CONTROL TECHNIQUES

# Quick Start Guide

# NE200/300

## Variable Speed AC drive

Part number：31019007

Version：V1.7

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# Revision History

| Date | Version | Description |
|---|---|---|
| 2020/4/7 | 1.0 | Issued for the first time |
| 2020/5/19 | 1.1 | Add “Modbus Address” column in parameter brief list |
| 2021/1/19 | 1.2 | 1、Add parameter F2.35,F2.36,F7.37~F7.41,modify the default value of F3.38，F3.39,F3.42,Fd.00.<br>2、Update the nameplate, add the inspection certification in the last page |
| 2021/2/22 | 1.3 | Update figure 4-3 |
| 2021/4/16 | 1.4 | Update CT logo to the newest version in all related drawings |
| 2021/6/18 | 1.5 | Update the last page “inspection certification” |
| 2021/6/23 | 1.6 | Update figure 3-3 |
| 2021/9/18 | 1.7 | Modified the Chinese characters in the “setting range” column of parameter F7.26 |

# 1. Safety Precautions

## 1.1 Description of safety marks

Warning: A Warning contains information which is essential for avoiding a safety hazard.

Caution: A Caution contains information which is necessary for avoiding a risk of damage to the product or other equipment.

## 1.2 Use

**Warning**

- This series of inverter is used to control the variable speed operation of three-phase motor and cannot be used for single-phase motor or other applications. Otherwise, inverter failure or fire may be caused.
- This series of inverter cannot be simply used in the applications directly related to the human safety, such as medical equipment.
- This series of inverter is produced under strict quality management system. Redundancy or bypass solution is necessary if the inverter failure may cause severe accident or loss.

## 1.3 Installation

**Caution**

- If the inverter is found to be damaged or parts missing, the inverter cannot be installed. Otherwise, accident may be caused.
- When handling and installing the product, please hold the product from bottom. Do not hold the enclosure only. Otherwise, your feet may be injured and the inverter may be damaged because of dropping.
- The inverter shall be mounted on the fire retardant surface, such as metal, and kept far away from the inflammables and heat source.
- Keep the drilling scraps from falling into the inside of the inverter during the installation; otherwise, inverter failure may be caused.
- When the inverter is installed inside the cabinet, the electricity control cabinet shall be equipped with fan and ventilation port.

And ducts for radiation shall be constructed in the cabinet.

## 1.4 Wiring

**Warning**

- The wiring must be conducted by qualified electricians. Otherwise, there exists the risk of electric shock or inverter damage.
- Before wiring, confirm that the power supply is disconnected. Otherwise, there exists the risk of electric shock or fire.
- The grounding terminal PE must be reliably grounded, otherwise, the inverter enclosure may become conductive.
- To ensure the safety, the inverter and the motor must be grounded. Please do not touch the main circuit terminal. The wires of the inverter main circuit terminals must not contact the enclosure. Otherwise, there exists the risk of electric shock.
- The connecting terminals for the braking resistor are （+）and PB. Please do not connect terminals other than these two. Otherwise, fire may be caused.

**Caution**

- The power supply cannot connect to output terminals U-V-W, otherwise, the inverter will be damaged.
- It is forbidden to connect the output terminal of the inverter to the capacitor or LC/RC noise filter with phase lead, otherwise, the internal components of the inverter may be damaged
- Please confirm that the power supply phases, rated voltage are consistent with that of the nameplate, otherwise, the inverter may be damaged.
- The wires of the main circuit terminals and the wires of the control circuit terminals shall be laid separately or in a square-crossing mode, otherwise, the control signal may be interfered.
- When the length of the cables between the inverter and the motor is more than 100m, it is suggested to use output reactor to avoid the inverter failure caused by the over-current of the distribution

capacitor.

- The inverter which equipped with DC reactor must connect with DC reactor between the terminal of P1、(+) otherwise the inverter will not display after power on.

## 1.5 Operation

**Warning**

- Power supply can only be connected after the wiring is completed and the cover is installed. It is forbidden to remove the cover in live condition; otherwise, there exists the risk of electric shock.
- When auto failure reset function or restart function is set, isolation measures shall be taken for the mechanical equipment, otherwise, personal injury may be caused.
- When the inverter is powered on, even when it is in the stop state, the terminals of the inverter are still live. Do not touch the inverter terminals; otherwise electric shock may be caused.
- The failure and alarm signal can only be reset after the running command has been cut off. Otherwise, personal injury may be caused.

**Caution**

- Do not start or shut down the inverter by switching on or off the power supply, otherwise the inverter may be damaged.
- Before operation, please confirm if the motor and equipment are in the allowable use range, otherwise, the equipment may be damaged.
- The heat sink and the braking resistor have high temperature. Please do not touch such devices; otherwise, you may be burnt.
- When it is used on lifting equipment, mechanical contracting brake shall also be equipped.
- Please do not change the inverter parameter randomly. Most of the factory set parameters of the inverter can meet the operating requirement, and the user only needs to set some necessary parameters. Any random change of the parameter may cause the

damage of the mechanical equipment.

- In the applications with mains frequency and variable frequency switching, the two contactors for controlling the mains frequency and variable frequency switching shall be interlocked.

## 1.6 Maintenance & Inspection

**Warning**

- In the power-on state, please do not touch the inverter terminals; otherwise, there exists the risk of electric shock.
- If cover is to be removed, the power supply must be disconnected first.
- Wait for at least 10 minutes after power off or confirm that the CHARGE indicator is off before maintenance and inspection to prevent the harm caused by the residual voltage of the main circuit electrolytic capacitor to persons.
- The components shall be maintained, inspected or replaced by qualified electricians.

**Caution**

- The circuit boards have large scale CMOS IC. Please do not touch the board to avoid the circuit board damage caused by static electricity.

# 2. Introduction to NE200&300

## 2.1 Product Model Description

The digits and letters of the inverter model number on the nameplate indicate information such as product series, voltage grade, power ratings and hardware versions.

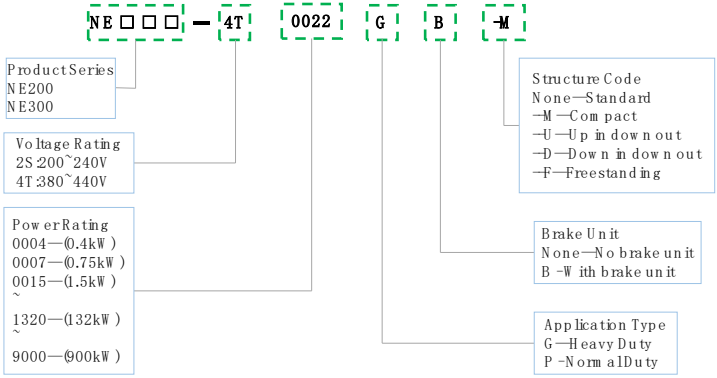



Fig.2-1 Product Model Description

## 2.2 Product Nameplate Description

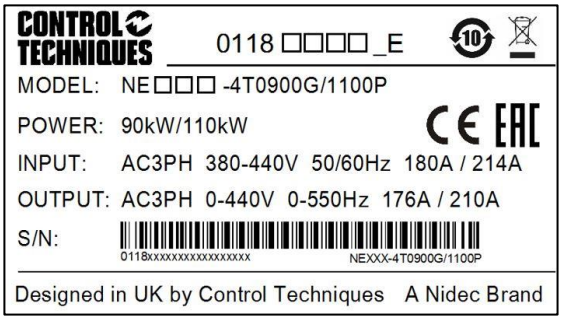



Fig.2-2 Product Nameplate Description

## 2.3 Product Series

### 2.3.1 NE200 Product Series

- NE200−4T□□□□GB Three-phase 400V Constant torque/heavy-duty application

| Power（kW） | | 0.75 | 1.5 | 2.2 | 4.0 |
|---|---|---|---|---|---|
| Adapted motor (kW) | | 0.75 | 1.5 | 2.2 | 4.0 |
| Output | Voltage (V) | 3phase 0~rated input voltage | | | |
| | Rated current (A) | 2.5 | 4.0 | 6.0 | 9.0 |
| | Overload capability | 150% 1min; 180% 20sec. | | | |
| Input | Rated voltage/ frequency | 3phase 380V/440V; 50Hz/60Hz | | | |
| | Voltage range | 304V~456V; voltage imbalance ≤3%; Allowable frequency fluctuation ±5% | | | |
| | Rated current (A) | 3.7 | 5.4 | 7.0 | 10.7 |
| Braking unit | | Inbuilt as standard | | | |
| IP rating | | IP20 | | | |
| Cooling | | Forced air cooling | | | |

- NE200−4T□□□□PB Three-phase 400V Variable torque/normal-duty application

| Power（kW） | | 1.5 | 2.2 | 4.0 | 5.5 |
|---|---|---|---|---|---|
| Adapted motor (kW) | | 1.5 | 2.2 | 4.0 | 5.5 |
| Output | Voltage (V) | 3phase 0~rated input voltage | | | |
| | Rated current (A) | 4.0 | 6.0 | 9.0 | 13 |
| | Overload capability | 120% 1min; 150% 1sec. | | | |
| Input | Rated voltage/ frequency | 3phase 380V/440V; 50Hz/60Hz | | | |
| | Voltage range | 304V~456V; voltage imbalance ≤3%; Allowable frequency fluctuation ±5% | | | |
| | Rated current (A) | 5.4 | 7.0 | 10.7 | 15.5 |
| Braking unit | | Inbuilt as standard | | | |
| IP rating | | IP20 | | | |
| Cooling | | Forced air cooling | | | |

- NE200−2S□□□□GB Single-phase 220V constant torque/heavy duty application

| Power（kW） | | 0.4 | 0.75 | 1.5 | 2.2 |
|---|---|---|---|---|---|
| Adapted motor (kW) | | 0.4 | 0.75 | 1.5 | 2.2 |
| Output | Voltage (V) | 3phase 0~rated input voltage | | | |
| | Rated current (A) | 2.5 | 4.5 | 7.0 | 10 |
| | Overload capability | 150% 1min; 180% 20sec. | | | |
| Input | Rated voltage/ frequency | 1phase 200V/240V; 50Hz/60Hz | | | |
| | Voltage range | 176V~264V; voltage imbalance ≤3%; Allowable frequency fluctuation ±5% | | | |
| | Rated current (A) | 5.3 | 8.3 | 14 | 23 |
| Braking unit | | Inbuilt as standard | | | |
| IP rating | | IP20 | | | |
| Cooling | | Forced air cooling | | | |

### 2.3.2 NE300 Product Series

- NE300−4T□□□□GB Three-phase 400V Constant torque/heavy-duty application

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power (kW)** | | 1.5 | 2.2 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 |
| **Motor power (kW)** | | 1.5 | 2.2 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 |
| Output | Voltage (V) | Three-phase 0 to rated input voltage | | | | | | | | | | | | | | | |
| | Rated current (A) | 4 | 6 | 9 | 13 | 17 | 25 | 32 | 37 | 45 | 60 | 75 | 90 | 110 | 150 | 176 | 210 |
| | Overload capacity : 150% 1 minute; 180% 20 seconds, | | | | | | | | | | | | | | | | |
| Input | Rated voltage/frequency :Three-phase 380V~440V; 50Hz/60Hz | | | | | | | | | | | | | | | | |
| | Max. voltage range: 304V ~ 456V; Voltage unbalancedness ⩽3%; allowable frequency fluctuation: ±5% | | | | | | | | | | | | | | | | |
| | Rated current(A) | 5.4 | 7 | 10.7 | 15 | 20.5 | 27 | 35 | 38.5 | 46.5 | 62 | 76 | 92 | 113 | 157 | 180 | 214 |
| **Braking unit** | | Built-in as standard | | | | | | | | | Need external | | | | | | |
| **Protection class** | | IP20 | | | | | | | | | | | | | | | |
| **Cooling mode** | | Forced air convection cooling | | | | | | | | | | | | | | | |
| **Power(kW)** | | 132 | 160 | 185 | 200 | 220 | 250 | 280 | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 |
| **Motor power(kW)** | | 132 | 160 | 185 | 200 | 220 | 250 | 280 | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 |
| Output | Voltage (V): Three-phase 0 to rated input voltage | | | | | | | | | | | | | | | | |
| | Rated current (A) | 250 | 300 | 340 | 380 | 420 | 470 | 540 | 600 | 660 | 730 | 840 | 900 | 950 | 1160 | 1300 | 1460 |
| | Overload capacity : 150% 1 minute; 180% 20 seconds, | | | | | | | | | | | | | | | | |
| Input | Rated voltage/frequency :Three-phase 380V~440V; 50Hz/60Hz | | | | | | | | | | | | | | | | |
| | Max. voltage range: 304V~456V; Voltage unbalancedness ⩽3%; allowable frequency fluctuation: ±5% | | | | | | | | | | | | | | | | |
| | Rated current (A) | 256 | 307* | 345* | 385* | 430* | 480* | 548* | 610* | 670* | 740* | 850* | 910* | 960* | 1170* | 1310* | 1470* |
| **Braking unit** | | Need external | | | | | | | | | | | | | | | |
| **Protection class** | | IP20 | | | | | | | | | | | | | | | |
| **Cooling mode** | | Forced air convection cooling | | | | | | | | | | | | | | | |

* NE300−4T1600G-F and above products are equipped with in-built DC reactor as standard.

