

HOSSONI
ELECTRIC
鸿宝电气



HONGBAO ELECTRIC GROUP CO.,LTD.

www.hossoni.com

EPS Emergency Power Supply UPS Uninterrupted Power Supply Frequency Converter
Soft Starter Switching Power Supply Stabilized Voltage Power Supply Voltage Regulator Charger
Inverter Solar/Wind Energy Power Generating System Transformer Storage Battery
Electric Automobile/Motor Controller Circuit Breaker Architectural Electrical Equipment

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Frequency converter



Constant quality, Devote to the world





The Most Complete and Largest Power Supply Research & Development and Production Base

A.Hongbao Shanghai Jiadingbei industrial Park B.Hongbao Shanghai Jiadingbei Technology Park C.Shanghai Hongbao production park
D.Hongbao Wengyang Industrial Park E.Hongbao(Shanghai)Logistics information center F.Hongbao Xiangyang Technology Park

Hongbao Electric Group Co., Ltd. is a large-scale high and new-tech enterprise specialized in researching, developing, producing, marketing, information and service in the power field. The company has two major production bases in Yueqing, Zhejiang and Jiading, Shanghai, the production workshop covers an area of more than 260,000 square meters, has more than 3500 employees, owns 16 professional branch companies, more than 500 interior sales companies and special sales agencies, over 30 oversea branch companies and 100 oversea representatives.

The leading products include voltage stabilizer, emergency power supply, uninterrupted power supply, storage battery, frequency converter, soft starter, charger, inverter, transformer, circuit breaker, architectural electrical equipment and others of more than 50 series, over 3000 varieties.

Hongbao Electric Group Co., Ltd. is one of the director units of China Power Supply Society. The company is awarded "ational high&new technology enterprise", "ational inspection-free product", "hina well-know trademark", "rustworthy enterprise", "ZheJiang famous brand", "eliable quality product" etc. Also achieved the ISO9001 quality management system certification and ISO14001 environment management system certification, the products have obtained certificates like UL, CE, CB, SEMKO, SASO, and also domestic CCC, CQC and TLC that is issued by Ministry of Information Industry successively.





HB-H6 AC driver

The HB-H6 series AC drive is a general-purpose high-performance current vector control AC drive, can implement the control of asynchronous motor and permanent magnet synchronous motor. HB-H6 has good dynamic characteristics and overload capacity with vector control technology and high torque output at low speed. It increases the user programmable function, background monitoring software and communication bus function, and supports multi-kind PG cards. It is used to drive various automation production equipment involving textile, paper-making, wiredrawing, machine tool, packing, food, fan and pump.

HB-H6 series good performance



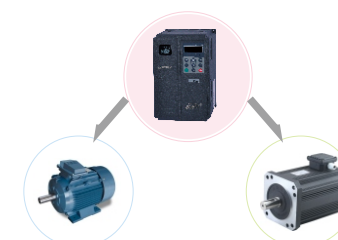
HB-H6 AC driver

HOSSONI HB-H6 AC driver is the main model, designed based on user's requirement and pursuit for best quality and the most reliable products. HB-H6 provide the user a new experience by high performance and powerful.

Support vector-controlled for multi-motor

Control of asynchronous motor and synchronous motor are implemented through the current vector control technology.

Control of permanent magnet synchronous motor without absolute position feedback is implemented through the current vector control technology



Asynchronism motor Synchronous machine

Supports multiple types of encoder



Differential encoder



Open-collector encoder



UVW encoder



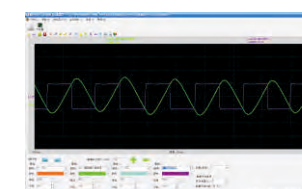
Resolver

Sensorless flux vector control

Sensorless flux vector control can output 150% rated torque at 0.5Hz when motor is locked-rotor. Sensorless flux vector control also improve field adaptability, reduce susceptibility to motor, so it can be used for winding application, load distribution of several motor driving same load.

