

矢量变频器 | Vector Frequency Inverter P I 8100/8000^{Series}

Product orientation:

P18100 series frequency inverter is a brand-new current vector high-performance frequency inverter produced by Powtran Technology, which is based on motor running and the new theories and technological achievements of control, with servo functions to finish perfect control of motor, to provide you with comprehensive solutions in high-end control fields.

Performance profile:

This 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 rapid-response and accurate torque control, can run a wide range of high-precision speed and torque control operation.. Brand-new hardware platform, scientific production technology and complete testing equipment ensure products more stable & reliable in application.

Technical Features:

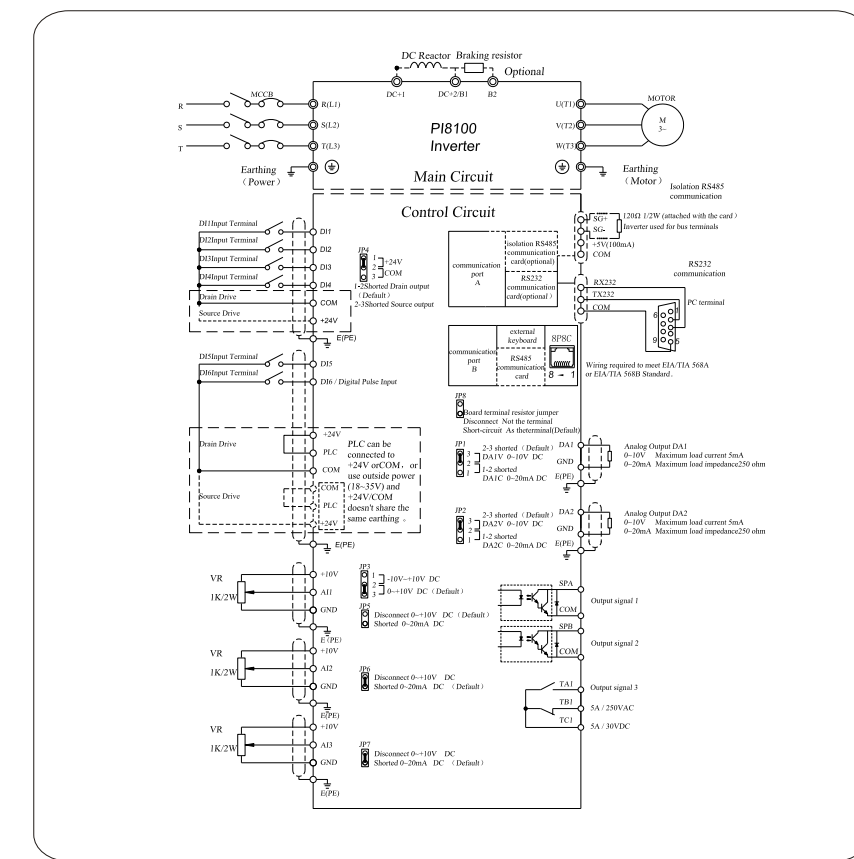
- Central control module based on DSP(32 bits digital signal processor), realizes high-speed and high-performance control
- Control Mode: Sensorless Vector Control, Sensor Close Loop Vector Control, V/F Control
- Automatic recognize the parameter of the motor, auto-adjust to the best control mode
- Dead zone compensation function and automatic slip compensate, 180% torque output can come out below 0.25Hz frequency
- Simple PLC function, at most 15 segments speed control and 8 segments acceleration control can be realized
- “One key to shuttle” keyboard, swirling free, two-way custom buttons with the demand for expansion
- Multi-language, humanization display menu, highlighted OLED+LED, simultaneous display 3 groups of state parameters
- Keyboard is hot-pluggable and can restore or copy 4 groups of running parameter programs
- Powerful communication function which can support standard RS485 and Modbus, meanwhile provide remote keyboard control
- Unique EMC design minimizes pollute to electricity resource
- Entire coating can work in various of severe environment

Capacity range:

Power Range: 0.75-7.5kW Frequency Range: 0.00~2000.00Hz
Voltage Range: Single-phase 220V
3-phase 220V/380V/460V

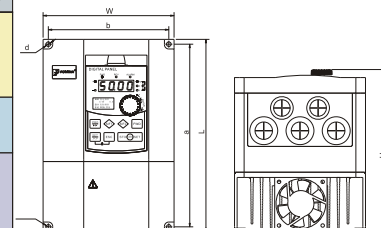
Application fields:

Metallurgy, petroleum, chemical, textile, electric power, building materials, coal, medicine, food, paper, plastics, printing, lifting, cable, washing, water, heating, sewage treatment, etc.
Industry, mechanical sets: drawing machine, mixer, extruder, cutting machine, winding machine, compressor, fan pumps, grinding machines, conveyors, hoists, centrifuges and various speed machinery.



