

# **H300 Series Variable Frequency Drive Product Manual**

Before installation and use, carefully read the user manual  
and store it properly for future reference



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# Preface

## Documentation Overview

The H300 series variable frequency drive is a universal high-performance, cost-effective open-loop current vector drive, primarily used for controlling and adjusting the speed and torque of three-phase AC asynchronous motors and synchronous motors. It is applicable in textile, papermaking, wire drawing, machine tool, packaging, food processing, fans, pumps, and various automated production equipment drives.

This manual covers product wiring, commissioning, and fault handling procedures. For complete details on function codes and fault codes, refer to the \*H300 Series Universal Variable Frequency Drive Parameter Manual\* and related documentation.

## Obtaining the Manual

To obtain the electronic PDF version, please use the following methods:

- Scan the QR code on the product body using a mobile phone to access the accompanying user manual.
- Request it directly from your sales manager or distributor.

## Warranty Statement

Under normal usage, warranty service is provided for product malfunctions or damages during the warranty period (refer to the purchase order for warranty details). Maintenance costs will apply for repairs beyond the warranty period.

During the warranty period, maintenance costs will be charged for product damages caused by the following circumstances.

- Product damage resulting from improper operation as specified in the manual.
- Product damage caused by fire, flood, or abnormal voltage.
- Product damage resulting from using the product for unintended functions.
- Product damage caused by exceeding the specified operational scope of the product.
- Secondary damage to the product caused by force majeure (natural disasters, earthquakes, lightning strikes).

Relevant service fees shall be calculated according to the manufacturer's unified standards. If a contract exists, the principle of contract priority shall apply.

For detailed warranty information, please refer to the 'Product Warranty Card'.

# 1. Product Information

## 1.1. Product Positioning and Features

This product is a universal high-performance, cost-effective open-loop current vector frequency drive, primarily designed for controlling and adjusting the speed and torque of three-phase AC asynchronous motors and three-phase AC synchronous motors. It incorporates advanced current vector technology while offering outstanding performance, rich functionality, user-friendly operation, and a premium aesthetic design.



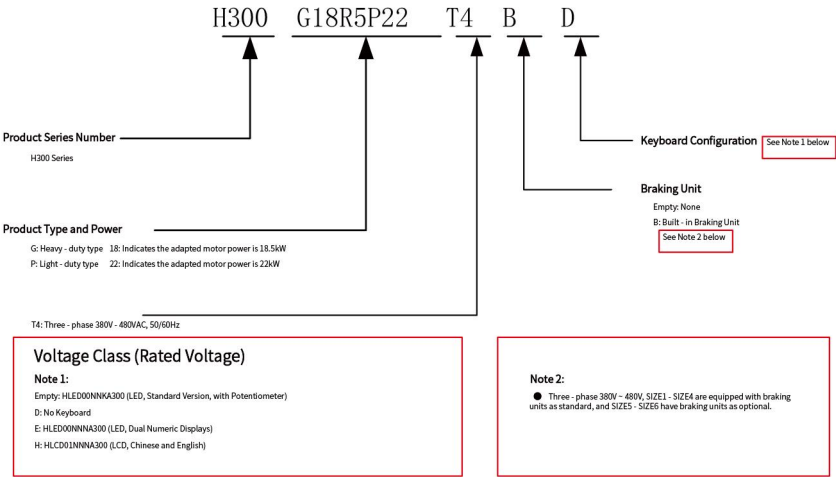
Product Appearance Diagram

This series features the following characteristics:

- Capable of driving three-phase AC asynchronous motors and three-phase AC permanent magnet synchronous motors.
- Enhanced drive performance enables asynchronous motors to achieve 0.25Hz/150% torque without an encoder, simplifying drive and control.
- Easily resolves technical and performance challenges encountered in equipment for industries such as cables, machine tools, metal products, petrochemicals, natural gas, lifting equipment, pulp and paper, textiles, dyeing, ceramics, and more.
- Advanced synchronous motor control algorithm ensures simpler and more stable control, especially for high-speed applications.
- Equipped with abundant functional accessories, including communication cards, I/O expansion cards, etc.

# 1.2. Nameplate and Model Number

MODEL: H300G18R5P22T4B  
INPUT: AC 3PH 380V~480V 42/51A 50/60Hz  
OUTPUT: AC 3PH 0V~480V 37/45A 0~320Hz 18.5/22KW  
HARDWARE VERSION: 1.0.01  
SOFTWARE VERSION: 1.01  
SN: G18R5P22T4B25B000001



Nameplate diagram

## 2. Product Structure

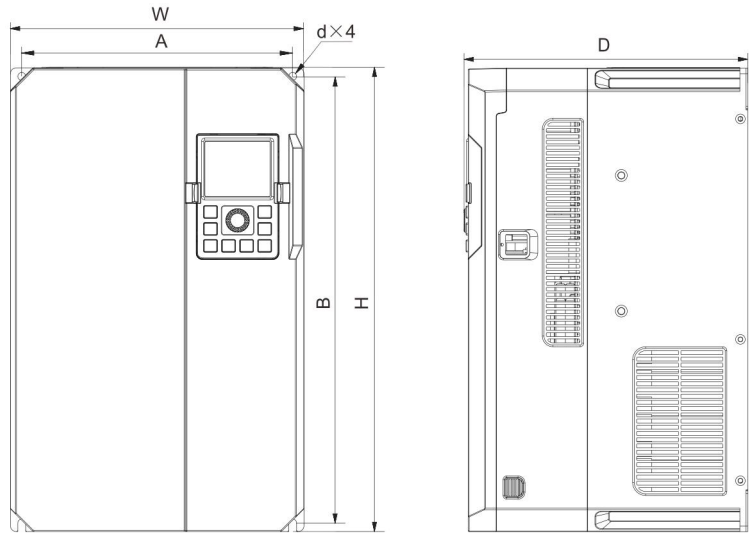
### 2.1. Model Specifications, Dimensions, and Power Rating

Refer to the table below for the correspondence between product models and dimensions.

Table of Product Model vs. Dimensions and Power Ratings

| Dimensions<br>,<br>Structural<br>model                                | Product model         |                  |
|-----------------------------------------------------------------------|-----------------------|------------------|
|                                                                       | Three-phase 380V~480V | Power range (kW) |
| SIZE1                                                                 | H300G0R4P0R75T4B      | 0.4~3.0kW        |
|                                                                       | H300G0R75P1R1T4B      |                  |
|                                                                       | H300G1R1P1R5T4B       |                  |
|                                                                       | H300G1R5P2R2T4B       |                  |
|                                                                       | H300G2R2P3R0T4B       |                  |
|                                                                       | H300G3R0P4R0T4B       |                  |
| SIZE2                                                                 | H300G4R0P5R5T4B       | 4.0~5.5kW        |
|                                                                       | H300G5R5P7R5T4B       |                  |
| SIZE3                                                                 | H300G7R5P11T4B        | 7.5~11kW         |
|                                                                       | H300G11P15T4B         |                  |
| SIZE4                                                                 | H300G15P18R5T4B       | 15kW             |
| SIZE5                                                                 | H300G18R5P22T4        | 18~22kW          |
|                                                                       | H300G18R5P22T4B       |                  |
|                                                                       | H300G22P30T4          |                  |
|                                                                       | H300G22P30T4B         |                  |
| SIZE6                                                                 | H300G30P37T4          | 30~37kW          |
|                                                                       | H300G30P37T4B         |                  |
|                                                                       | H300G37P45T4          |                  |
|                                                                       | H300G37P45T4B         |                  |
| SIZE7                                                                 | H300G45P55T4          | 45~55KW          |
|                                                                       | H300G45P55T4B         |                  |
|                                                                       | H300G55P65T4          |                  |
|                                                                       | H300G55P65T4B         |                  |
| SIZE8                                                                 | H300G65P75T4          | 65~110KW         |
|                                                                       | H300G65P75T4B         |                  |
|                                                                       | H300G75P90T4          |                  |
|                                                                       | H300G75P90T4B         |                  |
|                                                                       | H300G90P110T4         |                  |
|                                                                       | H300G90P110T4B        |                  |
|                                                                       | H300G110P132T4        |                  |
|                                                                       | H300G110P132T4B       |                  |
| SIZE9                                                                 | H300G132P160T4        | 132~160KW        |
|                                                                       | H300G160P185T4        |                  |
| Note: Bracketed items in model numbers indicate optional accessories. |                       |                  |

2.2. Overall Dimensions



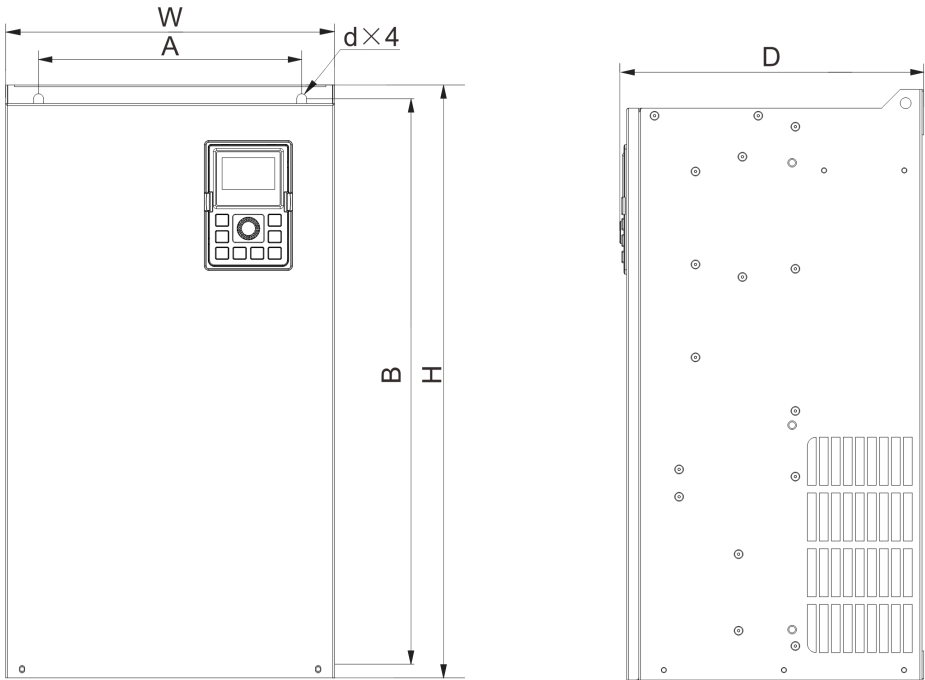
Outline and installation dimensions schematic diagram

Outline and mounting hole dimensions for SIZE1-SIZE6 models

| Structural outline | Mounting hole positions (mm) |     | Overall dimensions (mm) |     |       | Mounting hole diameter | Weight (kg) |
|--------------------|------------------------------|-----|-------------------------|-----|-------|------------------------|-------------|
|                    | A                            | B   | H                       | W   | D     | d×4                    |             |
| SIZE1              | 119                          | 194 | 205                     | 130 | 160   | Ø5                     | \           |
| SIZE2              | 119                          | 194 | 205                     | 130 | 170   | Ø5                     | \           |
| SIZE3              | 144                          | 244 | 254                     | 155 | 181.5 | Ø5.5                   | \           |
| SIZE4              | 182                          | 275 | 285                     | 192 | 181.5 | Ø5.5                   | \           |
| SIZE5              | 198                          | 338 | 350                     | 210 | 210   | Ø5.5                   | \           |
| SIZE6              | 240                          | 395 | 410                     | 260 | 248   | Ø7                     | \           |

2. Product Architecture

SIZE7-SIZE9 models



Outline and installation dimensions schematic diagram for SIZE7-SIZE9 models

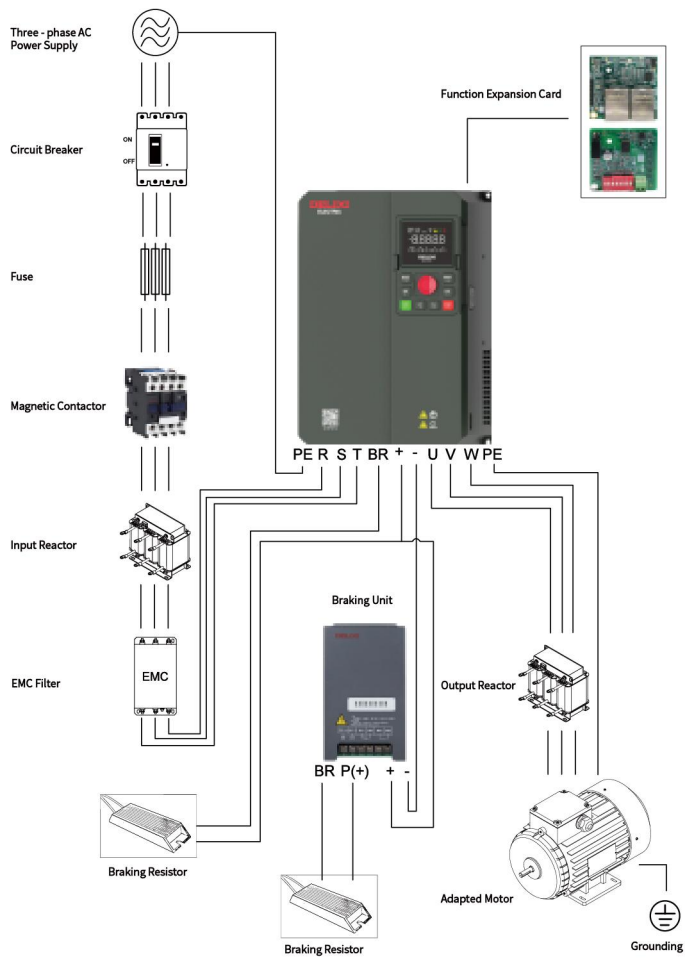
Outline and mounting hole dimensions for SIZE7-SIZE9 models

| Structural outline | Mounting hole positions (mm) |     | Overall dimensions (mm) |     |       | Mounting hole diameter | Weight (kg) |
|--------------------|------------------------------|-----|-------------------------|-----|-------|------------------------|-------------|
|                    | A                            | B   | H                       | W   | D     | d×4                    |             |
| SIZE7              | 240                          | 520 | 540                     | 300 | 277   | Ø9                     | \           |
| SIZE8              | 270                          | 560 | 580                     | 340 | 314.5 | Ø10                    | \           |
| SIZE9              | 300                          | 890 | 915                     | 400 | 323.5 | Ø10                    | \           |

# 3. System Configuration

## 3.1. System Connection Diagram

When a variable frequency drive controls an electric motor to form a control system, various electrical components must be installed on the input/output sides to ensure system safety and stability. The system configuration is shown in the diagram below.



System Configuration Diagram

### 3. System Configuration

Instructions for Peripheral Electrical Components

| Component Name                                                                                         | Installation Location | Functional Description                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circuit Breaker                                                                                        | Drive Input Side      | Install between the power supply and the inverter input side.<br>Short-circuit breaker: Cuts off power in case of downstream equipment overcurrent to prevent accidents.<br>Residual-current circuit breaker (RCCB): High-frequency leakage currents may occur during inverter operation. To prevent electric shock and potential fire hazards, select and install an appropriate RCCB based on site conditions. |
| Fuse                                                                                                   | Drive Input Side      | Prevents accidents caused by short circuits and protects downstream semiconductor devices.                                                                                                                                                                                                                                                                                                                       |
| Contactor                                                                                              | Drive Input Side      | For power-on/off operations of the frequency drive, avoid frequent power cycling (intervals should not be less than one hour) via contactors or direct start-up operations.                                                                                                                                                                                                                                      |
| Input reactor                                                                                          | Drive Input Side      | Effectively eliminates high-order harmonics on the input side and improves the power factor of the input side.                                                                                                                                                                                                                                                                                                   |
| EMC filter                                                                                             | Drive Input Side      | Reduces conducted and radiated interference emitted by the drive.                                                                                                                                                                                                                                                                                                                                                |
| Braking resistor                                                                                       | Drive output side     | During motor deceleration, regenerative energy is dissipated through the braking resistor.                                                                                                                                                                                                                                                                                                                       |
| Braking unit                                                                                           | Drive output side     | For product models without the 'B' designation, please use the braking unit recommended by our company.<br>During motor deceleration, regenerative energy is dissipated through the braking resistor.                                                                                                                                                                                                            |
| DC reactor                                                                                             | Drive output side     | Improves the power factor of the input side.<br>Improves the overall efficiency and thermal stability of the frequency drive.<br>Effectively eliminates the impact of high-order harmonics from the input side on the frequency drive, reducing conducted and radiated interference.                                                                                                                             |
| Output AC reactor                                                                                      | Drive output side     | Models with the letter 'A' in their product name already include an output AC reactor. External reactors are applicable for SIZE10-SIZE12 frame models.<br>Protects the insulation of the electric motor and extends its service life.                                                                                                                                                                           |
| Magnetic rings, magnetic clips                                                                         | Drive output side     | Reduces external interference and lowers bearing currents.                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                        | Signal cables         | Enhances signal immunity to interference.                                                                                                                                                                                                                                                                                                                                                                        |
| Electric motor                                                                                         | Drive output side     | Please select a compatible electric motor according to recommendations.                                                                                                                                                                                                                                                                                                                                          |
| Note: For peripheral electrical equipment selection, please refer to 'Chapter 4 Optional Accessories'. |                       |                                                                                                                                                                                                                                                                                                                                                                                                                  |

#### 3.1.1. COM/GND grounding screw

When the inverter is properly grounded, it reduces interference levels in external low-voltage cables and minimizes the impact of external cable-induced interference on the control board. Default connection.

On the other hand, when poor site grounding or other factors cause significant interference voltage on the inverter enclosure, this interference may be introduced into the control system. This could affect signals at the inverter terminals and, in severe cases, may lead to failures in communication, current sampling, analog I/O, digital I/O, or even impact other devices externally connected to the control board terminals.

## 4. Optional Accessories

### 4.1. List of Optional Accessories Supplied by Our Company

Refer to the table below for optional accessories supplied by our company for the H300 series. Detailed usage methods are provided in each accessory's manual. Specify required accessories when placing orders.

| Name                     |                                      | Model      | Supported Models                           | Description                                                                                                                |
|--------------------------|--------------------------------------|------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Braking Assembly         | External Braking Unit                |            |                                            | External Braking Unit                                                                                                      |
| Installation Accessories | Embedded Mounting Bracket            |            |                                            | For Embedded Installation                                                                                                  |
|                          | Output AC reactor                    |            |                                            |                                                                                                                            |
| Function Expansion Card  | I/O Expansion Card                   | HEEIO1     | H300 (Applicable to 15KW and above models) | 4 channels DI + 1 channel AI + 1 channel DO and 1 channel relay output + CAN + RS485 (Applicable to 15KW and above models) |
|                          | I/O Expansion Card                   | HEEIO2     | H500, H300 Full Series                     | 3 channels DI                                                                                                              |
|                          | I/O Expansion Card                   | HEEIO3     | H500, H300 Full Series                     | 3 channels DI + 1 channel relay + RS485                                                                                    |
|                          | I/O Expansion Card                   | HEEIO4     | H500, H300 Full Series                     | 3 channels DI + 1 channel DO + 1 channel relay output                                                                      |
|                          | I/O Expansion Card                   | HEEIO5A    | H500, H300 Full Series                     | 4 channels DI + 2 channels DO + RS485                                                                                      |
|                          | I/O Expansion Card                   | HEEIO5B    | H500, H300 Full Series                     | 4 channels DI + 2 channels DO                                                                                              |
|                          | I/O Expansion Card                   | HEEIO6     | H500, H300 Full Series                     | 1 channel AI (supports Differential Voltage Input and Thermal Resistor Input)                                              |
|                          | I/O Expansion Card                   | HEEIO7     | H500, H300 Full Series                     | 1 channel AI (supports -10V DC to +10V DC input)                                                                           |
| Communication card       | RS485 communication card             | HEE485     | H500, H300 Full Series                     | RS485 communication card (MODBUS-RTU)                                                                                      |
|                          | CAN communication card               | HEECAN     | H500, H300 Full Series                     | CAN communication card                                                                                                     |
|                          | CANopen Communication card           | HEECANOPEN | H500, H300 Full Series                     | CANopen communication card                                                                                                 |
|                          | PROFIBUS-DP communication card       | HEEDP      | H500, H300 Full Series                     | PROFIBUS-DP communication card                                                                                             |
|                          | PROFINET communication card          | HEEPN      | H500, H300 Full Series                     | PROFINET communication card                                                                                                |
|                          | EtherCAT communication card          | HEEECAT    | H500, H300 Full Series                     | EtherCAT communication card                                                                                                |
|                          | MODBUS TCP communication card        | HEETCP     | H500, H300 Full Series                     | MODBUS TCP communication card                                                                                              |
|                          | 4G communication card                | HEE4G      | H500, H300 Full Series                     | 4G communication card                                                                                                      |
| Matching cable           | Matching cable for DP expansion card | /          | H500 full series                           | Male-to-male DB9 cable for connecting HEE DP card and PROFIBUS master station                                              |

## 4. Optional Accessories

|  |                                                                        |   |                  |                                                                |
|--|------------------------------------------------------------------------|---|------------------|----------------------------------------------------------------|
|  | Matching network cable for PROFINET, EtherCAT, and TCP expansion cards | / | H500 full series | Direct-connect network cable meeting Cat5e or higher standards |
|  | Matching antenna for 4G expansion card                                 | / | H500 full series | 4G antenna set                                                 |

### Description

The above table lists only optional accessories supplied by our company. For other peripheral electrical components such as circuit breakers, contactors, fuses, EMC filters, AFE units, etc., our company provides recommendations only and does not supply them.

## 4.2. Braking Assembly

### 4.2.1.1. Selection of braking resistor resistance value

During braking, almost all regenerative energy from the electric motor is dissipated by the braking resistor. The resistance value of the braking resistor can be calculated using the formula:  
 $U \times U / R = P_b$

U—Braking voltage during stable system braking (U varies across different systems; the default braking voltage for this inverter series is 760V );

P<sub>b</sub>—Braking power.

### 4.2.1.2. Selection of braking resistor power rating

Theoretically, the power rating of the braking resistor equals the braking power. However, considering derating factor K, it can be calculated using the formula:

$$K \times P_r = P_b \times D,$$

K—takes a value around 50%,

P<sub>r</sub>—power of the braking resistor,

D — braking frequency, representing the proportion of the regeneration process to the entire working cycle

From the above two equations, we can derive:

$$K \times P_r = P_b \times D = U \times U / R \times D; \quad P_r = (U \times U \times D) / (R \times K),$$

Users can calculate the braking resistor power using this formula.

The K value is the derating coefficient for the braking resistor. A lower K value ensures the braking resistor does not overheat. Under conditions of good heat dissipation, users may appropriately increase the K value, but it is best not to exceed 50%. Otherwise, there is a risk of fire due to resistor overheating.

The braking frequency D should be determined based on the user's actual application scenario. 'Common Application Braking Frequencies' provides typical values for common scenarios:

Braking Frequency in

| Common Application Scenarios       | Elevator | Uncoiling and Coiling | Centrifuge | Occasional Load | Braking General Applications |
|------------------------------------|----------|-----------------------|------------|-----------------|------------------------------|
| Braking Frequency Value Assignment | 20 ~30%  | 20 ~30%               | 50~60%     | 5%              | 10%                          |

### 4.2.1.3. Braking Unit Model

#### Description

The braking resistance values in the table are based on heavy overload models (G-type) with a braking duty cycle (ED) of 10% and a maximum single braking duration of 10 seconds.

Braking Component Selection Table

| Inverter Model   | Braking Unit Model                        | Braking Resistance Value ( $\Omega$ ) | Braking Resistor Power (W) |
|------------------|-------------------------------------------|---------------------------------------|----------------------------|
| H300G0R4P0R75T4B | Built-in, Maximum Allowable Current 10A   | 1000                                  | 80                         |
| H300G0R75P1R1T4B | Built-in, Maximum Allowable Current 10A   | 600                                   | 160                        |
| H300G1R1P1R5T4B  | Built-in, Maximum Allowable Current 10A   | 500                                   | 210                        |
| H300G1R5P2R2T4B  | Built-in, Maximum Allowable Current 10A   | 400                                   | 250                        |
| H300G2R2P3R0T4B  | Built-in, Maximum Allowable Current 15A   | 250                                   | 400                        |
| H300G3R0P4R0T4B  | Built-in, Maximum Allowable Current 15A   | 150                                   | 600                        |
| H300G4R0P5R5T4B  | Built-in, Maximum Allowable Current 25A   | 150                                   | 750                        |
| H300G5R5P7R5T4B  | Built-in, maximum allowable current: 40A  | 100                                   | 1000                       |
| H300G7R5P11T4B   | Built-in, maximum allowable current: 40A  | 75                                    | 1200                       |
| H300G11P15T4B    | Built-in, maximum allowable current: 50A  | 50                                    | 2000                       |
| H300G15P18R5T4B  | Built-in, maximum allowable current: 75A  | 40                                    | 2500                       |
| H300G18R5P22T4   | CDI-BR-50                                 | 30                                    | 4000                       |
| H300G18R5P22T4B  | Built-in, maximum allowable current: 50A  | 30                                    | 4000                       |
| H300G22P30T4     | CDI-BR-50                                 | 30                                    | 4000                       |
| H300G22P30T4B    | Built-in, maximum allowable current: 50A  | 30                                    | 4000                       |
| H300G30P37T4     | CDI-BR-50                                 | 20                                    | 6000                       |
| H300G30P37T4B    | Built-in, maximum allowable current: 75A  | 20                                    | 6000                       |
| H300G37P45T4     | CDI-BR-100                                | 16                                    | 9000                       |
| H300G37P45T4B    | Built-in, maximum allowable current: 100A | 16                                    | 9000                       |
| H300G45P55T4     | CDI-BR-100                                | 13.6                                  | 9000                       |
| H300G45P55T4B    | CDI-BR-100                                | 13.6                                  | 9000                       |
| H300G55P65T4     | CDI-BR-100                                | 20/2                                  | 12000                      |
| H300G55P65T4B    | CDI-BR-100                                | 20/2                                  | 12000                      |
| H300G65P75T4     | CDI-BR-200                                | 13.6/2                                | 18000                      |
| H300G65P75T4B    | CDI-BR-200                                | 13.6/2                                | 18000                      |
| H300G75P90T4     | CDI-BR-200                                | 13.6/2                                | 18000                      |
| H300G75P90T4B    | CDI-BR-200                                | 13.6/2                                | 18000                      |
| H300G90P110T4    | CDI-BR-200                                | 20/3                                  | 18000                      |
| H300G90P110T4B   | CDI-BR-200                                | 20/3                                  | 18000                      |
| H300G110P132T4   | CDI-BR-200                                | 20/3                                  | 18000                      |
| H300G110P132T4B  | CDI-BR-200                                | 20/3                                  | 18000                      |

#### 4. Optional Accessories

|                |            |        |       |
|----------------|------------|--------|-------|
| H300G132P160T4 | CDI-BR-200 | 20/4   | 24000 |
| H300G160P185T4 | CDI-BR-400 | 13.6/4 | 36000 |

- The data in the above table serves as guidance. Users may select braking resistors with different resistance values and power ratings based on actual conditions (however, the resistance value must never be lower than the minimum braking resistor value specified in the table, while the power rating can be larger). The selection of braking resistors should be determined based on the power generated by the electric motor in the actual application system. It relates to factors such as system inertia, deceleration time, and energy from potential loads, requiring users to make appropriate choices according to their specific circumstances.
- Larger system inertia, shorter required deceleration time, and more frequent braking necessitate selecting braking resistors with larger power ratings and smaller resistance values.

## 5. Technical Data

### 5.1. Electrical Parameters

#### Description

The inverter rated power determination conditions in the table below are as follows:

- Three-phase 380V~480V: Inverter rated power is determined at 440V AC input.
- Three-phase 200V~240V: Inverter rated power is determined at 220V AC input.
- Single-phase 200V~240V: Inverter rated power is determined at 220V AC input.

#### Three-phase 380V~480V

Electrical Parameters (Three-phase 380V~480V) (SIZE1)

| Item                 |                                         | Specification                                                                                                                                 |               |              |              |              |              |
|----------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|--------------|--------------|--------------|
| Model: H300          |                                         | G0R4<br>P0R75                                                                                                                                 | G0R75<br>P1R1 | G1R1<br>P1R5 | G1R5<br>P2R2 | G2R2<br>P3R0 | G3R0<br>P4R0 |
| Structural outline   |                                         | SIZE1                                                                                                                                         |               |              |              |              |              |
| Output               | Power (kW) (Heavy load)                 | 0.4                                                                                                                                           | 0.75          | 1.1          | 1.5          | 2.2          | 3.0          |
|                      | Power (kW) (Light load)                 | 0.75                                                                                                                                          | 1.1           | 1.5          | 2.2          | 3.0          | 4.0          |
|                      | Rated Output Current (A)                | 1.6                                                                                                                                           | 3             | 3.5          | 4.5          | 6            | 7.5          |
|                      | Output Voltage                          | Three-phase 0~Input voltage                                                                                                                   |               |              |              |              |              |
|                      | Maximum Output Frequency                | 599Hz (adjustable via parameters)                                                                                                             |               |              |              |              |              |
|                      | Carrier Frequency                       | 0.5kHz~16.0kHz (carrier frequency automatically adjustable based on load characteristics)                                                     |               |              |              |              |              |
|                      | Overload Capacity                       | Heavy load: 150% rated current for 60s; Light load: 110% rated current for 60s                                                                |               |              |              |              |              |
| Input                | Rated input current (A)                 | 2.2                                                                                                                                           | 4.4           | 5.0          | 6.0          | 7.5          | 9.5          |
|                      | Rated voltage/Rated frequency           | AC: Three-phase 380~480V, 50/60Hz                                                                                                             |               |              |              |              |              |
|                      | Permissible voltage fluctuation range   | -15%~10%; Actual permissible range: AC 323V~528V                                                                                              |               |              |              |              |              |
|                      | Permissible frequency fluctuation range | ±5%; Actual permissible range: 47.5Hz~63Hz                                                                                                    |               |              |              |              |              |
|                      | Power supply capacity (kVA)             | 2                                                                                                                                             | 2.8           | 4.1          | 5            | 6.7          | 9.5          |
| Thermal design       | Exhaust air volume (CFM)                | -                                                                                                                                             | -             | -            | 9            | 9            | 9            |
| Overvoltage category | OVCIII                                  |                                                                                                                                               |               |              |              |              |              |
| Pollution degree     |                                         | PD2                                                                                                                                           |               |              |              |              |              |
| Protection rating    |                                         | IP20 (open type; IP protection rating applies to IEC products)<br>Type1 (Enclosed Type, Type1 Enclosure Rating applies to UL Listed Products) |               |              |              |              |              |

Electrical Parameters (Three-phase 380V~480V) (SIZE2~SIZE4)

| Item               |                          | Specification               |              |             |            |            |  |
|--------------------|--------------------------|-----------------------------|--------------|-------------|------------|------------|--|
| Model: H300        |                          | G4R0<br>P5R5                | G5R5<br>P7R5 | G7R5<br>P11 | G11<br>P15 | G15<br>P18 |  |
| Structural outline |                          | SIZE2                       |              | SIZE3       |            | SIZE4      |  |
| Output             | Power (kW) (Heavy load)  | 4.0                         | 5.5          | 7.5         | 11         | 15         |  |
|                    | Power (kW) (Light load)  | 5.5                         | 7.5          | 11          | 15         | 18         |  |
|                    | Rated Output Current (A) | 9.5                         | 13           | 17          | 25         | 32         |  |
|                    | Output Voltage           | Three-phase 0~Input voltage |              |             |            |            |  |

## 5. Technical Data

|                      |                                                                                                                                               |                                                                                           |      |      |      |      |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------|------|------|------|
|                      | Maximum Output Frequency                                                                                                                      | 599Hz (adjustable via parameters)                                                         |      |      |      |      |
|                      | Carrier Frequency                                                                                                                             | 0.5kHz~16.0kHz (carrier frequency automatically adjustable based on load characteristics) |      |      |      |      |
|                      | Overload Capacity                                                                                                                             | Heavy load: 150% rated current for 60s; Light load: 110% rated current for 60s            |      |      |      |      |
| Input                | Rated input current (A)                                                                                                                       | 11                                                                                        | 15.5 | 20.5 | 26   | 35   |
|                      | Rated voltage/Rated frequency                                                                                                                 | AC: Three-phase 380~480V, 50/60Hz                                                         |      |      |      |      |
|                      | Permissible voltage fluctuation range                                                                                                         | -15%~10%; Actual permissible range: AC 323V~528V                                          |      |      |      |      |
|                      | Permissible frequency fluctuation range                                                                                                       | ±5%; Actual permissible range: 47.5Hz~63Hz                                                |      |      |      |      |
|                      | Power supply capacity (kVA)                                                                                                                   | 12                                                                                        | 17.5 | 22.8 | 33.4 | 42.8 |
| Thermal design       | Exhaust air volume (CFM)                                                                                                                      | 20                                                                                        | 24   | 30   | 40   | 42   |
| Overvoltage category | OVCIII                                                                                                                                        |                                                                                           |      |      |      |      |
| Pollution degree     | PD2                                                                                                                                           |                                                                                           |      |      |      |      |
| Protection rating    | IP20 (open type; IP protection rating applies to IEC products)<br>Type1 (Enclosed Type, Type1 Enclosure Rating applies to UL Listed Products) |                                                                                           |      |      |      |      |

Electrical Parameters (Three-phase 380V~480V) (SIZE5, SIZE6)

| Item                 |                                                                                                                                               | Specification                                                                             |            |            |            |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------|------------|------------|
| Model: H300          |                                                                                                                                               | G18R5<br>P22                                                                              | G22<br>P30 | G30<br>P37 | G37<br>P45 |
| Structural outline   |                                                                                                                                               | SIZE5                                                                                     |            | SIZE6      |            |
| Output               | Power (kW) (Heavy load)                                                                                                                       | 18.5                                                                                      | 22         | 30         | 37         |
|                      | Power (kW) (Light load)                                                                                                                       | 22                                                                                        | 30         | 37         | 45         |
|                      | Rated Output Current (A) (Heavy load)                                                                                                         | 37                                                                                        | 45         | 60         | 75         |
|                      | Output Voltage                                                                                                                                | Three-phase 0~Input voltage                                                               |            |            |            |
|                      | Maximum Output Frequency                                                                                                                      | 599Hz (adjustable via parameters)                                                         |            |            |            |
|                      | Carrier Frequency                                                                                                                             | 0.5kHz~16.0kHz (carrier frequency automatically adjustable based on load characteristics) |            |            |            |
|                      | Overload Capacity                                                                                                                             | Heavy load: 150% rated current for 60s; Light load: 110% rated current for 60s            |            |            |            |
| Input                | Rated Input Current (A) (Heavy load)                                                                                                          | 38.5                                                                                      | 46.5       | 62         | 76         |
|                      | Rated voltage/Rated frequency                                                                                                                 | AC: Three-phase 380~480V, 50/60Hz                                                         |            |            |            |
|                      | Permissible voltage fluctuation range                                                                                                         | -15%~10%; Actual permissible range: AC 323V~528V                                          |            |            |            |
|                      | Permissible frequency fluctuation range                                                                                                       | ±5%; Actual permissible range: 47.5Hz~63Hz                                                |            |            |            |
|                      | Power supply capacity (kVA)                                                                                                                   | 33                                                                                        | 39         | 52         | 63         |
| Thermal design       | Exhaust air volume (CFM)                                                                                                                      | 52                                                                                        | 57         | 118        | 118        |
| Overvoltage category | OVCIII                                                                                                                                        |                                                                                           |            |            |            |
| Pollution degree     | PD2                                                                                                                                           |                                                                                           |            |            |            |
| Protection rating    | IP20 (open type; IP protection rating applies to IEC products)<br>Type1 (Enclosed Type, Type1 Enclosure Rating applies to UL Listed Products) |                                                                                           |            |            |            |

Electrical Parameters (Three-phase 380V~480V) (SIZE7-SIZE9)

| Item                 |                                                                                                                                                 | Specification                                                                             |            |            |            |             |              |              |              |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------|------------|------------|-------------|--------------|--------------|--------------|
| Model: H300          |                                                                                                                                                 | G45P<br>55                                                                                | G55P<br>65 | G65P<br>75 | G75P<br>90 | G90P<br>110 | G110<br>P132 | G132<br>P160 | G160<br>P185 |
| Structural outline   |                                                                                                                                                 | SIZE7                                                                                     |            | SIZE8      |            |             |              | SIZE9        |              |
| Output               | Power (kW) (Heavy Load)                                                                                                                         | 45                                                                                        | 55         | 65         | 75         | 90          | 110          | 132          | 160          |
|                      | Power (kW) (Light Load)                                                                                                                         | 55                                                                                        | 65         | 75         | 90         | 110         | 132          | 160          | 185          |
|                      | Rated Output Current (A) (Heavy Load)                                                                                                           | 90                                                                                        | 110        | 130        | 152        | 176         | 210          | 253          | 300          |
|                      | Output Voltage                                                                                                                                  | Three-phase 0~Input Voltage                                                               |            |            |            |             |              |              |              |
|                      | Maximum Output Frequency                                                                                                                        | 599Hz (Adjustable via parameters)                                                         |            |            |            |             |              |              |              |
|                      | Carrier Frequency                                                                                                                               | 0.5kHz~16.0kHz (Carrier frequency automatically adjustable based on load characteristics) |            |            |            |             |              |              |              |
|                      | Overload Capability                                                                                                                             | Heavy Load: 150% Rated Current for 60s; Light Load: 110% Rated Current for 60s            |            |            |            |             |              |              |              |
| Input                | Rated Input Current (A) (Heavy Load)                                                                                                            | 92                                                                                        | 113        | 134        | 157        | 180         | 214          | 256          | 305          |
|                      | Rated Voltage/Frequency                                                                                                                         | AC: Three-phase 380~480V, 50/60Hz                                                         |            |            |            |             |              |              |              |
|                      | Permissible Voltage Fluctuation Range                                                                                                           | -15%~10%, Actual Permissible Range: AC 323V~528V                                          |            |            |            |             |              |              |              |
|                      | Permissible Frequency Fluctuation Range                                                                                                         | ±5%, Actual Permissible Range: 47.5Hz~63Hz                                                |            |            |            |             |              |              |              |
|                      | Power Supply Capacity (kVA)                                                                                                                     | 81                                                                                        | 97         | 110        | 127        | 150         | 180          | 220          | 263          |
| Thermal Design       | Exhaust Air Volume (CFM)                                                                                                                        | 122.2                                                                                     | 122.2      | 218.6      | 218.6      | 287.2       | 354.2        | 547          | 627          |
| Overvoltage Category | OVCIII                                                                                                                                          |                                                                                           |            |            |            |             |              |              |              |
| Pollution Degree     | PD2                                                                                                                                             |                                                                                           |            |            |            |             |              |              |              |
| Protection Rating    | IP20 (open type, IP Protection Rating applies to IEC Products)<br>Type1 (enclosed type; NEMA Type1 rating applicable for UL-certified products) |                                                                                           |            |            |            |             |              |              |              |

## 5.2. Technical Specifications

Technical Specifications Table 1

| Item                |                         | Technical Specifications                                                       |                                                                                                                                                                                                                                                                                                                    |
|---------------------|-------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control Performance | Compatible Motor Types  | Asynchronous Induction Motors (IM), Permanent Magnet Synchronous Motors (PMSM) |                                                                                                                                                                                                                                                                                                                    |
|                     | Control Methods         | Sensorless Vector Control (SVC), V/F Control                                   |                                                                                                                                                                                                                                                                                                                    |
|                     | Asynchronous Motors V/F | Supported Functions                                                            | Overvoltage suppression, Overcurrent suppression, Momentary Power Loss Ride-Through, Oscillation Suppression, Torque Boost, Slip Compensation, Multiple V/F Curve Selection, V/F Separation, DC Braking, Random PWM, Over-excitation Fast Deceleration, Droop Control, Parameter auto-tuning, Speed Tracking, etc. |
|                     | Asynchronous Motors SVC | Supported Functions                                                            | Master-Slave Control, Overvoltage suppression, DC Braking, Torque Control, Momentary Power Loss Ride-Through, Parameter auto-tuning, Speed Tracking, etc.                                                                                                                                                          |
|                     |                         | Speed Regulation Range                                                         | 1:250 (SVC)                                                                                                                                                                                                                                                                                                        |
|                     |                         | Starting Torque                                                                | 0.25Hz/150% (SVC)                                                                                                                                                                                                                                                                                                  |
|                     |                         | Torque Step Response                                                           | Torque Step Response within 2ms                                                                                                                                                                                                                                                                                    |

