

HH100 Series Drive



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Product Introduction

HH100 Series Drives are positioned for High performance applications in industrial machinery market. HH100 drives have excellent motor control performance and EMC performance. These drives are designed for textile

machines, food processing machines, ceramic process machines, plastic machines, machine tool industry, elevators, transportation equipment etc.

Product Features

More accurate motor autotuning

Accurate rotating and static motor autotuning, convenient debugging, easy operation.

Rotating Autotuning

De-couple from the load, applied to the situation with high control accuracy

Static Autotuning

No need to de-couple from the load, applied when rotating autotuning is not available

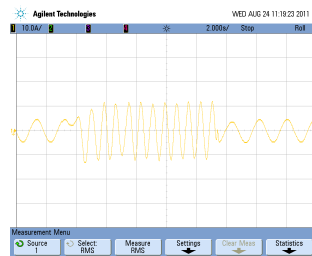
Excellent performance

AM sensorless vector control mode:

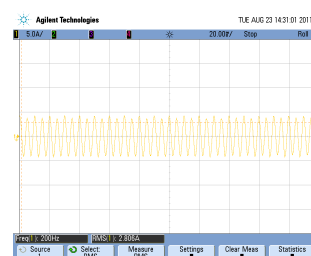
Starting Torque	Dynamic Response	Speed Ratio	Steady Speed Accuracy
0.5 Hz / 150% rated torque	< 50 ms	1:100	±0.2%



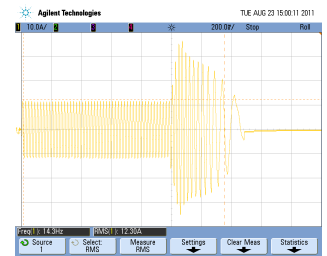
FWD/REV current waveform in sensorless vector control mode with 50 Hz full load



Load/Unload current waveform in sensorless vector control mode with 0.5 Hz



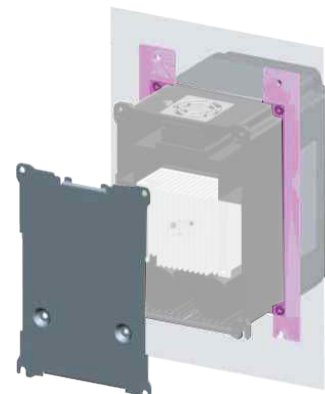
Running current waveform in sensorless vector control mode with 200 Hz



Flux braking current waveform in sensorless vector control mode with 50 Hz (deceleration time: 0.5 s)

Separate Air-duct

The separate air duct prevents the contaminants into the electronic parts/components and greatly improves the protective effect of the inverter, as well as its reliability and service life, to adapt various complicated site environments. It can also facilitate the heat-releasing in control cabinets and the heat-releasing design of the customer.

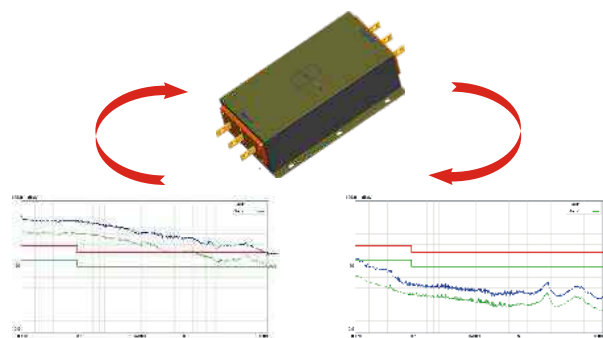


C3 Input Filter (Standard Configuration) and C2 Filter (Optional)

C3 input filter is embedded in the factory to meet different application requirements, save installation space and avoid the electromagnetic interference caused by incorrect selection and site installation.

Remarks:

- (1) C2 filter: EMC performance of the inverter achieves the limited usage requirement in civil environment.
- (2) C3 filter: EMC performance of the inverter achieves the limited usage requirement in civil environment.