■ NE300−4T□□□□PB Three-phase 400V Variable torque/normal-duty application

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power (kW)** | | 2.2 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 |
| **Motor power (kW)** | | 2.2 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 |
| **Output** | Voltage (V) | Three-phase 0 to rated input voltage | | | | | | | | | | | | | | | |
| | Rated current (A) | 6 | 9 | 13 | 17 | 25 | 32 | 37 | 45 | 60 | 75 | 90 | 110 | 150 | 176 | 210 | 250 |
| | Overload capacity : 120% 1 minute; 150% 1 second, | | | | | | | | | | | | | | | | |
| **Input** | Rated voltage/frequency :Three-phase 380V~440V; 50Hz/60Hz | | | | | | | | | | | | | | | | |
| | Max. voltage range: 304V ~ 456V; Voltage unbalancedness ⩽3%; allowable frequency fluctuation: ±5% | | | | | | | | | | | | | | | | |
| | Rated current(A) | 7 | 10.7 | 15 | 20.5 | 27 | 35 | 38.5 | 46.5 | 62 | 76 | 92 | 113 | 157 | 180 | 214 | 256 |
| **Braking unit** | | Built-in as standard | | | | | | | | | Need external | | | | | | |
| **Protection class** | | IP20 | | | | | | | | | | | | | | | |
| **Cooling mode** | | Forced air convection cooling | | | | | | | | | | | | | | | |
| **Power(kW)** | | 160 | 185 | 200 | 220 | 250 | 280 | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 | 900 |
| **Motor power(kW)** | | 160 | 185 | 200 | 220 | 250 | 280 | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 | 900 |
| **Output** | Voltage (V): Three-phase 0 to rated input voltage | | | | | | | | | | | | | | | | |
| | Rated current (A) | 300 | 340 | 380 | 420 | 470 | 540 | 600 | 660 | 730 | 840 | 900 | 950 | 1160 | 1300 | 1460 | 1640 |
| | Overload capacity : 120% 1 minute; 150% 1 second | | | | | | | | | | | | | | | | |
| **Input** | Rated voltage/frequency :Three-phase 380V~440V; 50Hz/60Hz | | | | | | | | | | | | | | | | |
| | Max. voltage range: 304V~456V; Voltage unbalancedness ⩽3%; allowable frequency fluctuation: ±5% | | | | | | | | | | | | | | | | |
| | Rated current (A) | 307 | 345* | 385* | 430* | 480* | 548* | 610* | 670* | 740* | 850* | 910* | 960* | 1170* | 1310* | 1470* | 1650* |
| **Braking unit** | | Need external | | | | | | | | | | | | | | | |
| **Protection class** | | IP20 | | | | | | | | | | | | | | | |
| **Cooling mode** | | Forced air convection cooling | | | | | | | | | | | | | | | |

* NE300−4T1850P-F and above products are equipped with external DC reactor as standard.

# 3. Product Installation

## 3.1 NE200 Product Outline, Mounting Dimension（Unit：mm）

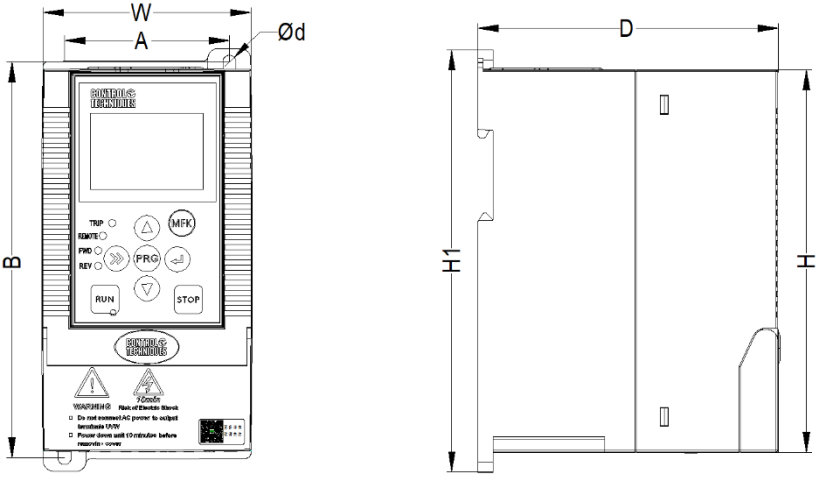



Fig.3-1 Product Outline, Mounting Dimension Schematic diagram

Note: NE200 series support 35mm DIN-rail mounting.

| Inverter Model | H | W | D | H1 | A | B | d |
|---|---|---|---|---|---|---|---|
| NE200-2S0004GB | 150 | 83 | 120 | 166 | 65 | 153 | 5 |
| NE200-2S0007GB | | | | | | | |
| NE200-2S0015GB | | | | | | | |
| NE200-4T0007G/0015PB | | | | | | | |
| NE200-4T0015G/0022PB | | | | | | | |
| NE200-4T0022GB-M | | | | | | | |
| NE200-2S0022GB | 200 | 120 | 140 | 215 | 98 | 202 | 5 |
| NE200-4T0022G/0040PB | | | | | | | |
| NE200-4T0040G/0055PB | | | | | | | |
| NE200-2S0004GB | | | | | | | |

Note：

-M means compact model

## 3.2 NE300 Product Outline, Mounting Dimension（Unit：mm）

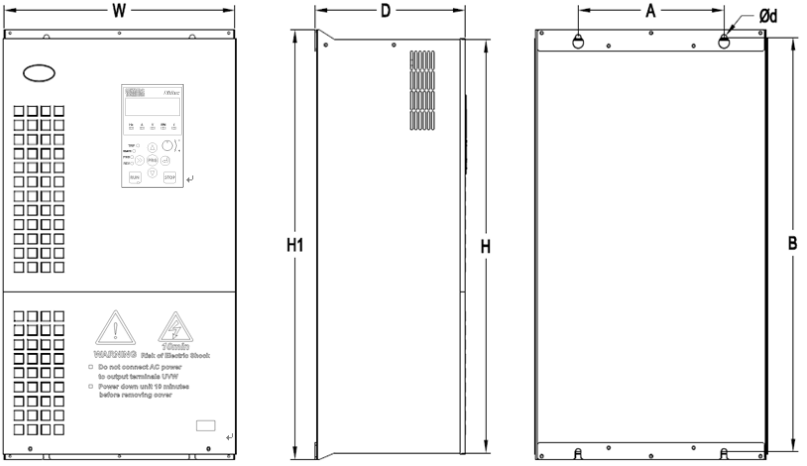



Fig.3-2 Product Outline, Mounting Dimension Schematic diagram

| Inverter Model | H | W | D | H1 | A | B | d |
|---|---|---|---|---|---|---|---|
| NE300-4T0015G/0022PB<br>NE300-4T0022G/0040PB<br>NE300-4T0040G/0055PB | 210 | 133 | 180 | 238 | 108 | 225 | 7 |
| NE300-4T0055G/0075PB<br>NE300-4T0075G/0110PB<br>NE300-4T0110G/0150PB | 258 | 155 | 180 | 285 | 120 | 270 | 7 |
| NE300-4T0150G/0185PB<br>NE300-4T0185G/0220PB<br>NE300-4T0220G/0300PB | 310 | 192 | 186 | 340 | 150 | 323 | 7 |
| NE300-4T0300G/0370P<br>NE300-4T0370G/0450P | 425 | 270 | 200 | 450 | 200 | 430 | 7 |
| NE300-4T0450G/0550P<br>NE300-4T0550G/0750P | 535 | 320 | 248 | 560 | 240 | 540 | 9 |
| NE300-4T0750G/0900P<br>NE300-4T0900G/1100P<br>NE300-4T1100G/1320P | 640 | 380 | 248 | 665 | 240 | 640 | 9 |

| Inverter Model | H | W | D | H1 | A | B | d |
|---|---|---|---|---|---|---|---|
| NE300-4T1320G/1600P-U<br>NE300-4T1320G/1600P-D<br>NE300-4T1600G/1850P-U<br>NE300-4T1600G/1850P-D | 710 | 465 | 355 | 750 | 380 | 719 | 11 |
| NE300-4T1850G/2000P-U<br>NE300-4T1850G/2000P-D<br>NE300-4T2000G/2200P-U<br>NE300-4T2000G/2200P-D<br>NE300-4T2200G/2500P-U<br>NE300-4T2200G/2500P-D<br>NE300-4T2500G/2800P-U<br>NE300-4T2500G/2800P-D | 859 | 550 | 385 | 900 | 440 | 868 | 11 |
| NE300-4T1600G/1850P-F<br>NE300-4T1850G/2000P-F<br>NE300-4T2000G/2200P-F<br>NE300-4T2200G/2500P-F | 1400 | 400 | 400 | 1400 | 460 | 1270 | 13 |
| NE300-4T2500G/2800P-F<br>NE300-4T2800G/3150P-F<br>NE300-4T3150G/3550P-F | 1600 | 500 | 420 | 1600 | 560 | 1460 | 13 |
| NE300-4T3550G/4000P-F<br>NE300-4T4000G/4500P-F<br>NE300-4T4500G/5000P-F<br>NE300-4T5000G/5600P-F | 1800 | 780 | 500 | 1800 | 840 | 1630 | 13 |
| NE300-4T5600G/6300P-F<br>NE300-4T6300G/7100P-F<br>NE300-4T7100G/8000P-F<br>NE300-4T8000G/9000P-F | 2000 | 1000 | 700 | 2000 | — | — | — |
| NE300-4T9000G-F | 1800 | **1560*** | 500 | 1800 | — | — | — |

Note:

-U means input lines come from upside and output lines come out downside.

-D means input lines come from downside and output lines come out downside.

-F means freestanding models

* This model consisting of two separate models, 1560 is the net dimension

without mounting distance. **Must keep ⩾ 200** mounting distance between them.

### 3.3 Operating keypad panel outline and mounting dimensions (Unit：mm)

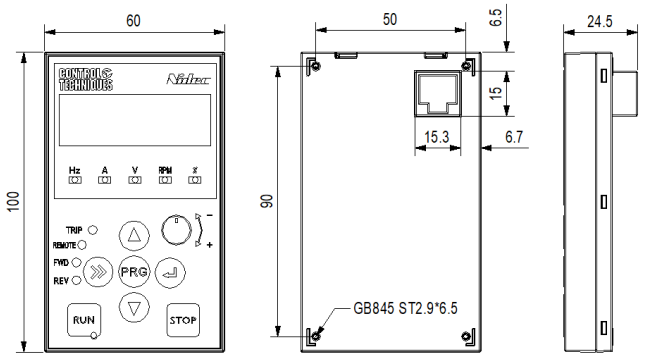
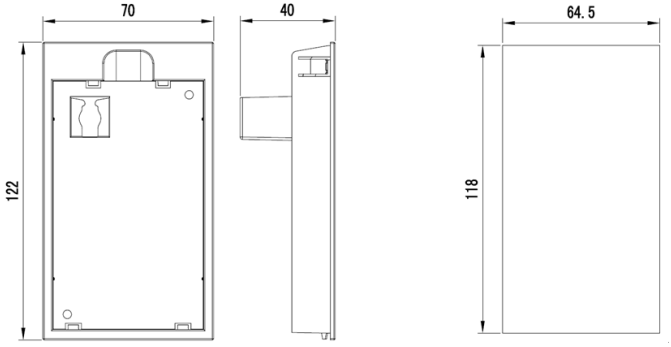



Fig.3-3 Operating Panel Outline and Mounting Dimension

### 3.4 Keypad holder outline and mounting dimensions

NEF-KB01 is the mounting tray when the operation panel is to install on the electric control cabinet. The outline and dimensions are as follows:(Unit：mm)：