## 5. Technical Data

|  |  |                             |                                             |
|--|--|-----------------------------|---------------------------------------------|
|  |  | Torque Control Accuracy     | Torque Control Accuracy $\pm 3\%$ above 5Hz |
|  |  | Steady-State Speed Accuracy | 0.05%                                       |
|  |  | Field Weakening Ratio       | 5x Field Weakening                          |

Technical Specifications Table 2

| Item |                       |                             | Technical Specifications                                                                                                                                  |
|------|-----------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Synchronous Motor SVC | Supported Functions         | Master-Slave Control, Overvoltage suppression, DC Braking, Torque Control, Momentary Power Loss Ride-Through, Parameter auto-tuning, Speed Tracking, etc. |
|      |                       | Speed Regulation Range      | 1:100 (SVC)                                                                                                                                               |
|      |                       | Starting Torque             | 0.5Hz/150% (SVC)                                                                                                                                          |
|      |                       | Torque Step Response        | Torque Step Response within 2ms                                                                                                                           |
|      |                       | Torque Control Accuracy     | Torque Control Accuracy $\pm 3\%$ above 5Hz                                                                                                               |
|      |                       | Steady-State Speed Accuracy | 0.05%                                                                                                                                                     |

Technical Specifications Table 3

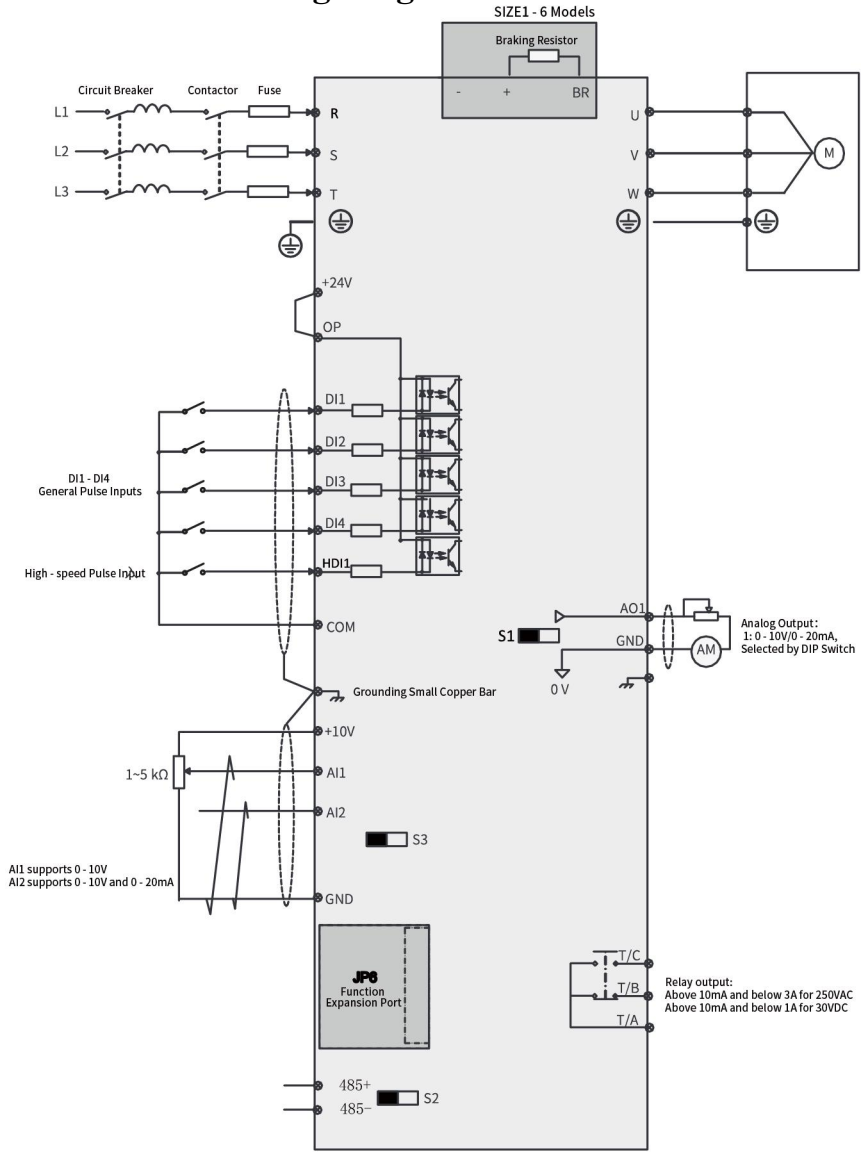
| Item            |                       |                            | Technical Specifications                                                                                                                                                                                                                                                                                                                             |
|-----------------|-----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic Functions | Command Channel       |                            | Controls motor start/stop operations, including DI/DO, virtual DI/DO, external expansion card DI/DO, communication reference. Supports switching between 4 sets of different motor parameters and control parameters, and allows free programming for start/stop command configuration.                                                              |
|                 | Given Channel         | Input Frequency Resolution | Digital Setting: 0.01Hz<br>Analog Setting: Maximum Frequency $\times 0.1\%$                                                                                                                                                                                                                                                                          |
|                 |                       | Speed/Torque Given         | Acceleration/deceleration curves, dynamic switching of multiple acceleration/deceleration times, S-curve acceleration/deceleration, external PID given, AI (2 channels, supporting 0-10V/0-20mA), communication-based speed/torque given, pulse given (HDI1), multi-step value given, etc.; supports Free Programming setting for speed/torque given |
|                 | Communication Methods |                            | Supports 7 communication methods: Modbus (Modbus-RTU, Modbus-TCP), Profibus-DP, CAN, CANopen, Profinet, EtherCAT, 4G-LTE                                                                                                                                                                                                                             |
|                 | Output Limitation     |                            | Supports torque limitation, power limitation, current limitation, ultimate torque limitation, speed limitation, frequency hopping                                                                                                                                                                                                                    |
|                 | Process Control       | PID                        | Sleep mode, free configuration of setPoint and feedback sources, 2-stage PID parameter switching, feedback loss detection, free configuration of output limitation, free initialization configuration                                                                                                                                                |
|                 | Protection            |                            | Inverter and motor protection including overvoltage, overcurrent, overload, motor overtemperature, load shedding protection, fault auto-reset, auto-restart, etc.                                                                                                                                                                                    |

Technical Specifications Table 4

| Item                         |                                 | Technical Specifications                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Customized Functions         | Free Programming                | Supports Free Programming. Supports bit-word conversion, single/double-word conversion, logic operations (AND, OR, NOT, XOR, XNOR), Arithmetic operations (fixed-Point & floating-Point addition/subtraction/multiplication/division, absolute value, numerical comparison), selector switch, free filtering, logic delay on/off, multi-Point curve, constant value |
|                              | Self-check                      | Inverter and electric motor detection. Supports IGBT shoot-through, ground short-circuit, phase-loss self-check, and phase-to-phase short-circuit self-check                                                                                                                                                                                                        |
|                              | Powerful background software    | The background software Dlx.DriveStudio supports Inverter parameter upload/download operations and oscilloscope functionality. Remote debugging and fault diagnosis are supported via the background software. Internal status monitoring of the Inverter can be achieved using the oscilloscope.                                                                   |
| Run                          | Run Command                     | References: Operator panel, control terminals, communication (switchable via multiple methods).                                                                                                                                                                                                                                                                     |
|                              | Frequency Command               | 14 Frequency Command types: Digital reference, analog voltage reference, analog current reference, pulse reference, serial port reference (switchable via multiple methods)                                                                                                                                                                                         |
|                              | Auxiliary Frequency Command     | 14 types of auxiliary frequency commands. Enables flexible auxiliary frequency fine-tuning and frequency synthesis.                                                                                                                                                                                                                                                 |
|                              | Input Terminals                 | Standard:<br>4 DI terminals, 1 high-speed DI terminal<br>2 AI terminals; AI1 supports only 0V~10V voltage mode input, AI2 supports 0V~10V voltage mode input or 0~20mA current mode input                                                                                                                                                                           |
|                              | Output Terminals                | Standard:<br>1 AO terminal, supporting 0~20mA current output or 0~10V voltage output<br>1 relay output terminal                                                                                                                                                                                                                                                     |
| Display and Keypad Operation | LED operation panel display     | Displays and modifies parameters; shows various inverter statuses (Forward Run/Reverse Rotation/Stop, panel/terminal/communication control, speed/torque control, etc.)                                                                                                                                                                                             |
|                              | Key Lock and Function Selection | Enables selective key locking and defines functional scope of specific keys to prevent misoperation                                                                                                                                                                                                                                                                 |
| Environment                  | Installation Site               | Indoor locations, shielded from direct sunlight, and free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water, or salt contamination                                                                                                                                                                                                 |
|                              | Altitude                        | No derating required below 1000m. Above 1000m, derate by 1% for every 100m increase. Maximum operational altitude is 3000m. For altitudes exceeding 3000m, contact the manufacturer (Note: For SIZE1 structural type inverters, maximum operational altitude is 2000m. For altitudes exceeding 2000m, contact the manufacturer)                                     |
|                              | Ambient Temperature             | -10°C ~ +50°C. When ambient temperature ranges from 40°C to 50°C, derating is required. For every 1°C increase in ambient temperature, derate by 1.5%.                                                                                                                                                                                                              |
|                              | Humidity                        | Less than 95%RH, non-condensing.                                                                                                                                                                                                                                                                                                                                    |
|                              | Vibration                       | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                |
|                              | Storage Temperature             | −20°C~+65°C                                                                                                                                                                                                                                                                                                                                                         |

# 6. Wiring

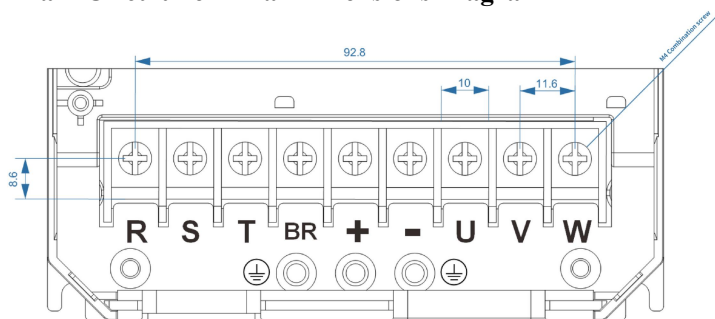
## 6.1. Electrical Wiring Diagram



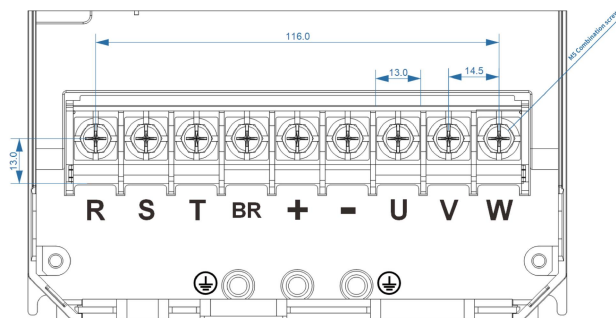
Standard System Wiring Diagram

## 6.2. Main Circuit Cable Wiring

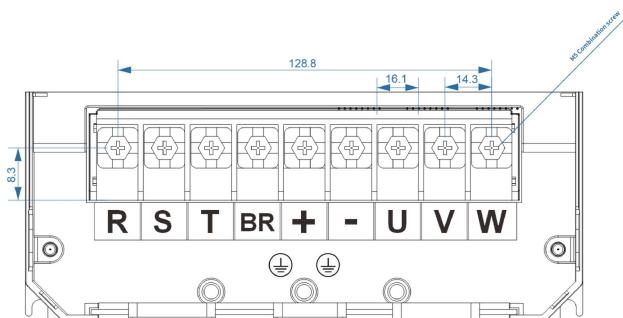
### 6.2.1.1. Main Circuit Terminal Dimensions Diagram



Main Circuit Terminal Layout and Dimensions Diagram for SIZE1-SIZE2 Models

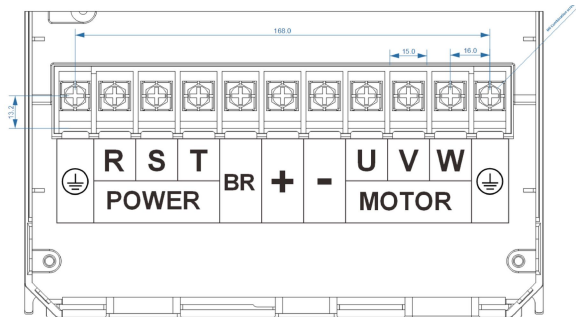


Main Circuit Terminal Layout and Dimensions Diagram for SIZE3 Models

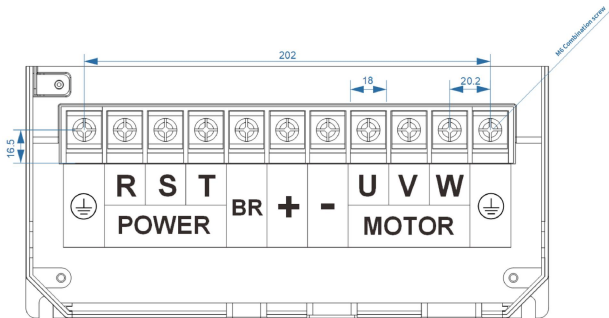


Main Circuit Terminal Layout and Dimensions Diagram for SIZE4 Models

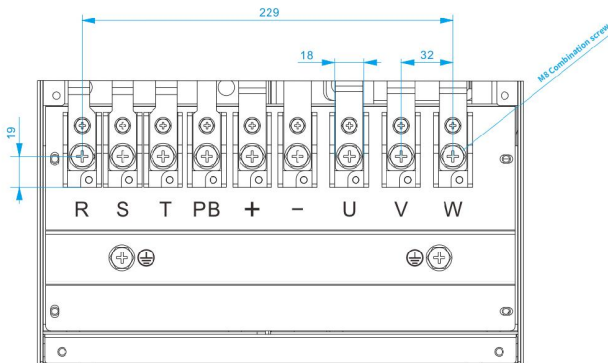
6. Wiring



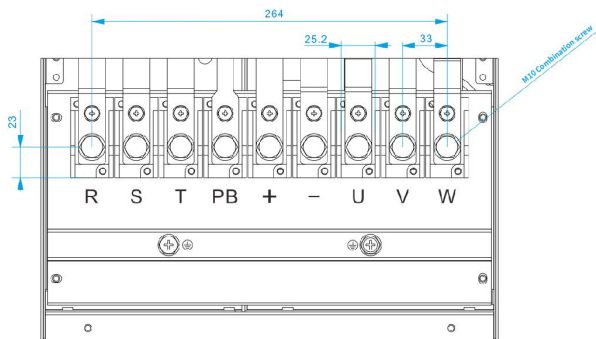
Main Circuit Terminal Layout and Dimensions Diagram for SIZE5 Models



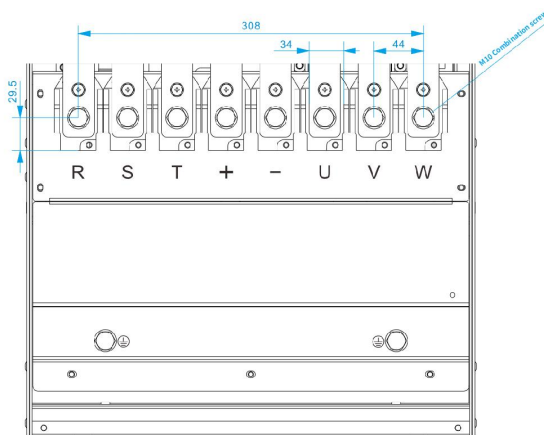
Main Circuit Terminal Layout and Dimensions Diagram for SIZE6 Models



Main Circuit Terminal Layout and Dimensions Diagram for SIZE7 Models



Main Circuit Terminal Layout and Dimensions Diagram for SIZE8 Models



Main Circuit Terminal Layout and Dimensions Diagram for SIZE9 Models

### 6.2.1.2. Main Circuit Terminal Wiring Instructions

The following section describes the wiring requirements for the main circuit terminals. For requirements regarding the selection, routing, and connection of main circuit cables, refer to '7.4.4.3 Main Circuit Requirements'.

To prevent accidents caused by short circuits, a fuse must be connected on the input side.

#### Input Power Supply R, S, T

- Wiring on the input side of the equipment has no phase sequence requirement.
- The specifications and installation methods for external main circuit wiring must comply with local regulations and relevant IEC standards.
- For main circuit cable wiring, select copper conductors of the corresponding size based on the recommended main circuit cable selection values.

#### DC Bus (+), (-), BR

- Residual voltage remains at the DC Bus (+) and (-) terminals immediately after power outage. Wiring operations must only be performed after waiting and confirming 10 minutes of power interruption; otherwise, there is an electric shock hazard.
- When selecting external braking components for 90kW and above models, ensure (+) and (-) polarities are correctly connected. Reversed connections may cause damage to both the equipment and braking components, potentially leading to fire.
- Braking unit wiring length must not exceed 10m. Use twisted-pair wires or tightly parallel-wired twin conductors.
- Never connect braking resistors directly to the DC Bus. This may cause equipment damage or fire.

6. Wiring

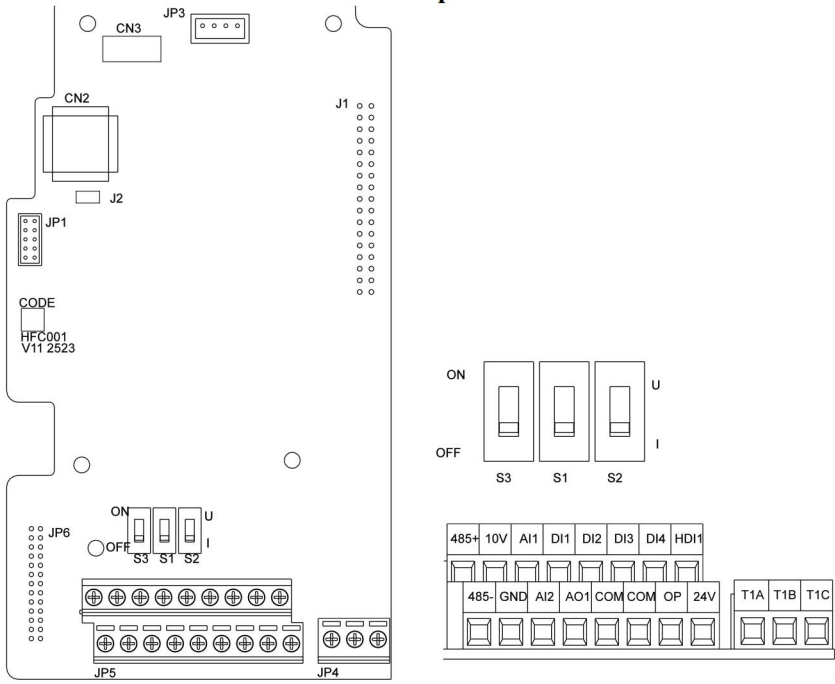
Output terminals U, V, W

- External Main Circuit wiring specifications and installation methods must comply with local regulations and relevant IEC standards.
- Use copper conductors of corresponding dimensions for Main Circuit cable wiring.
- Do not connect capacitors or surge absorbers to the output side, as this may cause frequent device protection or even damage.
- Excessive motor cable length may induce electrical resonance due to distributed capacitance, resulting in motor insulation breakdown or significant leakage current triggering device overcurrent protection. When motor cable length exceeds 100m, an AC output reactor must be installed near the equipment.

Grounding terminal (PE)

6.3. Control Circuit Cable Wiring

6.3.1.1. Control circuit terminal description



Control circuit terminal layout diagram

Control circuit terminal functions

| Category     | Terminal Symbol | Terminal Name                 | Functional Description                                                                                                                                                                                        |
|--------------|-----------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply | 10V-GND         | External 10V Power Supply     | Provides DC 10V power supply voltage, typically used as the operating power source for external potentiometers. Maximum output current: 10mA.                                                                 |
|              | 24V-COM         | External 24V Power Supply     | Provides DC 24V power supply voltage, typically used as the operating power source for digital input/output terminals or external low-voltage terminals. Maximum output current: 200mA [Note 1].              |
|              | OP              | External Power Input Terminal | Factory default setting: connected to 24V. When using an external power supply to drive digital input terminals, disconnect OP from the 24V power terminal and short-circuit it to the external power supply. |

|                                   |         |                                                                                     |                                                                                                                                                                                                                                                  |
|-----------------------------------|---------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analog Input                      | AI1-GND | Analog Input Terminal 1                                                             | Only supports voltage input<br>0V~10V<br>Input impedance: 22K $\Omega$ for voltage input                                                                                                                                                         |
|                                   | AI2-GND | Analog input terminal 2                                                             | Supports both voltage input and current input, with voltage input as the default.<br>Functions as voltage/current input supporting 0V~10V/0mA~20mA.<br>Input impedance: 22K $\Omega$ for voltage input, 500 $\Omega$ for current input [Note 2]. |
| Digital input                     | DI1-OP  | Digital input 1                                                                     | Opto-isolated, compatible with bipolar input.<br>Input impedance: 1.88K $\Omega$<br>Input voltage range: 9V~30V                                                                                                                                  |
|                                   | DI2-OP  | Digital input 2                                                                     |                                                                                                                                                                                                                                                  |
|                                   | DI3-OP  | Digital input 3                                                                     |                                                                                                                                                                                                                                                  |
|                                   | DI4-OP  | Digital input 4                                                                     |                                                                                                                                                                                                                                                  |
|                                   | HDI1-OP | High-speed pulse input 1                                                            | In addition to the features of DI1~DI4, it can also function as a high-speed pulse input channel.<br>Input impedance: 2.35k $\Omega$<br>Maximum input frequency: 100kHz<br>Operating voltage range: 15V~30V                                      |
| Analog output                     | AO1-GND | Analog output 1                                                                     | Voltage or current output is selected by the DIP switch on the control board. Default is voltage output.<br>Output voltage range: 0V~10V<br>Output current range: 0~20mA                                                                         |
| Relay Output                      | T1/A    | T1 common terminal                                                                  | Contact driving capacity:<br>250VAC, 3A, COS $\phi$ =0.5<br>30VDC, 3A                                                                                                                                                                            |
|                                   | T1/B    | T1 normally open terminal                                                           |                                                                                                                                                                                                                                                  |
|                                   | T1/C    | T1 normally closed terminal                                                         |                                                                                                                                                                                                                                                  |
| RS485                             | 485+    | 485 positive                                                                        | R485 port is standard on this unit                                                                                                                                                                                                               |
|                                   | 485-    | 485 negative                                                                        |                                                                                                                                                                                                                                                  |
| Function expansion card interface | JP6     | Function expansion card interface                                                   | 26-core terminal block serving as the interface for expansion cards (including optional cards such as I/O cards and communication cards).                                                                                                        |
| DIP switch                        | S1      |    | AO1 output current/voltage mode selection.<br>I: Current output mode<br>U: Voltage output mode                                                                                                                                                   |
|                                   | S2      |   | A12 input current/voltage mode selection.<br>I: Current mode, 0mA~20mA, input impedance 500 $\Omega$<br>U: Voltage input mode, DC 0V~10V                                                                                                         |
|                                   | S3      |  | This unit comes standard with an RS485 termination resistor.<br>ON: Termination resistor connected<br>OFF: Termination resistor disconnected                                                                                                     |

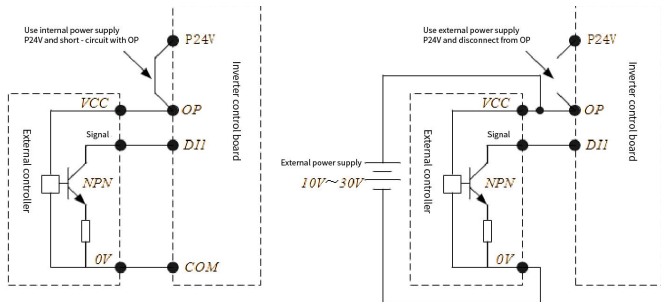
## Description

- **【Note 1】** : Derating is required when ambient temperature exceeds 23°C. For every 1°C increase in ambient temperature, output current decreases by 1.8mA. Maximum output current is 170mA at 40°C ambient temperature. When users short OP to 24V, the current of digital input terminals must also be considered.
- **【Note 2】**: When using a 500 $\Omega$  impedance, ensure the maximum output voltage of the signal source is no less than 10V to guarantee that AI can measure currents up to 20mA.

6. Wiring

6.3.1.2. Wiring for Digital Input Terminal DI

● Sink wiring method



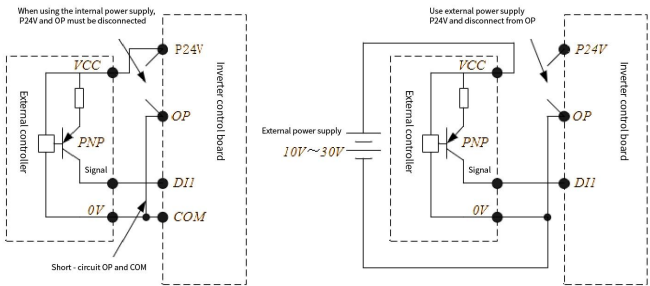
Sink wiring method

Utilizing the inverter's internal 24V power supply is the most common wiring approach. Short-circuit the inverter's OP and 24V terminals, and connect the inverter's COM terminal to the external controller's 0V.

When using an external 24V power supply, remove the jumper between +24V and OP. Connect the positive terminal of the external power supply to the OP terminal, allowing current to flow out from the DI port through the external controller contacts and return to the external voltage 0V.

In this wiring configuration, DI terminals of different inverters cannot be used in parallel; otherwise, it may cause DI malfunctions.

● Source-type wiring method



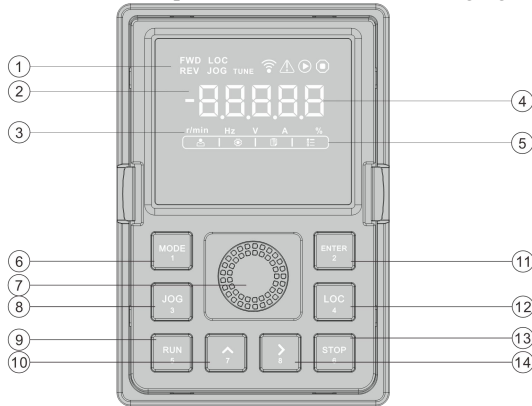
Source-type wiring method

## 7. Commissioning and Trial Operation

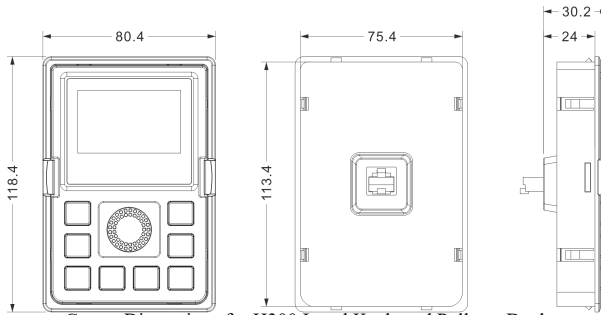
### 7.1. Onboard LED Control Panel Instructions

#### 7.1.1. Component Description

The onboard LED control panel displays operating status, fault information, and enables parameter configuration. The control panel is shown in the following figure.



Schematic Diagram of Onboard Control Panel Components



Cutout Dimensions for H300 Local Keyboard Pull-out Dock

Onboard Control Panel Structure Description

| No. | Component Name    | Description                                                                                                 |
|-----|-------------------|-------------------------------------------------------------------------------------------------------------|
| 1   | Status Indicator  | Displays forward/reverse rotation status, local/remote control, jog, tuning, warnings/faults, running, stop |
| 2   | Main Display Area | Displays function code parameters                                                                           |
| 3   | Unit Display Area | Displays units corresponding to function code values                                                        |
| 4   | Main Display Area | Displays function code parameters                                                                           |
| 5   | Menu Display Area | Displays Basic Mode, User Mode, Verification Mode                                                           |
| 6   | MODE Key          | Switches display modes; cancels data modification                                                           |
| 7   | Keyboard Knob     | Adjusts frequency; performs data modification and function code modification                                |
| 8   | JOG Key           | Multi-function Key (controlled by function code P0.1.35)                                                    |
| 9   | RUN Key           | Initiates equipment operation during local control mode                                                     |
| 10  | UP Key            | Increases frequency; performs data increment and function code increment                                    |
| 11  | ENTER Key         | Reads and stores set parameters during parameter setting mode                                               |
| 12  | LOC Key           | Multi-function Key (controlled by function code P0.1.35)                                                    |
| 13  | STOP Key          | Stops equipment during operation; performs fault reset during equipment failure                             |

## 7. Debugging and Trial Run

|    |                 |                                                                                                                |
|----|-----------------|----------------------------------------------------------------------------------------------------------------|
| 14 | Right Shift Key | Switches displayed data during monitoring; moves data modification position during parameter selection/setting |
|----|-----------------|----------------------------------------------------------------------------------------------------------------|

### 7.1.2. Key Information

Key Functions

| Keys                                                                              | Name            | Description                                                                                                    |
|-----------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------|
|   | MODE Key        | Toggle display mode. Cancel data modification                                                                  |
|   | ENTER Key       | Reads and stores set parameters during parameter setting mode                                                  |
|   | JOG Key         | Multi-function Key (controlled by function code P0.1.35)                                                       |
|   | LOC Key         | Multi-function Key (controlled by function code P0.1.35)                                                       |
|   | RUN Key         | Initiates equipment operation during local control mode                                                        |
|   | STOP Key        | Stops equipment during operation; performs fault reset during equipment failure                                |
|   | Increment Key   | Frequency increment during monitoring; Data increment, Function code increment                                 |
|   | Right Shift Key | Switches displayed data during monitoring; moves data modification position during parameter selection/setting |
|  | Keyboard Knob   | Adjusts frequency; performs data modification and function code modification                                   |

### 7.1.3. Status Indicator

Status Indicator

| No.                                                                                                | Component Name         | Description                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FWD</b><br><b>REV</b>                                                                           | Forward/Reverse status | FWD lit indicates target speed is forward<br>FWD flashing indicates target direction switching to forward<br>REV lit indicates target speed is reverse<br>REV flashing indicates target direction switching to reverse |
| <b>LOC</b>                                                                                         | Local/Remote status    | Continuously lit indicates Local Control<br>Flashing indicates Remote Control<br>Unlit indicates Terminal Control                                                                                                      |
| <b>JOG</b>                                                                                         | Jog status             | Lit indicates jog operation in progress                                                                                                                                                                                |
| <br><b>TUNE</b> | Tuning status          | Lit indicates tuning in progress                                                                                                                                                                                       |
|                 | Alarm Status           | Steady on indicates equipment fault<br>Off indicates no equipment fault                                                                                                                                                |

|                                                                                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Run/Stop Status |  Off Steady on, indicating stopped<br> Steady on  Off, indicating running<br> Steady on  Flashing, indicating deceleration stop in progress<br> Flashing  Steady on, indicating standby<br> Off  Off, indicating reverse rotation prohibited<br> Steady on  Steady on, indicating DC braking in progress<br> Flashing  Flashing, indicating DC braking stop in progress |
|  | Symbol Status   | Steady on indicates negative value; Off indicates positive value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>kW h min s r/min</b><br><b>Hz V A %</b>                                       | Unit Status     | Unit for main display value corresponds to steadily lit indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  | Mode Status     | The main display area shows the Basic Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | Mode Status     | The main display area shows the User Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  | Mode Status     | The main display area shows the Verification Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

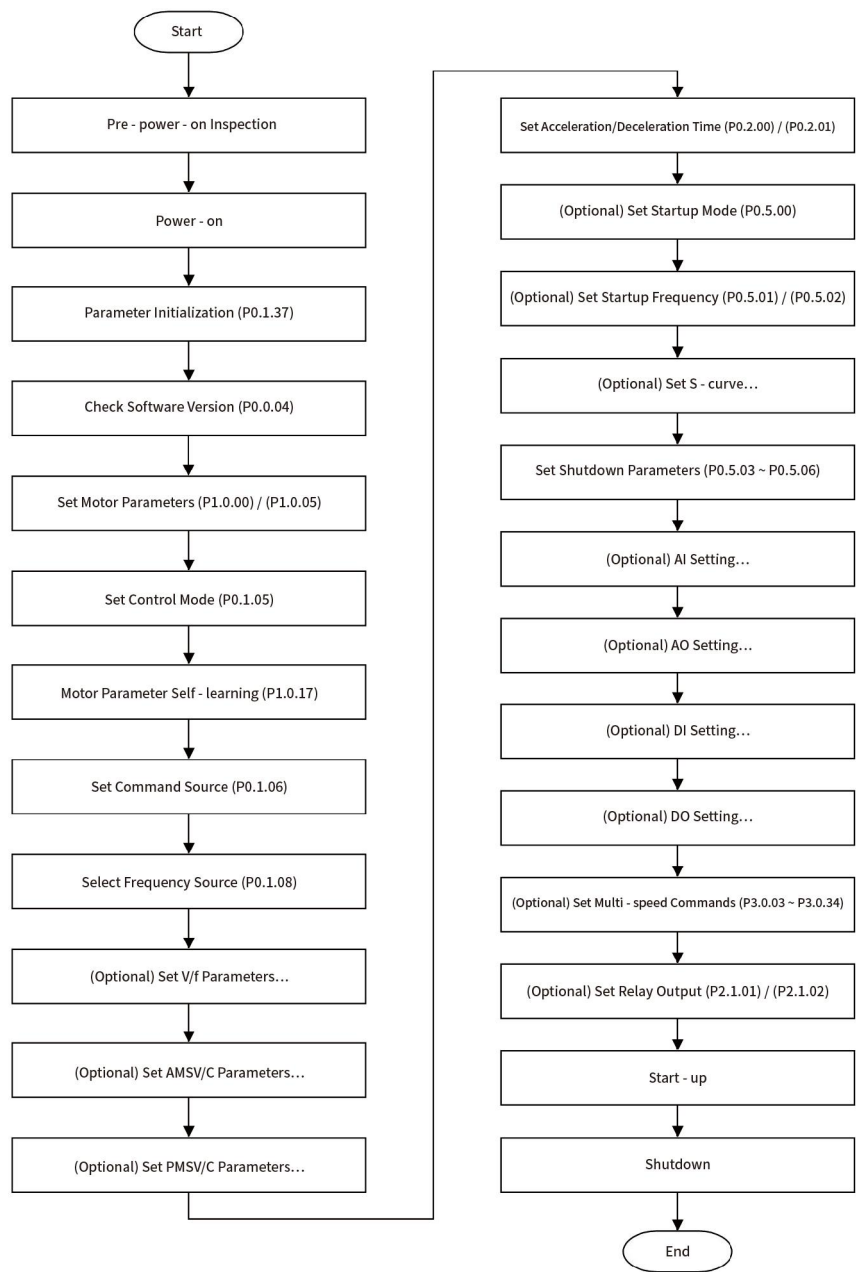
## 7.2. Basic Commissioning Procedure

Be sure to confirm the following items before turning on the power.

