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Control Drive Sensor Transmission Digitalization

E600&E610 Series VFDs

Book Style
Safety
Intelligent
Multi use
Easy use

Initiative Integrity Innovation

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HCFA ATC

All information in this document is subject to change without notice.
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Due to the delay in updating the paper version, please refer to the official website for the latest product information.

Book Style

High power density

Parallel installation

Compact size, big power

150% starting torque

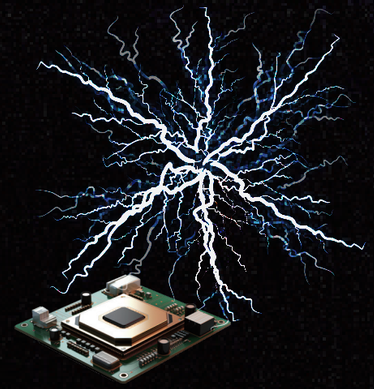
Safety

Enhanced conformal coating

Support STO function

15kV

Ultra strong anti-static



Easy use

Plug-in terminals

Screwless wiring

Up to 30s for debugging

Intelligent

Support Bluetooth function

Supports IOT modules

Multi use

Dual rated, long lead wires, high torque, high speeds

4 Times

field weakening control algorithm

Book Style

Lightweight structure /high power density

Compared with the previous series, the E600 & E610 are much lighter and more compact in design

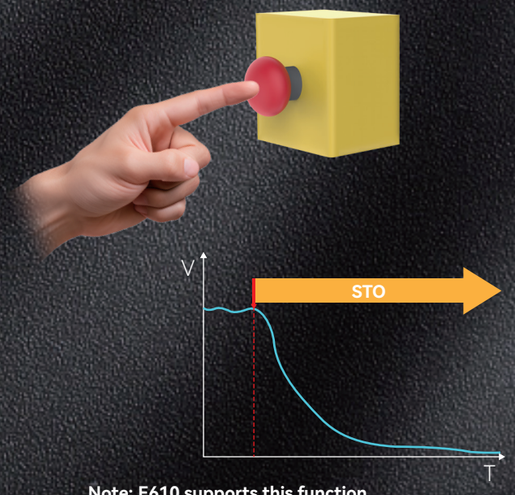
Parallel installation, much space and resources saved

Compared with the traditional installation of VFDs, the E600 & E610 supports seamless parallel installation, taking a smaller space, which effectively improves the efficiency of the cabinet

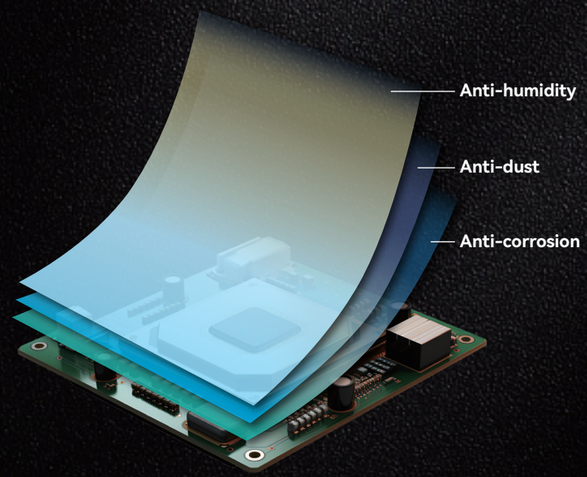
Safety

STO function

E610 models are built-in STO (Safe Torque Off) function. When danger occurs, the system triggers the base-pole blocking function of the VFD to cut off the output, stop the operation of the equipment as quickly as possible, which can more reliably protect the safety of people and machines



Note: E610 supports this function



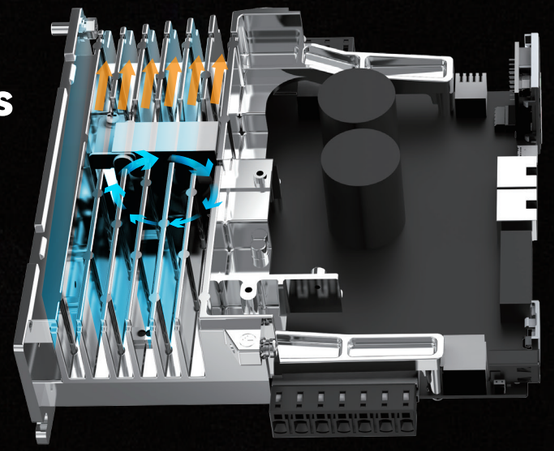
Enhanced conformal coating

Enhanced PCB coating, innovative cooling design, to ensure the health and stability of the product life cycle, to improve the environmental resistance and protection capabilities comprehensively

Easy use

Independent air ducts

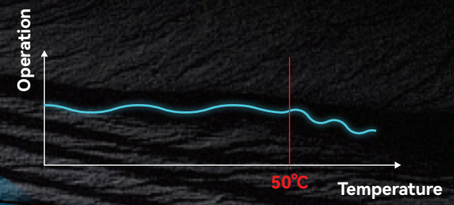
Independent air duct design, short air path, low resistance, less air leakage, greatly improving the cooling effect, effectively reducing the temperature rise of the VFD, more stable and reliable operation



Operating temperature

Normal operation between -10℃ ~ +60℃

(Between 50~60℃, derate by 10% for every +5℃)

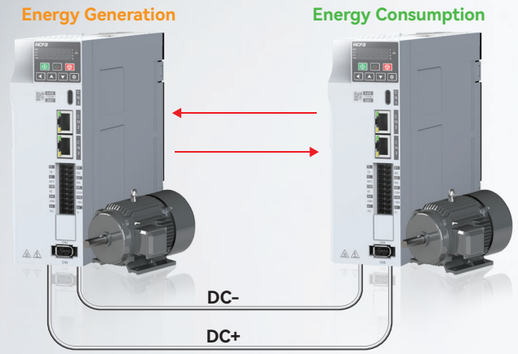


Easy use

Plug-in terminals, wiring-free design

Large-capacity wiring can adapt to various wiring requirements. Screw-free design saves crimping terminals and working time

Note: Plug-in terminals for models ≤3.7kW



Common DC, energy saving

DC common bus mode, energy is shared among multiple units, saving energy and reducing the need for braking components, saving costs

Upper computer/ external keypad

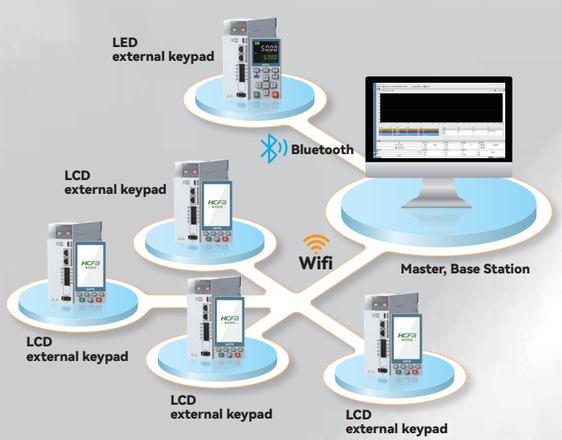
Simplify the debugging steps of VFD with HCFA VFD host computer and save the debugging time, and parameter upload and download function makes it easier to save parameter settings

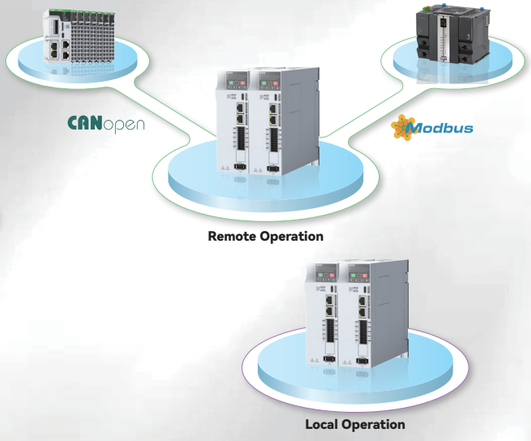
LED/LCD external keypad can be installed in the cabinet by opening a hole, so that you can observe the running status of the VFD without opening the cabinet

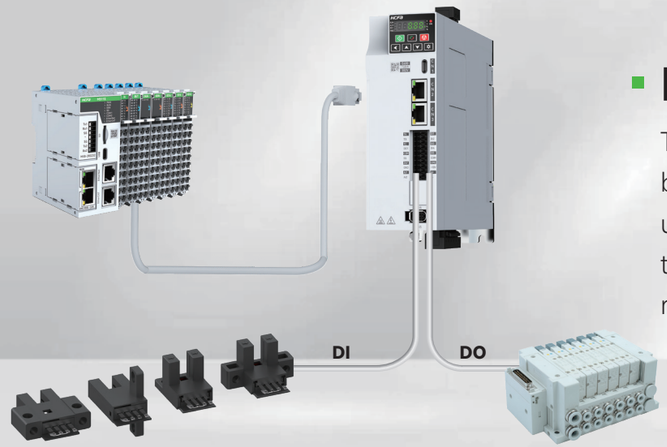
Intelligent

Bluetooth function, Internet of Things module

Supports Bluetooth and wireless networking, which makes it more convenient and efficient to network devices in the same area. The E610 model has built-in CANopen communication, and can communicate with host computers such as PLC via CANopen without the need for additional expansion communication cards







