



WD200 Series High-Performance General-Purpose AC Drive User Guide

Thank you for choosing the WD200 Series AC Drive!

WD200 is the new generation high-performance general-purpose AC drive designed by Wolong, featuring advanced motor control algorithms that support AC asynchronous motors, permanent magnet synchronous motors, and synchronous reluctance motor control. It has the advantages of high reliability, high performance, and strong expansion capability.

All models in the series adopt a high-power density narrow body design, saving space and enabling seamless integration into various system solutions. Additionally, custom products can be developed to meet specific industry requirements.

The WD200 Series AC Drive finds wide applications in industries such as metallurgy, mining, petroleum and petrochemical, cement, power plants, material handling, HVAC, textiles, injection molding, marine, and water treatment.

About this Guide

This guide provides an introduction to the features and usage of the WD200 Series AC drive, including installation, wiring, and parameter settings. Please read this guide carefully before using.

Technical Support

If you encounter any problems while using the WD200 Series AC Drive, please contact Wolong.

To ensure the accuracy of the guide, we have conducted a thorough review of the contents. However, we cannot guarantee that the guide is completely accurate. If you find any errors in the guide, we welcome your feedback and corrections.

We reserve the right to improve product technology and interpret this guide. In case of any changes, no separate notification will be given. Please refer to the relevant technical agreement.

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Safety Information

Instructions

Before installation, operation, or maintenance of the equipment, please read these instructions carefully and be familiarize with it. The following special information may appear elsewhere in this document or on the equipment to warn of potential hazards or remind you to pay attention to certain matters.



This is a safety symbol of "Danger" or "Warning". It indicates the presence of electrical hazards. Failure to follow the operating instructions may result in personal injury.



This is a safety warning symbol. It is used to remind you of the potential safety hazards that may cause personal injury in this area. Please adhere to all the safety precautions indicated by this symbol to avoid potential harm to personnel.



This is a symbol of static sensitive. Failure to comply with the relevant requirements may result in PCB board damage.



This is a symbol of High temperature. The base of the AC drive is hot. Do not touch!



Danger

"Danger" indicates an imminent hazardous situation that, if not avoided, could result in death or serious injury.



Warning

"Warning" indicates a potential hazardous situation that, if not avoided, could result in death, serious injury, or equipment damage.



Caution

"Caution" indicates a potential hazardous situation that, if not avoided, could result in personal injury or equipment damage.

Attention!

In the absence of safety warning symbols, it indicates potential hazardous situations. Failure to avoid these situations could result in equipment damage.

The installation, operation, maintenance, and repair of electrical equipment should only be carried out by trained professionals.

Preparation

Read and understand these instructions carefully before performing any operations on the AC drive.



Danger

Risk of Electric Shock, Explosion, or Arc Flash

- Only personnel who are familiar with and fully understand this manual and all other relevant product documentation, and have received necessary training to identify and avoid associated risks, are permitted to operate the AC drive.
- Only qualified personnel are allowed to carry out installation, commissioning, and maintenance.
- Check compliance with local and national electrical codes, as well as other applicable regulations related to equipment grounding.
- Use only electrical insulation tools and measuring devices with correct ratings.
- Do not touch unshielded components or terminals when the power is on.
- Insulate both ends of the motor cables that are not used with conductors.
- Avoid short-circuit DC bus terminals or braking resistor terminals.
- Before performing any operations on the AC drive:
 - Disconnect all power sources, including external control power.
 - Affix "Do Not Close" labels on all power switches.
 - Lock all power switches in the open position.
 - Wait for 10 minutes to discharge the DC bus capacitors.
 - Confirm the absence of other voltages in the AC drive system.
- Before powering on the AC drive:
 - Ensure that work is completed and the entire installation does not pose any hazards.
 - If there is grounding and short-circuit on the main power input terminals and motor output terminals, remove the grounding and short-circuit from these terminals.
 - Confirm that all devices are properly grounded.
- Ensure that protective devices such as safety doors and barriers are installed and/or closed.

Failure to follow these operating instructions may result in serious injury or death.



Warning

Risk of Unexpected Operation

The AC drive system may experience unexpected operation due to incorrect wiring, settings, or other errors.

- Install cables according to EMC requirements.
- Do not use unknown or inappropriate settings or data to operate this product.
- Perform commissioning to meet on-site application requirements.



Danger

Risk of Electric Shock or Unexpected Equipment Operation:

Do not use damaged products or accessories, as they may cause electric shock or unexpected equipment operation.

Attention!

Risk of AC Drive Damage

When operating the AC drive in environments with high temperatures, humidity, oil contamination, chemicals, dust, vibrations, and other challenging conditions, regular cleaning and maintenance should be performed to prevent a shortened lifespan of the AC drive or even potential equipment damage.



Danger

Risk of Fire and Electric Shock

Modification of the AC drive is strictly prohibited, as it can potentially lead to fire, electric shock, or other injuries.



Danger

Risk of Explosion

This equipment should only be installed and used in non-hazardous locations to mitigate the risk of explosions.

Warning

Loss of Control

- Designers of any control solution must consider the possibility of loss of control and develop contingency plans for such situations, including emergency stop, power interruption, and restart procedures.
- System control paths may involve communication control, and the potential consequences of unexpected transmission delays or circuit failures must be considered.
- Adhere to all accident prevention regulations and local safety guidelines is essential.

Warning

Risk of AC Drive Damage

The electronic components inside the AC drives are electrostatically sensitive devices. Proper electrostatic precautions should be taken during relevant operations.

Warning

Risk of Burns

During operation, the heat sink base of the AC drive may generate high temperatures. Do not touch to avoid burns.

Technical Parameters

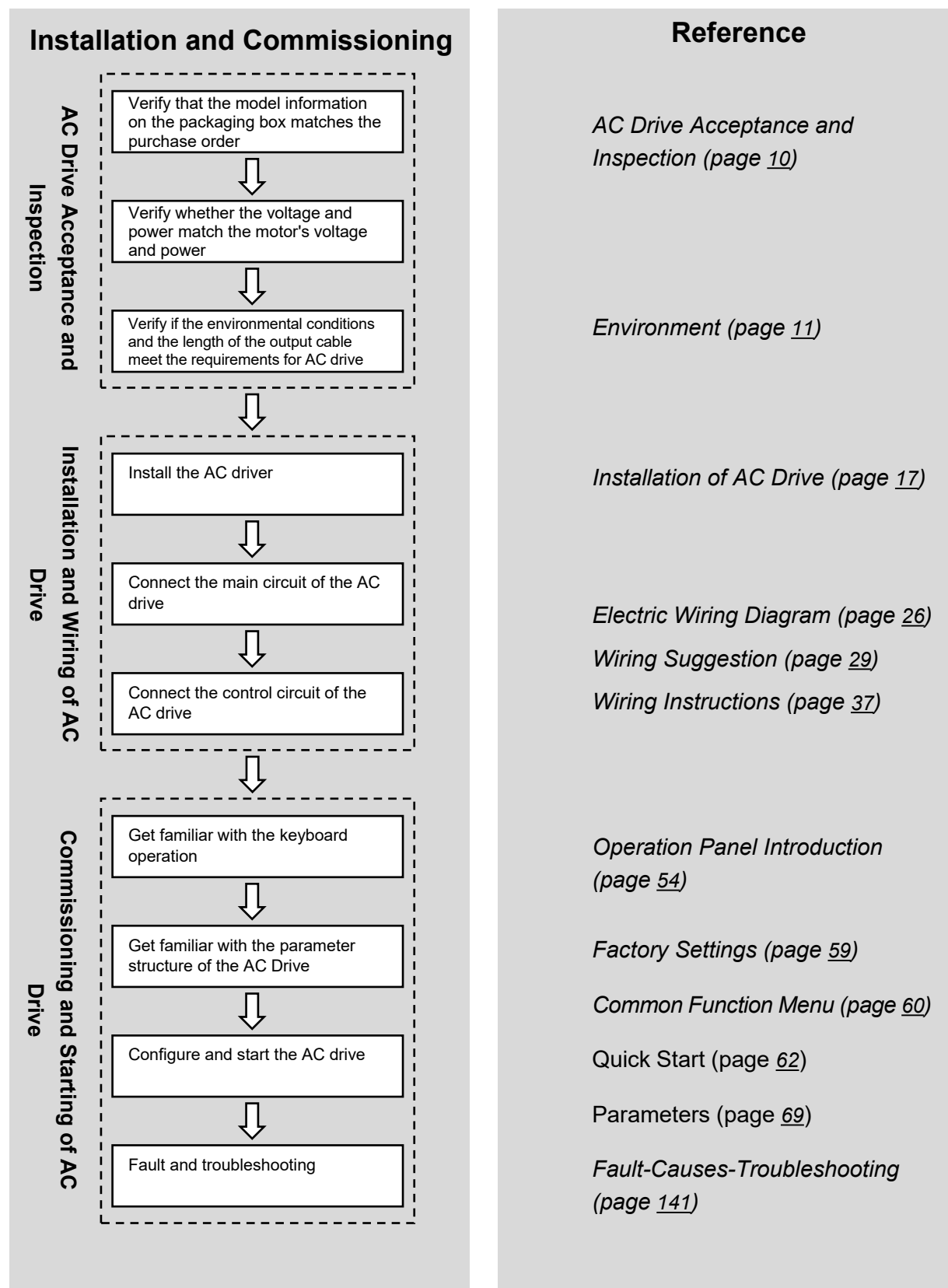
Power Supply Voltage and Power Range	Single-phase 200 V to 240 V -10% to 10% Three-phase 200 V to 240 V -10% to 10% Three-phase 380 V to 480 V -15% to 10% Three-phase 660 V to 690 V -10% to 10% 0.75 kW to 1,000 kW
Power Supply Frequency	50/60 Hz $\pm 5\%$
Motor Types	Three-phase induction motor (IM), permanent magnet synchronous motor (PMSM), synchronous reluctance motor (SynRM)
Control Modes	V/F, open-loop vector control (SVC), closed-loop vector control (FVC), voltage-frequency separation mode
Speed Control Range	1:200 (SVC) 1:1000 (FVC)
Speed Accuracy	IM: $\pm 0.5\%$ /PMSM: $\pm 0.1\%$ (SVC) $\pm 0.02\%$ (FVC)
Torque Control Accuracy	IM: $\pm 10\%$ /PMSM: $\pm 5\%$ (SVC) IM: $\pm 5\%$ /PMSM: $\pm 2.5\%$ (FVC)
Starting Torque	0.5 Hz 150% (SVC) 0.0 Hz 200% (FVC)
Overload Capacity	G-Heavy duty: 150% rated current for 60s P-Light duty: 120% rated current for 60s
Output Frequency Range	0~600Hz
Analog Inputs	2 channels: AI1 (0-10V/4-20mA/0-20mA), AI2 (0-10V/4-20mA/0-20mA)
Analog Outputs	2 channels: AO1 (0-10V/4-20mA/0-20mA), AO2 (0-10V/4-20mA/0-20mA) Note: Rack size 5 and below models have only 1 analog output (AO)
Digital Inputs	7 programmable digital inputs Maximum input frequency: 1 kHz Internal impedance: 4.4 K Ω Note: Rack size 5 and below models have only 5 programmable digital inputs
Digital Outputs	1 programmable logic output with open collector Internal power supply maximum current: 1.2 mA External power supply maximum current: 200 mA 1 high-speed pulse output

	Maximum frequency: 100 kHz
Relay Outputs	2 programmable relay outputs: TA1: Normally open (NO) contact TB1: Normally closed (NC) contact TC1: Common terminal TA2: Normally open (NO) contact TB2: Normally closed (NC) contact TC2: Common terminal Note: Rack size 5 and below models have only 1 relay output
Communication Interfaces	Modbus RTU communication: A+/B-/485G
Scalable Interfaces	EX-A: Scalable I/O expansion module, communication module, temperature expansion module. EX-B: Expandable speed feedback encoder module.

Optional Modules	
Fieldbus Adapter Module	PROFIBUS-DP, PROFINET, Ethernet, EtherCAT, CANopen
I/O Expansion Modules	4 digital inputs (including 1 high-speed input) 1 digital output 1 analog output 1 relay output 1 temperature input (PT100/PT1000)
Speed Feedback Module:	Incremental encoder module Rotary encoder module
Other Optional Accessories:	
Chinese Control Panel	Available for the all models
Braking Unit:	Rack size 1 to rack size 4 (0.75 kW-22 kW): Built-in braking unit included as standard Rack size 5 to rack size 8 (30 kW-160 kW): Optional built-in braking unit Rack size 9 and above (160 kW and above) : External braking unit optional Note: The above data is applicable to three-phase 380 V-480 V models. For data on other voltage levels, please consult Wolong technical support.
DC Reactors	An optional built-in DC reactor is available for models with a power rating of 30 kW and above. Note: The above data is applicable to three-phase 380 V-480 V models. For data on other voltage levels, please consult Wolong technical support.
Main Functions:	Control of asynchronous or permanent magnet synchronous motors Control of synchronous reluctance motors V/F or vector control Open-loop/closed-loop control Speed control Torque control PID control Multi-segment speed function Simple PLC function Pendulum frequency control Counting and timing functions Speed tracking startup Power-off restart function
Installation Methods	DIN rail mounting Wall mounting

	Flange mounting
	Floor standing mounting
Cooling Method	Forced air cooling
IP Rating	IP20
Operating Temperature	-10°C to +50°C (derating required above 40°C)
Storage Temperature	-30°C to +60°C
Certification	CE certified

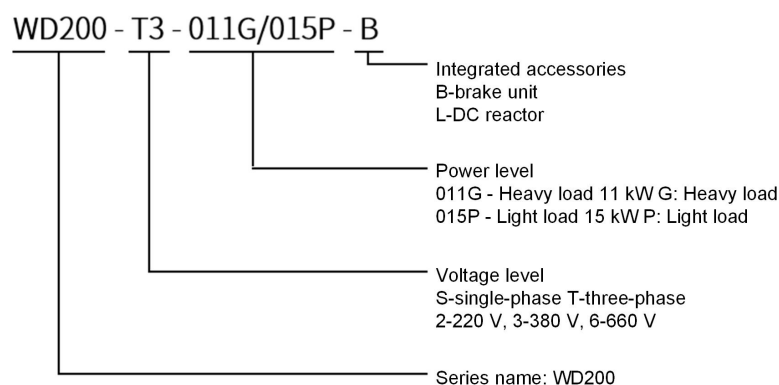
Quick Installation and Commissioning Guide



1. AC Drive Acceptance and Inspection

1.1 Verify that the model information on the packaging box matches the purchase order

The naming conventions and information on the nameplate are as follows:



1.2 Remove the AC drive from the packaging box and inspect it for any damage incurred during transportation.

- Is the packaging box intact, and are there any signs of damage or moisture?
 - Is there any damage to the housing of the AC drive after unpacking?
 - Check if the nameplate of the AC drive matches the model identification on the external packaging box.
 - Check if the accessories inside the packaging box are complete;
- If any of the above issues are found, please contact us or your dealer.

2. Environment

2.1 Temperature and Derating

Scenario	Temperature Range		Derating
Storage	-30...60	°C	O
Operation	-10...40	°C	O
	Up to 50	°C	√
Notes: √: For every increase of 1°C, the rated current of the AC drive decreases by 1%. O: No requirement. For environments below -10°C, please install a heating device.			

2.2 Operation Altitude and Derating

Altitude	Derating
1,000 m	O
1,000...3,000 m	√
Notes: √: For every increase of 100 m, the rated current of the AC drive decreases by 1%. O: No requirement. For operation above the altitude of 3,000 m, please contact our technical support.	

2.3 Relative Humidity

No dripping or condensation: 5...95%

2.4 Other Environmental Requirements

- Install the AC drive in a location where it will not be subjected to severe vibration or impact, with a maximum amplitude not exceeding 5.8 m/s² (0.6 g).
- Install the AC drive in an area where metal powder, dust, oil, water, and external biological substances cannot enter the interior of the equipment.
- Do not install in environments with direct sunlight exposure, oil mist, steam, or high salt content.
- Install in a location away from electromagnetic radiation sources.

If the above environmental requirements cannot be met, please consult our technical support.

3. AC Drive Rated Values

Power supply voltage: single-phase 200V~240V 50/60Hz

Motor	Power Supply (Input)		AC Drive (Output)		Model	Rack Size
Power rating indicated on the nameplate	Line current		Maximum continuous output current	Highest instantaneous current		
G: Heavy load			In	1.5In (heavy load)		
P: Light load				60s		
	kW	A	A	A		
G	0.75	8.2	4	6	WD200-S2-R75G-B	Rack size 1
G	1.5	14	7	10.5	WD200-S2-1R5G-B	
G	2.2	20	10	15	WD200-S2-2R2G-B	Rack size 2
G	4	32	16	24	WD200-S2-004G-B	

Power supply voltage: three-phase 200V~240V 50/60Hz

Motor	Power Supply (Input)		AC Drive (Output)		Model	Rack Size
Power rating indicated on the nameplate	Line current		Maximum continuous output current	Highest instantaneous current		
G: Heavy load			In	1.5In (heavy load)		
P: Light load				60s		
	kW	A	A	A		
G	0.75	4.6	4	6	WD200-T2-R75G-B	Rack size 1
G	1.5	9	7	10.5	WD200-T2-1R5G-B	
G	2.2	11.4	10	15	WD200-T2-2R2G-B	Rack size 2
G	4	16.7	16	24	WD200-T2-004G-B	
G	5.5	32.2	20	30	WD200-T2-5R5G-B	Rack size 3
G	7.5	41.3	30	45	WD200-T2-7R5G-B	Rack size 4
G	11	59	42	63	WD200-T2-011G-B	
G	15	57	55	82.5	WD200-T2-015G-B	Rack size 5
G	18.5	69	70	105	WD200-T2-018G-B	
G	22	89	80	120	WD200-T2-022G-B	Rack size 6
G	30	106	110	165	WD200-T2-030G	
G	37	139	130	195	WD200-T2-037G	Rack size 7
G	45	164	160	240	WD200-T2-045G	
G	55	196	200	300	WD200-T2-055G	

Power supply voltage: three-phase 380V~480V 50/60Hz

Motor	Power Supply (Input)	AC Drive (Output)			Model	Rack Size
Power rating indicated on the nameplate	Line current	Maximum continuous output current In	Highest instantaneous current 1.5In (heavy load) 60s	Highest instantaneous current 1.2In (light load) 60s		
	kW	A	A	A	A	
G	0.75	3.5	3	4.5	-	WD200-T3-R75G-B
P	1.5	5	4	-	4.8	
G	1.5	5	4	6	-	WD200-T3-1R5G-B
P	2.2	5.8	6	-	7.2	
G	2.2	5.8	6	9	-	WD200-T3-2R2G-B
P	-	-	-	-	-	
G	4	11	10	15	-	WD200-T3-004G/5R5P-B
P	5.5	15	13	-	15.6	
G	5.5	15	13	19.5	-	WD200-T3-5R5G/7R5P-B
P	7.5	20	17	-	20.4	
G	7.5	20	17	25.5	-	WD200-T3-7R5G/011P-B
P	11	26	25	-	30	
G	11	26	25	37.5	-	WD200-T3-011G/015P-B
P	15	35	32	-	38.4	
G	15	35	32	48	-	WD200-T3-015G/018P-B
P	18.5	39	38	-	45.6	
G	18.5	39	38	57	-	WD200-T3-018G/022P-B
P	22	46	45	-	54	
G	22	46	45	67.5	-	WD200-T3-022G/030P-B
P	30	62	60	-	72	
G	30	62	60	90	-	WD200-T3-030G/037P
P	37	76	75	-	90	
G	37	76	75	112.5	-	WD200-T3-037G/045P
P	45	90	90	-	108	
G	45	90	90	135	-	WD200-T3-045G/055P
P	55	105	110	-	132	
G	55	105	110	165	-	WD200-T3-055G/075P
P	75	140	150	-	180	
G	75	140	150	225	-	WD200-T3-075G/090P
P	90	160	180	-	216	
G	90	160	180	270	-	WD200-T3-090G/110P
P	110	210	210	-	252	
G	110	210	210	315	-	WD200-T3-110G/132P
P	132	240	250	-	300	
G	132	240	250	375	-	WD200-T3-132G/160P
P	160	290	310	-	372	
G	160	290	310	465	-	WD200-T3-160G/185P
P	185	330	340	-	408	

Power supply voltage: three-phase 380V~480V 50/60Hz

Motor	Power Supply (Input)	AC Drive (Output)			Model	Rack Size
Power rating indicated on the nameplate	Line current	Maximum continuous output current	Highest instantaneous current	Highest instantaneous current		
G: Heavy load P: Light load		In	1.5In (heavy load) 60s	1.2In (light load) 60s		
	kW	A	A	A	A	
G 185	330	340	510	-	WD200-T3-185G/200P	Rack size 9
P 200	370	380	-	456		
G 200	370	380	570	-	WD200-T3-200G/220P	
P 220	410	415	-	498		
G 220	410	415	622.5	-	WD200-T3-220G/250P	Rack size 10
P 250	460	470	-	564		
G 250	460	470	705	-	WD200-T3-250G/280P	
P 280	500	510	-	612		
G 280	500	510	765	-	WD200-T3-280G/315P	Rack size 11
P 315	580	600	-	720		
G 315	580	600	900	-	WD200-T3-315G/355P	
P 355	620	670	-	804		
G 355	620	670	1005	-	WD200-T3-355G/400P	Rack size 12
P 400	670	750	-	900		
G 400	670	750	1125	-	WD200-T3-400G/450P	
P 450	780	800	-	960		
G 450	780	800	1200	-	WD200-T3-450G/500P	Rack size 13
P 500	835	860	-	1032		
G 500	835	860	1290	-	WD200-T3-500G/560P	
P 560	920	990	-	1188		
G 560	920	990	1485	-	WD200-T3-560G/630P	Rack size 14
P 630	1050	1100	-	1320		
G 630	1050	1200	1800	-	WD200-T3-630G/710P	
P 710	1301	1340	-	1608		
G 710	1301	1340	2010	-	WD200-T3-710G/800P	Rack size 15
P 800	1466	1500	-	1800		
G 800	1466	1500	2250	-	WD200-T3-800G/900P	
P 900	1649	1620	-	1944		
G 900	1649	1620	2430	-	WD200-T3-900G/1000P	Rack size 16
P 1000	1832	1720	-	2064		
G 1000	1832	1720	2850	-	WD200-T3-1000G	

Power supply voltage: three-phase 660V~690V 50/60Hz

Motor	Power Supply (Input)	AC Drive (Output)			Model	Rack Size
Power rating indicated on the nameplate	Line current	Maximum continuous output current	Highest instantaneous current	Highest instantaneous current		
G: Heavy load P: Light load		In	1.5In (heavy load) 60s	1.2In (light load) 60s		
	kW	A	A	A	A	
G	22	40	28	42	-	WD200-T6-022G/030P
P	30	47	35	-	42	
G	30	47	35	52.5	-	WD200-T6-030G/037P
P	37	55	45	-	54	
G	37	55	45	67.5	-	WD200-T6-037G/045P
P	45	65	52	-	62	
G	45	65	52	78	-	WD200-T6-045G/055P
P	55	85	63	-	76	
G	55	85	63	94.5	-	WD200-T6-055G/075P
P	75	95	86	-	103	
G	75	95	86	129	-	WD200-T6-075G/090P
P	90	100	98	-	118	
G	90	100	98	147	-	WD200-T6-090G/110P
P	110	118	121	-	145	
G	110	118	121	181.5	-	WD200-T6-110G/132P
P	132	145	150	-	180	
G	132	145	150	225	-	WD200-T6-132G/160P
P	160	165	175	-	210	
G	160	165	175	262.5	-	WD200-T6-160G/185P
P	185	190	198	-	238	
G	185	190	198	297	-	WD200-T6-185G/200P
P	200	210	218	-	262	
G	200	210	218	327	-	WD200-T6-200G/220P
P	220	230	235	-	282	
G	220	230	235	352.5	-	WD200-T6-220G/250P
P	250	255	270	-	324	
G	250	255	270	405	-	WD200-T6-250G/280P
P	280	290	330	-	396	
G	280	290	330	495	-	WD200-T6-280G/315P
P	315	340	345	-	414	

Rack
size 6

Rack
size 7

Rack
size 8

Rack
size 9

Rack
size
10

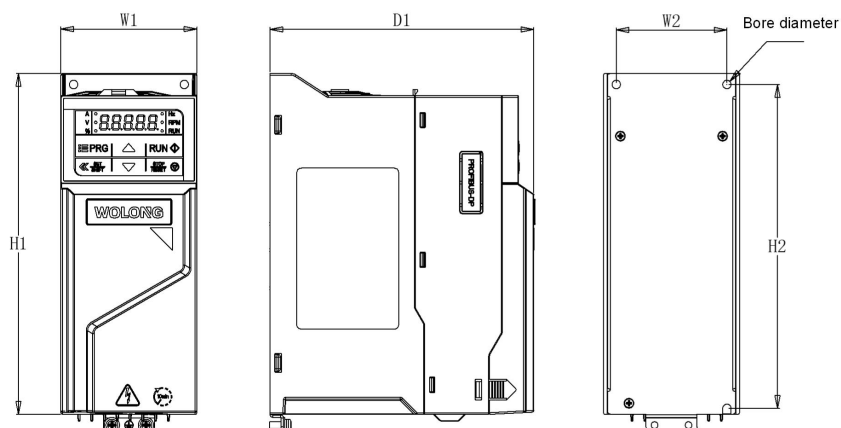
Power supply voltage: three-phase 660V~690V 50/60Hz

Motor	Power	Supply	AC Drive (Output)			Model	Rack Size
	kW	A	Line current	Maximum continuous output current In	Highest instantaneous current 1.5In (heavy load) 60s	Highest instantaneous current 1.2In (light load) 60s	
G: Heavy load P: Light load							
G	315	340	345	517.5	-	WD200-T6-315G/355P	Rack size 11
P	355	380	380	-	456		
G	355	380	380	570	-	WD200-T6-355G/400P	Rack size 11
P	400	410	430	-	516		
G	400	410	430	645	-	WD200-T6-400G/450P	Rack size 11
P	450	460	466	-	559		
G	450	460	466	699	-	WD200-T6-450G/500P	Rack size 11
P	500	520	540	-	648		
G	500	520	540	810	-	WD200-T6-500G/560P	Rack size 12
P	560	580	600	-	720		
G	560	580	600	900	-	WD200-T6-560G/630P	Rack size 12
P	630	660	690	-	828		
G	630	660	690	1035	-	WD200-T6-630G/710P	Rack size 12
P	710	730	760	-	912		
G	710	730	760	1140	-	WD200-T6-710G/800P	Rack size 13
P	800	807	860	-	1032		
G	800	807	860	1290	-	WD200-T6-800G/900P	Rack size 13
P	900	908	932	-	1118		
G	900	908	932	1398	-	WD200-T6-900G/1000P	Rack size 14
P	1000	1009	1040	-	1248		
G	1000	1009	1040	1560	-	WD200-T6-1000G	

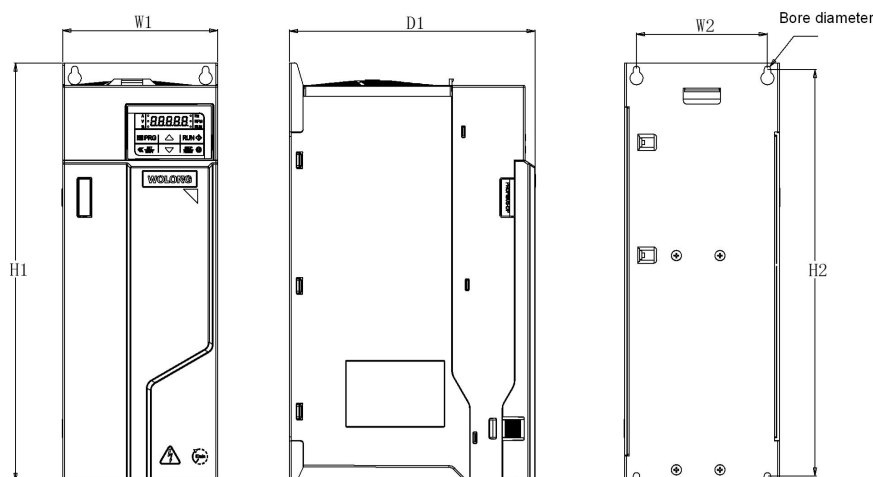
4. Installation

4.1 Installation Dimensions

Rack Size 1

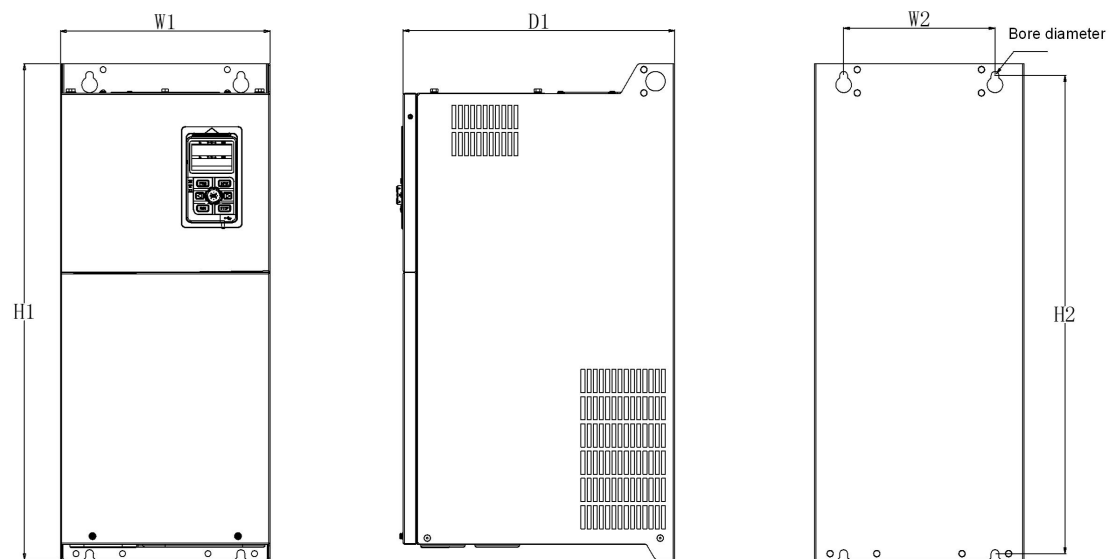


Rack Size 2, 3, 4, 5



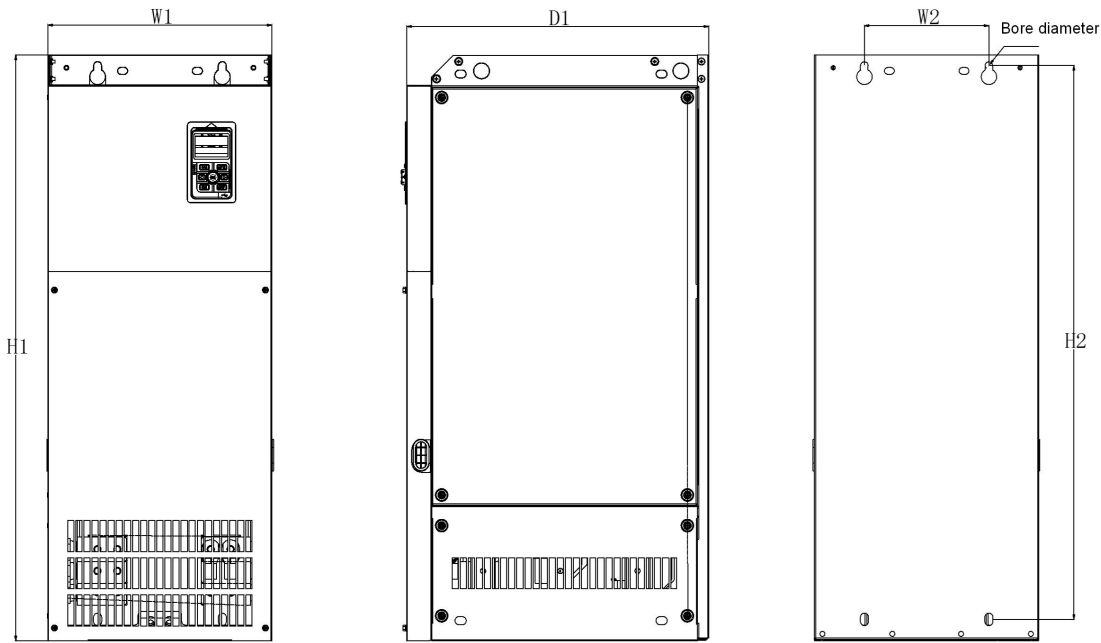
Rack Size	External Dimensions (mm/in)			Installation Dimensions (mm/in)		
	W1	D1	H1	W2	H2	Bore diameter
Rack size 1	80/3.15	155/6.1	200/7.87	65/2.56	190/7.48	3-Ø5/0.2
Rack size 2	100/3.94	155/6.1	242/9.53	84/3.31	232/9.13	4-Ø5/0.2
Rack size 3	116/4.57	175/6.89	320/12.6	98/3.86	308/12.13	4-Ø6/0.24
Rack size 4	142/5.59	225/8.86	383/15.08	120/4.72	372/14.65	4-Ø6/0.24
Rack size 5	170/6.69	225/8.86	430/16.93	150/5.91	416/16.38	4-Ø6.5/0.26