### Pre-Power On Checklist

| Item                                    | Content                                                                                                                                                                                              |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main Circuit Connection Verification    | Confirm the power supply voltage is correct (380V AC~480V AC 50/60Hz).                                                                                                                               |
|                                         | Confirm the power input terminals are securely connected to the Inverter input terminals (R/S/T).                                                                                                    |
|                                         | Confirm the Electric motor terminals are securely connected to the Inverter output terminals (U/V/W).                                                                                                |
|                                         | Confirm the Inverter and Electric motor are properly grounded.                                                                                                                                       |
|                                         | Confirm the wire gauge of the Main Circuit cables meets the requirements.                                                                                                                            |
|                                         | Confirm that heat-shrink tubing is applied over the copper tube of the cable lug and the cable core conductor on the Main Circuit wiring, and that the tubing completely covers the cable conductor. |
|                                         | Confirm the motor output wiring. If the length exceeds 50 meters, reduce the carrier frequency (P0.6.06).                                                                                            |
| Control circuit connection verification | Confirm that connections between control circuit terminals and other control devices are secure.                                                                                                     |
|                                         | Confirm that shielded twisted-pair wire has been selected for control circuit signal lines.                                                                                                          |
|                                         | Confirm correct wiring of the option card.                                                                                                                                                           |
|                                         | Confirm that control circuit cables are routed separately from main circuit power cables.                                                                                                            |
| Load verification                       | Confirm all inverter control circuit terminals are in the OFF state (inverter not in operating status).                                                                                              |
|                                         | Confirm the electric motor is in a no-load condition and disconnected from the mechanical system.                                                                                                    |
| Braking resistor verification           | When using a braking resistor and braking unit, confirm correct wiring and that the resistance value is appropriate.                                                                                 |

7. Debugging and Trial Run

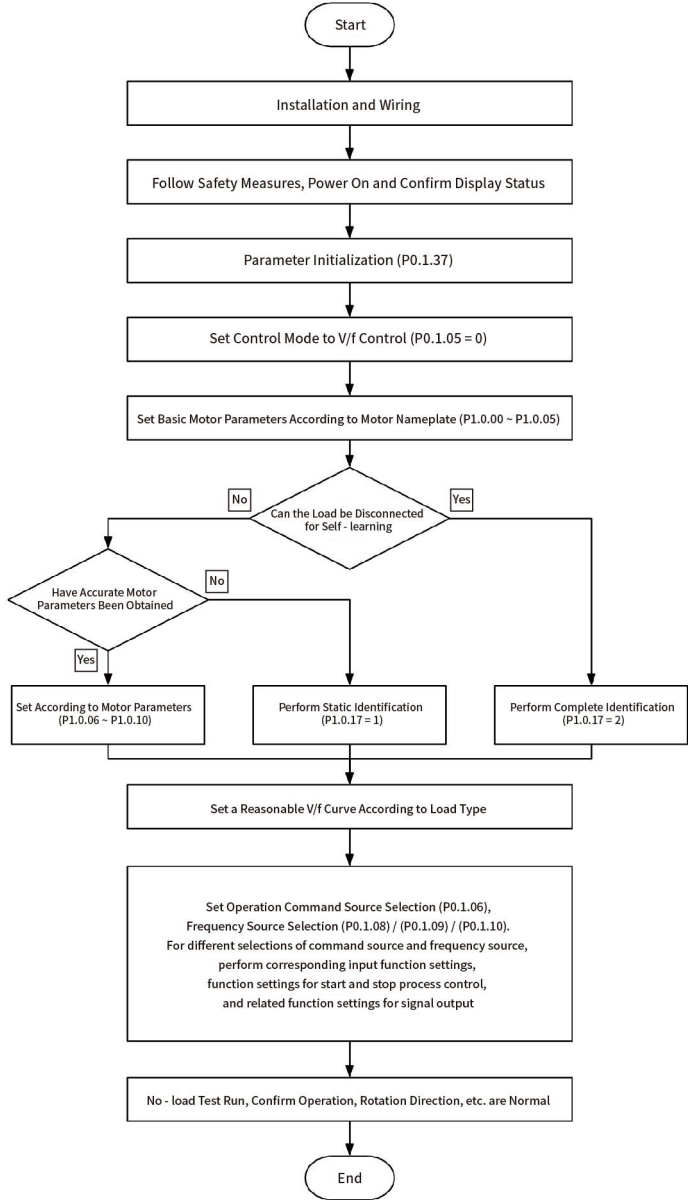


Basic Debugging Flow Diagram

Basic Debugging Flow Table

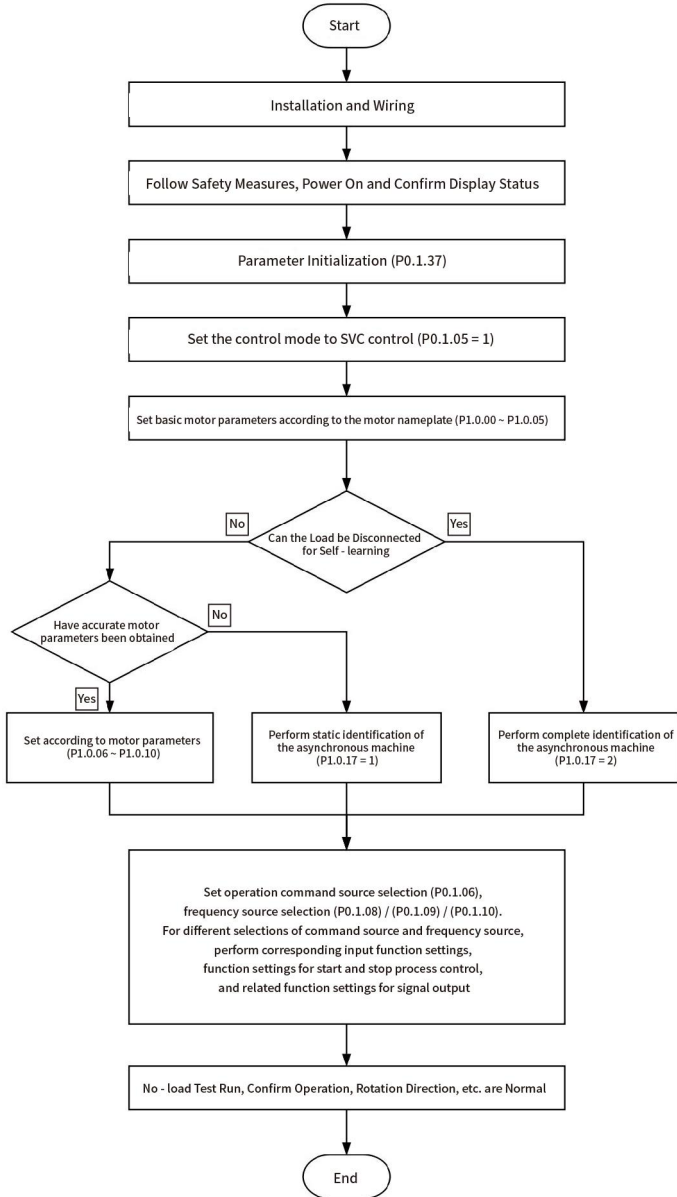
| No. | Step                                    | Relevant Parameters |
|-----|-----------------------------------------|---------------------|
| 1   | Pre-power-on Inspection                 | None                |
| 2   | Power On                                | None                |
| 3   | Parameter Initialization                | P0.1.37             |
| 4   | Check Software Version                  | P0.0.04             |
| 5   | Set Motor Parameters                    | P1.0.00, P1.0.05    |
| 6   | Set Control Mode                        | P0.1.05             |
| 7   | Motor Parameter Auto-tuning             | P1.0.17             |
| 8   | Set Command Source                      | P0.1.06             |
| 9   | Select Frequency Source                 | P0.1.08             |
| 10  | Set Acceleration/Deceleration Time      | P0.2.00, P0.2.01    |
| 11  | Set Stop Parameters                     | P0.5.03~P0.5.06     |
| 12  | (Optional) Set V/f Parameters           | P1.1.00~P1.1.14     |
| 13  | (Optional) Set AMSVC Parameters         | P1.1.15~P1.1.29     |
| 14  | (Optional) Set PM SVC parameters        | P1.1.15~P1.1.29     |
| 15  | (Optional) Set starting method          | P0.5.00             |
| 17  | (Optional) Set starting frequency       | P0.5.01, P0.5.02    |
| 18  | (Optional) Set S-curve                  | P0.2.18~P0.2.20     |
| 19  | (Optional) AI settings                  | P5.4.17, P5.4.18    |
| 20  | (Optional) AO settings                  | P2.3.00, P2.3.01    |
| 21  | (Optional) DI settings                  | P2.0.01~P2.0.08     |
| 22  | (Optional) DO settings                  | P2.1.00, P2.1.10    |
| 23  | (Optional) Set multi-step speed command | P3.0.03~P3.0.34     |
| 24  | (Optional) Set relay output             | P2.1.01, P2.1.02    |
| 25  | Start                                   | None                |

7.2.1. VF Control Mode Debugging Process



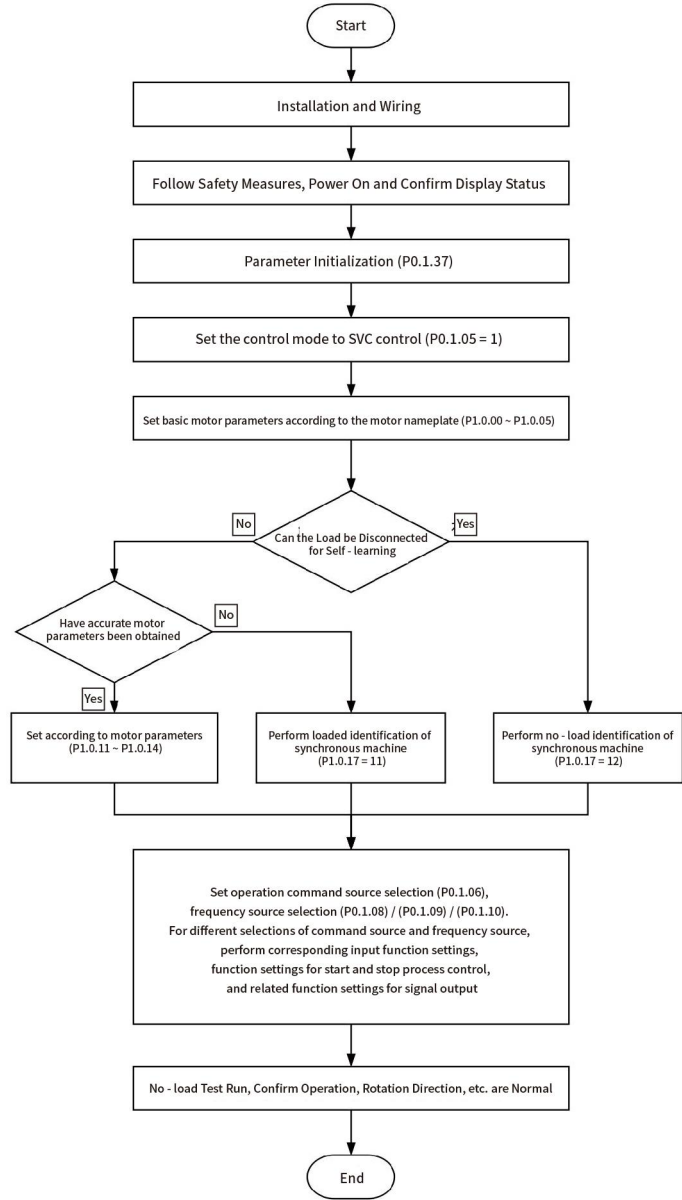
AMVf Control Mode Debugging Flowchart

## 7.2.2. AM SVC Control Mode Debugging Process



AM SVC Control Mode Debugging Flowchart

### 7.2.3. PM SVC Control Mode Debugging Process

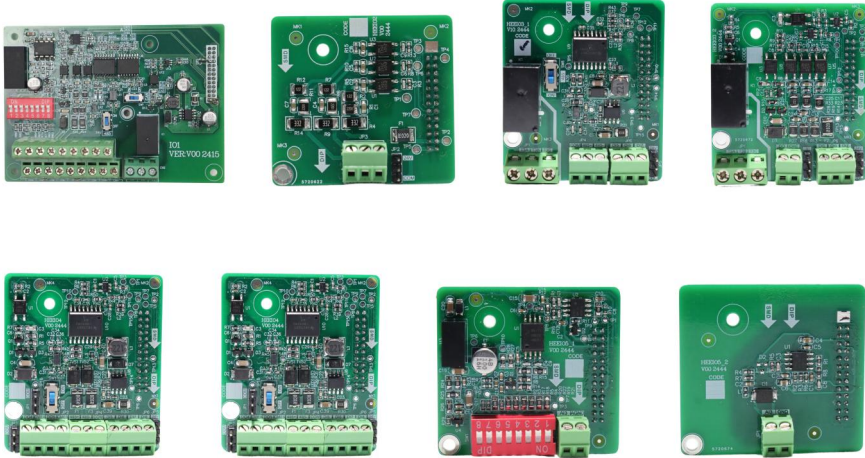


PM SVC Control Mode Debugging Flowchart

## 8. Expansion Card

### 8.1. I/O Expansion Card

#### Overview



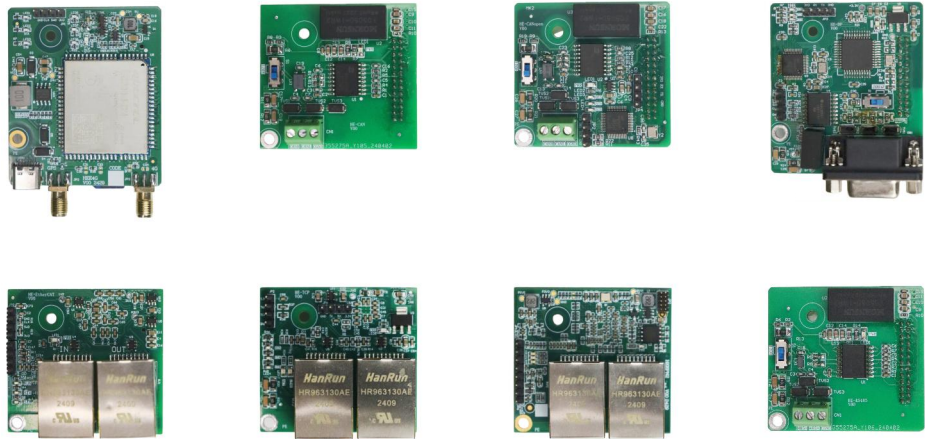
I/O Card Diagram

The H300-compatible I/O Expansion Cards are shown in the table below.

| No. | Model   | Main Functions                                                                                                             |
|-----|---------|----------------------------------------------------------------------------------------------------------------------------|
| 1   | HEEIO1  | 4 channels DI + 1 channel AI + 1 channel DO and 1 channel relay output + CAN + RS485 (Applicable to 15KW and above models) |
| 2   | HEEIO2  | 3 channels DI                                                                                                              |
| 3   | HEEIO3  | 3 channels DI + 1 channel relay + RS485                                                                                    |
| 4   | HEEIO4  | 3 channels DI + 1 channel DO + 1 channel relay output                                                                      |
| 5   | HEEIO5A | 4 channels DI + 2 channels DO + RS485                                                                                      |
| 6   | HEEIO5B | 4 channels DI + 2 channels DO                                                                                              |
| 7   | HEEIO6  | 1 channel AI (supports Differential Voltage Input and Thermal Resistor Input)                                              |
| 8   | HEEIO7  | 1 channel AI (supports -10V DC to +10V DC input)                                                                           |

## 8.2. Communication Expansion Card

### Overview



Communication Expansion Card Diagram

The H300-compatible Communication Expansion Cards are shown in the table below.

| Name                                  | Model      | Communication Protocol    |
|---------------------------------------|------------|---------------------------|
| CANopen Communication Expansion Card  | HEECANOPEN | CANopen                   |
| PROFIBUS Communication Expansion Card | HEEDP      | PROFIBUS                  |
| PROFINET Communication Expansion Card | HEEPN      | PROFINET                  |
| EtherCAT Communication Expansion Card | HEEECAT    | EtherCAT                  |
| 4G Communication Expansion Card       | HEE4G      | LTE                       |
| TCP Communication Expansion Card      | HEETCP     | MODBUS-TCP Slave Protocol |
| CAN Communication Expansion Card      | HEECAN     | CAN 2.0B Protocol         |
| RS485 Communication Expansion Card    | HEE485     | MODBUS-RTU Slave Station  |

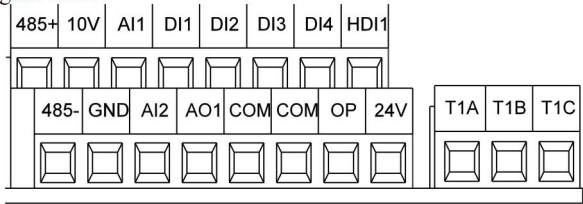
# 9. Appendix

## 9.1. Appendix 1: Standard 485 Communication (Onboard)

### 9.1.1. Standard RS485 Terminals and Networking Topology

#### 9.1.1.1. Standard RS485 Terminal Description

The H300 series inverter control board comes standard with RS-485 communication terminals, as shown in the figure below

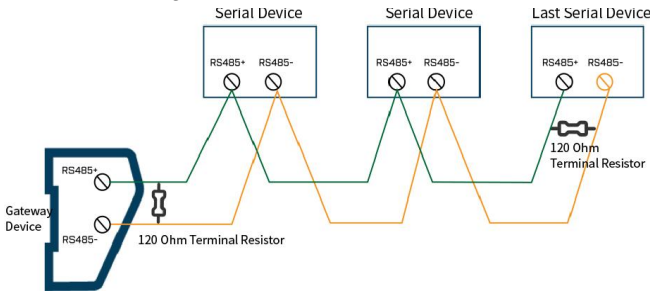


H300 Terminal Layout Diagram

| Terminal Symbol | Terminal Definitions         |
|-----------------|------------------------------|
| 485+            | 485 Signal Positive Terminal |
| 485-            | 485 Signal Negative Terminal |

#### 9.1.1.2. RS485 Network Topology

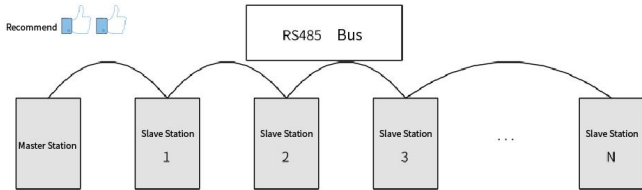
The RS485 bus connection topology is shown below. The 485 bus must use shielded twisted pair wiring, with 485+ and 485- connected via twisted pairs; Connect 120Ω terminating resistors only at both ends of the bus to prevent signal reflection; Connect all nodes' 485 signal reference grounds together; Supports up to 247 nodes. The distance from each node branch to the main bus must be less than 3 meters.



RS485 Bus Half-Duplex Connection Topology

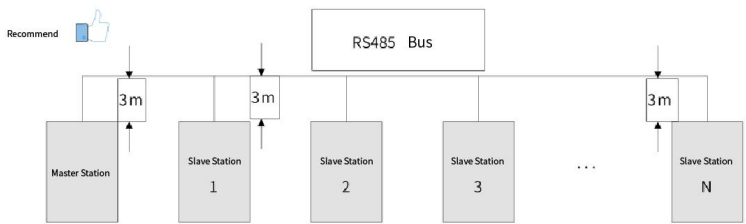
#### Multi-node Connection Mode

When the number of nodes is large, the 485 bus must adopt a daisy-chain connection topology. If branch-line connections are required, the branch length from the bus to each node should be minimized and is recommended not to exceed 3m. Star topology connections must be absolutely avoided. Common bus structure diagrams are shown below.



Daisy-chain Connection

9.1 Appendix I: Standard 485 Communication



Branch-line Connection

9.1.2. Standard RS485 Parameters

| Parameter | Parameter Name                                                   | Default Value | Setting Range                                                                                                      |
|-----------|------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------|
| P0.1.40   | Local Address                                                    | 1             | 000 is the Broadcast Address<br>001~247                                                                            |
| P2.8.00   | Standard Communication Baud Rate                                 | 3             | Units digit: MODBUS baud rate<br>0:1200<br>1:2400<br>2:4800<br>3:9600<br>4:19200<br>5:38400<br>6:57600<br>7:115200 |
| P2.8.01   | Standard Communication Data Format                               | 0             | 0: No parity (8-N-2)<br>1: Even parity (8-E-1)<br>2: Odd parity (8-O-1)<br>3: No parity (8-N-1)                    |
| P2.8.03   | Standard communication response delay of this unit               | 2             | 0ms~20ms                                                                                                           |
| P2.8.04   | Standard communication timeout period of this unit               | 5.0           | 0.1s~60.0s                                                                                                         |
| P2.8.05   | Standard communication data transmission format of this unit     | 1             | 0: ASCII mode (reserved)<br>1: RTU mode                                                                            |
| P2.8.06   | Does the standard MODBUS communication of this unit return data? | 0             | 0: Reply<br>1: No reply                                                                                            |
| P2.8.07   | Standard communication error handling method of this unit        | 0             | 0: Disabled<br>1: Enabled (fault cannot reset automatically)<br>2: Enabled (fault can reset automatically)         |

Note [1]:  
Response delay: After receiving data, the inverter delays for the time set by function code P2.8.03 before replying.  
Communication timeout period: When P2.8.07 communication error handling is enabled, if the interval between received data frames exceeds the time set by function code P2.8.04, the inverter triggers Err47 fault indicating communication abnormality.

9.1.3. Standard MODBUS Communication Format Description

9.1.3.1. Frame Examples

Master Station Write Command String Format

|                  |               |                      |                          |              |           |
|------------------|---------------|----------------------|--------------------------|--------------|-----------|
| Character Name   | Slave Address | Write Command<br>06H | Function Code<br>Address | Data Content | CRC Check |
| Character Length | 1Byte         | 1Byte                | 2Byte                    | 2Byte        | 2Byte     |
| Example          | 01H           | 06H                  | 9300H                    | 0000H        | A48EH     |

**Slave Station Write Command Reply String Format**

| Character Name   | Slave Address | Write Command<br>06H | Function Code<br>Address | Data Content | CRC Check |
|------------------|---------------|----------------------|--------------------------|--------------|-----------|
| Character Length | 1Byte         | 1Byte                | 2Byte                    | 2Byte        | 2Byte     |
| Example          | 01H           | 06H                  | 9300H                    | 0000H        | A48EH     |

**Master Station Read Command String Format**

| Character Name   | Slave Address | Read Command<br>03H | Function Code<br>Start Address | Number of<br>Data | CRC Check |
|------------------|---------------|---------------------|--------------------------------|-------------------|-----------|
| Character Length | 1Byte         | 1Byte               | 2Byte                          | 2Byte             | 2Byte     |
| Example          | 01H           | 03H                 | 0000H                          | 0003H             | 05CBH     |

**Slave Station Read Command Reply String Format**

| Character Name   | Slave Address | Read Command<br>03H | Number of<br>Data | Data Content 1 | Data Content 2 | Data Content 3 | CRC Check |
|------------------|---------------|---------------------|-------------------|----------------|----------------|----------------|-----------|
| Character Length | 1Byte         | 1Byte               | 1Byte             | 2Byte          | 2Byte          | 2Byte          | 2Byte     |
| Example          | 01H           | 03H                 | 06H               | 0000H          | 0000H          | 000CH          | 2170H     |

**Slave Station Write Command Error Reply String Format**

| Character Name   | Slave Address | Exception Response<br>Function Code | Read - Write Error Type | CRC Check |
|------------------|---------------|-------------------------------------|-------------------------|-----------|
| Character Length | 1Byte         | 1Byte                               | 1Byte                   | 2Byte     |
| Example          | 01H           | 86H                                 | 06H                     | C262H     |

**Slave Station Read Command Error Reply String Format**

| Character Name   | Slave Address | Exception Response<br>Function Code | Read - Write Error Type | CRC Check |
|------------------|---------------|-------------------------------------|-------------------------|-----------|
| Character Length | 1Byte         | 1Byte                               | 1Byte                   | 2Byte     |
| Example          | 01H           | 83H                                 | 02H                     | C0F1H     |

**9.1.4. Additional Settings for Standard 485 Interface****9.1.4.1. Communication Protocol Parameter Address Definition**

Function code parameters dedicated to communication access for H-series inverters. Specific read/write attributes are as follows:

| Function Code<br>Parameters | Group P0.1-P0.9; Groups P2-P6; Group P9.3.00-P9.3.49    | Readable and<br>Writable |
|-----------------------------|---------------------------------------------------------|--------------------------|
|                             | Group P0.0; Group P8; Group P9.0; Group P9.3.50-P9.3.99 | Read-Only                |

**9.1.4.2. Function Code Parameter Read/Write Address Description**

The high-order bits of the parameter address are formed by the group and level of the function code parameters, while the low-order bits are composed of the sequence number.

Since EEPROM has a limited lifespan, frequent writes to EEPROM must be avoided during communication. Therefore, some function codes only require updating values in RAM during communication without storing to EEPROM.

If writing to EEPROM is necessary, convert the high-order address bits to hexadecimal and transform the low-order address bits from decimal to hexadecimal. Then combine the high-order and low-order addresses into a 4-digit hexadecimal number.

For example, P2.1.12 written to EEPROM has: High-order address as hexadecimal 21 (group 2, level 1). Low-order address as decimal 12, converted to hexadecimal 0CH. Thus the full address is 210CH.

If writing to EEPROM is unnecessary, parameter groups Px.0-Px.5 (x:0-9) can be written to RAM by adding 0A00H to the parameter address. For example, the RAM address for P2.1.12 is 2B0CH. Writing groups Px.6-Px.9 to RAM is not supported.

Example: Address for writing P2.1.12 without saving to EEPROM is

The high-order address is hexadecimal 21; adding 0A00H yields 2BH. The low-order address is decimal 12, converted to hexadecimal as 0CH. Thus, the address is represented as 2B0CH.

## 9.1.5. Standard RS485 Communication Dedicated Function Code Definition Table and Examples

### 9.1.5.1. Function Code Definition Table

| Definition                          | Function Code | Parameter Address                                                                                                                                                  | Function Description                                                                                                                                                                |                                                                                                                     |
|-------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Frequency Inverter Command          | 06H           | 9300H (corresponding to parameter address P9.3.00)                                                                                                                 | 0001H                                                                                                                                                                               | Forward Run                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0002H                                                                                                                                                                               | Reverse Run                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0003H                                                                                                                                                                               | Forward Jog                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0004H                                                                                                                                                                               | Reverse Jog                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0005H                                                                                                                                                                               | Free Stop                                                                                                           |
|                                     |               |                                                                                                                                                                    | 0006H                                                                                                                                                                               | Decelerated Stop                                                                                                    |
|                                     |               |                                                                                                                                                                    | 0007H                                                                                                                                                                               | Fault Reset                                                                                                         |
|                                     |               | 9301H (corresponding to parameter address P9.3.01)                                                                                                                 | Frequency Command (as a percentage of the maximum frequency, not stored) (00.00 to 100.00 represents 0.00% to 100.00%)                                                              |                                                                                                                     |
|                                     |               | 9302H (corresponding to parameter address P9.3.02)                                                                                                                 | BIT0                                                                                                                                                                                | Multifunction Output Terminal HDO (When the HDO terminal is used as a DO, i.e., P2.1.10=1 Open Collector Output DO) |
|                                     |               |                                                                                                                                                                    | BIT1                                                                                                                                                                                | Function output terminal T1                                                                                         |
|                                     |               |                                                                                                                                                                    | BIT2                                                                                                                                                                                | Multifunction output terminal T2                                                                                    |
|                                     |               |                                                                                                                                                                    | BIT3                                                                                                                                                                                | Multifunction output terminal DO1 (extension card)                                                                  |
|                                     |               |                                                                                                                                                                    | BIT4                                                                                                                                                                                | Multifunction output terminal DO2 (extension card)                                                                  |
|                                     |               | To activate the multifunction output terminal signal, set its corresponding bit to 1; then convert this binary number to hexadecimal and send it to address 9302H. |                                                                                                                                                                                     |                                                                                                                     |
|                                     |               | 9303H (corresponding to parameter address P9.3.03)                                                                                                                 | AO1 output address (00.0 to 100.0 represents 0.0% to 100.0%)                                                                                                                        |                                                                                                                     |
|                                     |               | 9304H (corresponding to parameter address P9.3.04)                                                                                                                 | AO2 output address (00.0 to 100.0 represents 0.0% to 100.0%)                                                                                                                        |                                                                                                                     |
|                                     |               | 9305H (corresponding to parameter address P9.3.05)                                                                                                                 | HDO output address (when the HDO terminal is used as a PULSE output, i.e., P2.1.10 = 0 for PULSE output) (0000H–7FFFH represents 0.00%–100.00%, 00.0–100.0 represents 00.0%–100.0%) |                                                                                                                     |
|                                     |               | 9306H (corresponding to parameter address P9.3.06)                                                                                                                 | Upper frequency source (percentage of the maximum frequency, not stored) (00.00–100.00 represents 00.00%–100.00%)                                                                   |                                                                                                                     |
|                                     |               | 9307H (corresponding to parameter address P9.3.07)                                                                                                                 | Upper torque source (percentage of the torque limit, not stored) (00.00–100.00 represents 00.00%–100.00%)                                                                           |                                                                                                                     |
|                                     |               | 9308H (corresponding to parameter address P9.3.08)                                                                                                                 | VF separation voltage setting (percentage of the motor rated voltage, not stored) (00.00–100.00 represents 00.00%–100.00%)                                                          |                                                                                                                     |
|                                     |               | 930AH (corresponding to parameter address P9.3.10)                                                                                                                 | PID setPoint (percentage of the PID setPoint feedback range, not stored) (00.00 to 100.00 represents 0.00% to 100.00%)                                                              |                                                                                                                     |
|                                     |               | 930BH (corresponding to parameter address P9.3.11)                                                                                                                 | PID feedback value (percentage of the PID setPoint feedback range, not stored) (00.00 to 100.00 represents 0.00% to 100.00%)                                                        |                                                                                                                     |
| Monitor the operating status of the | 03H           | 9332H (corresponding to parameter address P9.3.50)                                                                                                                 | 0001H                                                                                                                                                                               | Forward Run                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0002H                                                                                                                                                                               | Reverse Run                                                                                                         |
|                                     |               |                                                                                                                                                                    | 0003H                                                                                                                                                                               | Stop                                                                                                                |

## 9.1 Appendix I: Standard 485 Communication

| Definition                                         | Function Code | Parameter Address                                  | Function Description |                                                                   |
|----------------------------------------------------|---------------|----------------------------------------------------|----------------------|-------------------------------------------------------------------|
| frequency inverter                                 |               |                                                    |                      |                                                                   |
| Monitor the fault status of the frequency inverter | 03H           | 9333H (corresponding to parameter address P9.3.51) | 00                   | No fault                                                          |
|                                                    |               |                                                    | 01                   | Overcurrent during constant speed                                 |
|                                                    |               |                                                    | 02                   | Overcurrent during acceleration                                   |
|                                                    |               |                                                    | 03                   | Overcurrent during deceleration                                   |
|                                                    |               |                                                    | 04                   | Overvoltage during constant speed                                 |
|                                                    |               |                                                    | 05                   | Overvoltage During Acceleration                                   |
|                                                    |               |                                                    | 06                   | Overvoltage During Deceleration                                   |
|                                                    |               |                                                    | 07                   | /                                                                 |
|                                                    |               |                                                    | 08                   | Undervoltage                                                      |
|                                                    |               |                                                    | 09                   | Frequency Inverter Overload                                       |
|                                                    |               |                                                    | 10                   | Motor Overload                                                    |
|                                                    |               |                                                    | 11                   | Input Phase Loss                                                  |
|                                                    |               |                                                    | 12                   | Output Phase Loss                                                 |
|                                                    |               |                                                    | 13                   | External Fault                                                    |
|                                                    |               |                                                    | 14                   | Expansion Card Communication Error                                |
|                                                    |               |                                                    | 15                   | IGBT Temperature Over-Temperature                                 |
|                                                    |               |                                                    | 16                   | Frequency Inverter Hardware Fault                                 |
|                                                    |               |                                                    | 17                   | Ground Short Circuit Fault Detected on Power-Up                   |
|                                                    |               |                                                    | 18                   | Motor Identification Error                                        |
|                                                    |               |                                                    | 19                   | Motor Load Loss                                                   |
|                                                    |               |                                                    | 20                   | PID Feedback Lost                                                 |
|                                                    |               |                                                    | 21                   | User-Defined Fault 1                                              |
|                                                    |               |                                                    | 22                   | User-Defined Fault 2                                              |
|                                                    |               |                                                    | 23                   | Cumulative Power-On Time Reached                                  |
|                                                    |               |                                                    | 24                   | Cumulative operating time reached                                 |
|                                                    |               |                                                    | 25                   | Encoder fault                                                     |
|                                                    |               |                                                    | 26                   | Parameter read/write error                                        |
|                                                    |               |                                                    | 27                   | Motor overheating                                                 |
|                                                    |               |                                                    | 28                   | Excessive speed deviation                                         |
|                                                    |               |                                                    | 29                   | Motor overspeed                                                   |
|                                                    |               |                                                    | 30                   | Initial position error                                            |
|                                                    |               |                                                    | 31                   | Current detection fault                                           |
|                                                    |               |                                                    | 32                   | /                                                                 |
|                                                    |               |                                                    | 33                   | /                                                                 |
|                                                    |               |                                                    | 34                   | Rapid current limiting timeout                                    |
|                                                    |               |                                                    | 35                   | Multi-motor control fault                                         |
|                                                    |               |                                                    | 36                   | /                                                                 |
|                                                    |               |                                                    | 37                   | /                                                                 |
|                                                    |               |                                                    | 38                   | Output short circuit                                              |
|                                                    |               |                                                    | 39                   | Brake pipe short circuit                                          |
|                                                    |               |                                                    | 40                   | Snubber resistor                                                  |
|                                                    |               |                                                    | 41                   | Relay hardware fault                                              |
|                                                    |               |                                                    | 42                   | Logic error during synchronous motor pole position identification |
|                                                    |               |                                                    | 43                   | Utility frequency to inverter switching error                     |
|                                                    |               |                                                    | 44                   | Motor identification fault                                        |
|                                                    |               |                                                    | 45                   | Over torque fault                                                 |
|                                                    |               |                                                    | 46                   | Stall Protection Fault                                            |

## 9.1 Appendix I: Standard 485 Communication

| Definition | Function Code | Parameter Address | Function Description |                                      |
|------------|---------------|-------------------|----------------------|--------------------------------------|
|            |               |                   | 47                   | Local Device 485 Communication Error |
|            |               |                   | 48                   | Ethernet Communication Error         |
|            |               |                   | 49                   | Type-C Communication Error           |

### 9.1.5.2. Examples

#### Example 1 Start Inverter #1 in Forward Run

Host Transmits Data Frame

|     |     |         |     |      |     |     |     |
|-----|-----|---------|-----|------|-----|-----|-----|
| ADR | CMD | ADDRESS |     | DATA |     | CRC |     |
| 01H | 06H | 93H     | 00H | 00H  | 01H | 6AH | 0AH |

Slave Replies Data Packet

|     |     |         |     |      |     |     |     |
|-----|-----|---------|-----|------|-----|-----|-----|
| ADR | CMD | ADDRESS |     | DATA |     | CRC |     |
| 01H | 06H | 93H     | 00H | 00H  | 01H | 6AH | 0AH |

#### Example 2 Set Frequency for Inverter #1 (Non-stored)

Target frequency value for Inverter #1 is 100.00% of Maximum Frequency

Method: Remove decimal Point from 100.00 → 10000D = 2710H

Host Transmits Data Frame

|     |     |         |     |      |     |     |     |
|-----|-----|---------|-----|------|-----|-----|-----|
| ADR | CMD | ADDRESS |     | DATA |     | CRC |     |
| 01H | 06H | 93H     | 01H | 27H  | 10H | EFH | 72H |

Slave Replies Data Frame

|     |     |         |     |      |     |     |     |
|-----|-----|---------|-----|------|-----|-----|-----|
| ADR | CMD | ADDRESS |     | DATA |     | CRC |     |
| 01H | 06H | 93H     | 01H | 27H  | 10H | EFH | 72H |

#### Example 3 Query the output frequency of Inverter 1#

Query the 'Output Frequency' of Inverter 1# during its operating status.

Method: The function code parameter for output frequency is P9.0.00, corresponding to address 9000H.

If the 'Output Frequency' of Inverter 1# is 50.00Hz. 5000D=1388H

Host Transmits Data Frame

|     |     |         |     |      |     |     |     |
|-----|-----|---------|-----|------|-----|-----|-----|
| ADR | CMD | ADDRESS |     | DATA |     | CRC |     |
| 01H | 03H | 90H     | 00H | 00H  | 01H | A9H | 0AH |

Slave Replies Data Frame

|     |     |            |  |      |     |     |     |
|-----|-----|------------|--|------|-----|-----|-----|
| ADR | CMD | Byte Count |  | DATA |     | CRC |     |
| 01H | 03H | 02H        |  | 13H  | 88H | B5H | 12H |

## 9.2. Appendix 2: Parameter Listing

### 9.2.1. P0 Basic Functions

#### 9.2.1.1. P0.0 Frequency Inverter Information (Read Only)

| Function Code and Communication Address | Function Code Name                    | Setting Description                                                                                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.0.00 (0x0000)                        | Reserved                              | 0~0                                                                                                                            | 0             | Any                 | "P0.0.00"   |
| P0.0.01 (0x0001)                        | Current Motor Control mode display    | Ones:<br>0:V/F Control<br>1:SVC Open loop vector control<br>2:Reserved<br>Tens:<br>0:Asynchronous motor<br>1:Synchronous motor | 0             | Read only           | "P0.0.01"   |
| P0.0.02 (0x0002)                        | Inverter Machine                      | 1~3637                                                                                                                         | Model         | Read only           | "P0.0.02"   |
| P0.0.03 (0x0003)                        | GP Type                               | 1: G Type (over load type)<br>2: P Type (Lightload type)                                                                       | Manufacturer  | Read only           | "P0.0.03"   |
| P0.0.04 (0x0004)                        | software version number               | 0.01~255.99                                                                                                                    | 0.01          | Read only           | "P0.0.04"   |
| P0.0.05 (0x0005)                        | Program Nonstandard Label             | 0.00~255.99                                                                                                                    | 0.00          | Read only           | "P0.0.05"   |
| P0.0.06 (0x0006)                        | Inverter rated power                  | 0.1~2000.0(kW)                                                                                                                 | Model         | Read only           | "P0.0.06"   |
| P0.0.07 (0x0007)                        | Inverter rated voltage                | 1~2000(V)                                                                                                                      | Model         | Read only           | "P0.0.07"   |
| P0.0.08 (0x0008)                        | Inverter rated current                | 0.01~655.35(A)                                                                                                                 | Model         | Read only           | "P0.0.08"   |
| P0.0.09 (0x0009)                        | Accumulative Running Time             | 0~65535(h)                                                                                                                     | 0             | Read only           | "P0.0.09"   |
| P0.0.10 (0x000A)                        | Accumulative Power On Time            | 0~65535(h)                                                                                                                     | 0             | Read only           | "P0.0.10"   |
| P0.0.11 (0x000B)                        | Accumulative Power Consumption        | 0~65535(kwh)                                                                                                                   | 0             | Read only           | "P0.0.11"   |
| P0.0.12 (0x000C)                        | Module Temperature                    | 0~999(°C)                                                                                                                      | 0             | Read only           | "P0.0.12"   |
| P0.0.13 (0x000D)                        | Last Macro Recovery Value             | 0~1000                                                                                                                         | 0             | Read only           | "P0.0.13"   |
| P0.0.14 (0x000E)                        | Reserved                              | 0~999                                                                                                                          | 500           | Read only           | "P0.0.14"   |
| P0.0.15 (0x000F)                        | Reserved                              | 0~999                                                                                                                          | 500           | Read only           | "P0.0.15"   |
| P0.0.16 (0x0010)                        | Inverter rated current after derating | 0.01~655.35(A)                                                                                                                 | 9.50          | Read only           | "P0.0.16"   |