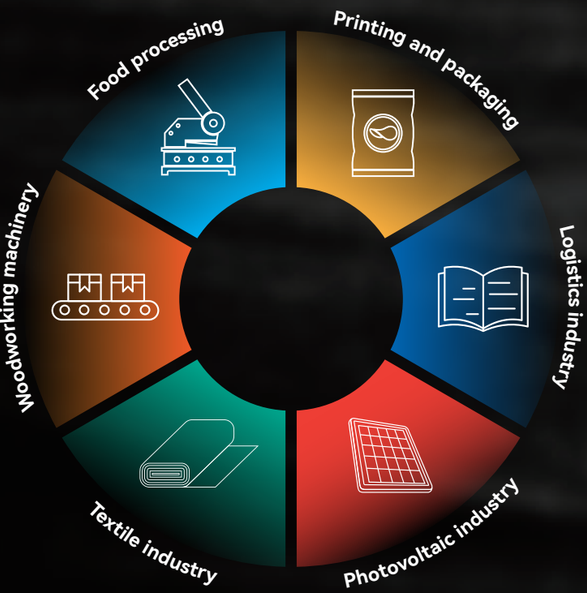
Remote IO Function

The sensor signals of the equipment can be directly connected to the VFD and uploaded to the PLC or host computer through communication and run the remote IO function

Multi use

Wide voltage range

380V~480VAC (-15%~10%) supported, wide voltage input range to meet the power supply scenarios under different working conditions.



Multi-functional

Built-in industry-specific functions to meet the needs of multiple industries and equipments

Naming Rules

HDv - E610 - 4T 7.5 B S - *

① ② ③ ④ ⑤ ⑥ ⑦

① Product name
HCFA VFD

② Product series
E600 Series
E610 Series

③ Voltage level	
2S	Single-phase 220V-240V
2T	Three-phase 220V-240V
4T	Three-phase 380V-480V

④ Power class	
0.4	400W
0.7	750W
1.5	1.5kW
2.2	2.2kW
3.7	3.7kW
5.5	5.5kW
7.5	7.5kW
011	11kW
015	15kW
018	18.5kW
022	22kW

⑤ Braking unit	
N	Not built-in
B	Built-in

⑥ Functional units	
N	No STO function
S	With STO function

⑦ Hardware and software version number

Technical Specifications

Three-phase 200V-240V, compatible single-phase					
Power [kW]			0.4	0.75	1.5	2.2*
Maximum adaptable motor capacity [kW]			0.4	0.75	1.5	2.2
Rated output current [Arms]			3.5	4.8	7.5	9
Instantaneous max. output current [Arms]			5.2	8.5	13.0	16.2
Input current [Arms]			3.8	5.3	8.6	11.5
Power capacity [kVA]			1.1	2.1	4.2	5.3
Heat and power loss [W]			35	52	88	110
Braking resistor	External braking resistor	Resistance value Ω	300	170	80	55
		Capacity [W]	90	160	340	500
	Minimum braking resistor [Ω]		48	48	32	16
Rated output voltage [V]			0~Input voltage			
Max. output frequency			0.00-599.00Hz			
Carrier frequency			VF: 1.500KHz~16.000KHz SVC: 1.500KHz~10.000KHz			
Overload capability			110% of rated current for 1 hour, 150% of rated current for 1 min., 180% of rated current for 3 sec			
Input supply voltage [V]			Three-phase AC200 ~ 240V、50/60Hz -15% ~ 10% Actual voltage range Three-phaseAC170V ~ 264V			

Note: * To be available in December 2023

Three-phase 380 ~ 480V AC											
Power [kW]	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11*	15*	18.5*	22*
Maximum adaptable motor capacity [kW]	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
Rated output current [Arms]	2.0	3.5	4.8	7.2	9	13	17	25	32	37	45
Instantaneous max. output current [Arms]	3.6	5.2	8.5	13.0	16.2	23.4	30.6	45.0	57.6	66.6	81.0
Input current [Arms]	2.3	3.8	5.3	8.6	11.5	16.6	21.9	32.2	41.2	50	57
Power capacity [kVA]	2	2.8	5	6.7	12	17.5	22.6	33.5	42.8	45	52
Heat and power loss [W]	39	46	68	80	140	200	240	355	455	476	550
Braking resistor — External braking resistor — Resistance value Ω	1450	800	380	260	150	100	75	50	38	32	27
Braking resistor — External braking resistor — Capacity [W]	80	140	300	440	750	1100	1500	2200	3000	4000	4500
Braking resistor — Minimum braking resistor [Ω]	96	96	96	96	32	32	32	20	20	24	24
Rated output voltage [V]	0~Input voltage										
Max. output frequency	0.00-599.00Hz										
Carrier frequency	VF: 1.500KHz~16.000KHz SVC: 1.500KHz~10.000KHz										
Overload capability	110% of rated current for 1 hour, 150% of rated current for 1 min., 180% of rated current for 3 sec										
Input supply voltage [V]	Three-phase 380 ~ 480V AC, 50/60Hz -15% ~ 10% Actual allowable voltage range Three-phase 323V ~ 528V AC										

Note: * To be available in December 2023

Performance Specifications

Basic functions

Maximum Frequency	0．00 ~ 599.00Hz（except non-standard models）
Carrier frequency	VF: 1.5000KHz~16.000KHz; SVC: 1.500KHz~10.000KHz; Carrier frequency can be automatically adjusted according to IGBT temperature and load characteristics
Input frequency resolution	Digital setting: 0.01Hz Analog setting: Maximum frequency x 0.025%
Motor type and control mode	Three-phase asynchronous motor: VF control, SVC vector control Permanent magnet synchronous motor: SVC vector control Synchronous reluctance motors: SVC vector control *
Starting torque	150% (SVC 0.5HZ)
Speed range 1:50	1:50 VF control; 1:100 Asynchronous motor vector control
Speed control accuracy	±1.0% VF control; ±0.5% vector control
Overload capacity	110% of rated current for 1 hour, 150% of rated current for 1 min., 180% of rated current for 3 sec
Torque Boost	Automatic torque boost; Manual torque boost 0.1%~30.0%
V/F Curve	Linear V/F, Multi-point V/F, Square V/F, VF Separation
Automatic Voltage Regulation (AVR)	Automatically maintains constant output voltage when grid voltage varies
DC braking	DC braking frequency: 0.00Hz~max. frequency, braking time: 0.00s~30.00s, braking action voltage value: 0.00%~50.00% braking action current value: 0.00%~100.00%
Jogging control	Jogging frequency range: 0.00Hz~max. frequency; Jogging acceleration/deceleration time 0.00s~600.00s
Simple PLC, Multi-segment speed operation	Up to 16 segments speed operation can be realized by built-in PLC or control terminal
Built-in PID	2 sets of PID parameters, can easily realize closed-loop process control system

Note: *Need to burn non-standard software

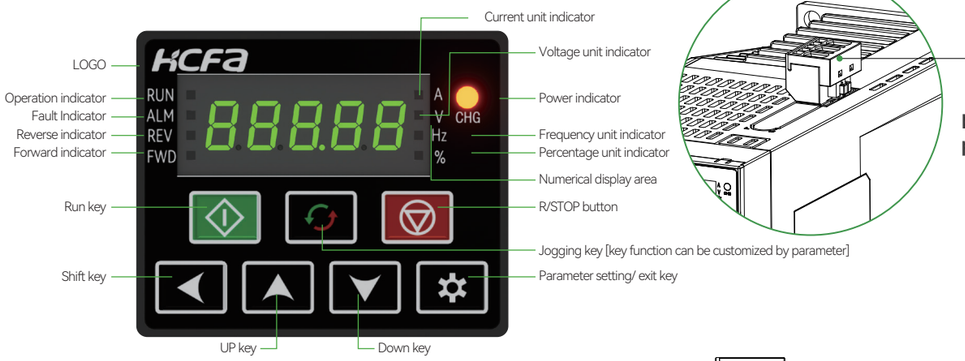
Personalized functions

Customized keys	Supports optional programmable buttons, jogging, positive/negative input switching, function code display switching, start/stop command switching, free stop and emergency stop
Communication bus	Built-in Modbus communication interface, CANopen bus built-in for E610 model
STO function	E610 model can be equipped with STO function
Customized fault function	Users can customize the analog or digital error according to their needs
Acceleration/deceleration curves	Linear acceleration and deceleration mode, S-curve acceleration and deceleration mode; Lifting load acceleration and deceleration curve method
Power metering	Calculate the power consumption per unit time
Display mode switching	Display mode can be quick menu mode and different from the default, convenient for debugging
Operation command channel	Three method: By operation panel setting, control terminal setting, and communication setting, which can be switched in various ways
Frequency source	8 kinds of frequency sources: Digital setting, analog voltage setting, analog current setting, pulse setting, multi-speed, PLC, PID, communication setting
Wireless communication	Wifi, Bluetooth, Internet of Things communication function is optional