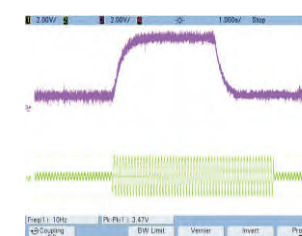
High starting torque

HB-H6 AC driver provides 150% startup torque at 0.5Hz(without sensor vector control) and provides 180% startup torque at 0.0Hz(with sensor vector control)



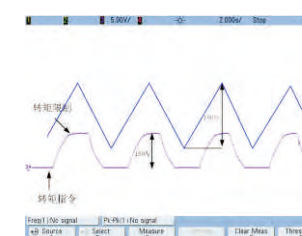
Great responsiveness

Torque response < 20ms without sensor vector control.
Torque response < 5ms with sensor vector control.



Torque limitation to protect motor

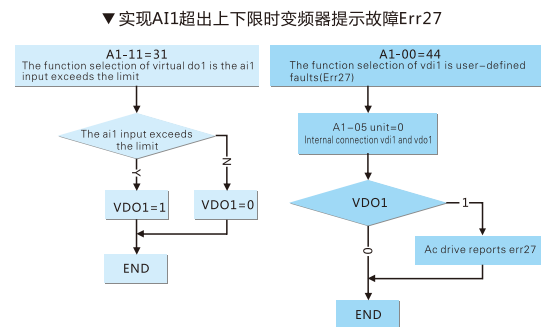
HB-H6 AC can limit the torque. When torque command exceed the max torque of motor, the torque of motors are constrained by max torque with maximum efficiency and protect the device.



HB-H6 series powerfull feature

Virtual I/Os

Five groups of virtual DI/Dos, the state of virtual DI can be set by function code directly or binding virtual DO capabilities.



Flexible and practical AI/AO

Every AI (AI1~AI3) can be provided 4 corresponding relationship curves, with more dynamic

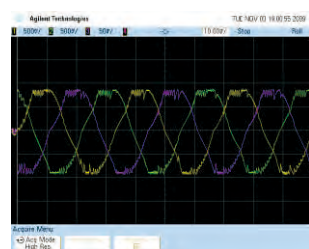
AI1~AI3 accept factory corrected or perform correction in the applications, up to 20mV precision after calibration.

AI1~AI3 can be used as DI

AI3 is isolated input port, can be used as Pt100, PT1000A or $\pm 10V$ input port

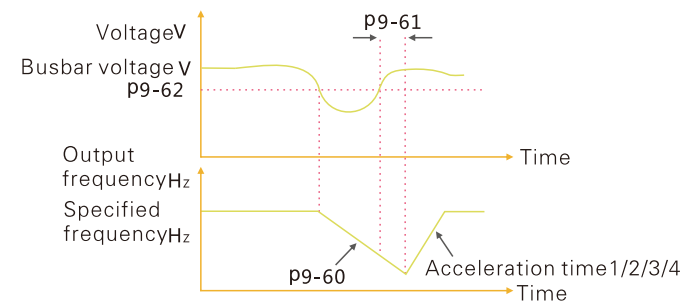
Power dip ride through

The frequent over-current alarm of AC driver can be avoided by rapid current limit function. The rapid current limit function can reduce the AC drive's over current faults at maximum, guaranteeing uninterrupted running of the AC drive and avoiding over current alarm caused by load increases or currents interfere.



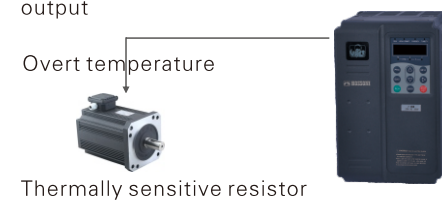
Power dip ride through

It ensures that the ac drive continues to run for a short time when an instantaneous power failure or sudden voltage reduction occurs.



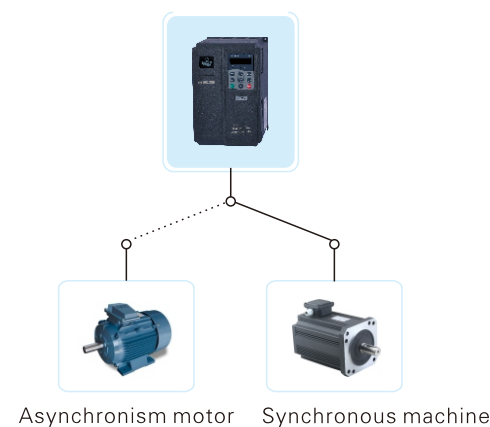
Motor overheat protection

The optional extension card enables AI3 to receive the signal from the motor temperature sensor input (PT100, Pt1000). When temperature of motor exceed warning temperature value, AC driver provide over temperature signal. When the temperature exceed protective value, it will provide motor overheat protection with malfunction output



Multi-motor switchover

Four motors can be switched over via four groups of motor parameters, so switching synchronous machine and asynchronousism motor can be realized.