Before installing the filter

After installing the filter

Conductive interference test of the power supply terminals

Technical Specifications

Function		Specification
Input	Input Voltage (V)	AC 3ph 380 V (-15%)~440 V (+10%)
	Input Frequency (Hz)	47~63 Hz
Output	Output Voltage (V)	0~input voltage
	Output Frequency (Hz)	0~400 Hz
	Output Power (kW)	0.75~15 kW
Technical Control Feature	Control Mode	SVPWM, sensorless vector control
	Motor Type	Asynchronous motor
	Speed Ratio	1:100 (SVC)
	Speed Control Accuracy	±0.2% (sensorless vector control)
	Speed Fluctuation	±0.3%(sensorless vector control)
	Torque Response	<50 ms (sensorless vector control)
	Torque Control Accuracy	10% (sensorless vector control)
	Starting Torque	0.5 Hz / 150% (sensorless vector control)
Running Control Feature	Overload Capability	150% of rated current: 1 minute 180% of rated current: 10 seconds 200% of rated current: 1 second
	Frequency Setting Method	Digital setting, analog setting, pulse frequency setting, multi-stage speed running setting, simple PLC setting, PID setting, MODBUS communication setting Realize the shifting between the set combination and set channel.
Fault Protection	Fault Protection	Provide over 30 fault protection functions: overcurrent, overvoltage, undervoltage, overheating, phase failure and overload, etc.
	Analog Input	1 channel (AI2) 0~10 V / 0~20 mA and 1 channel (AI3) -10~10 V
Peripheral Interface	Analog Output	2 channels (AO1, AO2) 0~10 V / 0~20 mA
	Digital Input	4 channels common input the MAX. frequency: 1 kHz; 1 channel high speed pulse input the MAX. frequency: 50 kHz;
Relay Output	Relay Output	2 channels programmable relay output RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capability: 3A / AC 250 V
	Mountable Method	Wall mountable and flange mountable
Others	Temperature of the running environment	-10~50°C, derate above 40°C
	Protective Degree	IP20
	Cooling	Air-cooling

HH100 Series Drive

Type Designation Key

HH100 - 2R2 - 4

① ② ③

Sign	Detailed description of the sign
①	Drive Series Name
②	Power Rating in kW
③	Voltage Class: 4-400 V

Power Ratings

Model No.	Output Power (kW)	Input Current (A)	Output Current (A)	Carrier Frequency (kHz)
HH100-0R7-4	0.75	3.4	2.5	2~15(8)
HH100-1R5-4	1.5	5	3.7	2~15(8)
HH100-2R2-4	2.2	5.8	5	2~15(8)
HH100-4R0-4	4	13.5	9.5	2~15(8)
HH100-5R5-4	5.5	19.5	14	2~15(8)
HH100-7R5-4	7.5	25	18.5	2~15(8)
HH100-110-4	11	32	25	2~15(8)
HH100-150-4	15	40	32	2~8(4)

Remarks:

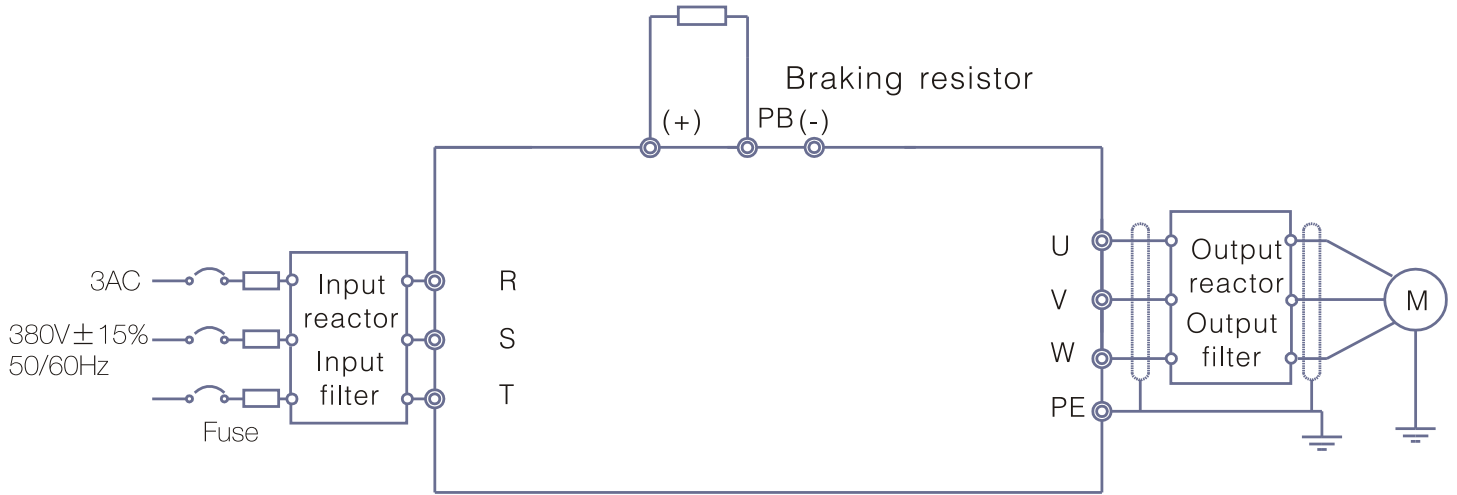
1. The input current is tested when no reactor and 380 V input voltage.
2. The output current is defined as the rated value when the output voltage is 380 V.
The output current needs to be calculated when the output voltage is 400 V, 415 V or 440 V.