Special functions

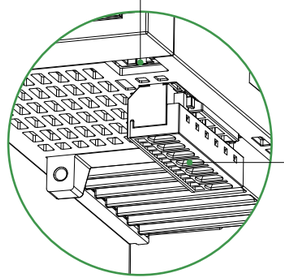
Speed tracking	The speed tracking function (IM/PM) is perfect and can be started in a non-stationary state
Weak magnetic properties	Load capacity in weak magnetic zone, high speed magnetic weakening capability
Active preheating	Active motor warm-up function reduces grease viscosity at low temperatures and enhances low-temperature starting ability
Overload and load reduction	Introducing overload reduction function, avoiding fault shutdown and reducing downtime
Long leadwire	Meet the demand for output to directly drive motors with a distance of 150m
Wide voltage characteristics	Wide voltage range design 380V~480V (-15%~10%)
LED display	Equipped with LED keyboard to realize parameter setting and status monitoring functions
Protection functions	Over-current protection, over-voltage protection, under-voltage protection, overheating protection, overload protection, etc
Accessories	Optional external keyboard, braking units, external keyboard cable, etc

Models of 400W-3.7kW

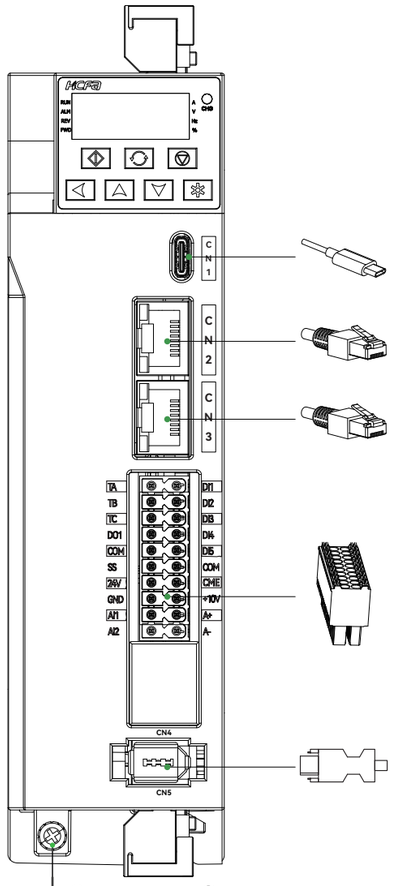


RST main circuit power connector

CN8 external keyboard connector



Power output connector



CN1 PC communication interface

CN2 485(IN)

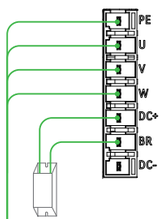
CN3 485(OUT)

CN4 Control terminal

CN5 Reserved

System grounding

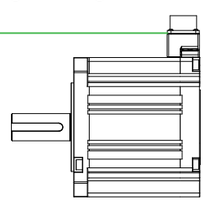
Ground terminal(PE)
To prevent electric shock, be sure to connect before turning



Motor connection terminal(U/V/W)
Motor power output terminal for connection to the VFD

Regenerative resistor connector(DC+/BR)
Connects an external braking resistor between DC+ and BR

DC bus terminals(DC+/DC-)
DC+: Main circuit bus +
DC-: Main circuit bus -



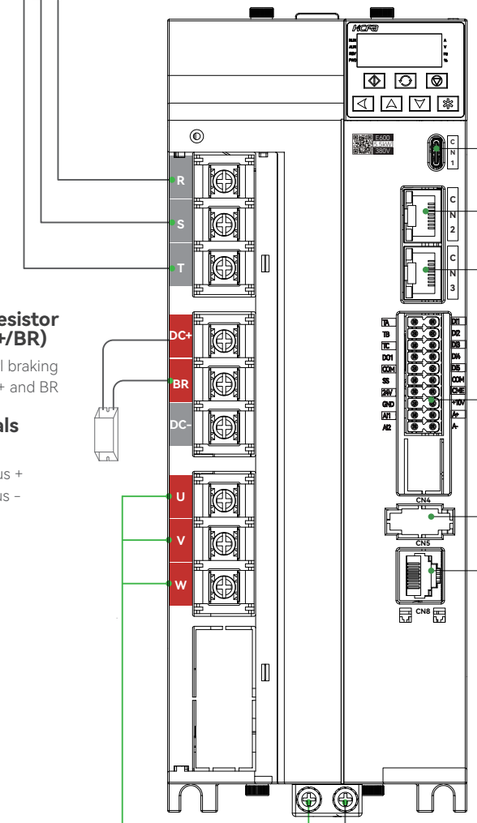
Models of 5.5kW-7.5kW

Main power supply 380V AC

Circuit breaker
Used to protect the power cable and cut off the power in case of overcurrent.

Filter
Used to prevent noise from outside the power cable.

Magnetic contactor
Turns on/off the power of the VFD.
Please install a surge suppressor when using.



Regenerative resistor connector (DC+/BR)
Connects an external braking resistor between DC+ and BR

DC bus terminals (DC+/DC-)
DC+: Main circuit bus +
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CN1 PC communication interface

CN2 485(IN)

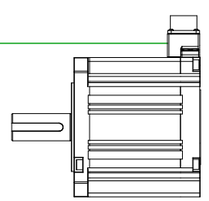
CN3 485(OUT)

CN4 Control terminal

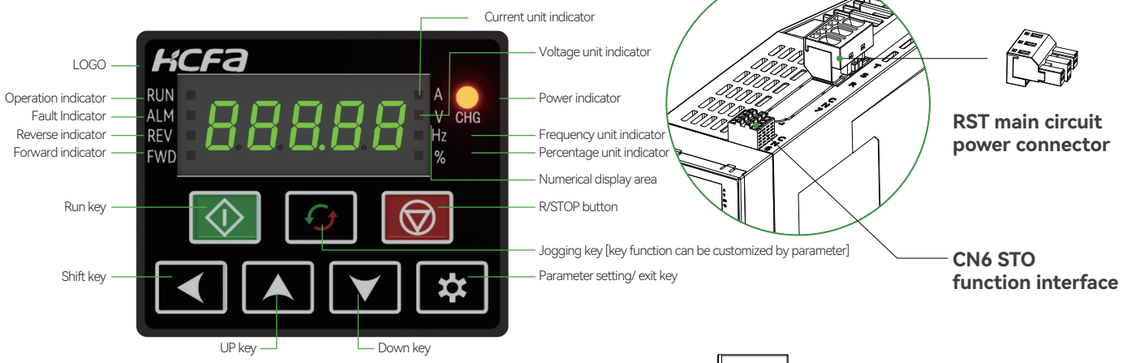
CN5 Reserved

CN8 Interface for external keypad

System grounding

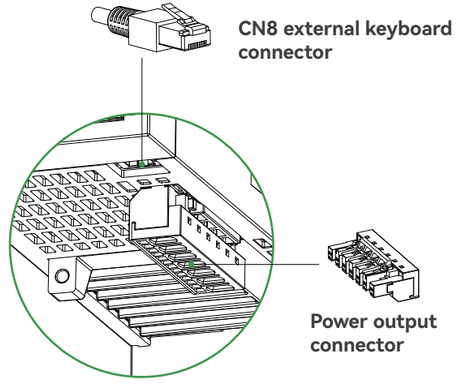


Models of 400W-3.7kW



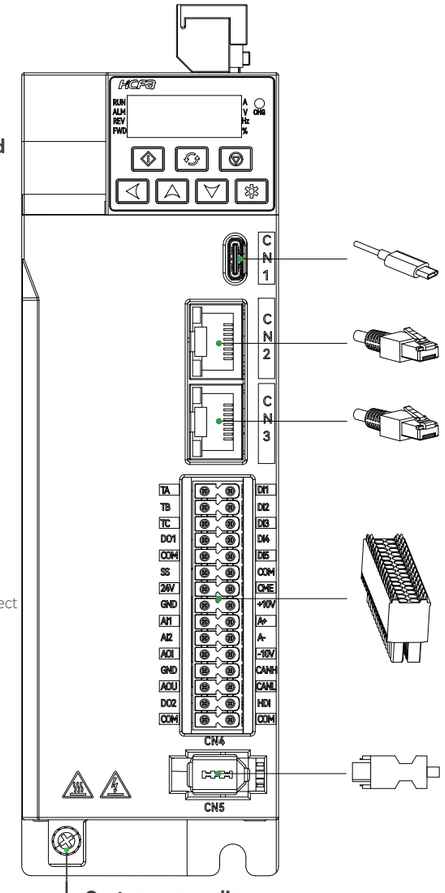
RST main circuit power connector

CN6 STO function interface



CN8 external keyboard connector

Power output connector



CN1 PC communication interface

CN2 CAN/485(IN)

CN3 CAN/485(OUT)

CN4 Control terminal

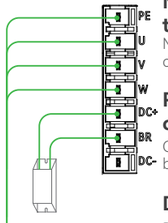
CN5 Reserved

Ground terminal(PE)

To prevent electric shock, be sure to connect before turning

Motor connection terminal(U/V/W)

Motor power output terminal for connection to the VFD



Regenerative resistor connector(DC+/BR)

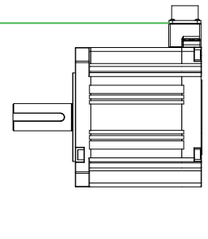
Connects an external braking resistor between DC+ and BR

DC bus terminals(DC+/DC-)

DC+: Main circuit bus +

DC-: Main circuit bus -

System grounding



Models of 5.5kW-7.5kW

Main power supply 380V AC

Circuit breaker

Used to protect the power cable and cut off the power in case of overcurrent.