Keypad tray dimensions　　Keypad tray hole size

Fig.3-4 Operating Panel Outline and Mounting Dimension

# 4. Wiring of Inverter

## 4.1 Terminal Wiring of NE200

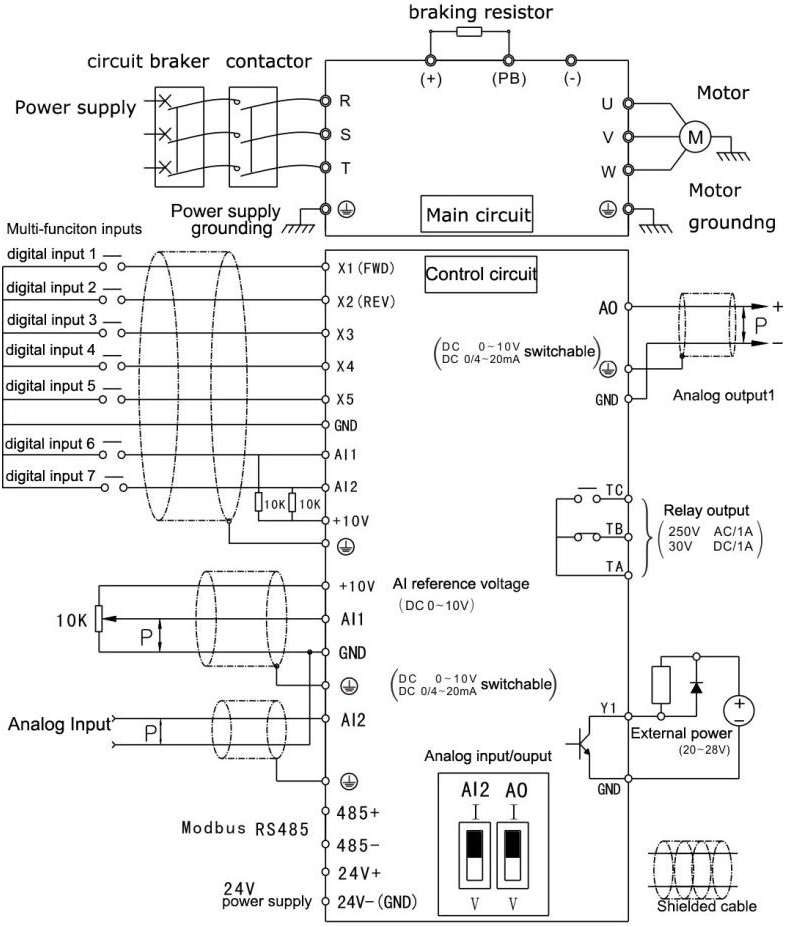



Fig. 4-1 Terminal Wiring（0022GB~0040GB）

### 4.1.1 Functions of Control Circuit Terminals

Standard configuration of control circuit terminals

| Type | Termina | Terminal function | Technical specification |
|---|---|---|---|
| Digital input & output | X1～X5 | Multi-functional input terminals 1～5 | Optical-isolator input<br>Frequency range:：0～200Hz<br>Voltage range: 0～12V |
| | Y1 | Open collector output | Optical-isolator output<br>maximum output current: 50mA<br>Output voltage range：0～24V |
| | GND | Terminal ref. grounding | |
| | 24V | 24V | 24V±5%, Maximum load :200mA, with overload and short circuit protection |
| Analog input | 10V | Analog input reference voltage | Open circuit voltage up to 11V; Maximum output 30mA |
| | AI1 | Analog input channel 1 | Input Voltage range：0～10V<br>Input impedance：100kΩ |
| | AI2 | Analog input channel 2 | Input Voltage range：0～10V<br>Input impedance：100kΩ<br>Input current range：0～30mA<br>Current Input impedance： 500Ω,<br>0~20mA or 0~10V analog input can be selected through DIP switch SW1 |
| | GND | Terminal ref. grounding | |
| Analog output | AO | Analog output 1 | 0～20mA: Allowed load impedance 200~500Ω<br>0～10V: Allowed load impedance ≥1kΩ.<br>With SC protection; 0~20mA or 0~10V analog output can be selected through DIP switch SW2 |
| | GND | Analog grounding | |
| Relay output | TA/TB/ TC | Relay output 1 | TA－TB：NC; TA－TC：NO<br>Contact capacity：250VAC/1A，30VDC/1A |

| Type | Termina | Terminal function | Technical specification |
|---|---|---|---|
| RS485 | 485+ | 485 differential positive | Rate: 1200/2400/4800/9600/19200/38400bps; Max. parallel 127 No.s; SW3 select adapted resistor; Max. Length 500m. (twisted shielding cable) |
| | 485- | 485 differential negative | |
| | GND | 485 shielding grounding | Internal isolated with COM |

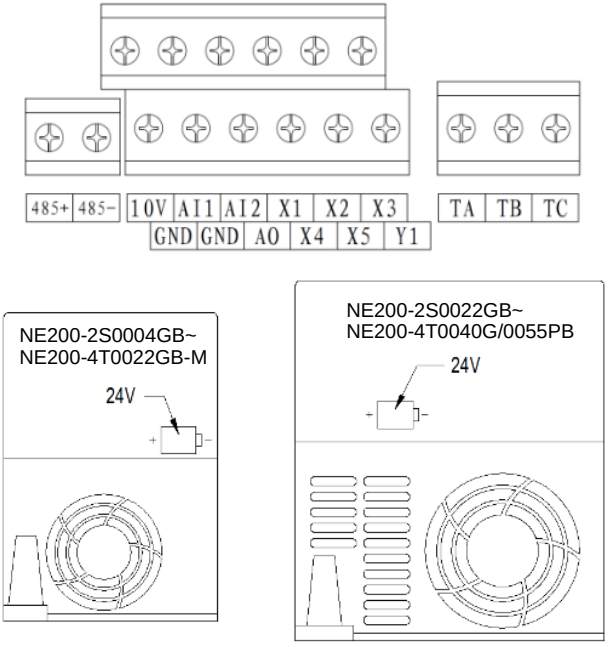



Fig.4-2 Arrangement of Control Circuit Terminals

## 4.2 Terminal Wiring of NE300

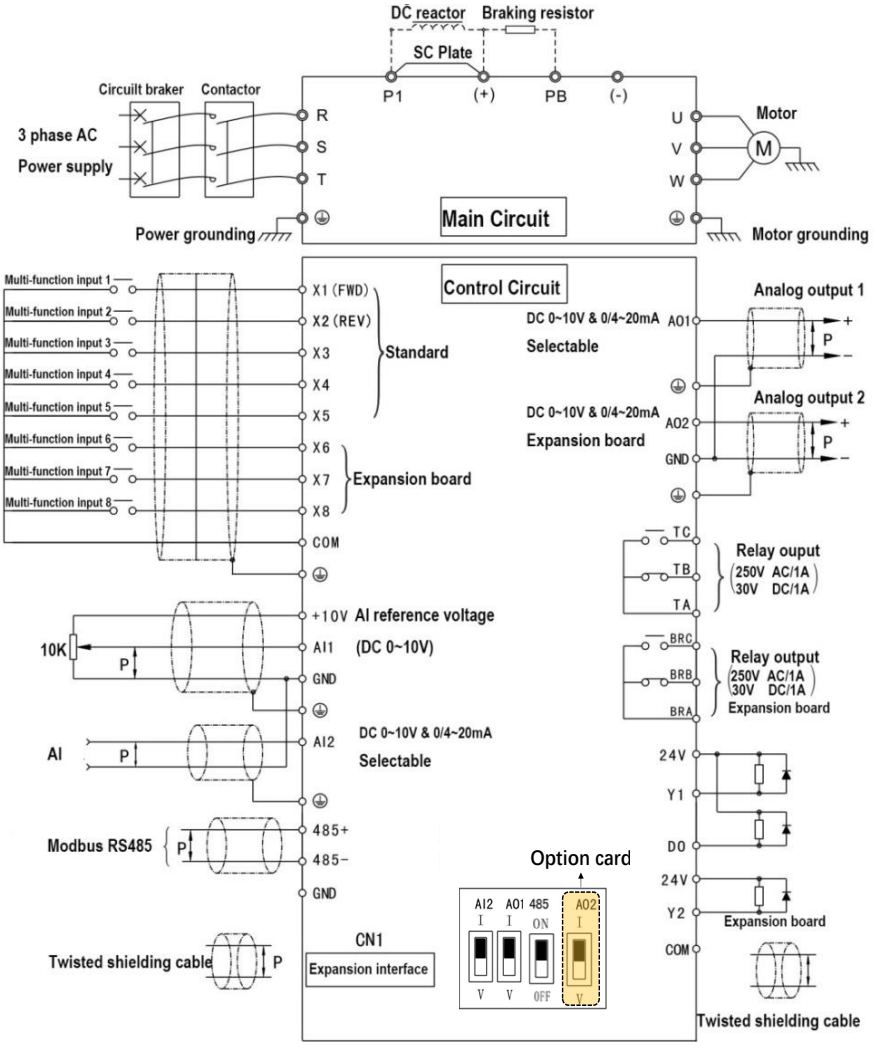



Fig.4-3 Terminal Wiring (0220G/0300PB as example)

### 4.2.1 Functions of Control Circuit Terminals

Standard configuration of control circuit terminals

| Type | Termina | Terminal function | Technical specification |
|---|---|---|---|
| Digital input | X1 ～ X3 | Multi-functional input terminals 1～3 | Optical-isolator input<br>Frequency range:：0～200Hz<br>Voltage range: 0～24V |
| | X4<br>X5 | Multi-functional input or Single pulse input 4, 5 | Multi-functional input：same as X1～X3<br>Single Pulse input:：0.1Hz～50kHz<br>Voltage range：0～24V |
| | COM | multi-functional input terminals common end | Internal isolated with GND |
| Digital output | 24V | 24V | 24V±5%, Maximum load :200mA, with overload and short circuit protection |
| | Y1 | Open collector output 1 | Optical-isolator output<br>maximum output current: 50mA<br>Output voltage range：0～24V |
| | DO | Open collector or high speed pulse output | Output frequency: 0～50kHz<br>Open collector same as Y1 |
| | COM | Open collector output common end | Internal isolated with GND |
| Analog input | 10V | Analog input reference voltage | Open circuit voltage up to 11V;<br>Internal isolated with com;<br>Maximum load 30mA，with overload and short circuit protection |
| | AI1 | Analog input channel 1 | Input Voltage range：0～10V<br>Input impedance：100kΩ |

| Type | Termina | Terminal function | Technical specification |
|---|---|---|---|
| | AI2 | Analog input channel 2 | Input Voltage range：0～10V<br>Input impedance：100kΩ<br>Input current range：0～30mA<br>Current Input impedance： 500Ω,<br>0~20mA or 0~10V analog input can be selected through DIP switch SW1 |
| | GND | Analog grounding | Internal isolated with COM |
| Analog output | AO1 | Analog output 1 | 0～20mA: Allow output impedance 200~500Ω<br>0～10V: Allowed output impedance ≥10kΩ.<br>With SC protection; 0~20mA or 0~10V analog output can be selected through DIP switch SW2 |
| | GND | Analog grounding | Internal isolated with COM |
| Relay output | TA/TB/ TC | Relay output 1 | TA－TB：NC; TA－TC：NO<br>Contact capacity：250VAC/1A，30VDC/1A |
| RS485 | 485+ | 485 differential positive | Rate: 1200/2400/4800/9600/19200/38400bps;<br>Max. parallel 127 No.s; SW3 select adapted resistor; Max. Length 500m. (twisted shielding cable) |
| | 485- | 485 differential negative | |
| | GND | 485 shielding grounding | Internal isolated with COM |

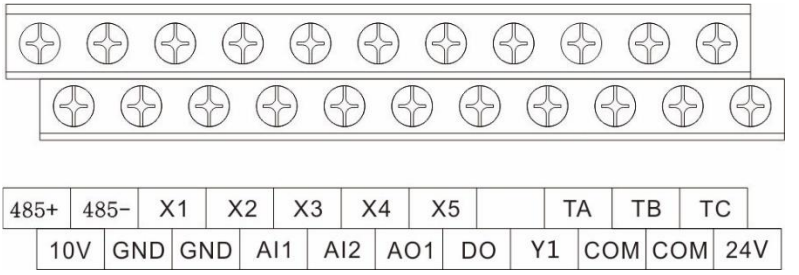



Fig.4-4 Arrangement of Control Circuit Terminals

# 5. Operation and Display

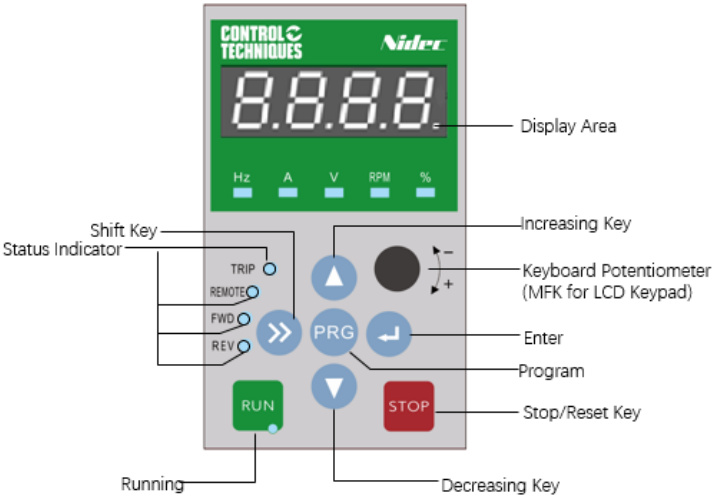



Fig.5-1 Operation Panel Diagram

## 5.1 Keyboard button description

Table 5-1 Keyboard keys description

| Keys | Name | Function |
|---|---|---|
| PRG | Programming key | Entry and exit of primary menu |
| ENTER | Confirmation key | Enter the next level menu or confirm the data setting |
| ^ | Increase key | Increase of the value or function code |

| | | |
|---|---|---|
| ∨ | Decrease key | Decrease of the value or function code |
| >> | Shift key | Select the to be displayed parameters in turn under stop interface or running interface; Choose the to be modified digits when setting parameters. |
| RUN | Running key | Run the inverter under keypad operation mode. |
| STOP | Stop/reset | Stop the inverter at running status; Reset operation in the fault alarm status. Its function is limited to setting of code FE.02. |
| Knob | Potentiometer | Adjust setting value when potentiometer is set up as input. |

## 5.2 Instruction of function code viewing and modification

The operation panel of the NE200&300 inverter adopts three levels menu structure to carry out operations such as parameter setting. The three levels are:

1. Groups of function code (level-1 menu)
2. Function code (level-2 menu)
3. Function code setup value(level-3 menu)

Note:

At level 3 menu, pressing PRG key or ENTER key can return to level-2 menu. The difference between them is that: Pressing ENTER will save the setup and return to the level 2 menu and then automatically shift to the next function code; while pressing PRG key will directly return to level 2 menu without saving the parameter, and stay at current function code.