#### 9.2.1.2. P0.1 Basic Parameters

| Function Code and Communication Address | Function Code Name                            | Setting Description                                                                                                                                                                                                                                                                             | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.1.00 (0x0100)                        | LCD language Switch                           | 0:Chinese<br>1:English<br>2:Russian                                                                                                                                                                                                                                                             | 0             | Any                 | "P0.1.00"   |
| P0.1.01 (0x0101)                        | Selection Display of Function Parameter Group | Ones:<br>0:Only display basic group<br>1:Display the menus at all levels<br>Tens:<br>0:Dont display Group P0.9<br>1:Display Group P0.9<br>Hundreds:<br>0:Dont display Group P1.2~P1.9<br>1:Display Group P1.2~P1.9<br>Thousands:<br>0:Dont display Group P9.1~P9.2<br>1:Display Group P9.1~P9.2 | 111           | Any                 | "P0.1.01"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                    | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                       | Ten Thousands:<br>0:Dont display Group P2.9<br>1:Reserved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                     |             |
| P0.1.02<br>(0x0102)                     | Type of Frequency inverter            | 1: G Type (over load type)<br>2: P Type (Lightload type)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Manufacturer  | Limited Param       | "P0.1.02"   |
| P0.1.03<br>(0x0103)                     | Function Password Protection          | 0:Modifiable<br>1:Non-modifiable<br>2:Modifiable Constrained Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0             | Any                 | "P0.1.03"   |
| P0.1.04<br>(0x0104)                     | Display Mode                          | 0:Basic Mode(Prefix with'P')<br>1>User Mode(Prefix with'U')<br>2:Verification Mode(Prefix with'C')                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Limited Param       | "P0.1.04"   |
| P0.1.05<br>(0x0105)                     | Motor 1 Control Mode                  | 0:V/F Control<br>1:Open-loop Vector Control<br>2:Closed-loop Vector Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0             | Read only in run    | "P0.1.05"   |
| P0.1.06<br>(0x0106)                     | Operation Command Selection           | 0:Keyboard Control<br>1:Terminal Control<br>2:Communication Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0             | Any                 | "P0.1.06"   |
| P0.1.07<br>(0x0107)                     | Run Command Bound to Frequency Source | Ones:Operation Panel Bound to Frequency Source Selection<br>0:No bindings<br>1:Keyboard Reference<br>2:External Terminal AI1 Reference<br>3:External Terminal AI2 Reference<br>4:External Terminal AI3 Reference<br>5:PULS Reference (HDI1)<br>6:Multiplex Directive Terminal Reference<br>7:Simple PLC Reference<br>8:PID Control Reference<br>9:Communication Reference<br>A:Operation Result 1<br>B:Operation Result 2<br>C:Operation Result 3<br>D:Operation Result 4<br>Tens:Terminal Command Bound to Frequency Source Selection<br>0:No bindings<br>1:Keyboard Reference<br>2:External Terminal AI1 Reference<br>3:External Terminal AI2 Reference<br>4:External Terminal AI3 Reference<br>5:PULS Reference (HDI1)<br>6:Multiplex Directive Terminal Reference<br>7:Simple PLC Reference<br>8:PID Control Reference<br>9:Communication Reference<br>A:Operation Result 1<br>B:Operation Result 2<br>C:Operation Result 3<br>D:Operation Result 4<br>Hundreds:Communication Bound to Frequency Source Selection<br>0:No bindings<br>1:Keyboard Reference<br>2:External Terminal AI1 Reference<br>3:External Terminal AI2 Reference<br>4:External Terminal AI3 Reference<br>5:PULS Reference (HDI1)<br>6:Multiplex Directive Terminal Reference<br>7:Simple PLC Reference<br>8:PID Control Reference<br>9:Communication Reference<br>A:Operation Result 1<br>B:Operation Result 2<br>C:Operation Result 3<br>D:Operation Result 4 | H.000         | Read only in run    | "P0.1.07"   |
| P0.1.08<br>(0x0108)                     | Option of Frequency Source            | 0:Frequency Source A<br>1:Frequency Source B<br>2:Frequency Source A+B<br>3:Frequency Source A-B<br>4:Max. Value of A & B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0             | Any                 | "P0.1.08"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                       | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                             | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                          | 5:Min. Value of A & B<br>6:Standby Frequency Source 1<br>7:Standby Frequency Source 2<br>8:Switch of Terminal among the above 8 kinds                                                                                                                                                                                                                                                                                                                           |               |                     |             |
| P0.1.09<br>(0x0109)                     | Option of A Frequency Source                             | 0:Keyboard Reference(No Power-off Memory)<br>1:Keyboard Reference(Power-off Memory)<br>2:External Terminal A11 Reference<br>3:External Terminal A12 Reference<br>4:External Terminal A13 Reference<br>5:PULS Reference (HD11)<br>6:Multiplex Directive Terminal Reference<br>7:Simple PLC Reference<br>8:PID Control Reference<br>9:Communication Reference<br>10:Operation Result 1<br>11:Operation Result 2<br>12:Operation Result 3<br>13:Operation Result 4 | 1             | Read only in run    | "P0.1.09"   |
| P0.1.10<br>(0x010A)                     | Option of Frequency Source B                             | Refer to P0.1.09                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0             | Read only in run    | "P0.1.10"   |
| P0.1.11<br>(0x010B)                     | B frequency source range selection                       | 0:Relative to the highest frequency<br>1:Relative to A frequency source                                                                                                                                                                                                                                                                                                                                                                                         | 0             | Any                 | "P0.1.11"   |
| P0.1.12<br>(0x010C)                     | Adjustment Volume of Frequency Source B at superposition | 0~150(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100           | Any                 | "P0.1.12"   |
| P0.1.13<br>(0x010D)                     | B frequency offset when superimposed                     | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.13"   |
| P0.1.14<br>(0x010E)                     | Keyboard Frequency Reference                             | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50.00         | Any                 | "P0.1.14"   |
| P0.1.15<br>(0x010F)                     | Running Direction                                        | 0:Default direction<br>1:Negation of Direction<br>2:Determined by multi-funtion input terminal                                                                                                                                                                                                                                                                                                                                                                  | 0             | Any                 | "P0.1.15"   |
| P0.1.16<br>(0x0110)                     | Maximum frequency                                        | 5.00~320.00(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50.00         | Read only in run    | "P0.1.16"   |
| P0.1.17<br>(0x0111)                     | Upper Limit Frequency Source                             | 0:Digital Reference<br>1: External Terminal A11 Reference<br>2: External Terminal A12 Reference<br>3: Multiplex Directive Reference<br>4:PULS Reference (HD11))<br>5: Communication Reference<br>6: Operation Result 1<br>7: Operation Result 2<br>8: Operation Result 3<br>9: Operation Result 4                                                                                                                                                               | 0             | Read only in run    | "P0.1.17"   |
| P0.1.18<br>(0x0112)                     | Motor1 Upper frequency Digital Reference                 | P0.1.20~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50.00         | Any                 | "P0.1.18"   |
| P0.1.19<br>(0x0113)                     | Upper Limit Frequency Offset                             | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.19"   |
| P0.1.20<br>(0x0114)                     | Lower frequency                                          | 0.00~P7.9.37(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.20"   |
| P0.1.21<br>(0x0115)                     | Hopping Frequency 1                                      | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.21"   |
| P0.1.22<br>(0x0116)                     | Hopping Frequency 2                                      | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.22"   |
| P0.1.23<br>(0x0117)                     | Hopping Frequency scope                                  | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00          | Any                 | "P0.1.23"   |
| P0.1.24<br>(0x0118)                     | Does the operating frequency jump                        | 0:Operating Frequency Without Jumps<br>1:Operating Frequency Jump                                                                                                                                                                                                                                                                                                                                                                                               | 0             | Any                 | "P0.1.24"   |
| P0.1.25<br>(0x0119)                     | Frequency resolution                                     | 1:0.1<br>2:0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2             | Read only in run    | "P0.1.25"   |
| P0.1.26<br>(0x011A)                     | Lower frequency operation mode                           | 0:Running at lower limit frequency<br>1:Stop<br>2:Zero-speed Running<br>3:Standby<br>4:DC braking                                                                                                                                                                                                                                                                                                                                                               | 0             | Any                 | "P0.1.26"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                       | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.1.27<br>(0x011B)                     | Knob/Up/Down Frequency Setting Action Reference          | 0:Running Frequency<br>1:Reference frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1             | Read only in run    | "P0.1.27"   |
| P0.1.28<br>(0x011C)                     | Frequency Memory Selection with Knob/Up/Down During Stop | 0:No Memory<br>1:Memory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             | Any                 | "P0.1.28"   |
| P0.1.29<br>(0x011D)                     | Inversion Control Enable                                 | 0:Allow<br>1:Prohibit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0             | Any                 | "P0.1.29"   |
| P0.1.30<br>(0x011E)                     | Forward and Reverse Dead Time                            | 0.0~3000.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0           | Any                 | "P0.1.30"   |
| P0.1.31<br>(0x011F)                     | Power-on Running Selection                               | 0:Running<br>1:Not Running                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0             | Any                 | "P0.1.31"   |
| P0.1.32<br>(0x0120)                     | Motor selection                                          | Ones:Function Code Motor Selection<br>1:Motor 1<br>2:Motor 2<br>3:Motor 3<br>4:Motor 4<br>Tens:Motor Selection Source<br>0:Function Code Selection (Determined by the Units Digit Value)<br>1:DI Terminal Selection (Determined by the DI Terminal)                                                                                                                                                                                                                                                                                                                                                                                         | H.01          | Read only in run    | "P0.1.32"   |
| P0.1.33<br>(0x0121)                     | Speed/Torque Control Mode Selection                      | 0:Speed Control<br>1:Torque Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0             | Read only in run    | "P0.1.33"   |
| P0.1.34<br>(0x0122)                     | Fan Control                                              | 0:Rotate at running<br>1:Continuous Running<br>2:Control based on Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0             | Read only in run    | "P0.1.34"   |
| P0.1.35<br>(0x0123)                     | Keyboard multifunction Key Function Reference            | Ones:JOG key<br>0:Valid<br>1: Forward Jogging<br>2: Reverse Jogging<br>3: Forward and Reverse Switch<br>4:Local/remote switch<br>5: Backward running<br>6:Down key<br>Tens:LOC key<br>0:Valid<br>1: Forward Jogging<br>2: Reverse Jogging<br>3: Forward and Reverse Switch<br>4:Local/remote switch<br>5: Backward running<br>6:Down key                                                                                                                                                                                                                                                                                                    | 41            | Read only in run    | "P0.1.35"   |
| P0.1.36<br>(0x0124)                     | Keyboard STOP Key Stop Function                          | 0:Only valid in Keyboard Operation Mode<br>1:Valid for any Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1             | Any                 | "P0.1.36"   |
| P0.1.37<br>(0x0125)                     | Parameter Initialization                                 | 0:No Operation<br>1:Clearance of Record Information<br>9:Recover Factory set value, excluding motor parameter, correction group, password group<br>19:Recover Factory set value, excluding motor parameter, password group<br>20:Recover Factory set value, excluding password group<br>30:Users Current Parameter Backup<br>60>User Backup Parameters Recovery<br>100:Manufacturer macros1<br>101:Manufacturer macros2<br>102:Manufacturer macros3<br>103:Manufacturer macros4<br>104:Manufacturer macros5<br>105:Manufacturer macros6<br>106:Manufacturer macros7<br>107:reserve<br>108:Manufacturer macros9<br>109:Manufacturer macros10 | 0             | Read only in run    | "P0.1.37"   |
| P0.1.38<br>(0x0126)                     | Purpose Selection                                        | 0~20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0             | Read only in run    | "P0.1.38"   |

| Function Code and Communication Address | Function Code Name                           | Setting Description                                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.1.39 (0x0127)                        | User Password                                | 0~65535                                                                                                                                                             | 0             | Limited Param       | "P0.1.39"   |
| P0.1.40 (0x0128)                        | Local Machine Address                        | 000:Broadcast Address<br>001~247                                                                                                                                    | 1             | Any                 | "P0.1.40"   |
| P0.1.41 (0x0129)                        | Current Resolution for Communication Reading | 0:two decimal place(<75KW),one decimal place(>=75KW)<br>1:one decimal place                                                                                         | 0             | Any                 | "P0.1.41"   |
| P0.1.42 (0x012A)                        | Communication Settings for User Groups       | Ones:Read Mode<br>0:Read Address<br>1:Read Address Mapping Function Code Value<br>Tens:Write Mode<br>0:Write Address<br>1:Write Address Mapping Function Code Value | H.00          | Any                 | "P0.1.42"   |
| P0.1.43 (0x012B)                        | T4 Model Grid Input Line Voltage             | 0:380V/400V<br>1:440V/480V                                                                                                                                          | 0             | Limited Param       | "P0.1.43"   |
| P0.1.44 (0x012C)                        | UP/DOWN Terminal Change Rate                 | 0.01~655.35(Hz)                                                                                                                                                     | 1.00          | Any                 | "P0.1.44"   |

### 9.2.1.3. P0.2 Acceleration and Deceleration Parameters

| Function Code and Communication Address | Function Code Name                                         | Setting Description    | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------------|------------------------|---------------|---------------------|-------------|
| P0.2.00 (0x0200)                        | Acceleration Time 1                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.00"   |
| P0.2.01 (0x0201)                        | Deceleration Time 1                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.01"   |
| P0.2.02 (0x0202)                        | Acceleration time 2                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.02"   |
| P0.2.03 (0x0203)                        | Deceleration time 2                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.03"   |
| P0.2.04 (0x0204)                        | Acceleration time 3                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.04"   |
| P0.2.05 (0x0205)                        | Deceleration time 3                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.05"   |
| P0.2.06 (0x0206)                        | Acceleration time 4                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.06"   |
| P0.2.07 (0x0207)                        | Deceleration time 4                                        | 0.0~6500.0(s)          | Model         | Any                 | "P0.2.07"   |
| P0.2.08 (0x0208)                        | Acceleration Time 1 Switch Frequency Point                 | P0.2.09~P0.1.16(Hz)    | 0.00          | Any                 | "P0.2.08"   |
| P0.2.09 (0x0209)                        | Acceleration Time 2 Switch Frequency Point                 | P0.2.10~P0.1.16(Hz)    | 0.00          | Any                 | "P0.2.09"   |
| P0.2.10 (0x020A)                        | Acceleration Time 3 Switch Frequency Point                 | 0.00~P0.1.16(Hz)       | 0.00          | Any                 | "P0.2.10"   |
| P0.2.11 (0x020B)                        | Reserved                                                   | 0~65535                | 0             | Any                 | "P0.2.11"   |
| P0.2.12 (0x020C)                        | Deceleration Time 1 Switch Frequency Point                 | P0.2.13~P0.1.16(Hz)    | 0.00          | Any                 | "P0.2.12"   |
| P0.2.13 (0x020D)                        | Deceleration Time 2 Switch Frequency Point                 | P0.2.14~P0.1.16(Hz)    | 0.00          | Any                 | "P0.2.13"   |
| P0.2.14 (0x020E)                        | Deceleration Time 3 Switch Frequency Point                 | 0.00~P0.1.16(Hz)       | 0.00          | Any                 | "P0.2.14"   |
| P0.2.15 (0x020F)                        | Acceleration and deceleration time unit                    | 0:s<br>1:min           | 0             | Read only in run    | "P0.2.15"   |
| P0.2.16 (0x0210)                        | Acceleration/Deceleration Time Decimal Point (Unit Depends | 0:1<br>1:0.1<br>2:0.01 | 1             | Read only in run    | "P0.2.16"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                        | Setting Description                                                                                                                                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         | on P0.2.15)                                               |                                                                                                                                                                                |               |                     |             |
| P0.2.17<br>(0x0211)                     | Benchmark frequency of accelerating and Deceleration time | 0: Highest Frequency<br>1: Reference frequency<br>2: 100Hz<br>3: Motor rated frequency<br>4: 50Hz<br>5: 60Hz                                                                   | 0             | Read only in run    | "P0.2.17"   |
| P0.2.18<br>(0x0212)                     | Acceleration and Deceleration Curve                       | 0: Straight Line<br>1: Curve S 1<br>2: Curve S 2                                                                                                                               | 0             | Read only in run    | "P0.2.18"   |
| P0.2.19<br>(0x0213)                     | Percentage of Starting Phase of Curve S                   | 0.0~100.0(%)                                                                                                                                                                   | 30.0          | Read only in run    | "P0.2.19"   |
| P0.2.20<br>(0x0214)                     | Percentage of Ending Phase of Curve S                     | 0.0~100.0(%)                                                                                                                                                                   | 30.0          | Read only in run    | "P0.2.20"   |
| P0.2.21<br>(0x0215)                     | Acceleration Time                                         | 0.0~6500.0(s)                                                                                                                                                                  | Model         | Any                 | "P0.2.21"   |
| P0.2.22<br>(0x0216)                     | Deceleration Time                                         | 0.0~6500.0(s)                                                                                                                                                                  | Model         | Any                 | "P0.2.22"   |
| P0.2.23<br>(0x0217)                     | Acceleration/Deceleration Time Selection for Motor 2      | 0: same as Motor 1<br>1: Acceleration/Deceleration Time 1<br>2: Acceleration/Deceleration Time 2<br>3: Acceleration/Deceleration Time 3<br>4: Acceleration/Deceleration Time 4 | 0             | Any                 | "P0.2.23"   |
| P0.2.24<br>(0x0218)                     | Acceleration/Deceleration Time Selection for Motor 3      | Same as P0.2.23                                                                                                                                                                | 0             | Any                 | "P0.2.24"   |
| P0.2.25<br>(0x0219)                     | Acceleration/Deceleration Time Selection for Motor 4      | Same as P0.2.23                                                                                                                                                                | 0             | Any                 | "P0.2.25"   |

#### 9.2.1.4. P0.3 Display Parameters

| Function Code and Communication Address | Function Code Name                                     | Setting Description           | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------------------|-------------------------------|---------------|---------------------|-------------|
| P0.3.00<br>(0x0300)                     | LED Running Display Parameter 1                        | 9000~9099                     | 9001          | Any                 | "P0.3.00"   |
| P0.3.01<br>(0x0301)                     | LED Running Display Parameter 2                        | 8999~9099                     | 9000          | Any                 | "P0.3.01"   |
| P0.3.02<br>(0x0302)                     | LED Running Display Parameter 3                        | 8999~9099                     | 9002          | Any                 | "P0.3.02"   |
| P0.3.03<br>(0x0303)                     | LED Running Display Parameter 4                        | 8999~9099                     | 9003          | Any                 | "P0.3.03"   |
| P0.3.04<br>(0x0304)                     | LED Running Display Parameter 5                        | 8999~9099                     | 9004          | Any                 | "P0.3.04"   |
| P0.3.05<br>(0x0305)                     | LED Running Display Parameter 6                        | 8999~9099                     | 9005          | Any                 | "P0.3.05"   |
| P0.3.06<br>(0x0306)                     | LED Running Display Parameter 7                        | 8999~9099                     | 9006          | Any                 | "P0.3.06"   |
| P0.3.07<br>(0x0307)                     | Automatic Time Switch of LED Running Display Parameter | 0.0: No Switch<br>0.1s~100.0s | 0.0           | Any                 | "P0.3.07"   |
| P0.3.08<br>(0x0308)                     | LED Stop Display Parameter 1                           | 9000~9099                     | 9001          | Any                 | "P0.3.08"   |
| P0.3.09<br>(0x0309)                     | LED Stop Display Parameter 2                           | 8999~9099                     | 9004          | Any                 | "P0.3.09"   |
| P0.3.10<br>(0x030A)                     | LED Stop Display Parameter 3                           | 8999~9099                     | 9009          | Any                 | "P0.3.10"   |
| P0.3.11<br>(0x030B)                     | LED Stop Display Parameter 4                           | 8999~9099                     | 8999          | Any                 | "P0.3.11"   |
| P0.3.12<br>(0x030C)                     | LED Stop Display Parameter 5                           | 8999~9099                     | 8999          | Any                 | "P0.3.12"   |
| P0.3.13<br>(0x030D)                     | LED Stop Display Parameter 6                           | 8999~9099                     | 8999          | Any                 | "P0.3.13"   |
| P0.3.14                                 | LED Stop Display                                       | 8999~9099                     | 8999          | Any                 | "P0.3.14"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                  | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| (0x030E)                                | Parameter 7                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                     |             |
| P0.3.15<br>(0x030F)                     | Automatic Time Switch of LED Stop Display Parameter | 0.0:No Switch<br>0.1s~100.0s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0           | Any                 | "P0.3.15"   |
| P0.3.16<br>(0x0310)                     | LCD Line 1 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9001          | Any                 | "P0.3.16"   |
| P0.3.17<br>(0x0311)                     | LCD Line 2 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9000          | Any                 | "P0.3.17"   |
| P0.3.18<br>(0x0312)                     | LCD Line 3 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9002          | Any                 | "P0.3.18"   |
| P0.3.19<br>(0x0313)                     | LCD Line 4 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9003          | Any                 | "P0.3.19"   |
| P0.3.20<br>(0x0314)                     | LCD Line 5 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9004          | Any                 | "P0.3.20"   |
| P0.3.21<br>(0x0315)                     | LCD Line 6 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.21"   |
| P0.3.22<br>(0x0316)                     | LCD Line 7 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.22"   |
| P0.3.23<br>(0x0317)                     | LCD Line 8 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.23"   |
| P0.3.24<br>(0x0318)                     | LCD Line 9 Display at Running                       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.24"   |
| P0.3.25<br>(0x0319)                     | LCD Line 10 Display at Running                      | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.25"   |
| P0.3.26<br>(0x031A)                     | LCD Line 1 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9001          | Any                 | "P0.3.26"   |
| P0.3.27<br>(0x031B)                     | LCD Line 2 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9004          | Any                 | "P0.3.27"   |
| P0.3.28<br>(0x031C)                     | LCD Line 3 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9009          | Any                 | "P0.3.28"   |
| P0.3.29<br>(0x031D)                     | LCD Line 4 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9010          | Any                 | "P0.3.29"   |
| P0.3.30<br>(0x031E)                     | LCD Line 5 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9004          | Any                 | "P0.3.30"   |
| P0.3.31<br>(0x031F)                     | LCD Line 6 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.31"   |
| P0.3.32<br>(0x0320)                     | LCD Line 7 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9008          | Any                 | "P0.3.32"   |
| P0.3.33<br>(0x0321)                     | LCD Line 8 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.33"   |
| P0.3.34<br>(0x0322)                     | LCD Line 9 Display at Stop                          | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9007          | Any                 | "P0.3.34"   |
| P0.3.35<br>(0x0323)                     | LCD top row display selection                       | Ones:Display selection for Area 1<br>0:Status Display<br>1:Operation direction Display<br>2:Operation command source Display<br>3:RTC Display<br>4~E:Reserved<br>F:Water pump application data Display<br>Tens:Display selection for Area 2<br>0:Status Display<br>1:Operation direction Display<br>2:Operation command source Display<br>3:RTC Display<br>4~E:Reserved<br>F:Water pump application data Display<br>Hundreds:Display selection for Area 3<br>0:Status Display<br>1:Operation direction Display<br>2:Operation command source Display<br>3:RTC Display<br>4~E:Reserved<br>F:Water pump application data Display<br>Thousands:Display selection for Area 4<br>0:Status Display<br>1:Operation direction Display<br>2:Operation command source Display<br>3:RTC Display<br>4~E:Reserved | H.0123        | Any                 | "P0.3.35"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                   | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.3.36 (0x0324)                        | Customized Display of Coefficient    | F:Water pump application data Display<br>0.0001~6.5000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.0000        | Any                 | "P0.3.36"   |
| P0.3.37 (0x0325)                        | User-defined display control word    | Ones:user-defined decimal place displaying<br>0:zero decimal place<br>1:one decimal place<br>2:two decimal places<br>3:three decimal places<br>Tens:source of user-defined display value<br>0:determined by hundreds place of user-defined display control word<br>1:determined by set value of P0.3.36<br>Hundreds:selection of user-defined displaying coefficient<br>0:user-defined displaying coefficient is P0.3.36<br>1:user-defined displaying coefficient is calculation result 1<br>2:user-defined displaying coefficient is calculation result 2<br>3:user-defined displaying coefficient is calculation result 3<br>4:user-defined displaying coefficient is calculation result 4 | 1             | Any                 | "P0.3.37"   |
| P0.3.38 (0x0326)                        | Dual-Row LED upper Display Selection | 0:Display P9.0 group function codes<br>1:Local address<br>2:Motor address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0             | Any                 | "P0.3.38"   |
| P0.3.39 (0x0327)                        | The upper LED during operation       | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 9002          | Any                 | "P0.3.39"   |
| P0.3.40 (0x0328)                        | The upper LED at stop                | 9000~9099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 9004          | Any                 | "P0.3.40"   |
| P0.3.41 (0x0329)                        | Function Code Upload/Download        | 0~65535                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0             | Read only           | "P0.3.41"   |

#### 9.2.1.5. P0.4 Jogging Operation

| Function Code and Communication Address | Function Code Name        | Setting Description  | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------|----------------------|---------------|---------------------|-------------|
| P0.4.00 (0x0400)                        | Jogging running frequency | 0.00~P0.1.16(Hz)     | 2.00          | Any                 | "P0.4.00"   |
| P0.4.01 (0x0401)                        | Jogging Acceleration time | 0.0~6500.0(s)        | 20.0          | Any                 | "P0.4.01"   |
| P0.4.02 (0x0402)                        | Jogging Deceleration time | 0.0~6500.0(s)        | 20.0          | Any                 | "P0.4.02"   |
| P0.4.03 (0x0403)                        | Jogging Priority          | 0:Valid<br>1:Invalid | 0             | Any                 | "P0.4.03"   |

#### 9.2.1.6. P0.5 Start/Stop Parameters

| Function Code and Communication Address | Function Code Name           | Setting Description                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------|----------------------------------------------------------------|---------------|---------------------|-------------|
| P0.5.00 (0x0500)                        | Start Mode                   | 0:Direct Start<br>1:Speed Tracking Mode<br>2:Brake and Restart | 0             | Any                 | "P0.5.00"   |
| P0.5.01 (0x0501)                        | Start Frequency              | 0.00~10.00(Hz)                                                 | 0.00          | Any                 | "P0.5.01"   |
| P0.5.02 (0x0502)                        | Hold Time of Start Frequency | 0.0~100.0(s)                                                   | 0.0           | Read only in run    | "P0.5.02"   |
| P0.5.03 (0x0503)                        | Stop Mode                    | 0:Stop by Deceleration<br>1:Free Stop                          | 0             | Any                 | "P0.5.03"   |
| P0.5.04 (0x0504)                        | Select shutdown frequency    | Ones:VF control<br>0:Set frequency<br>1: Feedback frequency    | 110           | Any                 | "P0.5.04"   |

| Function Code and Communication Address | Function Code Name  | Setting Description                                                                                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                     | Tens:SVC control<br>0:Set frequency<br>1: Feedback frequency<br>Hundreds: Reserved<br>0:Set frequency<br>1: Feedback frequency |               |                     |             |
| P0.5.05<br>(0x0505)                     | Shutdown frequency  | 0.00~P0.1.16(Hz)                                                                                                               | 0.50          | Any                 | "P0.5.05"   |
| P0.5.06<br>(0x0506)                     | Shutdown delay time | 0.00~10.00(s)                                                                                                                  | 0.00          | Any                 | "P0.5.06"   |

### 9.2.1.7. P0.6 Carrier Frequency and PWM Adjustment

| Function Code and Communication Address | Function Code Name                                                     | Setting Description                                                                                                                                                                                                                                                                                                                              | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.6.00<br>(0x0600)                     | Random PWM Model                                                       | 0:Disable<br>1:Random PWM Mode 1 (Only valid for VF)<br>2:Random PWM Mode 2 (Only valid for CPWM)<br>3:Random PWM Mode 3 (Only valid for CPWM)<br>4:Random PWM Mode 4 (Only valid for CPWM)                                                                                                                                                      | 0             | Read only in run    | "P0.6.00"   |
| P0.6.01<br>(0x0601)                     | Dead time compensation switch                                          | Ones:VF control<br>0:No compensation<br>1:Compensation method 1<br>2:Compensation method 2<br>Tens:SVC control<br>0:No compensation<br>1:Compensation method 1<br>2:Compensation method 2<br>3:Compensation method 3<br>Hundreds: Reserved<br>0:No compensation<br>1:Compensation method 1<br>2:Compensation method 2<br>3:Compensation method 3 | H.032         | Any                 | "P0.6.01"   |
| P0.6.02<br>(0x0602)                     | Dead time given                                                        | 100~200(%)                                                                                                                                                                                                                                                                                                                                       | 150           | Read only in run    | "P0.6.02"   |
| P0.6.03<br>(0x0603)                     | DPWM switch upper limit frequency                                      | 0.00~15.00(Hz)                                                                                                                                                                                                                                                                                                                                   | 12.00         | Any                 | "P0.6.03"   |
| P0.6.04<br>(0x0604)                     | PWM modulation method                                                  | Ones:<br>0:Asynchronous modulation<br>1:Synchronous modulation<br>Tens:<br>0:Both three-phase and two-phase modulation are present<br>1:All are three-phase modulation                                                                                                                                                                           | 0             | Read only in run    | "P0.6.04"   |
| P0.6.05<br>(0x0605)                     | Adjustment Depth of Random PWM Mode 1                                  | 1~10                                                                                                                                                                                                                                                                                                                                             | 5             | Any                 | "P0.6.05"   |
| P0.6.06<br>(0x0606)                     | Carrier Frequency                                                      | 0.5~16.0(kHz)                                                                                                                                                                                                                                                                                                                                    | 6.0           | Any                 | "P0.6.06"   |
| P0.6.07<br>(0x0607)                     | Low-speed carrier wave for open loop vector SVC control                | 0.5~16.0(kHz)                                                                                                                                                                                                                                                                                                                                    | 2.0           | Any                 | "P0.6.07"   |
| P0.6.08<br>(0x0608)                     | Switching frequency for low-speed carrier wave of open loop vector SVC | 0.00~50.00(Hz)                                                                                                                                                                                                                                                                                                                                   | 25.00         | Read only in run    | "P0.6.08"   |
| P0.6.09<br>(0x0609)                     | Does the Carrier Frequency Adjust with Temperature                     | Ones:Whether to adjust with temperature<br>0:No<br>1:Yes<br>Tens:Whether to adjust for overload<br>0:No<br>1:Yes                                                                                                                                                                                                                                 | 111           | Any                 | "P0.6.09"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                            | Setting Description                                                                                                                                                              | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                               | Hundreds:the maximum low-frequency carrier limited<br>0:No<br>1:Yes                                                                                                              |               |                     |             |
| P0.6.10<br>(0x060A)                     | Current detection compensation                                | 0.000~0.100                                                                                                                                                                      | 0.005         | Any                 | "P0.6.10"   |
| P0.6.11<br>(0x060B)                     | VF control AVR function                                       | 0:Valid<br>1:Invalid                                                                                                                                                             | 1             | Any                 | "P0.6.11"   |
| P0.6.12<br>(0x060C)                     | sampling Method                                               | Ones:VF control Sampling method<br>0:Multi-Point sampling<br>1:Single-Point sampling<br>Tens:Vector control sampling method<br>0:Multi-Point sampling<br>1:Single-Point sampling | H.01          | Read only in run    | "P0.6.12"   |
| P0.6.13<br>(0x060D)                     | CPU Selection for PWM                                         | 0:slave CPU<br>1:master CPU                                                                                                                                                      | 0             | Read only in run    | "P0.6.13"   |
| P0.6.14<br>(0x060E)                     | The minimum multiple ratio of the carrier operating frequency | 4.0~100.0                                                                                                                                                                        | 8.0           | Read only in run    | "P0.6.14"   |

#### 9.2.1.8. P0.7 DC Braking

| Function Code and Communication Address | Function Code Name                  | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------|---------------------|---------------|---------------------|-------------|
| P0.7.00<br>(0x0700)                     | Starting DC Brake Current           | 0~100(%)            | 0             | Any                 | "P0.7.00"   |
| P0.7.01<br>(0x0701)                     | Starting DC Brake Time              | 0.0~100.0(s)        | 0.0           | Read only in run    | "P0.7.01"   |
| P0.7.02<br>(0x0702)                     | Stop DC Braking Initial Frequency   | 0.00~P0.1.16(Hz)    | 0.00          | Any                 | "P0.7.02"   |
| P0.7.03<br>(0x0703)                     | Stop DC Braking Waiting Time        | 0.0~100.0(s)        | 0.0           | Read only in run    | "P0.7.03"   |
| P0.7.04<br>(0x0704)                     | Stop DC Braking Current             | 0~100(%)            | 0             | Any                 | "P0.7.04"   |
| P0.7.05<br>(0x0705)                     | Stop DC Braking Time                | 0.0~100.0(s)        | 0.0           | Read only in run    | "P0.7.05"   |
| P0.7.06<br>(0x0706)                     | DC Braking Current During Operation | 0~100(%)            | 0             | Any                 | "P0.7.06"   |

#### 9.2.1.9. P0.8 Revolving Speed Tracking

| Function Code and Communication Address | Function Code Name                               | Setting Description                                                                                                                           | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P0.8.00<br>(0x0800)                     | Revolving speed tracking current                 | 30~200(%)                                                                                                                                     | 100           | Read only in run    | "P0.8.00"   |
| P0.8.01<br>(0x0801)                     | Revolving speed tracking KP                      | 0~1000                                                                                                                                        | 500           | Any                 | "P0.8.01"   |
| P0.8.02<br>(0x0802)                     | Revolving speed tracking KI                      | 0~1000                                                                                                                                        | 800           | Any                 | "P0.8.02"   |
| P0.8.03<br>(0x0803)                     | Demagnetization time of revolving speed tracking | 0.00~10.00(s)                                                                                                                                 | 1.00          | Any                 | "P0.8.03"   |
| P0.8.04<br>(0x0804)                     | Min. frequency of revolving speed tracking       | 0.00~10.00(Hz)                                                                                                                                | 1.50          | Read only in run    | "P0.8.04"   |
| P0.8.05<br>(0x0805)                     | Speed Tracking Mode                              | 0:Direct Start<br>1:Start from power frequency(50HZ)<br>2:Brake and Restart<br>3:Magnetic field orientation (parameter identification needed) | 2             | Read only in run    | "P0.8.05"   |
| P0.8.06                                 | Speed tracking                                   | 1~100                                                                                                                                         | 20            | Any                 | "P0.8.06"   |

|          |                |  |  |  |
|----------|----------------|--|--|--|
| (0x0806) | responsiveness |  |  |  |
|----------|----------------|--|--|--|

## 9.2.2. P1 Group Motor Parameters, Control, and Master-Slave Control

### 9.2.2.1. P1.0 Motor 1 Parameters

| Function Code and Communication Address | Function Code Name                         | Setting Description                                                                                                                                                                                      | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P1.0.00<br>(0x1000)                     | Type of Motor 1                            | 0:Common Asynchronous Motor<br>1:Variable frequency asynchronous motor<br>2:Permanent magnet synchronous motor                                                                                           | 0             | Read only in run    | "P1.0.00"   |
| P1.0.01<br>(0x1001)                     | Motor 1 rated power                        | 0.1~2000.0(kW)                                                                                                                                                                                           | Model         | Read only in run    | "P1.0.01"   |
| P1.0.02<br>(0x1002)                     | Motor 1 rated frequency                    | 0.01~P0.1.16(Hz)                                                                                                                                                                                         | Model         | Read only in run    | "P1.0.02"   |
| P1.0.03<br>(0x1003)                     | Motor 1 rated voltage                      | 1~2000(V)                                                                                                                                                                                                | Model         | Read only in run    | "P1.0.03"   |
| P1.0.04<br>(0x1004)                     | Motor 1 rated current                      | 0.01A~655.35A (power inverter < 75kW)<br>0.1A~6553.5A (power inverter≥75kW)                                                                                                                              | Model         | Read only in run    | "P1.0.04"   |
| P1.0.05<br>(0x1005)                     | Motor 1 Rated Rotating Speed               | 1~65535(rpm)                                                                                                                                                                                             | Model         | Read only in run    | "P1.0.05"   |
| P1.0.06<br>(0x1006)                     | Stator resistance of asynchronous motor 1  | 0.001Ω~65.535Ω(inverter power<75kW)<br>0.0001Ω~6.5535Ω(inverter power<75kW)                                                                                                                              | Model         | Read only in run    | "P1.0.06"   |
| P1.0.07<br>(0x1007)                     | Rotor resistance of asynchronous motor 1   | 0.001Ω~65.535Ω(inverter power<75kW)<br>0.0001Ω~6.5535Ω(inverter power<75kW)                                                                                                                              | Model         | Read only in run    | "P1.0.07"   |
| P1.0.08<br>(0x1008)                     | Leakage inductance of asynchronous motor 1 | 0.01mH~655.35mH (power inverter≥75kW)<br>0.001mH~65.535mH (power inverter≥75kW)                                                                                                                          | Model         | Read only in run    | "P1.0.08"   |
| P1.0.09<br>(0x1009)                     | Mutual inductance of asynchronous motor 1  | 0.1mH~6553.5mH (power inverter≥75kW)<br>0.01mH~655.35mH (power inverter≥75kW)                                                                                                                            | Model         | Read only in run    | "P1.0.09"   |
| P1.0.10<br>(0x100A)                     | Non-load current of asynchronous motor 1   | 0.01A~Motor rated current (power inverter≥75kW)<br>0.1A~Motor rated current (power inverter<75kW)                                                                                                        | Model         | Read only in run    | "P1.0.10"   |
| P1.0.11<br>(0x100B)                     | Stator Resistance of Synchronous motor 1   | 0.001Ω~65.535Ω(inverter power<75kW)<br>0.0001Ω~6.5535Ω(inverter power<75kW)                                                                                                                              | Model         | Read only in run    | "P1.0.11"   |
| P1.0.12<br>(0x100C)                     | Back EMF of Synchronous motor 1            | 0.0~6553.5(V)                                                                                                                                                                                            | Model         | Read only in run    | "P1.0.12"   |
| P1.0.13<br>(0x100D)                     | D axis inductance of synchronous motor 1   | 0.01mH~655.35mH (frequency converter power ≤55 kW)<br>0.001mH~65.535mH (frequency converter power > 55 kW)                                                                                               | Model         | Read only in run    | "P1.0.13"   |
| P1.0.14<br>(0x100E)                     | Q axis inductance of synchronous motor 1   | 0.01mH~655.35mH (frequency converter power ≤55 kW)<br>0.001mH~65.535mH (frequency converter power > 55 kW)                                                                                               | Model         | Read only in run    | "P1.0.14"   |
| P1.0.15<br>(0x100F)                     | Motor 1 Tuning KP coefficient              | 1~200(%)                                                                                                                                                                                                 | 100           | Any                 | "P1.0.15"   |
| P1.0.16<br>(0x1010)                     | Motor 1 Tuning KI coefficient              | 1~200(%)                                                                                                                                                                                                 | 100           | Any                 | "P1.0.16"   |
| P1.0.17<br>(0x1011)                     | Motor 1 Parameter Identification Control   | 0:No Action<br>1:Asynchronous motor Static identification<br>2:Asynchronous motor Complete identification<br>11:Synchronous motor on-load identification<br>12:Synchronous motor non-load identification | 0             | Read only in run    | "P1.0.17"   |

### 9.2.2.2. P1.1 Motor 1 Vector and V/F Control

| Function Code and Communication Address | Function Code Name        | Setting Description                                                                          | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------|----------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P1.1.00<br>(0x1100)                     | V/F Curve Mode of Motor 1 | 0:Straight Line<br>1:Multi-Point Broken Line<br>2:Square V/F Curve 1<br>3:Square V/F Curve 2 | 0             | Read only in run    | "P1.1.00"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                             | Setting Description                                                                                                                                                                                                                                                                                                                                      | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                | 4:Square V/F Curve 3                                                                                                                                                                                                                                                                                                                                     |               |                     |             |
| P1.1.01<br>(0x1101)                     | Torque Boost of Motor 1                        | 0.0% (Automatic Torque Boost)<br>0.1%~30.0%                                                                                                                                                                                                                                                                                                              | Model         | Any                 | "P1.1.01"   |
| P1.1.02<br>(0x1102)                     | Motor 1 Cutoff Frequency of Torque Boost       | 0.00~P1.0.02(Hz)                                                                                                                                                                                                                                                                                                                                         | 50.00         | Read only in run    | "P1.1.02"   |
| P1.1.03<br>(0x1103)                     | Motor 1 V/F Slip Compensation Gain             | 0.0~200.0(%)                                                                                                                                                                                                                                                                                                                                             | 0.0           | Any                 | "P1.1.03"   |
| P1.1.04<br>(0x1104)                     | Motor 1 Broken Line V/F Point 1 Frequency      | 0.00~P1.1.06(Hz)                                                                                                                                                                                                                                                                                                                                         | 0.00          | Read only in run    | "P1.1.04"   |
| P1.1.05<br>(0x1105)                     | Motor 1 Broken Line V/F Point 1 Voltage        | 0.0~100.0(%)                                                                                                                                                                                                                                                                                                                                             | 0.0           | Read only in run    | "P1.1.05"   |
| P1.1.06<br>(0x1106)                     | Motor 1 Broken Line V/F Point 2 Frequency      | P1.1.04~P1.1.08(Hz)                                                                                                                                                                                                                                                                                                                                      | 0.00          | Read only in run    | "P1.1.06"   |
| P1.1.07<br>(0x1107)                     | Motor 1 Broken Line V/F Point 2 Voltage        | 0.0~100.0(%)                                                                                                                                                                                                                                                                                                                                             | 0.0           | Read only in run    | "P1.1.07"   |
| P1.1.08<br>(0x1108)                     | Motor 1 Broken Line V/F Point 3 Frequency      | P1.1.06~P1.0.02(Hz)                                                                                                                                                                                                                                                                                                                                      | 0.00          | Read only in run    | "P1.1.08"   |
| P1.1.09<br>(0x1109)                     | Motor 1 Broken Line V/F Point 3 Voltage        | 0.0~100.0(%)                                                                                                                                                                                                                                                                                                                                             | 0.0           | Read only in run    | "P1.1.09"   |
| P1.1.10<br>(0x110A)                     | Motor 1 V/F Overexcited Gain                   | 0~200                                                                                                                                                                                                                                                                                                                                                    | 64            | Any                 | "P1.1.10"   |
| P1.1.11<br>(0x110B)                     | Motor 1 VF oscillation suppression mode        | 1~3                                                                                                                                                                                                                                                                                                                                                      | 3             | Read only in run    | "P1.1.11"   |
| P1.1.12<br>(0x110C)                     | Motor 1 Response time of VF slip compensation  | 0.0~10.0(s)                                                                                                                                                                                                                                                                                                                                              | 0.5           | Any                 | "P1.1.12"   |
| P1.1.13<br>(0x110D)                     | Motor 1 VF online torque compensation gain     | 0~200                                                                                                                                                                                                                                                                                                                                                    | 150           | Any                 | "P1.1.13"   |
| P1.1.14<br>(0x110E)                     | Motor 1 VF oscillation suppression coefficient | 0~100                                                                                                                                                                                                                                                                                                                                                    | 20            | Any                 | "P1.1.14"   |
| P1.1.15<br>(0x110F)                     | Motor 1 Velocity Loop Proportional Gain 1      | 1~100                                                                                                                                                                                                                                                                                                                                                    | 30            | Any                 | "P1.1.15"   |
| P1.1.16<br>(0x1110)                     | Motor 1 Velocity Circulation Integral Time 1   | 0.01~10.00(s)                                                                                                                                                                                                                                                                                                                                            | 0.50          | Any                 | "P1.1.16"   |
| P1.1.17<br>(0x1111)                     | Motor 1 Switching Frequency 1                  | 0.00~P1.1.20(Hz)                                                                                                                                                                                                                                                                                                                                         | 5.00          | Any                 | "P1.1.17"   |
| P1.1.18<br>(0x1112)                     | Motor 1 Velocity Loop Proportional Gain 2      | 1~100                                                                                                                                                                                                                                                                                                                                                    | 20            | Any                 | "P1.1.18"   |
| P1.1.19<br>(0x1113)                     | Motor 1 Velocity Circulation Integral Time 2   | 0.01~10.00(s)                                                                                                                                                                                                                                                                                                                                            | 1.00          | Any                 | "P1.1.19"   |
| P1.1.20<br>(0x1114)                     | Motor 1 Switching Frequency 2                  | P1.1.17~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                      | 10.00         | Any                 | "P1.1.20"   |
| P1.1.21<br>(0x1115)                     | Motor 1 speed loop integral property           | 0:Valid<br>1:Invalid                                                                                                                                                                                                                                                                                                                                     | 0             | Any                 | "P1.1.21"   |
| P1.1.22<br>(0x1116)                     | Motor 1 Vector Control Torque Upper Frequency  | 0:Digital Reference (P1.1.23)<br>1: External Terminal AI1 Reference<br>2: External Terminal AI2 Reference<br>3: Multiplex Directive Reference<br>4:PULS Reference (HDI1))<br>5:Communication Reference<br>6:MIN(AI1,AI2)<br>7:MAX(AI1,AI2)<br>8: Operation Result 3<br>9: Operation Result 4<br>10:Standby Torque Source 1<br>11:Standby Torque Source 2 | 0             | Any                 | "P1.1.22"   |
| P1.1.23<br>(0x1117)                     | Motor 1 Torque Upper Limit Reference           | 0.0~200.0(%)                                                                                                                                                                                                                                                                                                                                             | Type GP       | Any                 | "P1.1.23"   |
| P1.1.24<br>(0x1118)                     | Motor 1 vector control slip gain               | 50~200(%)                                                                                                                                                                                                                                                                                                                                                | 100           | Any                 | "P1.1.24"   |

| Function Code and Communication Address | Function Code Name                                    | Setting Description   | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------------------|-----------------------|---------------|---------------------|-------------|
| P1.1.25 (0x1119)                        | Motor 1 Excitation adjustment ratio                   | 0~60000               | 2000          | Any                 | "P1.1.25"   |
| P1.1.26 (0x111A)                        | Motor 1 Excitation adjustment Integral                | 0~60000               | 1300          | Any                 | "P1.1.26"   |
| P1.1.27 (0x111B)                        | Motor 1 Torque adjustment ratio                       | 0~60000               | 2000          | Any                 | "P1.1.27"   |
| P1.1.28 (0x111C)                        | Motor 1 Torque adjustment Integral                    | 0~60000               | 1300          | Any                 | "P1.1.28"   |
| P1.1.29 (0x111D)                        | Motor 1 Velocity filtering coefficient                | 0~1000                | 100           | Any                 | "P1.1.29"   |
| P1.1.32 (0x1120)                        | Reserved                                              | 0~65535               | 0             | Any                 | "P1.1.32"   |
| P1.1.33 (0x1121)                        | Motor 1 angle adjustment KP                           | 1.0~300.0(%)          | 100.0         | Read only in run    | "P1.1.33"   |
| P1.1.34 (0x1122)                        | Enable power limit for generator operation of Motor 1 | 0:Disable<br>1:Enable | 0             | Any                 | "P1.1.34"   |
| P1.1.35 (0x1123)                        | Power limit for generator operation of Motor 1        | 0.0~200.0(%)          | 50.0          | Any                 | "P1.1.35"   |