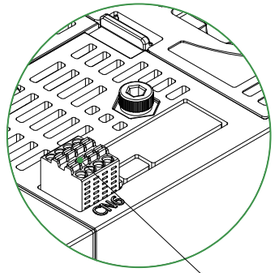
Filter

Used to prevent noise from outside the power cable.

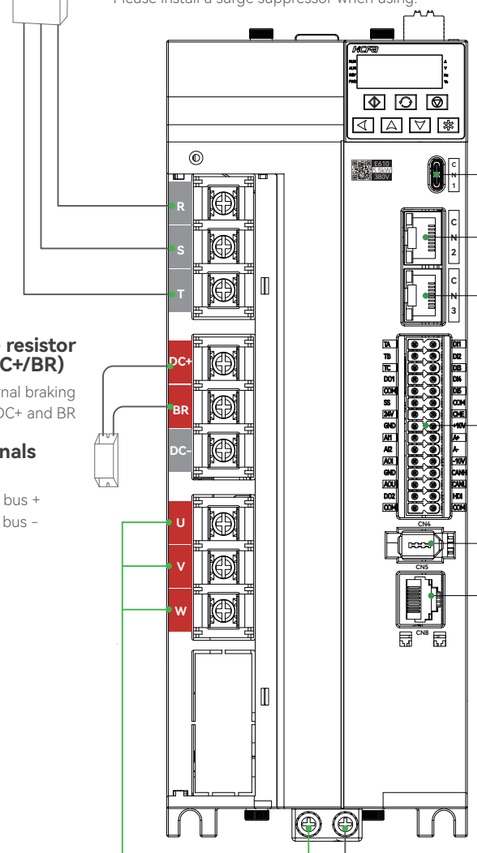
Magnetic contactor

Turns on/off the power of the VFD.

Please install a surge suppressor when using.



CN6 STO function interface



CN1 PC communication interface

CN2 CAN/485(IN)

CN3 CAN/485(OUT)

CN4 Control terminal

CN5 Reserved

CN8 Interface for external keypad

Regenerative resistor connector (DC+/BR)

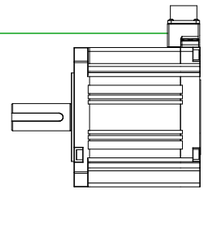
Connects an external braking resistor between DC+ and BR

DC bus terminals (DC+/DC-)

