HNC Electric

HV10

Series High Performance MINI VFD

Contents

Compact Design

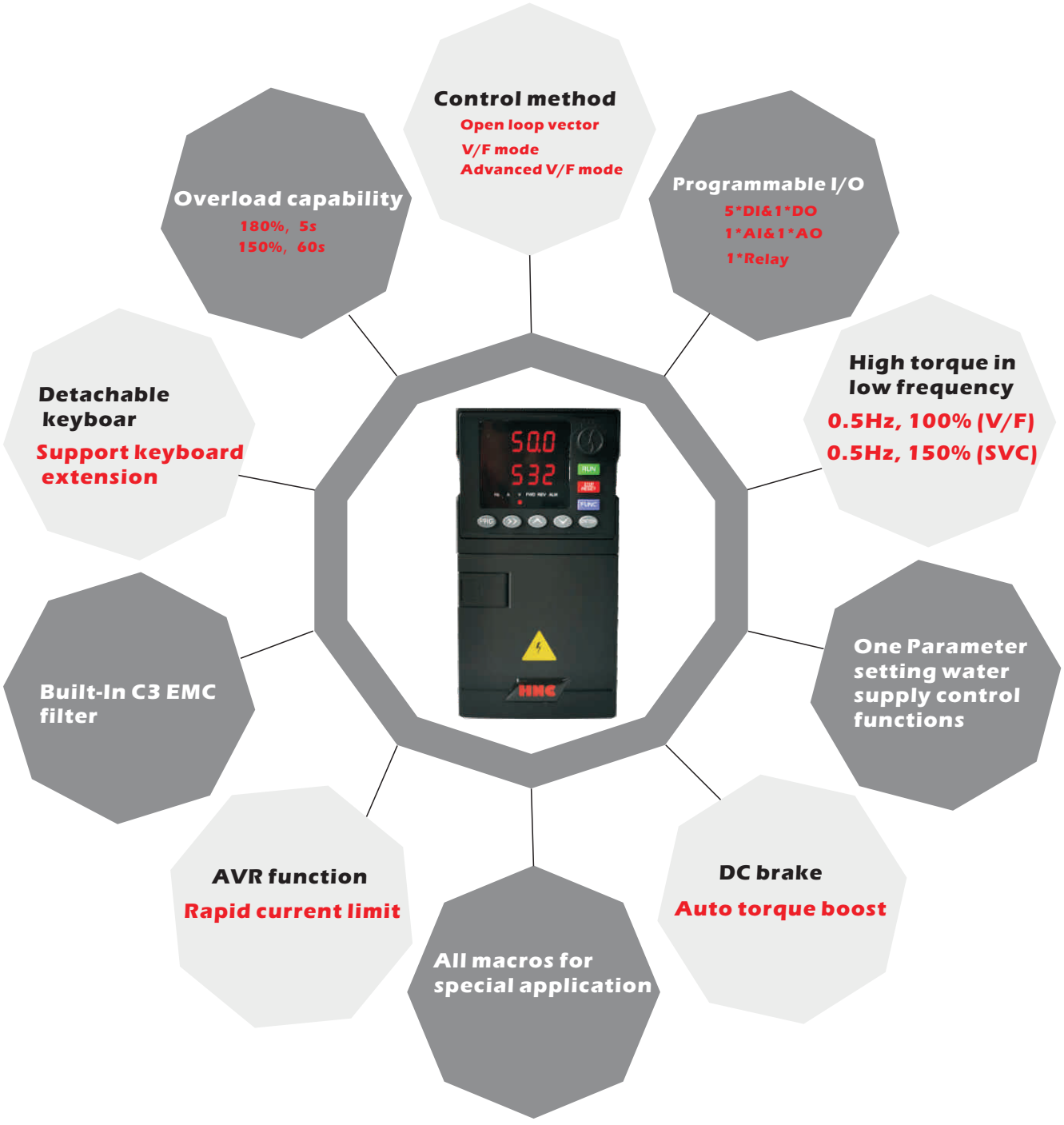
High Stability

Complete Functions

Basic specifications

Voltage	Power
Single phase AC120V	0.4kw~2.2kw
Single phase AC220V	0.4kw~2.2kw
Three phase AC220V	0.4kw~2.2kw
Three phase AC380V~440V	0.75kw~5.5kw
Three phase AC460V~480V	0.75kw~5.5kw