Rack Size 6, 7, 8



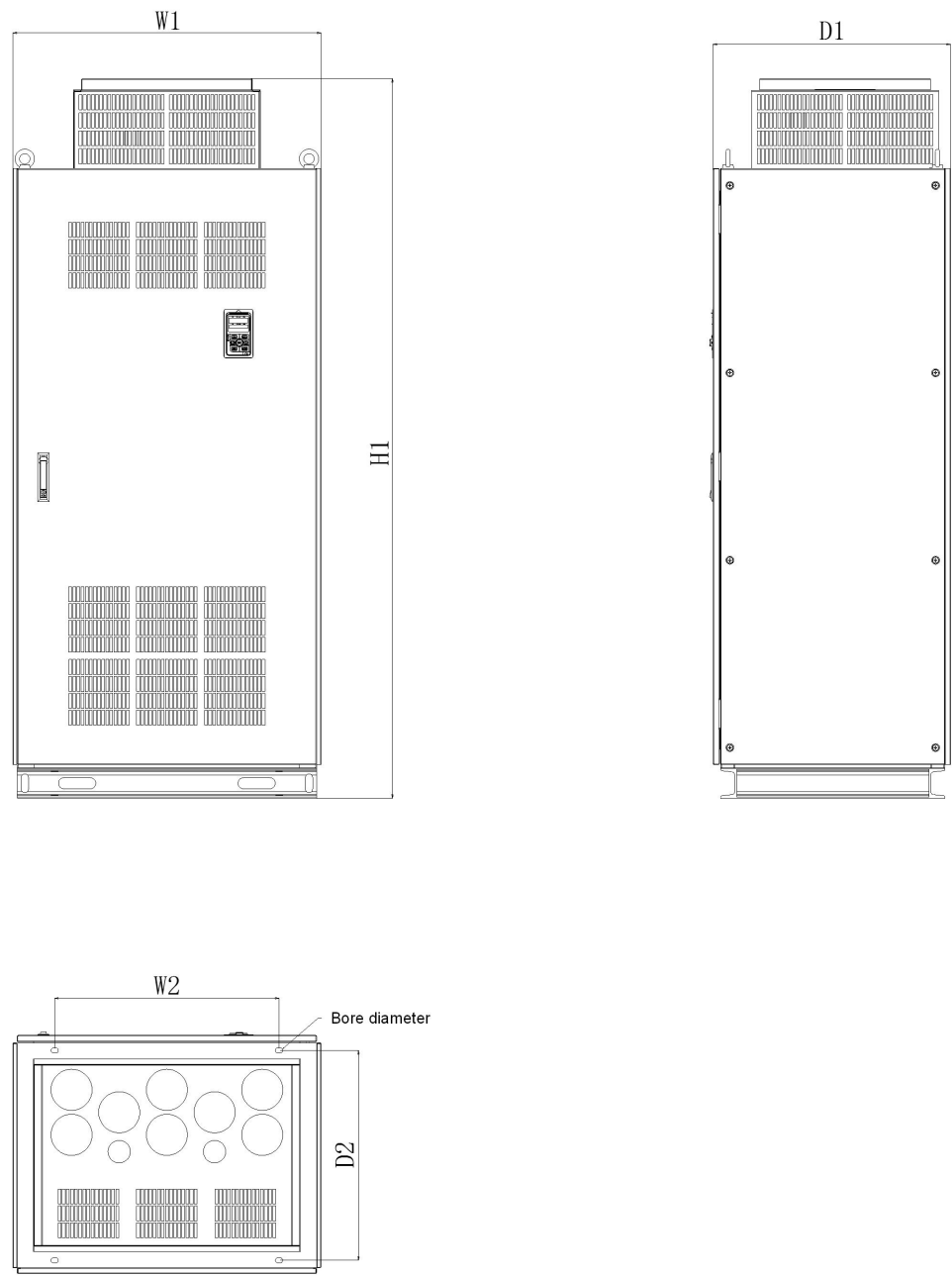
Rack Size	External Dimensions (mm/in)			Installation Dimensions (mm/in)		
	W1	D1	H1	W2	H2	Bore diameter
Rack size 6	240/9.45	310/12.20	560/22.05	176/6.93	545/21.46	4-Ø7/0.28
Rack size 7	270/10.63	350/13.78	638/21.12	195/7.68	615/24.21	4-Ø10/0.39
Rack size 8	350/13.78	390/15.35	735/28.94	220/8.66	715/28.15	4-Ø10/0.39

Rack Size 9, 10, 11, 12



Rack Size	External Dimensions (mm/in)			Installation Dimensions (mm/in)		
	W1	D1	H1	W2	H2	Bore diameter
Rack size 9	360/14.17	485/19.10	942/37.09	200/7.87	890/35.04	4-ø12/0.47
Rack size 10	370/15.57	545/21.46	1127/44.37	200/7.87	1075/43.32	4-ø20/0.79
Rack size 11	400/15.75	545/21.46	1212/47.72	240/9.45	1147/45.16	4-ø20/0.79
Rack size 12	460/18.11	545/21.46	1400/55.12	300/11.81	1340/52.76	4-ø20/0.79

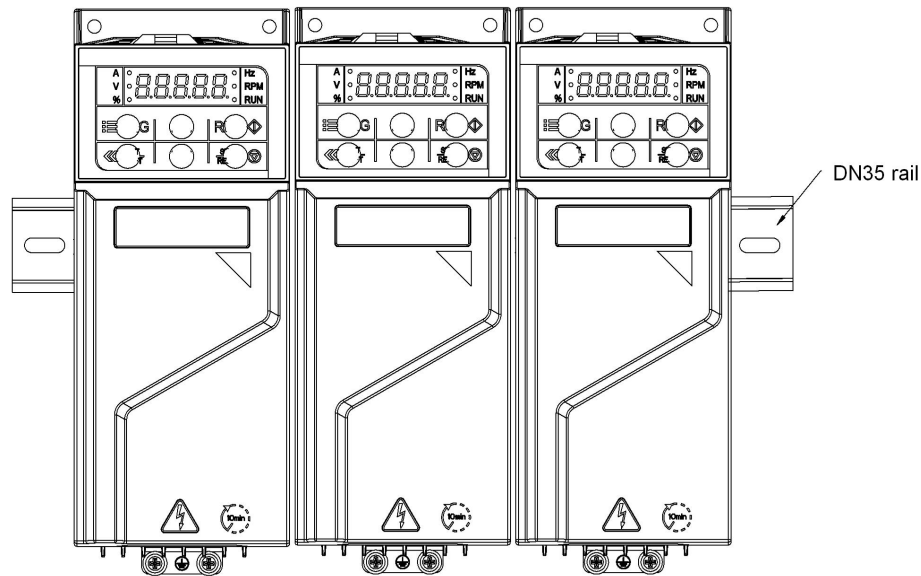
Rack Size 13



Rack Size	External Dimensions (mm/in)			Installation Dimensions (mm/in)		
	W1	D1	H1	W2	D2	Bore diameter
Rack size 13	825/32.48	635/25.00	1920/75.59	600/23.62	560/22.06	4-ø14/0.55

4.2 Installation Type

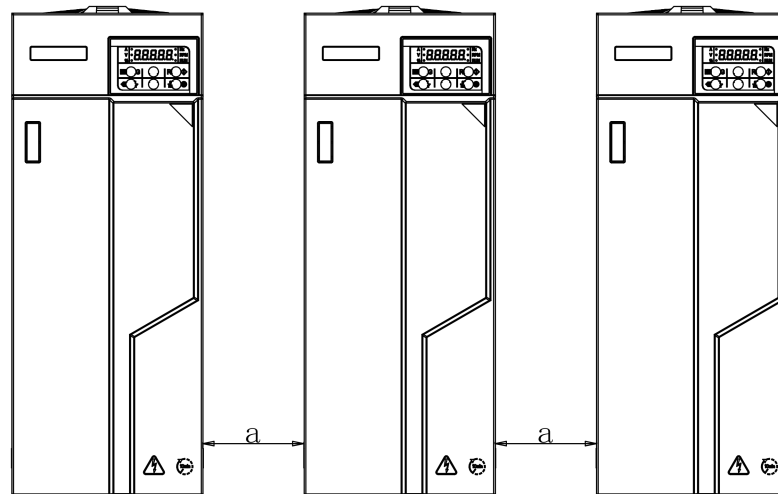
DIN Rail Mounting



Rack size 1 supports DIN rail mounting.

(If the AC drive is equipped with a DP communication card, make sure to leave sufficient space on the left side for inserting the DP connector.)

Wall Mounting – Independent Installation



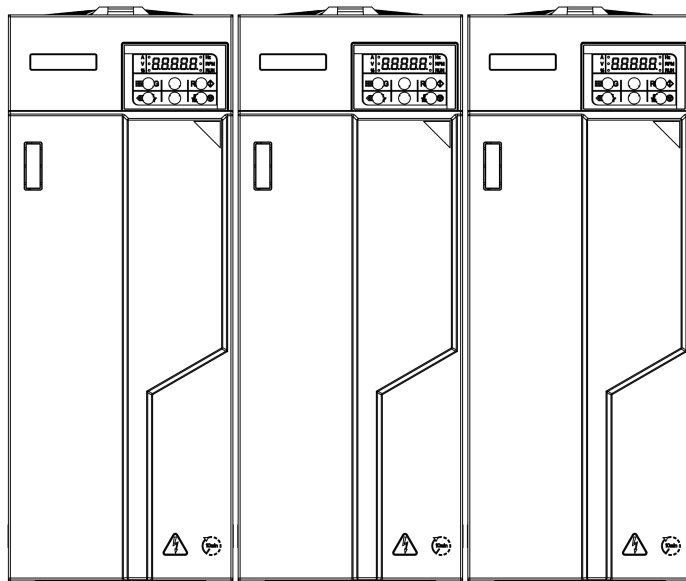
Rack sizes 1, 2, 3, 4, and 5 have no clearance requirements.

(If the AC drive is equipped with a DP communication card, make sure to leave sufficient space on the left side for inserting the DP connector.)

Rack sizes 6, 7, and 8 require at least 50 mm clearance.

Rack sizes 9, 10, 11, and 12 have no clearance requirements.

Wall Mounting - Side-by-Side Installation



Rack sizes 1, 2, 3, 4, and 5 support side-by-side installation.

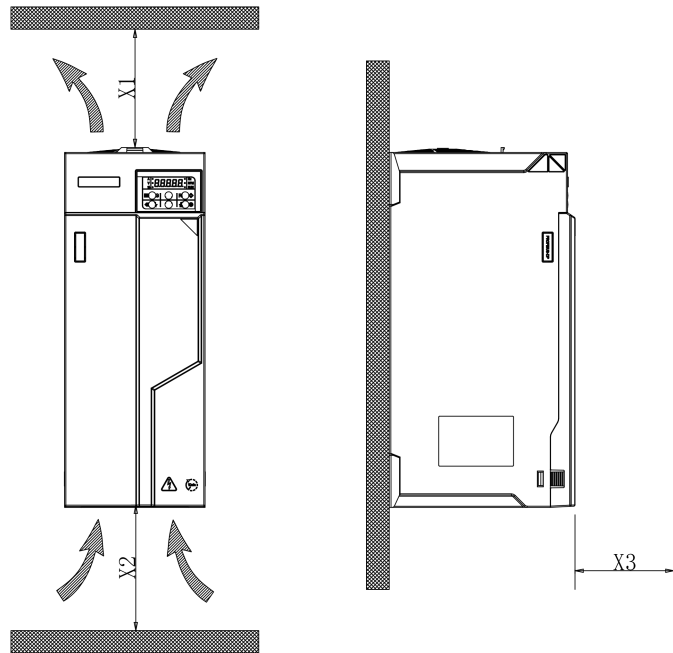
(If the AC drive is equipped with a DP communication card, ensure there is enough clearance on the left side for inserting the DP connector.)

Rack sizes 6, 7, and 8 don't support side-by-side installation.

Rack sizes 9, 10, 11, and 12 support side-by-side installation.

4.3 Installation Requirements

4.3.1 Installation Space Requirements



Rack Size	X1	X2	X3
1...4	≥100 mm	≥50 mm	≥10 mm
5	≥200 mm	≥100 mm	≥10 mm
6...8	≥300 mm	≥150 mm	≥10 mm
9...11	≥250 mm	≥120 mm	≥10 mm
12	≥250 mm	≥120 mm	≥10 mm

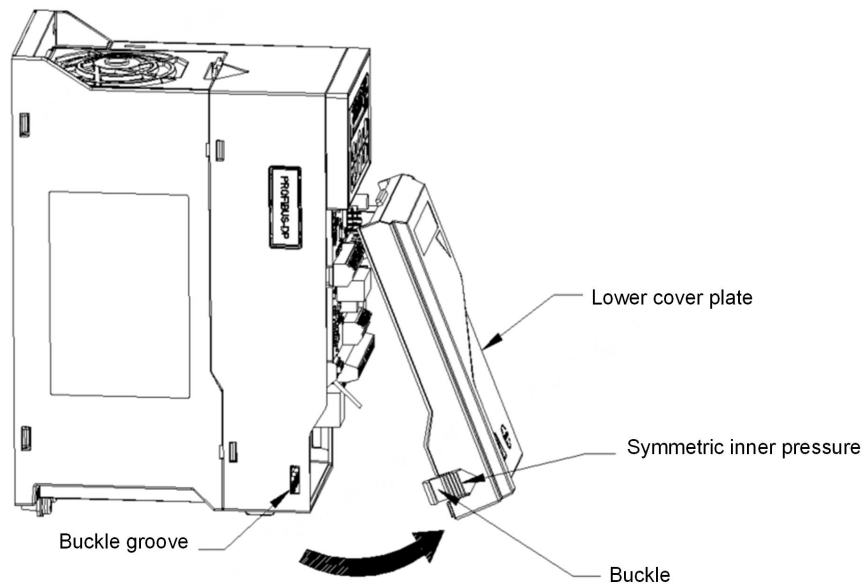
X1: Clearance at the top
X2: Clearance at the bottom
X3: Clearance at the front

4.3.2 Minimum Air Flow Required for Heat Dissipation (for Installation Inside the Cabinet)

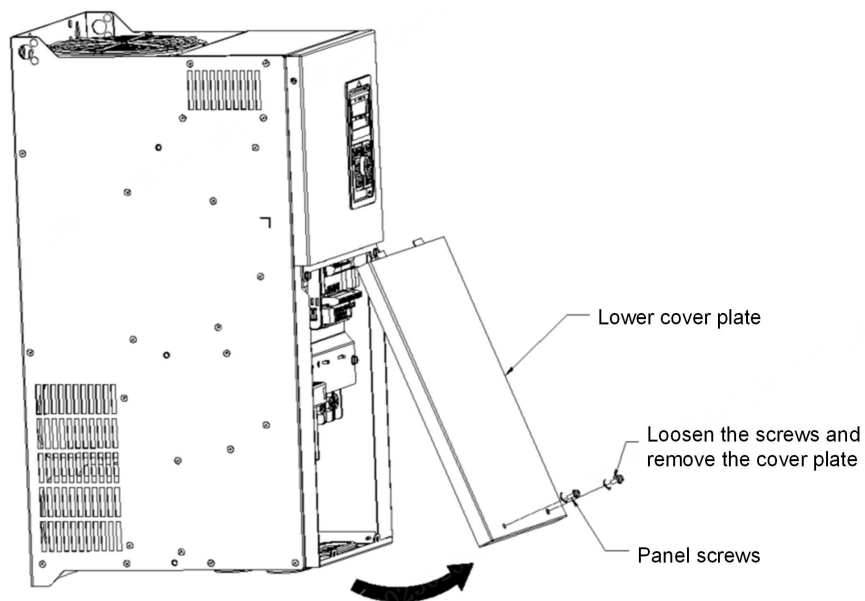
Rack Size	Minimum Air Flow m ³ /min (CFM)	Rack Size	Minimum Air Flow m ³ /min (CFM)
1	1.1 (39)	7	11.5 (406)
2	1.8 (64)	8	18.5 (653)
3	3.2 (113)	9	23 (812)
4	5 (177)	10	32 (1130)
5	6.8 (240)	11	36 (1271)
6	9 (318)	12	61 (2153)

4.4 Installation and Removal of Front Cover Panel

Rack Sizes 1, 2, 3, 4, and 5

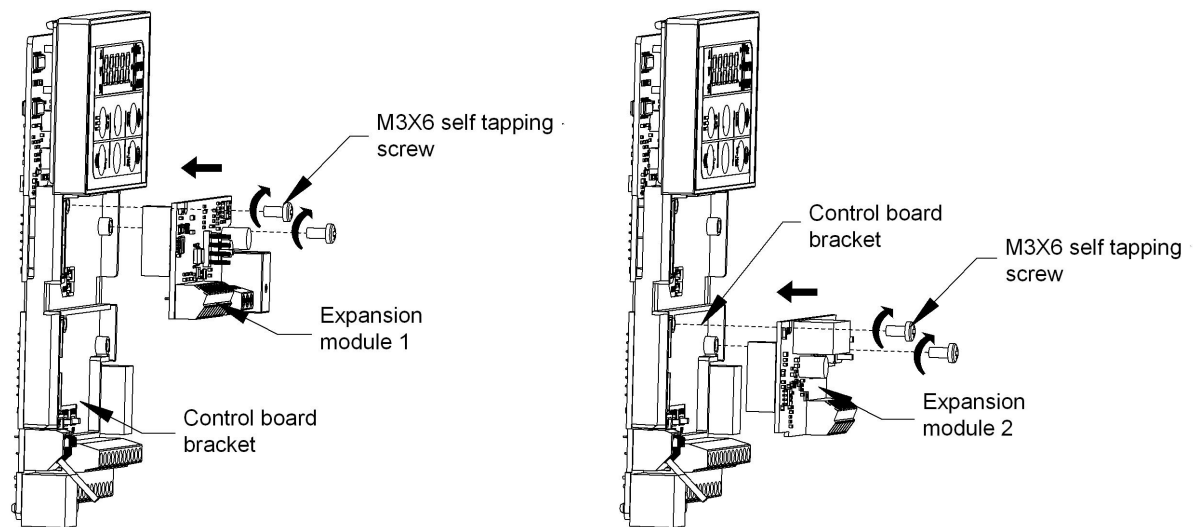


Rack Sizes 6, 7, 8, 9, 10, 11, and 12

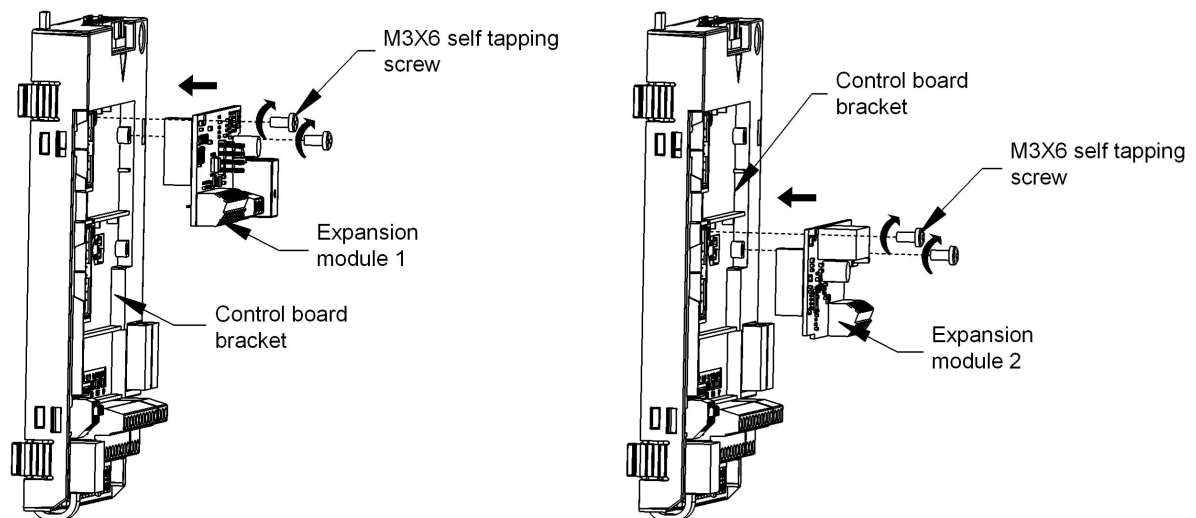


4.5 Installation of Expansion Modules

Rack Sizes 1, 2, 3, 4, and 5



Rack Sizes 6, 7, 8, 9, 10, 11, 12, 13, and 14



Note: Extension module 1 is installed in the EX-A card slot position and can accommodate I/O expansion modules and communication modules.

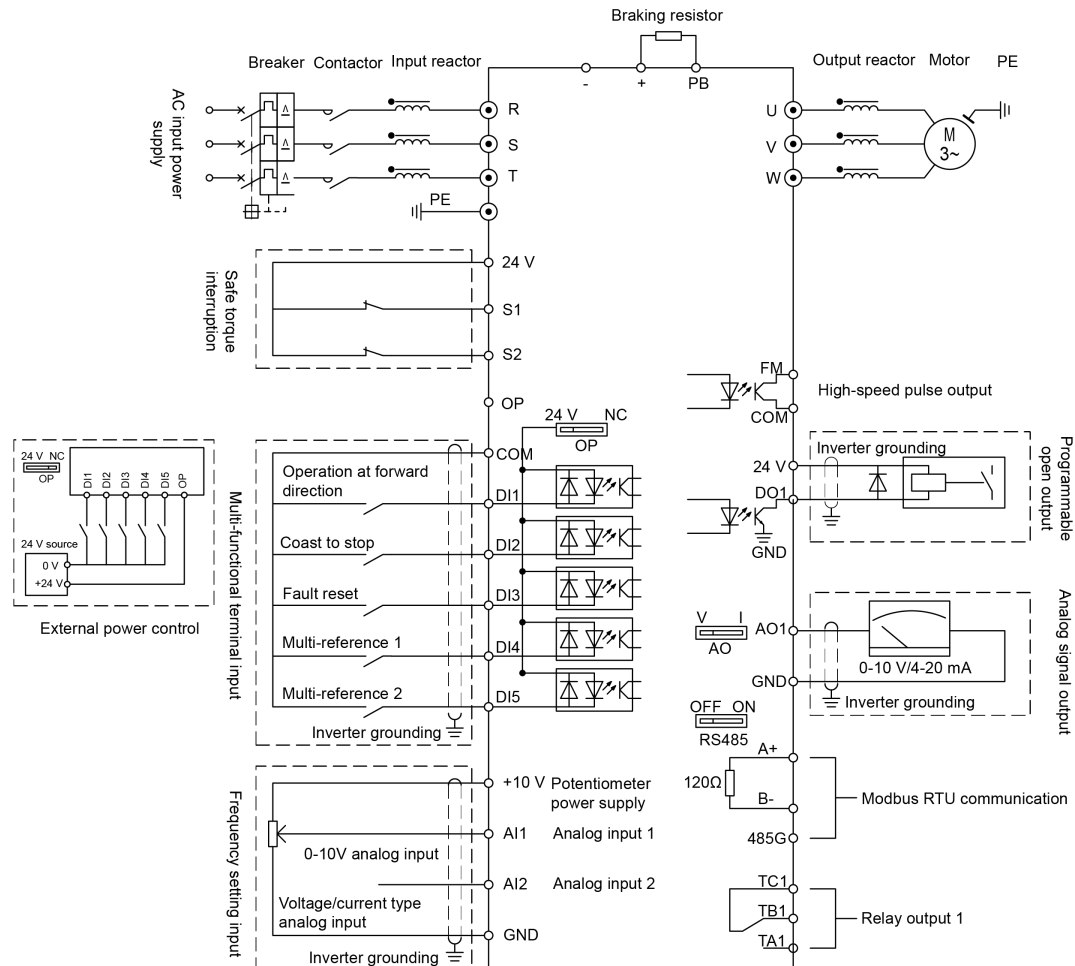
Extension module 2 is installed in the EX-B card slot position and can accommodate speed feedback encoder modules.

For models with rack sizes 6 and above, the top cover panel of the equipment needs to be removed when installing an extension module.

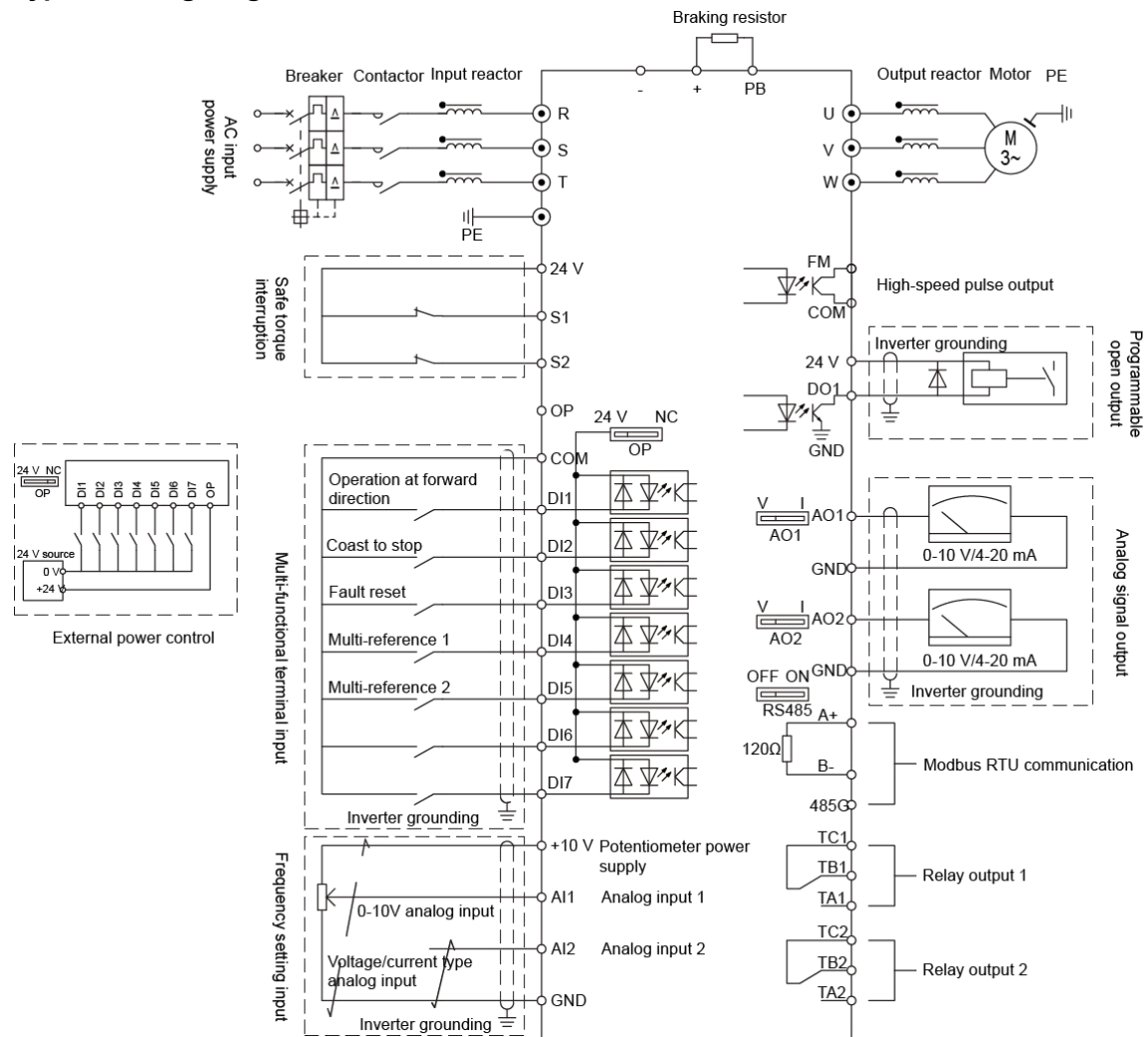
5. Wiring

5.1 Electric Wiring Diagram

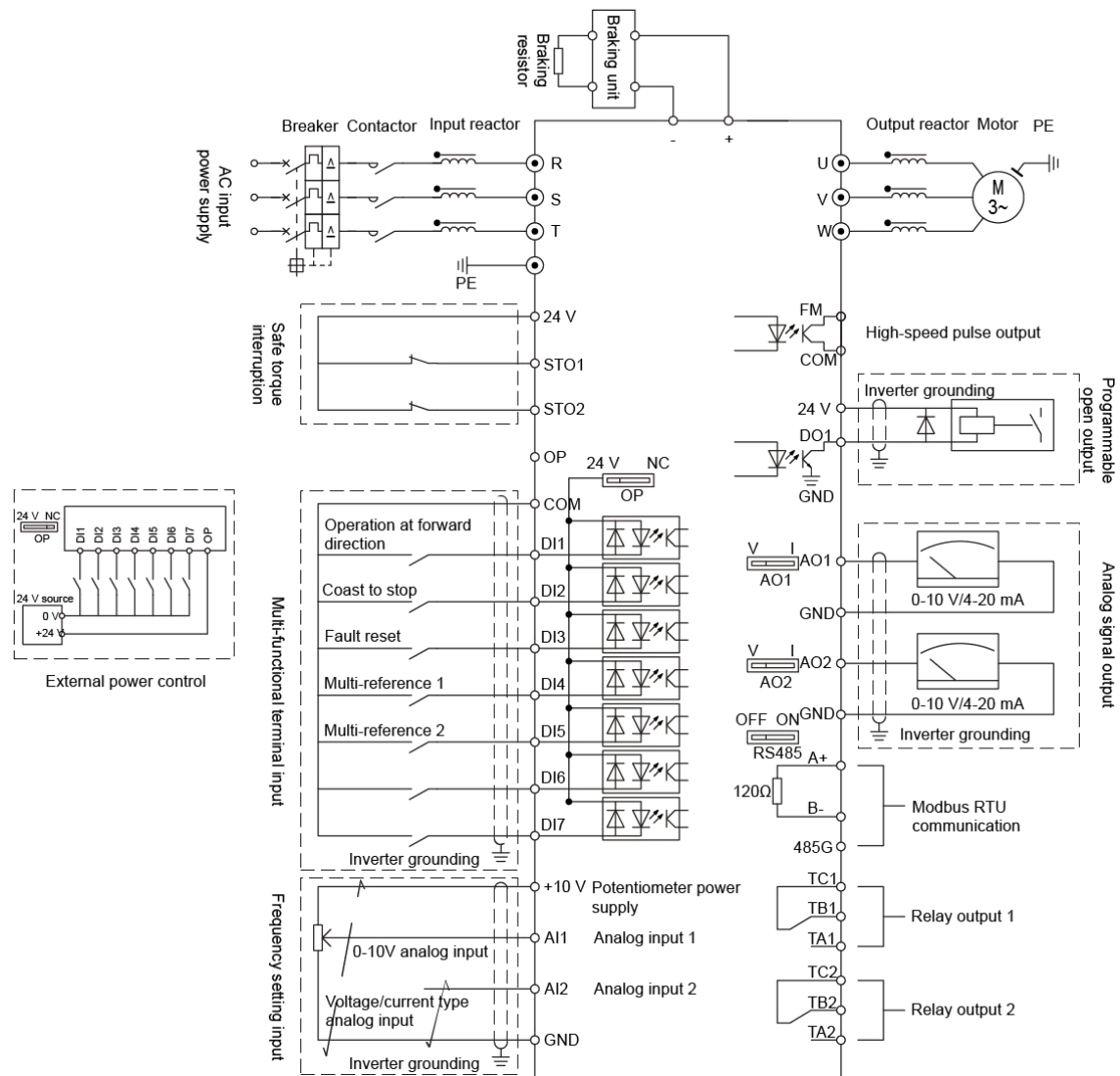
Typical wiring diagram for rack sizes 1, 2, 3, 4, and 5



Typical wiring diagram for rack sizes 6, 7, and 8



Typical wiring diagram for rack sizes 9, 10, 11, 12, 13, and 14



Note: The braking unit and braking resistor are optional external parts.

5.2. Wiring Suggestion

5.2.1 Power Supply

Leakage Protection Device Selection:

Due to the relatively high leakage current of the AC drive, if a leakage protection switch is required at the front end, it is recommended to select a leakage protection device with a rating of 30 mA or higher.

5.2.2 Grounding

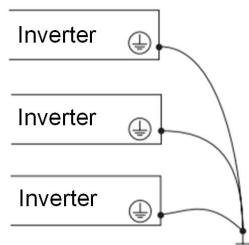
The AC drives must be grounded properly.

To comply with current regulations regarding high leakage currents (exceeding 3.5 mA), at least one protective conductor with a cross-sectional area of 10 mm² (AWG 6) or two protective conductors with the same cross-sectional area as the power supply conductors should be used.

Danger

Electrical Shock

Use the provided grounding connection point as shown in the diagram below to ground the equipment. The AC drive must be properly grounded before power is applied.
Failure to follow the instructions may result in serious injury or death.



Verify that the resistance to ground is 1 ohm or less.

Ground multiple AC drives as shown in the diagram on the left.

Do not create a loop or series connection with the grounding cables.

Warning

Incorrect Wiring

- Damage to the AC drive may occur if the input line voltage is applied to the output terminals (U, V, W).
- Check the power supply connections before powering on the WD200 AC Drive.
- If replacing another AC drive, ensure that all wiring connected to the WD200 AC Drive complies with all wiring instructions in this manual.

5.2.3 Others

Do not use surge protectors or power factor correction capacitors on the output of the AC drives.