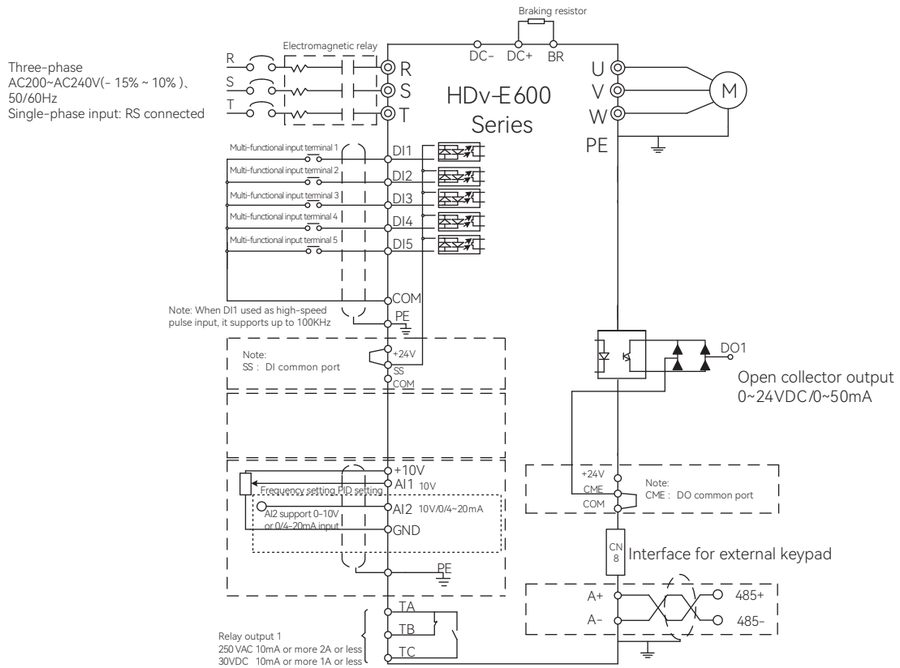
DC+: Main circuit bus +

DC-: Main circuit bus -

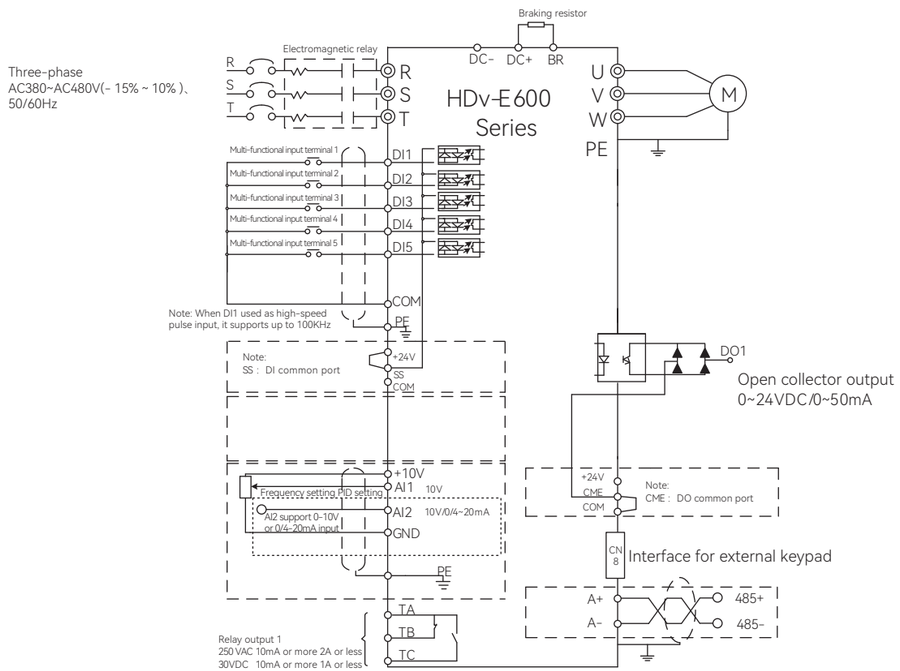
System grounding



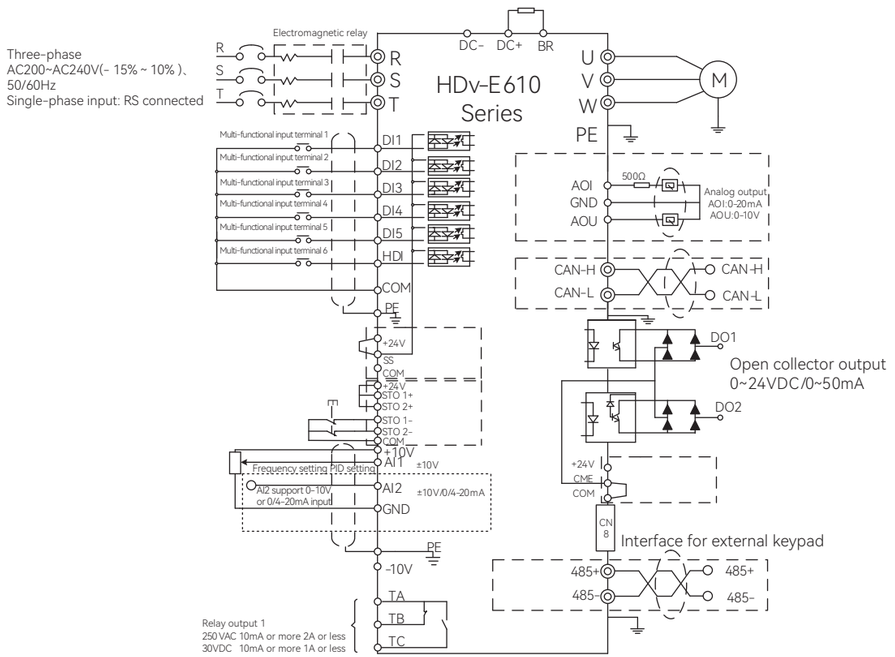
E600 AC220V



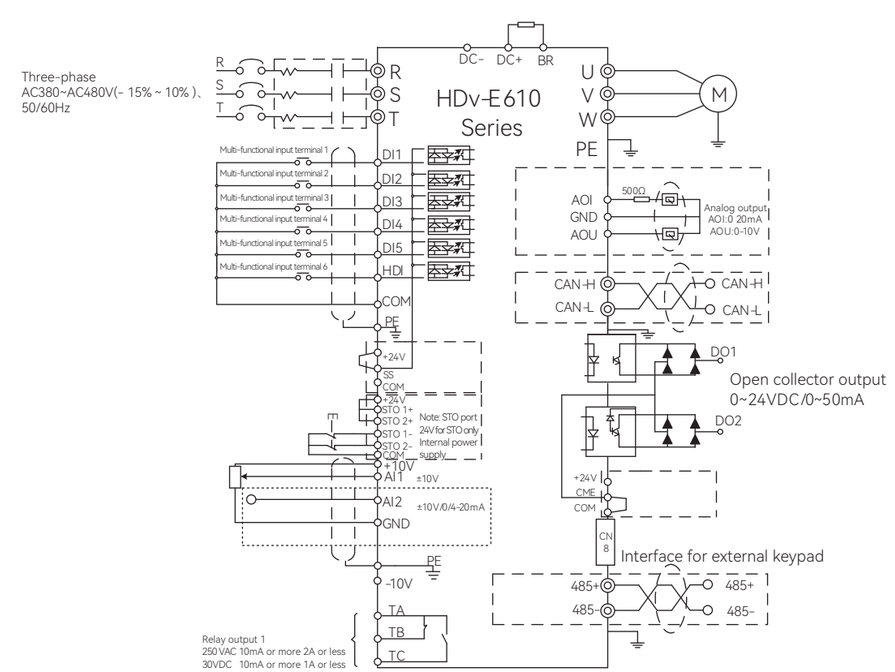
E600 AC380V



E610 AC220V

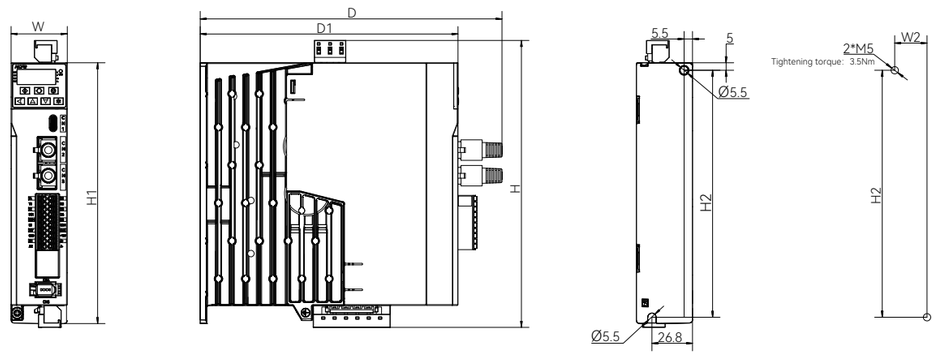


E610 AC380V



E600 AC220V 400W

Unit: mm

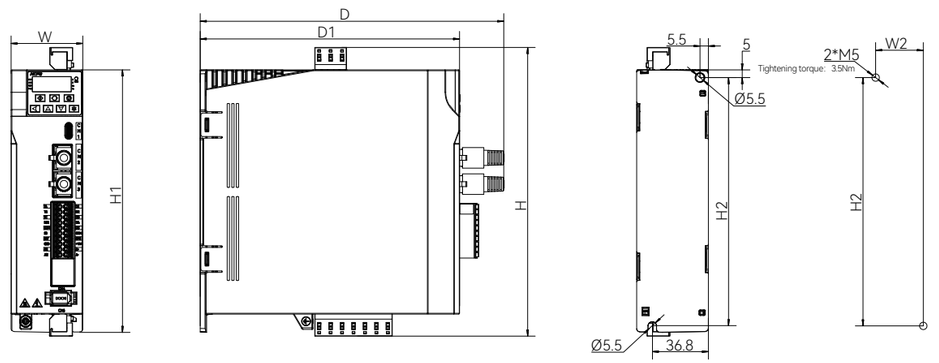


Weight: 0.75kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E600	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E600-2S0.4B-000	37	189.2	199	37	172	170	21.3	162.8	5.5	√
HDv-E600-2T0.4B-000										

E600 AC220V 750W-1.5kW

Unit: mm

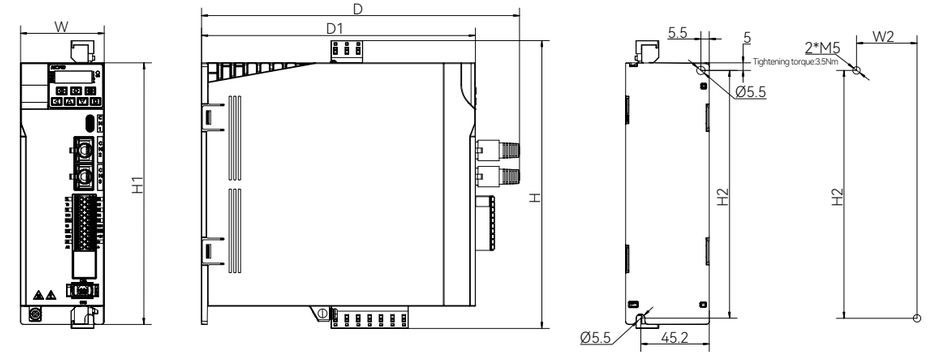


Weight: 0.96kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E600	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E600-2S0.7B-000	47	189.2	199	47	172	170	31.3	162.8	5.5	√
HDv-E600-2T0.7B-000										
HDv-E600-2S1.5B-000										
HDv-E600-2T1.5B-000										

E600 AC380V 400W/750W/1.5kW

Unit: mm

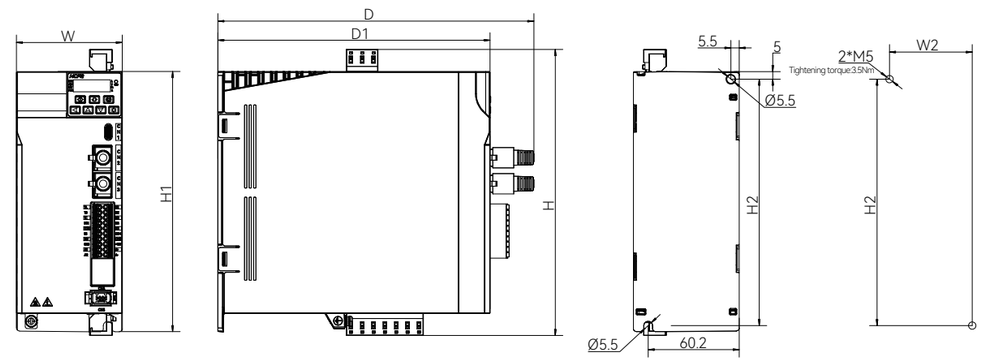


Weight: 1.17kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E600	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E600-4T0.4B-000	55	189.2	209	55	172	180	39.7	163	5.5	√
HDv-E600-4T0.7B-000										
HDv-E600-4T1.5B-000										

E600 AC380V 2.2kW-3.7kW

Unit: mm

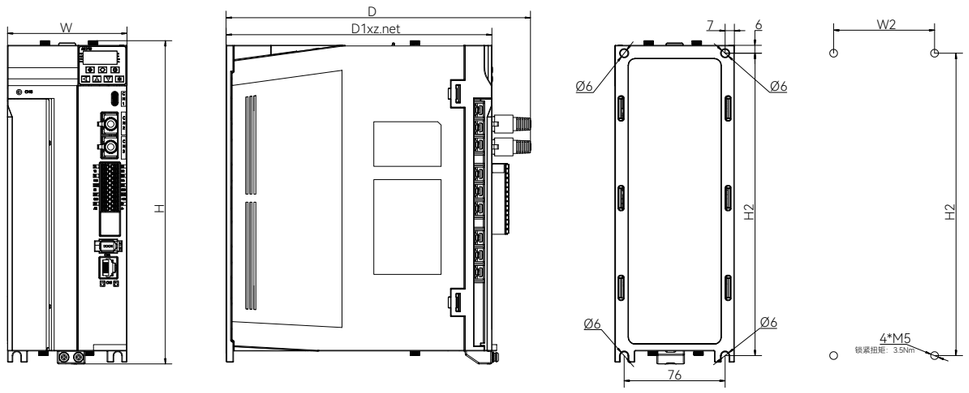


Weight: 1.38kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E600	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E600-4T2.2B-000	70	189.2	209	70	172	180	54.7	163	5.5	√
HDv-E600-4T3.7B-000										

E600 AC380V 5.5kW-7.5KW

Unit: mm

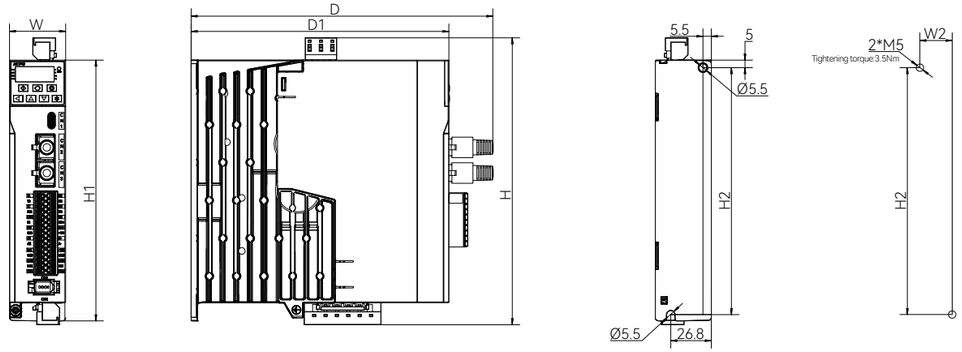


Weight: 3.07kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E600	W	H	D	W	H	D1	W2	H2	ϕ	Wall-mounted
HDv-E600-4T5.5B-000	90	243.3	229	90	243.3	200	76	227.5	6	√
HDv-E600-4T7.5B-000										