Based on listening and understanding of customers' requirement, HV10 supports full range of input voltage (AC 120V / 220V / 380V / 460V and etc.) , complete functions for different countries and applications



Product advantages

Flexible Design

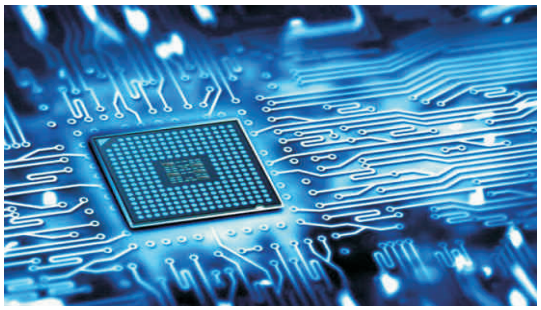
- Removable Keypad, support Remote installation
- All HV10s have cooling fan to ensure well-working in hot environment
- With built-In braking unit

Built-In C3 EMC filter

- Built-In C3 EMC filter in AC 220V inverters
- Reduce EMC interference from the outside, reduce malfunctions and improve accuracy

Complete Functions and Excellent arithmetic

- Powerful Sensor-less vector control & enhanced V/F algorithm
- Over modulation: enough torque output in lower voltage
- Auto carrier wave adjustment: adjusted according to temperature rise and frequency situation



Perfect Motor control and Protection

- Complete motor & inverter protection functions
- Perfect current / voltage limit functions
- Auto torque boost, auto slip compensation, shock suppression

Macro for Constant Pressure Water supply

- Complete PID functions：
- One Parameter setting
- Built-in water supply control functions

All Macros for Special Applications

- Support function calls for multiple applications：
- Auto-Energy Saving Applications / High start-stop application / CNC Router Spindle / Customer
- Defined / General Application Mode

Model Definition

HV10 - 5R5 G 3
① ② ③ ④

① HV 10 Series Inverter

② NO. Adaptative
R75 0.75kW
5R5 5.5kW

③ Code Inverter Type
G General Type

④ Code Inverter Type
1-1 Single phase 120V
1-2 Single phase 220V
2 Three phase 220V
3 Three phase 380V-440V
4 Three phase 460V-480V

HV10 series inverter specifications

Frequency inverter model	Input current (A)	Output current (A)	Adaptive motor (KW)	(HP)
G1 input voltage range: Single-phase AC120V±15%, 50 / 60 Hz				
HV10-R40G1-1	9	2.3	0.4	0.5
HV10-R75G1-1	15	4.0	0.75	1
HV10-1R5G1-1	24	7.0	1.5	2
HV10-2R2G1-1	31	9.6	2.2	3
G1 input voltage range: Single-phase AC220V±15%, 50 / 60 Hz				
HV10-R40G1-2	5.4	2.3	0.4	0.5
HV10-R75G1-2	8.2	4.0	0.75	1
HV10-1R5G1-2	14	7.0	1.5	2
HV10-2R2G1-2	23	9.6	2.2	3
G2 input voltage range: Three-phase AC220V±15%, 50 / 60 Hz				
HV10-R40G2	3.4	2.1	0.4	0.5
HV10-R75G2	5.0	3.8	0.75	1.0
HV10-1R5G2	5.8	5.1	1.5	2
HV10-2R2G2	10.5	9	2.2	3
HV10-004G2	14.6	13	4	5
G3 input voltage range: Three-phase AC 380~440 (-15%~+10%), 50 / 60 Hz				
HV10-R75G3	3.4	2.1	0.75	1
HV10-1R5G3	5.0	3.8	1.5	2
HV10-2R2G3	5.8	5.1	2.2	3
HV10-004G3	10.5	9	4.0	5
HV10-5R5G3	14.6	13	5.5	7.5
G4 input voltage range: Three-phase AC 440~480 (-15%~+10%), 50 / 60 Hz				
HV10-R75G4	4.1	2.5	0.75	1.0
HV10-1R5G4	4.9	3.7	1.5	2.0
HV10-2R2G4	5.7	5.0	2.2	2
HV10-004G4	11	8.0	4	5
HV10-5R5G4	15	10	5.5	7.5