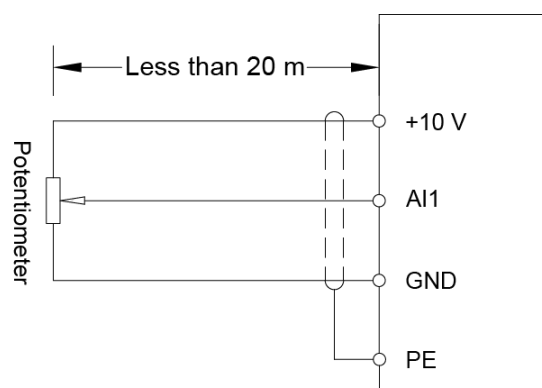
5.2.4 Control Cables

Keep the control circuit away from the power circuit. It is recommended to use shielded twisted pair cables, and ground each end of the shielded twisted pair cable.

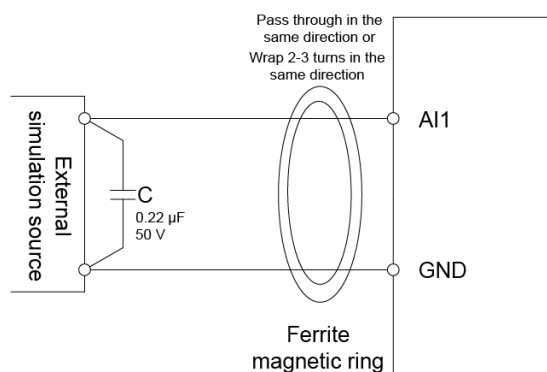
If using a conduit, do not place motor cables, power cables, and control cables in the same conduit. Maintain a distance of at least 8 cm between the metal conduits of the power cables and the control cables. Maintain a distance of at least 30 cm between the non-metallic conduits or cable ducts of the power cables and the control cables.

Analog Input Signals:

Due to the susceptibility of weak analog voltage signals to external interference, shielded cables are generally required, and wiring distances should be kept short, not exceeding 20 m.



In cases where certain analog signals are severely interfered with, filter capacitors or ferrite cores should be added to the analog current signal source side.

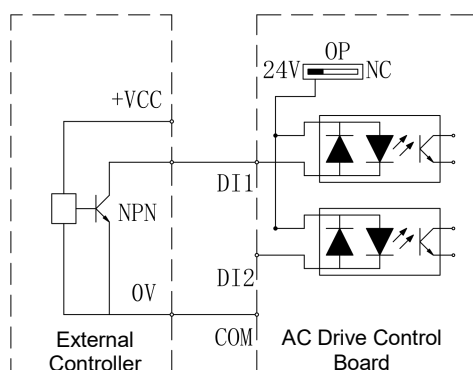


Digital Input Signals:

It is generally recommended to use shielded cables for digital input signals, and the wiring distance should be kept as short as possible, preferably not exceeding 20m.

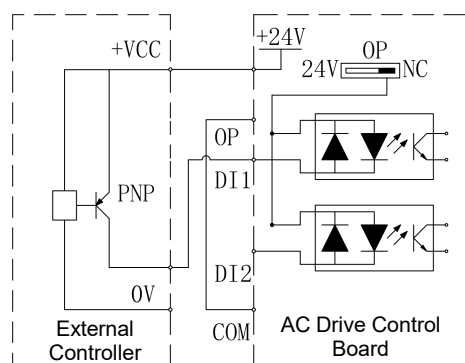
When using active drive mode, implement necessary filtering measures to reduce power supply interference is needed, and it is recommended to choose a dry contact control method.

Leakage Type Wiring:

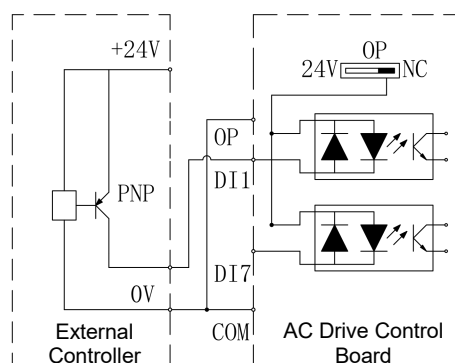


The diagram shows the use of internal power supply for connection. If an external power supply is used, switch the OP dip switch to the NC position. Connect the positive terminal of the external power supply's 24V to the OP terminal and connect the negative terminal of the external power supply to the COM terminal.

Source Type Wiring:



External Power Supply



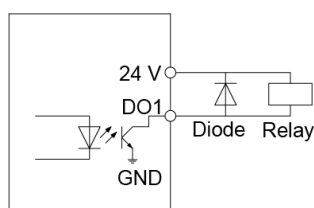
Internal Power Supply

Source type wiring: Switch the OP dip switch to the NC position and then connect OP to COM.

Using the internal power supply: Connect the AC drive's +24V to the +VCC of the external controller.

Using the external power supply: Connect the 0V of the external power supply to COM.

Digital Output (DO) Signals:



When the digital output terminals need to drive relays, install flyback diodes across the coil of the relay is necessary. Failure to do so may lead to damage to the DC 24V power supply.

Note: Ensure correct polarity when installing the flyback diode. Incorrect polarity may result in burning out the DC 24V power supply when there is an output signal from the digital output terminal.

5.2.5 Motor Cables

During the operation of the AC drive, the rapid switching of the power-switching transistors can cause a large dv/dt at the output terminal. When the motor cable is too long, it can result in high voltage stress on the motor windings, which may lead to insulation breakdown. Additionally, as the cable length increases, the distributed capacitance of the cables linearly increases, making it prone to generating high-frequency harmonic currents.

Therefore, when the motor cable length exceeds 100 m, it is essential to install output reactors, dv/dt filters, and other related products on the output side of the equipment. These devices effectively reduce the voltage stress and mitigate the impact of high harmonic currents. For more detailed information, please contact our technical support team.

5.2.6 Braking Resistor

Selection of braking resistor value.

The resistance value of the braking resistor can be calculated using the following formula:

$$U \times (U/R) = P_b$$

U - Braking voltage (the braking voltage value varies for different voltage-level models, which can be viewed and adjusted through parameter F12.33)

P_b - Braking power

Selection of braking resistor power.

Theoretically, the power of the braking resistor should match the braking power. However, considering the heating characteristics of the braking resistor, when calculating the braking resistor power, it should be multiplied by a derating factor K:

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

K - Derating factor, typically around 50%

P_r - Power of the braking resistor

D-Braking ratio, which is the proportion of the braking process to the entire operating cycle

From the above equations, the following can be obtained:

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

$$P_r = (U \times U \times D) / (R \times K)$$

You can calculate the braking resistor power based on the equation.

Note:

A lower derating factor K can ensure that the braking resistor does not overheat. You can appropriately increase the value of K under the condition of good heat dissipation of the braking resistor, but it is not recommended to exceed 50%, as it may lead to the risk of fire due to overheating of the resistor.

The braking ratio D should be determined based on the user's actual application scenarios.

The table below shows typical values for common application scenarios:

Common application scenarios	Occasional braking	General application scenarios	Unwinding/rewinding	Lifting and hoisting	Centrifuge
Braking ratio D	5%	10%	20%-30%	50%	50%-60%

For models with built-in braking units, the table below provides recommended braking resistor power and resistance values for general application scenarios. If the actual application differs from the typical scenarios, you can recalculate the braking resistor power and resistance values based on the specific requirements. Ensure that the selected braking resistor resistance value should be greater than the minimum resistance value requirement to avoid damaging the braking unit.

Model	Braking Unit	125% Braking torque (10% braking rate, maximum 10 seconds)			Minimum Resistance Value Ω
		Recommended Braking Resistor Power W	Recommended Braking Resistor Resistance Value Ω	Braking Resistors Piece	
WD200-T3-R75G-B	Standard	140	800	1	96
WD200-T3-1R5G-B	Standard	300	380	1	96
WD200-T3-2R2G-B	Standard	440	260	1	64
WD200-T3-004G/5R5P-B	Standard	740	150	1	32
WD200-T3-5R5G/7R5P-B	Standard	1100	100	1	32
WD200-T3-7R5G/011P-B	Standard	1500	75	1	32
WD200-T3-011G/015P-B	Standard	2200	50	1	24
WD200-T3-015G/018P-B	Standard	3000	38	1	24
WD200-T3-018G/022P-B	Standard	4000	32	1	24
WD200-T3-022G/030P-B	Standard	4500	27	1	24
WD200-T3-030G/037P-B	Optional	6000	20	1	19.2
WD200-T3-037G/045P-B	Optional	7000	16	1	14.8
WD200-T3-045G/055P-B	Optional	9000	13	1	12.8
WD200-T3-055G/075P-B	Optional	11000	10.5	1	9.6
WD200-T3-075G/090P-B	Optional	15000	7.7	1	6.8
WD200-T3-090G/110P-B	Optional	18000	7	1	5.6
WD200-T3-110G/132P-B	Optional	20000	6	1	5.6
WD200-T3-132G/160P-B	Optional	20000	6	1	5.6
WD200-T3-160G/185P-B	Optional	20000	6	1	5.6

5.2.7 EMC Requirements

The EMC product standard (EN 61800-3) specifies the EMC requirements for AC Drive products.

The WD200 Series AC Drive comply with the Category C3 standards of the EMC product standard (EN 61800-3).

EMC Application Environment Classification:

Category 1 environment: Residential environment. This includes applications that are directly connected to low-voltage power grids supplying power to residential areas without passing through intermediate transformer.

Category 2 environment: All environments except those directly connected to low-voltage power grids supplying power to residential areas.

Four Classifications for AC Drive:

C1-class AC Drive: Rated voltage below 1000 V, applied in Category 1 environments.

C2-class AC Drive: Rated voltage below 1000 V, not intended for use as a plug-in, socket-outlet, or portable device; must be installed and operated by professionals when applied in Category 1 environments as power drive systems.

C3-class AC Drive: Rated voltage below 1000 V, used in Category 2 environments, not applicable in Category 1 environments.

C4-class AC Drive: Rated voltage above 1000 V, or rated currents ≥ 400 A, applied in complex systems within Category 2 environments.

5.2.8 Disconnecting EMC Filters

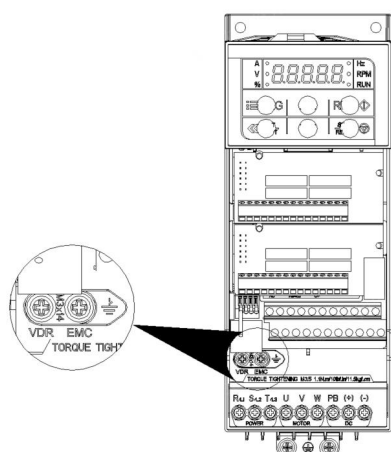
The entire WD200 Series AC Drives are equipped with built-in EMC filters. When the AC drive is working, there may be current leakage to the ground. If the leakage current causes compatibility issues with the front-end protection devices of the equipment (such as residual current devices or other equipment), you can reduce the leakage current by disconnecting the built-in EMC filter as shown below. However, note that after disconnecting the EMC filter, the AC drive will no longer meet the EMC requirements of the EMC product standard (EN 61800-3).

Disconnecting built-in EMC filter in a model with a rack size of 1, 2, 3, 4, and 5

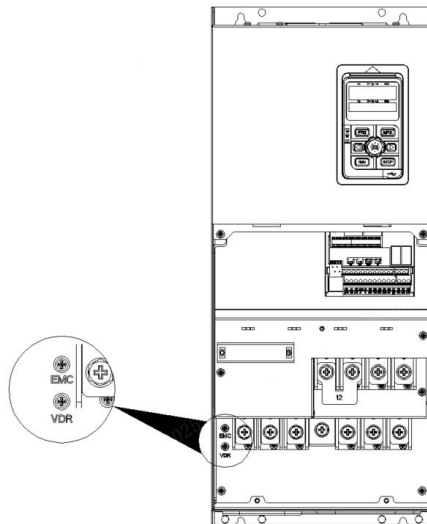
Operation Steps:

1. Open the lower cover of the AC drive, and locate the screw with the "EMC" symbol (the position may vary slightly depending on the model).
2. Use a crosshead screwdriver to loosen the grounding screw marked with "EMC" by rotating it counterclockwise for 5-10 turns to disconnect the EMC grounding.

Note: There is no need to remove the screw completely; just loosening it is sufficient. When removing, pay attention to the markings, and do not remove the "VDR" grounding screw.



Disconnecting built-in EMC filter in a model with a rack size of 6, 7, 8, 9, 10, 11, and 12



Operation Steps:

1. Open the lower cover of the AC drive, and locate the screw with the "EMC" symbol (the position may vary slightly depending on the model).
2. Use a crosshead screwdriver to loosen the grounding screw marked with "EMC".
3. Use electrical tape to wrap around the EMC grounding wire terminal, ensuring it is insulated from the metal casing and does not make contact with it.

Note: When removing, pay attention to the markings and avoid removing the "VDR" grounding screw.

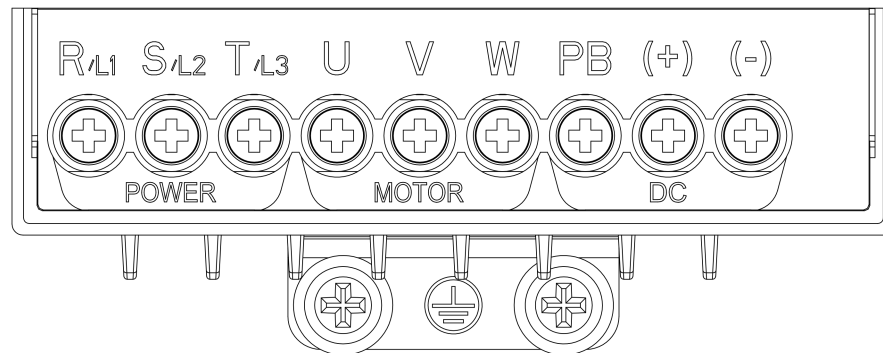
5.3 Wiring Instructions

5.3.1 Features and Functions of Power Terminals

Grounding terminal	Function
	Protective grounding
R/L1 S/L2 T/L3	POWER AC power supply input
PB	Output to braking resistor ^①
(+)	DC bus (positive) / Output to braking resistor
(-)	DC bus (negative)
U V W	MOTOR Output to motor
^① : When connecting the braking resistor, please ensure that the AC drive is ordered with a built-in or optional braking unit.	

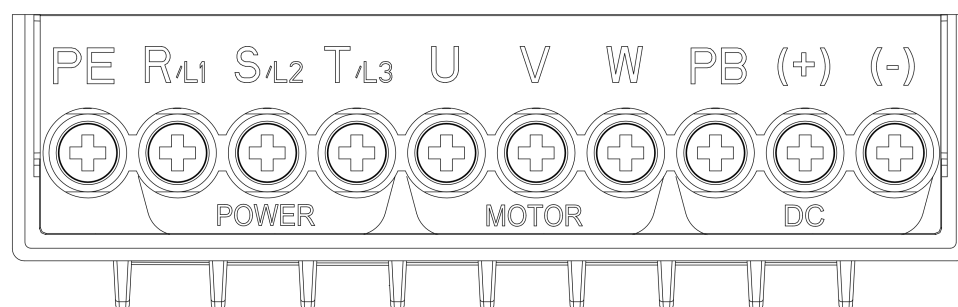
5.3.2 Layout of Power Terminals

Rack Size 1



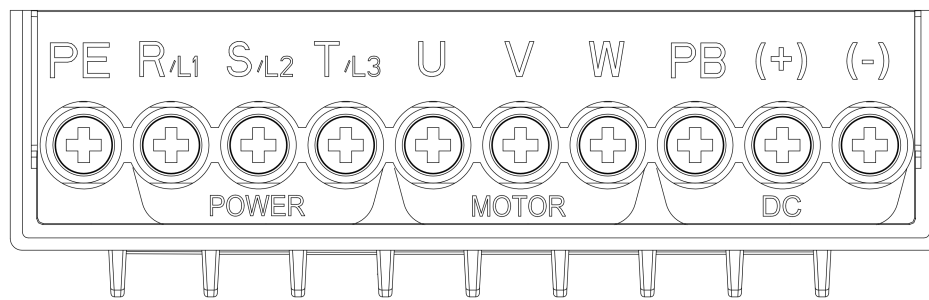
Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-R75G-B	0.75	1.1–1.5
WD200-T3-1R5G-B	0.75	
WD200-T3-2R2G-B	1	

Rack Size 2



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-004G/5R5P-B	1.5	1.2–1.7
WD200-T3-5R5G/7R5P-B		

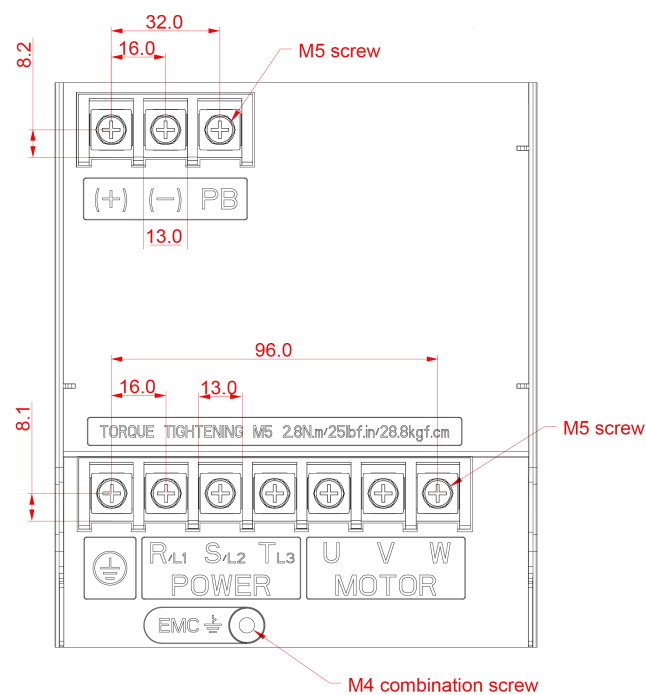
Rack Size 3



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-7R5G/011P-B	2.5	1.2–1.7
WD200-T3-011G/015P-B	4	

Rack Size 4

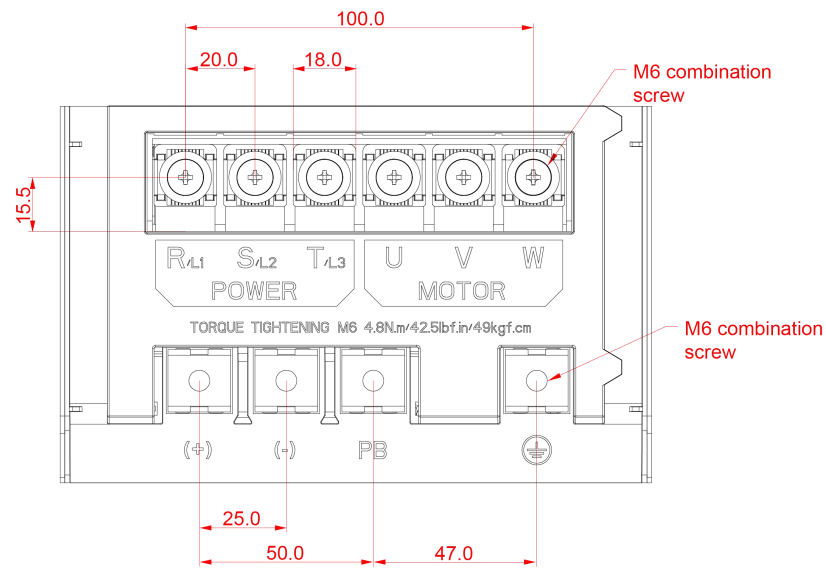
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-015G/018P-B	6	2.5–3.5
WD200-T3-018G/022P-B	10	
WD200-T3-022G/030P-B	10	

Rack Size 5

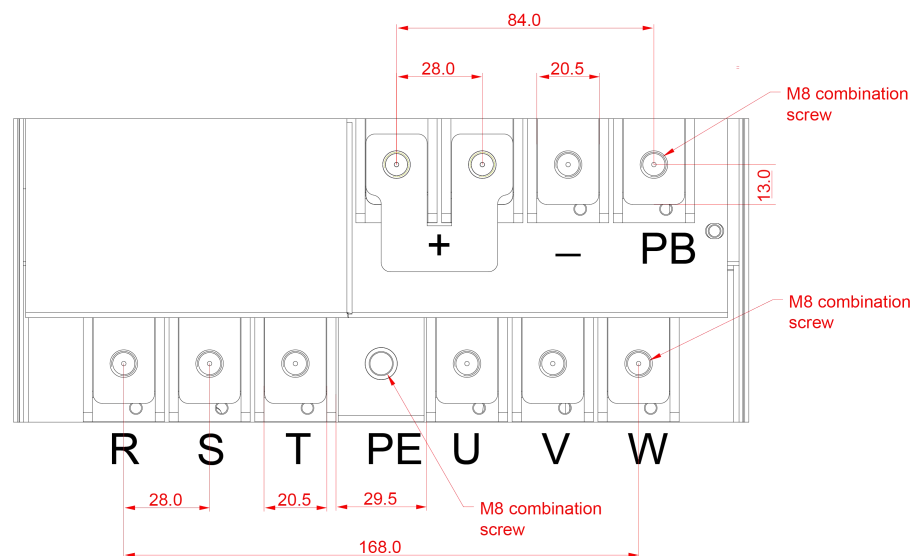
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-030G/037P	16	4–6
WD200-T3-037G/045P	25	

Rack Size 6

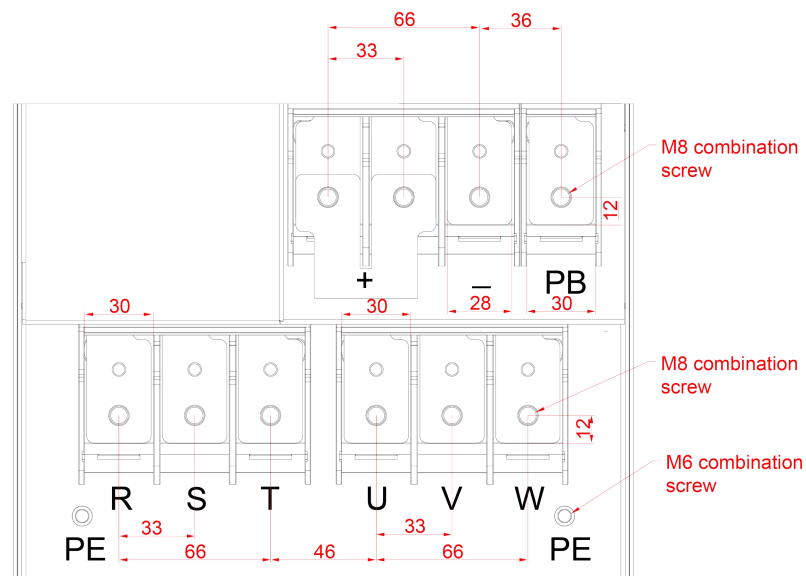
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-045G/055P	25	9–11
WD200-T3-055G/075P	35	
WD200-T3-075G/090P	50	
WD200-T6-022G/030P	4	
WD200-T6-030G/037P	6	
WD200-T6-037G/045P	6	
WD200-T6-045G/055P	10	
WD200-T6-055G/075P	16	
WD200-T6-075G/090P	16	

Rack Size 7

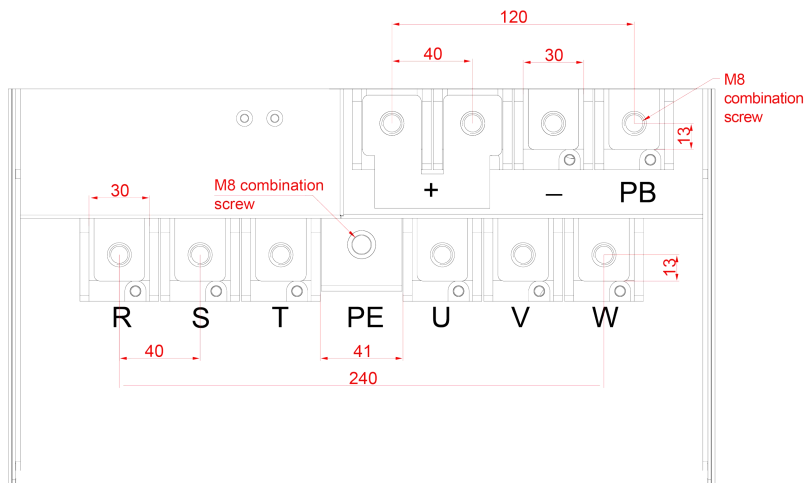
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-090G/110P	70	9–11
WD200-T3-110G/132P	95	
WD200-T6-090G/110P	16	
WD200-T6-110G/132P	25	

Rack Size 8

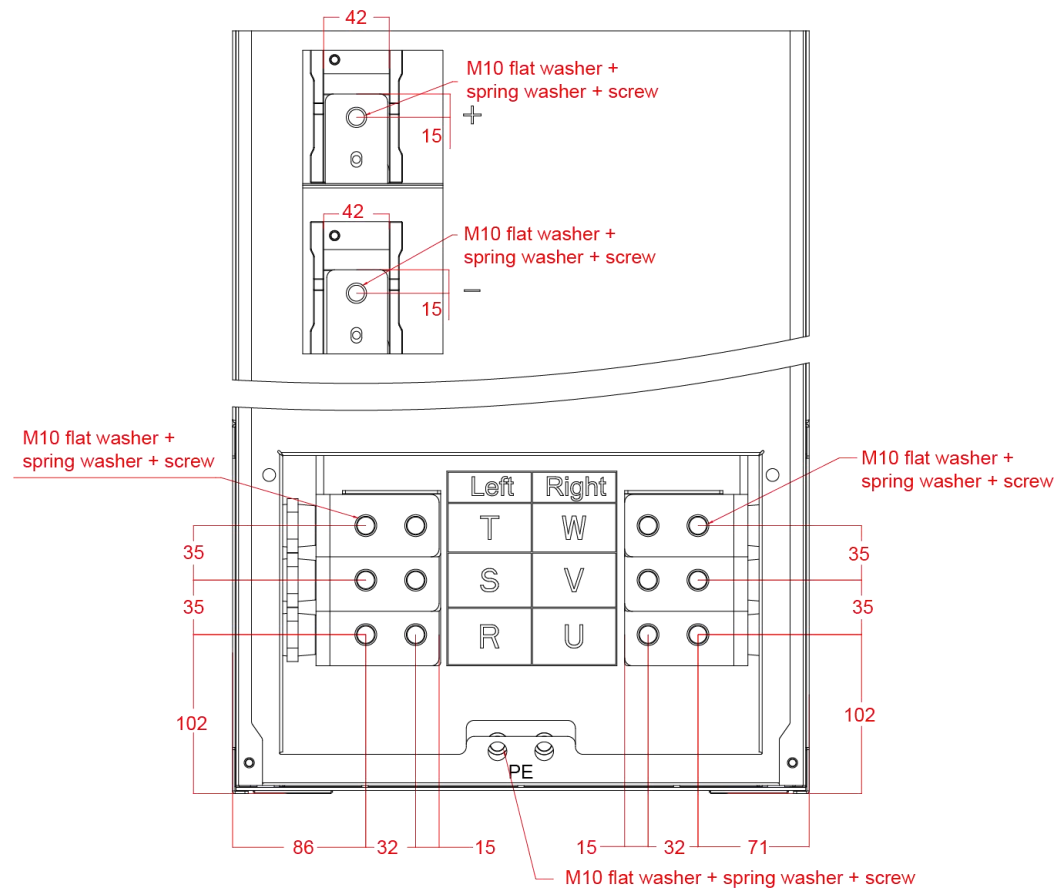
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-132G/160P	95	9–11
WD200-T3-160G/185P	150	
WD200-T6-132G/160P	35	
WD200-T6-160G/185P	50	

Rack Size 10

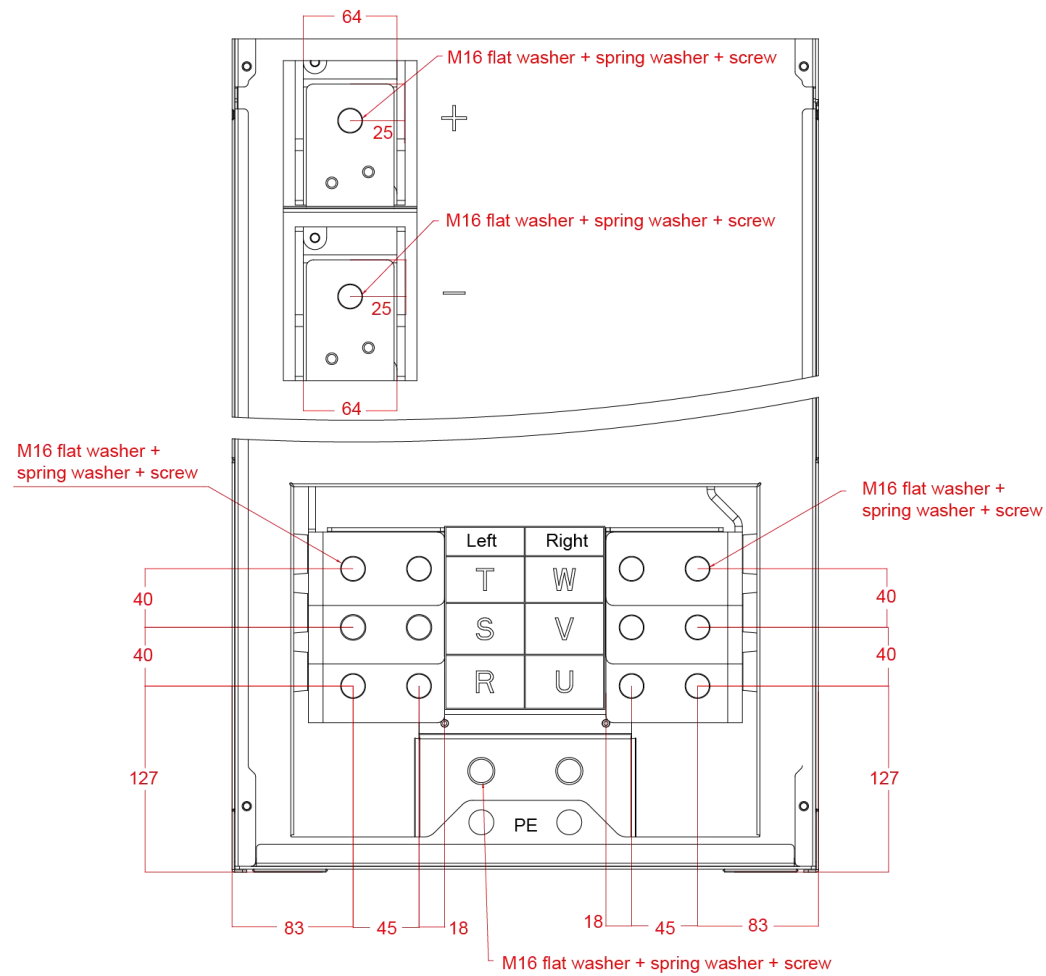
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-250G/280P	2x120	18–23
WD200-T3-280G/315P	2x150	
WD200-T6-250G/280P	95	
WD200-T6-280G/315P	120	

Rack Size 11

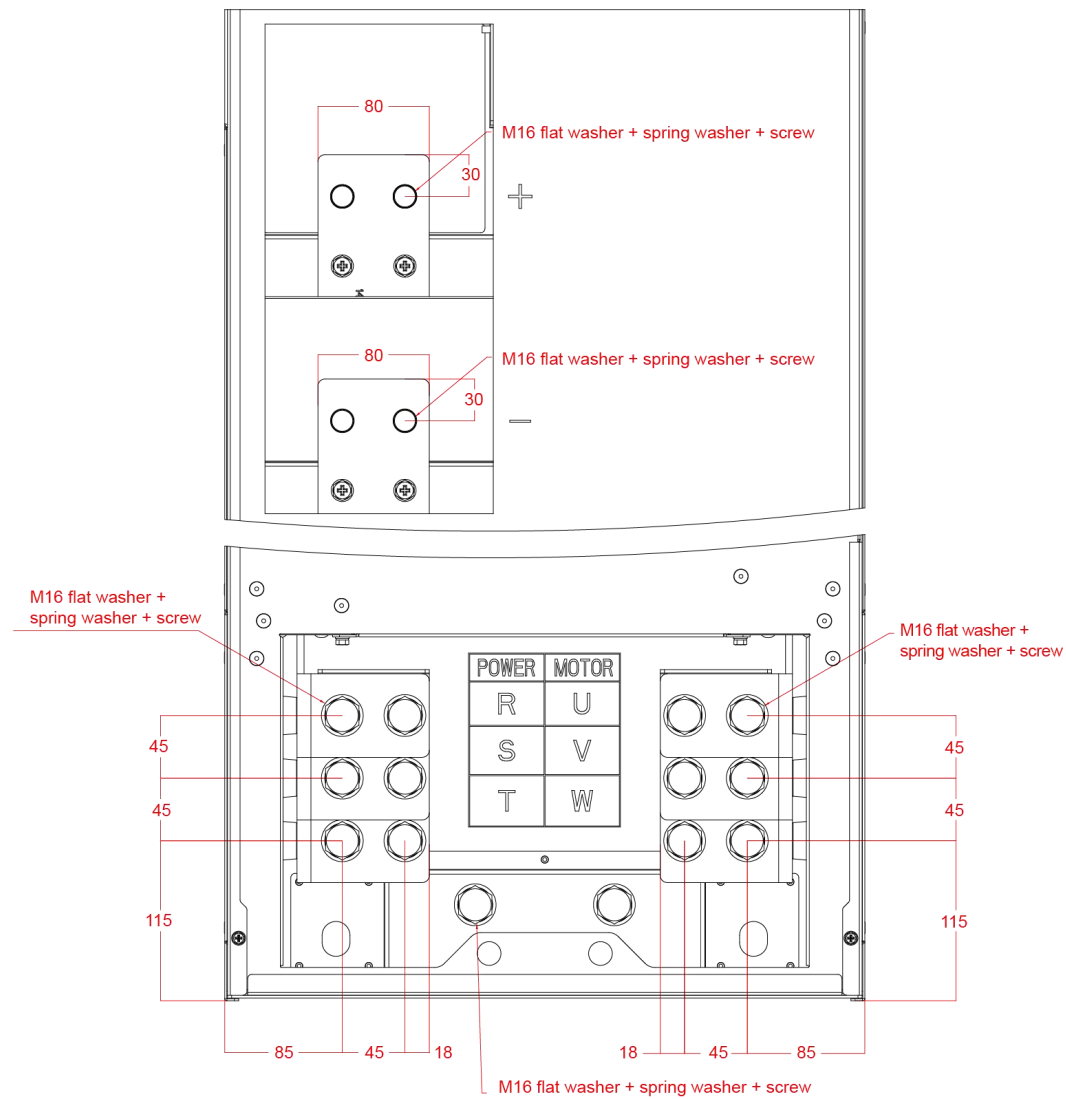
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-315G/355P	2x150	25–35
WD200-T3-355G/400P	2x185	
WD200-T3-400G/450P	2x240	
WD200-T6-315G/355P	150	
WD200-T6-355G/400P	185	
WD200-T6-400G/450P	2x70	