HB-H6 convenient application

Advanced background software

The background monitoring software helps to achieve functions of parameter upload & download and a real-time oscilloscope

Restoring backup parameters

When the parameters caused confusion by debug or carelessness, it can be restored default parameters or restored backup parameters and less confusing.

- Restore default parameters
- Restore backup parameters

Multiple communication protocols

It supports communication various bus communication modes to connect peripherals.
supported types: RS485 PROFIBUS-DP

HB-H6 Reliability

AC drive of 7.5kw and above configured with DC reactor as standard

Improve the power factor of the input side

Improve the efficiency and thermal stability of the AC drive.

Eliminate the impact of higher harmonics of the AC drive input side and reduce the external conduction and radiation interference.

Fan easy to change

Easy to clean, maintain and change.



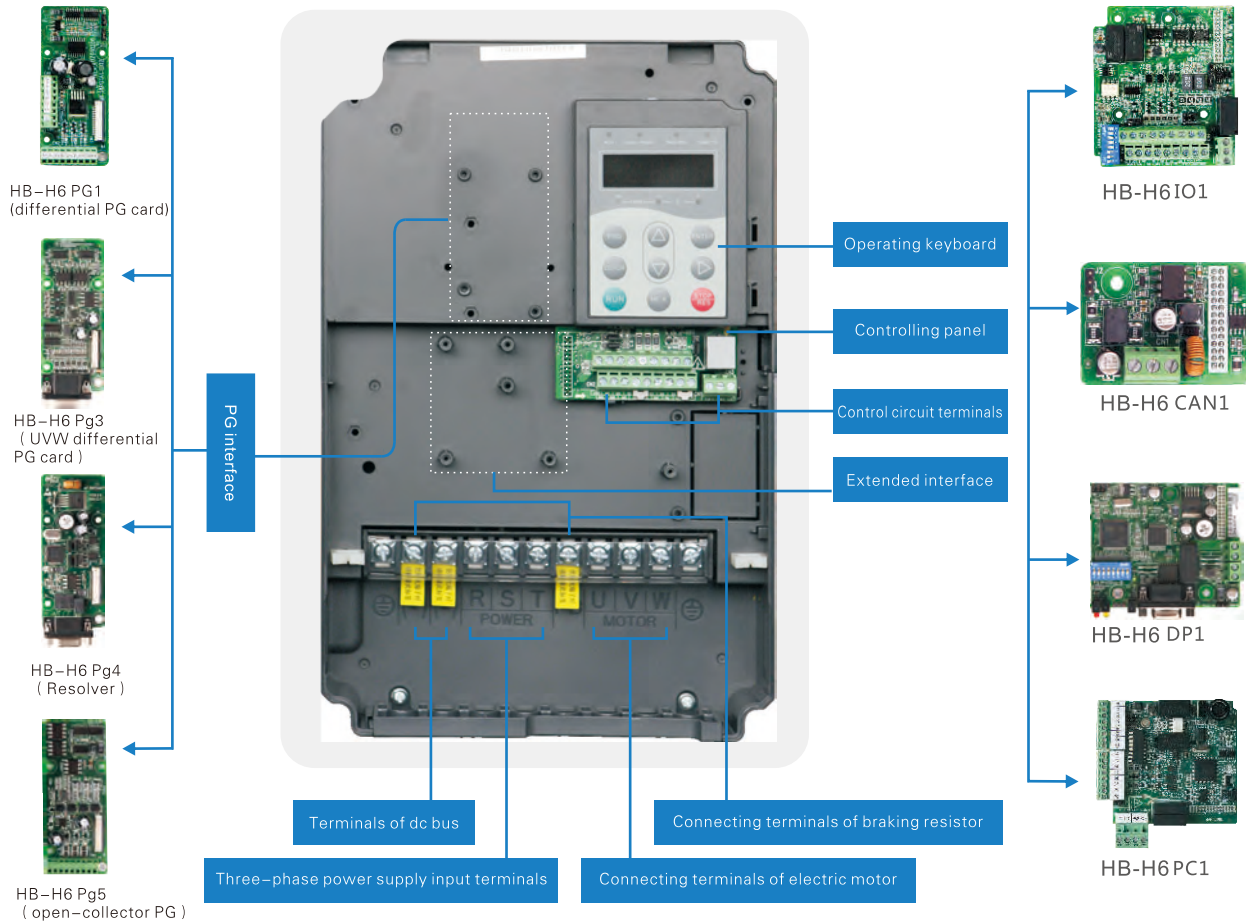
Endure environmental design

Three proofing coating process, dust and humidity, mildew prevent function