E610 AC220V 400W

Unit: mm

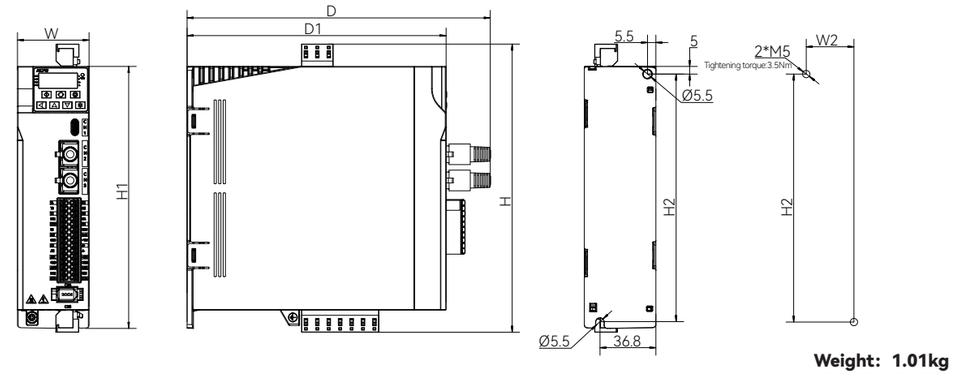


Weight: 0.76kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E610	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E610-2S0.4B-000	37	189.2	199	37	172	170	21.3	162.8	5.5	√
HDv-E610-2T0.4B-000										
HDv-E610-2S0.4BS-000										
HDv-E610-2T0.4BS-000										

E610 AC220V 750W-1.5kW

Unit: mm

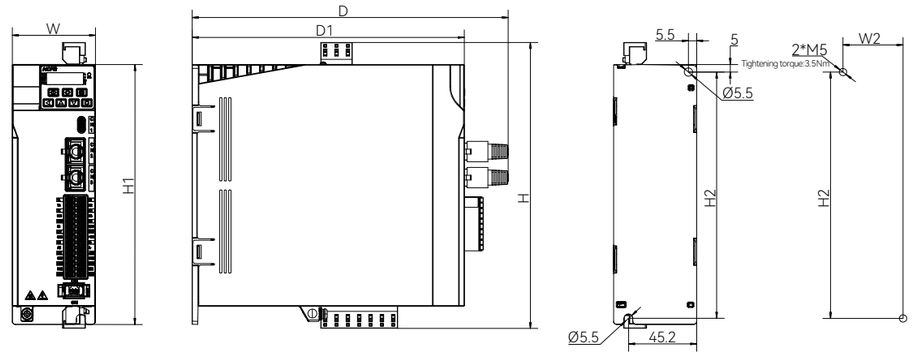


Weight: 1.01kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E610	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E610-2S0.7B-000	47	189.2	199	47	172	170	31.3	162.8	5.5	√
HDv-E610-2T0.7B-000										
HDv-E610-2S1.5B-000										
HDv-E610-2T1.5B-000										
HDv-E610-2S0.7BS-000										
HDv-E610-2T0.7BS-000										
HDv-E610-2S1.5BS-000										
HDv-E610-2T1.5BS-000										

E610 AC380V 400W/750W/1.5kW

Unit: mm

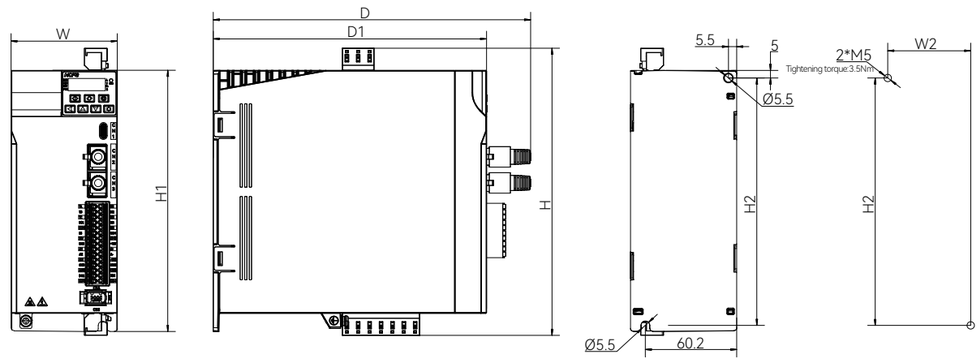


Weight: 1.21kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E610	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E610-4T0.4B-000	55	189.2	209	55	172	180	39.7	163	5.5	√
HDv-E610-4T0.7B-000										
HDv-E610-4T1.5B-000										
HDv-E610-4T0.4BS-000										
HDv-E610-4T0.7BS-000										
HDv-E610-4T1.5BS-000										

E610 AC380V 2.2kW-3.7kW

Unit: mm

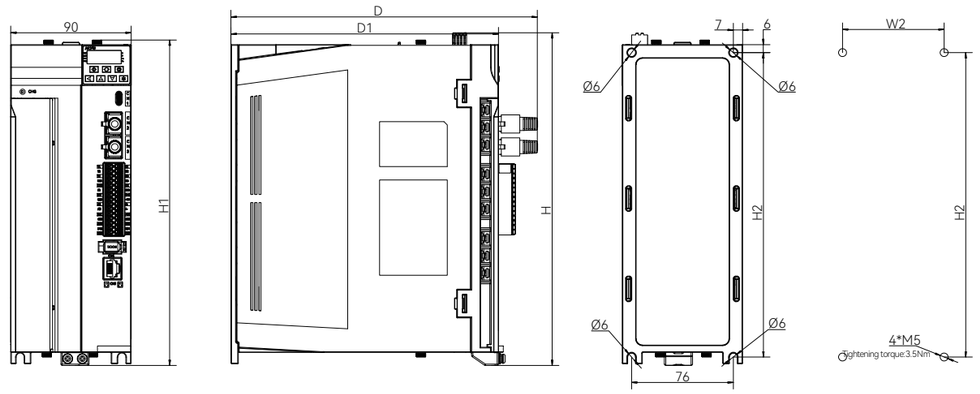


Weight: 1.42kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E610	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E610-4T2.2B-000	70	189.2	209	70	172	180	54.7	163	5.5	√
HDv-E610-4T3.7B-000										
HDv-E610-4T2.2BS-000										
HDv-E610-4T3.7BS-000										

E610 380V 5.5kW-7.5kW

Unit: mm



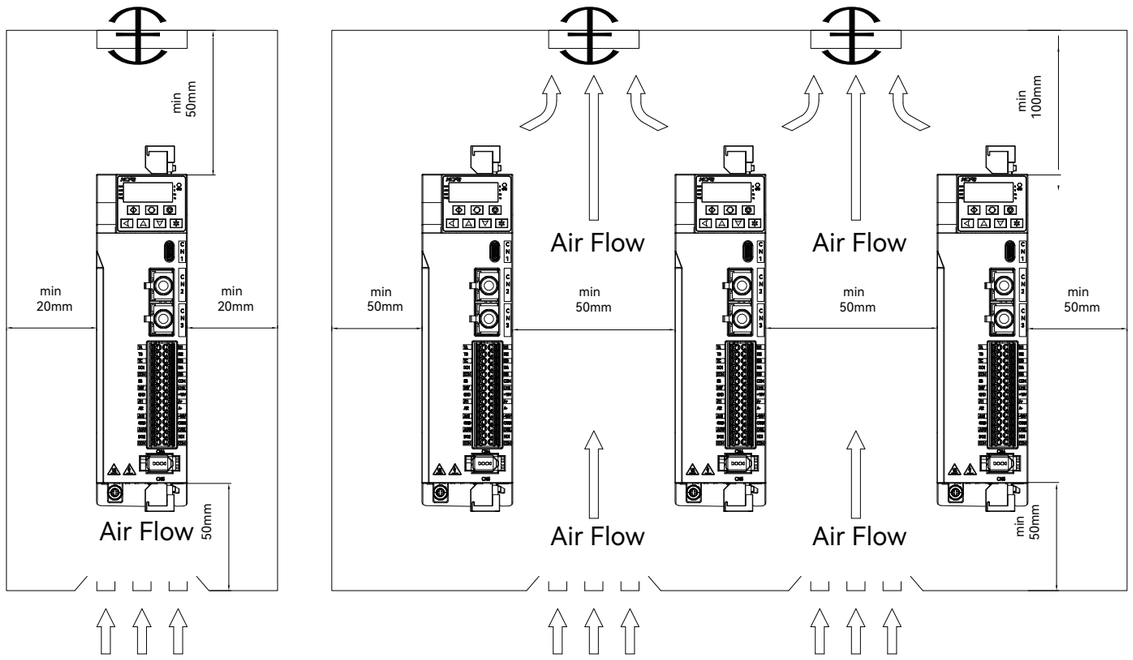
Weight: 3.11kg

Model name	Dimensions			Main unit size			Installation dimensions		Hole diameter	Installation method
E610	W	H	D	W	H1	D1	W2	H2	ϕ	Wall-mounted
HDv-E610-4T5.5B-000	90	248.7	229	90	243.3	200	76	227.5	6	√
HDv-E610-4T7.5B-000										
HDv-E610-4T5.5BS-000										
HDv-E610-4T7.5BS-000										

Installation environment

1. The ambient temperature should be around -10℃~60℃. When temperature exceeds 50℃, de-rating is required (Maximum de-rating is 20% at 60℃).
2. Install the VFD on the surface of an incombustible object, and ensure that there is sufficient space around for heat dissipation.
3. Free from the direct sun.
4. Free from the location with high humidity and condensation, humidity less than 95%
5. Free from the vibration(less than 5. 9m/s² (0. 6g))
6. Free from oil dirt, dust and metal powder
7. Free from corrosive, explosive and combustible gas.