Rack Size 12

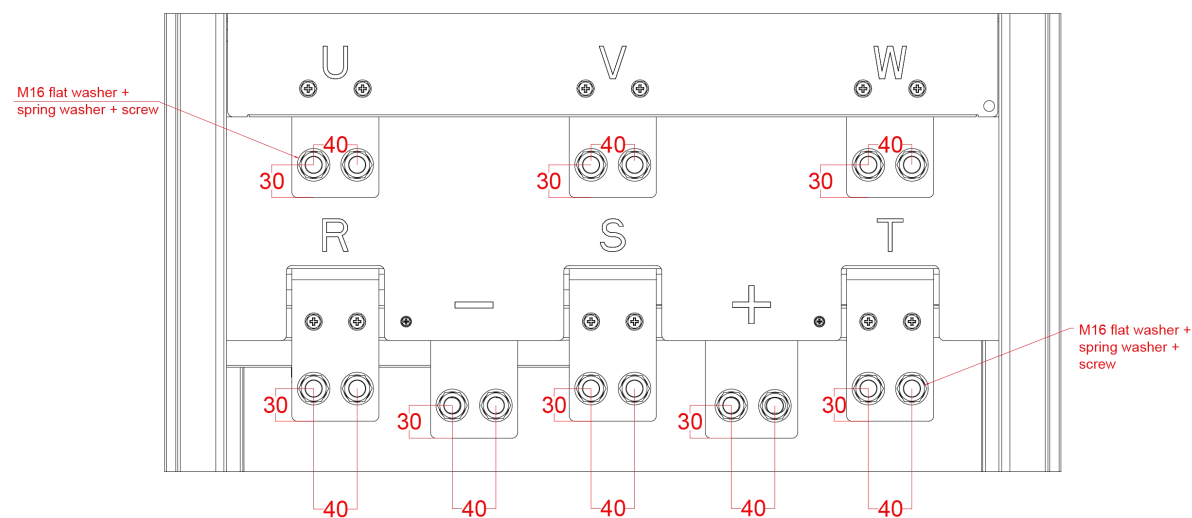
Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-450G/500P	2x150	60–85
WD200-T3-500G/560P	2x185	
WD200-T3-560G/630P	2x240	
WD200-T6-450G/500P	2x95	
WD200-T6-500G/560P	2x120	
WD200-T6-560G/630P	2x150	

Rack Size 13

Unit: mm



Model	Recommended Wire Size	Tightening Torque Specification
	mm ²	N.m
WD200-T3-630G/710P	3x185	60–85
WD200-T3-710G/800P	3x185	
WD200-T6-630G/710P	2x185	
WD200-T6-710G/800P	2x185	

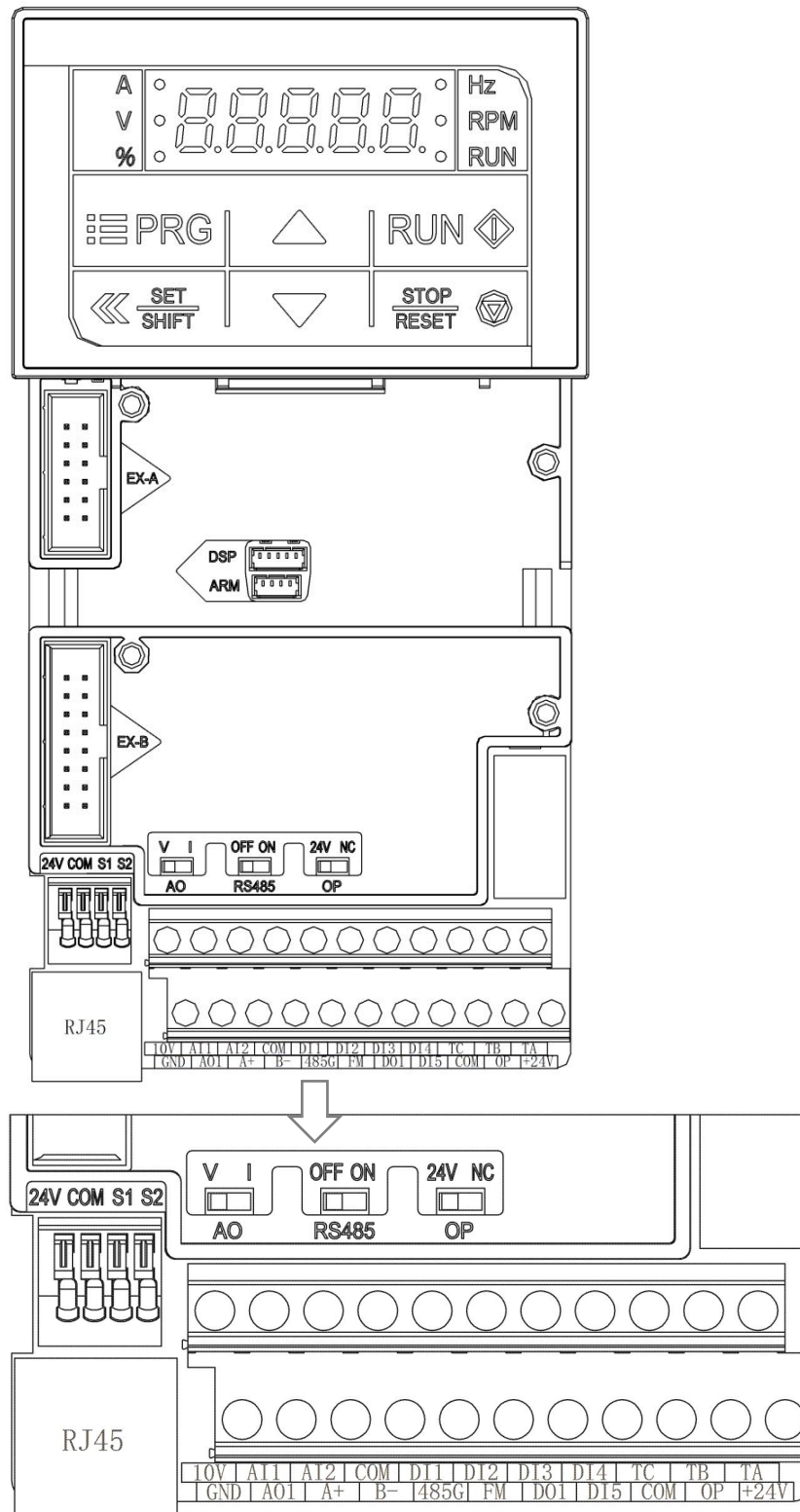
5.3.3 Features and Functions of Control Terminals

Terminal	Function	Electrical Specification
10 V	+10 V DC potentiometer power supply	+10 V (10.5 V$\pm$0.5 V) - Maximum 10 mA 1 kΩ to 10 kΩ
AI1 AI2	Analog input voltage or current	- Analog voltage input: 0-10 V DC Input impedance: 100 kΩ - Analog current input: 4-20 mA/0-20 mA Input impedance: 500 Ω
COM	+24 V DC power supply reference ground potential Reference ground for digital input/output (I/O)	0 V
DI1–DI7	Programmable digital inputs	- Internal impedance: 4.4 kΩ; +24 V DC (Voltage range allowed: 16.8 V–31.2 V) - Input frequency: maximum 1 kHz, DI5 can be used as a high-speed pulse input (maximum frequency 100 kHz) - Response time: 1 ms$\pm$0.5 ms
GND	+10 V DC reference ground potential Reference ground for analog input/output	0 V
AO1 AO2	Analog outputs voltage or current	- Analog voltage output: 0 to +10V DC, load impedance greater than 50 kΩ - Analog current output: 4–20 mA/0–20 mA Selectable via DIP switch, maximum load impedance 500 Ω
A+ B-	Modbus RTU communication	Standard Modbus RTU (485) communication interface, using twisted pair or shielded cable.
485G	RS485 communication shield ground	Grounding point for RS485 communication cable shielding layer
FM	High-speed pulse output or open-collector output	Configured via parameter F03.00 "FM terminal output mode selection": When used as a high-speed pulse output, the maximum frequency can reach 100 kHz; Can be used as an open-collector output, maximum voltage 24 V, maximum current from external power supply 16 mA
DO1	Programmable logic output with open-collector:	+24 V DC (maximum 30 V); - Maximum internal power supply current: 1.2 mA, maximum external power supply current: 200 mA; - Response time: 5 ms$\pm$1 ms.
COM	+24 V DC power supply reference ground potential Reference ground for digital input/output (I/O)	0 V
OP	External OP control input power supply	- External +24V DC connected to OP terminal, used for controlling DI signals. - When using external power supply control, set the OP DIP switch to NC end.
+24V(OUT)	+24V DC external output power supply	+24V DC power supply, maximum output current 100mA, used for digital input/output terminal operation power supply and external sensor power supply.

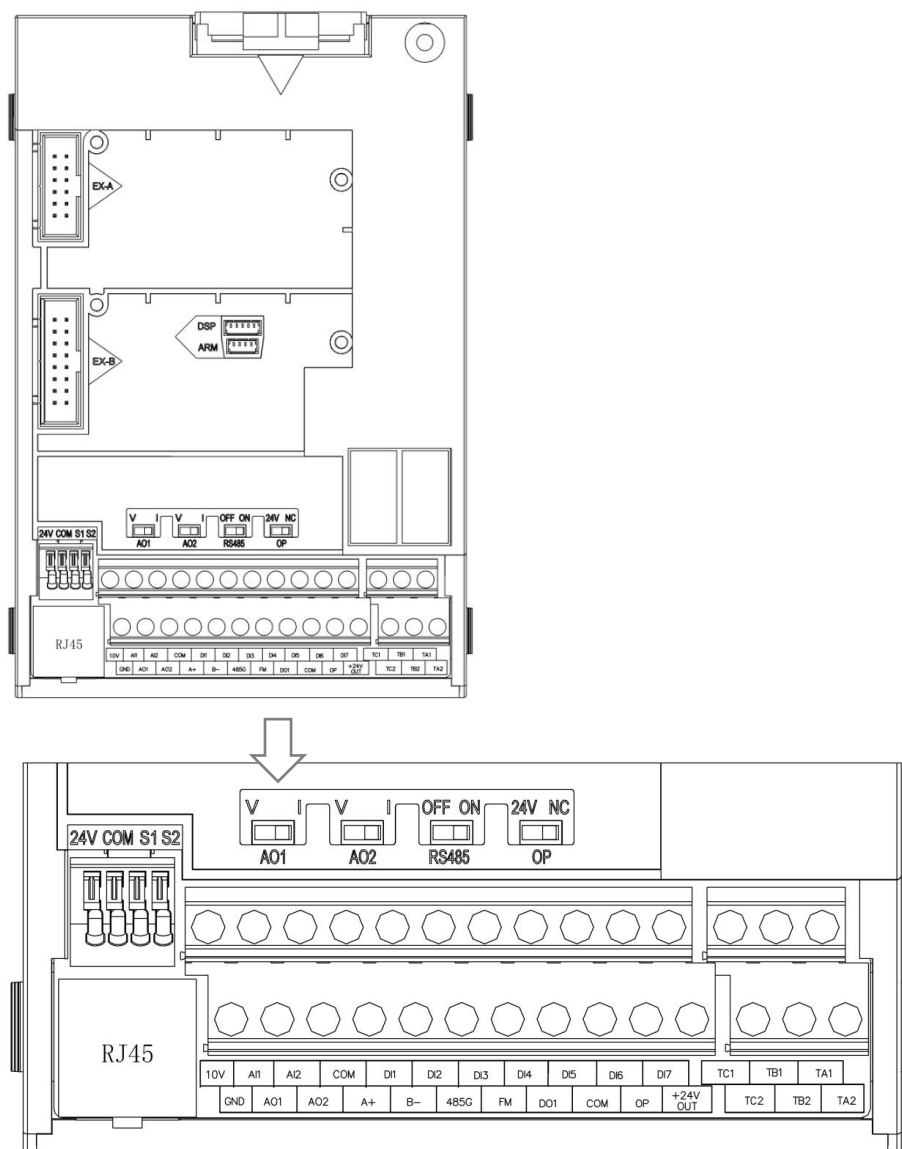
TC1 (CM) TB1 (NC) TA1 (NO)	Programmable relay output NC/NO contacts	• Minimum switching capacity: 16.7 mA at 24 V DC • Maximum switching capacity for resistive load: NO/NC-5 A/3 A 240 VAC, NO/NC-7 A/3 A 120 VAC • Response time: 5 ms • Service life: 100,000 operations at maximum switching power.
TC2 (CM) TB2 (NC) TA2 (NO)	Programmable relay output NC/NO contacts	• Minimum switching capacity: 16.7 mA at 24 V DC • Maximum switching capacity for resistive load: NO/NC - 5 A/3 A 240 VAC NO/NC - 7 A/3 A 120 VAC • Response time: 5 ms • Service life: 100,000 operations at maximum switching power.
EX-A EX-B	Expansion port	Used for I/O and communication module expansion Used for encoder module
24V COM S1(STO1) S2(STO2)	Safety function interface	• Factory setting: short 24V with S1 and S2 respectively; • If external 24V is used, connect the 0V of the external power supply to COM.

5.3.4 Control Terminal Layout

Rack Sizes 1, 2, 3, 4, and 5



Rack Sizes 6, 7, 8, 9, 10, 11, 12, 13, and 14



Positions and definitions of the DIP switches:

AO1 AO1_V  AO1_I	AO1_V: AO1 terminal outputs 0–10 V AO1_I: AO1 terminal outputs 4–20 mA/0–20 mA
AO2 AO2_V  AO2_I	AO2_V: AO2 terminal outputs 0–10 V AO2_I: AO2 terminal outputs 4–20 mA/0–20 mA
RS485 OFF  ON	R_OFF: RS485 don't connect to 120Ω termination resistor R_ON: RS485 connects to 120Ω termination resistor
OP 24V  NC	24V: internal 24V is active NC: External 24V is active, external +24V DC should be connected to OP terminal

Note: For the AO signal range selection, please refer to parameter [AO Output Signal Selection] on page 81 of this manual.

6. Commissioning

6.1 AC Drive Power-on and Settings

Please ensure that the cables for the main circuit and control circuit are correctly connected according to the installation guide of this manual before powering on!



Danger

Unexpected equipment operation

- The newly powered-on AC Drive is controlled by default through the start button (RUN) on the panel.

To prevent unexpected operation, do not touch the RUN button before completing the configuration of the AC drive.

Failure to follow the instructions may result in serious injury or death.



Warning

Inconsistent line voltage

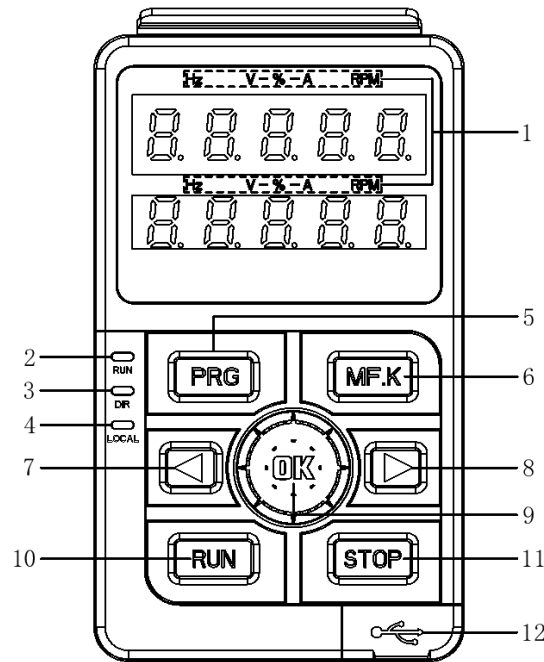
- Before powering on and setting the AC Drive, ensure that the line voltage matches the power supply voltage range indicated on the nameplate of the equipment.

Mismatched line voltage and power supply voltage range may damage the equipment.

Failure to follow the instructions may result in equipment damage.

6.2 Operation Panel

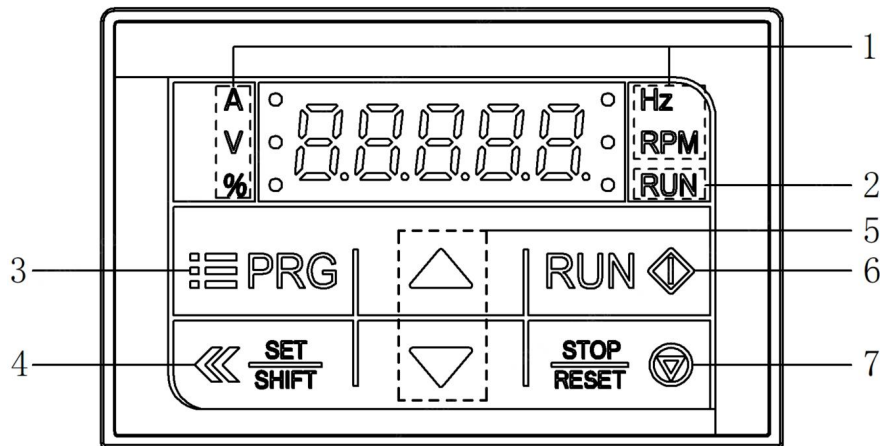
6.2.1 Dual-row LED Keyboard



1	Unit Display	Hz: Frequency A: Current V: Voltage RPM: Revolutions per minute %: Percentage
2	Running Indicator	On: Running Off: Stopped/Shut down
3	Direction Indicator	On: Reverse running Off: Forward running
4	Local Control Indicator:	On: Local (keyboard) control Off: External control (terminal control, communication control)
5	PRG	♦ Enter the function menu interface during standby or operation mode ♦ Press this key to exit parameter modification mode ♦ Long press (1s) during standby or operation mode to directly enter the status interface
6	MF.K	The function is set by F08.10 [MF.K key on the keyboard]
7, 8	Left and Right Keys	♦ Move left and right during parameter setting ♦ In display mode, switch the content displayed on the upper and lower screens
9	+/- (Function Keys) OK (Confirm Key)	♦ Rotate clockwise to increase the value and rotate counterclockwise to decrease the value ♦ Press the OK key to confirm/save the value

10	RUN	Control the equipment to run locally
11	STOP	Control the equipment to stop locally/reset fault
12	USB Interface	Connect to the host computer

6.2.2 Single-row LED Keyboard

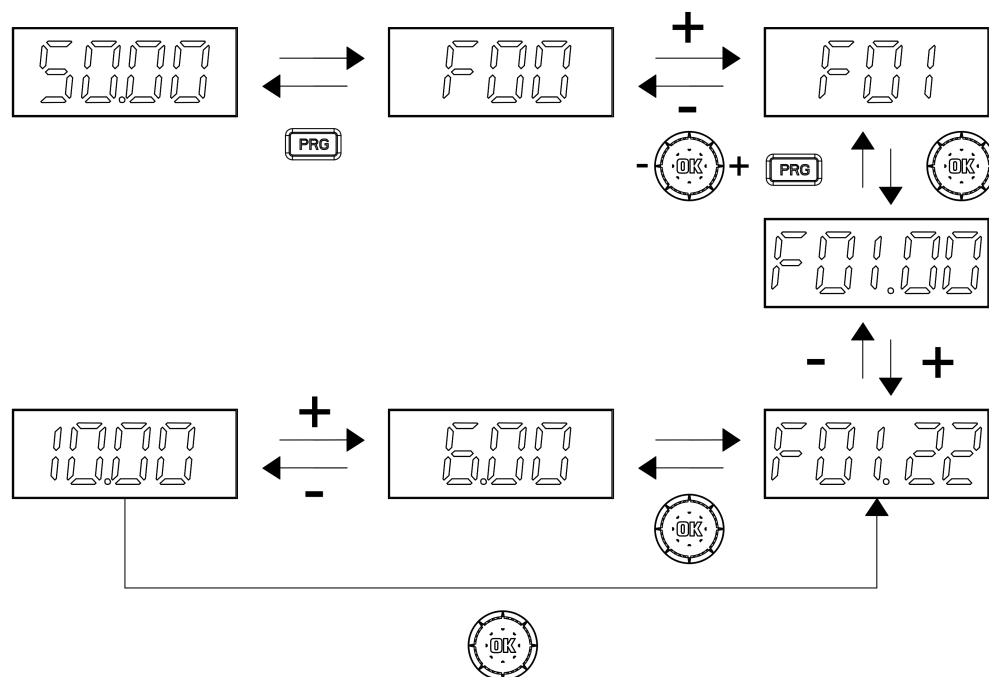


1	Unit Display	Hz: Frequency A: Current V: Voltage RPM: Revolutions per minute %: Percentage
2	Running Indicator	On: Forward running Flickering: Reverse running
3	PRG	♦ Enter the function menu interface during standby or operation mode ♦ Press this key to exit parameter modification mode ♦ Long press (1s) during standby or operation mode to directly enter the status interface
4	OK Move	♦ Confirm/save the value ♦ Move left and right during parameter setting; Switch the content displayed in display mode ♦ Long press the key for 1s to change the selected option; Long press without releasing will perform a cyclic shift
5	Up and down	♦ Up: increase the value ♦ Down: decrease the value
6	RUN	Control the equipment to run locally
7	STOP/RESET	Control the equipment to stop locally/reset fault

6.2.3 Parameter Settings Example

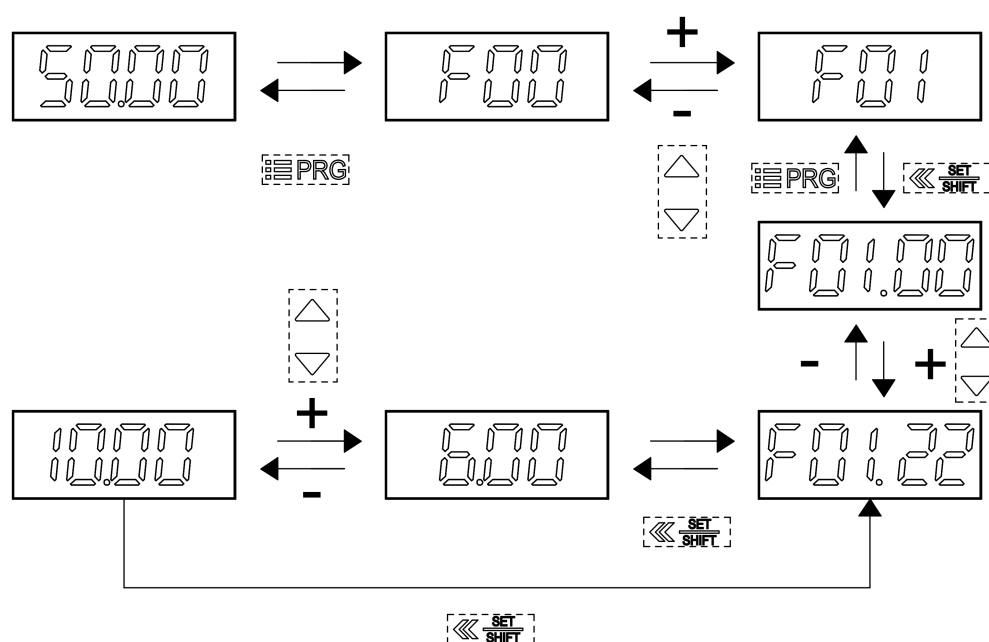
Below is an example of setting F01.22 [skip frequency 1]=10.00 Hz to show the basic method of panel operation.

Dual-row LED keyboard

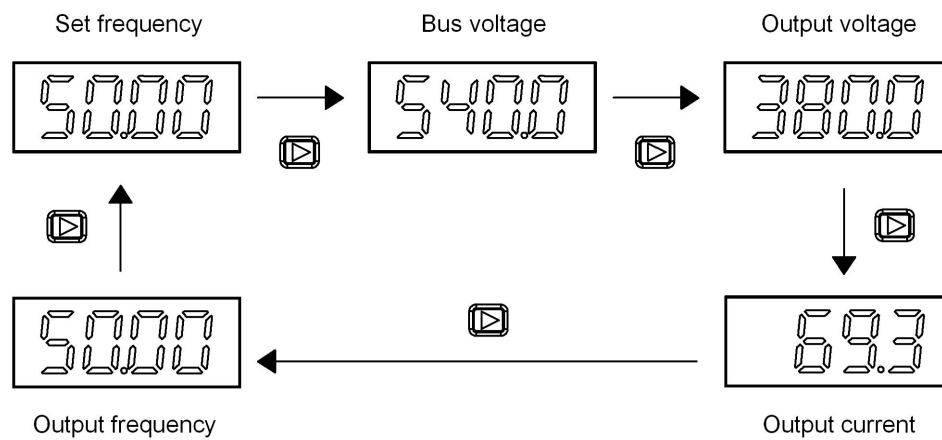


You can use the left and right keys   to quickly switch the cursor between the ones, tens, and hundreds digits of the adjustment value, making it easier to modify the value quickly.

Single-row LED keyboard



Operation Monitoring Data Viewing



Dual-row LED keyboard:

You can use the right key  to cyclically switch between the first-line monitoring parameters, and use the left key  to cyclically switch the second-line monitoring parameters.

Single-row LED keyboard:

Use the  key to change the displayed content.

6.3 Factory Settings

The factory settings of the WD200 Series AC Drives are intended for the most common operating conditions:

Code	Name	Settings
F00.00	Load characteristics	1: G-type - Constant torque load
F00.01	Motor control mode	2: V/F control
F00.02	Command source selection	0: Operation panel command channel
F00.05	Frequency setting channel A	1: F00.07 Preset frequency (retentive at power down) Set the initial frequency value as the value of F00.07 "preset frequency".
F00.07	Preset frequency	5 Hz
F00.13	Maximum frequency	50 Hz
F00.23	Acceleration time 1	20s
F00.24	Deceleration time 1	20s
F01.10	Stop Mode	0: Decelerate to stop
F02.00	DI1 terminal function selection	1: Forward (FWD)
F02.01	DI2 terminal function selection	8: Coast to stop
F02.02	DI3 terminal function selection	9: Fault Reset (RESET)
F02.17	Terminal I/O control mode	0: Two-wire 1 The motor's forward and reverse operation is controlled by terminals DI1 and DI2.
F03.02	Relay output 1	1: AC drive running
F03.03	Relay output 2	2: Fault output (fault shutdown)
F03.07	Selection of output function of AO1	0: Running frequency
F04.00	Motor type selection	0: Normal asynchronous motor
F04.04	Motor rated frequency	50 Hz

If the above values match the application requirements, the AC drive can be used without changing the settings.

Note: If you want to restore the preset values of the AC drive to the factory settings, set parameter F00.43 to 3: Restore all factory parameters.

6.4 Common Function Menu

The table below lists the menu groups for commonly used functions of the AC drive along with their corresponding page numbers, providing a convenient way to familiarize yourself with the parameter structure quickly:

Menu Group	Name	Page	Function
F00	Basic function parameter group	<u>69</u>	Load characteristics, motor control mode, command source selection, frequency setting, acceleration/deceleration time setting, factory setting reset...
F01	Start/stop parameter control group	<u>75</u>	Start/stop setting, running direction, jog control, frequency jump setting, PID hibernating/wakeup settings, spinning motor catch mode, instant stop control...
F02	Input terminal parameter group	<u>79</u>	Digital input (DI) function setting, 2/3-wire terminal control setting, analog input setting, pulse input setting...
F03	Output terminal parameter group	<u>89</u>	Relay output function setting, analog output function setting, pulse output setting, thyristor output function setting...
F04	Motor parameter group	<u>93</u>	Motor type selection, motor nameplate parameter setting, motor parameter identification, closed-loop control encoder setting...
F05	Vector control parameter group	<u>97</u>	Speed control/current control parameter setting, excitation regulation, weak field control for synchronous motors...
F06	V/F control parameter group	<u>101</u>	V/F curve setting, torque boost, slip compensation...
F07	Control optimization parameter group	<u>104</u>	Carrier frequency setting, deadband compensation...
F08	Display and operation parameters	<u>105</u>	Operating display setting, shutdown display setting, multifunction key selection setting, STOP/RESET key function setting...
F09	Auxiliary function parameter group	<u>108</u>	Frequency detection setting, zero current detection setting, output current limit setting, cooling fan control setting...
F10	Process PID control parameter group	<u>111</u>	Process PID control parameter setting...
F11	Communication parameter group	<u>113</u>	Modbus RTU communication parameter setting...
F12	Fault protection parameter group	<u>115</u>	Under-voltage, overload, no-load, speed protection, short-circuit prevention, input phase loss, output phase loss, fault

			reset...
F13	Fault record monitoring parameter group	<u>119</u>	Fault types, AC drive operational data during a fault...
F15	Software and hardware identification parameter group	<u>121</u>	AC drive information data, software version...
F16	Analog input/output (AI/AO) correction parameter group	<u>122</u>	AI voltage and AO voltage correction
F18	Multi-segment speed, simple PLC parameter group	<u>124</u>	Multi-segment speed and simple PLC parameter setting
F20	Torque control parameter group	<u>131</u>	Torque control parameter setting
F21	Wobble control parameter group	<u>132</u>	Wobble parameter setting
U47	Monitoring menu group	<u>135</u>	Operating frequency, set frequency, output frequency, output current, output torque, output power...

6.5 Simple Startup

For the first-time use of the AC drive, you can follow the simple startup procedure below to perform basic settings and meet the requirements of a simple startup. If the factory default values meet your application requirements, no further adjustments are required.

Step 1: Motor Parameter Setting (F04)

Procedure:

a. Press  to enter the menu. Find the F04 group menu, and press  to enter the group;

b. Use the  + knob to select the desired parameter in the table, and press  to save the parameter;

Press the left or right keys   to shift the cursor to the ones, tens, or hundreds digits of the value.

Code	Name	Settings	Suggestion
F04.00	Motor type selection	0: Normal asynchronous motor	Selected based on the actual motor type: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnet synchronous motor
F04.01	Motor rated power	Note: When the motor's rated frequency is greater than 50 Hz, adjust F00.13 (maximum frequency) first. F00.13 has a default value of 50 Hz.	Get the following data from the motor's nameplate: 
F04.02	Motor rated voltage		
F04.03	Motor rated current		
F04.04	Motor rated frequency		
F04.05	Motor rotational speed		
F04.09	Motor parameter identification	0: No operation	0: No operation 1: Asynchronous motor rotational auto-tuning 2: Asynchronous motor static auto-tuning 3: Asynchronous motor static complete

			auto-tuning 11: PMSM no-load rotational auto-tuning 12: PMSM static auto-tuning, identifying motor resistance and inductance 13: PMSM encoder direction tuning, involves identifying the direction of the motor by shaking it under no-load or light load states. 14: PMSM loaded auto-tuning
Motor parameter identification: 1. Before starting the auto-tuning, all motor parameters must be correctly set. 2. If there are any changes in motor parameters after the auto-tuning, re-execute the motor parameter identification. 3. Rotational auto-tuning is suitable for motors no-load conditions (recommended), while static auto-tuning is suitable for motors with a load already applied and where the motor shaft cannot easily detach from the load. 4. The auto-tuning process takes precedence over any control, and it can be executed through the RUN key on the control panel or the command source set by F00.02.			

For the complete parameters of the motor parameter group (F04), please refer to the parameter description on page [93](#).