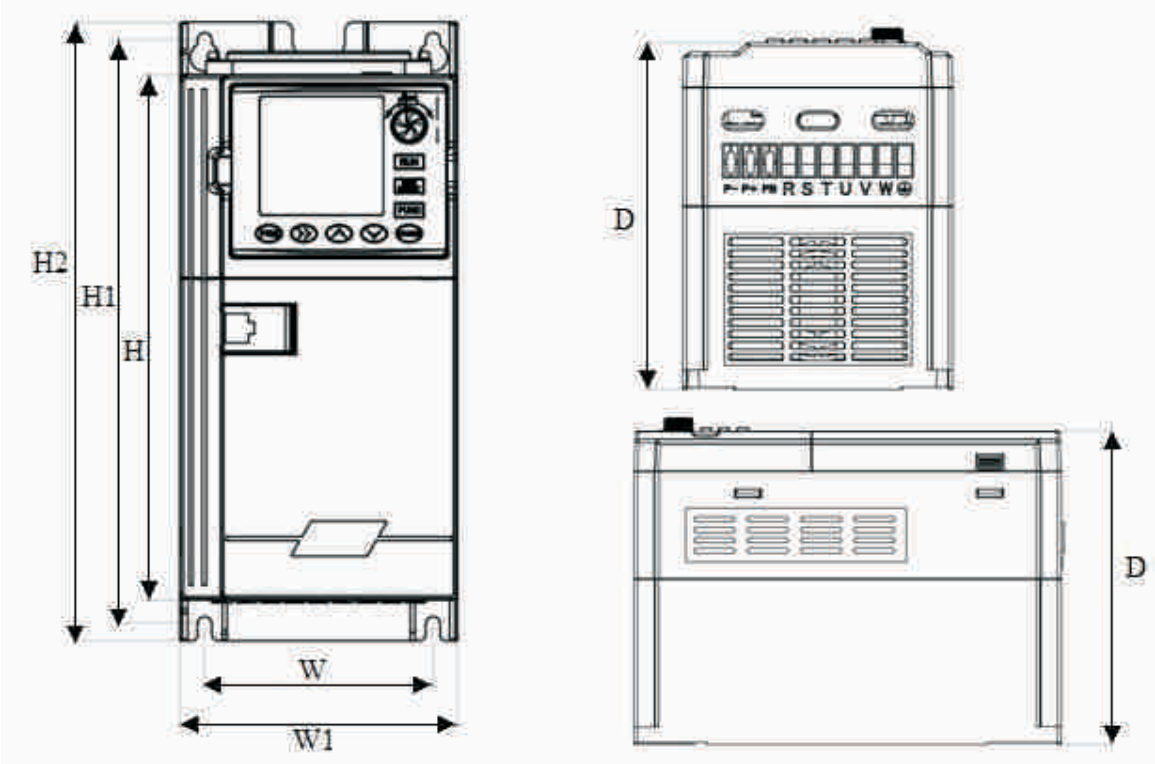
Specificaiton

Items			Description
Input	Rated voltage , Frequency		Three-phase(G3/G4 series) 380V-480V 50/60HZ Single&Three-phase (G1-2/G2 series) 220 V: 50/60 Hz , Single -phase (G1-1 series) 120 V: 50/60 Hz
	Allowable range of voltage variation		Three-phase(G3 series) : AC 380~440(-15%~+ 10%) Three-phase(G4 series) : AC 460~480(-15%~+ 10%) Single&Three-phase (G1-2/G2 series) : AC220V±15% Single -phase (G1-1 series) :AC120 V±15%
Output	Voltage		G1-1 series: 0~120 V; G1/G2 series; 0～220V, G3 series; 0～440 V, G4 series; 0～480 V
	Frequency		0～999.9HZ
	Overload capacity		110% long-term; 150% 1 minute; 180% 5 seconds
Control characteristic	Control mode		V/F control, Vector control
	Frequency setting resolution	Analog input	0.1% of the maximum output frequency
		Digital settings	0.1HZ
	Frequency accuracy	Analog input	Within 0.2% of the maximum output frequency
		Digital input	Within 0.01% of the set output frequency
	V/F control	V/F curve (voltage frequency characteristic)	Three ways: the first is linear torque characteristic curve, the second is square torque characteristic curve, and the third is user-setV/F curve
		Torque boost	Manual setting: 0.0 ～ 30.0% of rated output Automatic lifting: automatically determine the boost torque according to the output current and motor parameters
		Automatic current and voltage limiting	Whether in acceleration, deceleration or stable operation, the motor stator current and voltage can be automatically detected, which can be suppressed within the allowable range according to the unique algorithm to minimize the possibility of system fault tripping
	Sensorless vector control	voltage frequency characteristic	Automatically adjust output voltage-frequency ratio according to motor parameters and unique algorithm
		Torque characteristic	Starting torque: 100% rated torque at 0.5Hz (VF control) 150% rated torque at 0.5Hz (Vector control)
		Current and voltage suppression	Full-range current closed-loop control, completely avoiding current impact, with perfect overcurrent and overvoltage suppression function
	Undervoltage suppression during operation		Especially for users with low grid voltage and frequent fluctuation of grid voltage, the system can maintain the longest possible operation time according to the unique algorithm and residual energy allocation strategy even in the range below the allowable voltage
Typical function	Multi-stagespeed operation		7-stageprogrammable multi-stagespeed control and multiple operation modes are optional.
	PID control RS485 communication		Built-in PID controller (preset frequency). Standard configuration RS485 communication function, multiple communication protocols can be selected, with linkage synchronous control function
	Frequency setting	Analog input	DC voltage 0 ～ 10 V, DC current 0 ～ 20 mA (upper and lower limits are optional)
		Digital input	Operation panel setting, RS485 interface setting, UP/DW terminal setting, and various combination settings with analog input can also be made.
	Output signal	Digital output	1 OC output and 1 relay output (TA,TC), with up to 17 functions
		Analog output	1 AO, the output range can be flexibly set between 0 ～ 20mA or 0 ～ 10V, which can realize the output such as set frequency and output frequency.etc
	Automatic voltage stabilizing operation		According to the needs, three modes can be selected: dynamic voltage stabilization, static voltage stabilization and non-voltagestabilization, so as to obtain the most stable operation effect
	Acceleration / deceleration time setting		0.1S～999.9min can be set continuously
	Brake	Energy consumption braking	Energy consumption braking starting voltage, return difference voltage and energy consumption braking rate can be continuously adjusted