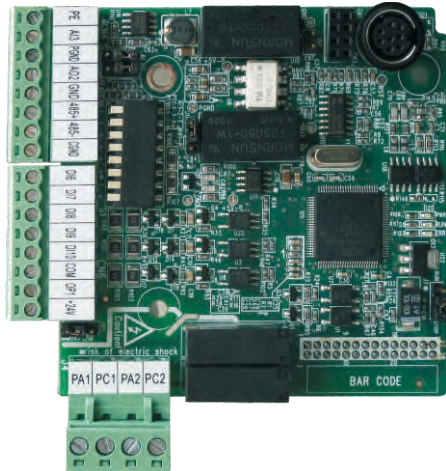
Wide operating voltage range

Independent duct design
ROHS compliant

HB-H6 series extended capabilities



HB-H6 series user programmable card



PLC card can update the common date between PLC and main CPU within 2ms.
user software can operate the internal variables of AC driver, also workable for all the ports.
It enable to write programs in ladder diagram and compatible with that of the H1U series PLC

HB-H6 provide the resources for user

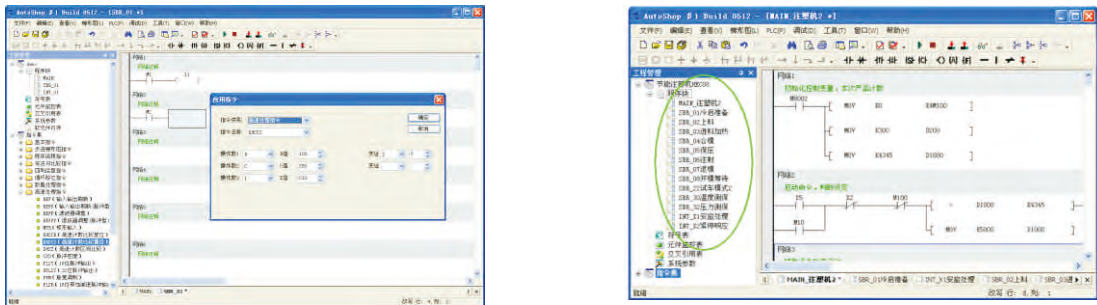
HB-H6 provided resources as follow 1*AI , 1*AO , 5*DI , 2*RELAY , 1*RS485.

| Description | Quantity | Introduction |
|-------------------|----------|--|
| AI | 1 | Isolation analog +- 1-v/20ma analog input, connected to pt100, ptc |
| AO | 1 | 0~10V/0~20mA output |
| Digital input(DI) | 5 | Normal digital input |
| Relay output | 2 | Normally open |
| RS485 | 1 | MODBUS with master/slave |

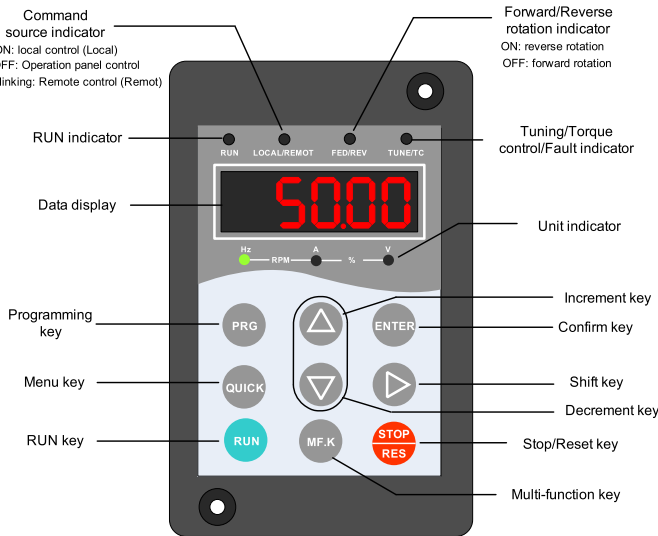
The newly added functions of standard PLC and standard AC driver