Below is the example of modifying the function code F9.01 from 10.00Hz to 20.00Hz. (The number of bigger font size refers to the blinking digit),

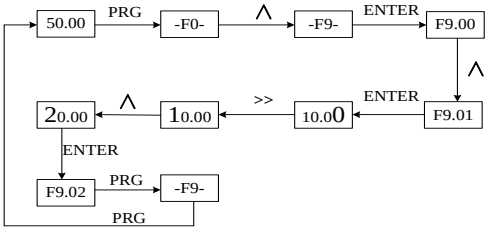



Fig.5-2 Example of 3 levels menu operating

At level-3 menu, if the parameter has no blinking digit, it indicates that this function code cannot be modified. The possible reasons include:

1) The function code is an unchangeable parameter, such as actual detection parameter, running record parameter, etc.

2) The function code cannot be modified in running status. It can be modified only after the inverter running is stopped.

## 6. Run the motor

| Operations | Details |
|---|---|
| Before power-on | Check:<br>No operating signal.<br>The motor has been connected.<br>1 phase 220V/ 3 phase 380V input power has been connected correctly. |
| The inverter is powered on | Confirm the inverter displays the correct operating mode on power -up. Reset the drive if the operation mode is incorrect. Contact your supplier if problem still exist. |
| G/P model selection | FP.05=0 Type G<br>FP.05=1 Type P |
| Set max, upper &lower limit frequency | F0.10 Basic frequency<br>F0.11 Max frequency<br>F0.12 Freq. upper limit<br>F0.13 Freq. lower limit |
| Set control mode | F0.01=0: Sensorless vector control-1<br>F0.01=1: Sensorless vector control-2<br>F0.01=2: Vector control with encoder (NE300 only)<br>F0.01=3: V/F control |
| Set acceleration and deceleration time | F0.19 Acceleration time (s)<br>F0.20 Deceleration time (s) |
| Set parameters on the motor nameplate | F5.00 motor type<br>F5.01 Poles of motor<br>F5.02 Rated power of motor (KW)<br>F5.03 Rated current of motor (A)<br>F5.04 Rated speed of rotation of motor (RPM) |
| Auto-tuning of motor | F5.10=1 (static auto-tuning) or<br>F5.10=2 (rotating auto-tuning, must unload) operate the motor via keypad to perform the auto-tuning. |
| Run the motor | Press Run button to run the motor.<br>Increase or decrease the speed with keypad knob. |

# 7. List of Parameters

Attention:

"○"means the parameter can be changed during running.

"×"means the parameter cannot be changed during running;

"*" means the parameter is detected value or fixed value and not changeable.

"-" means manufacturer parameter and the users have no access to it.

"②" indicates this parameter is only for NE200

"③"indicates this parameter is only for NE300

## F0: Basic function group

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F0.00 | ②Reserved | Reserved | Reserved | - | 0100H |
| F0.00 | ③Drive type display | 0~1 | 0 | × | 0100H |
| F0.01 | ②Control mode | 0: No vector Sensor vector control-1<br>1: No vector Sensor vector control-2<br>2: Reserved<br>3: V/F control | 0 | × | 0101H |
| | ③Control mode | 0: No vector Sensor vector control-1<br>1: No vector Sensor vector control-2<br>2: Vector control with encoder<br>3: V/F control | 0 | × | 0101H |
| F0.02 | Run command control mode | 0: Keypad control<br>1: Terminal control<br>2: Communication control | 0 | ○ | 0102H |
| F0.03 | Frequency reference1 (Freq. ref.1) | 0: Digital reference (keypad, terminal up/down)<br>1: AI1 2: AI2 | 0 | ○ | 0103H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 3: PULSE setup<br>4: Communication<br>5:MS (Multi-step) Speed<br>6: PLC 7: PID<br>8: Keypad potentiometer | | | |
| F0.04 | Frequency reference2 (Freq. ref.2) | 1: AI1 2: AI2<br>3: PULSE setup<br>4: Communication<br>5:MS (Multi-step) Speed<br>6: Reserved 7: Reserved<br>8: Keypad potentiometer | 1 | ○ | 0104H |
| F0.05 | Frequency setting selection | 0:Freq. ref.1<br>1:Freq. ref.2<br>2: Freq. ref.1+ Freq. ref.2<br>3: Switch between Freq. ref.1 & Freq. ref.2 by terminal<br>4: Switch between (Freq. ref.1+ Freq. ref.2) & Freq. ref.1 by terminal<br>5:MIIN (Freq. ref.1, Freq. ref.2)<br>6:MAX (Freq. ref.1, Freq. ref.2) | 0 | ○ | 0105H |
| F0.06 | UP/DOWN Preset freq. | 0~ Max frequency | 50.00Hz | ○ | 0106H |
| F0.07 | Terminal UP/ DOWN rate | 0.01~ 50.00Hz/s | 1.00Hz/s | ○ | 0107H |
| F0.08 | UP/DOWN function source select | 0: Keypad and terminal<br>1: Keypad<br>2: Terminal | 1 | ○ | 0108H |
| F0.09 | UP/DOWN data saving | 0: Be saved in power failure | 0 | ○ | 0109H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | selection | 1: Be saved in power failure<br>2: Be cleared to 0 after stop | | | |
| F0.10 | Basic frequency | 0.10～550.0Hz | 50.00Hz | × | 010AH |
| F0.11 | Max frequency | MAX[50.00Hz, Freq. upper limit, Reference frequency]~550.0Hz | 50.00Hz | × | 010BH |
| F0.12 | Freq. upper limit | Freq. lower limit ~ Max frequency | 50.00Hz | × | 010CH |
| F0.13 | Freq. lower limit | 0.00~Frequency upper limit | 0.00Hz | × | 010DH |
| F0.14 | Max output voltage | 110~440V | Depend on model | × | 010EH |
| F0.15 | Carrier freq. | 1.0~16.0KHz | Depend on model | ○ | 010FH |
| F0.16 | Carrier freq. auto-adjust | 0: disable<br>1: able | 0 | ○ | 0110H |
| F0.17 | Keypad direction | 0: Forward 1: Reverse | 0 | ○ | 0111H |
| F0.18 | Motor wiring direction | 0: Positive sequence<br>1: Reversed sequence | 0 | × | 0112H |
| F0.19 | Acc. time1 | 0.1～3600s | Depend on model | ○ | 0113H |
| F0.20 | Dec. time1 | 0.1～3600s | Depend on model | ○ | 0114H |

## Group F1: Start and stop control

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F1.00 | ②Start mode | 0: Start directly<br>1: DC injection brake first and then start at start freq. | 0 | ○ | 0200H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | ③Start mode | 0: Start directly<br>1: DC injection brake first and then start at start freq.<br>2: Speed tracking and start | 0 | ○ | 0200H |
| F1.01 | Start freq. | 0.10~60.00Hz | 0.50Hz | ○ | 0201H |
| F1.02 | Start freq. hold time | 0.0~10.0s | 0.0s | ○ | 0202H |
| F1.03 | ②DC brake current at start | G: 0.0~100.0% rated current | 0.00% | ○ | 0203H |
| F1.03 | ③DC brake current at start | G: 0.0~100.0% rated current<br>P: 0.0~80.0% rated current | 0.00% | ○ | 0203H |
| F1.04 | DC brake time at start | 0.0～30.0s | 0.0s | ○ | 0204H |
| F1.05 | Acc./Dec. mode | 0:<br>Linear<br>1:<br>S-curve | 0 | ○ | 0205H |
| F1.06 | Time of S-curve initial stage | 10.0～50.0% (Acc./ Dec. time) F1.06+F1.07≤90% | 30.00% | ○ | 0206H |
| F1.07 | Time of S-curve rising stage | 10.0~80.0%（Acc./ Dec. time）F1.06+F1.07≤90% | 40.00% | ○ | 0207H |
| F1.08 | Stop mode | 0: Deceleration to stop<br>1: Coast to stop<br>2: Deceleration +DC braking | 0 | × | 0208H |
| F1.09 | DC brake trigger frequency at stop | 0.00～550.0Hz | 0.00Hz | ○ | 0209H |
| F1.10 | DC brake waiting time at stop | 0.00～10.00s | 0.00s | ○ | 020AH |
| F1.11 | ②DC brake current at stop | 0.0~100% rated current | 0.00% | ○ | 020BH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | ③DC brake current at stop | Type G: 0.0~100.0% rated current<br>Type P: 0.0~80.0% rated current | 0.00% | ○ | 020BH |
| F1.12 | DC brake time at stop | 0.0～30.0s | 0.0s | ○ | 020CH |
| F1.13 | Energy consumption brake validity | 0: Disabled<br>1: Enabled | 0 | ○ | 020DH |
| F1.14 | Energy consumption brake action voltage | 380V: 650~750V<br>220V: 360~390V | 700V<br>380V | ○ | 020EH |
| F1.15 | Power failure and fault restart | 0: Disable<br>1: Enabled for power failure<br>2: Enabled for fault<br>3: Enabled for both<br>Note: Power recovery restart is only valid for terminal 2-wires mode. Fault restart is invalid for under-voltage fault. | 0 | ○ | 020FH |
| F1.16 | Waiting time for restart | 0.0～3600s | 2.0s | ○ | 0210H |
| F1.18 | ③Rotational speed tracking direction inspection | 0: Disable<br>1: Enable | 0 | ○ | 0212H |
| F1.19 | ③Rotational speed tracking direction inspection time | 10~1000ms | 50ms | ○ | 0213H |

## Group F2: Auxiliary running function

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F2.00 | Jog running freq. | 0.0～50.00Hz | 5.00Hz | ○ | 0300H |
| F2.01 | Jog Acc. time | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0301H |
| F2.02 | Jog Dec. time | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0302H |
| F2.03 | Acc. time2 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0303H |
| F2.04 | Dec. time2 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0304H |
| F2.05 | Acc. time3 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0305H |
| F2.06 | Dec. time3 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0306H |
| F2.07 | Acc. time4 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0307H |
| F2.08 | Dec. time4 | ②0.1～360.0s<br>③0.0~3600.0s | 6.00s②<br>20.0s③ | ○ | 0308H |
| F2.09 | ②Reserved | Reserved | Reserved | Reserved | 0309H |
| | ③Skip freq. 1 | 0.00~320.0Hz | 0.00Hz | × | 0309H |
| F2.10 | ③Skip freq. 2 | 0.00～320.0Hz | 0.00Hz | × | 030AH |
| F2.11 | Skip freq. amplitude | 0.00～15.00Hz | 0.00Hz | × | 030BH |
| F2.12 | Anti-Reverse control | 0: Reverse rotation allowed<br>1: Reverse rotation not allowed | 0 | ○ | 030CH |
| F2.13 | Fwd/ Rev switch dead-zone time | 0.0～3600s | 0.0s | ○ | 030DH |
| F2.14 | Freq. lower-limit treatment | 0: Run with frequency lower limit<br>1: Zero frequency operation | 0 | × | 030EH |
| F2.15 | Reserved | Reserved | 0 | × | |
| F2.16 | ③ | 0: Disable | 1 | ○ | 0310H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | Energy-saving control select | 1: Enable | | | |
| F2.17 | AVR Function | 0: Disabled 1: Enabled<br>2: Disabled only at speed-down | 2 | × | 0311H |
| F2.18 | Over modulation | 0: Enabled 1: Disabled | 1 | × | 0312H |
| F2.19 | ③Droop control | 0.00~10.00Hz | 0.00Hz | ○ | 0313H |
| F2.20 | Fan control mode | 0: Auto mode<br>1: Always Running | 0 | × | 0314H |
| F2.21 | Instant-power-failure treatment | 0: Disabled<br>②1: Drop frequency (Reserved)<br>③1: Drop frequency<br>2: Stop directly | 0 | ○ | 0315H |
| F2.22 | Instant-power-failure freq. drop point | 210～600V | 380V:420V<br>220V:230V | ○ | 0316H |
| F2.23 | Instant-power failure freq. drop rate | 1-800 | 400 | ○ | 0317H |
| F2.24 | Motor speed display ratio | 0.00～500.0% | 100.00% | ○ | 0318H |
| F2.25 | UP/DOWN drop to minus frequency | 0: Enabled<br>1: Disable | 1 | ○ | 0319H |
| F2.26 | ENTER key function | 0: No special action<br>1: FWD/REV switching<br>2: RUN for forward; Enter for reverse; STOP for stop<br>3: Jog running | 0 | ○ | 031AH |
| F2.27 | Freq. resolution | 0: 0.01Hz 1: 0.1Hz | 0 | × | 031BH |
| F2.28 | Acc./Dec. time unit | 0: 0.1s 1: 0.01s | 1②<br>0③ | × | 031CH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F2.29 | High freq. modulation mode | 0: Asynchronous modulation<br>1: Synchronous modulation | 0 | × | 031DH |
| F2.31 | IO output Freq. baseline select while vector control | 0: According to the Freq. after ACC/DEC speed<br>1: According to the current value | 0 | ○ | 031FH |
| F2.32 | PWM modulation mode | 0: uplink 16Hz discrete modulation mode (5-stage mode), downlink 12Hz continuous modulation mode (7-stage mode)<br>1: fixed as z continuous modulation mode (7-stage mode) | 0 | ○ | 0320H |
| F2.33 | Threshold value of Zero Freq. running | 0.00~550.0Hz | 0.00Hz | ○ | 0321H |
| F2.34 | Range between start Freq. and threshold value of Zero Freq. | 0.00~550.0Hz | 0.00Hz | ○ | 0322H |
| F2.35 | Synchronous motor IQ filter | 0：with filter<br>1：without filter | 0 | ○ | 0323H |
| F2.36 | Voltage modulation coefficient of synchronous motor with weak magnetic field | 0.0~120.0% | 105.0% | ○ | 0324H |