Step 2: Basic Function Parameter Setting (F00)

Code	Name	Settings	Suggestion
F00.01	Motor control mode	2: V/F control	0: Sensorless vector control (SVC) Suitable for general application loads and mechanical loads 1: Flux vector control (FVC) with speed feedback Suitable for mechanical loads with speed feedback 2: V/F control Suitable for general application loads and low-power motors or motorless testing
F00.02	Command source selection	0: Operation panel command channel	0: Control panel command channel - start/stop control through the RUN/STOP button on the control panel. 1: Terminal command channel - start/stop control through a DI terminal 2: Communication command channel - START/STOP control through a communication bus to receive the start/stop signal
F00.05	Frequency setting channel A	0: F00.07 preset frequency (nonretentive at power down)	0: F00.07 preset frequency (nonretentive at power down) 1: F00.07 Preset frequency (retentive at power down) 2: AI1 3: AI2 4: AI3 5: Pulse reference 6: Multi-segment command 7: Simple PLC 8: PID 9: Serial comms.
F00.07	Preset frequency	5.00 Hz	F00.05 is active when it is set to 0 or 1 Setting range: 0.00Hz~F00.13 (maximum frequency)
F00.13	Maximum frequency	50 Hz	Common applications: Set to motor's rated frequency Heavy load applications: Set to the maximum frequency that the load allows Setting range: 5.00~300.00Hz
F00.15	Maximum frequency	50 Hz	Common applications: Set to motor's rated frequency Heavy load applications: Set to the

			maximum frequency that the load allows Setting range: value of F00.17 ~ F00.13
F00.17	Minimum frequency	0 Hz	Common applications: Set to 0 Hz Other applications: Set to the low-speed frequency that the load requires Setting range: value of 0.00Hz ~ F00.15
F00.18	Acceleration/ deceleration time base frequency	0: Maximum frequency	0: Maximum frequency: Default value 1: Frequency reference: Sets the frequency to a specific value given through analog input, communication, or other means 2: 100 Hz: Fixed frequency. If the actual frequency cannot reach 100 Hz, it will be proportionally scaled.
F00.23	Acceleration time 1	20s	Time required to accelerate from 0 Hz to the frequency selected in F00.18, the load inertia should be considered
F00.24	Deceleration time 1	20s	Time required to decelerate from the frequency selected in F00.18 to 0 Hz, the load inertia should be considered
Code	Name	Settings	Suggestion
F00.43	Parameter initialization	0: No operation	Select 3 when you want to restore all parameters of the AC drive to the factory settings. 0: No operation 1: Restore factory parameters, excluding motor parameters 2: Clear recorded information 3: Restore all factory parameters 4: Backup user parameters - Saves the current equipment settings 5: Restore user parameters - Overwrites the current settings with the saved equipment parameters

For the complete parameters of the basic function group (F00), please refer to the parameter description on page 69.

Step 3: Start/Stop Control Parameter Setting (F01)

Code	Name	Settings	Suggestion
F01.10	Stop method	0: Decelerate to stop	0: Decelerate to stop Controlled to stop, the stopping time is controlled by F00.24 deceleration time 1: Coast to stop Uncontrolled to stop, the stopping time depends on the stop time and load inertia
F01.15	Operating	0: Default	0: Default direction operation

	direction	direction	1: Opposite to the default direction
F01.16	Reverse control	0: Allow	Devices that are not allowed to reverse can have their AC drives' output reversal prohibited by setting this parameter 0: Allow 1: Disallow

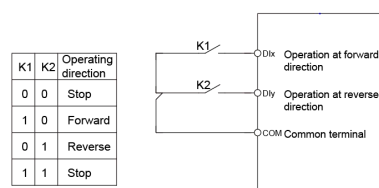
For the complete parameters of the start/stop parameter control group (F01), please refer to the parameter description on page [75](#).

Step 4: Input Terminal Parameter Setting (F02)

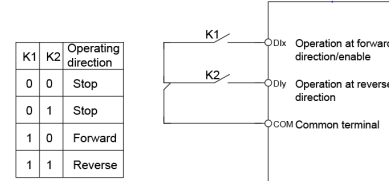
Code	Name	Settings	Suggestion
F02.00	DI1 terminal function selection	1: Forward (FWD)	Define the function of terminals; default parameters meet conventional applications. This example only displays the necessary parameters for a basic startup.
F02.01	DI2 terminal function selection	8: Coast to stop	
F02.02	DI3 terminal function selection	9: Fault reset (RESET)	
For more DI terminal settings, please refer to the parameter table in the user manual.			
F02.17	Terminal I/O control mode	0: Two-wire 1	0: Two-wire 1 1: Two-wire 2 2: Three-wire 1 3: Three-wire 2

Terminal Command Mode:

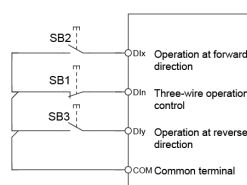
Two-wire 1



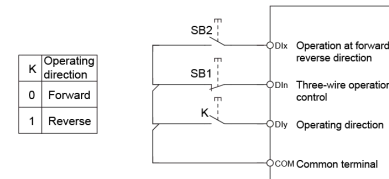
Two-wire 2



Three-wire 1



Three-wire 2



For the complete parameters of the input terminal parameter group (F02), please refer to the parameter description on page [79](#).

Step 5: Fault Protection Parameter Setting (F12)

Code	Name	Settings	Suggestion																				
F12.06	Motor overload protection selection	1: Allow	0: Disallow 1: Allow																				
F12.07	Motor overload protection gain	1.00	The AC drive judges whether the motor is overloaded based on the inverse time curve of the motor overload protection. Setting range: 0.20~10.00 Setting value=required protection time/default protection time For example, when the overload multiple is 150%, a protection time of 3 minutes is required; Set F12.07 to 0.5 (3/6=0.5) The default motor overload curve is as follows: <table border="1"> <thead> <tr> <th>Overload multiple</th><th>Default protection time</th><th>Overload multiple</th><th>Default protection time</th></tr> </thead> <tbody> <tr> <td>110%</td><td>100 min</td><td>160%</td><td>3 min</td></tr> <tr> <td>120%</td><td>80 min</td><td>170%</td><td>2 min</td></tr> <tr> <td>130%</td><td>30 min</td><td>180%</td><td>90s</td></tr> <tr> <td>140%</td><td>8 min</td><td>190%</td><td>60s</td></tr> </tbody> </table>	Overload multiple	Default protection time	Overload multiple	Default protection time	110%	100 min	160%	3 min	120%	80 min	170%	2 min	130%	30 min	180%	90s	140%	8 min	190%	60s
Overload multiple	Default protection time	Overload multiple	Default protection time																				
110%	100 min	160%	3 min																				
120%	80 min	170%	2 min																				
130%	30 min	180%	90s																				
140%	8 min	190%	60s																				

			150%	6 min	200%	50s	
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For the complete parameters of the fault protection parameter group (F12), please refer to the parameter description on page [115](#).

Step 6: Startup

Once you have completed the aforementioned settings, you can start the equipment.

During the operation, please observe the stability of the output frequency and output current of the AC drive.

For more parameters, please refer to the complete parameter table in the user manual.

7 Parameters

F00 Basic Function Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.00 0000	Load Characteristics 1: Type G: Heavy load 2: Type P: Standard load		1	Read-only parameter
F00.01 0001	Motor Control Mode 0: Sensorless vector control (SVC) • Automatic slip compensation based on load 1: Flux vector control (FVC) • Used for closed-loop vector control of motor with speed sensor 2: V/F control. The following scenarios are supported: • Special motors (wound rotor, conical rotor, etc.) • Multiple motors in parallel under the same AC drive • Motors with rated power lower than that of the AC drive	0–2	2	Change during shutdown
F00.02 0002	Command Source Selection 0: Operation panel command channel 1: Terminal command channel 2: Communication command channel	0–2	0	Change during shutdown
F00.03 0003	Reserved			
F00.04 0004	Reserved			
F00.05 0005	Frequency Setting Channel A 0: F00.07 preset frequency (without power-off memory) 1: F00.07 preset frequency (with power-off memory) 2: AI1 3: AI2 4: AI3 5: Pulse setting 6: Multi-segment command 7: Simple PLC 8: PID 9: Communication setting	0–9	1	Change during shutdown
F00.06 0006	Frequency Setting Channel B 0: F00.07 preset frequency (without power-off memory) 1: F00.07 preset frequency (with power-off memory) 2: AI1 3: AI2 4: AI3 5: Pulse setting 6: Multi-segment command 7: Simple PLC 8: PID 9: Communication setting	0–9	0	Change during shutdown
F00.07 0007	Preset Frequency Valid when F00.05 and F00.06 are set to 0 or 1 When F00.05 and F00.06 are set to 0: The frequency value of F00.07 restores to 5.00 Hz after the AC drive resumes power supply. When F00.05 and F00.06 are set to 1: The frequency value of F00.07 maintains the value that was set before the power interruption after the AC drive resumes power supply.	0.00 Hz–F00.13	5.00 Hz	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode												
F00.08 0008	Corresponding Selection of Frequency Setting Channel B 0: Relative to maximum frequency 1: Relative to frequency setting channel A	0–1	0	Change in real time												
F00.09 0009	Range of Frequency Setting Channel B	0%–150%	100%	Change in real time												
F00.10 0010	Frequency Offset of Frequency Setting Channel B for Superposition	0.00 Hz–F00.13	0 Hz	Change in real time												
F00.11 0011	Selection of Frequency Setting Source Unit place: Frequency source options 0: Channel A 1: Channel AB operation result 2: Switch between channel A and channel B 3: Switch between channel A and channel AB operation results 4: Switch between channel B and channel AB operation results Ten place: Channel AB operation relationship 0: Channel A + Channel B 1: Channel A - Channel B 2: Maximum value of the two 3: Minimum value of the two	0–34	00	Change in real time												
			<table><tr><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td></tr><tr><td></td><td>4</td></tr></table>	Tens place	Ones place	0	0	1	1	2	2	3	3		4	
Tens place	Ones place															
0	0															
1	1															
2	2															
3	3															
	4															
F00.12 0012	Frequency Setting Accuracy 1: 0.1 Hz 2: 0.01 Hz	1–2	2	Change during shutdown												
F00.13 0013	Maximum Frequency Maximum frequency that can be set for and output by the AC drive. If F00.12 is set to 1: 0.1 Hz, the AC drive can be set to 600 Hz.	5.00 Hz–300.00 Hz	50.00 Hz	Change during shutdown												
F00.14 0014	Frequency Upper Limit Source 0: F00.15 upper frequency 1: AI1 2: AI2 3: AI3 4: Pulse setting 5: Communication setting	0–5	0	Change during shutdown												
F00.15 0015	Maximum frequency Between the lower frequency of F00.17 and the upper frequency of F00.13.	F00.17–F00.13	50 Hz	Change in real time												
F00.16 0016	Frequency Upper Limit Offset Upper frequency combined with offset.	0.00 Hz–F00.13	0.00 Hz	Change in real time												

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.17 0017	Minimum Frequency Set minimum frequency	0.00 Hz–F00.15	0.00 Hz	Change in real time
F00.18 0018	Acceleration/Deceleration Time Base Frequency 0: Maximum frequency – Default value 1: Set frequency – Given frequency value, such as through analog and communication, etc. 2: 100 Hz – Fixed value, based on a range of 0–100 Hz. When the actual frequency is not 100 Hz, the acceleration and deceleration time will be proportionally converted.	0–2	0	Change during shutdown
F00.19 0019	Acceleration/Deceleration Time Unit 0: 1s 1: 0.1s 2: 0.01s	0–2	1	Change during shutdown
F00.20 0020	Acceleration/Deceleration Mode 0: Linear acceleration and deceleration 1: S-curve acceleration and deceleration	0–1	0	Change during shutdown
F00.21 0021	Time Proportion of S-Curve Start Segment Valid when F00.20 [acceleration and deceleration mode] is set to 1:S-curve acceleration and deceleration	0.0%–(100.0%–F00.2 2)	30%	Change during shutdown
F00.22 0022	Time Proportion of S-Curve End Segment Valid when F00.20 [acceleration and deceleration mode] is set to 1:s-curve acceleration and deceleration	0.0%–(100.0%–F00.2 1)	30%	Change during shutdown
F00.23 0023	Acceleration Time 1 Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
F00.24 0024	Deceleration Time 1 Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time

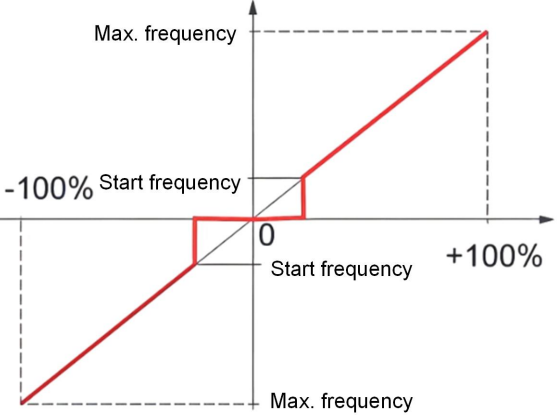
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.25 0025	Acceleration Time 2	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			
F00.26 0026	Deceleration Time 2	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			
F00.27 0027	Acceleration Time 3	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			
F00.28 0028	Deceleration Time 3	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			
F00.29 0029	Acceleration Time 4	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			
F00.30 0030	Deceleration Time 4	0.00s–6500.0s	Subject to the rated value of the AC drive	Change in real time
	Subject to F00.19 [acceleration and deceleration time unit]: 0: 1s Range: 0s–6500s 1: 0.1s Range: 0.0s–6500.0s 2: 0.01s Range: 0.00s–650.00s			

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.31 0031	Switchover Frequency of Acceleration Time 1 and Acceleration Time 2 Triggered when the setting is not 0.00 Hz. When the operating frequency reaches the set value, the acceleration time switches from 1 to 2.	0.00 Hz–F00.13	0.00 Hz	Change in real time
F00.32 0032	Switchover Frequency of Deceleration Time 1 and Deceleration Time 2 Triggered when the setting is not 0.00 Hz. When the operating frequency reaches the setting value, the deceleration time switches from 1 to 2.	0.00 Hz–F00.13	0.00 Hz	Change in real time
F00.33 0033	Reserved			
F00.34 0034	Reserved			
F00.35 0035	Reserved			
F00.36 0036	Power Down Retentive Selection via UP/DOWN 0: No memory 1: Memory	0–1	1	Change in real time
F00.37 0037	Running Base Frequency for UP/DOWN Modification 0: Running frequency 1: Set frequency	0–1	0	Change during shutdown
F00.38 0038	Command Source + Frequency Source 0: Not bound 1: Digital set frequency 2: AI1 3: AI2 4: AI3 5: Pulse setting (DI5) 6: Multi-segment speed setting 7: Simple PLC 8: PID 9: Communication Ones place: Operation panel bound with frequency source Tens place: Terminal bound with frequency source Hundreds place: Communication bound with frequency source	000–999	000	Change during shutdown

Hundreds place	Tens place	Ones place
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.39 0039	Serial Port Communication Protocol 0: Modbus protocol 1: Communication expansion card	0–1	0	Change during shutdown
F00.40 0040	Reserved			
F00.41 0041	User Password	0–65536	0	Change during shutdown
F00.42 0042	Function Code Read-Only Control 0: Changeable 1: Not changeable	0–1	0	Change during shutdown
F00.43 0043	Parameter Initialization 0: No operation 1: Restore factory parameters, excluding motor parameters 2: Clear recorded information 3: Restore all factory parameters 4: Back up user parameters 5: Restore user parameters (excluding motor parameters) 6: Restore user parameters (including motor parameters)	0–6	0	Change during shutdown

F01 Start/Stop Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F01.00 0100	Start Mode 0: Direct start 1: Speed tracking restart 2: Asynchronous motor pre-excitation start	0–2	0	Change in real time
F01.01 0101	Spinning Motor Catching Method 0: From shutdown frequency 1: From utility frequency 2: From maximum frequency	0–2	0	Change in real time
F01.02 0102	Spinning Motor Catching Current The maximum current during the speed tracking process is within this setting value range, which is valid when the motor is a three-phase asynchronous motor.	30%–200%	100%	Change in real time
F01.03 0103	Spinning Motor Catching Time Time of speed tracking Unit: ms	1–100	20	Change in real time
F01.04 0104	Start Frequency When the given frequency ranges from 0.00 Hz to the start frequency, the AC drive does not start. When the given frequency is greater than or equal to the start frequency, the AC drive starts and outputs the current given frequency. 	0.00 Hz–10.00 Hz	0.00 Hz	Change in real time
F01.05 0105	Start Frequency Holding Time The start frequency set for F01.04 will be maintained for this duration. After reaching the set time, the AC drive will operate at the actual given frequency.	0.0s–100.0s	0.0s	Change during shutdown
F01.06 0106	Start Pre-Excitation Current Pre-excitation current, whose duration is subject to F01.07 Same as the rated current of the motor	0%–100%	0%	Change during shutdown
F01.07 0107	Start Pre-Excitation Time Valid when F01.06 is set to a value other than 0% Pre-excitation current duration	0.0s–100.0s	0.0s	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F01.08 0108	Braking Utilization Rate This value should not be changed during regular operation to avoid any negative impact on the braking effect.	0%–100%	100%	Change in real time
F01.09 0109	Reserved			
F01.10 0110	Stop Method 0: Decelerate to stop Controlled to stop, the stop time is controlled by F00.24 deceleration time. 1: Coast to stop Uncontrolled to stop, the stop time is relevant to the stop time and load inertia.	0–1	0	Change in real time
F01.11 0111	Starting Frequency of DC Braking During Shutdown During shutdown, the AC drive starts performing DC braking when the frequency decreases to this value.	0.00 Hz–F00.13	0.00 Hz	Change in real time
F01.12 0112	Waiting Time of DC Braking During Shutdown During shutdown, the AC drive will start outputting DC braking torque after reaching the frequency set for F01.11 and after the waiting time has elapsed.	0.0s–100.0s	0.0s	Change in real time
F01.13 0113	DC Braking Current During Shutdown Same as the rated current of the motor	0%–100%	0%	Change in real time
F01.14 0114	DC Braking Time During Shutdown The AC drive stops DC braking after reaching this time.	0.0s–100.0s	0s	Change in real time
F01.15 0115	Operating Direction 0: Default direction 1: Opposite to the default direction	0–1	0	Change during shutdown
F01.16 0116	Reverse Control 0: Allow 1: Disallow	0–1	0	Change in real time
F01.17 0117	Waiting Time for Switchover between Forward Rotation and Reverse Rotation	0.0s–3000.0s	0.0s	Change in real time
F01.18 0118	Jog Frequency Reference Valid when the F02.00–F02.09 DI terminal function is set to the following parameters: 4: Jogging at forward direction (FJOG) 5: Jogging at reverse direction (RJOG)	0.00 Hz–F00.13	2.50Hz	Change in real time
F01.19 0119	Jog Acceleration Time Time required for the AC drive to accelerate from 0 to F01.18 (jogging operation frequency). Valid when the F02.00–F02.09 DI terminal function is set to the following parameters: 4: Jogging at forward direction (FJOG) 5: Jogging at reverse direction (RJOG)	0.0s–6500.0s	20.0s	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F01.20 0120	Jog Deceleration Time Time required for the AC drive to decelerate from F01.18 (jogging operation frequency) to 0. Valid when the F02.00–F02.09 DI terminal function is set to the following parameters: 4: Jogging at forward direction (FJOG) 5: Jogging at reverse direction (RJOG)	0.0s–6500.0s	20.0s	Change in real time
F01.21 0121	Jogging First 0: Invalid 1: Valid	0–1	0	Change in real time
F01.22 0122	Jump Frequency 1 Prevents prolonged operation within an adjustable range near a fixed frequency. This function can be used to prevent reaching the critical speed that can cause resonance.	0.0Hz–F00.13	0.0Hz	Change in real time
F01.23 0123	Jump Frequency 2 Prevents prolonged operation within an adjustable range near a fixed frequency. This function can be used to prevent reaching the critical speed that can cause resonance.	0.0Hz–F00.13	0.0Hz	Change in real time
F01.24 0124	Jump Frequency Width Valid when at least one of the parameters F01.22 skip frequency 1 and F01.23 skip frequency 2 is set to a value other than 0.0 Hz.	0.0Hz–F00.13	0.0Hz	Change in real time
F01.25 0125	Whether Jump Frequency is Effective During Acceleration and Deceleration Process 0: Invalid 1: Valid	0–1	0	Change in real time
F01.26 0126	Wakeup Frequency F01.28 (sleep frequency)–F00.13 (maximum frequency) Valid when PID function is activated in F10 process PID control parameter group.		0.0Hz	Change in real time
F01.27 0127	Wakeup Delay Time When the AC drive reaches the wake-up frequency, it will wait for the set time to elapse before waking up. Valid when PID function is activated in F10 process PID control parameter group.	0.0s–6500.0s	0.0s	Change in real time
F01.28 0128	Hibernating Frequency 0.00 Hz–F01.26 (wake-up frequency) Valid when PID function is activated in F10 process PID control parameter group.		0.0Hz	Change in real time
F01.29 0129	Hibernating Delay Time When the AC drive reaches the sleep frequency, it will wait for the set time to elapse before sleeping. Valid when PID function is activated in F10 process PID control parameter group.	0.0s–6500.0s	0.0s	Change in real time
F01.30 0130	Demagnetization Time When Catching A Spinning Motor Waiting time during speed tracking of asynchronous motor for rotor demagnetization.	0.0s–5.0s	1.0s	Change in real time

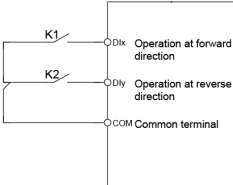
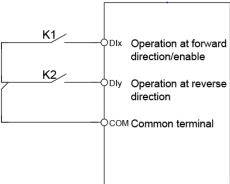
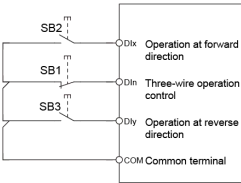
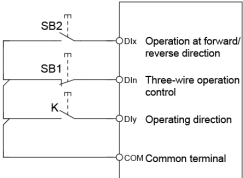
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F01.31 0131	Reserved			
F01.32 0132	Reserved			
F01.33 0133	Reserved			
F01.34 0134	Reserved			
F01.35 0135	Power Dip Ride-Through Function Selection 0: Invalid 1: Slowdown 2: Stop by slowdown	0–2	0	Change in real time
F01.36 0136	Instant Stop Exit for Voltage Judgment Valid when F01.35 continuous action during instant stop is set to a value other than 0. When the incoming voltage rises to this setting value, the AC drive starts exiting continuous action during instant stop.	80%–100%	85%	Change in real time
F01.37 0137	Judging Time of Bus Voltage Recovering from Power Dip Valid when the selection of the power dip ride-through function (F01.35) is set to a value other than 0. Waiting time after F01.36 is reached to judge if the voltage has recovered	0.0s–100.0s	0.5s	Change in real time
F01.38 0138	Threshold of Power Dip Ride-Through Function Enabled When the incoming voltage decreases to this setting value, the power dip ride-through function is triggered.	60%–100%	80%	Change in real time
F01.39 0139	Power Dip Ride-Through Gain Kp	0–100	40	Change in real time
F01.40 0140	Power Dip Ride-Through Integral Coefficient Ki	0–100	30	Change in real time
F01.41 0141	Deceleration Time of Power Dip Ride-Through Valid when F01.35 is set to 2.	0s–300.0s	20s	Change in real time

F02 Input Terminal Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.00 0200	DI1 Terminal Function Selection	0–59	1	Change during shutdown
	0: No function 1: Forward (FWD) 2: Reverse (REV) 3: Three-wire operation control 4: Jogging at forward direction (FJOG) 5: Jogging at reverse direction (RJOG) 6: Terminal UP 7: Terminal DOWN 8: Coast to stop 9: Fault Reset (RESET) 10: Operation suspended 11: External fault normally open input 12: Multi-segment command terminal 1 13: Multi-segment command terminal 2 14: Multi-segment command terminal 3 15: Multi-segment command terminal 4 16: Acceleration and deceleration selection terminal 1 17: Acceleration and deceleration selection terminal 2 18: Frequency source switching 19: UP/DOWN setting reset (terminals, keyboards) 20: Run command switching terminal (for switching between terminal/communication control and panel control) 21: Acceleration and deceleration disabled 22: PID suspended 23: PLC status reset 24: Wobble suspended 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control disabled 30: PULSE frequency input (valid for DI5 only) 31: Reserved 32: Immediate DC braking 33: External fault normally closed input			

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.00 0200	DI1 Terminal Function Selection (continued) 34: Frequency setting validity terminal (If this terminal function is set, it can control when the modification takes effect once the frequency is modified.) 35: Reverse action direction for PID 36: External shutdown terminal 1 (In keyboard control mode, this terminal can be used to stop the machine, which is equivalent to the STOP button on the keyboard.) 37: Control command switching terminal 2 (for switching between terminal/communication control) 38: PID integral pause terminal (valid when F10.16 (integral separation parameter) is set) 39: Frequency source X and preset frequency switching 40: Frequency source Y and preset frequency switching 41: Reserved 42: Reserved 43: PID parameter switching terminal 44: User-defined fault 1 45: User-defined fault 2 46: Speed control/Torque control switching 47: Emergent shutdown 48: External shutdown terminal 2 (Under any control mode this terminal can be used to stop the machine according to deceleration time 4) 49: Deceleration DC braking 50: Reset running time 51: Two-wire/Three-wire switching 52: Operation at reverse direction disabled 53–59: Reserved	0–59	1	Change during shutdown
F02.01 0201	DI2 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	8	Change during shutdown
F02.02 0202	DI3 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	9	Change during shutdown
F02.03 0203	DI4 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	12	Change during shutdown
F02.04 0204	DI5 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	13	Change during shutdown
F02.05 0205	DI6 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	0	Change during shutdown
F02.06 0206	DI7 Terminal Function Selection Same as the F02.00 DI1 terminal function	0–59	0	Change during shutdown

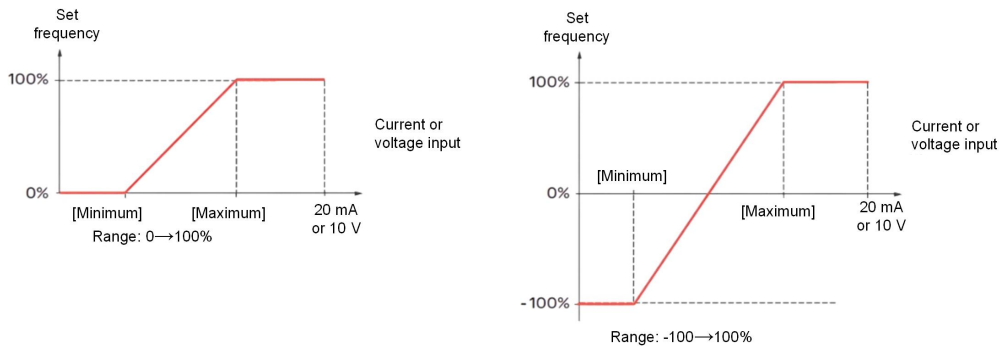
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode														
F02.07 0207	DI8 Terminal Function Selection Same as the F02.00 DI1 terminal function Valid only when I/O expansion cards are used	0–59	0	Change during shutdown														
F02.08 0208	DI9 Terminal Function Selection Same as the F02.00 DI1 terminal function Valid only when I/O expansion cards are used	0–59	0	Change during shutdown														
F02.09 0209	DI10 Terminal Function Selection Same as the F02.00 DI1 terminal function Valid only when I/O expansion cards are used	0–59	0	Change during shutdown														
F02.10 0210	DI Filtering Time To filter out potential interference, when the DI state changes, the duration of the signal is used to determine whether the setting is valid.	0.000s–1.000s	0.010s	Change in real time														
F02.11 0211	DI1-DI5 Active Mode Selection 0: High level 1: Low level Ones place: DI1 Tens place: DI2 Hundreds place: DI3 Thousands place: DI4 Ten thousands place: DI5	00000–11111	00000	Change during shutdown														
		<table><tr><td>Ten thousands place</td><td>Thousands place</td><td>Hundreds place</td><td>Tens place</td><td>Ones place</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr></table>	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place	0	0	0	0	0	1	1	1	1	1	
Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place														
0	0	0	0	0														
1	1	1	1	1														
F02.12 0212	DI6-DI10 Active Mode Selection 0: High level 1: Low level Ones place: DI6 Tens place: DI7 Hundreds place: DI8 Thousands place: DI9 Ten thousands place: DI10	00000–11111	00000	Change during shutdown														
		<table><tr><td>Ten thousands place</td><td>Thousands place</td><td>Hundreds place</td><td>Tens place</td><td>Ones place</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr></table>	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place	0	0	0	0	0	1	1	1	1	1	
Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place														
0	0	0	0	0														
1	1	1	1	1														
F02.13 0213	DI1 Delay Time	0.0s–3600.0s	0.0s	Change in real time														
F02.14 0214	DI2 Delay Time	0.0s–3600.0s	0.0s	Change in real time														
F02.15 0215	DI3 Delay Time	0.0s–3600.0s	0.0s	Change in real time														

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode																																				
F02.16 0216	Terminal UP/DOWN Change Rate Per Second Valid when the F02.00–F02.09 DI terminal function is set to the following parameters: 6: Terminal UP 7: Terminal DOWN	0.001 Hz/s–65.535 Hz/s	1.000 Hz/s	Change in real time																																				
F02.17 0217	Terminal I/O Control Mode 0: Two-wire 1 <table border="1"><thead><tr><th>K1</th><th>K2</th><th>Operating direction</th></tr></thead><tbody><tr><td>0</td><td>0</td><td>Stop</td></tr><tr><td>1</td><td>0</td><td>Forward</td></tr><tr><td>0</td><td>1</td><td>Reverse</td></tr><tr><td>1</td><td>1</td><td>Stop</td></tr></tbody></table>  1: Two-wire 2 <table border="1"><thead><tr><th>K1</th><th>K2</th><th>Operating direction</th></tr></thead><tbody><tr><td>0</td><td>0</td><td>Stop</td></tr><tr><td>0</td><td>1</td><td>Stop</td></tr><tr><td>1</td><td>0</td><td>Forward</td></tr><tr><td>1</td><td>1</td><td>Reverse</td></tr></tbody></table>  2: Three-wire 1  3: Three-wire 2 <table border="1"><thead><tr><th>K</th><th>Operating direction</th></tr></thead><tbody><tr><td>0</td><td>Forward</td></tr><tr><td>1</td><td>Reverse</td></tr></tbody></table> 	K1	K2	Operating direction	0	0	Stop	1	0	Forward	0	1	Reverse	1	1	Stop	K1	K2	Operating direction	0	0	Stop	0	1	Stop	1	0	Forward	1	1	Reverse	K	Operating direction	0	Forward	1	Reverse	0–3	0	Change in real time
K1	K2	Operating direction																																						
0	0	Stop																																						
1	0	Forward																																						
0	1	Reverse																																						
1	1	Stop																																						
K1	K2	Operating direction																																						
0	0	Stop																																						
0	1	Stop																																						
1	0	Forward																																						
1	1	Reverse																																						
K	Operating direction																																							
0	Forward																																							
1	Reverse																																							
F02.18 0218	Reserved																																							
F02.19 0219	Reserved																																							

Analog Input Setting

To adapt the given values to the application requirements, the minimum input value and maximum input value (in units of V, mA) are converted to a percentage.

The given value range is set to [0%–100%] or [-100%–+100%] in order to obtain bi-directional output from unidirectional input.



Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.20 0220	AI Curve 1 Minimum Input When the AI input is a current analog signal, it needs to be converted to a voltage value. Conversion relationship: 0–20 mA corresponds to 0–10 V, and 4–20 mA corresponds to 2–10 V.	0.00 V–F02.22	0.00 V	Change in real time
F02.21 0221	Corresponding Percentage of AI Curve 1 Minimum Input Ratio of the minimum input (analog) to the given value for AI curve 1.	-100.0%–+100.0%	0.0%	Change in real time
F02.22 0222	AI Curve 1 Maximum Input When the AI input is a current analog signal, it needs to be converted to a voltage value. Conversion relationship: 0–20 mA corresponds to 0–10 V, and 4–20 mA corresponds to 2–10 V.	F02.20–10.00 V	10.00 V	Change in real time
F02.23 0223	Corresponding Percentage of AI Curve 1 Maximum Input Ratio of the maximum input (analog) to the given value for AI curve 1.	-100.0%–+100.0%	100.0%	Change in real time
F02.24 0224	AI Curve 2 Minimum Input When the AI input is a current analog signal, it needs to be converted to a voltage value. Conversion relationship: 0–20 mA corresponds to 0–10 V, and 4–20 mA corresponds to 2–10 V.	0.00 V–F02.26	0.00 V	Change in real time
F02.25 0225	Corresponding Percentage of AI Curve 2 Minimum Input Ratio of the minimum input (analog) to the given value for AI curve 2.	-100.0%–+100.0%	0.0%	Change in real time
F02.26 0226	AI Curve 2 Maximum Input When the AI input is a current analog signal, it needs to be converted to a voltage value. Conversion relationship: 0–20 mA corresponds to 0–10 V, and 4–20 mA corresponds to 2–10 V.	F02.24–10.00 V	10.00 V	Change in real time
F02.27 0227	Corresponding Percentage of AI Curve 2 Maximum Input Ratio of the maximum input (analog) to the given value for AI curve 2.	-100.0%–+100.0%	100.0%	Change in real time

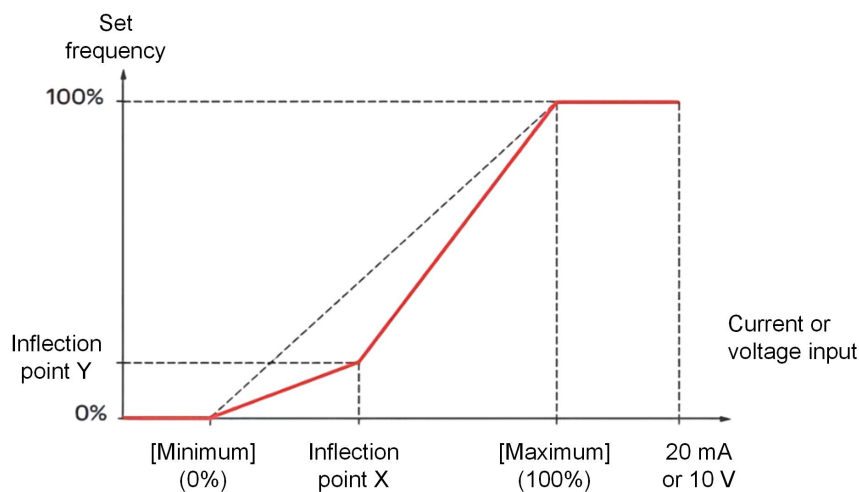
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.28 0228	AI Curve 3 Minimum Input When the AI input is a current analog signal, it needs to be converted to a voltage value. Conversion relationship: 0–20 mA corresponds to -10–10 V, and 4–20 mA corresponds to 2–10 V.	-10.00 V–F02.30	-10.00 V	Change in real time
F02.29 0229	Corresponding Percentage of AI Curve 3 Minimum Input Ratio of the minimum input (analog) to the given value for AI curve 3.	-100.0%–+100.0%	-100.0%	Change in real time
F02.30 0230	AI Curve 3 Maximum Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0–20 mA corresponds to -10–10 V, and 4–20 mA corresponds to 2–10 V.	F02.28–10.00 V	10.00 V	Change in real time
F02.31 0231	Corresponding Percentage of AI Curve 3 Maximum Input Ratio of the maximum input (analog) to the given value for AI curve 3.	-100.0%–+100.0%	100.0%	Change in real time

For applications requiring non-linear inputs, the [AI curve 4] and the [AI curve 5] can be implemented.

