

矢量变频器 | Vector Frequency Inverter

PI8600 Series



Product orientation:

PI8600 series frequency inverter is produced by Powtran Technology based on PI8100 series high-performance current vector software platform. It is for requirements in application fields with single-phase 220V, especially research a single-phase economic frequency inverter, is a boutique for nowadays small processing manufacture automatic control.

Performance profile:

PI8600 series frequency inverter is a high-quality, multi-functional vector control frequency inverter. By decoupling control of motor magnetic flux current and torque current to achieve quick-response and precise control, can run a wide range of the speed adjustment and torque control at a high accuracy. Brand-new hardware platform, scientific production technology and complete testing equipment, ensure products more stable & reliable in application.

Technical Features:

- Central control module based on DSP(32 bits digital signal processor), realizes high-speed and high-performance control
- Control Mode: Sensorless Vector Control, Sensor Close Loop Vector Control, V/F Control
- Automatic recognize the parameter of the motor, auto-adjust to the best control mode
- Dead zone compensate function and automatic slip compensate, 180% torque output can come out below 0.5Hz frequency
- 8 switch inputs, 3 analog inputs, 2 analog output, 0—10V or 0—20mA from inside the scope of the definition signal
- Support feedback signal 0—10V, 1---5V, 0---20mA, 4---20mA
- Expanding external keyboard, supporting hot-pluggable and can restore or copy 4 groups running parameter programs
- High effective function on default record and recheck, easy trouble-shooting
- Unique EMC design minimizes pollute to electricity resource
- Entire coating can work in various of severe environment
- Small body, fashionable appearance



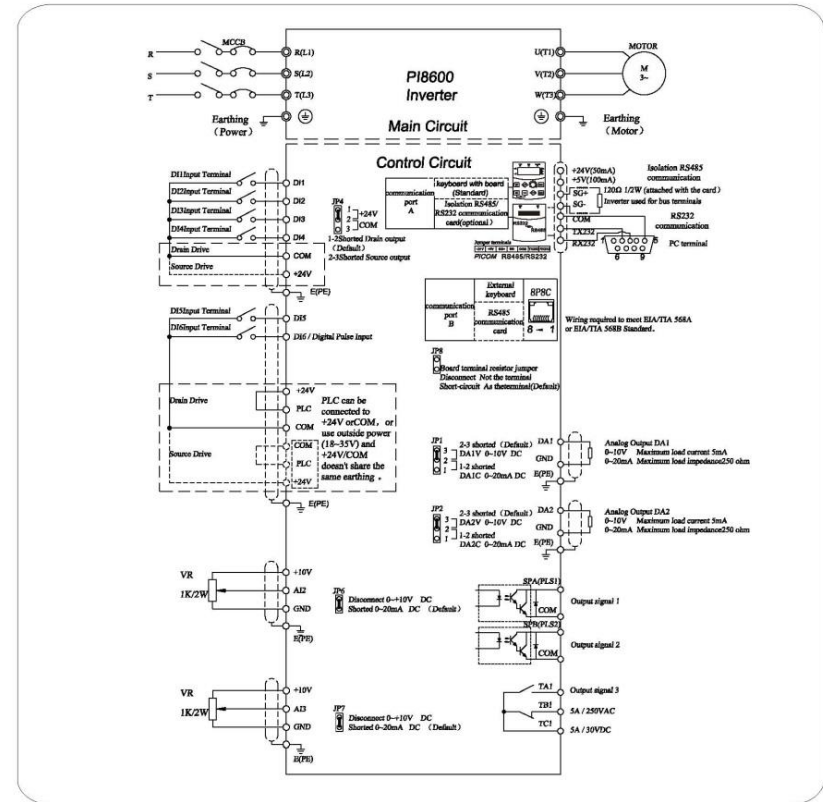
Capacity range:

Power Range: 0.4-1.5kW Frequency Range: 0.00~800.00Hz
Voltage Range: Single-phase 220V

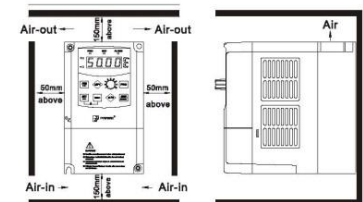
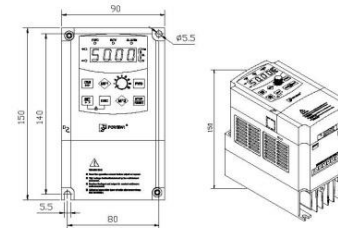
Application fields:

Medicine, food, printing & dyeing, washing and other industries, mechanical sets: a variety of mechanical sets with single-phase 220V power supply

Circuit diagram:



Specification & Installation Methods:

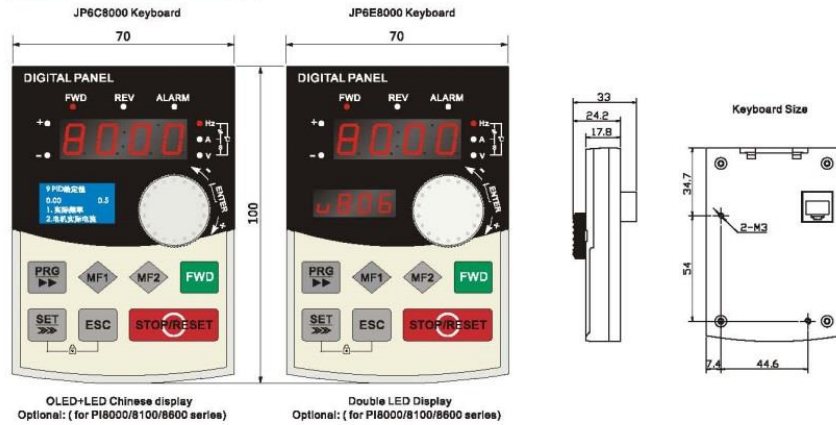


Frequency inverter must be installed by wall hooking in the indoor room with adequate ventilation with enough space left between it and the adjacent objects or damper (wall) surrounding it, as shown in the above figure

Model	Power (KW)	Voltage (V)	Current (A)	Shape (mm)			Installation Dimension(mm)			Structure Item	Weight (kg)
				L	W	H	a	b	d		
PI8600 R75G1	0.75	220	4	150	90	150	140	80	φ5.5	7N1	3.5
PI8600 1R5G1	1.5	220	7								

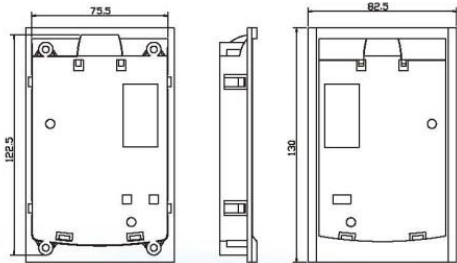
Keyboard Illustration:

PI8100/8000/8600 Series



OLED+LED Chinese display
Optional: (for PI8000/8100/8600 series)

Double LED Display
Optional: (for PI8000/8100/8600 series)



The dimension of aperture for installing keyboard in panel: (75.5±0.1) X (122.5±0.1)

JP6D8000 Keyboard rabbit
Optional: (for JP6C8000/JP6E8000 Keyboard)



Non-split keyboard
(for PI8000/8100/8600 series)

external keyboard
(for PI8800 series)

Standard Specification:

Items	Specifications
Power	<p>Voltage and frequency: Three-phase 200~240V, 50/60Hz; Three-phase 380~415V, 50/60Hz; Three-phase 440~480V, 50/60Hz</p> <p>Three-phase 575V, 50/60Hz; Three-phase 680V, 50/60Hz</p>
Allowable Fluctuation range	voltage: ±15% frequency: ±5%
Control system	high performance vector control inverter based on 32 bit DSP
Output frequency	G/F/Z/S/T/M type: 0.00~800.0Hz, maximum frequency can be set between 10.00 and 800.0Hz H type: 0.00~2000.0Hz, maximum frequency can be set between 10.00 and 2000.0Hz
control method	V/F control Senseless vector control Sensor close loop vector control
Start torque	0.50Hz 180% 0.25Hz 180% 0.00Hz 180%
speed adjustable range	1: 100 1: 200 1: 2000
Speed stabilizing precision	±0.5% ±0.2% ±0.02%
waveform produce methods	Asynchronous space vector PWM, N-class sub-synchronous space vector PWM, two-phase optimization of space vector PWM.
Auto torque boost function	Achieve low frequency (1Hz) and high output torque control under V/F control mode.
Accelerate /decelerate control	Sub-set S curve acceleration and deceleration mode, maximum acceleration and deceleration time is 3200 days
Long running time control	16 segments speed run, maximum running time is 3200 days
frequency setting accuracy	Digital: 0.01Hz (below 300Hz), 0.1Hz (above 300Hz); analogue: 1% of maximum frequency
frequency accuracy	Speed control tolerance 0.01%(25°C±10°C).
V/F curve mode	Linear, 1.2 times the power, 1.7 times the power, 2 times power, user-set 8 V / F Curve.
Over load capability	G / S type: 150% rated current -1 minute, rated current 200% -0.1 second; F: rated current 120% -1 minute 150% of rated current -0.1 second; Z / M / T type: rated current 180% -1 minute 250% rated current -0.1 second; H: rated current 250% -1 minute 300% rated current -0.1 second.
slip compensation	V / F control can automatically compensate for deterioration.
Running method	Keyboard/terminal/communication
Starting signal	Forward, reverse, jog (parameter control direction), forward jog, and reverse jog.
Emergency stop	Interrupt controller output.
fault reset	When the protection function is active, you can automatically or manually reset the fault condition.
Running status	Motor status display, stop, acceleration and deceleration, constant speed, the program running.
DC brake	Built-in PID regulator brake current flow in the premise, however, to ensure adequate braking torque.
Inverter protection	Overvoltage protection, under voltage protection, over current protection, overload protection, over-temperature protection, over the loss of speed protection, over-voltage stall protection, phase protection (optional), external fault, communication error, PID feedback signal abnormalities, P-S failure
IGBT temperature display	Display current IGBT temperature
Inverter fan control	The fan starting temperature can be set(optional)
Instant power-down re-start	Less than 15 milliseconds: continuous operation. Greater than 15 milliseconds: Automatic detection of motor speed, instantaneous power-down re-start.
Speed starting track method	automatically track motor speed when inverter starts
Parameter protection function	Protect inverter parameters by setting the password and decoding
IO	<p>8 way switch input: Can be customized into 47 kinds of functions, to achieve forward, reverse, forward jog, and reverse jog, emergency stop, reset, speed, acceleration speed, run-time switch, and pulse counting.</p> <p>3 way analog inputs: Can be defined as a switch input; To allow for maximum input range -10V ~ +10V, 0 ~ 20mA</p> <p>2 way analog output: Can achieve output range 0 ~ +10V, 0 ~ 20mA</p>
Keyboard	<p>Virtual terminal function: Can be set to a virtual terminal, using communication or keyboard IO port, and with the IO port status display.</p> <p>Frequency set: In 6 main ways + to 7 kinds of auxiliary to the way of the keyboard, three way analog input, pulse input, digital potentiometers.</p> <p>Keyboard cable: 8-core cable, in line with EIA T568A, EIA T568B standards.</p> <p>Double keyboard port: Supports dual-keyboard, synchronous control, independently of each other.</p> <p>Double and multi function keys: MF1, MF2 can be customized as addition and subtraction, forward, reverse, forward jog, and reverse jog, emergency stop, rise and fall, and other 9 kinds of ways.</p> <p>4-parameter storages: Control panel can be realized four groups of inverter parameters of upload, download, with manufacturer password to reset factory setting.</p> <p>Running info: At most display 3 monitoring parameters. Select by A00, A01, A02</p> <p>Fault info: Store 5 groups error messages at most, you can check the type of failure time when failure occurs, set frequency, output frequency, output current, running state, running time, IGBT temperature.</p>
Terminal location	<p>Double RS485 port: Rs485 port and an optional keyboard completely isolated RS485 communication module.</p> <p>CAN BUS: Can select can-bus module.</p>
Speed	<p>16-segment speed: At most 16 segments can be set (use multi-functional terminal to shift or program runs).</p> <p>8-segment running time: At most 8 segment running time can be set (multi-functional terminal can be used to shift)</p> <p>8 segment acceleration speed: At most 8 acceleration speed (can use the multi-functional terminal to switch).</p> <p>Seven-Segment Speed Configuration: At most 7 segment speed configuration can be set (multi-functional terminal can be used to switch).</p>
PID	<p>PID feedback signal: Six kinds of ways, keyboard, three way analog input, pulse input, digital potentiometers.</p> <p>PID giving signal: Six kinds of ways, keyboard, three ways analog input, pulse input, digital potentiometers.</p>
Motor	<p>2 groups of motor parameters: With the motor parameters, parameter can be selected, parameter identification automatic storage.</p> <p>3 identification method: Name plate calculation, static measurement, rotation measurements.</p> <p>5 name plate parameters: Rated frequency, rated current, rated voltage, the number of pole pairs, rated speed.</p> <p>5 identification parameters: N-load current, stator resistance, rotor resistance, stator inductance, mutual inductance.</p>
Environment	<p>Environment temperature: -10°C ~ 40°C, 40 ~ 50°C derating between the use is increased by 1°C, rated output current decrease of 1%.</p> <p>Store temperature: -40°C ~ +70°C</p> <p>Environment humidity: 5~95%, No condensation</p> <p>Height-vibration: 0 ~ 2000 meters, 1000 meters above derating use, increased by 100 m, rated input decreased%</p> <p>Application location: Mounted vertically inside the control cabinet with good ventilation, do not allow the level, or other installation method. The cooling medium is air. Installed in the absence of direct sunlight, N dust, N corrosive and explosive gas, N oil mist, N steam, N drip environment</p> <p>Cooling method: Forced air cooling and natural air cooling.</p>