## Group F3: Vector Control Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F3.00 | Speed loop proportional gain 1 | 1~3000 | 1000 | ○ | 0400H |
| F3.01 | Speed loop integral time 1 | 1~3000 | 300 | ○ | 0401H |
| F3.02 | Switching frequency 1 | 0.0～60.00Hz | 5.00Hz | ○ | 0402H |
| F3.03 | Speed loop proportional gain 2 | 1~3000 | 800 | ○ | 0403H |
| F3.04 | Speed loop integral time 2 | 1~3000 | 200 | ○ | 0404H |
| F3.05 | Switching frequency 2 | 0.0～60.00Hz | 10.00Hz | ○ | 0405H |
| F3.06 | Speed loop filter time constant | 0～500ms | 2ms②<br>3ms③ | ○ | 0406H |
| F3.07 | Current loop proportional coefficient | 0～6000 | 3000 | ○ | 0407H |
| F3.08 | Current loop integral coefficient | 0～6000 | 1500 | ○ | 0408H |
| F3.09 | VC Slip compensation | 0.0～200.0% | 100.00% | ○ | 0409H |
| F3.10 | ②Torque control | 0:Torque control Disabled<br>1:Torque digital setting(F3.11)<br>2:AI1 3:AI2<br>4:Reserved<br>5:communication<br>6:keypad potentiometer | 0 | ○ | 040AH |
| | ③Torque control | 0:Torque control Disabled<br>1:Torque digital setting(F3.11)<br>2:AI1 3:AI2 | 0 | ○ | 040AH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 4:Pulse<br>5:communication<br>6:keypad potentiometer | | | |
| F3.11 | Torque digital setting | 0.0～200.0% | 50.00% | ○ | 040BH |
| F3.12 | Torque control speed limit | 0: digital setting(F3.13)<br>1: AI1 2: AI2<br>3: PULSE 4: communication<br>5: keypad potentiometer | 0 | ○ | 040CH |
| F3.13 | Torque control speed limit digital setting | 0.00～550.0Hz | 50.00Hz | ○ | 040DH |
| F3.14 | ③Encoder pulse number | 1~9999 | 1000 | ○ | 040EH |
| F3.15 | ③Motor and PG reduction ratio | 0.010~50.000 | 1.000 | ○ | 040FH |
| F3.16 | ③PG direction | 0: Forward 1: Reverse | 0 | ○ | 0410H |
| F3.17 | ACC/DEC limit controlled by PG | 0: Limited 1: No limited | 0 | ○ | 0411H |
| F3.18 | SVC speed calculation filter | 0~15 | 5 | ○ | 0412H |
| F3.19 | SVC mode | 0: Mode1<br>1: Mode2 | 0 | ○ | 0413H |
| F3.20 | SVC mode2 flux weaken coefficient | 20~500% | 100% | ○ | 0414H |
| F3.21 | Flux weaken control selection | 0: Disable 1: Enable | 0 | ○ | 0415H |
| F3.22 | Torque limit compensation coefficient while | 60.0～300.0% | 85%②<br>200%③ | ○ | 0416H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | constant power output | | | | |
| F3.23 | Reserved | Reserved | Reserved | Reserved | |
| F3.24 | Torque ref. terminal single modulation | 0.0~10% | 0.00% | ○ | 0418H |
| F3.25 | Torque ref. terminal total modulation | 0.0~100% | 50% | ○ | 0419H |
| F3.26 | Torque limit in vector control mode | 0~300.0% | 150.0% | ○ | 041AH |
| F3.27 | Torque boost cut-off frequency in torque control mode | 0.00~15.00Hz | 12.00Hz | ○ | 041BH |
| F3.28 | Torque boost amount in torque control mode | 0.0~20.0% | 15.0% | ○ | 041CH |
| F3.31 | Synchronous motor initial position detection | 0：Do not detect<br>1：Detect in power-on first run<br>2：Detect every time | 2 | ○ | 041FH |
| F3.32 | Synchronous motor initial position detection current | 50~120% | 90% | ○ | 0420H |
| F3.33 | Initial position detection pulse width | 0~1200us | 0 | ○ | 0421H |
| F3.34 | Initial position detection pulse width actual value | 0~1200us | 0 | * | 0422H |
| F3.35 | Synchronous motor braking torque limit | 0.0~300.0% | 150.0% | ○ | 0423H |
| F3.36 | Synchronous motor flux weaken mode | 0：Flux weaken mode is invalid | 0 | ○ | 0424H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 1：Flux weaken mode is valid | | | |
| F3.37 | Max flux weaken current | 0~100.0% | 50% | ○ | 0425H |
| F3.38 | Flux weaken regulation proportional coefficient | 0~3000 | 500 | ○ | 0426H |
| F3.39 | Flux weaken regulation integration coefficient | 0~3000 | 800 | ○ | 0427H |
| F3.40 | Synchronous motor low speed Min. current | 0~100% | 30% | ○ | 0428H |
| F3.41 | Synchronous motor low speed carrier frequency | 1.0~16.0KHz | 2.0KHz | ○ | 0429H |
| F3.42 | Synchronous motor Min excitation current | -100.0~100.0% | 0.0% | ○ | 042AH |
| F3.43 | ②V/F Start switching frequency | 0~50.00Hz | 0.00Hz | ○ | 042BH |
| F3.44 | Synchronous motor position evaluating low speed filter | 2~100 | 40 | ○ | 042CH |
| F3.45 | Synchronous motor position evaluating high speed filter | 2~100 | 15 | ○ | 042DH |

## Group F4: V/F Control Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F4.00 | V/F curve setting | 0: Constant torque load V/F<br>1: 2.0 power decreasing torque<br>2: 1.5 power decreasing torque<br>3: 1.2 power decreasing torque<br>4: Multiple dots V/F | 0 | × | 0500H |
| F4.01 | V/F freq. F1 | 0.0～F4.03 | 10.00Hz | × | 0501H |
| F4.02 | V/F voltage V1 | 0.0～100.0% | 20.00% | × | 0502H |
| F4.03 | V/F freq. F2 | F4.01～F4.05 | 25.00Hz | × | 0503H |
| F4.04 | V/F voltage V2 | 0.0～100.0% | 50.00% | × | 0504H |
| F4.05 | V/F freq. F3 | F4.03～F0.10 | 40.00Hz | × | 0505H |
| F4.06 | V/F voltage V3 | 0～100.0% | 80.00% | × | 0506H |
| F4.07 | Torque boost | 0.0%: Auto boost<br>0.1～30.0%: Manual boost | 0.00% | ○ | 0507H |
| F4.08 | Manual torque boost cutoff point | 0.00～60.00Hz | 50.00Hz | ○ | 0508H |
| F4.09 | Slip compensation coefficient | 0.0～200.0% | 0.00% | ○ | 0509H |
| F4.10 | Slip compensation filtering time | 0.01～2.55s | 0.20s | ○ | 050AH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F4.11 | V/F separation control voltage source | 0: disabled<br>1: Digital setting (F4.12)<br>2: AI1<br>3: AI2<br>4: Pulse<br>5: communication | 0 | × | 050BH |
| F4.12 | V/F separation voltage digital setting | 0V～max output voltage | 38<br>0V | ○ | 050CH |
| F4.13 | V/F separation voltage rising time | 0.0s～1000.0s | 0.0s | ○ | 050DH |
| F4.14 | V/F oscillation suppression | 0~500 | Depends on model | ○ | 050EH |
| F4.15 | Vibration suppressor | 0~10 | 2 | ○ | 050FH |

## Group F5: Motor Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F5.00 | motor type | 0: Common asynchronous motor<br>1: Variable frequency asynchronous motor<br>2: PM motor | 0 | × | 0600H |
| F5.01 | Motor polarity number | 2~56 | 4 | × | 0601H |
| F5.02 | rated power | ②0.1～6553.5kW<br>③0.4~999.9kW | Depends on model | ○ | 0602H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F5.03 | rated current | ②0.01～655.35A<br>③0.1~999.9A | Depends on model | ○ | 0603H |
| F5.04 | rated speed | ②0～65535RPM<br>③0～24000 RPM | Depends on model | ○ | 0604H |
| F5.05 | No-load current I0 | ②0.01～655.35A<br>③0.1～999.9A | Depends on model | ○ | 0605H |
| F5.06 | ②Stator resistance R1 | 1～65535mΩ | Depends on model | ○ | 0606H |
| | ③Stator resistance R1 | 1～65535mΩ(Drive rated power≤22kW)<br>0.1～6553.5mΩ(Drive rated power>22kW) | Depends on model | ○ | 0606H |
| F5.07 | ②Leakage inductive reactance X | 0.01～655.35mH | Depends on model | ○ | 0607H |
| | ③Leakage inductive reactance X | 0.01～655.35mH(Drive rated power≤22kW)<br>0.001～65.535mH(Drive rated power>22kW) | Depends on model | ○ | 0607H |
| F5.08 | ②Rotor resistance R2 | 1～65535mΩ | Depends on model | ○ | 0608H |
| | ③Rotor resistance R2 | 1～65535mΩ(Drive rated power≤22kW)<br>0.1～6553.5mΩ(Drive rated power>22kW) | Depends on model | ○ | 0608H |
| F5.09 | ②Mutual Inductive reactance Xm | 0.1～6553.5mH | Depends on model | ○ | 0609H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | ③Mutual Inductive reactance Xm | 0.1～6553.5mH(Drive rated power≤22kW)<br>0.01～655.35mH(Drive rated power>22kW) | Depends on model | ○ | 0609H |
| F5.10 | Auto tune | 0: No operation<br>1: Static tuning<br>2: Rotary tuning | 0 | × | 060AH |
| F5.11 | ②Synchronous motor stator resistor Rs | 1～65535mΩ | Depends on model | ○ | 060BH |
| | ③Synchronous motor stator resistor Rs | 1～65535mΩ(Drive rated power≤22kW)<br>0.1～6553.5mΩ(Drive rated power>22kW) | Depends on model | ○ | 060BH |
| F5.12 | ②Synchronous motor D-axis inductance Ld | 0.01～655.35mH | Depends on model | ○ | 060CH |
| F5.12 | ③Synchronous motor D-axis inductance Ld | 0.01～655.35mH(Drive rated power≤22kW)<br>0.001～65.535mH(Drive rated power>22kW) | Depends on model | ○ | 060CH |
| F5.13 | ②Synchronous motor Q-axis inductance Lq | 0.01～655.35mH | Depends on model | ○ | 060DH |
| | ③Synchronous motor Q-axis inductance Lq | 0.01～655.35mH(Drive rated power≤22kW)<br>0.001～65.535mH(Drive rated power>22kW) | Depends on model | ○ | 060DH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F5.14 | Synchronous motor counter EMF constant | 0.0~6553.5v | 300.0v | ○ | 060EH |