Installation direction and space



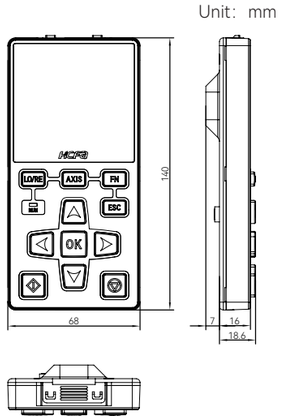
Precautions

1. When installing the VFD, do not seal its suction and discharge holes or place it upside down, otherwise it will cause malfunction.
2. In order to get a relatively low air resistance for the cooling fan to effectively dissipate heat, please follow the recommended installation space distance when installing more than one servo drive.
3. When multiple VFD are installed in parallel, the ambient temperature is required to be no higher than 40℃.
4. Please avoid being installed on the other VFD, because the heat generated by the lower VFD rises during operation, easily causing unnecessary temperature increase.
5. Do not install heat source components such as braking resistors near the VFD.
6. When the electric cabinet environment is in a high humidity environment, install a dehumidification device to avoid condensation.

LED External Keypad

- Built-in clock function
- Support 4 groups of parameter storage
- Built-in micro SD card slot
- Up to 100 meters can be extended
- Built-in Type-C interface, bluetooth

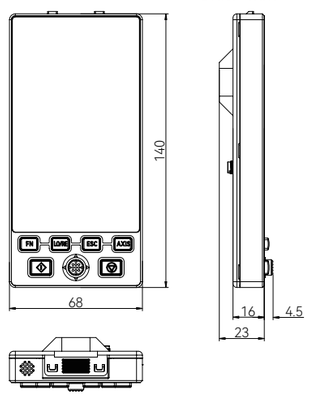
Unit: mm



LCD External Keypad

- Built-in clock function
- Support 4 groups of parameter storage
- Built-in micro SD card slot
- Support interface secondary development
- Up to 100 meters can be extended
- Built-in Type-C interface, Bluetooth, Wifi

Unit: mm



Selection Guide

E600 series VFD		
Voltage level	**Model name**	**Description**
220V	HDv-E600-2S0.4B-000	E600，single-phase 220V，power 400W，Built-in Modbus RTU communication
	HDv-E600-2T0.4B-000	E600，three-phase 220V，power 400W，Built-in Modbus RTU communication
	HDv-E600-2S0.7B-000	E600，single-phase 220V，power 750W，Built-in Modbus RTU communication
	HDv-E600-2T0.7B-000	E600，three-phase 220V，power 750W，Built-in Modbus RTU communication
	HDv-E600-2S1.5B-000	E600，single-phase 220V，power 1.5kW，Built-in Modbus RTU communication
	HDv-E600-2T1.5B-000	E600，three-phase 220V，power 1.5kW，Built-in Modbus RTU communication
	HDv-E600-2S2.2B-000*	E600，single-phase 220V，power 2.2kW，Built-in Modbus RTU communication
	HDv-E600-2T2.2B-000*	E600，three-phase 220V，power 2.2kW，Built-in Modbus RTU communication
380V	HDv-E600-4T0.4B-000	E600，three-phase 380V，power 400W，Built-in Modbus RTU communication
	HDv-E600-4T0.7B-000	E600，three-phase 380V，power 750W，Built-in Modbus RTU communication
	HDv-E600-4T1.5B-000	E600，three-phase 380V，power 1.5kW，Built-in Modbus RTU communication
	HDv-E600-4T2.2B-000	E600，three-phase 380V，power 2.2kW，Built-in Modbus RTU communication
	HDv-E600-4T3.7B-000	E600，three-phase 380V，power 3.7kW，Built-in Modbus RTU communication
	HDv-E600-4T5.5B-000	E600，three-phase 380V，power 5.5kW，Built-in Modbus RTU communication
	HDv-E600-4T7.5B-000	E600，three-phase 380V，power 7.5kW，Built-in Modbus RTU communication

Note: *To be available in December, 2023

E610 series VFD		
Voltage level	**Model name**	**Description**
220V	HDv-E610-2S0.4B-000	E610，single-phase 220V，power 400W，Built-in Modbus RTU, CANopen communication
	HDv-E610-2T0.4B-000	E610，three-phase 220V，power 400W，Built-in Modbus RTU, CANopen communication
	HDv-E610-2S0.7B-000	E610，single-phase 220V，power 750W，Built-in Modbus RTU, CANopen communication
	HDv-E610-2T0.7B-000	E610，three-phase 220V，power 750W，Built-in Modbus RTU, CANopen communication
	HDv-E610-2S1.5B-000	E610，single-phase 220V，power 1.5kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-2T1.5B-000	E610，three-phase 220V，power 1.5kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-2S2.2B-000*	E610，single-phase 220V，power 2.2kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-2T2.2B-000*	E610，three-phase 220V，power 2.2kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-2S0.4BS-000	E610，single-phase 220V，power 400W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2T0.4BS-000	E610，three-phase 220V，power 400W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2S0.7BS-000	E610，single-phase 220V，power 750W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2T0.7BS-000	E610，three-phase 220V，power 750W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2S1.5BS-000	E610，single-phase 220V，power 1.5kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2T1.5BS-000	E610，three-phase 220V，power 1.5kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2S2.2BS-000*	E610，single-phase 220V，power 2.2kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-2T2.2BS-000*	E610，three-phase 220V，power 2.2kW，Built-in Modbus RTU, CANopen communication, built-in STO

Note: *To be available in December, 2023

E610 series VFD

Voltage level	Model name	Description
380V	HDv-E610-4T0.4B-000	E610，three-phase 380V，power 400W，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T0.7B-000	E610，three-phase 380V，power 750W，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T1.5B-000	E610，three-phase 380V，power 1.5kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T2.2B-000	E610，three-phase 380V，power 2.2kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T3.7B-000	E610，three-phase 380V，power 3.7kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T5.5B-000	E610，three-phase 380V，power 5.5kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T7.5B-000	E610，three-phase 380V，power 7.5kW，Built-in Modbus RTU, CANopen communication
	HDv-E610-4T0.4BS-000	E610，three-phase 380V，power 400W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T0.7BS-000	E610，three-phase 380V，power 750W，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T1.5BS-000	E610，three-phase 380V，power 1.5kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T2.2BS-000	E610，three-phase 380V，power 2.2kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T3.7BS-000	E610，three-phase 380V，power 3.7kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T5.5BS-000	E610，three-phase 380V，power 5.5kW，Built-in Modbus RTU, CANopen communication, built-in STO
	HDv-E610-4T7.5BS-000	E610，three-phase 380V，power 7.5kW，Built-in Modbus RTU, CANopen communication, built-in STO

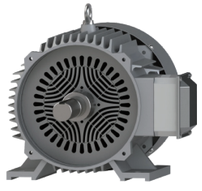
External operation panel

Voltage level	Model name	Description
External operation panel	LCD external keypad	4.3'' text screen, can support secondary development
	LED external keypad	Two lines of digital display

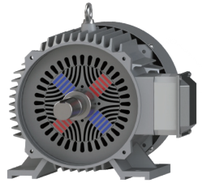
Synchronous reluctance motor Introduction

Overview

Synchronous reluctance motor (SynRM) is a synchronous motor based on the "minimum reluctance principle" that uses the torque (reluctance torque) generated by the special salient pole structure design of the rotor to drive the motor. The rotor does not have a squirrel-cage winding structure and does not use or only uses a small amount of permanent magnet materials which has the characteristics of high energy efficiency, stability and reliability, easy maintenance, and low cost, and can meet the requirements of equipment driving applications in various complex industrial environments. The magnetized synchronous reluctance motor developed on the basis of this technology uses high-temperature-resistant ferrite as the magnetizing material, and its performance is further improved. It combines the reliability of asynchronous motors and the high performance of permanent magnet motors, which is a high cost-effective, excellent and efficient drive solution for industrial equipment.