PLC operate internal variables of AC driver and\port resources
AC driver provides special parameter for PLC
Support PLC fault code
2ms data interaction
Support PLC monitor for PLC internal variables

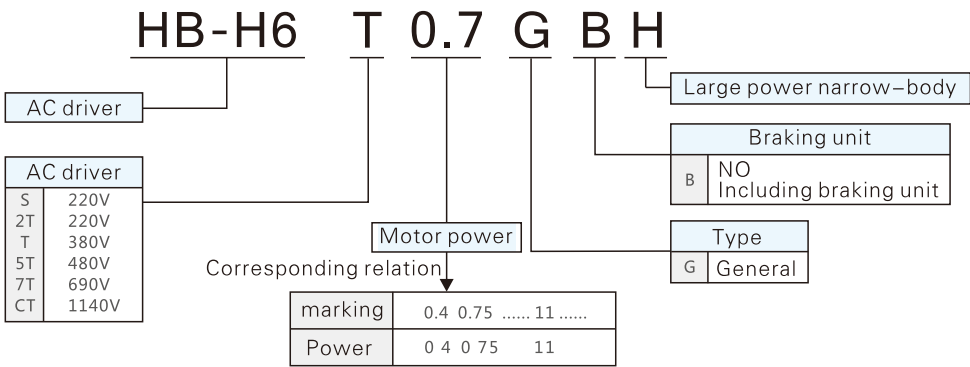
Visual Studio system



Simple to operate

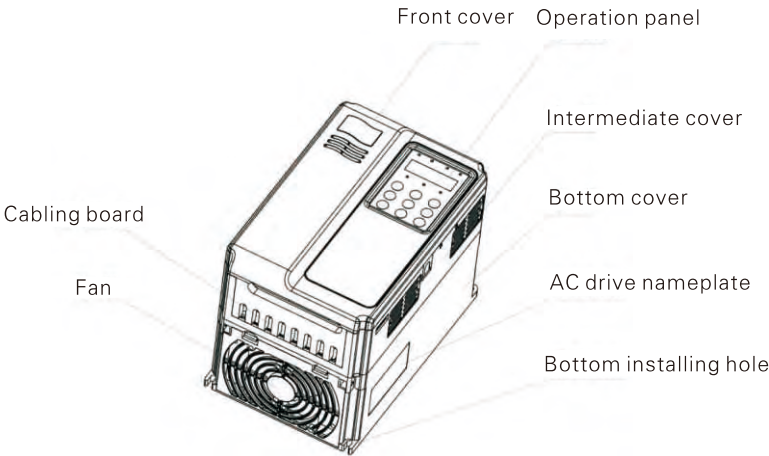


HB-H6 series product model and technical data

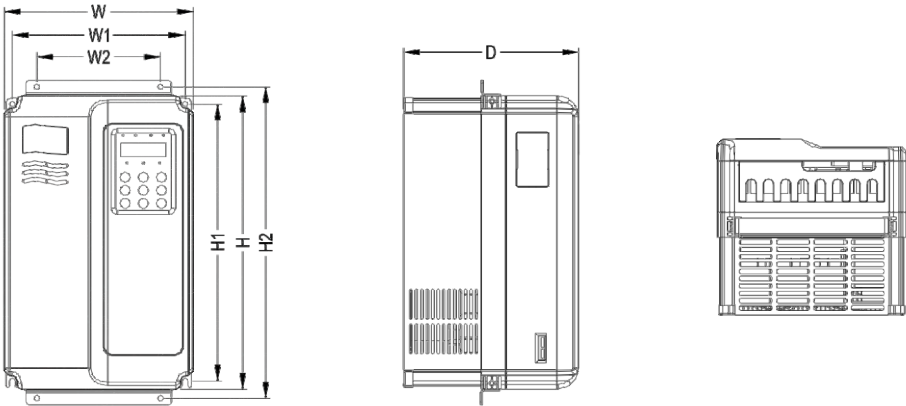


| AC driver model | | | | Power capacity | Input current | Output current | Motor | |
|---|--------------|--|--|----------------|---------------|----------------|-------|-----|
| Three phase : AC 220V (-15%~+20%) , 50/60Hz | | | | | | | KW | HP |
| HB-H6-2T0.75GB | | | | 3.0 | 5.0 | 3.8 | 3.8 | 1 |
| HB-H6-2T1.5GB | | | | 4.0 | 5.8 | 5.1 | 5.1 | 1.5 |
| HB-H6-2T2.2GB | | | | 5.9 | 10.5 | 9.0 | 9.0 | 3 |
| HB-H6-2T3.7GB | | | | 8.9 | 14.6 | 13.0 | 13.0 | 5 |
| HB-H6-2T5.5GB | | | | 17.0 | 26.0 | 25.0 | 25.0 | 7.5 |
| HB-H6-2T7.5GB | | | | 21.0 | 35.0 | 32.0 | 32.0 | 10 |
| HB-H6-2T11G | | | | 30.0 | 46.5 | 45.0 | 45.0 | 15 |
| HB-H6-2T15G | | | | 40.0 | 62.0 | 60.0 | 60.0 | 20 |
| HB-H6-2T18.5G | | | | 57.0 | 76.0 | 75.0 | 75.0 | 25 |
| HB-H6-2T22G | | | | 69.0 | 92.0 | 91.0 | 91.0 | 30 |
| HB-H6-2T30G | | | | 85.0 | 113.0 | 112.0 | 112.0 | 40 |
| HB-H6-2T37G | | | | 114.0 | 157.0 | 150.0 | 150.0 | 50 |
| HB-H6-2T45G | | | | 134.0 | 180.0 | 176.0 | 176.0 | 60 |
| HB-H6-2T55G | | | | 160.0 | 214.0 | 210.0 | 210.0 | 70 |
| HB-H6-2T75G | | | | 231.0 | 307.0 | 304.0 | 304.0 | 100 |
| Three phase : AC 380V (-15%~+20%) , 50/60Hz | | | | | | | | |
| HB-H6T0.7GB | | | | 1.5 | 3.4 | 2.1 | 0.75 | 1 |