## Group F6: Input terminals

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F6.00 | Terminal Command mode | 0: Two-wire mode 1<br>1: Two-wire mode 2<br>2: Three-wire mode 1<br>3: Three-wire mode 2 | 0 | × | 0700H |
| F6.01 | X1 terminal Function selection | 0: NULL<br>1: FWD<br>2: REV<br>3: RUN<br>4: F/R direction<br>5: HLD self-hold<br>6: FWD jog run (FJOG)<br>7: REV jog run (RJOG)<br>8: RESET<br>9: Freq. source switching<br>10: Terminal UP<br>11: Terminal DOWN<br>12: UP/DOWN setup clear<br>13: Coast to stop<br>14: DC brake<br>15: Acc./Dec. prohibit<br>16: Drive running prohibit | 1 | × | 0701H |
| F6.02 | X2 terminal Function selection | | 2 | × | 0702H |
| F6.03 | X3 terminal Function selection | | 8 | × | 0703H |
| F6.04 | X4 terminal Function selection | | 17 | × | 0704H |
| F6.05 | X5 terminal Function selection | | 18 | × | 0705H |
| F6.06 | ③X6 terminal Function selection<br>②AI1 terminal function | | 0 | × | 0706H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | selection | 17: Multi-step terminal 1<br>18: Multi-step terminal 2<br>19: Multi-step terminal 3<br>20: Multi-step terminal 4<br>21: torque control disable<br>22: Acc./Dec. time selector 1<br>23: Acc./Dec. time selector 2<br>24: Running pause normally open<br>25: Running pause normally closed<br>26: External fault normally open<br>27: External fault normally closed<br>28: Run command switch to terminal<br>29: Run command switch to keypad<br>30: External stop terminal; same to STOP key in keypad control mode.<br>31: Reserved<br>32: PLC status reset<br>33: Wobble freq. pause<br>34: Wobble freq. status reset | | | |
| F6.07 | ③X7 terminal Function selection<br>②AI2 terminal function selection | | 0 | × | 0707H |
| F6.08 | ②Reserve<br>③X8 terminal function selection | | Reserved | × | 0708H |
| F6.09 | ②Reserve<br>③AI1 terminal function selection | | Reserved | × | 0709H |
| | | | | | |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 35: PID pause<br>36: PID parameters switching<br>37: PID direction reversion; Active this terminal to reverse PID direction set by F8.04.<br>38: Timing drive input<br>39: Counter signal input<br>40: Counter clear<br>41: Actual length clear<br>42: FWD running (FWD NC)<br>43: REV running (REV NC)<br>44: HLD (Normally open)<br>45: Increase torque<br>46: Torque increment clear<br>47: Decrease torque<br>48: One key recover user parameters(Valid in stop state)<br>49~56: Reserved<br>57: Pulse input (Take X4 in case 2 inputs) | | | |
| F6.10 | Analog Nonlinear Selection | 0: none 1: AI1<br>2: AI2 3: Pulse | 0 | × | 070AH |
| F6.11 | AI1 Min. input | 0.00～F6.13 | 0.00V | ○ | 070BH |
| F6.12 | AI1 Min. input corresponding setup | -200.0～200.0% | 0.00% | ○ | 070CH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F6.13 | AI1 Max. input | F6.11～10.00V | 10.00V | ○ | 070DH |
| F6.14 | AI1 Max. input corresponding setup | -200.0～200.0% | 100.00% | ○ | 070EH |
| F6.15 | AI1 input filter time | 0.01～50.00s | 0.05s | ○ | 070FH |
| F6.16 | AI2 Min. input | 0.00～F6.18 | 0.00V | ○ | 0710H |
| F6.17 | AI2 Min. input corresponding setup | -200.0～200.0% | 0.00% | ○ | 0711H |
| F6.18 | AI2 Max. input | F6.16～10.00V | 10.00V | ○ | 0712H |
| F6.19 | AI2 Max. input corresponding setup | -200.0～200.0% | 100.00% | ○ | 0713H |
| F6.20 | AI2 input filter time | 0.01～50.00s | 0.05s | ○ | 0714H |
| F6.21 | PULSE Min. input | 0.00～F6.23 | 0.00kHz | ○ | 0715H |
| F6.22 | PULSE Min. input corresponding setup | -200.0%～200.0% | 0.00% | ○ | 0716H |
| F6.23 | PULSE Max. input | F6.21～50.00kHz | 50.00kHz | ○ | 0717H |
| F6.24 | PULSE Max. input corresponding setup | -200.0%～200.0% | 100.00% | ○ | 0718H |
| F6.25 | Pulse filter time | 0.01～50.00s | 0.05s | ○ | 0719H |
| F6.26 | Terminal up/down initial increment | 0.00~10.00Hz | 0.01Hz | ○ | 071AH |
| F6.27 | Freq. ref.2 datum | 0: Max. freq.<br>1: Freq. ref.1 | 0 | ○ | 071BH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F6.28 | Delay duration of X1 terminal close | 0.0~100.0s | 0.0s | ○ | 071CH |
| F6.29 | Delay duration of X1 terminal open | 0.0~100.0s | 0.0s | ○ | 071DH |
| F6.30 | Delay duration of X2 terminal close | 0.0~100.0s | 0.0s | ○ | 071EH |
| F6.31 | Delay duration of X2 terminal open | 0.0~100.0s | 0.0s | ○ | 071FH |
| F6.32 | Pos. and Neg. logic terminal X 1 | Pos. logic of Xi terminal:<br>Be valid while connecting between Xi and COM.<br>Neg. logic of Xi terminal:<br>Be valid while disconnecting between Xi and COM.<br>Units: Logic of X1 terminal<br>Tens: Logic of X2 terminal<br>Hundreds: Logic of X3 terminal<br>Thousands: Logic of X4 terminal | 0000 | × | 0720H |
| F6.33 | ②Pos. and Neg. logic terminal X 2 | Units: Logic of X5 terminal<br>Tens: Logic of AI1 terminal<br>Hundreds: Logic of AI2 terminal | 0000 | × | 0721H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | Note:<br>Terminal 24、25、26、27、42、43、44 and 49 are not impacted by this parameter. | | | |
| F6.33 | ③Pos. and Neg. logic terminal X 2 | Units: Logic of X5 terminal<br>Tens: Logic of X6 terminal<br>Hundreds: Logic of X7 terminal<br>Thousands: Logic of X8 terminal<br>Note:<br>Terminal 24、25、26、27、42、43、44 and 49 are not impacted by this parameter. | | | 0721H |

## Group F7: Output terminal

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F7.00 | ②Reserve | 0: NULL<br>1: RUN<br>2: Freq. arrival(FAR)<br>3: Freq. level detection 1 (FDT1)<br>4: Freq. level detection 2 (FDT2)<br>5: Freq. detection when speed-up<br>6: Freq. detection when speed-down<br>7: Zero-speed running | Reserve | Reserve | 0800H |
| | ③DO terminal output definition | | 0 | ○ | 0800H |
| F7.01 | Y1 terminal output selection | | 1 | ○ | 0801H |
| F7.02 | ②Reserve | | Reserve | Reserve | 0802H |
| | ③Y2 terminal output selection | | 0 | ○ | 0802H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F7.03 | Relay 1 (TA/TB/TC) output selection | 8: Zero-speed<br>9: PLC circulation completion<br>10: Reserved<br>11: Ready for running (RDY)<br>12: Timing arrival<br>13: Counting arrival<br>14: Reserved<br>15: Preset torque value arrival<br>16: Drive fault output<br>17: Under voltage status output<br>18: Drive overload pre-warning<br>19: Fixed-length arrived, level signal<br>20: PID in dormancy<br>21: AI1>AI2<br>22: AI1<F7.16<br>23: AI1>F7.16<br>24: F7.16<AI1<F7.17<br>25: Frequency lower limit arrival<br>26: Multi-pumps system auxiliary pump control signal<br>27: Communication setting<br>28: Drive running time arrival<br>29: Running in FWD<br>30: Running in REV<br>31: Instantaneous power loss processing<br>32：Current arrival | 16 | ○ | 0803H |
| F7.04 | ②Reserve | | Reserve | Reserve | 0804H |
| F7.04 | ③Relay 2 (BRA/BRB/BRC) output selection | | 0 | ○ | 0804H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F7.05 | Freq. arrival (FAR) detection width | 0.00～10.00Hz | 2.50Hz | ○ | 0805H |
| F7.06 | Frequency detection value 1 (FDT1 level) | 0.00～600.0Hz | 5.00Hz | ○ | 0806H |
| F7.07 | Freq. detection lag1 (FDT1-lag) | 0.00～10.00Hz | 1.00Hz | ○ | 0807H |
| F7.08 | ②Frequency detection value 2 (FDT2 level) | 0.00～320.0Hz | 5Hz | ○ | 0808H |
| | ③Frequency detection value 2 (FDT2 level) | 0.00～320.0Hz | 25.00Hz | ○ | 0808H |
| F7.09 | Freq. detection lag2 (FDT2-lag) | 0.00～10.00Hz | 1.00Hz | ○ | 0809H |
| F7.10 | Up detection frequency | 0.00～550.0Hz | 50.00Hz | ○ | 080AH |
| F7.11 | Down detection frequency | 0.00～550.0Hz | 0.00Hz | ○ | 080BH |
| F7.12 | Torque detection reference | 0.0～200.0% | 100.00% | ○ | 080CH |
| F7.13 | Preset Counting arrival value | 0～9999 | 0 | ○ | 080DH |
| F7.14 | Preset Timing arrival value | 0.0～6553.0s | 0.0s | ○ | 080EH |
| F7.16 | AI1 compare threshold 1 | 0.00～10.00v | 0.00v | ○ | 0810H |
| F7.17 | AI1 compare threshold 2 | 0.00～10.00v | 0.00v | ○ | 0811H |
| F7.18 | Analog compare hysteresis error | 0.00～30.00v | 0.20v | ○ | 0812H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F7.19 | ②AO function definition<br>③AO1 output selection | 0: NULL<br>1: Running freq. (0~max frequency)<br>2: Setting freq. (0~max frequency)<br>3: Output current(0～2 times of drive rated current)<br>4: Output voltage (0～Max Voltage)<br>5: PID setup (0～10V)<br>6: PID feedback (0～10V)<br>7: Calibrating signal (5V)<br>8: Output torque (0～2 times of motor rated torque)<br>9: Output power (0～2 times of drive rated power)<br>10: Bus voltage (0~1000V)<br>11: 9: AI1 (0～10V)<br>12: AI2 (0～10V/4～20mA)<br>13: Pulse frequency<br>14: Communication setting<br>15: Reserve<br>16: Current output (0~2 time rated value) | 1 | ○ | 0813H |
| F7.20 | ②Reserve | | Reserve | Reserve | 0814H |
| | ③AO2 output selection | | 0 | ○ | 0814H |
| F7.21 | ②Y1 function definition | | 0 | ○ | 0815H |
| | ③DO output selection | | 0 | ○ | 0815H |
| F7.22 | ②AO output range selection | 0: 0～10V/0～20mA<br>1: 2～10V/4～20mA | 0 | ○ | 0816H |
| | ③AO1 output range selection | | | | 0816H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F7.23 | ②Reserve | Reserve | Reserve | Reserve | 0817H |
| | ③AO2 output range selection | 0: 0～10V/0～20mA<br>1: 2～10V/4～20mA | 0 | ○ | 0817H |
| F7.24 | ②Gain of AO | 1～200% | 100% | ○ | 0818H |
| | ③Gain of AO1 | | | | 0818H |
| F7.25 | ②Reserve | Reserve | Reserve | Reserve | 0819H |
| | Gain of AO2③ | 1~200% | 100% | ○ | 0819H |
| F7.26 | ②Y1 Max. output pulse freq. | Y1 Min. output pulse freq.～50.00kHz | 10.00kHz | ○ | 081AH |
| | ③DO Max. output pulse freq. | DO Min. output pulse freq.～50.00kHz | | | 081AH |
| F7.27 | ②Y1 Min. output pulse freq. | 0.00～Y1 Max. output pulse freq. | 0.00kHz | ○ | 081BH |
| | ③DO Min. output pulse freq. | 0.00～DO Max. output pulse freq. | 0.00kHz | ○ | 081BH |
| F7.28 | Auxiliary pump start lag time | 0～9999s | 0 | ○ | 081CH |
| F7.29 | Auxiliary pump stop lag time | 0～9999s | 0 | ○ | 081DH |
| F7.30 | ②Y1 Max. output | 0: 50.00KHz<br>1: 500.0Hz | 0 | × | 081EH |
| | ③DO Max. output | | | | 081EH |
| F7.31 | FDT/RUN signal Jog selection | 0: Include Jog signal<br>1: Do not include Jog signal | 0 | × | 081FH |
| F7.32 | Running time arrival setup | 0~65530Mins | 0 | ○ | 0820H |
| F7.33 | Running time arrival stop | 0: Do not stop<br>1: Stop | 0 | ○ | 0821H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | selection | | | | |
| F7.34 | Ao1 4mA/2.00v adjustable datum | 0.0~100.0% | 20% | ○ | 0822H |
| F7.35 | ②Reserve | Reserve | Reserve | Reserve | 0823H |
| | ③Ao2 4mA/2.00v adjustable datum | 0.0~100.0% | 20% | ○ | 0823H |
| F7.36 | ②Digital output terminal Pos./Neg. logic | Units: Logic of Y1 terminal<br>Tens: Reserve<br>Hundreds: Logic of Relay 1<br>Thousands: Reserve | 0000 | ○ | 0824H |
| | ③Digital output terminal Pos./Neg. logic | Units: Logic of Y1 terminal<br>Tens: Logic of Y2 terminal<br>Hundreds: Logic of Relay 1<br>Thousands: Logic of Relay 2 | 0000 | ○ | 0824H |
| F7.37 | Current reaches the upper limit | 0.0～655.35A | 0.0A | ○ | 0825H |
| F7.38 | Current upper limit check time | 0.00～50.00s | 0.00s | ○ | 0826H |
| F7.39 | Current reaches lower limit | 0.0～655.35A | 0.0A | ○ | 0827H |
| F7.40 | Current lower limit check time | 0.00～50.00s | 0.00s | ○ | 0828H |
| F7.41 | AO torque output range selection | 0: 0~200% the rated torque of motor<br>1：-200~200% Motor rated torque output | 0 | ○ | 0829H |