By setting intermediate points on the curve, the input can be non-linear.

[AI curve 4]:

Range: 0→100%

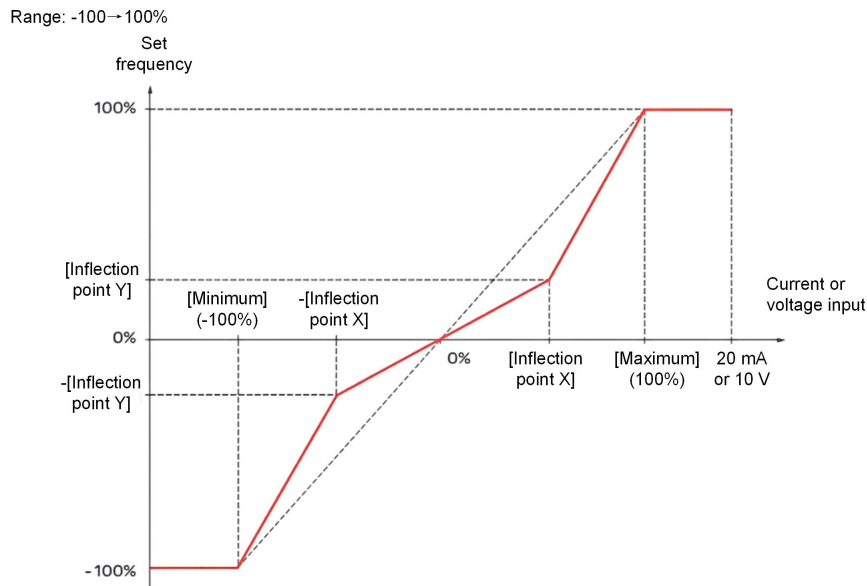


Note: For [inflection point X], 0% corresponds to [minimum value] and 100% corresponds to [maximum value].

Inflection point X corresponds to parameters F02.34 [inflection point 1 input for AI curve 4] and F02.36 [inflection point 2 input for AI curve 4].

Inflection point Y corresponds to parameters F02.35 [inflection point 1 input setting for AI curve 4] and F02.37 [inflection point 2 input setting for AI curve 4].

[AI curve 5]:



Inflection point X corresponds to parameter F02.44 [inflection point 2 input for AI curve 5].
 Inflection point Y corresponds to parameter F02.45 [inflection point 2 input setting for AI curve 5].

Inflection point X corresponds to parameter F02.42 [inflection point 1 input for AI curve 5].
 Inflection point Y corresponds to parameter F02.43 [inflection point 1 input setting for AI curve 5].

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.32 0232	AI Curve 4 Minimum Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0–20 mA corresponds to -10–10 V, and 4–20 mA corresponds to 2–10 V.	-10.00 V–F02.34	0.00 V	Change in real time
F02.33 0233	Corresponding Percentage of AI Curve 4 Minimum Input Ratio of the minimum input (analog) to the given value for AI curve 4.	-100.0%–+100.0%	0.0%	Change in real time
F02.34 0234	AI Curve 4 Inflection Point 1 Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0–20 mA corresponds to -10–10 V, and 4–20 mA corresponds to 2–10 V.	F02.32–F02.36	3 V	Change in real time
F02.35 0235	Corresponding Percentage of AI Curve 4 Inflection Point 1 Input Ratio of the inflection point 1 input value (analog) to the given value for AI curve 4.	-100.0%–+100.0%	30.0%	Change in real time
F02.36 0236	AI Curve 4 Inflection Point 2 Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0–20 mA corresponds to -10–10 V, and 4–20 mA corresponds to 2–10 V.	F02.34–F02.38	6 V	Change in real time
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode

F02.37 0237	Corresponding Percentage of AI Curve 4 Inflexion Point 2 Input Ratio of the inflection point 2 input value (analog) to the given value for AI curve 4	-100.0%~+100.0%	60.0%	Change in real time
F02.38 0238	AI Curve 4 Maximum Input When the AI input is a current analog signal, this value is x.xx mA. 10.00 V corresponds to 20 mA.	F02.36~10.00 V	10.00 V	Change in real time
F02.39 0239	Corresponding Percentage of AI Curve 4 Maximum Input Ratio of the maximum input (analog) to the given value for AI curve 4	-100.0%~+100.0%	100.0%	Change in real time
F02.40 0240	AI Curve 5 Minimum Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0~20 mA corresponds to -10~10 V, and 4~20 mA corresponds to 2~10 V.	-10.00 V~F02.42	-10.00 V	Change in real time
F02.41 0241	Corresponding Percentage of AI Curve 5 Minimum Input Ratio of the minimum input (analog) to the given value for AI curve 4.	-100.0%~+100.0%	-100.0%	Change in real time
F02.42 0242	AI Curve 5 Inflexion Point 1 Input When the AI input is a current analog signal, this value is x.xx mA. Conversion relationship: 0~20 mA corresponds to -10~10 V, and 4~20 mA corresponds to 2~10 V.	F02.40~F02.44	-3.00 V	Change in real time
F02.43 0243	Corresponding Percentage of AI Curve 5 Inflexion Point 1 Input Ratio of the inflection point 1 input value (analog) to the given value for AI curve 5	-100.0%~+100.0%	-30.0%	Change in real time
F02.44 0244	AI Curve 5 Inflexion Point 2 Input When the AI input is a current analog signal, this value is x.xx mA. 3 V corresponds to 6 mA.	F02.42~F02.46	3.00 V	Change in real time
F02.45 0245	Corresponding Percentage of AI Curve 5 Inflexion Point 2 Input Ratio of the inflection point 2 input value (analog) to the given value for AI curve 5	-100.0%~+100.0%	30.0%	Change in real time
F02.46 0246	AI Curve 5 Maximum Input When the AI input is a current analog signal, this value is x.xx mA. 10.00 V corresponds to 20 mA.	F02.44~10.00 V	10.00 V	Change in real time
F02.47 0247	Corresponding Percentage of AI Curve 4 Maximum Input Ratio of the maximum input (analog) to the given value for AI curve 4.	-100.0%~+100.0%	100.0%	Change in real time
F02.48 0248	Reserved			

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode																		
F02.49 0249	Reserved																					
F02.50 0250	AI Curve Setting Selection 1: Curve 1 (2 points. See F02.20–F02.23 parameters) 2: Curve 2 (2 points. See F02.24–F02.27 parameters) 3: Curve 3 (2 points. See F02.28–F02.31 parameters) 4: Curve 4 (4 points. See F02.32–F02.39 parameters) 5: Curve 5 (4 points. See F02.40–F02.47 parameters) Ones place: AI1 curve Tens place: AI2 curve Hundreds place: AI3 curve	111–555	321	Change in real time																		
			<table><tr><th>Hundreds place</th><th>Tens place</th><th>Ones place</th></tr><tr><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td><td>3</td></tr><tr><td>4</td><td>4</td><td>4</td></tr><tr><td>5</td><td>5</td><td>5</td></tr></table>	Hundreds place	Tens place	Ones place	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	
Hundreds place	Tens place	Ones place																				
1	1	1																				
2	2	2																				
3	3	3																				
4	4	4																				
5	5	5																				
F02.51 0251	AI Below Minimum Input Setting Selection 0: Minimum input setting value 1: 0.0% Ones place: AI1 below the minimum input setting value Tens place: AI2 below the minimum input setting value Hundreds place: AI3 below the minimum input setting value	000–111	000	Change in real time																		
			<table><tr><th>Hundreds place</th><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>	Hundreds place	Tens place	Ones place	0	0	0	1	1	1										
Hundreds place	Tens place	Ones place																				
0	0	0																				
1	1	1																				
F02.52 0252	AI1 Input Signal Selection 0: Voltage (0–10 V) 1: Current (4–20 mA) 2: Current (0–20 mA)	0–2	0	Change during shutdown																		
F02.53 0253	AI1 Filtering Time	0.00s–10.00s	0.10s	Change in real time																		
F02.54 0254	AI1 Setting Jump Point The range of the skip point corresponds to the range of the given value of AI1.	–100.0%–100.0%	0.0%	Change in real time																		
F02.55 0255	AI1 Setting Jump Width	0.0%–100.0%	0.5%	Change in real time																		
F02.56 0256	AI2 Input Signal Selection 0: Voltage (0–10 V) 1: Current (4–20 mA) 2: Current (0–20 mA)	0–2	0	Change during shutdown																		

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F02.57 0257	AI2 Filtering Time	0.00s–10.00s	0.10s	Change in real time
F02.58 0258	AI2 Setting Jump Point	-100.0%–100.0%	0.0%	Change in real time
F02.59 0259	AI2 Setting Jump Width	0.0%–100.0%	0.5%	Change in real time
F02.60 0260	AI3 Input Signal Selection Valid only when I/O expansion cards are used. 0: 0–10 V (0–20 mA) 1: 2–10 V (4–20 mA) Select the voltage/current signal via the DIP switch on the I/O expansion card.	0–1	0	Change during shutdown
F02.61 0261	AI3 Filtering Time Valid only when I/O expansion cards are used.	0.00s–10.00s	0.10s	Change in real time
F02.62 0262	AI3 Setting Jump Point Valid only when I/O expansion cards are used.	-100.0%–100.0%	0.0%	Change in real time
F02.63 0263	AI3 Setting Jump Width Valid only when I/O expansion cards are used.	0.0%–100.0%	0.5%	Change in real time
F02.64 0264	Pulse Minimum Input Minimum pulse value when the pulse signal is given	0.00 kHz–F02.67	0 kHz	Change in real time
F02.65 0265	Pulse Minimum Input Setting Ratio of the minimum pulse input (pulse signal) to the given value.	-100.0%–100.0%	0.0%	Change in real time
F02.66 0266	Pulse Maximum Input Maximum pulse value when the pulse signal is given	F02.64–100.00 kHz	50.00 kHz	Change in real time
F02.67 0267	Pulse Maximum Input Setting Ratio of the maximum pulse input (pulse signal) to the given value	-100.0%–100.0%	100.0%	Change in real time
F02.68 0268	Pulse Filtering Time	0.00s–10.00s	0.10s	Change in real time

F03 Output Terminal Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F03.00 0300	FM Output Signals Selection 0: Pulse output (FMP) 1: Digital output (FMR)	0–1	0	Change in real time
F03.01 0301	FMR Output Function Selection Valid when F03.00 [FM output signal] is set to 1: digital output (FMR) 0: No output 1: AC drive running 2: Fault output (fault shutdown) 3: Frequency level detection and FDT1 output 4: Frequency reached 5: Running at zero speed (no output during shutdown) 6: Motor overload pre-alarm 7: AC drive overload pre-alarm 8: Set count value reached 9: Specified count value reached 10: Length reached 11: PLC cycle completed 12: Running time reached 13: Frequency limit enabled 14: Torque limit enabled 15: Ready to run 16: AI1>AI2 17: Upper frequency reached 18: Lower frequency reached (relevant to operation) 19: Output at under-voltage state 20: Communication setting 21: Positioning completed (reserved) 22: Positioning close (reserved) 23: Running at zero speed 2 (output during shutdown) 24: Power-on time reached 25: Frequency level detection and FDT2 output 26: Output when frequency reaches 1 27: Output when frequency reaches 2 28: Output when current reaches 1	0–41	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F03.01 0301	FMR Output Function Selection (continued) 29: Output when current reaches 2 30: Output when the set time is reached 31: AI1 input out of range 32: Unloading 33: Running at reverse direction 34: Zero current state 35: Module temperature reached 36: Output current out of range 37: Lower frequency reached (irrelevant to operation) 38: Fault output (all faults) 39: Motor over-temperature pre-alarm 40: Running time reached 41: Fault output (for free-stop faults and no output at under-voltage state)	0–41	0	Change in real time
F03.02 0302	Relay Output 1 Same as F03.01 [FMR output function]	0–41	1	Change in real time
F03.03 0303	Relay Output 2 Same as F03.01 [FMR output function]	0–41	2	Change in real time
F03.04 0304	Relay Output 3 Valid only when I/O expansion cards are used. Same as F03.01 [FMR output function]	0–41	0	Change in real time
F03.05 0305	DO1 Output Same as F03.01 [FMR output function]	0–41	15	Change in real time
F03.06 0306	DO2 Output Valid only when I/O expansion cards are used. Same as F03.01 [FMR output function]	0–41	4	Change in real time
F03.07 0307	AO1 Output 0: Running frequency 1: Set frequency 2: Output current (The maximum output current corresponds to 2 times the motor rated current) 3: Output torque (The maximum output torque corresponds to 2 times of the rated torque) 4: Output power (The maximum output power corresponds to 2 times the rated power)	0–16	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F03.07 0307	AO1 Output (continued) 5: Output voltage (The maximum output voltage corresponds to 1.2 times the rated voltage) 6: Pulse input (0 to 100.0% corresponds to 0 kHz to 100.0 kHz) 7: AI1 8: AI2 9: AI3 (expansion card) 10: Length 11: Count value 12: Communication setting 13: Motor speed 14: Output current (100.0% corresponds to 1000.0 A) 15: Output voltage (100.0% corresponds to 1000.0 V) 16: Motor output torque (actual value, corresponding to the motor's percentage value) 0 to 100% corresponds to -200% to 200% of the motor's rated torque	0–16	0	Change in real time
F03.08 0308	AO2 Output Same as F03.07 [AO1 output] function	0–16	0	Change in real time
F03.09 0309	FMP Output Valid when F03.00 [FM output signal] is set to 0: pulse output (FMP). Same as F03.07 [AO1 output] function	0–16	0	Change in real time
F03.10 0310	AO1 Gain	-10.00—+10.00	1.00	Change in real time
F03.11 0311	AO1 Zero Offset Coefficient	-100.0%—+100.0%	0.0%	Change in real time
F03.12 0312	Output Signal Selection 0: 0–10 V (0–20 mA) 1: 2–10 V (4–20 mA) Note: The AO1 output can be switched between voltage and current signals using DIP switches. The factory setting of the AO1 output is voltage. To change it, please refer to the diagram on page 52 of this manual for DIP switch configuration.	0–1	0	Change during shutdown
F03.13 0313	Reserved			
F03.14 0314	AO2 Gain	-10.00—+10.00	1.00	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode															
F03.15 0315	AO2 Zero Offset Coefficient	-100.0%—+100.0%	0.0%	Change in real time															
F03.16 0316	AO2 Output Signal Selection 0: 0–10 V (0–20 mA) 1: 2–10 V (4–20 mA) Note: The AO2 output can be switched between voltage and current signals using DIP switches. The factory setting of the AO2 output is voltage. To change it, please refer to the diagram on page 52 of this manual for DIP switch configuration.	0–1	0	Change during shutdown															
F03.17 0317	Reserved																		
F03.18 0318	Relay Output 1 Delay Time	0.0s–3600.0s	0.0s	Change in real time															
F03.19 0319	Relay Output 2 Delay Time	0.0s–3600.0s	0.0s	Change in real time															
F03.20 0320	Relay Output 3 Delay Time Valid only when I/O expansion cards are used.	0.0s–3600.0s	0.0s	Change in real time															
F03.21 0321	FMR Output Delay Time Valid when F03.00 [FM output signal] is set to 1: digital output (FMR).	0.0s–3600.0s	0.0s	Change in real time															
F03.22 0322	DO1 Output Delay Time	0.0s–3600.0s	0.0s	Change in real time															
F03.23 0323	DO2 Output Delay Time Valid only when I/O expansion cards are used.	0.0s–3600.0s	0.0s	Change in real time															
F03.24 0324	Logic Output Terminal Inactive Status Selection Positive logic Negative logic Ones place: FMR Tens place: Relay output 1 Hundreds place: Relay output 2 Thousands place: DO1 Ten thousands place: DO2	00000–11111	00000	Change in real time															
	<table border="1"> <thead> <tr> <th>Ten thousands place</th><th>Thousands place</th><th>Hundreds place</th><th>Tens place</th><th>Ones place</th></tr> </thead> <tbody> <tr> <td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> </tbody> </table>	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place	0	0	0	0	0	1	1	1	1	1			
Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place															
0	0	0	0	0															
1	1	1	1	1															
F03.25 0325	Reserved																		
F03.26 0326	FMP Output Maximum Frequency Valid when F03.00 [FM output signal] is set to 0: pulse output (FMP).	0.01 kHz–100.00 kHz	50.00 kHz	Change in real time															
F03.27 0327	Reserved																		

F04 Motor Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F04.00 0400	Motor Type Selection 0: Normal asynchronous motor 1: Variable frequency asynchronous motor 2: Permanent magnet synchronous motor	0–2	0	Change during shutdown
F04.01 0401	Motor Rated Power Subject to the rated power of motor indicated on the nameplate.	Subject to the rated value of the AC drive	Subject to the rated value of the AC drive	Change during shutdown
F04.02 0402	Motor Rated Voltage Subject to the rated voltage of motor indicated on the nameplate.	Subject to the rated value of the AC drive	Subject to the rated value of the AC drive	Change during shutdown
F04.03 0403	Motor Rated Current Subject to the rated current of motor indicated on the nameplate	Subject to the rated value of the AC drive	Subject to the rated value of the AC drive	Change during shutdown
F04.04 0404	Motor Rated Frequency Subject to the rated power of motor indicated on the nameplate.	0.01 Hz–F00.13	50 Hz	Change during shutdown
F04.05 0405	Motor Rotational Speed Subject to the rated speed of motor indicated on the nameplate.	1 rpm–65535 rpm	1460 rpm	Change during shutdown
F04.06 0406	Reserved			
F04.07 0407	Reserved			
F04.08 0408	Reserved			
F04.09 0409	Motor Parameter Identification 0: No operation 1: Asynchronous motor rotational auto-tuning 2: Asynchronous motor static auto-tuning 3: Asynchronous motor static complete auto-tuning 11: PMSM no-load rotational auto-tuning 12: PMSM motor static auto-tuning, identification of motor resistance and inductance 13: PMSM motor encoder direction learning, and direction identification through shaking the motor in no-load or light load conditions 14: Asynchronous loaded auto-tuning	0–14	0	Change during shutdown
F04.10 0410	Asynchronous Motor Stator Resistance Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor The AC drive performs self-learning through F04.09 [motor parameter identification], and the self-learning result will replace the factory settings.	0.001 Ω–65.535 Ω	Subject to the rated value of the AC drive	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F04.11 0411	Asynchronous Motor Rotor Resistance	0.001 Ω –65.535 Ω	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.12 0412	Asynchronous Motor Leakage Inductance	0.01 mH–655.35 mH	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.13 0413	Asynchronous Motor Mutual Inductance	0.01 mH–655.35 mH	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.14 0414	Asynchronous Motor No-Load Current	0.01 A–F04.03	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.15 0415	Asynchronous Motor Stator Inductance	0.01 mH–655.35 mH	Subject to the rated value of the AC driver	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 0: Normal asynchronous motor 1: Variable frequency asynchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.16 0416	Synchronous Motor Stator Resistance	0.001 Ω –65.535 Ω	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 2: Permanent magnet synchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.17 0417	Synchronous Motor d-Axis Inductance	0.01 mH–655.35 mH	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 2: Permanent magnet synchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
111				
F04.18 0418	Synchronous Motor q-Axis Inductance	0.01 mH–655.35 mH	Subject to the rated value of the AC drive	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 2: Permanent magnet synchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.				
F04.19 0419	Reserved			
F04.20 0420	Counterelectromotive Force Coefficient of Synchronous Motor	0.0 V–6553.5 V	300.0 V	Change during shutdown
Valid when F04.00 [motor type] is set to the following parameters: 2: Permanent magnet synchronous motor Execute 11: PMSM no-load rotation self-learning through F04.09 [motor parameter identification], then the self-learning result will replace the factory settings.				
F04.21 0419	Reserved			
F04.22 0422	Reserved			
F04.23 0423	Reserved			
F04.24 0424	Reserved			
F04.25 0425	Encoder Type	0–4	0	Change during shutdown
0: ABZ incremental encoder 1: Reserved 2: Rotary encoder 3: Reserved 4: Reserved				
F04.26 0426	Number of ABZ Encoder Pulses	1–65535	1024	Change during shutdown
F04.27 0427	Reserved			
F04.28 0428	ABZ Encoder AB Phase Sequence	0–1	0	Change during shutdown
0: Forward 1: Reverse				
F04.29 0429	Installation Position Angle of ABZ Encoder	0.0°–359.9°	0.0°	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
111				
F04.30 0430	Phase Sequence of Rotary Encoder UVW Signal 0: Forward 1: Reverse	0–1	0	Change during shutdown
F04.31 0431	Zero Position Angle of Rotary Encoder UVW Signal	0.0°–359.9°	0.0°	Change in real time
F04.32 0432	Rotational Pole Number Valid when F04.00 [motor type] is set to the following parameters: 2: Permanent magnet synchronous motor Execute self-learning via F04.09 [motor parameter identification], then the factory settings will be replaced by the results of the self-learning operation.	1–65535	1	Change in real time
F04.33 0433	Encoder Disconnection Detection Time 0.0s: No action 0.1s–10.0s	0.0s–10.0s	0.10s	Change in real time

F05 Vector Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F05.00 0500	Speed Loop Proportional Gain 1	1–100	30	Change in real time
F05.01 0501	Speed Loop Integration Time 1	0.01s–10.0s	0.5s	Change in real time
F05.02 0502	Switching Frequency 1	0.0 Hz–F05.05	5.0 Hz	Change in real time
F05.03 0503	Speed Loop Proportional Gain 2	1–100	20	Change in real time
F05.04 0504	Speed Loop Integration Time 2	0.01s–10.0s	1.0s	Change in real time
F05.05 0505	Switching Frequency 2	F05.02–F00.13	10.0 Hz	Change in real time
F05.06 0506	Vector Control Slip Gain	50%–200%	100%	Change in real time
F05.07 0507	Speed Feedback Filtering Time	0.000s–0.100s	0.0050s	Change in real time
F05.08 0508	Vector Control Overexcitation Gain	0–200	64	Change in real time
F05.09 0509	Speed Control Electric Torque Upper Limit Source 0: Upper limit setting for speed control electric torque (F05.10) 1: AI1 2: AI2 3: AI3 4: Pulse setting 5: Communication setting 6: MIN(AI1, AI2) 7: MAX(AI1, AI2)	0–7	0	Change in real time
F05.10 0510	Upper Limit Setting for Speed Control Electric Torque	0.0%–200.0%	150%	Change in real time
F05.11 0511	Speed Control Braking Torque Upper Limit Source 0: Upper limit for speed control electric torque (F05.12) 1: AI1 2: AI2 3: AI3 4: Pulse setting 5: Communication setting 6: MIN(AI1, AI2) 7: MAX(AI1, AI2)	0–7	0	Change in real time
F05.12 0512	Upper Limit Setting for Speed Control Braking Torque	0.0%–200.0%	150%	Change in real time
F05.13 0513	Excitation Regulation Proportional Gain	0–60000	3000	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F05.14 0514	Excitation Regulation Integral Gain	0–60000	500	Change in real time
F05.15 0515	Torque Regulation Proportional Gain	0–60000	3000	Change in real time
F05.16 0516	Torque Regulation Integral Gain	0–60000	500	Change in real time
F05.17 0517	Speed Loop Integral Attribute 0: Speed loop integral always effective 1: Speed loop integral separated	0–1	0	Change in real time
F05.18 0518	Synchronous Motor Weak Magnetic Mode 0: Non-weak magnet 1: Automatic adjustment 2: Direct calculation	0–2	1	Change in real time
F05.19 0519	Synchronous Motor Weak Magnetic Coefficient	1%–50%	20%	Change in real time
F05.20 0520	Reserved			
F05.21 0521	Reserved			
F05.22 0522	Reserved			
F05.23 0523	Reserved			
F05.24 0524	Synchronous Motor Initial Position Detection Current During startup, the pulse current for detecting the magnetic pole position corresponds to 100% of the motor's rated current.	80%–180%	100%	Change in real time
F05.25 0525	Reserved			
F05.26 0526	Initial Position Identification Fault Enabling 0: Disallow 1: Enabled	0–1	1	Change in real time
F05.27 0527	Synchronous Motor Saliency Adjustment Gain	50–500	100	Change in real time
F05.28 0528	Maximum Torque Current Ratio Control	0–1	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F05.29 0529	Power Generation Torque Upper Limit Enabling 0: Disallow 1: Enabled	0–1	0	Change during shutdown
F05.30 0530	Reserved			
F05.31 0531	Reserved			
F05.32 0532	Reserved			
F05.33 0533	Low-Speed Excitation Current Valid when output frequency is less than 5 Hz in SVC mode.	0%–50%	30%	Change in real time
F05.34 0534	Low-Speed Carrier Frequency Valid when operating frequency $\leq 12.5\%$ of rated frequency of motor.	0.8 kHz–F07.00	2.0 kHz	Change in real time
F05.35 0535	Reserved			
F05.36 0536	Reserved			
F05.37 0537	Reserved			
F05.38 0538	Reserved			
F05.39 0539	Synchronous Motor Inductance Detection Current During startup, the pulse current for detecting inductance values corresponds to 100% of the motor's rated current.	30%–120%	100%	Change in real time
F05.40 0540	Reserved			
F05.41 0541	Reserved			
F05.42 0542	Reserved			
F05.43 0543	Current Loop kp during Tuning	1–100	6	Change in real time
F05.44 0544	Current Loop ki during Tuning	1–100	6	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F05.49 0549	Speed Loop Mode Selection 0: Speed loop mode 1 1: Speed loop mode 2	0–1	0	Change in real time
F05.50 0550	Z Signal Correction 0: Magnetic pole angle not reset by Z signal 1: Magnetic pole angle reset by Z signal	0–1	1	Change in real time
F05.51 0551	Zero Servo Enabling 0: Disallow 1: Enabled Valid in closed loop vector control of synchronous motor.	0–1	0	Change in real time
F05.52 0552	Zero Servo Switching Frequency Valid in closed loop vector control of synchronous motor.	0–F05.02	0.30 Hz	Change in real time
F05.53 0553	Zero Servo Speed Loop Proportional Gain Valid in closed loop vector control of synchronous motor	1–100	10	Change in real time
F05.54 0554	Zero Servo Speed Loop Integration Time Valid in closed loop vector control of synchronous motor.	0.01s–10.00s	0.50s	Change in real time

F06 V/F Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F06.00 0600	V/F Curve Setting 0: Straight V/F curve 1: Multi-point V/F curve 2: Square V/F curve 3: 1.2-power V/F curve 4: 1.4-power V/F curve 6: 1.6-power V/F curve 8: 1.8-power V/F curve 10: Complete V/F separation 11: Partial V/F separation	0–11	0	Change during shutdown
F06.01 0601	Torque Boost 0.0%: Automatic torque boost 0.1%–30.0%	0.0%–30%	1%	Change in real time
F06.02 0602	Torque Boost Cutoff Frequency	0.00 Hz–F00.13	50 Hz	Change during shutdown
F06.03 0603	Automatic Torque Boost Compensation Gain Valid when F06.01 [torque boost] is set to 0.0%: automatic torque boost.	80%–150%	100%	Change during shutdown
F06.04 0604	V/F Overexcitation Gain	0–200	64	Change in real time
F06.05 0605	Shift Compensation Coefficient 100% corresponding to the rated slip.	0.0%–200.0%	0.0%	Change in real time
F06.06 0606	Shift Compensation Filtering Time	0.1s–10.0s	0.5s	Change in real time
F06.07 0607	Multi-Point V/F Frequency Point 1 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	0.00 Hz–F06.09	0.00 Hz	Change during shutdown
F06.08 0608	Multi-Point V/F Voltage Point 1 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	0.0%–100.0%	0.0%	Change during shutdown
F06.09 0609	Multi-Point V/F Frequency Point 2 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	F06.07–F06.11	0.00 Hz	Change during shutdown
F06.10 0610	Multi-Point V/F Voltage Point 2 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	0.0%–100.0%	0.0%	Change during shutdown
F06.11 0611	Multi-Point V/F Frequency Point 3 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	F06.09–F04.04 (rated power of motor)	0.00 Hz	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F06.12 0612	Multi-Point V/F Voltage Point 3 Valid when F06.00 [V/F curve setting] is set to 1: multi-point V/F curve.	0.0%–100.0%	0.0%	Change during shutdown
F06.13 0613	V/F Separation Voltage Source 0: Digital setting of V/F separated voltage source (F06.14) 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Multi-segment command 6: Simple PLC 7: PID 8: Communication setting	0–8	0	Change in real time
F06.14 0614	Digital Setting of V/F Separation Voltage Source F04.02 (rated voltage of motor)	0 V–F04.02	0 V	Change in real time
F06.15 0615	Voltage Acceleration Time for VF Separation Time required to increase voltage from 0 V to the motor's rated voltage.	0.0s–1000.0s	0.0s	Change in real time
F06.16 0616	Voltage Deceleration Time for VF Separation Time required to decrease voltage from the motor's rated voltage to 0 V.	0.0s–1000.0s	0.0s	Change in real time
F06.17 0617	Selection of V/F Separation Shutdown Mode 0: Frequency/voltage independently reduced to 0 1: Frequency decreases after voltage is reduced to 0	0–1	0	Change during shutdown
F06.18 0618	Oscillation Suppression Gain Mode	0–4	3	Change during shutdown
F06.19 0619	Oscillation Suppression Gain	0–100	40	Change in real time
F06.20 0620	Reserved			
F06.21 0621	Enable Over-Current Stall Suppression 0: Invalid 1: Valid	0–1	1	Change during shutdown
F06.22 0622	Enable Over-Current Action Suppression 100% corresponding to the rated current of the AC drive.	50%–200%	150%	Change during shutdown
F06.23 0623	Overcurrent Stall Suppression Gain	0–100	20	Change in real time
F06.24 0624	Compensation Factor of Speed Multiplying Current Limit Level	50%–200%	100%	Change during shutdown
F06.25 0625	Over-Voltage Stall Enable 0: Invalid 1: Valid	0–1	1	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F06.26 0626	Over-Voltage Stall Action Voltage DC bus voltage range	200.0 V–2000.0 V	710.0 V	Change during shutdown
F06.27 0627	Over-Voltage Stall Suppression Frequency Gain	0–100	30	Change in real time
F06.28 0628	Over-Voltage Stall Suppression Voltage Gain	0–100	30	Change in real time
F06.29 0629	Maximum Rise Frequency Limit for Over-Voltage Stall	0 Hz–50 Hz	5 Hz	Change during shutdown

F07 Control Optimization Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F07.00 0700	Carrier Frequency	2.0 kHz–16.0 kHz	Subject to the rated value of the AC drive	Change during shutdown
F07.01 0701	Carrier Frequency Adjusted with Temperature 0: No 1: Yes	0–1	1	Change in real time
F07.02 0702	PWM Modulation Method 0: Asynchronous modulation 1: Synchronous modulation	0–1	0	Change in real time
F07.03 0703	Random PWM 0: Not selected 1–10: Depth selected randomly	0–10	0	Change in real time
F07.04 0704	DPWM Switching Upper Limit Frequency	0.5 Hz–F00.13	8.0 Hz	Change in real time
F07.05 0705	Dead-Zone Compensation Mode Selection 0: No compensation 1: Compensation mode 1	0–1	1	Change in real time
F07.06 0706	Dead-Zone Time Adjustment	100%–200%	150%	Change during shutdown
F07.07 0707	Over-Current Fast Prevention 0: Disabled 1: Enabled	0–1	1	Change in real time
F07.08 0708	Voltage Over Modulation Coefficient	100–120	105	Change in real time