| HB-H6T1.5GB | | | | 3.0 | 5.0 | 3.8 | 1.5 | 2 |
| HB-H6T2.2GB | | | | 4.0 | 5.8 | 5.1 | 2.2 | 3 |
| HB-H6T3.7GB | | | | 5.9 | 10.5 | 9.0 | 3.7 | 5 |
| HB-H6T5.5GB | HB-H6T5.5PB | | | 8.9 | 14.6 | 13.0 | 5.5 | 7.5 |
| HB-H6T7.5GB | HB-H6T7.5PB | | | 11.0 | 20.5 | 17.0 | 7.5 | 10 |
| HB-H6T11GB | HB-H6T11PB | | | 17.0 | 26.0 | 25.0 | 11.0 | 15 |
| HB-H6T15GB | HB-H6T15PB | | | 21.0 | 35.0 | 32.0 | 15.0 | 20 |
| HB-H6T18.5G | HB-H6T18.5PB | | | 24.0 | 38.5 | 37.0 | 18.5 | 25 |
| HB-H6T22G | HB-H6T22P | | | 30.0 | 46.5 | 45.0 | 22 | 30 |
| HB-H6T30G | HB-H6T30P | | | 40.0 | 62.0 | 60.0 | 30 | 40 |
| HB-H6T37G | HB-H6T37P | | | 57.0 | 76.0 | 75.0 | 37 | 50 |
| HB-H6T45G | HB-H6T45P | | | 69.0 | 92.0 | 91.0 | 45 | 60 |
| HB-H6T55G | HB-H6T55P | | | 85.0 | 113.0 | 112.0 | 55 | 70 |
| HB-H6T75G | HB-H6T75P | | | 114.0 | 157.0 | 150.0 | 75 | 100 |
| HB-H6T90G | HB-H6T90P | | | 134.0 | 180.0 | 176.0 | 90 | 125 |
| HB-H6T110G | HB-H6T110P | | | 160.0 | 214.0 | 210.0 | 110 | 150 |
| HB-H6T132G | HB-H6T132P | | | 192.0 | 256.0 | 253.0 | 132 | 175 |
| HB-H6T160G | HB-H6T160P | | | 231.0 | 307.0 | 304.0 | 160 | 210 |
| HB-H6T200G | HB-H6T200P | | | 250.0 | 385.0 | 377.0 | 200 | 260 |
| HB-H6T220G | HB-H6T220P | | | 280.0 | 430.0 | 426.0 | 220 | 300 |
| HB-H6T250G | HB-H6T250P | | | 355.0 | 468.0 | 465.0 | 250 | 350 |
| HB-H6T280G | HB-H6T280P | | | 396.0 | 525.0 | 520.0 | 280 | 370 |
| HB-H6T315G | HB-H6T315P | | | 445.0 | 590.0 | 585.0 | 315 | 500 |
| HB-H6T355G | HB-H6T355P | | | 500.0 | 665.0 | 650.0 | 355 | 420 |
| HB-H6T400G | HB-H6T400P | | | 565.0 | 785.0 | 725.0 | 400 | 530 |
| HB-H6T450P | | | | 630.0 | 883.0 | 820.0 | 450 | 600 |