## 9.2.3. P2 Group Terminal Functions and Optional Cards

### 9.2.3.1. P2.0 External Terminal DI/DHI Input

| Function Code and Communication Address | Function Code Name                     | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.0.00 (0x2000)                        | External Terminal Running Control Mode | 0:Two-line Type 1<br>1:Two-line Type 2<br>2:Three-line Type 1<br>3:Three-line Type 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0             | Read only in run    | "P2.0.00"   |
| P2.0.01 (0x2001)                        | DII Terminal Function                  | 0:No Function<br>1:Forward (FWD)<br>2:Reverse (REV)<br>3:Three-wire Running Control<br>4:Forward Jogging<br>5:Reverse Jogging<br>6:Terminal UP<br>7:Terminal DOWN<br>8:Free Stop<br>9:Multiplex Directive Terminal 1<br>10:Multiplex Directive Terminal 2<br>11: Multiplex Directive Terminal 3<br>12:Multiplex Directive Terminal 4<br>13:Fault Reset (RESET)<br>14:Running Pause<br>15:External Fault Input<br>16:Acceleration & Deceleration Time Selection Terminal 1<br>17:Acceleration & Deceleration Time Selection Terminal 2<br>18:Frequency Source Selection Terminal 1<br>19:Frequency Source Selection Terminal 2<br>20:Frequency Source Selection Terminal 3<br>21:Running Command Selection Terminal 1<br>22:Running Command Selection Terminal 2<br>23:UP/DOWN Reference Reset<br>24:Prohibition of Acceleration & Deceleration<br>25:PID Pause<br>26:PLC State Reset<br>27:Wobblulating Pause<br>28:Counter Input<br>29:Counter Reset<br>30:Length Counting Input<br>31:Length Reset | 1             | Read only in run    | "P2.0.01"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name    | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                       | 32:Torque Control Prohibition<br>33:Reserved<br>34:Immediate DC Brake<br>35:External Fault Normally-closed Input<br>36:Frequency Modification Enable<br>37:PID Action Direction Negation<br>38:External Stop Terminal 1<br>39:External Stop Terminal 2<br>40:PID Integral Stop<br>41:PID Parameter Switch<br>42:Speed Control/Torque Control Switch<br>43:Emergency Stop<br>44:Deceleration DC Brake<br>45:User-Defined Fault 1<br>46:User-Defined Fault 2<br>47:Running Time Reset<br>48:Timer Input Terminal 1<br>49:Timer Input Terminal 2<br>50:Timer Reset Terminal 1<br>51:Timer Reset Terminal 2<br>52:Reserved<br>53:Reserved<br>54:Reserved<br>55:Integral Computation Reset<br>56:User Function 1<br>57:User Function 2<br>58:User Function 3<br>59:User Function 4<br>60:User Function 5<br>61:User Function 6<br>62:Reserved<br>63:Reserved<br>64:Motor 1 Selection Terminal<br>65:Motor 2 Selection Terminal<br>66:Motor 3 Selection Terminal<br>67:Motor 4 Selection Terminal<br>68:Enable for switching between variable frequency and power frequency<br>69:Enable for fire mode 1<br>70:Enable for fire mode 2<br>71:Detection for wire breakage in fire mode |               |                     |             |
| P2.0.02 (0x2002)                        | DI2 Terminal Function | Same as P2.0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2             | Read only in run    | "P2.0.02"   |
| P2.0.03 (0x2003)                        | DI3 Terminal Function | Same as P2.0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9             | Read only in run    | "P2.0.03"   |
| P2.0.04 (0x2004)                        | DI4 Terminal Function | 0:Used as a Normal Analog Signal<br>1:Forward (FWD)<br>2:Reverse (REV)<br>3:Three-wire Running Control<br>4:Forward Jogging<br>5:Reverse Jogging<br>6:Terminal UP<br>7:Terminal DOWN<br>8:Free Stop<br>9:Multiplex Directive Terminal 1<br>10:Multiplex Directive Terminal 2<br>11: Multiplex Directive Terminal 3<br>12:Multiplex Directive Terminal 4<br>13:Fault Reset (RESET)<br>14:Running Pause<br>15:External Fault Input<br>16:Acceleration & Deceleration Time Selection Terminal 1<br>17:Acceleration & Deceleration Time Selection Terminal 2<br>18:Frequency Source Selection Terminal 1<br>19:Frequency Source Selection Terminal 2<br>20:Frequency Source Selection Terminal 3<br>21:Running Command Selection Terminal 1<br>22:Running Command Selection Terminal 2                                                                                                                                                                                                                                                                                                                                                                                             | 10            | Read only in run    | "P2.0.04"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                 | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                    | 23:UP/DOWN Reference Reset<br>24:Prohibition of Acceleration & Deceleration<br>25:PID Pause<br>26:PLC State Reset<br>27:Wobblulating Pause<br>28:Counter Input<br>29:Counter Reset<br>30:Length Counting Input<br>31:Length Reset<br>32:Torque Control Prohibition<br>33:Reserved<br>34:Immediate DC Brake<br>35:External Fault Normally-closed Input<br>36:Frequency Modification Enable<br>37:PID Action Direction Negation<br>38:External Stop Terminal 1<br>39:External Stop Terminal 2<br>40:PID Integral Stop<br>41:PID Parameter Switch<br>42:Speed Control/Torque Control Switch<br>43:Emergency Stop<br>44:Deceleration DC Brake<br>45:User-Defined Fault 1<br>46:User-Defined Fault 2<br>47:Running Time Reset<br>48:Timer Input Terminal 1<br>49:Timer Input Terminal 2<br>50:Timer Reset Terminal 1<br>51:Timer Reset Terminal 2<br>52:Reserved<br>53:Reserved<br>54:Reserved<br>55:Integral Computation Reset<br>56:User Function 1<br>57:User Function 2<br>58:User Function 3<br>59:User Function 4<br>60:User Function 5<br>61:User Function 6<br>62:Reserved<br>63:Reserved<br>64:Motor 1 Selection Terminal<br>65:Motor 2 Selection Terminal<br>66:Motor 3 Selection Terminal<br>67:Motor 4 Selection Terminal<br>68:Enable for switching between variable frequency and power frequency<br>69:Enable for fire mode 1<br>70:Enable for fire mode 2<br>71:Detection for wire breakage in fire mode |               |                     |             |
| P2.0.05<br>(0x2005)                     | DI5 Terminal Function                              | Same as P2.0.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11            | Read only in run    | "P2.0.05"   |
| P2.0.06<br>(0x2006)                     | DI6 Terminal Function                              | Same as P2.0.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8             | Read only in run    | "P2.0.06"   |
| P2.0.07<br>(0x2007)                     | DI7 Terminal Function                              | Same as P2.0.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Read only in run    | "P2.0.07"   |
| P2.0.08<br>(0x2008)                     | DI8 Terminal Function                              | Same as P2.0.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Read only in run    | "P2.0.08"   |
| P2.0.09<br>(0x2009)                     | DH11 Terminal Function as DI Input                 | Same as P2.0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Read only in run    | "P2.0.09"   |
| P2.0.11<br>(0x200B)                     | DI Filtering time                                  | 0.000~1.000(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.010         | Any                 | "P2.0.11"   |
| P2.0.13<br>(0x200D)                     | Minimum Input of PULSE                             | 0.00~P2.0.15(kHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.00          | Any                 | "P2.0.13"   |
| P2.0.14<br>(0x200E)                     | Corresponding reference for Minimum Input of PULSE | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0           | Any                 | "P2.0.14"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                 | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.0.15<br>(0x200F)                     | Maximum Input of PULSE                             | P2.0.13~100.00(kHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50.00         | Any                 | "P2.0.15"   |
| P2.0.16<br>(0x2010)                     | Corresponding reference for Maximum Input of PULSE | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100.0         | Any                 | "P2.0.16"   |
| P2.0.17<br>(0x2011)                     | PULSE Filtering time                               | 0.00~10.00(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.10          | Any                 | "P2.0.17"   |
| P2.0.18<br>(0x2012)                     | All Terminal Function as DI Input                  | 0:Used as a Normal Analog Signal<br>1:Forward (FWD)<br>2:Reverse (REV)<br>3:Three-wire Running Control<br>4:Forward Jogging<br>5:Reverse Jogging<br>6:Terminal UP<br>7:Terminal DOWN<br>8:Free Stop<br>9:Multiplex Directive Terminal 1<br>10:Multiplex Directive Terminal 2<br>11: Multiplex Directive Terminal 3<br>12:Multiplex Directive Terminal 4<br>13:Fault Reset (RESET)<br>14:Running Pause<br>15:External Fault Input<br>16:Acceleration & Deceleration Time Selection Terminal 1<br>17:Acceleration & Deceleration Time Selection Terminal 2<br>18:Frequency Source Selection Terminal 1<br>19:Frequency Source Selection Terminal 2<br>20:Frequency Source Selection Terminal 3<br>21:Running Command Selection Terminal 1<br>22:Running Command Selection Terminal 2<br>23:UP/DOWN Reference Reset<br>24:Prohibition of Acceleration & Deceleration<br>25:PID Pause<br>26:PLC State Reset<br>27:Wobblulating Pause<br>28:Counter Input<br>29:Counter Reset<br>30:Length Counting Input<br>31:Length Reset<br>32:Torque Control Prohibition<br>33:Reserved<br>34:Immediate DC Brake<br>35:External Fault Normally-closed Input<br>36:Frequency Modification Enable<br>37:PID Action Direction Negation<br>38:External Stop Terminal 1<br>39:External Stop Terminal 2<br>40:PID Integral Stop<br>41:PID Parameter Switch<br>42:Speed Control/Torque Control Switch<br>43:Emergency Stop<br>44:Deceleration DC Brake<br>45:User-Defined Fault 1<br>46:User-Defined Fault 2<br>47:Running Time Reset<br>48:Timer Input Terminal 1<br>49:Timer Input Terminal 2<br>50:Timer Reset Terminal 1<br>51:Timer Reset Terminal 2<br>52:Reserved<br>53:Reserved<br>54:Reserved<br>55:Integral Computation Reset<br>56:User Function 1<br>57:User Function 2<br>58:User Function 3 | 0             | Read only in run    | "P2.0.18"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                         | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                            | 59:User Function 4<br>60:User Function 5<br>61:User Function 6<br>62:Reserved<br>63:Reserved<br>64:Motor 1 Selection Terminal<br>65:Motor 2 Selection Terminal<br>66:Motor 3 Selection Terminal<br>67:Motor 4 Selection Terminal<br>68:Enable for switching between variable frequency and power frequency<br>69:Enable for fire mode 1<br>70:Enable for fire mode 2<br>71:Detection for wire breakage in fire mode |               |                     |             |
| P2.0.19<br>(0x2013)                     | AI2 Terminal Function as DI Input          | Same as P2.0.18                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Read only in run    | "P2.0.19"   |
| P2.0.20<br>(0x2014)                     | AI3 Terminal Function as DI Input          | Same as P2.0.18                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | Read only in run    | "P2.0.20"   |
| P2.0.21<br>(0x2015)                     | Valid Delay for AI1 Terminal as DI Input   | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.21"   |
| P2.0.22<br>(0x2016)                     | Valid Delay for AI2 Terminal as DI Input   | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.22"   |
| P2.0.23<br>(0x2017)                     | Valid Delay for AI3 Terminal as DI Input   | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.23"   |
| P2.0.24<br>(0x2018)                     | Invalid Delay for AI1 Terminal as DI Input | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.24"   |
| P2.0.25<br>(0x2019)                     | Invalid Delay for AI2 Terminal as DI Input | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.25"   |
| P2.0.26<br>(0x201A)                     | Invalid Delay for AI3 Terminal as DI Input | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.26"   |
| P2.0.27<br>(0x201B)                     | DI1 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.27"   |
| P2.0.28<br>(0x201C)                     | DI2 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.28"   |
| P2.0.29<br>(0x201D)                     | DI3 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.29"   |
| P2.0.30<br>(0x201E)                     | DI4 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.30"   |
| P2.0.31<br>(0x201F)                     | DI5 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.31"   |
| P2.0.32<br>(0x2020)                     | DI6 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.32"   |
| P2.0.33<br>(0x2021)                     | DI7 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.33"   |
| P2.0.34<br>(0x2022)                     | DI8 effective delay                        | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.34"   |
| P2.0.35<br>(0x2023)                     | Valid Delay for HDI1 Terminal as DI Input  | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.35"   |
| P2.0.37<br>(0x2025)                     | DI1 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.37"   |
| P2.0.38<br>(0x2026)                     | DI2 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.38"   |
| P2.0.39<br>(0x2027)                     | DI3 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.39"   |
| P2.0.40<br>(0x2028)                     | DI4 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.40"   |
| P2.0.41<br>(0x2029)                     | DI5 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.41"   |
| P2.0.42<br>(0x202A)                     | DI6 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.42"   |
| P2.0.43<br>(0x202B)                     | DI7 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.43"   |
| P2.0.44<br>(0x202C)                     | DI8 ineffective delay                      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.44"   |
| P2.0.45<br>(0x202D)                     | Invalid Delay for HDI1 Terminal as DI      | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0           | Any                 | "P2.0.45"   |
| P2.0.47                                 | DI Valid State Option                      | Ones:AI1                                                                                                                                                                                                                                                                                                                                                                                                            | 0             | Read only           | "P2.0.47"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                     | Setting Description                                                                                                                                                                                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| (0x202F)                                | of AI                                  | 0:Active High Level<br>1:Active Low Level<br>Tens:AI2<br>0:Active High Level<br>1:Active Low Level<br>Hundreds:AI3<br>0:Active High Level<br>1:Active Low Level                                                                                                                                                   |               | in run              |             |
| P2.0.48<br>(0x2030)                     | Valid Model Selection 1 of Terminal DI | Ones:DI1<br>0:Active High Level<br>1:Active Low Level<br>Tens:DI2<br>0:Active High Level<br>1:Active Low Level<br>Hundreds:DI3<br>0:Active High Level<br>1:Active Low Level<br>Thousands:DI4<br>0:Active High Level<br>1:Active Low Level<br>Ten Thousands:DI5<br>0:Active High Level<br>1:Active Low Level       | 0             | Read only in run    | "P2.0.48"   |
| P2.0.49<br>(0x2031)                     | Valid Model Selection 2 of Terminal DI | Ones:DI6<br>0:Active High Level<br>1:Active Low Level<br>Tens:DI7<br>0:Active High Level<br>1:Active Low Level<br>Hundreds:DI8<br>0:Active High Level<br>1:Active Low Level<br>Thousands:DI9<br>0:Active High Level<br>1:Active Low Level<br>Ten Thousands: Reserved<br>0:Active High Level<br>1:Active Low Level | 0             | Read only in run    | "P2.0.49"   |

#### 9.2.3.2. P2.1 External Terminal D0/DHO Output

| Function Code and Communication Address | Function Code Name          | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.1.01<br>(0x2101)                     | T1 Relay Function Selection | 0:No Function<br>1:Frequency inverter under Running<br>2:Fault Stop Output<br>3:Frequency Level Testing FDT1 Output<br>4:Frequency Reached<br>5:Zero-speed Running (no output when shut down)<br>6:Motor Overload Pre-alarm<br>7:Frequency inverter Overload Pre-alarm<br>8:Reference Count Value Reached<br>9:Designated Count Value Reached<br>10:Length Reached<br>11:PLC circulation cycle completed<br>12:Accumulative Running Time Reached<br>13:Frequency Limit<br>14:Torque Limit<br>15:Ready for Running<br>16:AI1>AI2<br>17:Upper Frequency Reached<br>18:Lower Frequency Reached (no output when shut down)<br>19:Undervoltage state output<br>20:Communication Reference<br>21:AI1 Output less than Lower Limit | 1             | Any                 | "P2.1.01"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                              | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                 | 22:All Output more Upper Limit<br>23:Zero-speed Running 2 (also output when shut down)<br>24:Accumulative Power-on Time Reached<br>25:Frequency Level Testing FDT2 Output<br>26:Frequency 1 Reaches Output<br>27:Frequency 2 Reaches Output<br>28:Current 1 Reaches Output<br>29:Current 2 Reaches Output<br>30:Timing Reaches Output<br>31:All Input Overlimit<br>32:In Off-load<br>33:In Reverse Running<br>34:Zero-current State<br>35:Module Temperature Reached<br>36:Output Current Overlimit<br>37:Lower Frequency Reached (also output when shut down)<br>38:Alarm Output<br>39:PLC Phase Completed<br>40:Current Running Time Reached<br>41:Fault Output (Not Output for Undervoltage)<br>42:Time of Timer 1 Reached<br>43:Time of Timer 2 Reached<br>44:Time of Timer 1 Reached but Time of Timer 2 not Reached<br>45>User Function 1<br>46>User Function 2<br>47>User Function 3<br>48>User Function 4<br>49>User Function 5<br>50:Synchronization Intermediate Relay M1<br>51:Synchronization Intermediate Relay M2<br>52:Synchronization Intermediate Relay M3<br>53:Synchronization Intermediate Relay M4<br>54:Synchronization Intermediate Relay M5<br>55:Distance over Zero<br>56:Distance Set value 1 Reached<br>57:Distance Set value 2 Reached<br>58:Operation Result 2 greater than 0<br>59:Operation Result 4 greater than 0<br>60:Motor temperature exceeds the pre-alarm threshold.<br>61:Frequency Converter Output During Power-Frequency Switching<br>62:Power frequency output during frequency conversion switching<br>63:Over Torque Output<br>64:Stall Output<br>65:Indication of water supply dormant operation<br>66:Fire mode activation status<br>67:Fault of disconnection detection in fire mode |               |                     |             |
| P2.1.03<br>(0x2103)                     | Expansion Card DO1 Function Selection           | Same as P2.1.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0             | Any                 | "P2.1.03"   |
| P2.1.04<br>(0x2104)                     | Expansion Card DO2 Function Selection           | Same as P2.1.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0             | Any                 | "P2.1.04"   |
| P2.1.05<br>(0x2105)                     | HDO effective delay                             | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0           | Any                 | "P2.1.05"   |
| P2.1.06<br>(0x2106)                     | T1 effective delay                              | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0           | Any                 | "P2.1.06"   |
| P2.1.08<br>(0x2108)                     | DO1 effective delay                             | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0           | Any                 | "P2.1.08"   |
| P2.1.09<br>(0x2109)                     | DO2 effective delay                             | 0.0~3600.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0           | Any                 | "P2.1.09"   |
| P2.1.12<br>(0x210C)                     | Valid State of Multi-functional Output Terminal | Ones:DO<br>0:Positive Logic<br>1:Negative Logic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0             | Any                 | "P2.1.12"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name    | Setting Description                                                                                                                                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                       | Tens:T1<br>0:Positive Logic<br>1:Negative Logic<br>Hundreds: Reserved<br>0:Positive Logic<br>1:Negative Logic<br>Thousands:Expansion Card DO1<br>0:Positive Logic<br>1:Negative Logic<br>Ten Thousands:Expansion Card DO2<br>0:Positive Logic<br>1:Negative Logic |               |                     |             |
| P2.1.16<br>(0x2110)                     | T1 ineffective delay  | 0.0~3600.0(s)                                                                                                                                                                                                                                                     | 0.0           | Any                 | "P2.1.16"   |
| P2.1.18<br>(0x2112)                     | DO1 ineffective delay | 0.0~3600.0(s)                                                                                                                                                                                                                                                     | 0.0           | Any                 | "P2.1.18"   |
| P2.1.19<br>(0x2113)                     | DO2 ineffective delay | 0.0~3600.0(s)                                                                                                                                                                                                                                                     | 0.0           | Any                 | "P2.1.19"   |

#### 9.2.3.3. P2.2 AI Input

| Function Code and Communication Address | Function Code Name                | Setting Description                                                                                                                                                                                                                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.2.00<br>(0x2200)                     | Analog Input Curve Selection      | Ones:Curve selected for AI1<br>1:Curve 1<br>2:Curve 2<br>3:Curve 3<br>4:Curve 4<br>5:Curve 5<br>Tens:Curve selected for AI2<br>1:Curve 1<br>2:Curve 2<br>3:Curve 3<br>4:Curve 4<br>5:Curve 5<br>Hundreds:Curve selected for AI3<br>1:Curve 1<br>2:Curve 2<br>3:Curve 3<br>4:Curve 4<br>5:Curve 5                                                    | 321           | Any                 | "P2.2.00"   |
| P2.2.01<br>(0x2201)                     | Analog Input resolution Selection | Ones:AI1 Input resolution<br>0:0.01Hz<br>1:0.02Hz<br>2:0.05Hz<br>3:0.10Hz<br>4:0.20Hz<br>5:0.50Hz<br>6:1.00Hz<br>Tens:AI2 Input resolution<br>0:0.01Hz<br>1:0.02Hz<br>2:0.05Hz<br>3:0.10Hz<br>4:0.20Hz<br>5:0.50Hz<br>6:1.00Hz<br>Hundreds:AI3 Input resolution<br>0:0.01Hz<br>1:0.02Hz<br>2:0.05Hz<br>3:0.10Hz<br>4:0.20Hz<br>5:0.50Hz<br>6:1.00Hz | 0             | Any                 | "P2.2.01"   |
| P2.2.02                                 | Selection for Curve               | Ones:AI1                                                                                                                                                                                                                                                                                                                                            | 0             | Any                 | "P2.2.02"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                   | Setting Description                                                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| (0x2202)                                | less than Min. Reference                             | 0: Corresponding Min. Input Reference<br>1:0.0%<br>Tens:AI2<br>0: Corresponding Min. Input Reference<br>1:0.0%<br>Hundreds:AI3<br>0: Corresponding Min. Input Reference<br>1:0.0% |               |                     |             |
| P2.2.03<br>(0x2203)                     | AI1 Filtering time                                   | 0.00~10.00(s)                                                                                                                                                                     | 0.10          | Any                 | "P2.2.03"   |
| P2.2.04<br>(0x2204)                     | AI2 Filtering time                                   | 0.00~10.00(s)                                                                                                                                                                     | 0.10          | Any                 | "P2.2.04"   |
| P2.2.05<br>(0x2205)                     | AI3 Filtering time                                   | 0.00~10.00(s)                                                                                                                                                                     | 0.10          | Any                 | "P2.2.05"   |
| P2.2.06<br>(0x2206)                     | AI1 set jump Point                                   | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.06"   |
| P2.2.07<br>(0x2207)                     | AI1 set jump amplitude                               | 0.0~100.0(%)                                                                                                                                                                      | 0.5           | Any                 | "P2.2.07"   |
| P2.2.08<br>(0x2208)                     | AI2 set jump Point                                   | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.08"   |
| P2.2.09<br>(0x2209)                     | AI2 set jump amplitude                               | 0.0~100.0(%)                                                                                                                                                                      | 0.5           | Any                 | "P2.2.09"   |
| P2.2.10<br>(0x220A)                     | Set jump Point of AI3                                | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.10"   |
| P2.2.11<br>(0x220B)                     | Set jump amplitude of AI3                            | 0.0~100.0(%)                                                                                                                                                                      | 0.5           | Any                 | "P2.2.11"   |
| P2.2.12<br>(0x220C)                     | Minimum Input of Curve 1                             | -10.00~P2.2.14(V)                                                                                                                                                                 | 0.00          | Any                 | "P2.2.12"   |
| P2.2.13<br>(0x220D)                     | Corresponding reference for Minimum Input of Curve 1 | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.13"   |
| P2.2.14<br>(0x220E)                     | Maximum Input of Curve 1                             | P2.2.12~10.00(V)                                                                                                                                                                  | 10.00         | Any                 | "P2.2.14"   |
| P2.2.15<br>(0x220F)                     | Corresponding reference for Maximum Input of Curve 1 | -100.0~100.0(%)                                                                                                                                                                   | 100.0         | Any                 | "P2.2.15"   |
| P2.2.16<br>(0x2210)                     | Minimum Input of Curve 2                             | -10.00~P2.2.18(V)                                                                                                                                                                 | 0.00          | Any                 | "P2.2.16"   |
| P2.2.17<br>(0x2211)                     | Corresponding reference for Minimum Input of Curve 2 | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.17"   |
| P2.2.18<br>(0x2212)                     | Maximum Input of Curve 2                             | P2.2.16~10.00(V)                                                                                                                                                                  | 10.00         | Any                 | "P2.2.18"   |
| P2.2.19<br>(0x2213)                     | Corresponding reference for Maximum Input of Curve 2 | -100.0~100.0(%)                                                                                                                                                                   | 100.0         | Any                 | "P2.2.19"   |
| P2.2.20<br>(0x2214)                     | Minimum Input of Curve 3                             | -10.00~P2.2.22(V)                                                                                                                                                                 | -10.00        | Any                 | "P2.2.20"   |
| P2.2.21<br>(0x2215)                     | Corresponding reference for Minimum Input of Curve 3 | -100.0~100.0(%)                                                                                                                                                                   | -100.0        | Any                 | "P2.2.21"   |
| P2.2.22<br>(0x2216)                     | Maximum Input of Curve 3                             | P2.2.20~10.00(V)                                                                                                                                                                  | 10.00         | Any                 | "P2.2.22"   |
| P2.2.23<br>(0x2217)                     | Corresponding reference for Maximum Input of Curve 3 | -100.0~100.0(%)                                                                                                                                                                   | 100.0         | Any                 | "P2.2.23"   |
| P2.2.24<br>(0x2218)                     | Min. Input of Curve 4                                | -10.00~P2.2.26(V)                                                                                                                                                                 | 0.00          | Any                 | "P2.2.24"   |
| P2.2.25<br>(0x2219)                     | Corresponding reference for Min. Input of Curve 4    | -100.0~100.0(%)                                                                                                                                                                   | 0.0           | Any                 | "P2.2.25"   |
| P2.2.26                                 | Curve 4 Inflection                                   | P2.2.24~P2.2.28(V)                                                                                                                                                                | 3.00          | Any                 | "P2.2.26"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                           | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------------------------|---------------------|---------------|---------------------|-------------|
| (0x221A)                                | Point 1 Input                                                |                     |               |                     |             |
| P2.2.27<br>(0x221B)                     | Corresponding reference for Curve 4 Inflection Point 1 Input | -100.0~100.0(%)     | 30.0          | Any                 | "P2.2.27"   |
| P2.2.28<br>(0x221C)                     | Curve 4 Inflection Point 2 Input                             | P2.2.26~P2.2.30(V)  | 6.00          | Any                 | "P2.2.28"   |
| P2.2.29<br>(0x221D)                     | Corresponding reference for Curve 4 Inflection Point 2 Input | -100.0~100.0(%)     | 60.0          | Any                 | "P2.2.29"   |
| P2.2.30<br>(0x221E)                     | Max. input of Curve 4                                        | P2.2.28~10.00(V)    | 10.00         | Any                 | "P2.2.30"   |
| P2.2.31<br>(0x221F)                     | Corresponding reference for Max. input of Curve 4            | -100.0~100.0(%)     | 100.0         | Any                 | "P2.2.31"   |
| P2.2.32<br>(0x2220)                     | Min. Input of Curve 5                                        | -10.00~P2.2.34(V)   | -10.00        | Any                 | "P2.2.32"   |
| P2.2.33<br>(0x2221)                     | Corresponding reference for Min. Input of Curve 5            | -100.0~100.0(%)     | -100.0        | Any                 | "P2.2.33"   |
| P2.2.34<br>(0x2222)                     | Curve 5 Inflection Point 1 Input                             | P2.2.32~P2.2.36(V)  | -3.00         | Any                 | "P2.2.34"   |
| P2.2.35<br>(0x2223)                     | Corresponding reference for Curve 5 Inflection Point 1 Input | -100.0~100.0(%)     | -30.0         | Any                 | "P2.2.35"   |
| P2.2.36<br>(0x2224)                     | Curve 5 Inflection Point 2 Input                             | P2.2.34~P2.2.38(V)  | 3.00          | Any                 | "P2.2.36"   |
| P2.2.37<br>(0x2225)                     | Corresponding reference for Curve 5 Inflection Point 2 Input | -100.0~100.0(%)     | 30.0          | Any                 | "P2.2.37"   |
| P2.2.38<br>(0x2226)                     | Max. input of Curve 5                                        | P2.2.36~10.00(V)    | 10.00         | Any                 | "P2.2.38"   |
| P2.2.39<br>(0x2227)                     | Corresponding reference for Max. input of Curve 5            | -100.0~100.0(%)     | 100.0         | Any                 | "P2.2.39"   |

#### 9.2.3.4. P2.3 AO Output

| Function Code and Communication Address | Function Code Name          | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.3.00<br>(0x2300)                     | Analog Output AO1 Reference | 0:Running Frequency<br>1:Reference frequency<br>2:Output Current<br>3:Output Torque (Absolute Value of Torque)<br>4:Output Power<br>5:Output Voltage<br>6:Impulse Input<br>7:A11 Voltage<br>8:A12 Voltage<br>9:A13 Voltage<br>10:Actual Length Value<br>11:Actual Counting Value<br>12:Communication Reference<br>13:Motor Speed<br>14:Output Current<br>15:Bus line voltage<br>16:Output Torque<br>17:Operation Result 1<br>18:Operation Result 2<br>19:Operation Result 3<br>20:Operation Result 4 | 0             | Any                 | "P2.3.00"   |
| P2.3.01                                 | Analog Output AO2           | Same as P2.3.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1             | Any                 | "P2.3.01"   |

| Function Code and Communication Address | Function Code Name       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------|---------------------|---------------|---------------------|-------------|
| (0x2301)                                | Reference                |                     |               |                     |             |
| P2.3.02<br>(0x2302)                     | Reserved                 | 0~25                | 1             | Any                 | "P2.3.02"   |
| P2.3.03<br>(0x2303)                     | Analog AO1 Output Offset | -100.0~100.0(%)     | 0.0           | Any                 | "P2.3.03"   |
| P2.3.04<br>(0x2304)                     | Analog AO1 Output Gains  | -10.00~10.00        | 1.00          | Any                 | "P2.3.04"   |
| P2.3.05<br>(0x2305)                     | Analog AO2 Output Offset | -100.0~100.0(%)     | 0.0           | Any                 | "P2.3.05"   |
| P2.3.06<br>(0x2306)                     | Analog AO2 Output Gains  | -10.00~10.00        | 1.00          | Any                 | "P2.3.06"   |

### 9.2.3.5. P2.4 AI, AO Curve Calibration

| Function Code and Communication Address | Function Code Name      | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------|---------------------|---------------|---------------------|-------------|
| P2.4.00<br>(0x2400)                     | AI1 actual voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.00"   |
| P2.4.01<br>(0x2401)                     | AI1 indicated voltage 1 | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.01"   |
| P2.4.02<br>(0x2402)                     | AI1 actual voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.02"   |
| P2.4.03<br>(0x2403)                     | AI1 indicated voltage 2 | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.03"   |
| P2.4.04<br>(0x2404)                     | AI2 actual voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.04"   |
| P2.4.05<br>(0x2405)                     | AI2 indicated voltage 1 | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.05"   |
| P2.4.06<br>(0x2406)                     | AI2 actual voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.06"   |
| P2.4.07<br>(0x2407)                     | AI2 indicated voltage 2 | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.07"   |
| P2.4.08<br>(0x2408)                     | AI3 actual voltage 1    | -1.100~11.000(V)    | Manufacturer  | Any                 | "P2.4.08"   |
| P2.4.09<br>(0x2409)                     | AI3 indicated voltage 1 | -1.100~11.000(V)    | Manufacturer  | Any                 | "P2.4.09"   |
| P2.4.10<br>(0x240A)                     | AI3 actual voltage 2    | -1.100~11.000(V)    | Manufacturer  | Any                 | "P2.4.10"   |
| P2.4.11<br>(0x240B)                     | AI3 indicated voltage 1 | -1.100~11.000(V)    | Manufacturer  | Any                 | "P2.4.11"   |
| P2.4.12<br>(0x240C)                     | AO1 target voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.12"   |
| P2.4.13<br>(0x240D)                     | AO1 actual voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.13"   |
| P2.4.14<br>(0x240E)                     | AO1 target voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.14"   |
| P2.4.15<br>(0x240F)                     | AO1 actual voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.15"   |
| P2.4.16<br>(0x2410)                     | AO2 target voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.16"   |
| P2.4.17<br>(0x2411)                     | AO2 actual voltage 1    | 0.000~4.000(V)      | Manufacturer  | Any                 | "P2.4.17"   |
| P2.4.18<br>(0x2412)                     | AO2 target voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.18"   |
| P2.4.19<br>(0x2413)                     | AO2 actual voltage 2    | 6.000~11.000(V)     | Manufacturer  | Any                 | "P2.4.19"   |

### 9.2.3.6. P2.7 Expansion Communication Card Settings

| Function Code and Communication Address | Function Code Name  | Setting Description   | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------|-----------------------|---------------|---------------------|-------------|
| P2.7.00                                 | Expansion card Baud | Ones:MODBUS baud rate | H.3           | Any                 | "P2.7.00"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                       | Setting Description                                                                                                                                                                                                                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| (0x2700)                                | Rate                                                     | 0:1200<br>1:2400<br>2:4800<br>3:9600<br>4:19200<br>5:38400<br>6:57600<br>7:115200<br>8:256000<br>9:460800<br>A:921600<br>B:2500000<br>Tens: Reserved<br>Hundreds: Reserved<br>Thousands: Reserved                                                                                                                                                 |               |                     |             |
| P2.7.01<br>(0x2701)                     | Expansion card Data Format                               | 0:No Verification (8-N-2)<br>1:Even Parity Verification (8-E-1)<br>2:Odd Parity Verification (8-O-1)<br>3:No Verification (8-N-1)                                                                                                                                                                                                                 | 0             | Any                 | "P2.7.01"   |
| P2.7.02<br>(0x2702)                     | Reserved                                                 | 0~65535                                                                                                                                                                                                                                                                                                                                           | 0             | Any                 | "P2.7.02"   |
| P2.7.03<br>(0x2703)                     | Expansion card Response Delay                            | 0~20(ms)                                                                                                                                                                                                                                                                                                                                          | 2             | Any                 | "P2.7.03"   |
| P2.7.04<br>(0x2704)                     | Expansion card Communication Timeout                     | 0.1~60.0(s)                                                                                                                                                                                                                                                                                                                                       | 5.0           | Any                 | "P2.7.04"   |
| P2.7.05<br>(0x2705)                     | Expansion card Data Transmission Format                  | Ones:MODBUS data format<br>0:ASCII Mode (Reserved)<br>1:RTU Mode<br>Tens:PROFIBUS data format<br>0:PPO1<br>1:PPO2<br>2:PPO3<br>3:PPO5                                                                                                                                                                                                             | 1             | Any                 | "P2.7.05"   |
| P2.7.06<br>(0x2706)                     | Expansion card MODBUS communication data reply or not    | 0:Reply<br>1:No reply                                                                                                                                                                                                                                                                                                                             | 0             | Read only in run    | "P2.7.06"   |
| P2.7.07<br>(0x2707)                     | Expansion card communication error enable                | Ones:<br>0:Disable<br>1:Enable(The fault can not be automatically reset)<br>2:Enable(The fault can be automatically reset)<br>Tens: Reserved<br>Hundreds:<br>0: No processing<br>1: Inter-board communication timeout, no response to the master station<br>Thousands:<br>Inter-board communication timeout time (in seconds), maximum 15 seconds | H.0           | Any                 | "P2.7.07"   |
| P2.7.08<br>(0x2708)                     | first segment of IP Address                              | 1~255                                                                                                                                                                                                                                                                                                                                             | 192           | Any                 | "P2.7.08"   |
| P2.7.09<br>(0x2709)                     | second segment of IP Address                             | 0~255                                                                                                                                                                                                                                                                                                                                             | 168           | Any                 | "P2.7.09"   |
| P2.7.10<br>(0x270A)                     | third segment of IP Address(DP Address)(CANopen Address) | IP:0~255<br>DP:1~126<br>CANopen:1~127                                                                                                                                                                                                                                                                                                             | 1             | Any                 | "P2.7.10"   |
| P2.7.11<br>(0x270B)                     | fourth segment of IP Address(CANopen Baud Rate)          | IP:1~254<br>CANopen:1,1000K<br>2,500K<br>3,250K<br>4,125K<br>5,100K<br>6,50K                                                                                                                                                                                                                                                                      | 100           | Any                 | "P2.7.11"   |
| P2.7.12                                 | first segment of subnet                                  |                                                                                                                                                                                                                                                                                                                                                   | 255           | Any                 | "P2.7.12"   |

| Function Code and Communication Address | Function Code Name                            | Setting Description                                                                                                                                                                                                                | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| (0x270C)                                | mask                                          | 0~255                                                                                                                                                                                                                              |               |                     |             |
| P2.7.13<br>(0x270D)                     | second segment of subnet mask                 | 0~255                                                                                                                                                                                                                              | 255           | Any                 | "P2.7.13"   |
| P2.7.14<br>(0x270E)                     | third segment of subnet mask                  | 0~255                                                                                                                                                                                                                              | 255           | Any                 | "P2.7.14"   |
| P2.7.15<br>(0x270F)                     | fourth segment of subnet mask                 | 0~255                                                                                                                                                                                                                              | 0             | Any                 | "P2.7.15"   |
| P2.7.16<br>(0x2710)                     | first segment of gateway                      | 0~255                                                                                                                                                                                                                              | 192           | Any                 | "P2.7.16"   |
| P2.7.17<br>(0x2711)                     | second segment of gateway                     | 0~255                                                                                                                                                                                                                              | 168           | Any                 | "P2.7.17"   |
| P2.7.18<br>(0x2712)                     | third segment of gateway                      | 0~255                                                                                                                                                                                                                              | 1             | Any                 | "P2.7.18"   |
| P2.7.19<br>(0x2713)                     | fourth segment of gateway                     | 0~255                                                                                                                                                                                                                              | 1             | Any                 | "P2.7.19"   |
| P2.7.20<br>(0x2714)                     | first word of MAC Address                     | 0~H.FFFF                                                                                                                                                                                                                           | H.4853        | Any                 | "P2.7.20"   |
| P2.7.21<br>(0x2715)                     | second word of MAC Address                    | 0~H.FFFF                                                                                                                                                                                                                           | H.0057        | Any                 | "P2.7.21"   |
| P2.7.22<br>(0x2716)                     | last word of MAC Address                      | 0~H.FFFF                                                                                                                                                                                                                           | H.5500        | Any                 | "P2.7.22"   |
| P2.7.23<br>(0x2717)                     | DHCP ENABLE                                   | 0:Disable<br>1:Enable                                                                                                                                                                                                              | 0             | Any                 | "P2.7.23"   |
| P2.7.24<br>(0x2718)                     | TCP Listen timeout reset                      | 0:Disable<br>1:Enable                                                                                                                                                                                                              | 0             | Any                 | "P2.7.24"   |
| P2.7.25<br>(0x2719)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.25"   |
| P2.7.26<br>(0x271A)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.26"   |
| P2.7.27<br>(0x271B)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.27"   |
| P2.7.28<br>(0x271C)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.28"   |
| P2.7.29<br>(0x271D)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.29"   |
| P2.7.30<br>(0x271E)                     | Reserved                                      | 0~65535                                                                                                                                                                                                                            | 0             | Any                 | "P2.7.30"   |
| P2.7.31<br>(0x271F)                     | 6 in 1 Expansion card communications protocol | 0:None<br>1:PROFINET<br>2:EtherCAT<br>3:Modbus TCP<br>4:EtherNet IP<br>5:CANopen<br>6:PROFIBUS<br>7:Reserved<br>8:Reserved<br>9:Reserved<br>10:Reserved<br>11:Reserved<br>12:Reserved<br>13:Reserved<br>14:Reserved<br>15:Reserved | 0             | Any                 | "P2.7.31"   |