F08 Display and Operation Parameters

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F08.01 0801	Running Display Selection 1 Bit00: Operating frequency (Hz) Bit01: Set frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: DI input status Bit08: DO output status Bit09: AI1 voltage (V) Bit10: AI2 voltage (V) Bit11: AI3 voltage (V) Bit12: Count Bit13: Length Bit14: Load speed display Bit15: PID setting	0000–FFFF	001F	Change in real time
F08.02 0802	Running Display Selection 2 Bit00: PID feedback Bit01: PLC stage Bit02: Input pulse frequency (kHz) Bit03: Operating frequency 2 (Hz) Bit04: Remaining running time Bit05: AI1 voltage before calibration Bit06: AI2 voltage before calibration Bit07: AI3 voltage before calibration Bit08: Linear speed Bit09: Current power-on time Bit10: Current running time Bit11: Input pulse frequency (Hz) Bit12: Communication reference Bit13: Encoder feedback speed Bit14: Main frequency X display Bit15: Auxiliary frequency Y display	0000–FFFF	0000	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F08.03 0803	Stop Display Selection Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: DI input status Bit03: DO output status Bit04: AI1 voltage (V) Bit05: AI2 voltage (V) Bit06: AI3 voltage (V) Bit07: Count Bit08: Length Bit09: PLC stage Bit10: Load speed Bit11: PID setting Bit12: Input pulse frequency (kHz)	0000–1FFF	0003	Change in real time
F08.04 0804	Load Speed Display Coefficient	0.0001–6.5000	1.0000	Change in real time
F08.05 0805	Output Power Correction Factor	0.00%–200.0%	100.0%	Change in real time
F08.06 0806	Current Correction Coefficient	95.0%–100.0%	100.0%	Change in real time
F08.07 0807	Reserved			
F08.08 0808	Load Speed Display Decimal Point Position Ones place: Number of digits displayed for load speed Tens place: Number of digits displayed for feedback speed	10–23	21	Change in real time
F08.09 0809	Reserved			
F08.10 0810	Multi-Functional Key Function Selection 0: Invalid 1: Switch between operation panel command channel and remote command channel (terminal command channel or communication command channel) 2: Forward and reverse direction switch 3: Jogging at forward direction 4: Jogging at reverse direction	0–4	0	Change during shutdown

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F08.11 0811	STOP/RESET Key Function 0: Valid only in keyboard control mode 1: Valid in any control mode	0–1	1	Change in real time
F08.12 0812	IGBT Temperature	-20°C to 120°C		Read-only parameter
F08.13 0813	Accumulated Power Consumption	0 kWh–65535 kWh		Read-only parameter
F08.14 0814	Reserved			
F08.15 0815	Reserved			

F09 Auxiliary Function Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F09.00 0900	Frequency Detection Value (FDT1) Valid when F03.01–F03.06 is set to 3: frequency level detection for FDT1 output.	0.00 Hz–F00.13	50.00 Hz	Change in real time
F09.01 0901	Frequency Detection Delay (FDT1) Valid when F03.01–F03.06 is set to 3: frequency level detection for FDT1 output. 100% corresponding to F09.00 [frequency detection value (FDT1)].	0.0%–100.0%	5.0%	Change in real time
F09.02 0902	Detection Width of Target Frequency Reached Valid when F03.01–F03.06 is set to 4: frequency reached. 100% corresponding to the maximum frequency.	0.0%–100.0%	0.0%	Change in real time
F09.03 0903	Frequency Detection Value (FDT2) Valid when F03.01–F03.06 is set to 25: frequency level detection for FDT2 output.	0.00 Hz–F00.13	50.00 Hz	Change in real time
F09.04 0904	Frequency Detection Delay (FDT2) Valid when F03.01–F03.06 is set to 25: frequency level detection for FDT2 output. 100% corresponding to F09.03 [frequency detection value (FDT2)].	0.0%–100.0%	5.0%	Change in real time
F09.05 0905	Frequency Detection Value 1 of Random Frequency Reached Valid when F03.01–F03.06 is set to 26: frequency arrival detection value 1.	0.00 Hz–F00.13	50.00 Hz	Change in real time
F09.06 0906	Width Detection Value 1 of Random Frequency Reached Valid when F03.01–F03.06 is set to 26: frequency arrival detection value 1. 100.0% corresponding to the maximum frequency.	0.0%–100.0%	0.0%	Change in real time
F09.07 0907	Frequency Detection Value 2 of Random Frequency Reached Valid when F03.01–F03.06 is set to 27: frequency arrival detection value 2.	0.00 Hz–F00.13	50.00 Hz	Change in real time
F09.08 0908	Width Detection Value 2 of Random Frequency Reached Valid when F03.01–F03.06 is set to 27: frequency arrival detection value 2. 100.0% corresponding to the maximum frequency.	0.0%–100.0%	0.0%	Change in real time
F09.09 0909	Zero Current Detection Level Valid when F03.01–F03.06 is set to 34: zero current state. 100% corresponding to the rated current of the motor.	0.0%–300.0%	5.0%	Change in real time
F09.10 0910	Zero Current Detection Delay Valid when F03.01–F03.06 is set to 34: zero current state.	0.01s–600.00s	0.10s	Change in real time
F09.11 0911	Output Over-Current Threshold Valid when F03.01–F03.06 is set to 36: output current out of range 0.0% (no detection) 0.1%–300.0% (100% corresponding to the rated current of the motor).	0.0%–300.0%	200.0%	Change in real time
F09.12 0912	Output Over-Current Detection Delay Valid when F03.01–F03.06 is set to 36: output current out of range.	0.00s–600.00s	0.00s	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F09.13 0913	Detection Level of Current 1 Valid when F03.01–F03.06 is set to 28: current arrival of 1. Same as the rated current of the motor.	0.0%–300.0%	100%	Change in real time
F09.14 0914	Detection Width of Current 1 Valid when F03.01–F03.06 is set to 28: current arrival of 1. Same as the rated current of the motor.	0.0%–300.0%	0.0%	Change in real time
F09.15 0915	Detection Level of Current 2 Valid when F03.01–F03.06 is set to 29: current arrival of 2. Same as the rated current of the motor.	0.0%–300.0%	100%	Change in real time
F09.16 0916	Detection Width of Current 2 Valid when F03.01–F03.06 is set to 29: current arrival of 2. Same as the rated current of the motor.	0.0%–300.0%	0.0%	Change in real time
F09.17 0917	Timing Function 0: Invalid 1: Valid	0–1	0	Change during shutdown
F09.18 0918	Running Time Setting Channel 0: F09.19 1: AI1 2: AI2 3: AI3	0–3	0	Change during shutdown
F09.19 0919	Running Time Valid when F09.18 [timer running time] is set to 0.	0.0 min–6500.0 min	0.0 min	Change during shutdown
F09.20 0920	Accumulative Power-on Time Threshold Valid when F03.01–F03.06 is set to 24: power-on time reached	0 H–65000 H	0 H	Change in real time
F09.21 0921	Accumulative Running Time Threshold Valid when F03.01–F03.06 is set to 12: running time reached	0 H–65000 H	0 H	Change in real time
F09.22 0922	Accumulative Power-on Time Arrival Action 0: Continue running 1: Fault prompt	0–1	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F09.23 0923	Accumulative Running Time Arrival Action 0: Continue running 1: Fault prompt	0–1	0	Change in real time
F09.24 0924	Action When Frequency Reference Lower Than Frequency Lower Limit 0: Run at the lower frequency 1: Stop 2: Run at zero speed	0–2	0	Change in real time
F09.25 0925	Running Time Threshold This Time Valid when F03.01–F03.06 is set to 40: running time reached.	0.0 min–6500.0 min	0.0 min	Change during shutdown
F09.26 0926	AI1 Input Voltage Protection Value Lower Limit Valid when F03.01–F03.06 is set to 31: AI1 input out of range.	0.00 V–F09.27	3.10 V	Change in real time
F09.27 0927	AI1 Input Voltage Protection Value Upper Limit Valid when F03.01–F03.06 is set to 31: AI1 input out of range.	F09.26–10.00 V	6.80 V	Change in real time
F09.28 0928	Reserved			
F09.29 0929	Cooling Fan Control 0: Fan runs during operation 1: Cooling fan always runs	0–1	0	Change during shutdown
F09.30 0930	Temperature Protection Threshold 1 Valid when the temperature expansion module is used, corresponding to channel 1.	0–200°C	90°C	Change in real time
F09.31 0931	Temperature Protection Threshold 2 Valid when the temperature expansion module is used, corresponding to channel 2.	0–200°C	90°C	Change in real time
F09.32 0932	Temperature Protection Threshold 3 Valid when the temperature expansion module is used, corresponding to channel 3.	0–200°C	90°C	Change in real time
F09.33 0933	Temperature Protection Threshold 4 Valid when the temperature expansion module is used, corresponding to channel 4.	0–200°C	90°C	Change in real time
F09.34 0934	Temperature Protection Threshold 5 Valid when the temperature expansion module is used, corresponding to channel 5.	0–200°C	90°C	Change in real time

F10 Process PID Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode						
F10.00 1000	PID Reference Setting Channel 0: Set PID value 1: AI1 2: AI2 3: AI3 4: Pulse setting (DI5) 5: Communication setting 6: Multi-segment command setting	0–6	0	Change in real time						
F10.01 1001	PID Digital Setting Valid when F10.00 [set PID source] is set to [0: set PID value].	0.0%–100.0%	50.0%	Change in real time						
F10.02 1002	PID Feedback Setting Channel 0: AI1 1: AI2 2: AI3 3: AI1-AI2 4: Pulse setting (DI5) 5: Communication setting 6: AI1+AI2 7: MAX(AI1 , AI2) 8: MIN(AI1 , AI2)	0–8	0	Change in real time						
F10.03 1003	PID Reference and Feedback Range	0–65535	1000	Change in real time						
F10.04 1004	PID Operation Direction 0: Forward direction 1: Reverse direction	0–1	0	Change in real time						
F10.05 1005	Proportional Gain	0.0–100.0	20.0	Change in real time						
F10.06 1006	Integral Time	0.01s–10.00s	2.00s	Change in real time						
F10.07 1007	Differential Time	0.000s–10.000s	0.000s	Change in real time						
F10.08 1008	PID Initial Value	0.0%–100.0%	0.0%	Change in real time						
F10.09 1009	PID Initial Value Active Time	0.00s–650.00s	0.00s	Change in real time						
F10.10 1010	PID Integral Property Ones place: Integral separated 0: Invalid; 1: Valid Tens place: Whether to stop integration when output reaches the limit 0: Continue integration; 1: Stop integration	00–11	00	Change in real time						
		<table><tr><td>Tens place</td><td>Ones place</td></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr></table>			Tens place	Ones place	0	0	1	1
Tens place	Ones place									
0	0									
1	1									
F10.11 1011	PID Differential Limit	0.00%–100.00%	0.10%	Change in real time						
F10.12 1012	PID Output Limit in Reverse Direction	0.00 Hz–F00.13	2.00 Hz	Change in real time						

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F10.13 1013	PID Error Limit	0.0%–100.0%	0.0%	Change in real time
F10.14 1014	Maximum Positive Deviation between Two Outputs	0.0%–100.0%	1.00%	Change in real time
F10.15 1015	Maximum Negative Deviation between Two Outputs	0.0%–100.0%	1.00%	Change in real time
F10.16 1016	PID Reference Change Time	0.00s–650.00s	0.00s	Change in real time
F10.17 1017	PID Feedback Filter Time	0.00s–60.00s	0.00s	Change in real time
F10.18 1018	PID Output Filter Time	0.00s–60.00s	0.00s	Change in real time
F10.19 1019	Reserved			
F10.20 1020	Proportional Gain 2	0.0–100.0	20.0	Change in real time
F10.21 1021	Integral Time 2	0.01s–10.00s	2.00s	Change in real time
F10.22 1022	Differential Time 2	0.000s–10.000s	0.000s	Change in real time
F10.23 1023	PID Parameter Switchover Condition 0: No switch 1: DI terminal 2: Auto switch according to deviation 3: Auto switch according to operating frequency	0–3	0	Change in real time
F10.24 1024	PID Error 1 for Auto Switchover	0.0–F10.25	20.0%	Change in real time
F10.25 1025	PID Error 2 for Auto Switchover	F10.24–100.0	80.0%	Change in real time
F10.26 1026	Selection of PID Operation at Stop 0: No operation during shutdown 1: Operation during shutdown	0–1	0	Change in real time
F10.27 1027	Detection Level of PID Feedback Loss 0.0%: No feedback loss detection 0.1%–100.0%	0.0%–100.0%	0.0%	Change in real time
F10.28 1028	Detection Time of PID Feedback Loss	0.0s–20.0s	0.0s	Change in real time

F11 Communication Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F11.00 1100	Reserved			
F11.01 1101	Modbus Communication Address 0: Broadcast address 1–247	0–247	1	Change in real time
F11.02 1102	Modbus Baud Rate 2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS	2–7	5	Change in real time
F11.03 1103	Modbus Data Format Symbol 0: No check (8-N-2) 1: Even parity (8-E-1) 2: Odd parity (8-O-1) 3: No check (8-N-1)	0–3	0	Change in real time
F11.04 1104	Modbus Response Delay	0–20 ms	2 ms	Change in real time
F11.05 1105	Modbus Communication Timeout Time 0.0: Invalid 0.1–60.0s	0.0s–60.0s	0.0s	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F11.06 1106	Reserved			
F11.07 1107	Canopen Communication address 1–247	1–247	1	Change in real time
F11.08 1108	Canopen Baud Rate 0: 20 Kbps 1: 50 Kbps 2: 100 Kbps 3: 125 Kbps 4: 250 Kbps 5: 500 Kbps 6: 1 Mbps	0–6	5	Change in real time
F11.09 1109	Canopen Communication Timeout Time 0.0: Invalid 0.1–60.0s	0.0s–60.0s	0.0s	Change in real time
F11.10 1110	Reserved			
F11.11 1111	Reserved			
F11.12 1112	Canopen Communication Timeout Time 0.0: Invalid 0.1–60.0s	0.0s–60.0s	0.0s	Change in real time
F11.13 1113	Reserved			
11.14 1114	Profibus-DP Slave Address 1–126	1–126	1	Change in real time
F11.18 1118	Reserved			

F12 Fault Protection Parameter Group

Function Code	Name/Description	Adjustment Range		Factory Settings	Change Mode
F12.00 1200	Reserved				
F12.01 1201	Reserved				
F12.02 1202	Reserved				
F12.03 1203	Reserved				
F12.04 1204	Under-Voltage Threshold	200.0 V–2000.0 V		350.0 V	Change in real time
F12.05 1205	Over-Voltage Threshold	200.0 V–2000.0 V		Subject to the rated value of the AC drive	Change during shutdown
F12.06 1206	Motor Overload Protection Selection 0: Disallow 1: Allow	0–1		1	
F12.07 1207	Motor Overload Protection Gain Setting value = required protection time/default protection time Example: When the factor is 150% and the required protection time is 3 min, set F12.07 to 0.5 (3/6=0.5). The default motor overload curve is shown in the right figure:	0.20–10.00		1.00	Change in real time
		Overload multiple	Default protection time	Overload multiple	Default protection time
		110%	100 min	160%	3 min
		120%	80 min	170%	2 min
		130%	30 min	180%	90s
		140%	8 min	190%	60s
		150%	6 min	200%	50s
F12.08 1208	Motor Overload Pre-warning Coefficient Valid when F03.01–F03.06 is set to 6: motor overload pre-alarm.	50%–100%		80%	Change in real time
F12.09 1209	Underload Protection Selection 0: Invalid 1: Valid	0–1		0	Change in real time
F12.10 1210	Underload Detection Level	0.0%–100.0%		10.0%	Change in real time
F12.11 1211	Underload Detection Time	0.0s–60.0s		1.0s	Change in real time
F12.12 1212	Temperature Protection Selection 0: Invalid 1: Enabled Bit0: I/O expansion module temperature protection enable Bit1: Temperature expansion card channel 1 temperature protection enable	00000–11111		00000	Change in real time
Function	Name/Description	Adjustment		Factory	Change

Code		Range	Settings	Mode						
F12.12 1212	Temperature Protection Options (continued) Bit2: Temperature expansion card channel 2 temperature protection enable Bit3: Temperature expansion card channel 3 temperature protection enable Bit4: Temperature expansion card channel 4 temperature protection enable Bit5: Temperature expansion card channel 5 temperature protection enable Valid when the I/O expansion module is used Valid when the temperature expansion module is used.	00000–11111	00000	Change in real time						
F12.13 1213	Reserved									
F12.14 1214	Reserved									
F12.15 1215	Overspeed Detection Level 100% corresponding to the maximum frequency.	0.0%–50.0%	20.0%	Change in real time						
F12.16 1216	Overspeed Detection Time 0.0s: No detection 0.1s–60.0s	0.0s–60.0s	1.0s	Change in real time						
F12.17 1217	Detection Level of Speed Error 100% corresponding to the maximum frequency.	0.0%–50.0%	20.0%	Change in real time						
F12.18 1218	Detection Time of Speed Error 0.0s: No detection 0.1s–60.0s	0.0s–60.0s	5.0s	Change in real time						
F12.19 1219	Startup Protection Selection 0: No protection 1: Protection	0–1	0	Change in real time						
F12.20 1220	Detection of Short-Circuit to Ground upon Power-on 0: Invalid 1: Valid Ones place: Short to ground protection during power-on Tens place: Short to ground protection before running	00–11	00	Change in real time						
		<table><tr><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr></table>		Tens place	Ones place	0	0	1	1	
Tens place	Ones place									
0	0									
1	1									
F12.21 1221	Input Phase Loss/Contactor Protection Selection 0: Disallow 1: Allow Ones place: Input phase loss protection Tens place: Contactor closure protection	00–11	11	Change in real time						
		<table><tr><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr></table>		Tens place	Ones place	0	0	1	1	
Tens place	Ones place									
0	0									
1	1									

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode		
F12.22 1222	Output Phase Loss Protection	00–11	01	Change in real time		
	0: Disallow 1: Allow					
	Ones place: Input phase loss protection		Tens place	Ones place		
	Tens place: Output phase loss protection before running (applicable to synchronous motors)		0	0		
			1	1		
F12.23 1223	Auto Reset Times	0–20	0	Change in real time		
F12.24 1224	Delay of Auto Reset	0.1s–100.0s	1s	Change in real time		
	Valid when F12.23 [number of automatic fault resets] is set to a value other than 0.					
F12.25 1225	Selection of DO Action during Auto Reset	0–1	0	Change in real time		
	0: No action 1: Action					
F12.26 1226	Fault Protection Action Selection 1	00000–22222	00000	Change in real time		
	0: Coast to stop					
	1: Shut down based on the shutdown mode					
	2: Continue running					
	Ones place: Motor overload	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place
	Tens place: Input phase loss	0	0	0	0	0
		1	1	1	1	
		2	2	2	2	
	Hundreds place: Input phase loss					
	Thousands place: External fault					
	Ten thousands place: Communication exception					
F12.27 1227	Fault Protection Action Selection 2	00000–22022	00000	Change in real time		
	0: Coast to stop					
	1: Shut down based on the shutdown mode					
	2: Continue running					
	Ones place: Encoder fault	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place
	Tens place: Function code reading and writing exception	0	0	0	0	0
		1	1	0	1	
	Hundreds place: Reserved					
	Thousands place: Motor overheating					
	Ten thousands place: Running time reached					
F12.28 1228	Fault Protection Action Selection 3	00000–22222	00000	Change in real time		
	0: Coast to stop					
	1: Shut down based on the shutdown mode					
	2: Continue running					
	Ones place: User-defined fault 1	Ten thousands place	Thousands place	Hundreds place	Tens place	Ones place
	Tens place: User-defined fault 2	0	0	0	0	0
		1	0	1	1	
		2	0	2	2	
	Hundreds place: Power-on time reached					
	Thousands place: Underload					
	Ten thousands place: PID feedback loss during operation					

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode												
F12.29 1229	Fault Protection Action Selection 4 0: Coast to stop 1: Shut down based on the shutdown mode 2: Continue running Ones place: Excessive speed deviation Tens place: Motor overspeed Hundreds place: Initial position error	000–222	000	Change in real time												
		<table><tr><th>Hundreds place</th><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td><td>2</td></tr></table>	Hundreds place	Tens place	Ones place	0	0	0	1	1	1	2	2	2		
Hundreds place	Tens place	Ones place														
0	0	0														
1	1	1														
2	2	2														
F12.30 1230	Reserved															
F12.31 1231	Frequency Selection for Continuing Operation upon Fault 0: Operation at the current frequency 1: Operation at the set frequency 2: Operation at the upper frequency 3: Operation at the lower frequency 4: Operation at the standby frequency in case of exceptions	0–4	0	Change in real time												
F12.32 1232	Backup Frequency upon Fault Valid when F12.31 [frequency when running in case of faults] is set to 4: run at the standby frequency in case of exceptions 100% corresponding to the maximum frequency of F00.13	0.0%–100.0%	100%	Change in real time												
F12.33 1233	Braking Start Voltage	200.0 V–2000.0 V	Subject to the rated value of the AC drive	Change in real time												
F12.34 1234	Reserved															
F12.35 1235	UVW Encoder Malfunction Enabling 0: Disabled 1: Enabled	0–1	1	Change in real time												
F12.36 1236	Parameter Auto-Tuning Fault enabling 0: Disabled 1: Enabled	0–1	1	Change in real time												
F12.37 1237	Reserved															
F12.38 1238	Reserved															
F12.39 1239	Reserved															

F13 Fault Record Monitoring Parameter Group

Function Code	Name/Description (read-only)
F13.00 1300	Types of the First Four Faults For details on fault codes, please refer to [8 Faults – Causes – Countermeasures] of this manual.
F13.01 1301	Types of the First Three Faults For details on fault codes, please refer to [8 Faults – Causes – Countermeasures] of this manual.
F13.02 1302	Types of the First Two Faults For details on fault codes, please refer to [8 Faults – Causes – Countermeasures] of this manual.
F13.03 1303	Type of the First Fault For details on fault codes, please refer to [8 Faults – Causes – Countermeasures] of this manual.
F13.04 1304	Type of This Fault For details on fault codes, please refer to section [8 Faults – Causes – Countermeasures] of this manual.
F13.05 1305	Frequency during This Fault Unit: Hz
F13.06 1306	Current during This Fault Unit: A
F13.07 1307	Bus Voltage during This Fault Unit: V
F13.08 1308	Module Temperature during This Fault Unit: °C
F13.09 1309	Reserved
F13.10 1310	Frequency during the Previous Fault Unit: Hz
F13.11 1311	Current during the Previous Fault Unit: A
F13.12 1312	Bus Voltage during the Previous Fault Unit: V
F13.13 1313	Module Temperature during the Previous Fault Unit: °C
F13.14 1314	Reserved
F13.15 1315	Frequency during the Previous Two Faults Unit: Hz
F13.16 1316	Current during the Previous Two Faults Unit: A

Function Code	Name/Description (read-only)
F13.17 1317	Bus Voltage during the Previous Two Faults Unit: V
F13.18 1318	Module Temperature during the Previous Two Faults Unit: °C
F13.19 1319	Reserved
F13.20 1320	Frequency during the Previous Three Faults Unit: Hz
F13.21 1321	Current during the Previous Three Faults Unit: A
F13.22 1322	Bus Voltage during the Previous Three Faults Unit: V
F13.23 1323	Module Temperature during the Previous Three Faults Unit: °C
F13.24 1324	Reserved
F13.25 1325	Frequency during the Previous Four Faults Unit: Hz
F13.26 1326	Current during the Previous Four Faults Unit: A
F13.27 1327	Bus Voltage during the Previous Four Faults Unit: V
F13.28 1328	Module Temperature during the Previous Four Faults Unit: °C
F13.29 1329	Reserved

F15 Hardware and Software Identification Parameter Group

Function Code	Name/Description (read-only)
F15.00 1500	Product Model 200 – WD200 Series AC Drive
F15.01 1501	Rate Power of the AC Drive Subject to the rated value of the AC drive (unit: kW)
F15.02 1502	Rated Voltage of the AC Drive Subject to the rated value of the AC drive (unit: V)
F15.03 1503	Rate Current of the AC Drive Subject to the rated value of the AC drive (unit: A)
F15.04 1504	Accumulative Power-on Time Unit: h
F15.05 1505	Accumulative Running Time Unit: h
F15.07 1507	Functional Software Version Number
F15.08 1508	Performance Software Version Number

F16 AI/AO Calibration Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F16.00 1600	AI1 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.01 1601	AI1 Displayed Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.02 1602	AI1 Measured Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.03 1603	AI1 Displayed Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.10 1610	AI2 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.11 1611	AI2 Displayed Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.12 1612	AI2 Measured Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.13 1613	AI2 Displayed Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.20 1620	AI3 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.21 1621	AI3 Displayed Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.22 1622	AI3 Measured Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.23 1623	AI3 Displayed Voltage 2	-10.00 V–10.000 V	2.000 V	Change in real time
F16.30 1630	AO1 Target Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.31 1631	AO1 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.32 1632	AO1 Target Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.33 1633	AO1 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time

F16.40 1640	AO2 Target Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F16.41 1641	AO2 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.42 1642	AO2 Target Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time
F16.43 1643	AO1 Measured Voltage 1	-10.00 V–10.000 V	2.000 V	Change in real time

F18 Multi-Segment Speed, Simple PLC Parameter Group

It is set to the following parameters through F02 group menu [DI function]:

12: Multi-segment command terminal 1

13: Multi-segment command terminal 2

14: Multi-segment command terminal 3

15: Multi-segment command terminal 4

A maximum of 16 speeds can be set, as shown in the table below:

16 Speeds	8 Speeds	4 Speeds	2 Speeds	Set Speed
0	0	0	0	Frequency reference 1
0	0	0	1	Frequency reference 2
0	0	1	0	Frequency reference 3
0	0	1	1	Frequency reference 4
0	1	0	0	Frequency reference 5
0	1	0	1	Frequency reference 6
0	1	1	0	Frequency reference 7
0	1	1	1	Frequency reference 8
1	0	0	0	Frequency reference 9
1	0	0	1	Frequency reference 10
1	0	1	0	Frequency reference 11
1	0	1	1	Frequency reference 12
1	1	0	0	Frequency reference 13
1	1	0	1	Frequency reference 14
1	1	1	0	Frequency reference 15
1	1	1	1	Frequency reference 16

F18 Multi-Segment Speed, Simple PLC Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F18.00 1800	Frequency Reference 1 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change during shutdown
F18.01 1801	Frequency Reference 2 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change during shutdown
F18.02 1802	Frequency Reference 3 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.03 1803	Frequency Reference 4 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.04 1804	Frequency Reference 5 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.05 1805	Frequency Reference 6 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.06 1806	Frequency Reference 7 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.07 1807	Frequency Reference 8 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.08 1808	Frequency Reference 9 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.09 1809	Frequency Reference 10 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.10 1810	Frequency Reference 11 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.11 1811	Frequency Reference 12 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.12 1812	Frequency Reference 13 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.13 1801	Frequency Reference 14 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.14 1814	Frequency Reference 15 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time
F18.15 1815	Frequency Reference 16 F00.13 [maximum frequency]	-F00.13–F00.13	0.00 Hz	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode						
F18.20 1820	Simple PLC Running Mode 0: Stop after running one cycle 1: Keep final values after running one cycle 2: Repeat after running one cycle	0–2	0	Change in real time						
F18.21 1821	Simple PLC Power Down Retentive Selection Ones place: 0: No memory after power down 1: Memory after power-off Tens place: 0: No memory after power-off 1: Memory after power-off	00–11	00							
		<table><tr><th>Tens place</th><th>Ones place</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr></table>			Tens place	Ones place	0	0	1	1
Tens place	Ones place									
0	0									
1	1									
F18.22 1822	Running Time of PLC Reference 1 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time						
F18.23 1823	Acceleration/Deceleration Time of PLC Reference 1 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time						
F18.24 1824	Running Time of PLC Reference 2 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time						
F18.25 1825	Acceleration/Deceleration Time of PLC Reference 2 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time						
F18.26 1826	Running Time of PLC Reference 3 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time						

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F18.27 1827	Acceleration/Deceleration Time of PLC Reference 3 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.28 1828	Running Time of PLC Reference 4 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.29 1829	Acceleration/Deceleration Time of PLC Reference 4 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.30 1830	Running Time of PLC Reference 5 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.31 1831	Acceleration/Deceleration Time of PLC Reference 5 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.32 1832	Running Time of PLC Reference 6 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.33 1833	Acceleration/Deceleration Time of PLC Reference 6 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F18.34 1834	Running Time of PLC Reference 7 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.35 1835	Acceleration/Deceleration Time of PLC Reference 7 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.36 1836	Running Time of PLC Reference 8 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.37 1837	Acceleration/Deceleration Time of PLC Reference 8 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.38 1838	Running Time of PLC Reference 9 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.39 1839	Acceleration/Deceleration Time of PLC Reference 9 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.40 1840	Running Time of PLC Reference 10 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F18.41 1841	Acceleration/Deceleration Time of PLC Reference 10 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.42 1842	Running Time of PLC Reference 11 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.43 1843	Acceleration/Deceleration Time of PLC Reference 11 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.44 1844	Running Time of PLC Reference 12 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.45 1845	Acceleration/Deceleration Time of PLC Reference 12 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.46 1846	Running Time of PLC Reference 13 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.47 1847	Acceleration/Deceleration Time of PLC Reference 13 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F18.48 1848	Running Time of PLC Reference 14 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.49 1849	Acceleration/Deceleration Time of PLC Reference 14 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.50 1850	Running Time of PLC Reference 15 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.51 1851	Acceleration/Deceleration Time of PLC Reference 15 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.52 1852	Running Time of PLC Reference 16 The time unit is set through F18.54 [PLC running time unit]: 0: s 1: h	0.0–6500.0	0.0	Change in real time
F18.53 1853	Acceleration/Deceleration Time of PLC Reference 16 0: Acceleration and deceleration time 1 1: Acceleration and deceleration time 2 2: Acceleration and deceleration time 3 3: Acceleration and deceleration time 4	0–3	0	Change in real time
F18.54 1854	PLC Running Time Unit 0: s 1: h	0–1	0	Change in real time
F18.55 1855	Multi-Segment Command 1 Input Mode 0: F18.00 1: AI1 2: AI2 3: AI3 4: Pulse 5: PID 6: F00.07 preset frequency, change through UP/DOWN	0–6	0	Change in real time

F20 Torque Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F20.00 2000	Speed/Torque Control Mode Selection 0: Speed control 1: Torque control	0–1	0	Change during shutdown
F20.01 2001	Torque Reference Selection 0: F20.02 digital setting of torque 1: AI1 2: AI2 3: AI3 4: Pulse setting 5: Communication setting 6: MIN(AI1, AI2) 7: MAX(AI1, AI2)	0–7	0	Change during shutdown
F20.02 2002	Torque Digital Setting Valid when F20.01 [torque source] is set to [0: digital setting of torque].	-200.0%–+200.0%	50%	Change in real time
F20.03 2003	Reserved			
F20.04 2004	Reserved			
F20.05 2005	Forward Maximum Frequency in Torque Control	0.00 Hz–F00.13	50.00 Hz	Change in real time
F20.06 2006	Reverse Maximum Frequency in Torque Control	0.00 Hz–F00.13	50.00 Hz	Change in real time
F20.07 2007	Torque Acceleration Time	0.00s–650.00s	0.00s	Change in real time
F20.08 2008	Torque Deceleration Time	0.00s–650.00s	0.00s	Change in real time

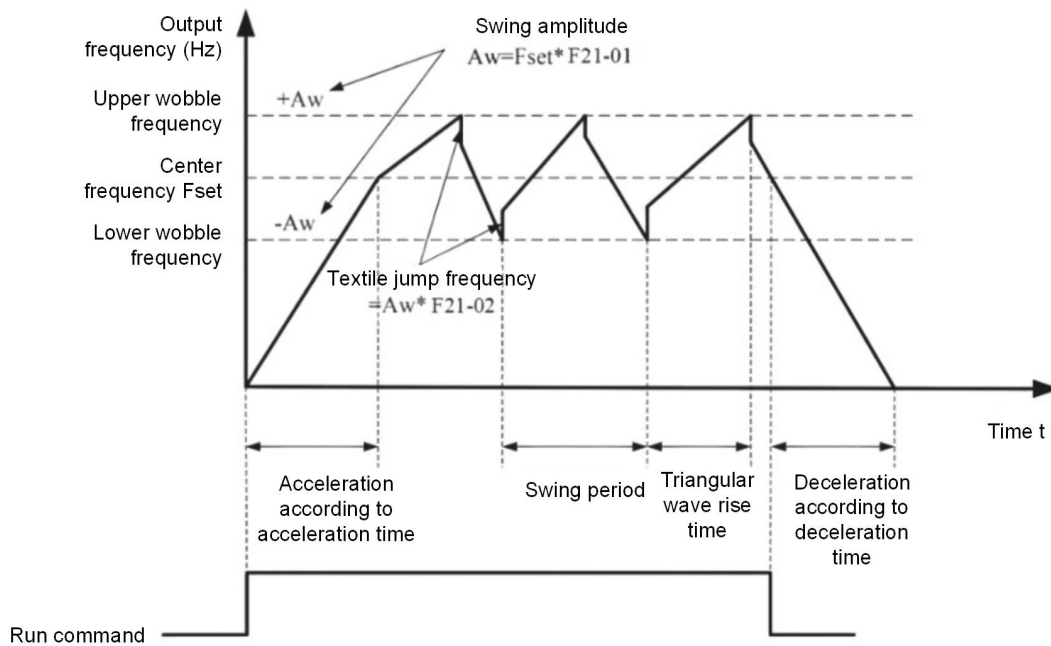
F21 Wobble Control Parameter Group

Wobble control is suitable for industries such as textiles, chemical fibers, and scenarios requiring lateral movement or winding functions.

Wobble function means that the output frequency of the AC drive swings up and down with the set frequency as the center. The trajectory of the running frequency on the time axis is shown in the figure below.

Here, the swing range is determined by F21.00 [wobble setting mode] and F21.01 [wobble amplitude].