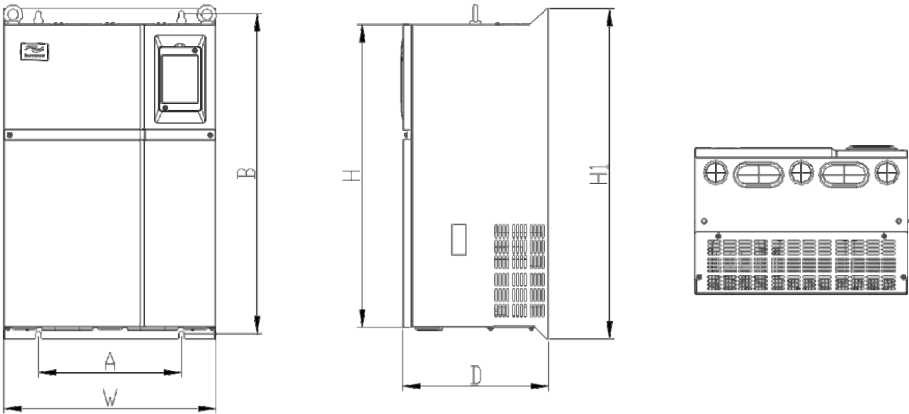
HB-H6 series Product shape diagram



AC driver shape diagram



0.4KW~15Kw dimension and installation diagram



HB-H6 series technical specifications

| Item | | Specifications | |
|--------------------|---------------------------------------|---|---------------|
| Standard functions | Maximum frequency | • Vector control: 0–300 Hz • V/F control: 0–320 Hz | |
| | Carrier frequency | 0.5–16 kHz The carrier frequency is automatically adjusted based on the load features. | |
| | Input frequency resolution | Digital setting: 0.01 Hz Analog setting: maximum frequency x 0.025% | |
| | Control mode | • Sensorless flux vector control (SFVC) • Closed-loop vector control (CLVC) • Voltage/Frequency (V/F) control | |
| | Startup torque | • G type: 0.5 Hz/150% (SFVC); 0 Hz/180% (CLVC) • P type: 0.5 Hz/100% | |
| | Speed range | 1:100 (SFVC) | 1:1000 (CLVC) |
| | Speed stability accuracy | • $\pm 0.5\%$ (SFVC) • $\pm 0.02\%$ (CLVC) | |
| | Torque control accuracy | $\pm 5\%$ (CLVC) | |
| | | | |
| Standard functions | Overload capacity | • G type: 60s for 150% of the rated current, 3s for 180% of the rated current • P type: 60s for 120% of the rated current, 3s for 150% of the rated current | |
| | Torque boost | • Fixed boost • Customized boost 0.1%–30.0% | |
| | V/F curve | • Straight-line V/F curve • Multi-point V/F curve • N-power V/F curve (1.2-power, 1.4-power, 1.6-power, 1.8-power, square) | |
| | V/F separation | Two types: complete separation; half separation | |
| | Ramp mode | • Straight-line ramp • S-curve ramp Four groups of acceleration/deceleration time with the range of 0.0–6500.0s | |
| | DC braking | DC braking frequency: 0.00 Hz to maximum frequency Braking time: 0.0–36.0s Braking action current value: 0.0%–100.0% | |
| | JOG control | JOG frequency range: 0.00–50.00 Hz JOG acceleration/deceleration time: 0.0–6500.0s | |
| | Onboard multiple preset speeds | It implements up to 16 speeds via the simple PLC function or combination of DI terminal states. | |
| | Onboard PID | It realizes process-controlled closed loop control system easily. | |
| | Auto voltage regulation (AVR) | It can keep constant output voltage automatically when the mains voltage changes. | |
| | Overvoltage/Overcurrent stall control | The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to overvoltage/overcurrent. | |
| | Torque limit and control | It can limit the torque automatically and prevent frequent over current tripping during the running process. Torque control can be implemented in the CLVC mode. | |