Specificaiton

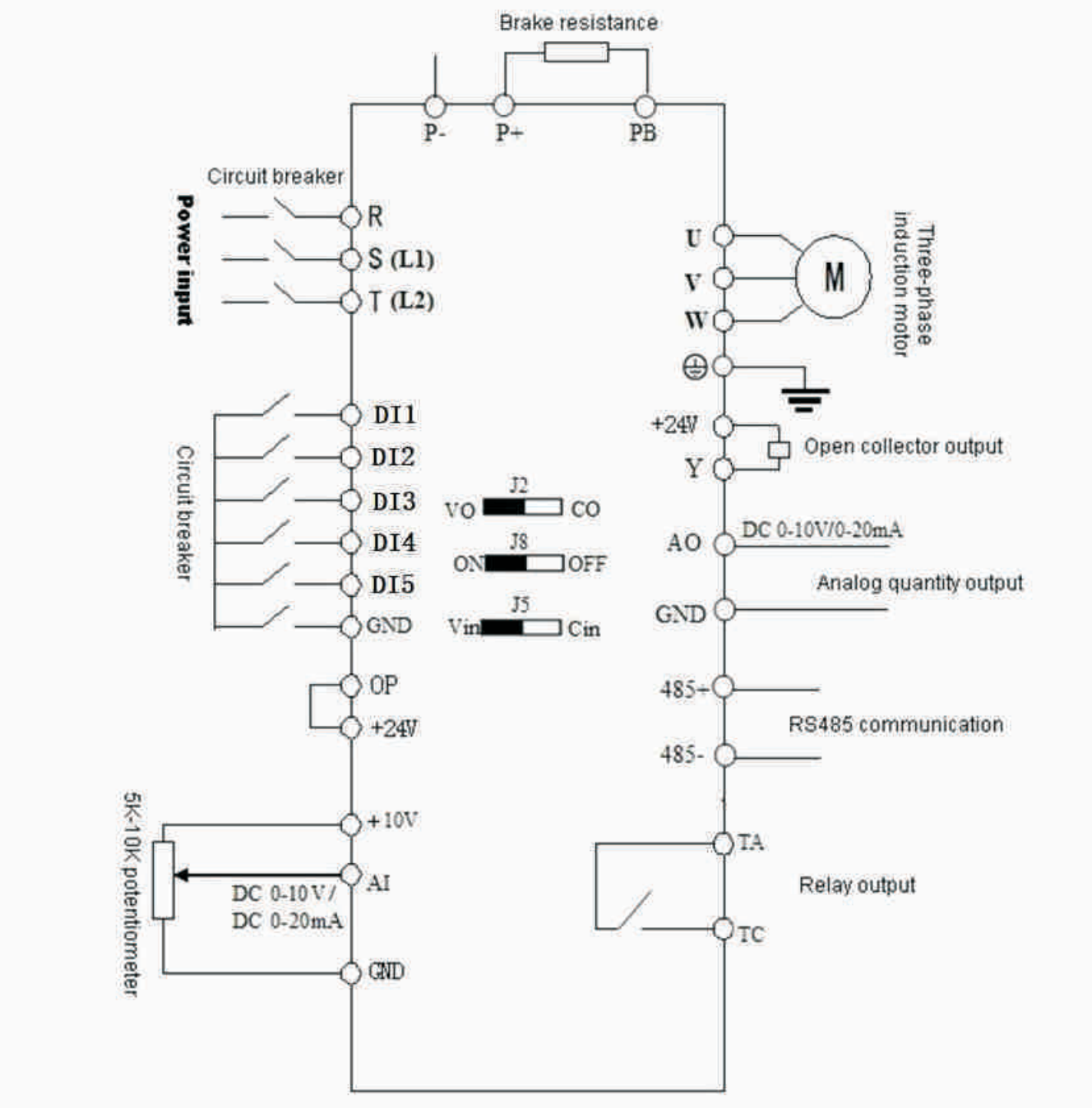
Items		Description
Display	DC brake	Starting frequency of DC braking during stop: 0.00 ～ [00.05]upper limit frequency Braking time: 0.0 ～ 30.0s; Braking current: 0.0% ～ 50.0% of rated voltage of motor
	Low noise operation	The carrier frequency is continuously adjustable from 2.0 kHz to 20.0 kHz to minimize the noise of the motor
	Counter	One internal counter is convenient for system integration
	Operating function	Upper and lower limit frequency setting, frequency jump operation, reverse operation limit, slip frequency compensation, RS485 communication, frequency increment and decrement control, fault self-recoveryoperation, etc
	Running status	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, PID feedback , analog input and output, etc
	Alarm content	Record a number of operating parameters such as output frequency, set frequency, output current, output voltage, DC voltage and module temperature during the latest fault
Protection function		Overcurrent, overvoltage, undervoltage, module failure, electronic thermal relay, overheating, short circuit, internal memory failure, etc.
Environment	Ambient temperature	-10℃ ～ +40℃ (when the ambient temperature is 40℃ ～ 50℃, please use it at a reduced level)
	Ambient humidity	5% ～ 95% RH, no water condensation
	Surrounding environment	Indoor (no direct sunlight, corrosion, flammable gas, oil mist, dust, etc.)
	Altitude	Derating for use above 1000 meters, every 1000 meters up derating 10%
Structure	Protection grade	IP20
	Cooling mode	Air-cooledwith fan control