The F21.02 [jump frequency amplitude] represents the frequency percentage relative to the swing range, i.e., the jump frequency = swing x jump frequency amplitude (F21.02).



The set length is set through parameters of F21.05–F21.07:

The length information is acquired through the multi-functional digital input (DI) terminals. By dividing the number of pulses sampled by the terminal by F21.07 [pulses per meter], the actual length can be calculated and obtained as F21.06 [actual length]. When the actual length exceeds the set length F21.05, the multi-functional digital output (DO) will output an ON signal, indicating "length reached".

During the set length control process, the length reset operation can be reset through the multi-functional DI terminals (28 selected for DI function). For specific details, please refer to F02.00–F02.09. The corresponding input terminal function should be set to "length count input" (function 27) in the application, and DI5 port must be used when the pulse frequency is high.

The counting function is set through parameters F21.08 [set count value] and F21.09 [specified count value].

The counting value is set through parameters F21.08 and F21.09:

The information needs to be collected through the multi-functional DI terminals. In the application, the corresponding F02 group input terminal function should be set to "counter input" (function 25), and DI5 port must be used when the pulse frequency is high.

When the count value reaches the set counting value F21.08, the multi-functional DO will output an ON signal, indicating "set counting value reached", and then the counter stops counting. When the count value reaches the specified counting value F21.09, the multi-functional DO will output an ON signal, indicating "specified counting value reached", and then the counter continues counting until the "set counting value" is reached.

The specified count value F21.09 should not exceed the set counting value F21.08.

F21 Wobble Control Parameter Group

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F21.00 2100	Swing Setting Method 0: Relative to center frequency (given frequency) 1: Relative to maximum frequency	0–1	0	Change in real time
F21.01 2101	Swing Amplitude When F21.00 [wobble setting mode] is set to 0: relative to center frequency, it is 100% corresponding to the given frequency. When F21.00 [wobble setting mode] is set to 1: relative to maximum frequency, it is 100% corresponding to the maximum frequency.	0.0%–100.0%	0.0%	Change in real time
F21.02 2102	Hopping Frequency Amplitude	0.0%–50.0%	0.0%	Change in real time
F21.03 2103	Swing Period	0.1s–3000.0s	10.0s	Change in real time
F21.04 2104	Rise Time of Triangle Waveform of Swing Percentage of the triangular wave rise time relative to the wobble cycle F21.03 Triangular wave rise time = Wobble cycle F21.03 x Triangular wave rise time of wobble F21.04 (unit: s) Triangular wave fall time = Wobble cycle F21.03 x (1 - Triangular wave rise time of wobble F21.04) (unit: s)	0.1%–100.0%	50.0	Change in real time
F21.05 2105	Set Length	0 m–65535 m	1,000 m	Change in real time
F21.06 2106	Actual Length	0 m–65535 m		Read-only
F21.07 2107	Pulses Per Meter	0.1–6553.5	100.0	Change in real time
F21.08 2108	Set Count	1–65535	1000	Change in real time
F21.09 2109	Specified Count	1–65535	1000	Change in real time

U47 Monitoring Menu Parameter Group

Function Code	Name/Description (read-only)
U47.00 4700	Running Frequency Unit: Hz
U47.01 4701	Set Frequency Unit: Hz
U47.02 4702	Bus Voltage Unit: V
U47.03 4703	Output Voltage Unit: V
U47.04 4704	Output Current Unit: A
U47.05 4705	Output Power Unit: kW
U47.06 4706	Output Torque Unit: %
U47.07 4707	DI Input Status
U47.08 4708	DO Output Status
U47.09 4709	AI1 Physical Value Unit: V When the AI1 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.10 4710	AI2 physical value Unit: V When the AI2 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.11 4711	AI3 physical value Unit: V When the AI3 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.12 4712	Count
U47.13 4713	Length Unit: m
U47.14 4714	Load Speed Display Unit: Hz
U47.15 4715	PID Reference

Function Code	Name/Description (read-only)
U47.16 4716	PID Feedback
U47.17 4717	PLC Stage
U47.18 4718	Input Pulse Frequency Unit: kHz
U47.19 4719	Feedback Speed Unit: Hz
U47.20 4720	Remaining Run Time Unit: min
U47.21 4721	Physical Value before AI1 Correction Unit: V When the AI1 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.22 4722	Physical Value before AI2 Correction Unit: V When the AI2 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.23 4723	Physical Value before AI3 Correction Unit: V When the AI1 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.24 4724	Fixed Length Control of Linear Speed Unit: m/s
U47.25 4725	Current Power-on Time Unit: min
U47.26 4726	Current Run Time Unit: min
U47.27 4727	Input Pulse Frequency Unit: Hz
U47.28 4728	Communication Reference Set communication frequency Unit: Hz
U47.29 4729	Encoder Feedback Speed Unit: Hz
U47.30 4730	Main Frequency Display Unit: Hz

Function Code	Name/Description (read-only)
U47.31 4731	Auxiliary Frequency Display Unit: Hz
U47.32 4732	Reserved
U47.33 4733	Synchronous Motor Rotor Position Unit: °
U47.34 4734	Motor Temperature Unit: °C
U47.35 4735	Target Torque Unit: %
U47.36 4736	Position of Rotary Transformer Range: 0–4096 Corresponding to 0°–360°
U47.37 4737	Power Factor Angle Unit: °
U47.38 4738	Reserved
U47.39 4739	V/F Separation Target Voltage Unit: V
U47.40 4740	V/F Separation Output Voltage Unit: V
U47.41 4741	Reserved
U47.42 4742	Reserved
U47.43 4743	Reserved
U47.44 4744	Reserved
U47.45 4745	Reserved
U47.46 4746	Reserved
U47.49 4749	Motor Speed Unit: rpm

Function Code	Name/Description (read-only)
U47.51 4751	AO1 Actual Output Voltage Unit: V When the AO1 output is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.52 4752	AO2 Actual Output Voltage When the AO1 input is a current signal, the voltage value should be doubled and converted to the current signal in mA.
U47.58 4758	Reserved
U47.59 4759	Reserved
U47.60 4760	Reserved
U47.61 4761	AC Drive Status Bit0-Bit1 0: Stop 1: Rotate at forward direction 2: Rotate at reverse direction Bit2-Bit3 0: Constant speed 1: Acceleration 2: Slowdown
U47.62 4762	Current Fault Code For details on fault codes, please refer to section [8 Faults – Causes – Countermeasures] of this manual.
U47.76 4776	Accumulative of AC Drive Overload Unit: %

U49 Monitoring Menu Parameter Group

Function Code	Name/Description (read-only)
U49.00 4900	AC Drive Status Bit0-Bit1 0: Stop 1: Rotate at forward direction 2: Rotate at reverse direction Bit2-Bit3 0: Constant speed 1: Acceleration 2: Slowdown Bit4 0: DC bus voltage normal 1: DC bus voltage insufficient
U49.01 4901	Current Fault Display the current fault code. For example, 5 indicates ERR05 fault code.
U49.02 4902	Running Frequency Unit: Hz
U49.03 4903	Set Frequency Unit: Hz
U49.04 4904	Reserved
U49.05 4905	Output Current Unit: A
U49.06 4906	Reserved
U49.07 4907	Output Voltage Unit: V
U49.08 4708	Motor Speed Unit: rpm
U49.09 4909	Output Power Unit: kW
U49.10 4910	Target Torque Unit: %
U49.11 4911	Output Torque Unit: %
U49.12 4912	Bus Voltage Unit: V

Function Code	Name/Description (read-only)
U49.13 4913	IGBT Temperature Unit: °C
U49.14 4914	Reserved
U49.15 4915	Motor Temperature Unit: °C

8 Faults – Causes – Countermeasures

Fault Code	Fault Name	Possible Causes	Countermeasures
ERR01	IGBT Fault	• Short circuit in AC drive output circuit • Motor-to- AC drive cable too long • Module overheating • Hardware fault	• Check the cable connection between the AC drive and the motor, as well as the motor insulation. • Check whether the motor cable length exceeds the specified value, and if necessary, install an output reactor/output filter. • Check whether the AC drive fan is working properly and whether the air duct is unimpeded. • Contact Wolong's technical support.
ERR02	Acceleration Overcurrent	• AC drive output grounding or short circuit • Vector control mode without parameter auto-tuning • Acceleration time too short • Improper torque boost or V/F curve • Low voltage • Starting a rotating motor • Sudden load increase during acceleration • Insufficient AC drive model	• Check the cable connection between the AC drive and the motor, as well as the motor insulation. • Perform motor parameter auto-tuning. • Check and adjust the acceleration time. • Check and adjust the torque boost parameters or V/F curve. • Check the incoming line voltage. • Choose speed tracking start or restart after the motor has stopped. • Check the load and eliminate any sudden load increases. • Check whether the AC drive power matches the load requirements.
ERR03	Deceleration Overcurrent	• AC drive output grounding or short circuit • The control mode without parameter auto-tuning • Deceleration time too short • Low voltage • Sudden load increase during deceleration • High load inertia	• Check the cable connecting the AC drive and the motor, as well as the motor insulation. • Perform motor parameter auto-tuning. • Check and adjust the deceleration time. • Check the incoming line voltage. • Check the load and eliminate any sudden load increases. • Add braking units and braking resistors.
ERR04	Overcurrent during Operation	• AC drive output grounding or short circuit • Vector control mode without parameter auto-tuning • Low voltage • Sudden load increase during operation • Insufficient AC drive model	• Check the cable connection between the AC drive and the motor, as well as the motor insulation. • Perform motor parameter auto-tuning. • Check the incoming line voltage. • Check the load and eliminate any sudden load increases. • Check whether the AC drive power matches the load requirements.

Faults – Causes – Countermeasures

User Guide

Fault Code	Fault Name	Possible Causes	Countermeasures
ERR05	Acceleration Overvoltage	• High input voltage • External force dragging the motor during acceleration • Acceleration time too short	• Check the incoming line voltage. • Check the load and add braking units and braking resistors if necessary. • Check and adjust the acceleration time.
ERR06	Deceleration Overvoltage	• High input voltage • External force dragging the motor during deceleration • Deceleration time too short • High load inertia	• Check the incoming line voltage. • Check the load and add braking units and braking resistors if necessary. • Check and adjust the deceleration time. • Add braking units and braking resistors.
ERR07	Overvoltage during Operation	• High input voltage • External force dragging the motor during operation	• Check the incoming line voltage. • Check the load and add braking units and braking resistors if necessary.
ERR08	Under-Voltage	• Power outage • Low input voltage • Hardware fault	• Simply power cycle to restore. • Check the incoming line voltage. • Contact Wolong's technical support.
ERR09	AC Drive Overload	• Overload/stall • Insufficient AC drive model	• Check the load and mechanical conditions. • Check whether the AC drive power matches the load.
ERR10	AC Drive Overheating	• High ambient temperature • AC Drive air duct blocked • AC Drive fan not running • Carrier frequency set too high • Hardware fault	• Check the ambient temperature and ventilation on site. • Check the AC Drive air duct and clean it if necessary. • Check whether the AC Drive fan works properly and replace it if necessary. • Check and lower the carrier frequency. • Contact Wolong's technical support.
ERR12	Input Phase Loss	• Phase loss for input power supply • Hardware fault	• Check the input power supply. • Contact Wolong's technical support.

Faults – Causes – Countermeasures

User Guide

Fault Code	Fault Name	Possible Causes	Countermeasures
ERR13	Output Phase Loss	- Phase loss for the output cable from the AC Drive to the motor - Phase loss for motor - Hardware fault	- Check the AC Drive/motor wiring and cable. - Check the motor. - Contact Wolong's technical support.
ERR17	Current Detection Fault	Hardware fault	Contact Wolong's technical support.
ERR18	Pre-charging Fault	Hardware fault	- Restart the AC Drive. - Contact Wolong's technical support.
ERR19	EEPROM Fault	Main control board hardware fault	Contact Wolong's technical support.
ERR20	Encoder Fault	- Incompatibility between the encoder and the AC Drive - Encoder wiring error - Encoder damaged - Speed feedback encoder module damaged	- Check whether the signal type and voltage of the encoder and encoder module are compatible. - Check the encoder wiring. - Replace the encoder. - Replace the speed feedback encoder module.
ERR23	Parameter Auto-Tuning Fault	- Inaccurate motor data - Parameter auto-tuning timeout	- Reset motor data based on the motor nameplate. - Check whether the cable between the AC Drive and the motor is connected properly.
ERR30	Motor Overload	- F12.07 parameter set too low - Overload or motor stall - Insufficient AC Drive model	- Adjust F12.07 parameter based on the motor current. - Check load and mechanical conditions. - Check whether the AC Drive power matches the load requirements.
ERR31	Motor Overheating	- F12.07 parameter is set too low - Overload or motor stall - Insufficient AC Drive model	- Adjust F12.07 parameter based on the motor current. - Check load and mechanical conditions. - Check whether the AC Drive power matches the load requirements.
ERR32	Short to Ground	- Short to ground in motor or motor cable - Hardware fault	- Check the cable connection between the AC Drive and the motor, as well as the motor insulation. - Contact Wolong's technical support.
ERR33	Charging Resistor Overload	- Input power supply voltage mismatch with the AC Drive - Frequent power-on/off of the AC Drive's power supply	- Check the power supply voltage. - Do not frequently turn on or off the power supply.
ERR34	External Fault	External fault triggered through DI terminal	Check and eliminate external faults.

Faults – Causes – Countermeasures

User Guide

Fault Code	Fault Name	Possible Causes	Countermeasures
ERR37	Running Time Arrival	The cumulative running time has reached the setting value.	• Clear the records of F00.43 [parameter initialization].
ERR38	Power-on Time Arrival	The cumulative running time has reached the setting value.	• Clear the records of F00.43 [parameter initialization].
ERR39	Underload	Operating current smaller than the setting value of F12.10	• Check whether the load is normal. • Check whether the F12.10 parameter settings match the actual operating condition.
ERR40	Communication Fault	• Incorrect setting of F11 communication parameter group • Communication cable wiring error/disconnection • Interference • Upper computer communication error/fault	• Check and configure the F11 communication parameter group correctly. • Check the wiring of the communication cable. • Separate the communication cable from the power cable and ground the communication cable through the shielding layer. • Check the upper computer communication/reset fault.
ERR41	PID Feedback Loss	PID feedback smaller than the setting value of F10.27	• Check PID feedback. • Set F10.27 correctly.
ERR42	Excessive Speed Deviation	• Incorrect encoder parameter settings • Inaccurate auto-tuning model/no auto-tuning at all • Incorrect setting of speed deviation parameters of F12.17 and F12.18	• Check and adjust the encoder parameters. • Check the motor nameplate and perform AC drive auto-tuning again. • Adjust F12.17 and F12.18 parameters based on the actual operating condition.
ERR43	User-Defined Fault 1	Triggering user-defined fault 1 on the multi-functional DI terminal	Check and reset external user-defined fault 1.
ERR44	User-Defined Fault 2	Triggering user-defined fault 2 on the multi-functional DI terminal	Check and reset external user-defined fault 2.

Faults – Causes – Countermeasures

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Fault Code	Fault Name	Possible Causes	Countermeasures
ERR45	Sequential Current Limiting Fault	• Overload or motor stall • Insufficient AC drive model	• Check the load and mechanical conditions. • Check whether the AC drive power matches the load requirements.
ERR47	Motor Overspeed	• Incorrect setting of encoder parameters • Inaccurate auto-tuning model/no auto-tuning at all • Incorrect setting of speed deviation parameters of F12.17 and F12.18	• Check and adjust the encoder parameters. • Check the motor nameplate and perform AC drive auto-tuning again. • Adjust F12.17 and F12.18 parameters based on the actual operating condition.
ERR48	Magnetic Pole Position Detection Failure	Excessive deviation between motor data and actual values	Check the motor nameplate and reset motor parameters.
ERR52	Short Circuit of Braking Resistor	Short circuit in braking resistor	Check/measure the braking resistors.
ERR54	Abnormal Back Electromotive Force	Excessive deviation between motor data and actual values	Check the motor nameplate and reset motor parameters.

9 Appendix: Modbus Communication

9.1 Modbus Protocol Introduction

The transmission mode used by Modbus is Remote Terminal Unit (RTU). The frame does not contain any message headers or end markers.

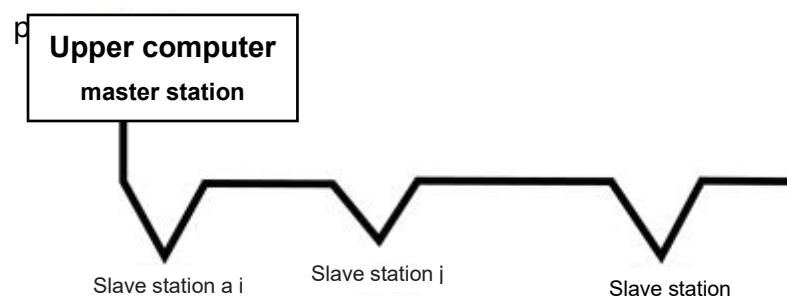
Slave Station Address	Request Code	Data	CRC16
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Data is transmitted in binary code.

CRC16: Cyclic redundancy check

9.1.1 Principle

The Modbus protocol is a master/slave



Only one device can transmit data on a line at any given time.

Data exchange can only be initiated and managed by the master station. The master station sequentially accesses and manages communication with slave stations. The slave stations are not allowed to send messages unless invited by the master station.

In case of incorrect data exchange, the master station repeats the inquiry. If no response is received from the inquired slave station within a given time frame, the master station determines that the inquired slave station is missing.

If a slave station cannot understand the message, it will send an exceptional response to the master station. The master station may respond to this request or choose not to respond.

Direct communication between slave stations is not allowed. For communication between slave stations, the application software must be designed to first inquire one slave station and then send the received data to another slave station.

Two types of conversations between the master station and the slave stations can be implemented:

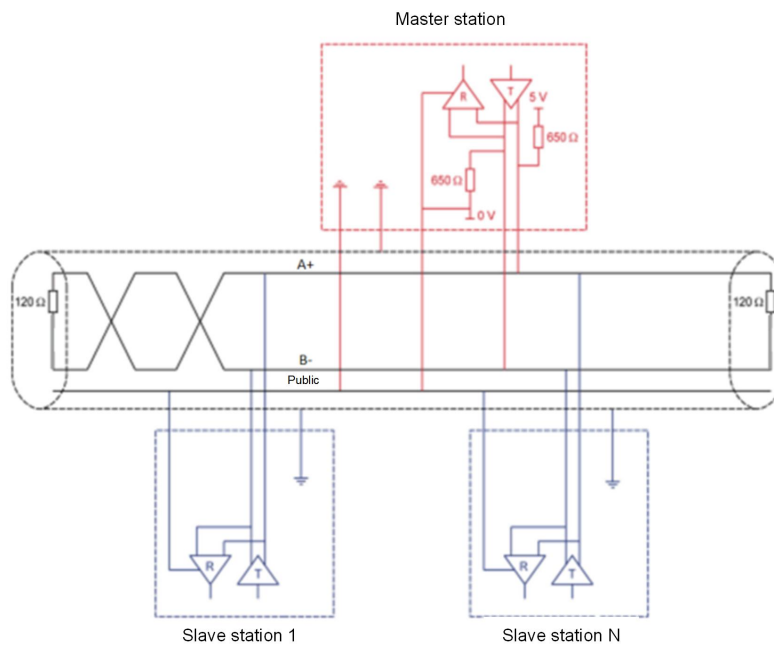
- The master station sends a request to a slave station and waits for its response.
- The master station sends a request to all slave stations without waiting for their responses (broadcast mode).

9.1.2 Address

Address specifications:

- The Modbus addresses of the AC drive can be set from 1 to 247.
- In requests sent by the master station, address 0 is reserved for broadcast. The AC drive will receive and consider the request but will not respond to it.

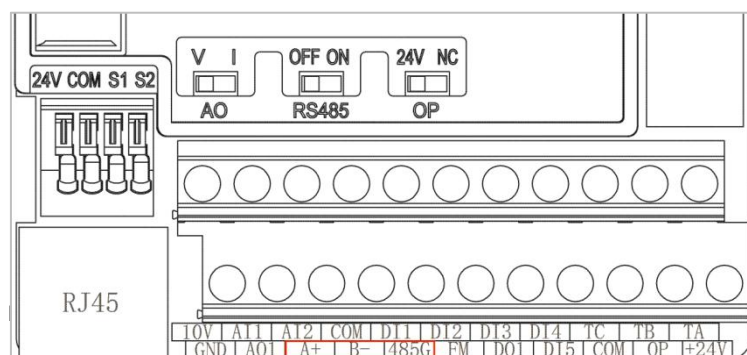
9.2 Modbus Diagram



Characteristic	Definition
Type of connecting cable	Shielded cable with one twisted pair and at least one other conductor
Maximum length of bus	1000 m, with 19200 bps baud rate
Maximum number of stations (without repeater)	32 stations, 31 of which are slave stations
Line terminator	One 120 ohm resistor
Common terminal polarity	One or multiple points on the bus is/are connected to ground for protection

9.2.1 The following figure shows the built-in communication interface of the WD200 AC Drive

9.2.2 Wiring



Terminal	Signal
A+	485+
B-	485-
485G	GND

9.3 Supported Modbus Function

Function Name	Function Code		Description	Remarks
	Decimal	Hexadecimal		
Read Holding register	03	16#03	Read N characters	Maximum length of PDU: 12 characters
Write Single Output Character	06	16#06	Write single output character	
Write N Output Characters	16	16#10	Write N output characters	Maximum length of PDU: 12 characters

The communication address (decimal) is below the function code of the parameter group:

Function Code	Name/Description	Adjustment Range	Factory Settings	Change Mode
F00.07 0007 ↑	Preset Frequency	0.00 Hz–F00.13	5.00 Hz	Change in real time

Note:

When using a write command to write parameters in the parameter group, if the data is intended to be written to the address but not store in EEPROM (EEPROM frequent writes may reduce EEPROM lifespan), add 10000 to the address. If the function code parameter address is not incremented by 10000, the data will be written to EEPROM, meaning it will be stored even after power loss.

For example, for parameter F12.23, the address for writing to RAM is 11223, while the address for storing in EEPROM is 1223. The same applies to other parameters in the

parameter group.

9.3.1 Read N Output Characters

Function Code 03

Request

Function Code	1 byte	16#03
Start Address	2 bytes	16#0000...16#FFFF
Number of Registers	2 bytes	1...63 (16#3F)

Response

Function Code	1 byte	16#03
Byte Count	1 byte	2xN(1)
Register Value	N(1) x 2 bytes	–

N(1): Number of registers

Error detected

Detected Error Code	1 byte	16#83
Exception Code	1 byte	1...8

Appendix: Modbus Communication

Example

This function is used to read all input and output characters of the AC drive.

Request

Slave Station No.	03	No. of 1st Character		Number of Characters		CRC16	
		Hi	Lo	Hi	Lo	Lo	Hi
1 byte	1 byte	2 bytes		2 bytes		2 bytes	

Hi = high-order byte, Lo = low-order byte

Response

Slave Station No.	03	Number of Read Characters	Value of 1st Character		Value of Last Character		CRC16	
			Hi	Lo	Hi	Lo	Lo	Hi
1 byte	1 byte	1 byte	2 bytes		2 bytes		2 bytes	

Hi = high-order byte, Lo = low-order byte

Example: Using function code 03 to read 4 characters from slave 2, starting at address 0023 and ending at 0026 (16#0017 to 16#001A), where:

- F00.23 = Acceleration Time 1 = 20s (0023=16#0017)
- F00.24 = Deceleration Time 1 = 20s (0024=16#0018)
- F00.25 = Acceleration Time 2 = 20s (0025=16#0019)
- F00.26 = Deceleration Time 2 = 20s (0026=16#001A)

Request

0x02	0x03	0x0017	0x0004	0xF43E
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Response

0x02	0x03	0x08	0x00C8	0x00C8	0x00C8	0x00C8	0xB2E7
	Address:	—	0x0017	0x0018	0x0019	0x001A	—

9.3.2 Write Single Output Character

Function Code 06

Request

Function Code	1 byte	16#06
Register Address	2 bytes	16#0000...16#FFFF
Register Value	2 bytes	16#0000...16#FFFF

Response

Function Code	1 byte	16#06
Register Address	2 bytes	16#0000...16#FFFF
Register Value	2 bytes	16#0000...16#FFFF

Error Detected

Detected Error Code	1 byte	16#86
Exception Code	1 byte	1...8

Example

Request and Response (in the same frame format)

Slave Station No.	06	Character No.		Character Value		CRC16	
		Hi	Lo	Hi	Lo	Lo	Hi
1 byte	1 byte	2 bytes		2 bytes		2 bytes	

Example

Example: Write the value 16#000A to character 0023=16#0017 (Acceleration Time 1 = 10s) on slave station 2.

Request and Response	0x02	0x06	0x0017	0x0064	0x3816
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9.3.3 Write N Output Characters

Function Code 16

Request

Slave Station No.	10	No. of 1st Character		Number of Characters		Byte Count	Value of 1st Character		CRC16	
		Hi	Lo	Hi	Lo		Hi	Lo	Lo	Hi
1 byte	1 byte	2 bytes		2 bytes		1 byte	2 bytes		2 bytes	

Response

Slave Station No.	10	No. of 1st Character		Number of Characters		CRC16	
		Hi	Lo	Hi	Lo	Lo	Hi
1 byte	1 byte	2 bytes		2 bytes		2 bytes	

Example

Write the values 300 and 400 to characters 0023 and 0024 on slave station 2
(Acceleration Time 1 = 30s and Deceleration Time 1 = 40s).

Request

Slave Station No.	Request Code	No. of 1st Character		Number of Characters		Byte Count	Value of 1st Character		Value of 2nd Character		CRC16	
		Hi	Lo	Hi	Lo		Hi	Lo	Hi	Lo	Lo	Hi
0x02	0x10	0x00	0x17	0x00	0x02	0x04	0x01	0x2C	0x01	0x90	0x7D	0xC8

Exception codes from slave stations:

Code	Cause
1	Invalid password
2	Invalid read/write command
3	CRC error
4	Invalid address
5	Invalid parameter
6	Invalid parameter change
7	System locked
8	Parameter storage in progress

9.4 Communication Control Parameters

Address	Name/Description	Range	R/W Characteristic
6000	Communication Control Command 0001: Forward 0002: Reverse 0003: Jogging at forward direction 0004: Jogging at reverse direction 0005: Free stop 0006: Stop by slowdown 0007: Fault reset	0001–0007	W
6001	Set Communication Frequency Unit: 0.01 Hz	0–F00.13 [maximum frequency]	W
6003	Set FM Output 0–10000 corresponds to 0–100.00%	0–100.00%	W
6004	Set AO1 Output 0–10000 corresponds to 0–100.00%	0–100.00%	W
6005	Set AO2 Output 0–10000 corresponds to 0–100.00%	0–100.00%	W
6007	Set PID 0–10000 corresponds to 0–100.00%	0–100.00%	W
6008	PID Feedback 0–10000 corresponds to 0–100.00%	0–100.00%	W
6009	Set Torque 1000 corresponds to 100.0% rated motor torque	-2000–2000	W
6010	Set V/F Separated Voltage source Unit: V	0–F04.02 [rated voltage of motor]	W
6011	Set Upper Frequency Source Unit: 0.01 Hz	0–F00.13 [maximum frequency]	W
7000	AC Drive Status 0001: Forward 0002: Reverse 0003: Stop		R
7100	Set Frequency Unit: 0.01 Hz		R
7101	Running Frequency Unit: 0.01 Hz		R

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Address	Name/Description	Range	R/W Characteristic
7102	Bus Voltage Unit: 0.1 V		R
7103	Output Voltage Unit: 1 V		R
7104	Output Current Unit: 0.1 A		R
7105	Output Power Unit: 0.1 kW		R
7106	Output Torque Unit: 0.1%		R
7107	Operating Speed Unit: 0.01 Hz		R
7108	DI Input Status		R
7109	DO Output Status		R
7110	AI1 Voltage Unit: 0.01 V		R
7111	AI2 Voltage Unit: 0.01 V		R
7112	AI3 Voltage Unit: 0.01 V		R
7113	Count Input		R
7114	Length Value Input Unit: 1 m		R
7115	Load Speed Unit: 0.01 Hz		R
7116	Set PID Unit: 0.1%		R
7117	PID Feedback Unit: 0.1%		R
7118	PLC Step		R
7119	Pulse Input Frequency Unit: 0.01 kHz		R

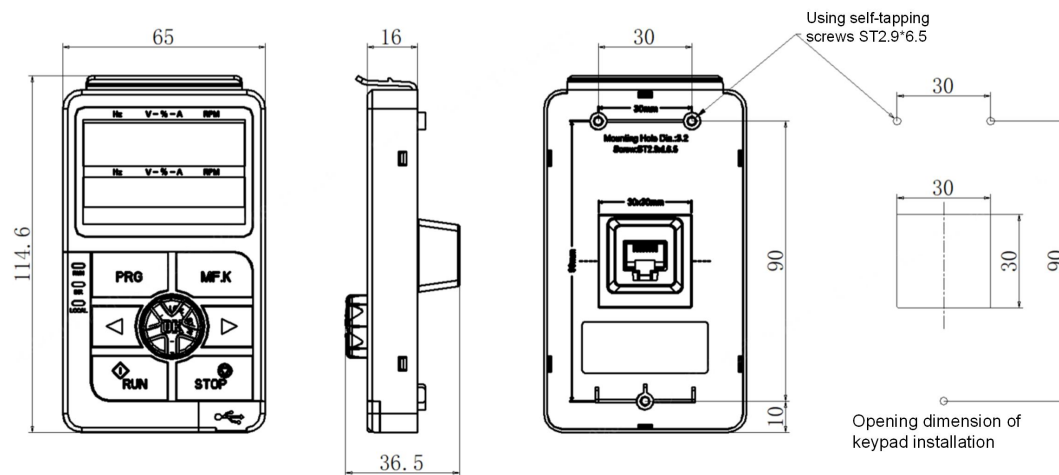
Appendix: Modbus Communication

User Guide

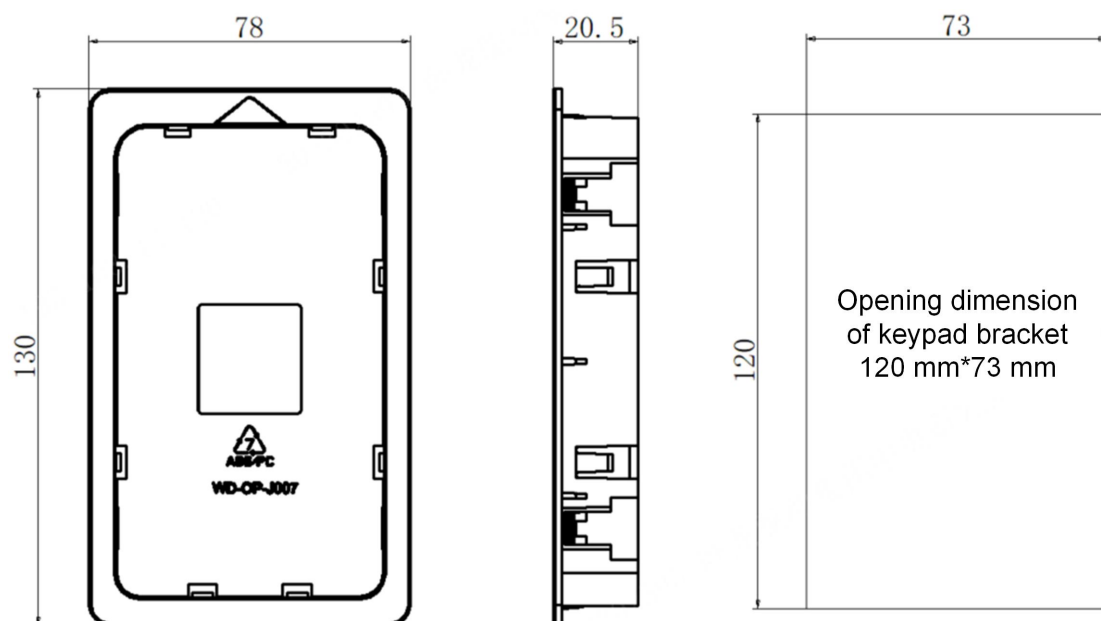
Address	Name/Description	R/W Characteristic
7120	Feedback Speed Unit: 0.1 Hz	R
7121	Remaining Running time Unit: 0.1 min	R
7122	AI1 Voltage before Calibration Unit: 0.01 V	R
7123	AI2 Voltage before Calibration Unit: 0.01 V	R
7124	AI3 Voltage before Calibration Unit: 0.01 V	R
7125	Linear Speed Unit: 1 m/s	R
7126	Current Power-on Time Unit: 1 min	R
7127	Current Running Time Unit: 0.1 min	R
7128	Input Pulse Frequency Unit: Hz	R
7129	Communication Reference Unit: 0.01 Hz	R
7130	Actual Feedback Speed Unit: 0.01 Hz	R
7131	Main Frequency X Display Unit: 0.01 Hz	R
7132	Auxiliary Frequency Y Display Unit: 0.01 Hz	R
8000	AC Drive Fault Code 0: No fault 1–99: Faults (For details, please refer to the fault code table in Faults section)	R

10 Appendix: Opening Dimension Drawing of Keypad Cabinet Door Installation

10.1 Opening Drawing of Keypad Cabinet Door Installation



10.2 Opening Drawing of Keypad Bracket Cabinet Door Installation





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