### 9.2.3.7. P2.8 Standard 485 Settings of This Device

| Function Code and Communication Address | Function Code Name                              | Setting Description                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P2.8.00<br>(0x2800)                     | Standard Communication Baud Rate of This Device | Ones:MODBUS baud rate<br>0:1200<br>1:2400<br>2:4800<br>3:9600<br>4:19200<br>5:38400 | H.3           | Any                 | "P2.8.00"   |

### 9.3 Appendix III: Faults and Troubleshooting

|                     |                                                                                  |                                                                                                                                   |     |                  |           |
|---------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----|------------------|-----------|
|                     |                                                                                  | 6:57600<br>7:115200                                                                                                               |     |                  |           |
| P2.8.01<br>(0x2801) | Standard Communication Data Format of This Device                                | 0:No Verification (8-N-2)<br>1:Even Parity Verification (8-E-1)<br>2:Odd Parity Verification (8-O-1)<br>3:No Verification (8-N-1) | 0   | Any              | "P2.8.01" |
| P2.8.02<br>(0x2802) | Reserved                                                                         | 0~65535                                                                                                                           | 0   | Any              | "P2.8.02" |
| P2.8.03<br>(0x2803) | Standard Communication Response Delay of This Device                             | 0~20(ms)                                                                                                                          | 2   | Any              | "P2.8.03" |
| P2.8.04<br>(0x2804) | Standard Communication Timeout of This Device                                    | 0.1~60.0(s)                                                                                                                       | 5.0 | Any              | "P2.8.04" |
| P2.8.05<br>(0x2805) | Standard Communication Data Transmission Format of This Device                   | 0:ASCII Mode (Reserved)<br>1:RTU Mode                                                                                             | 1   | Any              | "P2.8.05" |
| P2.8.06<br>(0x2806) | Does the standard communication of this device using MODBUS protocol return data | 0:Reply<br>1:No reply                                                                                                             | 0   | Read only in run | "P2.8.06" |
| P2.8.07<br>(0x2807) | Standard Communication Error enable for This Device's Built-in Communication     | 0:Disable<br>1:Enable(The fault can not be automatically reset)<br>2:Enable(The fault can be automatically reset)                 | 0   | Any              | "P2.8.07" |
| P2.8.08<br>(0x2808) | Standard Communication Trigger Function Enable for This Device                   | 0:Disable<br>1:Enable                                                                                                             | 0   | Any              | "P2.8.08" |

## 9.2.4. P3 Group Application Function 1

### 9.2.4.1. P3.0 Multi-segment Speed and Simple PLC

| Function Code and Communication Address | Function Code Name             | Setting Description                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.0.00<br>(0x3000)                     | Simple PLC Running Mode        | 0:End of Single Running and Stop<br>1:End of Single Running and Save Final Value<br>2:Continuous Running<br>3:Cycle N Times                         | 0             | Any                 | "P3.0.00"   |
| P3.0.01<br>(0x3001)                     | Cycle number(s), N             | 0~65000                                                                                                                                             | 0             | Any                 | "P3.0.01"   |
| P3.0.02<br>(0x3002)                     | Option of PLC Power-off Memory | 0:Ones:Option of Power-off Memory<br>1:No Power-off Memory<br>1:Power-off Memory<br>Tens:Stop Memory Selection<br>0:No Stop Memory<br>1:Stop Memory | 0             | Any                 | "P3.0.02"   |
| P3.0.03<br>(0x3003)                     | Phase Directive 0              | -100.0~100.0(%)                                                                                                                                     | 0.0           | Any                 | "P3.0.03"   |
| P3.0.04<br>(0x3004)                     | Phase O Running Time           | 0.0~6500.0(s)                                                                                                                                       | 0.0           | Any                 | "P3.0.04"   |
| P3.0.05<br>(0x3005)                     | Phase Directive 1              | -100.0~100.0(%)                                                                                                                                     | 0.0           | Any                 | "P3.0.05"   |
| P3.0.06<br>(0x3006)                     | Phase 1 Running Time           | 0.0~6500.0(s)                                                                                                                                       | 0.0           | Any                 | "P3.0.06"   |
| P3.0.07<br>(0x3007)                     | Phase Directive 2              | -100.0~100.0(%)                                                                                                                                     | 0.0           | Any                 | "P3.0.07"   |
| P3.0.08<br>(0x3008)                     | Phase 2 Running Time           | 0.0~6500.0(s)                                                                                                                                       | 0.0           | Any                 | "P3.0.08"   |
| P3.0.09<br>(0x3009)                     | Phase Directive 3              | -100.0~100.0(%)                                                                                                                                     | 0.0           | Any                 | "P3.0.09"   |
| P3.0.10<br>(0x300A)                     | Phase 3 Running Time           | 0.0~6500.0(s)                                                                                                                                       | 0.0           | Any                 | "P3.0.10"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name    | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.0.11<br>(0x300B)                     | Phase Directive 4     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.11"   |
| P3.0.12<br>(0x300C)                     | Phase 4 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.12"   |
| P3.0.13<br>(0x300D)                     | Phase Directive 5     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.13"   |
| P3.0.14<br>(0x300E)                     | Phase 5 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.14"   |
| P3.0.15<br>(0x300F)                     | Phase Directive 6     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.15"   |
| P3.0.16<br>(0x3010)                     | Phase 6 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.16"   |
| P3.0.17<br>(0x3011)                     | Phase Directive 7     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.17"   |
| P3.0.18<br>(0x3012)                     | Phase 7 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.18"   |
| P3.0.19<br>(0x3013)                     | Phase Directive 8     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.19"   |
| P3.0.20<br>(0x3014)                     | Phase 8 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.20"   |
| P3.0.21<br>(0x3015)                     | Phase Directive 9     | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.21"   |
| P3.0.22<br>(0x3016)                     | Phase 9 Running Time  | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.22"   |
| P3.0.23<br>(0x3017)                     | Phase Directive 10    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.23"   |
| P3.0.24<br>(0x3018)                     | Phase 10 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.24"   |
| P3.0.25<br>(0x3019)                     | Phase Directive 11    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.25"   |
| P3.0.26<br>(0x301A)                     | Phase 11 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.26"   |
| P3.0.27<br>(0x301B)                     | Phase Directive 12    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.27"   |
| P3.0.28<br>(0x301C)                     | Phase 12 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.28"   |
| P3.0.29<br>(0x301D)                     | Phase Directive 13    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.29"   |
| P3.0.30<br>(0x301E)                     | Phase 13 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.30"   |
| P3.0.31<br>(0x301F)                     | Phase Directive 14    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.31"   |
| P3.0.32<br>(0x3020)                     | Phase 14 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.32"   |
| P3.0.33<br>(0x3021)                     | Phase Directive 15    | -100.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.0           | Any                 | "P3.0.33"   |
| P3.0.34<br>(0x3022)                     | Phase 16 Running Time | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0           | Any                 | "P3.0.34"   |
| P3.0.35<br>(0x3023)                     | Phase 0 attribution   | Ones:Acceleration & Deceleration Time Selection (Invalid Multiplex Directive)<br>0:Acceleration & Deceleration Time 1<br>1:Acceleration & Deceleration Time 2<br>2:Acceleration & Deceleration Time 3<br>3:Acceleration & Deceleration Time 4<br>Tens:Frequency Source Selection (Valid Multiplex Directive)<br>0:Current Phase Directive<br>1:Keyboard Frequency Reference<br>2:AI1 Input<br>3:AI2 Input<br>4:AI3 Input<br>5:PULS Reference (HDI1)<br>6:PID Reference<br>7:Operation Result 1<br>8:Operation Result 2<br>9:Operation Result 3<br>A:Operation Result 4<br>Hundreds:running direction | H.000         | Any                 | "P3.0.35"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name           | Setting Description                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------|------------------------------------------------|---------------|---------------------|-------------|
|                                         |                              | 0:Default direction<br>1:Negation of Direction |               |                     |             |
| P3.0.36<br>(0x3024)                     | Phase 1 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.36"   |
| P3.0.37<br>(0x3025)                     | Phase 2 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.37"   |
| P3.0.38<br>(0x3026)                     | Phase 3 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.38"   |
| P3.0.39<br>(0x3027)                     | Phase 4 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.39"   |
| P3.0.40<br>(0x3028)                     | Phase 5 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.40"   |
| P3.0.41<br>(0x3029)                     | Phase 6 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.41"   |
| P3.0.42<br>(0x302A)                     | Phase 7 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.42"   |
| P3.0.43<br>(0x302B)                     | Phase 8 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.43"   |
| P3.0.44<br>(0x302C)                     | Phase 9 attribution          | Same as P3.0.35                                | H.000         | Any                 | "P3.0.44"   |
| P3.0.45<br>(0x302D)                     | Phase 10 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.45"   |
| P3.0.46<br>(0x302E)                     | Phase 11 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.46"   |
| P3.0.47<br>(0x302F)                     | Phase 12 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.47"   |
| P3.0.48<br>(0x3030)                     | Phase 13 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.48"   |
| P3.0.49<br>(0x3031)                     | Phase 14 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.49"   |
| P3.0.50<br>(0x3032)                     | Phase 15 attribution         | Same as P3.0.35                                | H.000         | Any                 | "P3.0.50"   |
| P3.0.51<br>(0x3033)                     | Simple PLC Running Time Unit | 0:s<br>1:min<br>2:h                            | 0             | Any                 | "P3.0.51"   |

#### 9.2.4.2. P3.1 Process PID Control

| Function Code and Communication Address | Function Code Name   | Setting Description                                                                                                                                                                                                                                                                                                                                                              | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.1.00<br>(0x3100)                     | PID Reference Source | 0:Digital Reference (P3.1.01)<br>1: External Terminal AI1 Reference<br>2: External Terminal AI2 Reference<br>3:External Terminal AI3 Reference<br>4:PULS Reference (HDI1))<br>5: Communication Reference<br>6:Multiplex Directive Terminal Reference<br>7:Simple PLC Reference<br>8:Operation Result 1<br>9:Operation Result 2<br>10:Operation Result 3<br>11:Operation Result 4 | 0             | Any                 | "P3.1.00"   |
| P3.1.01<br>(0x3101)                     | PID Value Reference  | 0.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                     | 50.0          | Any                 | "P3.1.01"   |
| P3.1.02<br>(0x3102)                     | PID Feedback Source  | 0:External Terminal AI1 Reference<br>1:External Terminal AI2 Reference<br>2:AI1-AI2<br>3:AI1+AI2<br>4:PULS Reference (P2.0.12)<br>5: Communication Reference<br>6:MAX[AI1,AI2]<br>7:MIN[AI1,AI2]<br>8:Switch of Multiplex Directive Terminal on the above conditions<br>9:Operation Result 1<br>10:Operation Result 2                                                            | 0             | Any                 | "P3.1.02"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                             | Setting Description                                                                                                                    | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                | 11:Operation Result 3<br>12:Operation Result 4                                                                                         |               |                     |             |
| P3.1.03<br>(0x3103)                     | PID Action Direction                           | 0:Direct Action<br>1:Reverse Action                                                                                                    | 0             | Any                 | "P3.1.03"   |
| P3.1.04<br>(0x3104)                     | PID Reference Feedback Range                   | 0~65535                                                                                                                                | 1000          | Any                 | "P3.1.04"   |
| P3.1.05<br>(0x3105)                     | Proportional Gains KP1                         | 0.0~100.0                                                                                                                              | 20.0          | Any                 | "P3.1.05"   |
| P3.1.06<br>(0x3106)                     | Integral Time TI1                              | 0.01~10.00(s)                                                                                                                          | 2.00          | Any                 | "P3.1.06"   |
| P3.1.07<br>(0x3107)                     | Derivative Time TD1                            | 0.000~10.000(s)                                                                                                                        | 0.000         | Any                 | "P3.1.07"   |
| P3.1.08<br>(0x3108)                     | PID Deviation Limit                            | 0.0~100.0(%)                                                                                                                           | 0.0           | Any                 | "P3.1.08"   |
| P3.1.09<br>(0x3109)                     | PID Feedback Filtering time                    | 0.00~60.00(s)                                                                                                                          | 0.00          | Any                 | "P3.1.09"   |
| P3.1.10<br>(0x310A)                     | Proportional Gains KP2                         | 0.0~100.0                                                                                                                              | 20.0          | Any                 | "P3.1.10"   |
| P3.1.11<br>(0x310B)                     | Integral Time TI2                              | 0.01~10.00(s)                                                                                                                          | 2.00          | Any                 | "P3.1.11"   |
| P3.1.12<br>(0x310C)                     | Derivative Time TD2                            | 0.000~10.000(s)                                                                                                                        | 0.000         | Any                 | "P3.1.12"   |
| P3.1.13<br>(0x310D)                     | PID Switch Conditions                          | 0:No Switch<br>1:Switch through Terminals<br>2:Switch through Deviation                                                                | 0             | Any                 | "P3.1.13"   |
| P3.1.14<br>(0x310E)                     | PID Switch Deviation 1                         | 0.0~P3.1.15(%)                                                                                                                         | 20.0          | Any                 | "P3.1.14"   |
| P3.1.15<br>(0x310F)                     | PID Switch Deviation 2                         | P3.1.14~100.0(%)                                                                                                                       | 80.0          | Any                 | "P3.1.15"   |
| P3.1.16<br>(0x3110)                     | PID Initial Value                              | 0.0~100.0(%)                                                                                                                           | 0.0           | Any                 | "P3.1.16"   |
| P3.1.17<br>(0x3111)                     | PID Initial Value Hold Time                    | 0.00~650.00(s)                                                                                                                         | 0.00          | Any                 | "P3.1.17"   |
| P3.1.18<br>(0x3112)                     | PID Feedback Loss Test                         | 000.0%:No Judgment on Feedback Loss<br>000.1%~100.0%                                                                                   | 0.0           | Any                 | "P3.1.18"   |
| P3.1.19<br>(0x3113)                     | PID Feedback Loss Test Time                    | 0.0~20.0(s)                                                                                                                            | 0.0           | Any                 | "P3.1.19"   |
| P3.1.20<br>(0x3114)                     | PID Stop Operation                             | 0:No Operation<br>1:Operation                                                                                                          | 0             | Any                 | "P3.1.20"   |
| P3.1.21<br>(0x3115)                     | PID reverse cutoff frequency                   | 0.00~P0.1.16(Hz)                                                                                                                       | 0.00          | Any                 | "P3.1.21"   |
| P3.1.22<br>(0x3116)                     | PID differential limiter                       | 0.00~100.00(%)                                                                                                                         | 0.10          | Any                 | "P3.1.22"   |
| P3.1.23<br>(0x3117)                     | PID given change time                          | 0.00~650.00(s)                                                                                                                         | 0.00          | Any                 | "P3.1.23"   |
| P3.1.24<br>(0x3118)                     | PID feedback filter time                       | 0.00~100.00(s)                                                                                                                         | 0.10          | Read only in run    | "P3.1.24"   |
| P3.1.25<br>(0x3119)                     | PID output filter time                         | 0.00~60.00(s)                                                                                                                          | 0.00          | Any                 | "P3.1.25"   |
| P3.1.26<br>(0x311A)                     | Maximum Positive Deviation Between Two Outputs | 0.00~100.00(%)                                                                                                                         | 1.00          | Any                 | "P3.1.26"   |
| P3.1.27<br>(0x311B)                     | Maximum Negative Deviation Between Two Outputs | 0.00~100.00(%)                                                                                                                         | 1.00          | Any                 | "P3.1.27"   |
| P3.1.28<br>(0x311C)                     | PID Integral properties                        | Ones:Integral Separation<br>0:Valid<br>1:Invalid<br>Tens:Halt Integral on Output Limit<br>0:Continue Integration<br>1:Stop Integration | 0             | Any                 | "P3.1.28"   |

**9.2.4.3. P3.3 Energy-saving Control**

| Function Code and Communication Address | Function Code Name                 | Setting Description                                                                                                                     | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.3.00 (0x3300)                        | Quit sleep mode                    | 0:Disable<br>1:Sleep and wake up based on frequency<br>2:Sleep and wake up based on pressure deviation<br>3:Universal water supply mode | 0             | Read only in run    | "P3.3.00"   |
| P3.3.01 (0x3301)                        | Awake delay time                   | 0.0~6500.0(s)                                                                                                                           | 5.0           | Any                 | "P3.3.01"   |
| P3.3.02 (0x3302)                        | Sleep delay time                   | 0.0~6500.0(s)                                                                                                                           | 5.0           | Any                 | "P3.3.02"   |
| P3.3.03 (0x3303)                        | Wake-up frequency                  | P0.1.20~P0.1.16(Hz)                                                                                                                     | 0.00          | Any                 | "P3.3.03"   |
| P3.3.04 (0x3304)                        | Sleep frequency                    | P0.1.20~P0.1.16(Hz)                                                                                                                     | 0.00          | Any                 | "P3.3.04"   |
| P3.3.05 (0x3305)                        | Awake pressure deviation           | 00.0%~50.0% (Based on PID Reference Feedback Range )                                                                                    | 5.0           | Any                 | "P3.3.05"   |
| P3.3.06 (0x3306)                        | Sleep pressure deviation           | 00.0%~50.0% (Based on PID Reference Feedback Range )                                                                                    | 5.0           | Any                 | "P3.3.06"   |
| P3.3.07 (0x3307)                        | Sleep boost frequency              | P0.1.20~P7.9.37(Hz)                                                                                                                     | 50.00         | Any                 | "P3.3.07"   |
| P3.3.08 (0x3308)                        | Sleep boost frequency holding time | When set to 0, the sleep boost function is invalid                                                                                      | 0.0           | Any                 | "P3.3.08"   |
| P3.3.09 (0x3309)                        | Sleep boost tolerance              | 0~10.0% (When 10% is set, it corresponds to 10% of the PID set value)                                                                   | 10.0          | Any                 | "P3.3.09"   |
| P3.3.10 (0x330A)                        | Stable Holding Time                | 0.0~1000s (When the set value is 0, the sleep response is slow)                                                                         | 10.0          | Any                 | "P3.3.10"   |

**9.2.4.4. P3.4 Timing Control**

| Function Code and Communication Address | Function Code Name                           | Setting Description                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.4.00 (0x3400)                        | Accumulative Power-on Reaches Reference Time | 0~65000(h)                                                                                                                                          | 0             | Any                 | "P3.4.00"   |
| P3.4.01 (0x3401)                        | Accumulative Running Reaches Reference Time  | 0~65000(h)                                                                                                                                          | 0             | Any                 | "P3.4.01"   |
| P3.4.02 (0x3402)                        | Current Running Reaches Reference Time       | 0.0~6500.0(min)                                                                                                                                     | 0.0           | Read only in run    | "P3.4.02"   |
| P3.4.03 (0x3403)                        | Timing Function Selection                    | 1:min<br>2:h                                                                                                                                        | 1             | Read only in run    | "P3.4.03"   |
| P3.4.04 (0x3404)                        | Fixed Running Time Selection                 | 0:Digital Reference (P3.4.05)<br>1: External Terminal AI1 Reference<br>2:External Terminal AI2 Reference(Analog input range corresponds to P3.4.05) | 0             | Read only in run    | "P3.4.04"   |
| P3.4.05 (0x3405)                        | Fixed Running Time                           | 0000.0~6500.0 (unit depends on P3.4.03)                                                                                                             | 0.0           | Read only in run    | "P3.4.05"   |
| P3.4.06 (0x3406)                        | Enable Timer Function                        | 0:Disable<br>1:Enable                                                                                                                               | 0             | Read only in run    | "P3.4.06"   |

**9.2.4.5. P3.5 Frequency Change Switching**

| Function Code and Communication Address | Function Code Name                        | Setting Description                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------|---------------------------------------------------------------------|---------------|---------------------|-------------|
| P3.5.00 (0x3500)                        | Enable Frequency Change Switching         | 0:Disable<br>1:Enable via function code<br>2:Enable via DI terminal | 0             | Read only in run    | "P3.5.00"   |
| P3.5.01 (0x3401)                        | Maximum Phase-Locked Adjustment Frequency | 0.00~15.00(Hz)                                                      | 3.00          | Read only in run    | "P3.5.01"   |

|                     |                                                                                             |                                      |       |                     |           |
|---------------------|---------------------------------------------------------------------------------------------|--------------------------------------|-------|---------------------|-----------|
| P3.5.02<br>(0x3502) | Phase-locked KP                                                                             | 0~10000                              | 1000  | Read only<br>in run | "P3.5.02" |
| P3.5.03<br>(0x3503) | Phase-locked KI                                                                             | 0~10000                              | 1000  | Read only<br>in run | "P3.5.03" |
| P3.5.04<br>(0x3504) | Delay Time from<br>Wave Blocking to<br>Disconnecting the<br>Inverter Contactor              | 0.000~5.000(s)                       | 0.002 | Read only<br>in run | "P3.5.04" |
| P3.5.05<br>(0x3405) | Delay Time from<br>Disconnecting<br>Inverter to Switching<br>to Line Frequency              | 0.000~5.000(s)                       | 0.020 | Read only<br>in run | "P3.5.05" |
| P3.5.06<br>(0x3506) | Delay Time from<br>Disconnecting Line<br>Frequency to<br>Switching to Inverter<br>Frequency | 0.000~5.000(s)                       | 0.020 | Read only<br>in run | "P3.5.06" |
| P3.5.07<br>(0x3507) | Shutdown Mode for<br>Frequency Change<br>Switching                                          | 0:Inverter Stop<br>1:Direct shutdown | 0     | Read only<br>in run | "P3.5.07" |

#### 9.2.4.6. P3.6 Torque Control

| Function<br>Code and<br>Communic<br>ation<br>Address | Function Code Name                    | Setting Description                                                                                                                                                                                                                                                                                                                                                                             | Default<br>Value | Modificati<br>on Method | Page<br>Number |
|------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------|----------------|
| P3.6.00<br>(0x3600)                                  | Torque Reference<br>Source            | 0:Digital Reference<br>1: External Terminal AI1 Reference<br>2: External Terminal AI2 Reference<br>3: Multiplex Directive Reference<br>4:PULS Reference (HD11))<br>5: Communication Reference<br>6:MIN(AI1,AI2)<br>7:MAX(AI1,AI2)<br>8:Operation Result 1<br>9:Operation Result 2<br>10:Operation Result 3<br>11:Operation Result 4<br>12:Standby Torque Source 1<br>13:Standby Torque Source 2 | 0                | Read only<br>in run     | "P3.6.00"      |
| P3.6.01<br>(0x3601)                                  | Torque Digital<br>Reference           | -200.0~200.0(%)                                                                                                                                                                                                                                                                                                                                                                                 | 150.0            | Any                     | "P3.6.01"      |
| P3.6.02<br>(0x3602)                                  | Torque Control FWD<br>Frequency Limit | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                | 50.00            | Any                     | "P3.6.02"      |
| P3.6.03<br>(0x3603)                                  | Torque Control REV<br>Frequency Limit | 0.00~P0.1.16(Hz)                                                                                                                                                                                                                                                                                                                                                                                | 50.00            | Any                     | "P3.6.03"      |
| P3.6.04<br>(0x3604)                                  | Torque Acceleration<br>Time           | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                   | 0.0              | Any                     | "P3.6.04"      |
| P3.6.05<br>(0x3605)                                  | Torque Deceleration<br>Time           | 0.0~6500.0(s)                                                                                                                                                                                                                                                                                                                                                                                   | 0.0              | Any                     | "P3.6.05"      |
| P3.6.06<br>(0x3606)                                  | Torque filtering time                 | 0.00~10.00(s)                                                                                                                                                                                                                                                                                                                                                                                   | 0.00             | Any                     | "P3.6.06"      |

#### 9.2.4.7. P3.7 Droop Control

| Function<br>Code and<br>Communic<br>ation<br>Address | Function Code Name | Setting Description | Default<br>Value | Modificati<br>on Method | Page<br>Number |
|------------------------------------------------------|--------------------|---------------------|------------------|-------------------------|----------------|
| P3.7.00<br>(0x3700)                                  | Droop Control      | 0.00~10.00(Hz)      | 0.00             | Any                     | "P3.7.00"      |

## 9.2.5. P4 Group Special Adjustment

### 9.2.5.1. P4.0 Asynchronous Motor Vector Control

| Function Code and Communication Address | Function Code Name                | Setting Description       | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------|---------------------------|---------------|---------------------|-------------|
| P4.0.11<br>(0x400B)                     | SVC mode                          | 0:Mode 0<br>1:Mode 1(New) | 1             | Read only in run    | "P4.0.11"   |
| P4.0.12<br>(0x400C)                     | SVC Weak Field Current Regulation | 0:Mode 0<br>1:Mode 1(New) | 1             | Read only in run    | "P4.0.12"   |

### 9.2.5.2. P4.1 Synchronous Motor Vector Control

| Function Code and Communication Address | Function Code Name                                                | Setting Description                                                                                                        | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P4.1.00<br>(0x4100)                     | Reserved                                                          | 0~65535                                                                                                                    | 0             | Any                 | "P4.1.00"   |
| P4.1.01<br>(0x4101)                     | Reserved                                                          | 0~65535                                                                                                                    | 0             | Any                 | "P4.1.01"   |
| P4.1.02<br>(0x4102)                     | Max. flux-weakening current                                       | 0.0~300.0(%)                                                                                                               | 110.0         | Any                 | "P4.1.02"   |
| P4.1.03<br>(0x4103)                     | Over modulation coefficient                                       | 100~120(%)                                                                                                                 | 110           | Read only in run    | "P4.1.03"   |
| P4.1.04<br>(0x4104)                     | Voltage margin                                                    | 0~100(%)                                                                                                                   | 5             | Read only in run    | "P4.1.04"   |
| P4.1.05<br>(0x4105)                     | Flux-weakening proportionality coefficient                        | 0~50                                                                                                                       | 0             | Any                 | "P4.1.05"   |
| P4.1.06<br>(0x4106)                     | Flux-weakening Integral coefficient                               | 0~50                                                                                                                       | 5             | Any                 | "P4.1.06"   |
| P4.1.07<br>(0x4107)                     | Manufacturer parameters                                           | 0~1                                                                                                                        | 0             | Read only in run    | "P4.1.07"   |
| P4.1.08<br>(0x4108)                     | Manufacturer parameters                                           | 50~600                                                                                                                     | 100           | Any                 | "P4.1.08"   |
| P4.1.09<br>(0x4109)                     | Magnetic pole position identification method before the operation | 0:Identification before each run<br>1:Identification before first run<br>2:No identification                               | 0             | Read only in run    | "P4.1.09"   |
| P4.1.10<br>(0x410A)                     | Identification current of magnetic pole position before running   | 30~200(%)                                                                                                                  | 120           | Any                 | "P4.1.10"   |
| P4.1.11<br>(0x410B)                     | Manufacturer parameters                                           | 5~200                                                                                                                      | 30            | Any                 | "P4.1.11"   |
| P4.1.12<br>(0x410C)                     | Manufacturer parameters                                           | 5~200                                                                                                                      | 40            | Any                 | "P4.1.12"   |
| P4.1.13<br>(0x410D)                     | Manufacturer parameters                                           | 0~100                                                                                                                      | 0             | Read only in run    | "P4.1.13"   |
| P4.1.14<br>(0x410E)                     | Manufacturer parameters                                           | 0~10                                                                                                                       | 0             | Any                 | "P4.1.14"   |
| P4.1.15<br>(0x410F)                     | PMSVC Low-Speed Current Compensation                              | 0~100(%)                                                                                                                   | 30            | Read only in run    | "P4.1.15"   |
| P4.1.16<br>(0x4110)                     | PMSVC Velocity Filtering Coefficient                              | 0~1000                                                                                                                     | 100           | Any                 | "P4.1.16"   |
| P4.1.17<br>(0x4111)                     | PMSVC Low-Speed Velocity Filtering Coefficient                    | 0~1000                                                                                                                     | 200           | Any                 | "P4.1.17"   |
| P4.1.18<br>(0x4112)                     | PMSVC Low-Speed Current Compensation Mode                         | 0: Limited by torque upper limit<br>1: Constant value compensation<br>2: Constant value plus real-time torque compensation | 0             | Any                 | "P4.1.18"   |
| P4.1.19<br>(0x4113)                     | PMSVC Low-Speed Current Compensation cutoff frequency             | 20~100(%)                                                                                                                  | 20            | Read only in run    | "P4.1.19"   |
| P4.1.20<br>(0x4114)                     | Identification current of magnetic pole position during tuning    | 30~200(%)                                                                                                                  | 100           | Any                 | "P4.1.20"   |

| Function Code and Communication Address | Function Code Name                                                  | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------------------------------------|---------------------|---------------|---------------------|-------------|
| P4.1.21<br>(0x4115)                     | The switching torque of PMSVC low-speed current compensation mode 0 | 1~50(%)             | 25            | Read only in run    | "P4.1.21"   |

### 9.2.5.3. P4.2 Asynchronous Motor VF Control

| Function Code and Communication Address | Function Code Name                                                     | Setting Description                                                                                                                                                                                                                                                                                          | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P4.2.00<br>(0x4200)                     | Automatic Frequency Increase Enable                                    | 0:Disable<br>1:Enable                                                                                                                                                                                                                                                                                        | 0             | Read only in run    | "P4.2.00"   |
| P4.2.01<br>(0x4201)                     | Auto Frequency Increase Kp                                             | 0~100                                                                                                                                                                                                                                                                                                        | 50            | Any                 | "P4.2.01"   |
| P4.2.02<br>(0x4202)                     | Auto Frequency Increase Ki                                             | 0~100                                                                                                                                                                                                                                                                                                        | 50            | Any                 | "P4.2.02"   |
| P4.2.03<br>(0x4203)                     | Auto Frequency Ramp Minimum Torque Current                             | 10~100(%)                                                                                                                                                                                                                                                                                                    | 50            | Read only in run    | "P4.2.03"   |
| P4.2.04<br>(0x4204)                     | Auto Frequency Ramp Maximum Regenerative Torque Current                | 10~100(%)                                                                                                                                                                                                                                                                                                    | 20            | Read only in run    | "P4.2.04"   |
| P4.2.05<br>(0x4205)                     | VF Weak Magnetic Field Zone Overcurrent Stall Compensation Coefficient | 50~200(%)                                                                                                                                                                                                                                                                                                    | 50            | Read only in run    | "P4.2.05"   |
| P4.2.06<br>(0x4206)                     | Anti-Stall Maximum Frequency Rise Limit                                | 0~50(Hz)                                                                                                                                                                                                                                                                                                     | 5             | Read only in run    | "P4.2.06"   |
| P4.2.07<br>(0x4207)                     | Voltage Gain for VF Overvoltage Stall Suppression                      | 0~100                                                                                                                                                                                                                                                                                                        | 30            | Any                 | "P4.2.07"   |
| P4.2.08<br>(0x4208)                     | VF Mode                                                                | 0:VF Mode 0<br>1:VF Mode 1(New)                                                                                                                                                                                                                                                                              | 1             | Read only in run    | "P4.2.08"   |
| P4.2.09<br>(0x4209)                     | VF-Separated Voltage Source                                            | 0: Digital Reference (P4.2.10)<br>1: External Terminal AI1 Reference<br>2: External Terminal AI2 Reference<br>3: Multiplex Directive Reference<br>4:PULS Reference (HDI1))<br>5: Communication Reference<br>6: Operation Result 1<br>7: Operation Result 2<br>8: Operation Result 3<br>9: Operation Result 4 | 0             | Read only in run    | "P4.2.09"   |
| P4.2.10<br>(0x420A)                     | Digital setting of the voltage source for VF separation                | 0~2000(V)                                                                                                                                                                                                                                                                                                    | 380           | Read only in run    | "P4.2.10"   |
| P4.2.11<br>(0x420B)                     | The voltage rise time of VF separation                                 | 0~10000(s)                                                                                                                                                                                                                                                                                                   | 0             | Read only in run    | "P4.2.11"   |
| P4.2.12<br>(0x420C)                     | The voltage deceleration time for VF separation                        | 0~10000(s)                                                                                                                                                                                                                                                                                                   | 0             | Read only in run    | "P4.2.12"   |
| P4.2.13<br>(0x420D)                     | VF separation shutdown mode selection                                  | 0:The voltage and frequency decrease at the same time<br>1:Reduce the voltage first, then the frequency                                                                                                                                                                                                      | 0             | Read only in run    | "P4.2.13"   |

### 9.2.5.4. P4.3 Vector Control

| Function Code and Communication Address | Function Code Name          | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------|---------------------|---------------|---------------------|-------------|
| P4.3.00<br>(0x4300)                     | Over modulation coefficient | 100~120(%)          | 105           | Read only in run    | "P4.3.00"   |

### 9.3 Appendix III: Faults and Troubleshooting

|                     |                                          |                                                                                     |    |                  |           |
|---------------------|------------------------------------------|-------------------------------------------------------------------------------------|----|------------------|-----------|
| P4.3.01<br>(0x4301) | field weakening torque limit coefficient | 30~200                                                                              | 80 | Any              | "P4.3.01" |
| P4.3.02<br>(0x4302) | Flux-weakening method                    | 0: No field weakening<br>1: Field weakening method 1<br>2: Field weakening method 2 | 1  | Read only in run | "P4.3.02" |

#### 9.2.5.5. P4.4 TypeC Port Settings

| Function Code and Communication Address | Function Code Name                                                        | Setting Description                                                                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P4.4.00<br>(0x4400)                     | TypeC communication baud rate                                             | Ones:MODBUS baud rate<br>0:1200<br>1:2400<br>2:4800<br>3:9600<br>4:19200<br>5:38400<br>6:57600<br>7:115200<br>8:256000<br>9:460800<br>A:921600<br>B:2500000 | H.7           | Any                 | "P4.4.00"   |
| P4.4.01<br>(0x4401)                     | TypeC communication Data Format                                           | 0:No Verification (8-N-2)<br>1:Even Parity Verification (8-E-1)<br>2:Odd Parity Verification (8-O-1)<br>3:No Verification (8-N-1)                           | 0             | Any                 | "P4.4.01"   |
| P4.4.02<br>(0x4402)                     | Reserved                                                                  | 0~65535                                                                                                                                                     | 0             | Any                 | "P4.4.02"   |
| P4.4.03<br>(0x4403)                     | TypeC communication Response Delay                                        | 0~20(ms)                                                                                                                                                    | 2             | Any                 | "P4.4.03"   |
| P4.4.04<br>(0x4404)                     | TypeC Communication Timeout                                               | 0.1~60.0(s)                                                                                                                                                 | 5.0           | Any                 | "P4.4.04"   |
| P4.4.05<br>(0x4405)                     | TypeC communication Data Transmission Format                              | 0:ASCII Mode (Reserved)<br>1:RTU Mode                                                                                                                       | 1             | Any                 | "P4.4.05"   |
| P4.4.06<br>(0x4406)                     | TypeC communication MODBUS communication data reply or not                | 0:Reply<br>1:No reply                                                                                                                                       | 0             | Read only in run    | "P4.4.06"   |
| P4.4.07<br>(0x4407)                     | TypeC Communication Error enable for This Device's Built-in Communication | 0:Disable<br>1:Enable                                                                                                                                       | 0             | Any                 | "P4.4.07"   |
| P4.4.08<br>(0x4408)                     | The TypeC communication trigger function is enabled                       | 0:Disable<br>1:Enable(The fault can not be automatically reset)<br>2:Enable(The fault can be automatically reset)                                           | 0             | Any                 | "P4.4.08"   |

#### 9.2.5.6. P4.6 Port filtering time

| Function Code and Communication Address | Function Code Name                                                          | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------------------------------------|---------------------|---------------|---------------------|-------------|
| P4.6.00<br>(0x4600)                     | The filtering time of the standard configuration of this machine and HDI1/2 | 0.0~21.2(us)        | 0.0           | Any                 | "P4.6.00"   |
| P4.6.01<br>(0x4601)                     | Expansion Card Filtering Time                                               | 0.0~21.2(us)        | 0.0           | Any                 | "P4.6.01"   |
| P4.6.02<br>(0x4602)                     | TYPE-C filtering time                                                       | 0.0~21.2(us)        | 0.0           | Any                 | "P4.6.02"   |
| P4.6.03<br>(0x4603)                     | Network port filtering time                                                 | 0.0~21.2(us)        | 0.0           | Any                 | "P4.6.03"   |

### 9.2.5.7. P4.7 Network port settings

| Function Code and Communication Address | Function Code Name                                                       | Setting Description                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P4.7.00<br>(0x4700)                     | RJ45 communication baud rate                                             | Ones:MODBUS baud rate<br>0:1200<br>1:2400<br>2:4800<br>3:9600<br>4:19200<br>5:38400<br>6:57600<br>7:115200                        | H.4           | Any                 | "P4.7.00"   |
| P4.7.01<br>(0x4701)                     | RJ45 communication Data Format                                           | 0:No Verification (8-N-2)<br>1:Even Parity Verification (8-E-1)<br>2:Odd Parity Verification (8-O-1)<br>3:No Verification (8-N-1) | 0             | Any                 | "P4.7.01"   |
| P4.7.02<br>(0x4702)                     | Reserved                                                                 | 0~65535                                                                                                                           | 0             | Any                 | "P4.7.02"   |
| P4.7.03<br>(0x4703)                     | RJ45 communication Response Delay                                        | 0~20(ms)                                                                                                                          | 2             | Any                 | "P4.7.03"   |
| P4.7.04<br>(0x4704)                     | RJ45 Communication Timeout                                               | 0.1~60.0(s)                                                                                                                       | 5.0           | Any                 | "P4.7.04"   |
| P4.7.05<br>(0x4705)                     | RJ45 communication Data Transmission Format                              | 0:ASCII Mode (Reserved)<br>1:RTU Mode                                                                                             | 1             | Any                 | "P4.7.05"   |
| P4.7.06<br>(0x4706)                     | RJ45 communication MODBUS communication data reply or not                | 0:Reply<br>1:No reply                                                                                                             | 0             | Any                 | "P4.7.06"   |
| P4.7.07<br>(0x4707)                     | RJ45 Communication Error enable for This Device's Built-in Communication | 0:Disable<br>1:Enable(The fault can not be automatically reset)<br>2:Enable(The fault can be automatically reset)                 | 0             | Any                 | "P4.7.07"   |
| P4.7.08<br>(0x4708)                     | RJ45 communication trigger function is enabled                           | 0:Disable<br>1:Enable                                                                                                             | 0             | Any                 | "P4.7.08"   |