HB-H6 series technical specifications

| Item | | Specifications | |
|--------------------------|----------------------------------|--|--|
| Individualized functions | High performance | Control of asynchronous motor and synchronous motor are implemented through the high-performance current vector control technology. | |
| | Power dip ride through | The load feedback energy compensates the voltage reduction so that the AC drive can continue to run for a short time. | |
| | Rapid current limit | It helps to avoid frequent overcurrent faults of the AC drive. | |
| | Virtual I/Os | Five groups of virtual DI/Dos can realize simple logic control. | |
| | Timing control | Time range: 0.0–6500.0 minutes | |
| Individualized functions | Multi-motor switchover | Four motors can be switched over via four groups of motor parameters. | |
| | Multiple communication protocols | It supports communication via Modbus-RTU, PROFIBUS-DP, CANlink and CANopen. | |
| | Motor overheat protection | The optional I/O extension card enables AI3 to receive the motor temperature sensor input (PT100, PT1000) so as to realize motor overheat protection. | |
| | Multiple encoder types | It supports various encoders such as differential encoder, open-collector encoder, resolver, UVW encoder, and SIN/COS encoder. | |
| | User programmable function | The optional programming card helps you to realize secondary development. Its programming environment is compatible with that of the PLC of Inovance. | |
| RUN | Advanced background software | It supports the operation of AC drive parameters and virtual oscillograph function, via which the state inside the AC drive is monitored. | |
| | Running command source | • Operation panel • Control terminals • Serial communication port You can perform switchover between these sources in various ways. | |
| | Frequency source | There are a total of 10 frequency sources, such as digital setting, analog voltage setting, analog current setting, pulse setting and serial communication port setting. You can perform switchover between these sources in various ways. | |
| | Auxiliary frequency source | There are ten auxiliary frequency sources. It can implement fine tuning of auxiliary frequency and frequency synthesis. | |
| | Input terminal | Standard: 5 digital input (DI) terminals, one of which supports up to 100 kHz high-speed pulse input 2 analog input (AI) terminals, one of which only supports 0–10 V voltage input and the other supports 0–10 V voltage input or 4–20 mA current input Expanding capacity: 5 DI terminals 1 AI terminal that supports -10–10 V voltage input and also supports PT100/PT1000 | |

HB-H6 series technical specifications

| Item | | Specifications |
|--|------------------------------------|---|
| RUN | Output terminal | Standard 1 high-speed pulse output terminal (open-collector) that supports 0–100 kHz square wave signal output 1 digital output (DO) terminal 1 relay output terminal 1 analog output (AO) terminal that supports 0–20 mA current output or 0–10 V voltage output Expanding capacity: 1 DO terminal 1 relay output terminal 1 AO terminal that supports 0–20 mA current output or 0–10 V voltage output |
| | | |
| Display and operation on the operation panel | LED display | It displays the parameters. |
| | Key locking and function selection | It can lock the keys partially or completely and define the function range of some keys so as to prevent mis-function. |
| | Protection mode | Motor short-circuit detection at power-on, input/output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection and overload protection |
| | Optional parts | LCD operation panel, braking unit, I/O extension card 1, I/O extension card 2, user programmable card, RS485 communication card, PROFIBUS-DP communication card, CANlink communication card, CANopen communication card, differential input PG card, UVW differential input PG card, resolver PG card and OC input PG card |
| Environment | Installation location | Indoor, free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapour, drip or salt. |
| | Altitude | Lower than 1000 m |
| | Ambient temperature | -10°C to +40°C (de-rated if the ambient temperature is between 40°C and 50°C) |
| | Humidity | Less than 95%RH, without condensing |
| | Vibration | Less than 5.9 m/s ² (0.6 g) |
| | Storage temperature | -20°C to +60°C |
| | IP level | IP20 |
| | Pollution degree | PD2 |
| Power distribution system | | TN , TT |
| | | |

HB-H6 series wiring diagram