Specification and Size:

Model	Power (KW)	Voltage (V)	Current (A)	Shape dimensions			Installation dimensions			Structure Item	Net weight (Kg)
				L	W	H	a	b	d		
PI8100 R75G3	0.75	380	2.5	185	120	178.5	174	108	Ø5.3	7N2	2.4
PI8100 1R5G3	1.5	380	3.7								
PI8100 2R2G3	2.2	380	5								
PI8100 004G3	4	380	8.5	220	150	185.5	209	138	Ø5.3	7N3	3.5
PI8100 5R5G3	5.5	380	13								
PI8100 7R5G3	7.5	380	16								
PI8100 7R5F3	7.5	380	16	285	180	200	272	167	Ø5.5	7N4	7
PI8100 011F3	11	380	25								

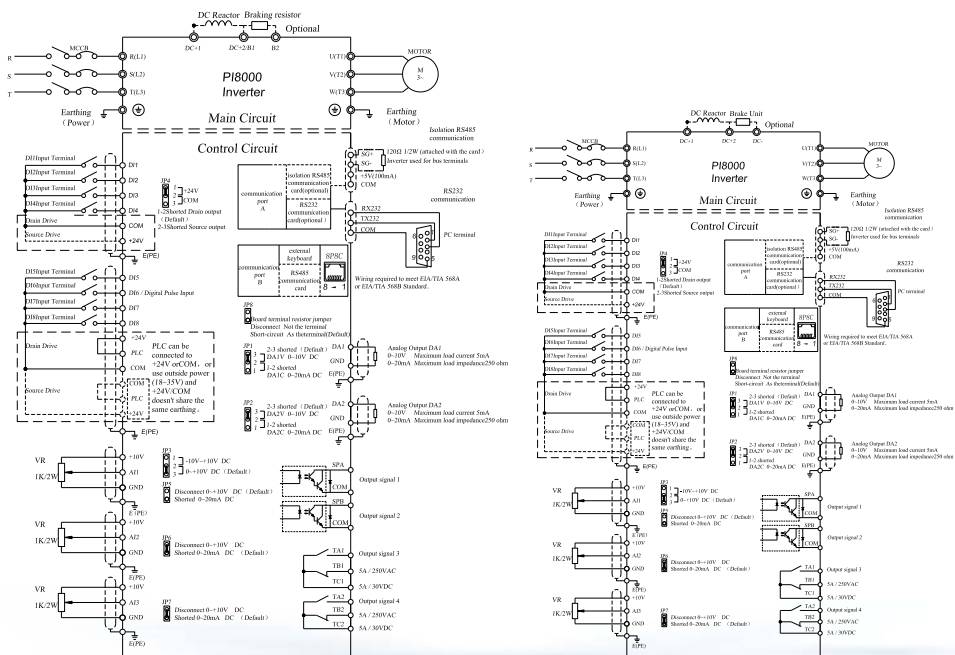


P I 8100^{Series}

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PI8000 Series

Circuit diagram:



11KW~15KW

PI8000 series

18.5KW~630KW



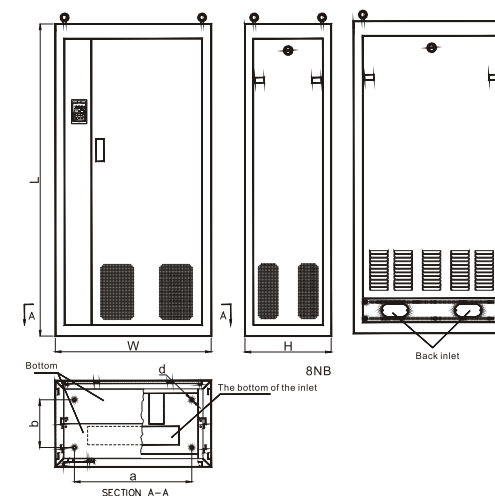
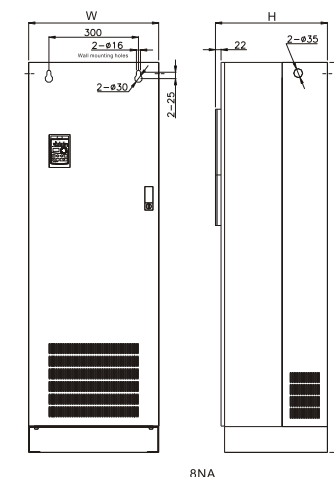
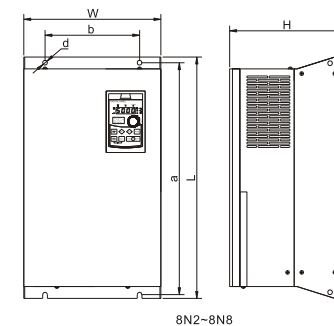
Tips:

Environment requirements for installation of frequency inverter

- Please install in the absence of oil mist, dust, clean places or install in fully closed shape, floats which can not invade cabinet box
- Please install in the place where metal powder, oil, water can not intrude into the internal drive.
- Do not install on timber and combustible materials
- Do not install in place with harmful gases and liquids
- Please install in a place without shock
- Please install in a place without salt
- Do not install in direct sunlight

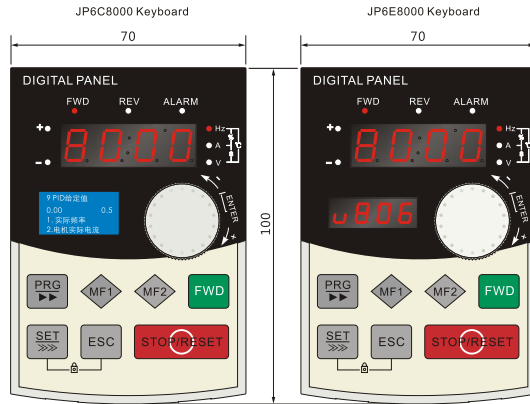
Specification and Size:

Model	Power (KW)	Voltage (V)	Current (A)	Shape dimensions (mm)			Installation dimensions (mm)			Structure Item	Net weight (Kg)
				L	W	H	a	b	d		
PI8000 011G32/015F32	11/15	380	25/32	380	220	230	360	135	Ø10	8N2	11
PI8000 015G32/018F32	15/18	380	32/38								
PI8000 018G3/022F3	18/22	380	38/45	460	280	245	440	160	Ø10	8N3	15.5
PI8000 022G3/030F3	22/30	380	45/60								
PI8000 030G3/037F3	30/37	380	60/75	500	300	270	480	200	Ø10	8N4	23.5
PI8000 037G3/045F3	37/45	380	75/90								
PI8000 045G3/055F3	45/55	380	90/110	630	360	297	680	200	Ø10	8N5	48
PI8000 055G3/075F3	55/75	380	110/150								
PI8000 075G3/093F3	75/93	380	150/170	700	400	297	690	350	Ø10	8N6	68
PI8000 093G3/110F3	93/110	380	170/210								
PI8000 110G3/132F3	110/132	380	210/250	750	475	320	730	260	Ø10	8N7	86
PI8000 132G3/160F3	132/160	380	250/300								
PI8000 160G3/187F3	160/187	380	300/340	850	500	320	830	260	Ø10	8N8	95
PI8000 187G3/200F3	187/200	380	340/380								
PI8000 200G3/220F3	200/220	380	380/415	1540	515	443	465	367	Ø13	8N8/8NA	190
PI8000 220G3/250F3	220/250	380	415/470								
PI8000 250G3/280F3	250/280	380	470/520								
PI8000 280G3/315F3	280/315	380	520/600								
PI8000 315G3/355F3	315/355	380	600/640								
PI8000 355G3/400F3	355/400	380	640/690	1700	850	492	640	260	Ø13	8NB	350
PI8000 400G3/450F3	400/450	380	690/740								
PI8000 450G3/500F3	450/500	380	740/880								