### 9.2.6. P5 Group Protection Functions

#### 9.2.6.1. P5.0 Fault Recovery and Action Selection

| Function Code and Communication Address | Function Code Name                        | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                       | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P5.0.00<br>(0x5000)                     | Fault Auto Reset Number                   | 0~20                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0             | Any                 | "P5.0.00"   |
| P5.0.01<br>(0x5001)                     | Waiting Interval Time of Fault Auto Reset | 0.1~100.0(s)                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.0           | Any                 | "P5.0.01"   |
| P5.0.02<br>(0x5002)                     | Fault Protective Action Selection 1       | Ones:Motor Overload<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens:Input Default Phase<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Hundreds:Output Default Phase<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Thousands: External Default<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Ten Thousands:expansion card Communication Abnormality<br>0: Free Stop | 0             | Any                 | "P5.0.02"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                  | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                     | 1: Stop by its Mode<br>2: Continuous Running                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                     |             |
| P5.0.03<br>(0x5003)                     | Fault Protective Action Selection 2 | Ones: Motor Overload<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens: Feedback Loss<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Hundreds: User Customized Fault 1<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Thousands: User Customized Fault 2<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Ten Thousands: Power-on Time Reached<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running                          | 0             | Any                 | "P5.0.03"   |
| P5.0.04<br>(0x5004)                     | Fault Protective Action Selection 3 | Ones: Running Time Reached<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens: Reserved<br>0: Free Stop<br>Hundreds: Parameter Read-Write Abnormality<br>0: Free Stop<br>1: Stop by its Mode<br>Thousands: Motor Overhaul<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Ten Thousands: Fault of 24V Power Supply<br>0: Free Stop<br>1: Stop by its Mode                                                                                                                       | 0             | Any                 | "P5.0.04"   |
| P5.0.05<br>(0x5005)                     | Fault Protective Action Selection 4 | Ones: Larger Speed Deviation<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens: Motor Overspeed<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Hundreds: Initial Position Error<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Thousands: Inverter overload<br>0: Free Stop<br>1: Stop by its Mode<br>2: Derating run<br>Ten Thousands: There is a communication fault in the RS485 interface of this device<br>0: Reserved<br>1: Reserved<br>2: Reserved | 0             | Any                 | "P5.0.05"   |
| P5.0.06<br>(0x5006)                     | Fault Protective Action Selection 5 | Ones: Over-torque<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens: Reserved<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Hundreds: Ethernet port communication failure<br>0: Free Stop                                                                                                                                                                                                                                                                                    | 0             | Any                 | "P5.0.06"   |

| Function Code and Communication Address | Function Code Name                                   | Setting Description                                                                                                                                                                                                                                                                                                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                      | 1: Stop by its Mode<br>2: Continuous Running<br>Thousands: Type-C communication failure<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Ten Thousands: Reserved<br>0:Reserved<br>1:Reserved<br>2:Reserved                                                                                                                                                                |               |                     |             |
| P5.0.07<br>(0x5007)                     | Fault Protective Action Selection 6                  | Ones: Reserved<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Tens: Reserved<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Hundreds: Reserved<br>0: Free Stop<br>1: Stop by its Mode<br>2: Continuous Running<br>Thousands:Reserved<br>0:Reserved<br>1:Reserved<br>2:Reserved<br>Ten Thousands: Reserved<br>0:Reserved<br>1:Reserved<br>2:Reserved | 0             | Any                 | "P5.0.07"   |
| P5.0.08<br>(0x5008)                     | Fault Protective Action Selection 7                  | Same as P5.0.07                                                                                                                                                                                                                                                                                                                                                                             | 0             | Any                 | "P5.0.08"   |
| P5.0.09<br>(0x5009)                     | Fault Protective Action Selection 8                  | Same as P5.0.07                                                                                                                                                                                                                                                                                                                                                                             | 0             | Any                 | "P5.0.09"   |
| P5.0.10<br>(0x500A)                     | Fault Protective Action Selection 9                  | Same as P5.0.07                                                                                                                                                                                                                                                                                                                                                                             | 0             | Any                 | "P5.0.10"   |
| P5.0.11<br>(0x500B)                     | Fault Protective Action Selection 10                 | Same as P5.0.07                                                                                                                                                                                                                                                                                                                                                                             | 0             | Any                 | "P5.0.11"   |
| P5.0.12<br>(0x500C)                     | Continuous Running Frequency Selection when at Fault | 0:Running at Current Frequency<br>1:Running at Reference frequency<br>2:Running at Upper Frequency<br>3:Running at Lower Frequency<br>4:Running at Back Frequency for Abnormality                                                                                                                                                                                                           | 0             | Any                 | "P5.0.12"   |
| P5.0.13<br>(0x500D)                     | Backup Frequency for Abnormality                     | 0.0~100.0(%)                                                                                                                                                                                                                                                                                                                                                                                | 100.0         | Any                 | "P5.0.13"   |

### 9.2.6.2. P5.1 Motor Protection Functions

| Function Code and Communication Address | Function Code Name                    | Setting Description                                       | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------|-----------------------------------------------------------|---------------|---------------------|-------------|
| P5.1.01<br>(0x5101)                     | Motor Overload Protection             | 0:Disabled<br>1:Enable                                    | 1             | Any                 | "P5.1.01"   |
| P5.1.02<br>(0x5102)                     | Motor Overload Protection Level       | 0.20~10.00                                                | 1.00          | Any                 | "P5.1.02"   |
| P5.1.03<br>(0x5103)                     | Motor Overload Alarm System           | 50~100(%)                                                 | 80            | Any                 | "P5.1.03"   |
| P5.1.04<br>(0x5104)                     | Type of motor temperature sensor      | 0:No temperature sensor<br>1:PT100<br>2:PT1000<br>3:KTY84 | 0             | Any                 | "P5.1.04"   |
| P5.1.05<br>(0x5105)                     | Thermal protection threshold of motor | 0~200(°C)                                                 | 110           | Any                 | "P5.1.05"   |
| P5.1.06<br>(0x5106)                     | Overheat pre-alarm threshold of motor | 0~200(°C)                                                 | 90            | Any                 | "P5.1.06"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                          | Setting Description                                                                                                                                                                                       | Default Value | Modification Method | Page Number |
|-----------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P5.1.07<br>(0x5107)                     | Temperature detection<br>Enable of motor                    | 0: No detection<br>1: Reserved<br>2: Pass AI3<br>3: Combination Detection via AI1 and AO2                                                                                                                 | 0             | Any                 | "P5.1.07"   |
| P5.1.08<br>(0x5108)                     | A multiple of the rated current of the maximum output motor | 10.0~800.0(%)                                                                                                                                                                                             | 300.0         | Any                 | "P5.1.08"   |
| P5.1.09<br>(0x5109)                     | A multiple of the rated voltage of the maximum output motor | 10.0~400.0(%)                                                                                                                                                                                             | 100.0         | Any                 | "P5.1.09"   |
| P5.1.10<br>(0x510A)                     | Maximum output voltage mode                                 | Ones: VF control<br>0: Only the bus voltage is associated<br>1: Correlate P5.1.09 with bus voltage<br>Tens: SVC control<br>0: Only the bus voltage is associated<br>1: Correlate P5.1.09 with bus voltage | H.10          | Read only in run    | "P5.1.10"   |
| P5.1.11<br>(0x510B)                     | Over Torque Protection Method                               | 0: No Protection<br>1: Full Protection<br>2: Only During Constant Speed Protection                                                                                                                        | 0             | Any                 | "P5.1.11"   |
| P5.1.12<br>(0x510C)                     | Over Torque Protection Limit                                | 0.0~800.0(%)                                                                                                                                                                                              | 150.0         | Any                 | "P5.1.12"   |
| P5.1.13<br>(0x510D)                     | Over Torque Protection Delay Time                           | 0.00~60.00(s)                                                                                                                                                                                             | 2.00          | Any                 | "P5.1.13"   |
| P5.1.14<br>(0x510E)                     | Stall Protection Enable                                     | 0~1                                                                                                                                                                                                       | 0             | Any                 | "P5.1.14"   |
| P5.1.15<br>(0x510F)                     | Stall Protection Feedback Frequency                         | 0.00~20.00(Hz)                                                                                                                                                                                            | 5.00          | Any                 | "P5.1.15"   |
| P5.1.16<br>(0x5110)                     | Stall Protection Delay Time                                 | 0.00~60.00(s)                                                                                                                                                                                             | 2.00          | Any                 | "P5.1.16"   |
| P5.1.17<br>(0x5111)                     | Stall Protection frequency offset                           | 0.00~10.00(Hz)                                                                                                                                                                                            | 2.00          | Any                 | "P5.1.17"   |

#### 9.2.6.3. P5.2 Momentary Power Interruption Handling (Under-voltage Suppression)

| Function Code and Communication Address | Function Code Name                                       | Setting Description                                    | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------------|--------------------------------------------------------|---------------|---------------------|-------------|
| P5.2.00<br>(0x5200)                     | Action Selection for Momentary Interruption              | 0: Valid<br>1: Deceleration<br>2: Stop by Deceleration | 0             | Read only in run    | "P5.2.00"   |
| P5.2.01<br>(0x5201)                     | Judgment Time of Momentary Interruption Voltage Recovery | 0.0~100.0(s)                                           | 0.5           | Any                 | "P5.2.01"   |
| P5.2.02<br>(0x5202)                     | Voltage Judgment for Momentary Interruption Action       | 40%~100% (Standard Bus line voltage)                   | 80            | Any                 | "P5.2.02"   |
| P5.2.03<br>(0x5203)                     | Voltage Judgment for Suspension of Momentary Action      | 60%~100%(Standard Bus line voltage)                    | 85            | Read only in run    | "P5.2.03"   |
| P5.2.04<br>(0x5204)                     | Instantaneous stop non-stop Kp                           | 0~100                                                  | 40            | Any                 | "P5.2.04"   |
| P5.2.05<br>(0x5205)                     | Instantaneous stop non-stop Ki                           | 0~100                                                  | 30            | Any                 | "P5.2.05"   |
| P5.2.06<br>(0x5206)                     | Instantaneous stop and deceleration time                 | 0.0~3000.0(s)                                          | 20.0          | Any                 | "P5.2.06"   |

**9.2.6.4. P5.3 Anti-Stall Function**

| Function Code and Communication Address | Function Code Name                                      | Setting Description        | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------------------------|----------------------------|---------------|---------------------|-------------|
| P5.3.00 (0x5300)                        | Braking Use Rate                                        | 0~100(%)                   | 100           | Any                 | "P5.3.00"   |
| P5.3.01 (0x5301)                        | Undervoltage Point setting                              | 60.0~140.0(%)              | 100.0         | Any                 | "P5.3.01"   |
| P5.3.02 (0x5302)                        | Fast current limit enable                               | 0:Disable<br>1:Enable      | 1             | Any                 | "P5.3.02"   |
| P5.3.03 (0x5303)                        | Overspeed Test                                          | 0.0~50.0(%)                | 20.0          | Any                 | "P5.3.03"   |
| P5.3.04 (0x5304)                        | Overspeed Test Time                                     | 0.0:No Test<br>00.1s~60.0s | 1.0           | Any                 | "P5.3.04"   |
| P5.3.05 (0x5305)                        | Speed Deviation greater than Test Value                 | 0.0~50.0(%)                | 20.0          | Any                 | "P5.3.05"   |
| P5.3.06 (0x5306)                        | Speed Deviation greater than Test Time                  | 0.0:No Test<br>00.1s~60.0s | 5.0           | Any                 | "P5.3.06"   |
| P5.3.07 (0x5307)                        | Overvoltage Stall Protection Sensitivity                | 0~100                      | 5             | Any                 | "P5.3.07"   |
| P5.3.08 (0x5308)                        | Overvoltage Stall Protection Voltage Point              | 115~150(%)                 | 143           | Any                 | "P5.3.08"   |
| P5.3.09 (0x5309)                        | v <sub>f</sub> Overcurrent Stall Protection Sensitivity | 0~100                      | 20            | Any                 | "P5.3.09"   |
| P5.3.10 (0x530A)                        | v <sub>f</sub> Overcurrent Stall Protection current     | 50~180(%)                  | Type GP       | Any                 | "P5.3.10"   |
| P5.3.11 (0x530B)                        | Braking voltage on Point                                | 115~150(%)                 | 135           | Any                 | "P5.3.11"   |
| P5.3.12 (0x530C)                        | Max output current of inverter                          | 10.0~200.0(%)              | Type GP       | Any                 | "P5.3.12"   |

**9.2.6.5. P5.4 Frequency, Current, and AI Detection**

| Function Code and Communication Address | Function Code Name                         | Setting Description                                            | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------|----------------------------------------------------------------|---------------|---------------------|-------------|
| P5.4.00 (0x5400)                        | The reference frequency reaches test width | 0.0~100.0(%)                                                   | 0.0           | Any                 | "P5.4.00"   |
| P5.4.01 (0x5401)                        | Frequency Test FDT1                        | 0.00~P0.1.16(Hz)                                               | 50.00         | Any                 | "P5.4.01"   |
| P5.4.02 (0x5402)                        | FDT1 Lagged Value                          | 0.0~100.0(%)                                                   | 5.0           | Any                 | "P5.4.02"   |
| P5.4.03 (0x5403)                        | Frequency Test FDT2                        | 0.00~P0.1.16(Hz)                                               | 50.00         | Any                 | "P5.4.03"   |
| P5.4.04 (0x5404)                        | FDT2 Lagged Value                          | 0.0~100.0(%)                                                   | 5.0           | Any                 | "P5.4.04"   |
| P5.4.05 (0x5405)                        | Any reached frequency tested value 1       | 0.00~P0.1.16(Hz)                                               | 50.00         | Any                 | "P5.4.05"   |
| P5.4.06 (0x5406)                        | Any reached frequency 1 test width         | 0.0~10.0(%)                                                    | 0.0           | Any                 | "P5.4.06"   |
| P5.4.07 (0x5407)                        | Any reached frequency tested value 2       | 0.00~P0.1.16(Hz)                                               | 50.00         | Any                 | "P5.4.07"   |
| P5.4.08 (0x5408)                        | Any reached frequency 2 test width         | 0.0~100.0(%)                                                   | 0.0           | Any                 | "P5.4.08"   |
| P5.4.09 (0x5409)                        | Zero Current Test Level                    | 000.0%~300.0%<br>(100.0% correspond to rated current of motor) | 5.0           | Any                 | "P5.4.09"   |
| P5.4.10 (0x540A)                        | Delay Time for Zero Current Test           | 0.01~600.00(s)                                                 | 0.10          | Any                 | "P5.4.10"   |
| P5.4.11 (0x540B)                        | Output Current Overlimit Value             | 0.0%:No Test<br>000.1%~300.0%                                  | 200.0         | Any                 | "P5.4.11"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                    | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|---------------------------------------|---------------------|---------------|---------------------|-------------|
| P5.4.12 (0x540C)                        | Delay Time for Current Overlimit Test | 0.00~600.00(s)      | 0.00          | Any                 | "P5.4.12"   |
| P5.4.13 (0x540D)                        | Current Level Test 1                  | 0.0~300.0(%)        | 100.0         | Any                 | "P5.4.13"   |
| P5.4.14 (0x540E)                        | Test Width of Current Level 1         | 0.0~300.0(%)        | 0.0           | Any                 | "P5.4.14"   |
| P5.4.15 (0x540F)                        | Current Level Test 2                  | 0.0~300.0(%)        | 100.0         | Any                 | "P5.4.15"   |
| P5.4.16 (0x5410)                        | Test Width of Current Level 2         | 0.0~300.0(%)        | 0.0           | Any                 | "P5.4.16"   |
| P5.4.17 (0x5411)                        | All Input Lower Limit                 | 0.00~P5.4.18(V)     | 3.10          | Any                 | "P5.4.17"   |
| P5.4.18 (0x5412)                        | All Input Upper Limit                 | P5.4.17~11.00(V)    | 6.80          | Any                 | "P5.4.18"   |
| P5.4.19 (0x5413)                        | Model Temperature Reaches Reference   | 0~100(°C)           | 75            | Any                 | "P5.4.19"   |

#### 9.2.6.6. P5.5 Other Protection

| Function Code and Communication Address | Function Code Name                                                    | Setting Description                                                                                                                                                                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P5.5.00 (0x5500)                        | Power-on short circuit to ground enable                               | 0:Disable<br>1:Enable                                                                                                                                                                                                                                       | 1             | Any                 | "P5.5.00"   |
| P5.5.01 (0x5501)                        | Output Short Circuit Detection Enable                                 | 0:Disable<br>1:Enable                                                                                                                                                                                                                                       | 1             | Any                 | "P5.5.01"   |
| P5.5.02 (0x5502)                        | Input Default Phase Protection Sensitivity                            | 01~10 (The smaller it is, the more sensitivity it is)                                                                                                                                                                                                       | 5             | Any                 | "P5.5.02"   |
| P5.5.03 (0x5503)                        | Input Default Phase Protection                                        | Ones:Input phase loss hardware enabled<br>0:Disabled<br>1: Enable (Only One Phase Missing)<br>2: Enable (One Phase Missing, Two Phases Missing, or Three Phases Missing)<br>Tens:Input phase loss software enabled<br>0:Disabled<br>1:Enable                | H.01          | Any                 | "P5.5.03"   |
| P5.5.04 (0x5504)                        | Output Default Phase Protection                                       | 0:Disabled<br>1:Enable                                                                                                                                                                                                                                      | 1             | Any                 | "P5.5.04"   |
| P5.5.08 (0x5508)                        | Fault Output Terminal Action Selection during Fault Auto Reset Period | 0:No Action<br>1:Action                                                                                                                                                                                                                                     | 0             | Any                 | "P5.5.08"   |
| P5.5.09 (0x5509)                        | Output power display mode                                             | 0:Active power<br>1:Inactive power<br>2:Apparent power                                                                                                                                                                                                      | 0             | Any                 | "P5.5.09"   |
| P5.5.10 (0x550A)                        | Reserved                                                              | 0~65535                                                                                                                                                                                                                                                     | 0             | Any                 | "P5.5.10"   |
| P5.5.11 (0x550B)                        | Buffer relay protection enabled                                       | 0:Disabled<br>1:Enable                                                                                                                                                                                                                                      | 1             | Any                 | "P5.5.11"   |
| P5.5.12 (0x550C)                        | Output phase loss detection mode before operation                     | 0: No detection<br>1: Detection before operation only<br>2: Detection during shutdown only<br>3: Detection both before operation and during shutdown<br>4: One-time detection prior to initial operation                                                    | 0             | Read only in run    | "P5.5.12"   |
| P5.5.13 (0x550D)                        | Output phase loss detection interval during shutdown                  | 1~60000(s)                                                                                                                                                                                                                                                  | 10            | Any                 | "P5.5.13"   |
| P5.5.14 (0x550E)                        | Fire mode selection                                                   | Ones: (Fire mode activation method)<br>0: Parameter activation (p5.5.15)<br>1: Terminal activation<br>2: Parameter activation or terminal activation<br>Tens: (Enable method of phase loss detection for fire mode output)<br>0: Parameter enable (p5.5.16) | H.22          | Read only in run    | "P5.5.14"   |

| Function Code and Communication Address | Function Code Name                                                   | Setting Description                                                                                                                              | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                                      | 1: Terminal enable<br>2: Parameter enable or terminal enable                                                                                     |               |                     |             |
| P5.5.15<br>(0x550F)                     | Parameter activation of the fire mode                                | 0: Exit the fire mode<br>1: Fire mode 1 is activated<br>2: Fire mode 2 is activated                                                              | 0             | Any                 | "P5.5.15"   |
| P5.5.16<br>(0x5510)                     | Parameter enable for phase loss detection of the output in fire mode | 0: Disable<br>1: Enable                                                                                                                          | 0             | Any                 | "P5.5.16"   |
| P5.5.17<br>(0x5511)                     | Frequency source selection in fire mode                              | 0: The set frequency in the fire mode is set by the parameter p5.5.19.<br>1: The set frequency in the fire mode is set by the parameter p0.1.08. | 0             | Any                 | "P5.5.17"   |
| P5.5.18<br>(0x5512)                     | Set frequency in fire mode                                           | P0.1.20~P7.9.37(Hz)                                                                                                                              | 50.00         | Any                 | "P5.5.18"   |
| P5.5.19<br>(0x5513)                     | Fault reset time in fire mode                                        | 0.5~20.0                                                                                                                                         | 5.0           | Any                 | "P5.5.19"   |

## 9.2.7. P8 Fault Records

### 9.2.7.1. P8.0 Fault Records Overview

| Function Code and Communication Address | Function Code Name         | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P8.0.00<br>(0x8000)                     | Fault Record 1 (Last Time) | 0: No Fault<br>1: Constant Overcurrent<br>2: Accelerated Overcurrent<br>3: Decelerated Overcurrent<br>4: Constant Overvoltage<br>5: Accelerated Overvoltage<br>6: Decelerated Overvoltage<br>7: Module Fault<br>8: Undervoltage<br>9: Frequency inverter Overload<br>10: Motor Overload<br>11: Input Default Phase<br>12: Output Default Phase<br>13: External Fault<br>14: Communication Abnormality<br>15: Frequency inverter Overheat<br>16: Frequency inverter Hardware Fault<br>17: Motor-to-ground Short Circuit<br>18: Motor Identification Error<br>19: Motor Off-load<br>20: PID Feedback Loss<br>21: User Customized Fault 1<br>22: User Customized Fault 2<br>23: Power-on Time Reached<br>24: Running Time Reached<br>25: Encoder Fault<br>26: Parameter Read-Write Abnormality<br>27: Motor Overheat<br>28: Larger Speed Deviation<br>29: Motor Overspeed<br>30: Initial Position Error<br>31: Current Test Fault<br>32: Contactor<br>33: Abnormality of Current Test<br>34: Fast Current-limiting Timeout<br>35: Motor Switch at Running<br>36: 24V Power Fault<br>37: Driving power supply fault<br>38: Output short circuit<br>39: Reserve<br>40: Buffer Resistance Fault | 0.0           | Read only           | "P8.0.00"   |
| P8.0.01<br>(0x8001)                     | Fault Record 2             | Same as P8.0.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0           | Read only           | "P8.0.01"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name           | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------|---------------------|---------------|---------------------|-------------|
| P8.0.02 (0x8002)                        | Fault Record 3               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.02"   |
| P8.0.03 (0x8003)                        | Fault Record 4               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.03"   |
| P8.0.04 (0x8004)                        | Fault Record 5               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.04"   |
| P8.0.05 (0x8005)                        | Fault Record 6               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.05"   |
| P8.0.06 (0x8006)                        | Fault Record 7               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.06"   |
| P8.0.07 (0x8007)                        | Fault Record 8               | Same as P8.0.00     | 0.0           | Read only           | "P8.0.07"   |
| P8.0.08 (0x8008)                        | Running Time 1 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.08"   |
| P8.0.09 (0x8009)                        | Running Time 2 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.09"   |
| P8.0.10 (0x800A)                        | Running Time 3 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.10"   |
| P8.0.11 (0x800B)                        | Running Time 4 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.11"   |
| P8.0.12 (0x800C)                        | Running Time 5 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.12"   |
| P8.0.13 (0x800D)                        | Running Time 6 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.13"   |
| P8.0.14 (0x800E)                        | Running Time 7 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.14"   |
| P8.0.15 (0x800F)                        | Running Time 8 when at fault | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.0.15"   |

#### 9.2.7.2. P8.1 Fault Record 1 (Most Recent Detailed Information)

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.1.00 (0x8100)                        | Fault record 1 master code (Last Time)   | Same as P8.0.00     | 0             | Read only           | "P8.1.00"   |
| P8.1.01 (0x8101)                        | Fault record 1 Subcode (Last Time)       | 0~9                 | 0             | Read only           | "P8.1.01"   |
| P8.1.02 (0x8102)                        | Fault Frequency 1                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.1.02"   |
| P8.1.03 (0x8103)                        | Fault Current 1                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.1.03"   |
| P8.1.04 (0x8104)                        | Bus line voltage 1 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.1.04"   |
| P8.1.05 (0x8105)                        | Input Terminal State 1 when at fault     | 0~9999              | 0             | Read only           | "P8.1.05"   |
| P8.1.06 (0x8106)                        | Output Terminal State 1 when at fault    | 0~9999              | 0             | Read only           | "P8.1.06"   |
| P8.1.07 (0x8107)                        | Frequency inverter State 1 when at fault | 0~65535             | 0             | Read only           | "P8.1.07"   |
| P8.1.08 (0x8108)                        | Power-on Time 1 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.1.08"   |
| P8.1.09 (0x8109)                        | Running Time 1 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.1.09"   |
| P8.1.10 (0x810A)                        | Module Temperature 1                     | 0~999(°C)           | 0             | Read only           | "P8.1.10"   |
| P8.1.11 (0x810B)                        | Frequency Decimal Point 1 at Fault       | 1~2                 | 2             | Read only           | "P8.1.11"   |
| P8.1.12 (0x810C)                        | Current Decimal Point 1 at Fault         | 1~2                 | 2             | Read only           | "P8.1.12"   |

**9.2.7.3. P8.2 Fault Record 2**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.2.00 (0x8200)                        | Fault record 2 master code               | Same as P8.0.00     | 0             | Read only           | "P8.2.00"   |
| P8.2.01 (0x8201)                        | Fault record 1 Subcode                   | 0~9                 | 0             | Read only           | "P8.2.01"   |
| P8.2.02 (0x8202)                        | Fault Frequency 2                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.2.02"   |
| P8.2.03 (0x8203)                        | Fault Current 2                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.2.03"   |
| P8.2.04 (0x8204)                        | Bus line voltage 2 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.2.04"   |
| P8.2.05 (0x8205)                        | Input Terminal State 2 when at fault     | 0~9999              | 0             | Read only           | "P8.2.05"   |
| P8.2.06 (0x8206)                        | Output Terminal State 2 when at fault    | 0~9999              | 0             | Read only           | "P8.2.06"   |
| P8.2.07 (0x8207)                        | Frequency inverter State 2 when at fault | 0~65535             | 0             | Read only           | "P8.2.07"   |
| P8.2.08 (0x8208)                        | Power-on Time 2 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.2.08"   |
| P8.2.09 (0x8209)                        | Running Time 2 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.2.09"   |
| P8.2.10 (0x820A)                        | Module Temperature 2                     | 0~999(°C)           | 0             | Read only           | "P8.2.10"   |
| P8.2.11 (0x820B)                        | Frequency Decimal Point 2 at Fault       | 1~2                 | 2             | Read only           | "P8.2.11"   |
| P8.2.12 (0x820C)                        | Current Decimal Point 2 at Fault         | 1~2                 | 2             | Read only           | "P8.2.12"   |

**9.2.7.4. P8.3 Fault Record 3**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.3.00 (0x8300)                        | Fault record 3 master code               | Same as P8.0.00     | 0             | Read only           | "P8.3.00"   |
| P8.3.01 (0x8301)                        | Fault record 3 Subcode                   | 0~9                 | 0             | Read only           | "P8.3.01"   |
| P8.3.02 (0x8302)                        | Fault Frequency 3                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.3.02"   |
| P8.3.03 (0x8303)                        | Fault Current 3                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.3.03"   |
| P8.3.04 (0x8304)                        | Bus line voltage 3 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.3.04"   |
| P8.3.05 (0x8305)                        | Input Terminal State 3 when at fault     | 0~9999              | 0             | Read only           | "P8.3.05"   |
| P8.3.06 (0x8306)                        | Output Terminal State 3 when at fault    | 0~9999              | 0             | Read only           | "P8.3.06"   |
| P8.3.07 (0x8307)                        | Frequency inverter State 3 when at fault | 0~65535             | 0             | Read only           | "P8.3.07"   |
| P8.3.08 (0x8308)                        | Power-on Time 3 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.3.08"   |
| P8.3.09 (0x8309)                        | Running Time 3 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.3.09"   |
| P8.3.10 (0x830A)                        | Module Temperature 3                     | 0~999(°C)           | 0             | Read only           | "P8.3.10"   |
| P8.3.11 (0x830B)                        | Frequency Decimal Point 3 at Fault       | 1~2                 | 2             | Read only           | "P8.3.11"   |
| P8.3.12 (0x830C)                        | Current Decimal Point 3 at Fault         | 1~2                 | 2             | Read only           | "P8.3.12"   |

**9.2.7.5. P8.4 Fault Record 4**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.4.00 (0x8400)                        | Fault record 4 master code               | Same as P8.0.00     | 0             | Read only           | "P8.4.00"   |
| P8.4.01 (0x8401)                        | Fault record 4 Subcode                   | 0~9                 | 0             | Read only           | "P8.4.01"   |
| P8.4.02 (0x8402)                        | Fault Frequency 4                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.4.02"   |
| P8.4.03 (0x8403)                        | Fault Current 4                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.4.03"   |
| P8.4.04 (0x8404)                        | Bus line voltage 4 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.4.04"   |
| P8.4.05 (0x8405)                        | Input Terminal State 4 when at fault     | 0~9999              | 0             | Read only           | "P8.4.05"   |
| P8.4.06 (0x8406)                        | Output Terminal State 4 when at fault    | 0~9999              | 0             | Read only           | "P8.4.06"   |
| P8.4.07 (0x8407)                        | Frequency inverter State 4 when at fault | 0~65535             | 0             | Read only           | "P8.4.07"   |
| P8.4.08 (0x8408)                        | Power-on Time 4 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.4.08"   |
| P8.4.09 (0x8409)                        | Running Time 4 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.4.09"   |
| P8.4.10 (0x840A)                        | Module Temperature 4                     | 0~999(°C)           | 0             | Read only           | "P8.4.10"   |
| P8.4.11 (0x840B)                        | Frequency Decimal Point 4 at Fault       | 1~2                 | 2             | Read only           | "P8.4.11"   |
| P8.4.12 (0x840C)                        | Current Decimal Point 4 at Fault         | 1~2                 | 2             | Read only           | "P8.4.12"   |

**9.2.7.6. P8.5 Fault Record 5**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.5.00 (0x8500)                        | Fault record 5 master code               | Same as P8.0.00     | 0             | Read only           | "P8.5.00"   |
| P8.5.01 (0x8501)                        | Fault record 5 Subcode                   | 0~9                 | 0             | Read only           | "P8.5.01"   |
| P8.5.02 (0x8502)                        | Fault Frequency 5                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.5.02"   |
| P8.5.03 (0x8503)                        | Fault Current 5                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.5.03"   |
| P8.5.04 (0x8504)                        | Bus line voltage 5 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.5.04"   |
| P8.5.05 (0x8505)                        | Input Terminal State 5 when at fault     | 0~9999              | 0             | Read only           | "P8.5.05"   |
| P8.5.06 (0x8506)                        | Output Terminal State 5 when at fault    | 0~9999              | 0             | Read only           | "P8.5.06"   |
| P8.5.07 (0x8507)                        | Frequency inverter State 5 when at fault | 0~65535             | 0             | Read only           | "P8.5.07"   |
| P8.5.08 (0x8508)                        | Power-on Time 5 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.5.08"   |
| P8.5.09 (0x8509)                        | Running Time 5 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.5.09"   |
| P8.5.10 (0x850A)                        | Module Temperature 5                     | 0~999(°C)           | 0             | Read only           | "P8.5.10"   |
| P8.5.11 (0x850B)                        | Frequency Decimal Point 5 at Fault       | 1~2                 | 2             | Read only           | "P8.5.11"   |
| P8.5.12 (0x850C)                        | Current Decimal Point 5 at Fault         | 1~2                 | 2             | Read only           | "P8.5.12"   |

**9.2.7.7. P8.6 Fault Record 6**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.6.00 (0x8600)                        | Fault record 6 master code               | Same as P8.0.00     | 0             | Read only           | "P8.6.00"   |
| P8.6.01 (0x8601)                        | Fault record 6 Subcode                   | 0~9                 | 0             | Read only           | "P8.6.01"   |
| P8.6.02 (0x8602)                        | Fault Frequency 6                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.6.02"   |
| P8.6.03 (0x8603)                        | Fault Current 6                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.6.03"   |
| P8.6.04 (0x8604)                        | Bus line voltage 6 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.6.04"   |
| P8.6.05 (0x8605)                        | Input Terminal State 6 when at fault     | 0~9999              | 0             | Read only           | "P8.6.05"   |
| P8.6.06 (0x8606)                        | Output Terminal State 6 when at fault    | 0~9999              | 0             | Read only           | "P8.6.06"   |
| P8.6.07 (0x8607)                        | Frequency inverter State 6 when at fault | 0~65535             | 0             | Read only           | "P8.6.07"   |
| P8.6.08 (0x8608)                        | Power-on Time 6 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.6.08"   |
| P8.6.09 (0x8609)                        | Running Time 6 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.6.09"   |
| P8.6.10 (0x860A)                        | Module Temperature 6                     | 0~999(°C)           | 0             | Read only           | "P8.6.10"   |
| P8.6.11 (0x860B)                        | Frequency Decimal Point 6 at Fault       | 1~2                 | 2             | Read only           | "P8.6.11"   |
| P8.6.12 (0x860C)                        | Current Decimal Point 6 at Fault         | 1~2                 | 2             | Read only           | "P8.6.12"   |

**9.2.7.8. P8.7 Fault Record 7**

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.7.00 (0x8700)                        | Fault record 7 master code               | Same as P8.0.00     | 0             | Read only           | "P8.7.00"   |
| P8.7.01 (0x8701)                        | Fault record 7 Subcode                   | 0~9                 | 0             | Read only           | "P8.7.01"   |
| P8.7.02 (0x8702)                        | Fault Frequency 7                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.7.02"   |
| P8.7.03 (0x8703)                        | Fault Current 7                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.7.03"   |
| P8.7.04 (0x8704)                        | Bus line voltage 7 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.7.04"   |
| P8.7.05 (0x8705)                        | Input Terminal State 7 when at fault     | 0~9999              | 0             | Read only           | "P8.7.05"   |
| P8.7.06 (0x8706)                        | Output Terminal State 7 when at fault    | 0~9999              | 0             | Read only           | "P8.7.06"   |
| P8.7.07 (0x8707)                        | Frequency inverter State 7 when at fault | 0~65535             | 0             | Read only           | "P8.7.07"   |
| P8.7.08 (0x8708)                        | Power-on Time 7 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.7.08"   |
| P8.7.09 (0x8709)                        | Running Time 7 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.7.09"   |
| P8.7.10 (0x870A)                        | Module Temperature 7                     | 0~999(°C)           | 0             | Read only           | "P8.7.10"   |
| P8.7.11 (0x870B)                        | Frequency Decimal Point 7 at Fault       | 1~2                 | 2             | Read only           | "P8.7.11"   |
| P8.7.12 (0x870C)                        | Current Decimal Point 7 at Fault         | 1~2                 | 2             | Read only           | "P8.7.12"   |

### 9.2.7.9. P8.8 Fault Record 8

| Function Code and Communication Address | Function Code Name                       | Setting Description | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------|---------------------|---------------|---------------------|-------------|
| P8.8.00 (0x8800)                        | Fault record 8 master code               | Same as P8.0.00     | 0             | Read only           | "P8.8.00"   |
| P8.8.01 (0x8801)                        | Fault record 8 Subcode                   | 0~9                 | 0             | Read only           | "P8.8.01"   |
| P8.8.02 (0x8802)                        | Fault Frequency 8                        | 0.00~655.35(Hz)     | 0.00          | Read only           | "P8.8.02"   |
| P8.8.03 (0x8803)                        | Fault Current 8                          | 0.00~655.35(A)      | 0.00          | Read only           | "P8.8.03"   |
| P8.8.04 (0x8804)                        | Bus line voltage 8 when at Fault         | 0.0~6553.5(V)       | 0.0           | Read only           | "P8.8.04"   |
| P8.8.05 (0x8805)                        | Input Terminal State 8 when at fault     | 0~9999              | 0             | Read only           | "P8.8.05"   |
| P8.8.06 (0x8806)                        | Output Terminal State 8 when at fault    | 0~9999              | 0             | Read only           | "P8.8.06"   |
| P8.8.07 (0x8807)                        | Frequency inverter State 8 when at fault | 0~65535             | 0             | Read only           | "P8.8.07"   |
| P8.8.08 (0x8808)                        | Power-on Time 8 when at fault            | 0~65535(min)        | 0             | Read only           | "P8.8.08"   |
| P8.8.09 (0x8809)                        | Running Time 8 when at fault             | 0.0~6553.5(min)     | 0.0           | Read only           | "P8.8.09"   |
| P8.8.10 (0x880A)                        | Module Temperature 8                     | 0~999(°C)           | 0             | Read only           | "P8.8.10"   |
| P8.8.11 (0x880B)                        | Frequency Decimal Point 8 at Fault       | 1~2                 | 2             | Read only           | "P8.8.11"   |
| P8.8.12 (0x880C)                        | Current Decimal Point 8 at Fault         | 1~2                 | 2             | Read only           | "P8.8.12"   |