Product Weight and Dimensions

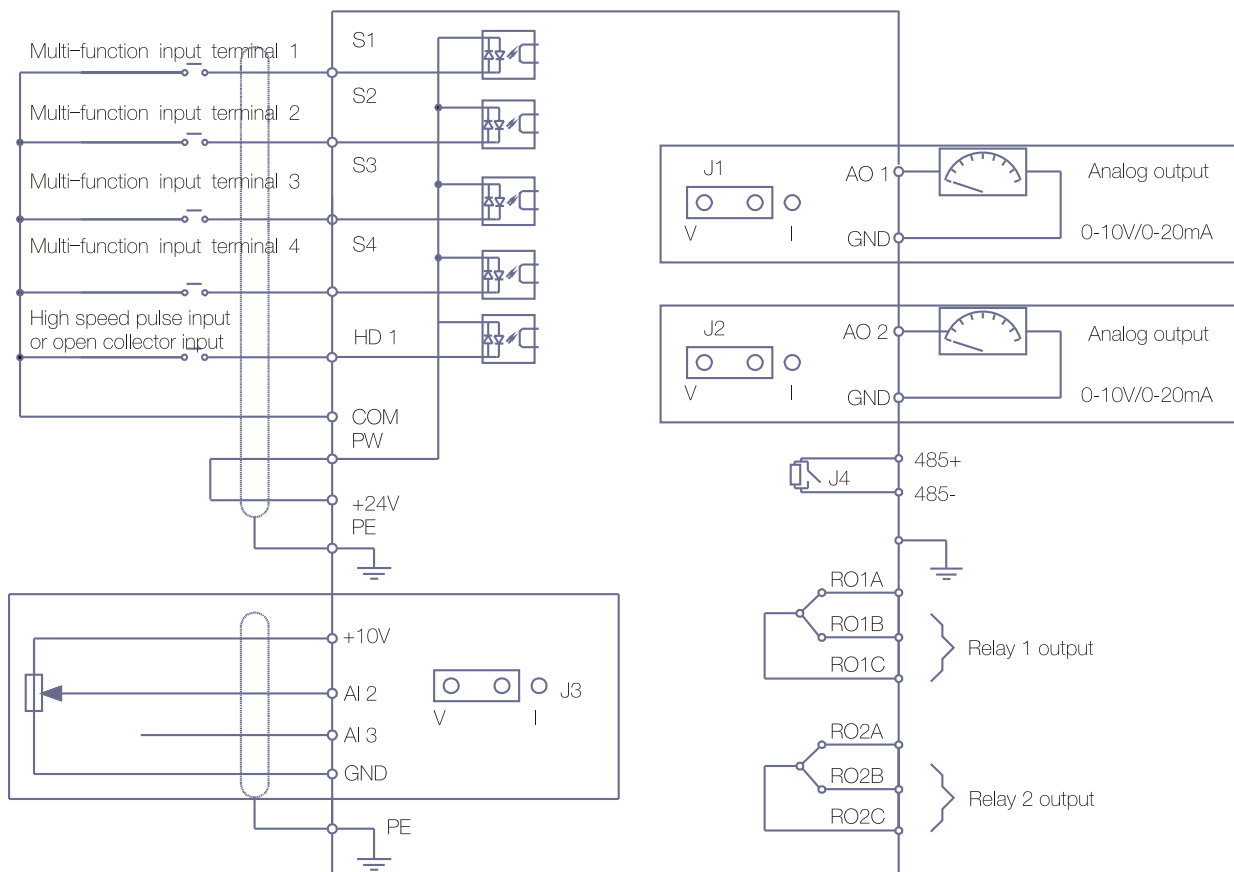
Power	Gross Weight (kg)	Net Weight (kg)	Packing Material	Dimension (mm)
0.7~2.2 kW	2.4	1.9	Carton box	290 x 210 x 265
4~5.5 kW	3.9	3.1	Carton box	350 x 235 x 270
7.5~15 kW	6.6	5.6	Carton box	430 x 375 x 325