Synchronous reluctance motor (SynRM)



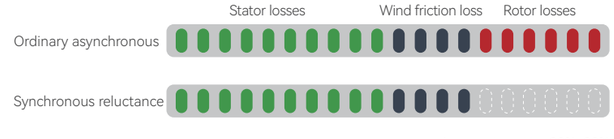
Magnetized synchronous reluctance motor

Synchronous reluctance motor Technical Features

Motor energy efficiency standards

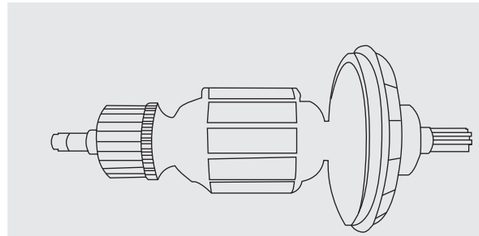
Definition	International Standards (IEC 60034-1)	New National Standards (GB18613-2020)	Old National Standard (GB18613-2012)	Description
Super premium efficiency	IE5	Primary energy efficiency	-	-
High efficiency	IE4	Second-level energy efficiency	Primary energy efficiency	-
Standard efficiency	IE3	Third-level energy efficiency	Second-level energy efficiency	-
Elimination	IE2	-	Third-level energy efficiency	Market access energy efficiency limit value

High energy efficiency



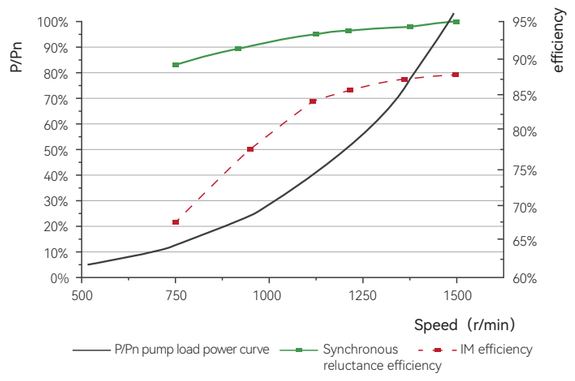
Loss reduced by 20%~30%

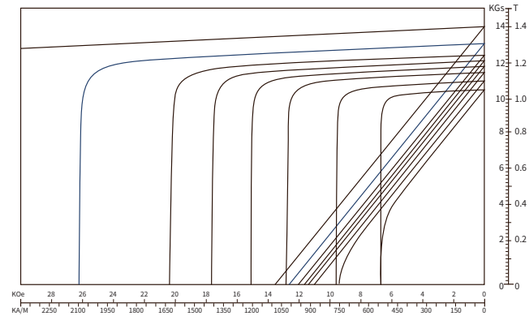
High reliability



No risk of broken squirrel cage rotor bars

Pump load efficiency comparison





No risk of demagnetization of rare earth magnets

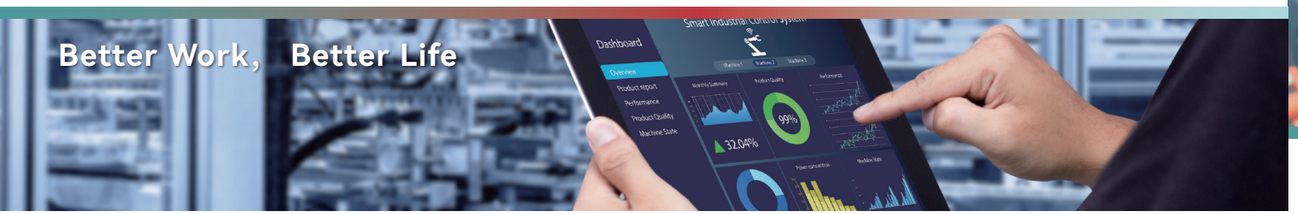
Low cost

The main materials are iron and copper, and it does not contain expensive materials such as rare earth permanent magnets, so the cost is lower.

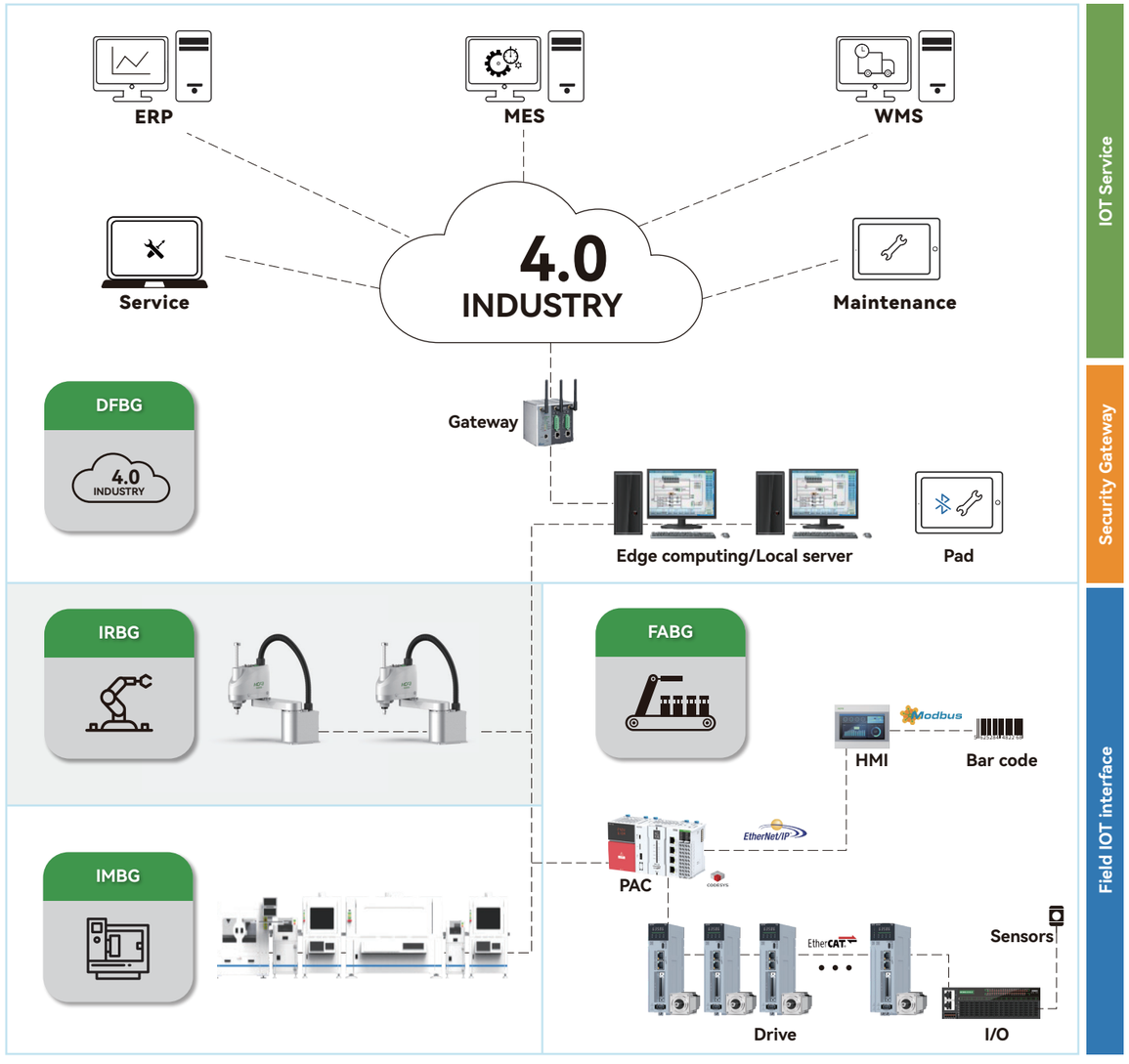
Synchronous reluctance motor Specifications

Frame No.	Series*	Power/kW	Voltage/V	Current/A	Rated speed/rpm	Rated torque/Nm	Rated frequency/Hz	Efficiency/%	Power factor
100L	SR	3	380	6.5	3000	9.55	150	91.1	0.84
100L	SR	4	380	8.4	3000	12.73	150	91.8	0.84
100L	SR	5.5	380	11.5	3000	17.51	150	92.6	0.84
100L	SR	7.5	380	14.5	3000	23.88	150	93.3	0.84

Note: *More models are being updated continuously, and the product will be launched in 2024



We not only provide the core components of industrial automation, but also engage in the industrial process, industrial robots, industrial machines, and digital factories, and can provide enterprises with comprehensive solutions of automation + intelligent equipment + digitalization



Zhejiang Hechuan Technology Co., Ltd., established in 2011, is a company that focuses on the research and development, manufacturing, sales and application integration of industrial automation products, and committed to providing core components and system integration solutions for smart factories.

The main products include controllers, servo systems, vision systems, encoders, VFDs, HMIs, electric rollers, precision transmission components, etc., covering the entire field of industrial automation.

We have newly established a 200-mu high-efficiency precision industrial transmission industrialization base. By introducing industry professionals, it has orderly promoted the industrialization application of precision guide rails, lead screws and other transmission components.

In November 2023, HCFA Technology and Bosch Rexroth signed a strategic cooperation agreement. Bosch Rexroth strategically invested in HCFA Technology and planned to cooperate to establish a subsidiary. Based on common innovation concepts and innovative thinking, the two parties will integrate their respective advantages, form resource complementarity, and carry out in-depth cooperation, striving to become ecological partners in the entire value chain of industrial automation and promote the further development of China's industrial automation industry.

R&D Centers
6
Set up nationally

R&D investment
10%+
Proportion of revenue

R&D personnel
300+
Elite gathering

- Established six R&D centers in Longyou, Hangzhou, Shenzhen, Dalian, Suzhou and Germany
- Self-designed ASIC and SOC chips, realize localization replacement
- First-class AMR magnetic technology/high-precision encoder in the industry