## 9.2.8. P9 Group Monitoring and Special Addresses

### 9.2.8.1. P9.0 Monitoring Parameters

| Function Code and Communication Address | Function Code Name     | Setting Description                                                                                         | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P9.0.00 (0x9000)                        | Running Frequency      | 0.00~655.35(Hz)                                                                                             | 0.00          | Read only           | "P9.0.00"   |
| P9.0.01 (0x9001)                        | Reference frequency    | 0.00~655.35(Hz)                                                                                             | 0.00          | Read only           | "P9.0.01"   |
| P9.0.02 (0x9002)                        | Output Current         | Output current when the frequency inverter runs<br>.01A (inverter Power<75kW)<br>0.1A (inverter Power≥75kW) | 0.00          | Read only           | "P9.0.02"   |
| P9.0.03 (0x9003)                        | Output Voltage         | Output current when the frequency inverter runs                                                             | 0             | Read only           | "P9.0.03"   |
| P9.0.04 (0x9004)                        | Bus Voltage            | Voltage on DC Bus of the frequency inverter                                                                 | 0.0           | Read only           | "P9.0.04"   |
| P9.0.05 (0x9005)                        | Output Torque          | When the frequency inverter runs, the output torque is the percentage of rated torque of the motor          | 0.0           | Read only           | "P9.0.05"   |
| P9.0.06 (0x9006)                        | Output Power           | Output frequency when the frequency inverter runs                                                           | 0.0           | Read only           | "P9.0.06"   |
| P9.0.07 (0x9007)                        | Input Terminal Status  | Check whether the input terminal has signal input                                                           | 0             | Read only           | "P9.0.07"   |
| P9.0.08 (0x9008)                        | Output Terminal Status | Check whether the output terminal has signal output                                                         | 0             | Read only           | "P9.0.08"   |
| P9.0.09 (0x9009)                        | AI1 Voltage            | Check the voltage between AI1 and GND                                                                       | 0.00          | Read only           | "P9.0.09"   |
| P9.0.10 (0x900A)                        | AI2 Voltage            | Check the voltage between AI2 and GND                                                                       | 0.00          | Read only           | "P9.0.10"   |
| P9.0.11 (0x900B)                        | Custom Display Value   | Display coefficient P5.0.15 and the value after conversion of Decimal Point P5.0.16 through customerization | 0.00          | Read only           | "P9.0.11"   |
| P9.0.12 (0x900C)                        | Actual Counting Value  | View actual counting value of the frequency inverter for counting function                                  | 0             | Read only           | "P9.0.12"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                     | Setting Description                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P9.0.13<br>(0x900D)                     | Actual Length Value                    | View actual counting value of the frequency inverter for fixed-length function                                                                    | 0             | Read only           | "P9.0.13"   |
| P9.0.14<br>(0x900E)                     | PID Reference                          | Product of PID reference value and PID reference feedback quantity                                                                                | 0             | Read only           | "P9.0.14"   |
| P9.0.15<br>(0x900F)                     | PID Feedback                           | Product of PID feedback value and PID reference feedback range                                                                                    | 0             | Read only           | "P9.0.15"   |
| P9.0.16<br>(0x9010)                     | Impulse frequency                      | View the frequency of PULSE Impulse Input                                                                                                         | 0.00          | Read only           | "P9.0.16"   |
| P9.0.17<br>(0x9011)                     | Feedback Speed                         | -327.68~327.67(Hz)                                                                                                                                | 0.00          | Read only           | "P9.0.17"   |
| P9.0.18<br>(0x9012)                     | PLC Phase                              | Display which stage the Simple PLC runs at                                                                                                        | 0             | Read only           | "P9.0.18"   |
| P9.0.19<br>(0x9013)                     | Voltage before AI1 Correction          | Voltage between AI1 and GND before AI1 correction                                                                                                 | 0.000         | Read only           | "P9.0.19"   |
| P9.0.20<br>(0x9014)                     | Voltage before AI2 Correction          | Voltage between AI2 and GND before AI2 correction                                                                                                 | 0.000         | Read only           | "P9.0.20"   |
| P9.0.21<br>(0x9015)                     | Line Speed                             | The linear velocity of high-speed pulse sampling is equal to the number of pulses collected per minute divided by the number of pulses per meter. | 0             | Read only           | "P9.0.21"   |
| P9.0.22<br>(0x9016)                     | Current Power-on Time                  | Length of current power-on time                                                                                                                   | 0             | Read only           | "P9.0.22"   |
| P9.0.23<br>(0x9017)                     | Current Running Time                   | Length of current running time                                                                                                                    | 0.0           | Read only           | "P9.0.23"   |
| P9.0.24<br>(0x9018)                     | Residual Running Time                  | Residual running time at Timing Function of P3.1.00                                                                                               | 0.0           | Read only           | "P9.0.24"   |
| P9.0.25<br>(0x9019)                     | Frequency of Frequency Source A        | View the frequency given by Frequency A                                                                                                           | 0.00          | Read only           | "P9.0.25"   |
| P9.0.26<br>(0x901A)                     | Frequency of Frequency Source B        | View the frequency given by Frequency B                                                                                                           | 0.00          | Read only           | "P9.0.26"   |
| P9.0.27<br>(0x901B)                     | Communication Set value                | The value set by corresponding communication address A001 is the percentage of the highest frequency                                              | 0.00          | Read only           | "P9.0.27"   |
| P9.0.28<br>(0x901C)                     | Impulse frequency                      | View the frequency of PULSE Impulse Input                                                                                                         | 0             | Read only           | "P9.0.28"   |
| P9.0.30<br>(0x901E)                     | Actual Distance Value                  | View actual distance value of the distance value of the frequency inverter                                                                        | 0.0           | Read only           | "P9.0.30"   |
| P9.0.31<br>(0x901F)                     | Voltage before AI3 Correction          | Voltage between AI3 and GND before AI3 correction                                                                                                 | 0.000         | Read only           | "P9.0.31"   |
| P9.0.32<br>(0x9020)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.32"   |
| P9.0.33<br>(0x9021)                     | Reserved                               | 0.0~6553.5                                                                                                                                        | 0.0           | Read only           | "P9.0.33"   |
| P9.0.34<br>(0x9022)                     | Motor temperature                      | Real-time detection of motor temperature                                                                                                          | 0             | Read only           | "P9.0.34"   |
| P9.0.35<br>(0x9023)                     | Target Torque                          | -3276.8~3276.7(%)                                                                                                                                 | 0.0           | Read only           | "P9.0.35"   |
| P9.0.37<br>(0x9025)                     | Power Factor Angle                     | -3276.8~3276.7(°C)                                                                                                                                | 0.0           | Read only           | "P9.0.37"   |
| P9.0.38<br>(0x9026)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.38"   |
| P9.0.39<br>(0x9027)                     | AI3 Voltage                            | Check the voltage between AI3 and GND                                                                                                             | 0.00          | Read only           | "P9.0.39"   |
| P9.0.40<br>(0x9028)                     | Output Voltage Value of V/F Separation | 0~65535(V)                                                                                                                                        | 0             | Read only           | "P9.0.40"   |
| P9.0.41<br>(0x9029)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.41"   |
| P9.0.42<br>(0x902A)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.42"   |
| P9.0.43<br>(0x902B)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.43"   |
| P9.0.44<br>(0x902C)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.44"   |
| P9.0.45<br>(0x902D)                     | Reserved                               | 0~65535                                                                                                                                           | 0             | Read only           | "P9.0.45"   |
| P9.0.46<br>(0x902E)                     | Operation Result 1                     | Check the value of operation result 1                                                                                                             | 0             | Read only           | "P9.0.46"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                | Setting Description                              | Default Value | Modification Method | Page Number |
|-----------------------------------------|-----------------------------------|--------------------------------------------------|---------------|---------------------|-------------|
| P9.0.47<br>(0x902F)                     | Operation Result 2                | Check the value of operation result 2            | 0             | Read only           | "P9.0.47"   |
| P9.0.48<br>(0x9030)                     | Operation Result 3                | Check the value of operation result 3            | 0             | Read only           | "P9.0.48"   |
| P9.0.49<br>(0x9031)                     | Operation Result 4                | Check the value of operation result 4            | 0             | Read only           | "P9.0.49"   |
| P9.0.50<br>(0x9032)                     | User Standby Monitoring Value 1   | Check the value of user special function         | 0             | Read only           | "P9.0.50"   |
| P9.0.51<br>(0x9033)                     | User Standby Monitoring Value 2   | Check the value of user special function         | 0             | Read only           | "P9.0.51"   |
| P9.0.52<br>(0x9034)                     | User Standby Monitoring Value 3   | Check the value of user special function         | 0             | Read only           | "P9.0.52"   |
| P9.0.53<br>(0x9035)                     | User Standby Monitoring Value 4   | Check the value of user special function         | 0             | Read only           | "P9.0.53"   |
| P9.0.54<br>(0x9036)                     | User Standby Monitoring Value 5   | Check the value of user special function         | 0             | Read only           | "P9.0.54"   |
| P9.0.55<br>(0x9037)                     | Reserved                          | 0.0~6553.5                                       | 0.0           | Read only           | "P9.0.55"   |
| P9.0.56<br>(0x9038)                     | Reserved                          | 0.0~6553.5                                       | 0.0           | Read only           | "P9.0.56"   |
| P9.0.57<br>(0x9039)                     | Reserved                          | 0.0~6553.5                                       | 0.0           | Read only           | "P9.0.57"   |
| P9.0.59<br>(0x903B)                     | Reserved                          | 0.00~327.67(%)                                   | 0.00          | Read only           | "P9.0.59"   |
| P9.0.60<br>(0x903C)                     | Reserved                          | 0.00~327.67(%)                                   | 0.00          | Read only           | "P9.0.60"   |
| P9.0.61<br>(0x903D)                     | Inverter Running Status           | 0~65535                                          | 0             | Read only           | "P9.0.61"   |
| P9.0.62<br>(0x903E)                     | Reserved                          | 0~65535                                          | 0             | Read only           | "P9.0.62"   |
| P9.0.63<br>(0x903F)                     | Reserved                          | 0.00~327.67(%)                                   | 0.00          | Read only           | "P9.0.63"   |
| P9.0.64<br>(0x9040)                     | Reserved                          | 0.00~327.67(%)                                   | 0.00          | Read only           | "P9.0.64"   |
| P9.0.65<br>(0x9041)                     | Reserved                          | 0~65535                                          | 0             | Read only           | "P9.0.65"   |
| P9.0.66<br>(0x9042)                     | Timing 1 Running time             | 0.0~6553.5                                       | 0.0           | Read only           | "P9.0.66"   |
| P9.0.67<br>(0x9043)                     | Timing 2 Running time             | 0.0~6553.5                                       | 0.0           | Read only           | "P9.0.67"   |
| P9.0.68<br>(0x9044)                     | Set revolving speed               | Set revolving speed of inverter                  | 0             | Read only           | "P9.0.68"   |
| P9.0.69<br>(0x9045)                     | Running speed                     | Output revolving speed while inverter is running | 0             | Read only           | "P9.0.69"   |
| P9.0.70<br>(0x9046)                     | The DI input is 16 bits high      | 0~65535                                          | 0             | Read only           | "P9.0.70"   |
| P9.0.71<br>(0x9047)                     | The DO input is 16 bits high      | 0~65535                                          | 0             | Read only           | "P9.0.71"   |
| P9.0.72<br>(0x9048)                     | Actual Maximum Current Percentage | 0.0~500.0(%)                                     | 180.0         | Read only           | "P9.0.72"   |
| P9.0.73<br>(0x9049)                     | Actual carrier                    | 0.1~100.0(kHz)                                   | 6.0           | Read only           | "P9.0.73"   |
| P9.0.74<br>(0x904A)                     | Inverter Real-Time Overload Ratio | 0.00~200.00(%)                                   | 0.00          | Read only           | "P9.0.74"   |
| P9.0.75<br>(0x904B)                     | Motor Real-Time Overload Ratio    | 0.00~200.00(%)                                   | 0.00          | Read only           | "P9.0.75"   |

#### 9.2.8.2. P9.3 A0 and B0 Parameter Address Mapping

| Function Code and Communication Address | Function Code Name                                     | Setting Description                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------|---------------|---------------------|-------------|
| P9.3.00<br>(0x9300)                     | Mapping 0xA000(only valid under communication control) | 0:No command<br>1:Forward Run<br>2:Reverse Run<br>3:Forward Jogging | 0             | Any                 | "P9.3.00"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                   | Setting Description                                                                                                                                                                                                                           | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                                                      | 4:Reverse Jogging<br>5:Free Stop<br>6:Shutdown By Speed Reduction<br>7:Fault Rest<br>8:Reserved                                                                                                                                               |               |                     |             |
| P9.3.01<br>(0x9301)                     | Mapping 0xA001                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.01"   |
| P9.3.02<br>(0x9302)                     | Mapping 0xA002                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.02"   |
| P9.3.03<br>(0x9303)                     | Mapping 0xA003                                       | 0.0~100.0(%)                                                                                                                                                                                                                                  | 0.0           | Any                 | "P9.3.03"   |
| P9.3.04<br>(0x9304)                     | Mapping 0xA004                                       | 0.0~100.0(%)                                                                                                                                                                                                                                  | 0.0           | Any                 | "P9.3.04"   |
| P9.3.05<br>(0x9305)                     | Mapping 0xA005                                       | 0.0~100.0(%)                                                                                                                                                                                                                                  | 0.0           | Any                 | "P9.3.05"   |
| P9.3.06<br>(0x9306)                     | Mapping 0xA006                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.06"   |
| P9.3.07<br>(0x9307)                     | Mapping 0xA007                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.07"   |
| P9.3.08<br>(0x9308)                     | Mapping 0xA008                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.08"   |
| P9.3.09<br>(0x9309)                     | Mapping 0xA009                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.09"   |
| P9.3.10<br>(0x930A)                     | Mapping 0xA010                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.10"   |
| P9.3.11<br>(0x930B)                     | Mapping 0xA011                                       | -100.00~100.00(%)                                                                                                                                                                                                                             | 0.00          | Any                 | "P9.3.11"   |
| P9.3.39<br>(0x9327)                     | Expansion card Software Version                      | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.39"   |
| P9.3.40<br>(0x9328)                     | write-back Expansion card Error code                 | 0~9                                                                                                                                                                                                                                           | 0             | Any                 | "P9.3.40"   |
| P9.3.41<br>(0x9329)                     | Real-time frequency under the keyboard               | 0.00~P7.9.37(Hz)                                                                                                                                                                                                                              | 50.00         | Any                 | "P9.3.41"   |
| P9.3.42<br>(0x932A)                     | The version number of the pull-out keyboard software | 0.00~655.35                                                                                                                                                                                                                                   | 0.00          | Any                 | "P9.3.42"   |
| P9.3.43<br>(0x932B)                     | Communicate in keyboard mode to run commands         | 0:No command<br>1:Forward Run<br>2:Reverse Run<br>3:Forward Jogging<br>4:Reverse Jogging<br>5:Free Stop<br>6:Shutdown By Speed Reduction<br>7:Fault Rest<br>8:Reserved<br>9:Forward and Reverse Switch<br>10:Local/remote<br>11:Jog to cancel | 0             | Any                 | "P9.3.43"   |
| P9.3.44<br>(0x932C)                     | Mapping 0xA100                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.44"   |
| P9.3.45<br>(0x932D)                     | Mapping 0xA101                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.45"   |
| P9.3.46<br>(0x932E)                     | Mapping 0xA102                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.46"   |
| P9.3.47<br>(0x932F)                     | Mapping 0xA103                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.47"   |
| P9.3.48<br>(0x9330)                     | Mapping 0xA104                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.48"   |
| P9.3.49<br>(0x9331)                     | Mapping 0xA200                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Any                 | "P9.3.49"   |
| P9.3.50<br>(0x9332)                     | Mapping 0xB000                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Read only           | "P9.3.50"   |
| P9.3.51<br>(0x9333)                     | Fault Master Code (Mapping 0xB001)                   | 0~65535                                                                                                                                                                                                                                       | 0             | Read only           | "P9.3.51"   |
| P9.3.52<br>(0x9334)                     | Fault Code                                           | 0.0~6553.5                                                                                                                                                                                                                                    | 0.0           | Read only           | "P9.3.52"   |
| P9.3.90<br>(0x935A)                     | Mapping 0xB040                                       | 0~65535                                                                                                                                                                                                                                       | 0             | Read only           | "P9.3.90"   |

### 9.3 Appendix III: Faults and Troubleshooting

| Function Code and Communication Address | Function Code Name                                   | Setting Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Default Value | Modification Method | Page Number |
|-----------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
| P9.3.91<br>(0x935B)                     | Current Error level                                  | 0~8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0             | Read only           | "P9.3.91"   |
| P9.3.92<br>(0x935C)                     | Current Motor Serial Number                          | 1~4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1             | Read only           | "P9.3.92"   |
| P9.3.93<br>(0x935D)                     | Mutual inductance units                              | 0:mH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0             | Read only           | "P9.3.93"   |
| P9.3.94<br>(0x935E)                     | Leakage inductance and DQ axis inductance resolution | 2:0.01<br>3:0.001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2             | Read only           | "P9.3.94"   |
| P9.3.95<br>(0x935F)                     | Mutual inductance resolution                         | 1:0.1<br>2:0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1             | Read only           | "P9.3.95"   |
| P9.3.96<br>(0x9360)                     | Resistance resolution                                | 3:0.001<br>4:0.0001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3             | Read only           | "P9.3.96"   |
| P9.3.97<br>(0x9361)                     | Current resolution                                   | 1:0.1<br>2:0.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2             | Read only           | "P9.3.97"   |
| P9.3.98<br>(0x9362)                     | Inverter indicator status 1                          | Bit00~Bit01:S lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit02~Bit03:P lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit04~Bit05:T lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit06~Bit07:Basic Mode Lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit08~Bit09>User Mode Lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit10~Bit11:Verification Mode Lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit12~Bit13:Reserved<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit14~Bit15:Reserved<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved | 0             | Read only           | "P9.3.98"   |
| P9.3.99<br>(0x9363)                     | Inverter indicator status 0                          | Bit00~Bit01:FWD lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit02~Bit03:REV lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit04~Bit05:LOC lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved                                                                                                                                                                                                                                                                                                                                                                          | 0             | Read only           | "P9.3.99"   |

| Function Code and Communication Address | Function Code Name | Setting Description                                                                                                                                                                                                                                                                                                                                 | Default Value | Modification Method | Page Number |
|-----------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|
|                                         |                    | Bit06~Bit07:JOG lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit08~Bit09:TUNE lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit10~Bit11:WARN lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit12~Bit13:RUN lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved<br>Bit14~Bit15:STOP lamp<br>0:Off<br>1:On<br>2:flicker<br>3:Reserved |               |                     |             |

## 9.3. Appendix 3: Faults and Troubleshooting

| Fault code | Fault Name                                             | Fault Cause                                                                                  | Fault Confirmation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Fault Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er01.1     | Hardware Overcurrent 1 During Constant Speed           | Output current exceeds the overcurrent value during constant-speed operation of the inverter | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      |
| Er01.2     | Software overcurrent during constant speed operation   | Output current exceeds the overcurrent value during constant-speed operation of the inverter | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      |
| Er01.3     | Hardware overcurrent 2 during constant speed operation | Output current exceeds the overcurrent value during constant-speed operation of the inverter | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      | Check whether the inverter output circuit is short-circuited;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Perform parameter identification or increase low-frequency torque compensation.<br>Check whether the rated power of the electric motor or inverter is sufficiently high.                                                                                                                                                                                      |
| Er02.1     | Hardware overcurrent 1 during acceleration             | Output current exceeds the overcurrent threshold during inverter acceleration.               | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high. | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high. |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                 | Fault Cause                                                                          | Fault Confirmation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Fault Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|--------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er02.2     | Software Overcurrent During Acceleration   | Output current exceeds the overcurrent threshold during inverter acceleration.       | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high |
| Er02.3     | Hardware Overcurrent 2 During Acceleration | Output current exceeds the overcurrent threshold during inverter acceleration.       | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Check whether the input voltage is too low.<br>Extend the acceleration time.<br>Perform parameter identification, increase low-frequency torque compensation, or adjust the V/F curve.<br>Check whether the load experiences sudden changes.<br>Check whether speed tracking is selected or restart after the motor comes to a complete stop.<br>Check whether the rated power of the electric motor or inverter is sufficiently high |
| Er03.1     | Hardware Overcurrent 1 During Deceleration | Output current exceeds overcurrent threshold during inverter deceleration operation. | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        |
| Er03.2     | Software Overcurrent During Deceleration   | Output current exceeds overcurrent threshold during inverter deceleration operation. | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        |
| Er03.3     | Hardware Overcurrent 2 During Deceleration | Output current exceeds overcurrent threshold during inverter deceleration operation. | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        | Check for short circuits, grounding, or excessive length in the electric motor or wiring.<br>Perform parameter identification; Extend deceleration time;<br>Check whether the input voltage is too low;<br>Check whether the load experiences sudden changes.<br>Install braking unit and braking resistor;                                                                                                                                                                                                                        |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                             | Fault Cause                                                                                                                                                                            | Fault Confirmation Method                                                                                                                                                                                                                                                                                                    | Fault Solution                                                                                                                                                                                                                                                                                                               |
|------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er04.2     | Overvoltage during constant speed      | DC bus voltage exceeds the set value during inverter constant-speed operation.<br>S1 Rating: 240V<br>S2/T2 Rating: 400V<br>T4 Rating: 810V<br>T5 Rating: 820V<br>T6 Rating: 1350V      | Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Check whether external forces are driving the motor during operation;                                                                                                                                                                 | Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Check whether external forces are driving the motor during operation;                                                                                                                                                                 |
| Er05.2     | Overvoltage during acceleration        | During inverter acceleration, the DC voltage of the main circuit exceeds the set value. Class S1: 240V<br>S2/T2 Rating: 400V<br>T4 Rating: 810V<br>T5 Rating: 820V<br>T6 Rating: 1350V | Check whether the electric motor or its wiring has a ground short circuit<br>Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Extend the acceleration time.<br>Check if any external force is driving the motor during acceleration;                                                   | Check whether the electric motor or its wiring has a ground short circuit<br>Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Extend the acceleration time.<br>Check if any external force is driving the motor during acceleration;                                                   |
| Er06.2     | Overvoltage during deceleration        | During inverter deceleration, the DC voltage of the main circuit exceeds the set value. Class S1: 240V<br>S2/T2 Rating: 400V<br>T4 Rating: 810V<br>T5 Rating: 820V<br>T6 Rating: 1350V | Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Extend deceleration time;<br>Check if any external force is driving the motor during deceleration;<br>Install braking unit and braking resistor                                                                                       | Check whether input voltage is too high;<br>Check if bus voltage display is normal;<br>Extend deceleration time;<br>Check if any external force is driving the motor during deceleration;<br>Install braking unit and braking resistor                                                                                       |
| Er08.1     | Undervoltage                           | Insufficient DC main circuit voltage during operation, Detect DC undervoltage value:<br>Class S1: 100V<br>Class S2/T2: 200V<br>Class T4: 350V<br>Class T5: 350V<br>Class T6: 650V      | Check whether the power wiring connections are in good contact;<br>Check whether the incoming line voltage is within the specified range;<br>Check for instantaneous power loss;<br>Verify whether the bus voltage display is correct;<br>Check whether the rectifier bridge and charging resistor are functioning normally; | Check whether the power wiring connections are in good contact;<br>Check whether the incoming line voltage is within the specified range;<br>Check for instantaneous power loss;<br>Verify whether the bus voltage display is correct;<br>Check whether the rectifier bridge and charging resistor are functioning normally; |
| Er09.1     | Inverter single-phase current overload | Inverter single-phase current exceeds the allowable overload current                                                                                                                   | Check whether the motor is locked or reduce the motor load;<br>Replace with a higher-power inverter                                                                                                                                                                                                                          | Check whether the motor is locked or reduce the motor load;<br>Replace with a higher-power inverter                                                                                                                                                                                                                          |
| Er09.2     | Inverter output current overload       | Inverter output current exceeds the allowable overload current                                                                                                                         | Check whether the motor is locked or reduce the motor load;<br>Replace with a higher-power inverter                                                                                                                                                                                                                          | Check whether the motor is locked or reduce the motor load;<br>Replace with a higher-power inverter                                                                                                                                                                                                                          |
| Er10.1     | Electric motor overload                | Motor current exceeds the allowable overload current                                                                                                                                   | Verify whether motor protection parameter P5.1.05 (Motor Overload Protection Level Setting) is appropriately configured;<br>Check whether the electric motor is locked-rotor or reduce the motor load;<br>Correctly set the motor rated current;<br>Replace with a higher-power electric motor;                              | Verify whether motor protection parameter P5.1.05 (Motor Overload Protection Level Setting) is appropriately configured;<br>Check whether the electric motor is locked-rotor or reduce the motor load;<br>Correctly set the motor rated current;<br>Replace with a higher-power electric motor;                              |

| Fault code | Fault Name                                                              | Fault Cause                                      | Fault Confirmation Method                                                                                                                     | Fault Solution                                                                                                                                |
|------------|-------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Er11.1     | Input phase loss hardware protection (18.5KW and above)                 | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er11.2     | Input phase loss software protection                                    | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er11.3     | Input phase loss (R-phase) hardware protection (15KW and below)         | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er11.4     | Input phase loss (S-phase) hardware protection (15KW and below)         | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er11.5     | Input phase loss (T-phase) hardware protection (15KW and below)         | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er11.6     | Input loss of two phases or three phases hardware protection            | Input phase loss or three-phase imbalance fault  | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support | Check whether the input circuit voltage has phase loss or three-phase imbalance<br>Check for loose wiring terminals<br>Seek technical support |
| Er12.1     | Output phase loss during normal operation                               | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.2     | Output phase loss during abnormal operation                             | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.3     | Output phase loss at low output frequency                               | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.4     | Output phase loss at low feedback frequency                             | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.5     | Low output current in asynchronous motor vector control                 | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.6     | Output phase loss during stator resistance identification               | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |
| Er12.7     | Output phase loss during synchronous motor pole position identification | Output phase loss or three-phase imbalance fault | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;  |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                                                | Fault Cause                                                                                            | Fault Confirmation Method                                                                                                                                                                                                                                                | Fault Solution                                                                                                                                                                                                                                                           |
|------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er12.8     | Phase loss detected in V or W output before operation                     | Output phase loss or three-phase imbalance fault                                                       | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;                                                                                                                             | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;;                                                                                                                            |
| Er12.9     | Phase loss detected in U phase or all three phases before operation       | Output phase loss or three-phase imbalance fault                                                       | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;                                                                                                                             | Check if the output circuit voltage has phase loss or three-phase imbalance;<br>Check for loose wiring terminals;<br>Seek technical support;;                                                                                                                            |
| Er13.1     | External fault terminal normally open                                     | Faults caused by external control circuits                                                             | Inspect the external fault signal input circuit;<br>Reset operation;                                                                                                                                                                                                     | Inspect the external fault signal input circuit;<br>Reset operation;                                                                                                                                                                                                     |
| Er13.2     | External fault terminal Normally Closed (NC)                              | Faults caused by external control circuits                                                             | Inspect the external fault signal input circuit;<br>Reset operation;                                                                                                                                                                                                     | Inspect the external fault signal input circuit;<br>Reset operation;                                                                                                                                                                                                     |
| Er14.1     | Expansion card communication abnormal                                     | Communication exception between the inverter and CPU expansion card or other devices                   | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              |
| Er14.2     | Expansion card communication abnormal                                     | Communication exception between the inverter and CPU expansion card or other devices                   | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              |
| Er14.3     | Expansion card communication abnormal                                     | Communication exception between CPU expansion card and other devices                                   | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                              |
| Er15.1     | IGBT temperature detected too high                                        | IGBT temperature or heat sink temperature detection value exceeds the temperature protection threshold | Check fan operation status and ventilation conditions;<br>Check if ambient temperature is excessively high; cooling measures required;<br>Check whether the thermistor or temperature switch is damaged;<br>Remove dirt from the heat sink exterior and air intake vent; | Check fan operation status and ventilation conditions;<br>Check if ambient temperature is excessively high; cooling measures required;<br>Check whether the thermistor or temperature switch is damaged;<br>Remove dirt from the heat sink exterior and air intake vent; |
| Er17.1     | Ground Short Circuit Fault During Power-On Detection                      | Electric motor grounding short circuit                                                                 | Check whether the inverter output circuit or electric motor has a grounding short circuit                                                                                                                                                                                | Check whether the inverter output circuit or electric motor has a grounding short circuit                                                                                                                                                                                |
| Er18.3     | Current too low during asynchronous motor rotor resistance identification | An error occurred during motor parameter identification                                                | Verify whether motor parameters match the motor nameplate;<br>Check whether the main cable between the inverter and electric motor is properly connected                                                                                                                 | Verify whether motor parameters match the motor nameplate;<br>Check whether the main cable between the inverter and electric motor is properly connected                                                                                                                 |
| Er18.4     | CBC triggered during identification                                       | An error occurred during motor parameter identification                                                | Verify whether motor parameters match the motor nameplate;<br>Check whether the main cable between the inverter and electric motor is properly connected                                                                                                                 | Verify whether motor parameters match the motor nameplate;<br>Check whether the main cable between the inverter and electric motor is properly connected                                                                                                                 |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                                               | Fault Cause                                                                                                                          | Fault Confirmation Method                                                                                                                                  | Fault Solution                                                                                                                                             |
|------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er19.1     | Motor Load Loss                                                          | Inverter operating current is less than the load shedding current value (P5.5.06) and persists for the duration specified in P5.5.07 | Inspect whether the load has been disconnected;<br>Check whether the values set for parameters P5.5.06 and P5.5.07 conform to actual operating conditions; | Inspect whether the load has been disconnected;<br>Check whether the values set for parameters P5.5.06 and P5.5.07 conform to actual operating conditions; |
| Er20.1     | PID Feedback Loss                                                        | The PID feedback value is less than the value set in P3.1.18 and persists for the duration specified in P3.1.19                      | Check whether the PID feedback signal is normal;<br>Verify if the values set in parameters P3.1.18 and P3.1.19 align with actual operating conditions;     | Check whether the PID feedback signal is normal;<br>Verify if the values set in parameters P3.1.18 and P3.1.19 align with actual operating conditions;     |
| Er21.1     | User-Defined Fault 1                                                     | Fault 1 signal issued by the user via multifunctional terminals or PLC programming function                                          | Check whether the custom fault 1 condition has been resolved, then reset and restart operation                                                             | Check whether the custom fault 1 condition has been resolved, then reset and restart operation                                                             |
| Er22.1     | User-Defined Fault 2                                                     | Fault 2 signal issued by the user via multifunctional terminals or PLC programming function                                          | Check whether the custom fault 2 condition has been resolved, then reset and restart operation;                                                            | Check whether the custom fault 2 condition has been resolved, then reset and restart operation;                                                            |
| Er23.1     | Total Power-On Time Reached                                              | The inverter's accumulated power-on time has reached the duration specified in P3.4.00                                               | Use the parameter initialization function to clear recorded information                                                                                    | Use the parameter initialization function to clear recorded information                                                                                    |
| Er24.1     | Total Running Time Reached                                               | The inverter's accumulated operation time has reached the duration specified in P3.4.01                                              | Use the parameter initialization function to clear recorded information                                                                                    | Use the parameter initialization function to clear recorded information                                                                                    |
| Er26.1     | Parameter read/write exception: Single write timeout                     | Parameter Read/Write Exception                                                                                                       | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     |
| Er26.2     | Parameter read/write exception: Single read timeout                      | Parameter Read/Write Exception                                                                                                       | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     |
| Er26.3     | Parameter read/write exception: Read/write timeout                       | Parameter Read/Write Exception                                                                                                       | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     |
| Er26.4     | Parameter read/write exception: Write function code count exceeded limit | Parameter Read/Write Exception                                                                                                       | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     | Replace the control board;<br>Contact the manufacturer for assistance;                                                                                     |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                                 | Fault Cause                                                                               | Fault Confirmation Method                                                                                                                          | Fault Solution                                                                                                                                     |
|------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Er26.5     | Parameter read/write exception: Manufacturer program error | Parameter Read/Write Exception                                                            | Replace the control board;<br>Contact the manufacturer for assistance;                                                                             | Replace the control board;<br>Contact the manufacturer for assistance;                                                                             |
| Er27.1     | Motor Overheating                                          | Detected electric motor temperature too high                                              | Check if the electric motor temperature is excessively high;<br>Inspect whether the temperature sensor is damaged or has loose wiring;             | Check if the electric motor temperature is excessively high;<br>Inspect whether the temperature sensor is damaged or has loose wiring;             |
| Er28.1     | Excessive Speed Deviation                                  | Speed deviation exceeds the value of P5.3.05 and persists for the duration set in P5.3.06 | Verify whether P5.3.05 and P5.3.06 are configured appropriately;<br>Confirm if motor parameter identification has been performed;                  | Verify whether P5.3.05 and P5.3.06 are configured appropriately;<br>Confirm if motor parameter identification has been performed;                  |
| Er29.1     | Motor Overspeed                                            | Speed deviation exceeds the value of P5.3.03 and persists for the duration set in P5.3.04 | Check whether P5.3.03 and P5.3.04 are set appropriately;<br>Confirm if motor parameter identification has been performed;                          | Check whether P5.3.03 and P5.3.04 are set appropriately;<br>Confirm if motor parameter identification has been performed;                          |
| Er30.1     | Initial Position Error                                     | Motor parameters deviate significantly from actual values                                 | Verify the correctness of motor parameters, especially whether the motor Rated Current is set correctly;                                           | Verify the correctness of motor parameters, especially whether the motor Rated Current is set correctly;                                           |
| Er31.1     | U-phase current abnormality                                | Current detection circuit malfunction                                                     | Check whether the Hall sensor is faulty;<br>Check whether the drive board detection circuit is faulty;<br>Check whether the drive board is faulty; | Check whether the Hall sensor is faulty;<br>Check whether the drive board detection circuit is faulty;<br>Check whether the drive board is faulty; |
| Er31.2     | V-phase current abnormality                                | Current detection circuit malfunction                                                     | Check whether the Hall sensor is faulty;<br>Check whether the drive board detection circuit is faulty;<br>Check whether the drive board is faulty; | Check whether the Hall sensor is faulty;<br>Check whether the drive board detection circuit is faulty;<br>Check whether the drive board is faulty; |
| Er34.1     | U-phase fast current limit timeout                         | Inverter operating current persistently exceeds the allowable current limit value         | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    |
| Er34.2     | V-phase fast current limit timeout                         | Inverter operating current persistently exceeds the allowable current limit value         | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    |
| Er34.3     | W-phase current fast limiting timeout                      | Inverter operating current persistently exceeds the allowable current limit value         | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    | Check whether the motor is overloaded or stalled;<br>Verify whether the inverter is undersized;                                                    |
| Er35.1     | Multi-motor control fault: Motor switched during operation | Motor switching performed during inverter operation                                       | Perform motor switching operation after inverter stops                                                                                             | Perform motor switching operation after inverter stops                                                                                             |
| Er35.2     | Multi-motor control fault: More than 1 motor engaged       | DI input indicates multiple motors engaged                                                | Check if multiple motors are connected<br>Check DI input for abnormalities                                                                         | Check if multiple motors are connected<br>Check DI input for abnormalities                                                                         |
| Er38.1     | Output short-circuit overcurrent hardware interrupt        | Phase-to-phase short circuit or ground fault                                              | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer                       | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer                       |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                                                                           | Fault Cause                                  | Fault Confirmation Method                                                                                                    | Fault Solution                                                                                                               |
|------------|------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Er38.2     | Output short-circuit CBC software query                                                              | Phase-to-phase short circuit or ground fault | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer |
| Er38.3     | Output short-circuit CBC hardware interrupt                                                          | Phase-to-phase short circuit or ground fault | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer |
| Er38.4     | Output phase-loss detection before operation;<br>Output short-circuit overcurrent hardware interrupt | Phase-to-phase short circuit or ground fault | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer |
| Er38.5     | Output phase-loss detection before operation;<br>Output short-circuit CBC software query             | Phase-to-phase short circuit or ground fault | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer |
| Er38.6     | Output phase-loss detection before operation;<br>Output short-circuit CBC hardware interrupt         | Phase-to-phase short circuit or ground fault | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer | Inspect motor cable insulation and motor body insulation<br>If fault persists without motor connection, contact manufacturer |
| Er39.1     | Brake tube short-circuit during zero drift detection                                                 | Braking Tube Short Circuit                   | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er39.2     | Brake tube short-circuit when brake tube not enabled                                                 | Braking Tube Short Circuit                   | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er39.3     | Brake tube short-circuit hardware fault                                                              | Braking Tube Short Circuit                   | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er40.1     | Buffer resistor overload fault                                                                       | Significant fluctuations in DC bus voltage   | Check whether the power-on buffer contactor functions normally<br>Check input voltage fluctuation conditions                 | Check whether the power-on buffer contactor functions normally<br>Check input voltage fluctuation conditions                 |
| Er41.1     | Relay hardware fault - continuously high level                                                       | Power-on relay hardware detection fault      | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er41.2     | Relay hardware failure PWM wave                                                                      | Power-on relay hardware detection fault      | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er42.1     | Logic error 1 during synchronous motor pole position identification                                  | BUG occurred during program execution        | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |
| Er42.2     | Logic error 2 during synchronous motor pole position identification                                  | BUG occurred during program execution        | Contact the manufacturer                                                                                                     | Contact the manufacturer                                                                                                     |

### 9.3 Appendix III: Faults and Troubleshooting

| Fault code | Fault Name                                                                                | Fault Cause                                                 | Fault Confirmation Method                                                                                                                                                                                                                                                                                                                                         | Fault Solution                                                                                                                                                                                                                                                                                                                                                    |
|------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er43.1     | Phase sequence error during power/VFD switching                                           | Power input frequency and output frequency are inconsistent | Check operating direction and power frequency phase sequence                                                                                                                                                                                                                                                                                                      | Check operating direction and power frequency phase sequence                                                                                                                                                                                                                                                                                                      |
| Er43.2     | Prolonged switching time during power/VFD transition                                      | Switching unsuccessful over extended period                 | Whether target frequency deviation from grid frequency exceeds P6.0.01 value<br>Whether P6.0.02 and P6.0.03 are set unreasonably<br>Contact the manufacturer                                                                                                                                                                                                      | Whether target frequency deviation from grid frequency exceeds P6.0.01 value<br>Whether P6.0.02 and P6.0.03 are set unreasonably<br>Contact the manufacturer                                                                                                                                                                                                      |
| Er44.1     | Run command source isn't keyboard mode when parameter identification is set               | Unreasonable parameter identification setting               | Please first set P0.1.06 to keyboard control                                                                                                                                                                                                                                                                                                                      | Please first set P0.1.06 to keyboard control                                                                                                                                                                                                                                                                                                                      |
| Er44.2     | Inconsistency between motor type and parameter identification settings                    | Motor type set incorrectly                                  | Properly configure the motor type and identification method. For example, when P1.0.00 is set to 2 (synchronous motor), P1.0.17 should not be configured with synchronous motor identification methods (11 or 12), but rather should select asynchronous motor identification methods (1 or 2).                                                                   | Properly configure the motor type and identification method. For example, when P1.0.00 is set to 2 (synchronous motor), P1.0.17 should not be configured with synchronous motor identification methods (11 or 12), but rather should select asynchronous motor identification methods (1 or 2).                                                                   |
| Er44.3     | Unreasonable configuration of motor selection and parameter identification function codes | Motor selection set incorrectly                             | Configure the corresponding motor x identification and motor x parameter identification. For instance, if P0.1.32 selects motor 2, but parameter identification is performed using P1.0.17 instead of P1.2.17, this fault will be triggered.                                                                                                                      | Configure the corresponding motor x identification and motor x parameter identification. For instance, if P0.1.32 selects motor 2, but parameter identification is performed using P1.0.17 instead of P1.2.17, this fault will be triggered.                                                                                                                      |
| Er44.4     | Unreasonable carrier wave setting for vector control                                      | Carrier frequency setting is incorrect                      | Under vector control, when the target frequency is high, if the carrier frequency is set too low, increase the value of P0.6.06. It must be greater than the target frequency multiplied by P0.6.14. For example: with a target frequency of 1000Hz and P0.6.14 set to 8.0, P0.6.06 must be set to at least 8.0kHz or higher; otherwise a fault will be reported. | Under vector control, when the target frequency is high, if the carrier frequency is set too low, increase the value of P0.6.06. It must be greater than the target frequency multiplied by P0.6.14. For example: with a target frequency of 1000Hz and P0.6.14 set to 8.0, P0.6.06 must be set to at least 8.0kHz or higher; otherwise a fault will be reported. |
| Er45.1     | Over-torque Fault                                                                         | Significant fluctuations in DC bus voltage                  | Has parameter identification been performed under vector control?<br>Is the load too heavy?<br>Is the model selection appropriate?<br>Are the parameters set correctly?                                                                                                                                                                                           | Has parameter identification been performed under vector control?<br>Is the load too heavy?<br>Is the model selection appropriate?<br>Are the parameters set correctly?                                                                                                                                                                                           |
| Er46.1     | Stall protection                                                                          | Power-on relay hardware detection fault                     | Has parameter identification been performed under vector control?<br>Is the load too heavy?<br>Is the model selection appropriate?<br>Are the parameters set correctly?                                                                                                                                                                                           | Has parameter identification been performed under vector control?<br>Is the load too heavy?<br>Is the model selection appropriate?<br>Are the parameters set correctly?                                                                                                                                                                                           |
| Er47.1     | Local 485 Communication Anomaly                                                           | Power-on relay hardware detection fault                     | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                                                                                                                       | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                                                                                                                       |
| Er47.2     | Local 485 Communication Anomaly                                                           | BUG occurred during program execution                       | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                                                                                                                       | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol;                                                                                                                                                                                                       |

| Fault code | Fault Name                         | Fault Cause                                                 | Fault Confirmation Method                                                                                                                                   | Fault Solution                                                                                                                                              |
|------------|------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Er48.1     | Network port communication anomaly | BUG occurred during program execution                       | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; |
| Er48.2     | Network port communication anomaly | Power input frequency and output frequency are inconsistent | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; |
| Er49.1     | Type-C communication anomaly       | Switching unsuccessful over extended period                 | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; |
| Er49.2     | Type-C communication anomaly       | Unreasonable parameter identification setting               | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; | Check external communication lines;<br>Host computer malfunctioning;<br>Incorrect communication parameter settings;<br>Inconsistent communication protocol; |

Documentation

| Warranty Card         |                |  |              |  |                |  |
|-----------------------|----------------|--|--------------|--|----------------|--|
| User                  | User Name      |  |              |  |                |  |
|                       | User Address   |  |              |  |                |  |
|                       | Contact Person |  | Telephone    |  | Fax            |  |
|                       | Machine Model  |  | Machine Code |  |                |  |
| Agent/<br>Distributor | Supplier       |  |              |  |                |  |
|                       | Contact Person |  | Telephone    |  | Date of Supply |  |

Warranty Terms

The warranty provisions for our company's products shall be executed in accordance with the "Quality Assurance" section of the User Manual.

1.The warranty period for this product is 18 months from the date of factory shipment of the barcode.  
Under normal use, repairs will be provided upon presentation of the warranty card and product barcode.

2.Faults arising from the following causes shall be subject to chargeable repairs even within the warranty period:

2-1.Issues resulting from incorrect operation, or unauthorized repair or modification;  
2-2.Issues arising from use of this product beyond the prescribed standard specifications;  
2-3.Damage caused by dropping or improper handling after purchase;  
2-4.Device aging or malfunction caused by adverse environmental conditions;  
2-5.Damage resulting from earthquakes, fire, floods, lightning strikes, abnormal voltage, or other natural disasters;  
2-6.Damage occurring during transportation (Note: the transportation method is designated by the customer, and the company assists in handling the transfer procedures of the goods);  
2-7.Damage to or illegibility of the brand, trademark, serial number, nameplate, or other manufacturer's markings;  
2-8.Failure to pay the full amount as agreed upon in the purchase contract;  
2-9.Failure to provide an objective and accurate description of installation, wiring, operation, maintenance, or other usage conditions to the company's service unit.

3.All products manufactured by our company are entitled to paid lifetime service.

## Certificate of Conformity

Inspector: \_\_\_\_\_  
Manufacture  
Date: \_\_\_\_\_  
Factory Shipment  
Number: \_\_\_\_\_

**This product has passed  
inspection and is approved  
for factory shipment.**

## Product Service Card

Attention: To ensure the safety of personnel, equipment, and property, and to fully utilize the superior performance of this product, please read the product user manual thoroughly before use. Comply with all instructions during handling, installation, commissioning, operation, and maintenance.

Declaration  
The detailed user manual can be obtained by scanning the QR code:



September 2025