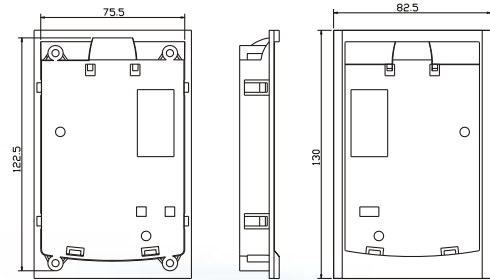
Keyboard Illustration:

PI8100/8000/8600 Series

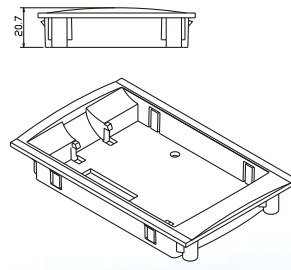


JP6C8000 Keyboard
OLED+LED Chinese display
Optional: (for PI8000/8100/8600 series)

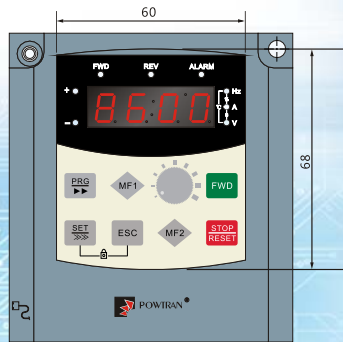
JP6E8000 Keyboard
Double LED Display
Optional: (for PI8000/8100/8600 series)



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 PI8600 series)

Standard Specification:

Items	Specifications	
Power	Voltage and frequency	Three-phase 200~240V, 50/60Hz Three-phase 380~415V, 50/60Hz Three-phase 440~460V, 50/60Hz
	Allowable Fluctuation range	voltage: ±15% frequency: ±5%
Control	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
	Start torque	0.50Hz 180%
	speed adjustable range	1: 100
	Speed stabilizing precision	±0.5%
	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	Digit: 0.01Hz(below 300Hz), 0.1Hz(above 300Hz); analogue: 1% of maximum frequency
	frequency accuracy	Speed control tolerance 0.01%(25℃±10℃).
	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.
Running	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, PG failure
Protection	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	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.
	3 way analog inputs	Can be defined as a switch input; To allow for maximum input range -10V ~ +10V, 0 ~ 20mA
	2 way analog output	Can achieve output range 0 ~ +10V, 0 ~ 20mA
	Virtual terminal function	Can be set to a virtual terminal, using communication or keyboard IO port, and with the IO port status display.
Keyboard	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.
	Keyboard cable	8-core cable, in line with EIA T568A, EIA T568B standards.
	Double keyboard port	Supports dual-keyboard, synchronous control, independently of each other.
	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.
	4-parameter storages	Control panel can be realized four groups of inverter parameters of upload, download, with manufacturer password to reset factory setting
	Running info	At most display 3 monitoring parameters. Select by A00, A01, A02
	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 voltage, output current, running state, running time, IGBT temperature.
	Double RS485 port	Rs485 port and an optional keyboard completely isolated RS485 communication module.
Communication	CAN BUS	Can select can-bus module.
	16-segment speed	At most 16 segments can be set (use multi-functional terminal to shift or program runs).
Speed	8-segment running time	At most 8 segment running time can be set(multi-functional terminal can be used to shift)
	8 segment acceleration speed	At most 8 acceleration speed(can use the multi-functional terminal to switch).
PID	Seven-Segment Speed Configuration	At most 7 segment speed configuration can be set (multi-functional terminal can be used to switch).
	PID feedback signal	Six kinds of ways, keyboard, three way analog input, pulse input, digital potentiometers.
Motor	PID giving signal	Six kinds of ways, keyboard, three ways analog input, pulse input, digital potentiometers.
	2 groups of motor parameters	With the motor parameters, parameter can be selected, parameter identification automatic storage.
Environment	3 identification method	Name plate calculation, static measurement, rotation measurements.
	5 name plate parameters	Rated frequency, rated current, rated voltage, the number of pole pairs, rated speed.
	5 identification parameters	N-load current, stator resistance, rotor resistance, stator inductance, mutual inductance.
	Environment temperature	-10℃ ~ 40℃, 40 ~ 50℃ derating between the use is increased by 1℃, rated output current decrease of 1%.
	Store temperature	-40℃ ~ +70℃
	Environment humidity	5~95%, No condensation
	Height-vibration	0 ~ 2000 meters, 1000 meters above derating use, increased by 100 m, rated input decreased%
Application location	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
	Cooling method	Forced air cooling and natural air cooling.