Standard Wiring

Wiring diagram of main circuit

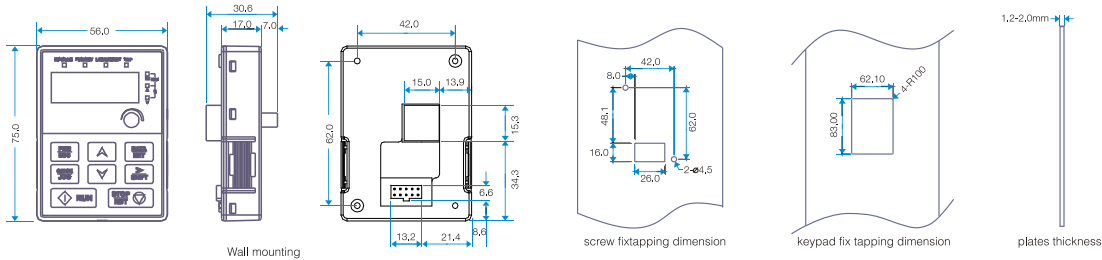


Wiring diagram of control board



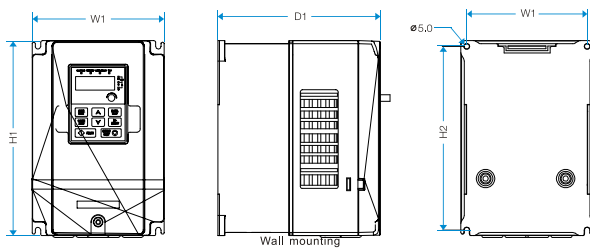
Installation Dimensions

Keypad dimensions



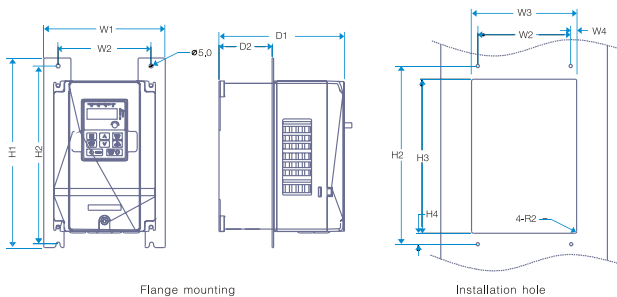
Remarks: the fix Keypad mounting bracket is optional

Wall mounting



Model	W1	W2	H1	H2	D1	Installation Hole
0.7~2.2 kW	126	115	186	175	155	5
4~5.5 kW	146	131	256	243.5	167	6
7.5~15 kW	170	151	320	303.5	196	6

Flange mounting



Model	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Installation Hole
0.7~2.2 kW	150.2	115	130	7.5	223.9	220	190	13.5	155	65.5	5
4~5.5 kW	170.2	131	150	9.5	292	276	260	6	167	84.5	6
7.5~15 kW	191.2	151	174	11.5	370	351	324	12	196.3	113	6

Remarks:

1. The flange installation board is optional.



About Us

Founded & established in 1983 as Hi-Rel Electronics Pvt. Ltd., we are now a Hitachi group company - Hitachi Hi-Rel Power Electronics Pvt. Ltd., recognized as a pioneer in power electronics. With 3 decades of experience, we have garnered a significant level of trust in our market segment and continue to offer world class power electronics products, value added services & customized solutions.

Our product portfolio includes UPS (uninterruptible power supply) for industrial, commercial & enterprise applications, medium voltage & low voltage variable frequency drives, steel automation & engineered drives for customized applications, industrial automation & control products like PLC, SCADA & DCS, solar inverters, railway products and other customized products like UMPS, I-dip (dip ride through solutions).

With expertise, experience and an efficient product line, we will always be your power electronics partner.

When you choose to do business with us, you are partnering with a company who cares.

- Leading manufacturer of UPS, drives & automation products and solar inverters
- State-of-the-art manufacturing facility at Gandhinagar & Sanand in Gujarat, India
- In-house R&D facility recognized by DSIR, Government of India
- ISO 9001:2008, ISO 14001:2004 & BS OHSAS 18001:2007 certified company with export house status
- Approved by leading consultants and EPC vendors
- Pan India & global presence
- Serving entire gamut of industries
- Rich experience in “mission critical” applications
- Dedicated & decentralized 24x7 after-sales-service
- Offers products with greater energy efficiency & lower carbon footprint

Global & Pan India Presence



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In the spirit of continuous improvement, specifications are subject to change without notice.