## Group F8: PID Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F8.00 | PID setup channel selection | 0: PID digital setting （F8.02） 1: AI1 2: AI2 3: Pulse input 4: serial communication | 0 | ○ | 0900H |
| F8.01 | PID feedback channel selection | 0: AI1 1: AI2 2: Pulse input 3: serial communication 4: AI1-AI2 5: AI1+AI2 6: MAX(AI1, AI2) 7: MIN(AI1, AI2) | 1 | ○ | 0901H |
| F8.02 | Analog PID digital setup | 0.0～999.9 | 50 | ○ | 0902H |
| F8.03 | Analog closed loop measuring range | 1.0～999.9 | 100 | ○ | 0903H |
| F8.04 | PID action direction | 0: Positive 1: Negative | 0 | ○ | 0904H |
| F8.05 | PID proportional gain 1 (KP1) | 0.1～9.9 | 1 | ○ | 0905H |
| F8.06 | PID integration time 1 | 0～100s | 10s(2) 3s(3) | ○ | 0906H |
| F8.07 | PID differential time 1 | 0.00～1.00s | 0.00s | ○ | 0907H |
| F8.08 | PID proportional gain 2 (KP2) | 0.1～9.9 | 1 | ○ | 0908H |
| F8.09 | PID integration time 2 | 0.0～100.0s | 10.0s | ○ | 0909H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F8.10 | PID differential time 2 | 0.00～1.00s | 0.00s | ○ | 090AH |
| F8.11 | PID parameters switching | 0: No switching, use the first group parameters<br>1: switching by terminal<br>2: auto-switching by deviation | 0 | ○ | 090BH |
| F8.12 | PID parameter switching Deviation 1 | 0.0～999.9 | 20 | ○ | 090CH |
| F8.13 | PID parameter switching Deviation 2 | 0.0～999.9 | 80 | ○ | 090DH |
| F8.14 | PID delay time constant | 0.0～100.0s | 0.0s | ○ | 090EH |
| F8.15 | Deviation limit | 0.0～999.9 | 0.2 | ○ | 090FH |
| F8.16 | PID output positive limit | ②0.0~320.0Hz<br>③0.0～600.0Hz | 50.00Hz | ○ | 0910H |
| F8.17 | PID output negative limit | 0.00～550.0Hz | 0.00Hz | ○ | 0911H |
| F8.18 | PID preset freq. | 0.00～550.0Hz | 0.00Hz | × | 0912H |
| F8.19 | Hold time of PID preset frequency | 0.0～3600s | 0.0s | × | 0913H |
| F8.20 | Enable dormancy | 0: Disabled<br>1: Enabled | 0 | × | 0914H |
| F8.21 | Dormancy delay | 0～999s | 120s | ○ | 0915H |
| F8.22 | Dormancy threshold | 0.0～320.0Hz | 20.0Hz | ○ | 0916H |
| F8.23 | Awaken threshold | 0.0~100.0%<br>(relative to pre-set value) | 80.00% | ○ | 0917H |
| F8.24 | PID feedback offline detection | 0.0~100.0%<br>(relative to feedback | 0.0% | ○ | 0918H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | range | measuring range, 0.0% no detection) | | | |
| F8.25 | PID feedback offline detection time | 0.0~50.0s | 2.0s | ○ | 0919H |
| F8.26 | PID feedback offline detection Min. Freq. | 0.00~50.00Hz | 10.00Hz | ○ | 091AH |

## Group F9: Multi-step speed and PLC

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F9.00 | Multi-step freq.1 | 0.00～Max frequency | 5.00 Hz | ○ | 0A00H |
| F9.01 | Multi-step freq.2 | 0.00～Max frequency | 10.00 Hz | ○ | 0A01H |
| F9.02 | Multi-step freq.3 | 0.00～Max frequency | 15.00 Hz | ○ | 0A02H |
| F9.03 | Multi-step freq.4 | 0.00～Max frequency | 20.00 Hz | ○ | 0A03H |
| F9.04 | Multi-step freq.5 | 0.00～Max frequency | 30.00 Hz | ○ | 0A04H |
| F9.05 | Multi-step freq.6 | 0.00～Max frequency | 40.00 Hz | ○ | 0A05H |
| F9.06 | Multi-step freq.7 | 0.00～Max frequency | 50.00 Hz | ○ | 0A06H |
| F9.07 | PLC running mode | 0: Single cycle<br>1: Single cycle and hold final value<br>2: Continuous cycle | 2 | × | 0A07H |
| F9.08 | PLC restarting mode after interrupt | 0: Restart from first step<br>1: Continue from the step where the drive interrupted | 0 | × | 0A08H |
| F9.09 | PLC status recorded or not at power failure | 0: Not save<br>1: Save | 0 | × | 0A09H |
| F9.10 | Time unit select for each duration | 0: Second<br>1: Minute | 0 | × | 0A0AH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | of PLC processing | | | | |
| F9.11 | PLC step1 duration (T1) | 0.1～3600 | 20 | ○ | 0A0BH |
| F9.12 | PLC step2 duration (T2) | 0.0～3600 | 20 | ○ | 0A0CH |
| F9.13 | PLC step3 duration (T3) | 0.0～3600 | 20 | ○ | 0A0DH |
| F9.14 | PLC step4 duration (T4) | 0.0～3600 | 20 | ○ | 0A0EH |
| F9.15 | PLC step5 duration (T5) | 0.0～3600 | 20 | ○ | 0A0FH |
| F9.16 | PLC step6 duration (T6) | 0.0～3600 | 20 | ○ | 0A10H |
| F9.17 | PLC step7 duration (T7) | 0.1～3600 | 20 | ○ | 0A11H |
| F9.18 | Step T1 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A12H |
| F9.19 | Step T2 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A13H |
| F9.20 | Step T3 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A14H |
| F9.21 | Step T4 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A15H |
| F9.22 | Step T5 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A16H |
| F9.23 | Step T6 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A17H |
| F9.24 | Step T7 program running setting | 1 F/r ～ 4 F/r | 1F | ○ | 0A18H |
| F9.25 | ②Current step running time | 0.0～3600 | 0 | * | 0A19H |
| F9.25 | ③Current running step | 1～7 | 0 | * | 0A19H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| F9.26 | ②Current running step | 1～7 | 0 | * | 0A1AH |
| F9.26 | ③Current step running time | 0.0～3600 | 0 | * | 0A1AH |
| F9.27 | Multi-step freq.8 | 0.00～Max frequency | 50.00 Hz | ○ | 0A1BH |
| F9.28 | Multi-step freq.9 | 0.00～Max frequency | 50.00 Hz | ○ | 0A1CH |
| F9.29 | Multi-step freq.10 | 0.00～Max frequency | 50.00 Hz | ○ | 0A1DH |
| F9.30 | Multi-step freq.11 | 0.00～Max frequency | 50.00 Hz | ○ | 0A1EH |
| F9.31 | Multi-step freq.12 | 0.00～Max frequency | 50.00 Hz | ○ | 0A1FH |
| F9.32 | Multi-step freq.13 | 0.00～Max frequency | 50.00 Hz | ○ | 0A20H |
| F9.33 | Multi-step freq.14 | 0.00～Max frequency | 50.00 Hz | ○ | 0A21H |
| F9.34 | Multi-step freq.15 | 0.00～Max frequency | 50.00 Hz | ○ | 0A22H |
| F9.35 | PLC Multi-step Freq.1 selection | 0:Multi-step digital setting<br>1: AI1 2: AI2<br>3: keypad potentiometer<br>4: Pulse input | 0 | ○ | 0A23H |
| F9.36 | PLC Multi-step Freq.7 selection | | 0 | ○ | 0A24H |

## Group FA: Wobble Frequency

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FA.00 | Wobble amplitude | 0.0~50.0% | 0.0% | ○ | 0B00H |
| FA.01 | Jitter frequency | 0.0~50.0%(to FA.00) | 0.0% | ○ | 0B01H |
| FA.02 | Jitter Time | 5～50ms | 5ms | ○ | 0B02H |
| FA.03 | Wobble freq. up time | 0.1～999.9s | 5.0s | ○ | 0B03H |
| FA.04 | Wobble freq. down time | 0.1～999.9s | 5.0s | ○ | 0B04H |
| FA.05 | Amplitude mode | 0: Relative to the central freq. | 0 | ○ | 0B05H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 1: Relative to Max. frequency | | | |

## Group Fb: Fixed Length

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| Fb.00 | Preset length | 0～65530 | 0 | ○ | 0C00H |
| Fb.01 | Actual length | 0～65530 | 0 | * | 0C01H |
| Fb.02 | Pulses number per unit | 0.1～6553.0 | 100 | ○ | 0C02H |

## Group FC: Protection and Fault Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FC.00 | Motor overload protection mode | 0: Disabled<br>1: Common motor (with low speed compensation)<br>2: Variable frequency motor (without low speed compensation) | 1 | × | 0D00H |
| FC.01 | Electro thermal protection value | 20～110%②<br>20～200%③ | 100% | ○ | 0D01H |
| FC.02 | Overload Pre-alarm detection level | 30.0～200.0% | 160% | ○ | 0D02H |
| FC.03 | Overload Pre-alarm detection time | 0.0～80.0s | 60.0s | ○ | 0D03H |
| FC.04 | Current amplitude limit | 0:Invalid<br>1: Acc./Dec. valid; Constant speed invalid | 2 | ○ | 0D04H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 2: Valid all the time | | | |
| FC.05 | Current amplitude limit level | Type G：80.0～200.0%<br>Type P：60.0～150.0% | G: 160.0%<br>P: 120.0% | ○ | 0D05H |
| FC.06 | Over voltage stall function | 0: Invalid (Recommended if braking resistor mounted)<br>1: Valid for Acc/Dec.<br>2: Valid all the time | 1 | × | 0D06H |
| FC.07 | Overvoltage point for Acc./Dec. suspend | 110.0～150.0% (Bus voltage) | 380V: 140%<br>220V: 120% | × | 0D07H |
| FC.08 | Input phase loss detection | 1～100% (100% correspond to 800V) | 20% | × | 0D08H |
| FC.09 | Input phase loss detection delay time | 2～255s | 10s | × | 0D09H |
| FC.10 | Output phase loss detection | 0: Invalid 1: Valid | 1 | ○ | 0D0AH |
| FC.11 | Terminal close fault detection | 0: Invalid 1: Valid | 1 | ○ | 0D0BH |
| FC.12 | Fault auto reset times | 0～10,“0” means auto reset is disabled. Only 3 faults have auto reset function | 0 | × | 0D0CH |
| FC.13 | Fault auto reset interval | 0.1～20.0s/time | 5.0s | × | 0D0DH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FC.14 | Under-voltage fault treatment | 0: No treatment<br>1: Auto reset at power recovery<br>2: Auto run at power recovery (Auto run time interval is F1.16) | 0 | ○ | 0D0EH |
| FC.15 | Fast current limit | 50.0%~100.0% (100% means this function is disabled.) | Depends on model | ○ | 0D0FH |
| FC.16 | Fast current limit time | 0.01~1.00s | 0.10s②<br>0.20s③ | ○ | 0D10H |
| FC.17 | Overvoltage suppression freq. | 0.00~10.00Hz | 0.00Hz | ○ | 0D11H |
| FC.18 | Select suppression overvoltage methods | 0: method 1<br>1: method 2<br>2: method 3 | 0 | ○ | 0D12H |
| FC.19 | Treatment select while overvoltage forewarning | 0: Warning and running still<br>1: Fault cause stopping | 0 | ○ | 0D13H |
| FC.20 | Reminding or not while undervoltage | 0: Yes<br>1: No | 0 | ○ | 0D14H |

## Group Fd: Communication Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| Fd.00 | 485 Communication | 0: Disabled RS485<br>1: Enabled RS485 | 1 | ○ | 0E00H |
| Fd.01 | Local address | 1～247 | 1 | ○ | 0E01H |
| Fd.02 | Baud rate setup | 0: 1200BPS 1: 2400BPS | 3② | ○ | 0E02H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 2: 4800BPS 3: 9600BPS 4: 19200BPS 5: 38400BPS | 4③ | | |
| Fd.03 | Parity bit setup | 0: Even parity check<br>1: Odd parity check<br>2: No parity check | 0 | ○ | 0E03H |
| Fd.04 | Communication timeout detection duration | Range: 0.0～100.0s<br>0: No timeout detection<br>Others: Timeout detection duration | 0.0s | ○ | 0E04H |
| Fd.05 | Response delay duration | 0～500ms | 5ms | ○ | 0E05H |
| Fd.06 | Communication Freq. setting coefficient | 0.0~200.0% | 100.00% | ○ | 0E06H |
| Fd.07 | Communication interrupt detection mode | 0: Time interval between 2 packets receiving.<br>1: Time interval of 0005H Add. data writing | 0 | ○ | 0E07H |
| Fd.08 | Feedback or not (Y or N) While writing into COMMS setting | 0：Y<br>1：N | 0 | ○ | 0E08H |
| Fd.09 | Save the COMMS setting or not (Y or N) While power down | 0：N<br>1：Y | 0 | ○ | 0E09H |

## Group FE: Operation interface & display

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FE.00 | Display | 0: Normal 3-levels menu | 0 | ○ | 0F00H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | parameter-type setup | display<br>1: Only display modified parameters | | | |
| FE.01 | MFK Key function selection | 0: MFK inactive<br>1: JOG running<br>2: FWD/REV switching<br>3: UP/DOWN clear<br>4: Running command switch (terminal or communication)<br>7: RUN for FWD, MFK for REV, STOP for STOP | 0 | ○ | 0F01H |
| FE.02 | STOP key function | 0: Valid only in keypad control mode<br>1: Valid in stop state of terminal/ communication control mode<br>2: Valid in Fault state of terminal/ communication control mode<br>3: Valid in both stop & fault state of terminal/ communication control mode | 2 | ○ | 0F02H |
| FE.03 | Running freq.(Hz) (before compensation) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 2 | ○ | 0F03H |
| FE.04 | Running freq. (Hz) (After compensation) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F04H |
| FE.05 | Reference frequency (Hz blinking) | 0: No display<br>1: Display at stop<br>2: Display at running | 1 | ○ | 0F05H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 3: Display at stop & running | | | |
| FE.06 | Output current(A) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 2 | ○ | 0F06H |
| FE.07 | Bus voltage (V) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 3 | ○ | 0F07H |
| FE.08 | Output voltage (V) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F08H |
| FE.09 | Output torque (%) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F09H |
| FE.10 | Reference torque (% blinking) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0AH |
| FE.11 | Rotate speed (r/min) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0BH |
| FE.12 | Reference speed (r/min blinking) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0CH |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FE.13 | Output power (kW) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0DH |
| FE.14 | AI1 (V) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0EH |
| FE.15 | AI2 (V) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F0FH |
| FE.16 | Analog PID feedback | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F10H |
| FE.17 | Analog PID setup | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F11H |
| FE.18 | Terminal status (no unit) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F12H |
| FE.19 | Actual length | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F13H |
| FE.20 | Reference length | 0: No display<br>1: Display at stop | 0 | ○ | 0F14H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | 2: Display at running<br>3: Display at stop & running | | | |
| FE.21 | Linear speed (m/min) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F15H |
| FE.22 | External count value (no unit) | 0: No display<br>1: Display at stop<br>2: Display at running<br>3: Display at stop & running | 0 | ○ | 0F16H |