Overall dimensions of the whole machine



Voltage level	Model	Outline construction and installation dimension (mm) W	H	D	W1	H1	Mounting hole(d)	Weight (kg)
1PH120V	HV10-R40G1-1	60	160	134	78	170	4	0.9
	HV10-R75G1-1							
	HV10-1R5G1-1							
	HV10-2R2G1-1							
1PH220V	HV10-R40G1-2	60	160	134	78	170	4	0.9
	HV10-R75G1-2							
	HV10-1R5G1-2							
	HV10-2R2G1-2							
3PH220V	HV10-R40G2							
	HV10-R75G2							
	HV10-1R5G2							
	HV10-2R2G2							
3PH380V	HV10-R40G3							
	HV10-R75G3							
	HV10-1R5G3							
	HV10-2R2G3							
	HV10-004G3	78	200	152	95	212	4	1.3
	HV10-5R5G3							

Basic operation wiring



HNC Electric

HNC ELECTRIC LIMITED is a company dedicated to the development and production of intelligent industrial automation solutions based on national strategic needs. Supported by its outstanding electrical and electronic technology and strong control technology, it provides control, display, drive and system solutions and other related products and services to customers worldwide.

With 25 years of hard work, we have developed and produced professional CNC systems, industrial robots, servo drives, servo motors, reducers, inverters, PLCs, HMIs, etc.

In more than 50 countries and regions around the world, we have established a comprehensive agent system and after-sales service system. In the future, we will, as always, provide more professional services for global industrial automation.

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Thanks for choosing HNC product
Any technique support,please feel to contact our support team

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