## Group FF: Running History Record

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FF.00 | Type of latest fault | 0: NULL<br>1: Uu1 bus undervoltage<br>2: OC1 Acc. overcurrent<br>3: OC2 Dec. overcurrent<br>4: OC3 Constant speed overcurrent<br>5: Ou1 Acc. overvoltage<br>6: Ou2 Dec. overvoltage<br>7: Ou3 overvoltage in constant speed<br>8: ②Reserve<br>8: ③GF Ground Fault<br>9: SC Load Short-Circuit<br>10: OH1 Heatsink overheat<br>11: OL1 Motor overload<br>12: OL2 Drive overload<br>13: EF0 communication | NULL | * | 1000H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | | fault<br>14: EF1 external terminal fault<br>15: SP1 Input phase failure or input phases unbalance<br>16: SPO Output phase failure or Unbalance<br>17: EEP EEPROM Fault<br>18: CCF Communication between the drive and keypad cannot be established<br>19: bCE Brake unit fault<br>20: PCE Parameter copy Error<br>21: IDE Hall current detection fault<br>22: ECE PG fault<br>23: LC fast current limit fault<br>24: EF2 terminal close fault<br>25: PIDE: PID feedback offline<br>26: OLP2 Forewarning of overload fault<br>27: InPE Initial position fault detected of synchronous moto | | | |
| FF.01 | Output freq. at latest fault | 0～Frequency upper limit | 0.00Hz | * | 1001H |
| FF.02 | Reference frequency at latest fault | 0～Frequency upper limit | 0.00Hz | * | 1002H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FF.03 | Output current at latest fault | 0～2 drive rated current | 0.0A | * | 1003H |
| FF.04 | Bus voltage frequency at latest fault | 0～1000V | 0V | * | 1004H |
| FF.05 | Running status at latest fault | 0: **StP** Stop 1: **Acc** acceleration<br>2: **dEc** deceleration<br>3: **con** constant speed | 0 | * | 1005H |
| FF.06 | Fault history 1 (Last One) | The same as FF.00 | NULL | * | 1006H |
| FF.07 | Fault history 2 | The same as FF.00 | NULL | * | 1007H |
| FF.08 | Total power on time | 0～65530h | 0h | * | 1008H |
| FF.09 | Total running time | 0～65530h | 0h | * | 1009H |
| FF.10 | Reserved | Reserved | Reserved | - | 100AH |
| FF.11 | Software version number of control board | 1.00~10.00 | 1 | - | 100BH |
| FF.12 | Non-standard version number of software | 0~255 | 0 | - | 100CH |
| FF.13 | ②Heat sink temperature | -30.0～120.0°C | 0.0°C | - | 100DH |
| | ③IGBT temperature | 0.0～140.0°C | 0.0°C | - | 100DH |
| FF.14 | ②Flux current | -200.0~200.0% | | * | 100EH |
| FF.15 | ③Torque current | -200.0~200.0% | | * | 100FH |
| FF.17 | Accumulated kilowatt-hours（Upper 16 | 0~65535kWH | 0kWH | - | 1011H |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | bits） | | | | |
| FF.18 | Accumulated kilowatt-hours （Low 16 bits） | 0~65535kWH | 0kWH | - | 1012H |

## Group FP Protection Parameters

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| FP.00 | User password | 0~9999<br>0: No password<br>Others: password protection | 0 | ○ | - |
| FP.01 | Parameter write-in protection | 0: All parameters are allowed modifying<br>1: Only FP.01 and FP.03 can be modified<br>2: All parameters aren't allowed read | 0 | ○ | -- |
| FP.02 | Parameter initialization | 0: No operation<br>1: Clear fault history<br>2: Restore to defaults | 0 | × | -- |
| FP.03 | Parameter copy | 0: No action<br>1: Parameters download<br>2: Parameters upload(except motor's parameters)<br>3: Parameters upload (all parameters) | 0 | × | -- |
| FP.04 | Parameter upload protection | 0: Protection enabled<br>1: Protection disabled | 0 | × | -- |
| FP.05 | G/P model selection | 0: Type G 1: Type P | 0 | × | -- |
| FP.07 | User | 0: Invalid 1: Valid | 0 | × | -- |

| Code | Description | Setting range | Default | Modify | Modbus Address |
|---|---|---|---|---|---|
| | parameters backup | | | | |
| FP.08 | User parameters recovery | 0: Invalid 1: Valid | 0 | × | -- |

# 8. Trip information and trouble shooting

Once a trip is detected, NE200&300 would immediately block PWM output and enter the trip protection state; meanwhile TRIP on the keyboard would spark and the LED display the trip code. At this point one must identify the cause of trip and its corresponding solutions according to the method suggested in this section, if it does not work, please contact us immediately. The trip codes and their respective solutions are present in Table 8-1.

**Note:** A trip code with a sign"③"indicates this trip code is only for NE300

Table 8-1 trip diagnosis and its solutions

| Trip code | Trip Type | Possible causes | Solutions |
|---|---|---|---|
| Uu1 | Bus Under voltage during running | 1.Power grid low voltage | 1. Check the input power source. |
| OC1 | Over current in Acceleration | 1. Acceleration time too short<br>2. Power grid low voltage<br>3. Inverter power rating too small | 1. Increase the acceleration time.<br>2. Check the input power source.<br>3. Choose inverter with higher capacity. |
| OC2 | Over current in Deceleration | 1. Deceleration time too short<br>2. Large load inertia<br>3. Inverter power rating too small | 1. Increase the deceleration time.<br>2. Add suitable brake devices.<br>3. Choose higher capacity drive |
| OC3 | Over current at constant-speed | 1 .Abnormal Load mutation<br>2. Power grid low voltage<br>3. Inverter power rating too small<br>4.Encoder sudden offline in | 1. Check the load<br>2. Check the input power source.<br>3. Choose higher capacity drive<br>4. Check the encoder and its wiring. |

| Trip code | Trip Type | Possible causes | Solutions |
|---|---|---|---|
| | | closed-loop vector control | |
| Ou1 | Over Voltage in Acceleration | 1.Acceleration time too short<br>2.Power supply abnormal | 1. Increase the acceleration time<br>2. Check the input power source. |
| Ou2 | Over voltage in deceleration | 1.Deceleration time too short<br>2.Large load inertia | 1. Increase the deceleration time<br>2. Add suitable brake devices. |
| Ou3 | Over voltage in constant speed | 1. Power supply abnormal<br>2.Large load inertia | 1. Check the input power source.<br>2. Add suitable braking devices. |
| GF ③ | Ground Fault | 1. One output phase got short circuit problem. | 1. Check whether the electric motor insulation is weakening.<br>2. Check whether the wiring between the frequency converter and the electric motor is damaged. |
| SC | Load short-circuit | 1. Wiring of inverter and motor get phase-to-phase short circuit<br>2.Damage of the inverting module IGBT | 1. Check whether the electric motor coil is short circuit.<br>2. Ask for the services from manufactures. |
| OH1 | Heat-sink over heat | 1. Ambient temperature too high<br>2. Fan is damaged<br>3. Fan air duct is blocked | 1. Lower the ambient temperature.<br>2. Change the fan<br>3. Clear the air duct. |
| OL1 | Motor overload | 1. Power supply abnormal<br>2. Motor rated current set wrongly | 1. Check the input power source.<br>2. Check whether the motor's rated current is correctly set |

| Trip code | Trip Type | Possible causes | Solutions |
|---|---|---|---|
| | | | up. |
| | | 3.The Curve of V/F is not fit | 3. Adjust the V/F curve and torque boosting performance. |
| | | 4. Motor always works with heavy load at low speed.<br>5. Motor blocked to stall or sudden large load change<br>6.Motor power too low | 4. Use specialized electric motor.<br>5. Check whether the motor or the load is blocked to stall or not.<br>6. Use motor and inverter of suitable power ratings |
| OL2 | Inverter overload | 1. Low voltage in power grid<br>2. Load too heavy<br>3. Acceleration too fast<br>4.Restart the motor still in turning | 1. Check the input power source.<br>2. Select bigger capacity inverter.<br>3. Increase the acceleration time<br>4. Avoid restarting when the motor is in rotation. |
| EF0 | Communication fault | 1. Baud rate and parity checksum is set incorrect<br>2. Communication interrupted for long time | 1. Check communication parameters correct or not.<br>2. Check the interface wiring. |
| EF1 | External terminal fault | 1. Faults comes from external control circuit | 1. Check the external input |
| SP1 | Input phase loss | 1. Input R,S,T have phase loss or imbalance | 1. Check input voltage |
| SPO | Output phase loss | 1.There is lack of U,V,W when output<br>2.There is a serious unbalance in output | 1. Check U-V-W motor wiring<br>2. Check the load |
| EEP | EEPROM error | 1.Function code parameter writing | 1. Recover factory defaults |

| Trip code | Trip Type | Possible causes | Solutions |
|---|---|---|---|
| | | error<br>2. EEPROM damaged | 2. Ask for service from supplier |
| CCF | Keypad & control board communication interrupted | 1.Connection cable between keyboard and control panel is broken | 1. Check the connection cable between keyboard and control panel |
| bCE | Brake unit fault | 1.The braking line or braking pipe is broken<br>2.brake resistor is too lower | 1. Check the brake unit, change the brake pipe.<br>2. Choose the suitable braking resistor. |
| PCE | Parameter copy Error | 1. Too long connection cable between keypad and control board leads to interference in parameters transmission.<br>2. The downloading parameters do not match the existed parameters in the inverter. | 1. Shorten the cable between Keyboard and control board to reduce interference.<br>2. Before downloading, make sure the parameters match the inverter. |
| IDE | IDE Hall current detection fault | 1. The current sensoring or hall device get damaged. | 1. Ask for service from supplier |
| ECE ③ | Encoder fault | 1. Encoder signal wires are connected reversely.<br>2. Encoder signal wires get damaged.<br>3. Encoder damaged.<br>4. Dual-way encoder detected motor direction is not match with | 1. Check whether the encoder signal is correctly connected.<br>2. Check whether the encoder wiring is broke.<br>3. Change the encoder.<br>4. Change the encoder direction (F3.16) or alter motor wiring sequence. |

| Trip code | Trip Type | Possible causes | Solutions |
|---|---|---|---|
| | | inverter direction. | |
| LC | Fast current limit fault | 1. Load too large or motor blocked to stall<br>2. Inverter power rating too small<br>3. Inverter output circuit loop grounded or SC. | 1. Decrease the load and check motor and mechanical part status<br>2. Choose higher power inverter<br>3. Remove the external fault |
| EF2 | Terminal close fault | 1. The FWD or REV terminals close and get power on. But inverter is set to not allow the restart after power failure recovery. | 1. Disconnect the FWD or REV terminal first and then power on the inverter.<br>2. Close the fault detection function for closed terminal fault (FC.11=0) |
| PIDE | PID feedback error | 1. PID feedback offline | 1. Check PID feedback line.<br>2. Disable PID feedback detection (F8.24=0.0%)<br>3. Increase PID feedback offline detection time (F8.25) |
| OLP2 | Overload pre-alarm error | 1.fequency inverter output current is higher than set pre-alarm threshold | 1. Disable pre-alarm function(FC.19=0)<br>2. Increase pre-alarm threshold value (FC.02)<br>3. Increase pre-alarm detection time(FC.03) |

## Hazardous substance limit table for electrical and electronic products

| Part Name | Hazardous substances | | | | | |
|---|---|---|---|---|---|---|
| | Lead (Pb) | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr +6) | Polybrominated biphenyls (PBB) | Polybrominated diphenyl ethers (PBDE) |
| Electronics assembly | X | 0 | 0 | 0 | 0 | 0 |
| Housing assembly | 0 | 0 | 0 | 0 | 0 | 0 |
| Keypad Battery | 0 | 0 | 0 | 0 | 0 | 0 |

This table is in accordance with the provision of SJ/T11364

O: Indicates that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

# Inspection Certificate

This document certifies that this product
Inverter
Applied to standards
IEC61800 / EN61800 / GB12668

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空白位置宽度为 42mm

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was dispatched fully functional tested and inspected in accordance with Control Techniques specifications and drawings.

ChenLi

Operations Director

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CONTROL TECHNIQUES