PX ELECTRONICS

www.pxelectronic.com

DATASHEET

PXE SERIES POWER PRODUCTS

Smart Frequency Inverter

PXe-PI150

PX ELECTRONICS

www. pxelectronic.com

Index

About

PX Electronic specialise in the design of electrical power measuring instrumentation. Including power analysers, High Voltage Switching, HiPot Testing, ground bond testing and DC loads. Our product expertise and consultancy includes applications associated with electrical safety equipment, AC power analysis, energy instruments and current sensors and current probes. Applications include EV, wind turbines, green power, automation, military power systems, power electronics, power conversion, electric cars, generators, motors, fans and pumps.

Our range of Test & Measuring products includes power analysers, single & three phase watt meters measuring from DC to 2MHz along with HV related switching and IR measurement products.

PX offers PC based software solutions. This enables PX measuring instruments and transducers to be controlled via USB, Ethernet, RS232, RS485 and IEEE-488 interfaces. Various display and storage options are available to suit the customer's need. An "in house" software customisation service is available.

PX has a global support network, enabling us to distribute our products worldwide from a variety of distributors and representatives to meet the needs of our customers.

PXe-PI150
Smart Frequency Inverter

Product Orientation

PXe- PI 150 series smart frequency inverter is a brand new design concept, a new generation of low-power inverters has been developed, which makes debugging easier, more efficient, and more reliable.

As a compact size frequency inverter, the PXe-PI 150 has obvious advantages such as easy installation, small size, low temperature rise and powerful software performance.

Performance Feature

Save installation space
Compact design Support side by side installation

Reduce cost
Adopt the latest thermal simulation technology, the most reasonable and reliable layout for the components to realize the compact size

Simple commissioning
External keyboard is optional

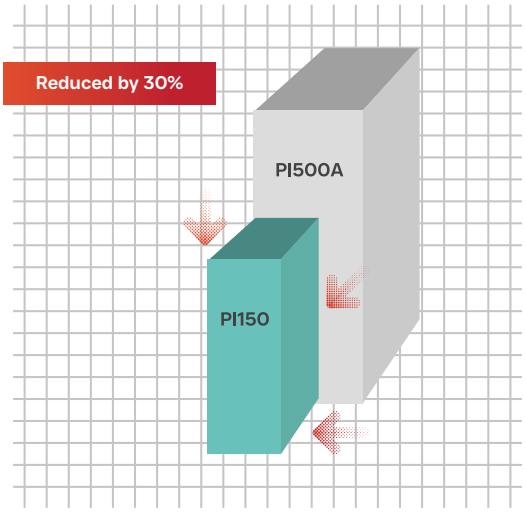
Multiple installation ways
DIN-Rail Mounting, vertical, side by side

Energy saving and environmental protection
Excellent energy saving effect to reduce power consumption

User friendly design
Protection function ,over current, over voltage, fast current limit protection function, avoid reporting Error code wrongly

Powerful performance
A Competitive product with multiple functions to meet different requirements. Torque control function, enhanced brake function when acceleration and protect function for immediate power off

PI150 inverter 5.5kW and the same power machine volume comparison chart



Multiple installation methods

(Multiple inverters can be installed side by side, no need to reserve intervals, greatly reducing the control cabinet of the machine)

Ordinary inverter

PI150

Installed side by side, no need to reserve intervals

Screw installation, flexible

DIN-Rail mounting ,quick and convenient

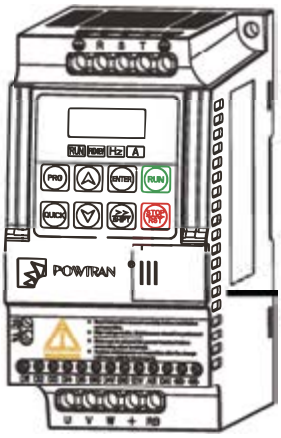
Technical Features

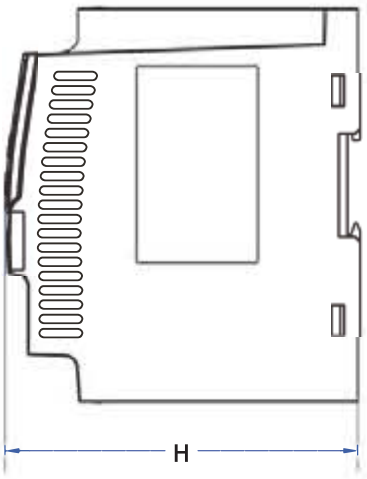
Item	Function		Specification	
Power	Rated voltage		AC 1PH 220V(-15%)-240V(+10%) AC 3PH 220V(-15%)-240V(+10%) AC 3PH 380V(-15%)-440V(+10%)	
	Input frequency		50Hz/60Hz	
	Allowing fluctuations		Voltage continued volatility: ±10%	Less than 3% of voltage unbalance rate 3%
			Input frequency fluctuation: ±5%	Distortion satisfy IEC61800-2 standard
Control	Control system		High performance vector control inverter based on DSP	
	Control method		V/F control, vector control W/O PG	
	Automatic torque boost function		Realize low frequency (1 Hz) and large output torque control under the V/F control mode	
	Acceleration/deceleration control		Straight or S-curve mode. Four times available and time range is 0.0 to 6500.0s	
	V/F curve mode		Linear, square root/m-th power, custom V/F curve	
	Over load capability		G type:rated current 150% - 1 minute, rated current 180% - 2 seconds	
	Maximum frequency		1, Vector control:O to 300Hz; 2, V/F control:O to 3200Hz	
	Carrier Frequency		0.5 to 16kHz; automatically adjust carrier frequency according to the load characteristics	
	Input frequency resolution		Digital setting: 0.01 Hz Analog setting: maximum frequency*0.025%	
	Start torque		G type: 0.5Hz/150% (vector control W/O PG)	
	Speed range		1: 100 (vector control W/O PG)	
	Steady-speed precision		Vector control W/O PG: ± 0.5% (rated synchronous speed)	
	Torque response		≤ 40ms (vector control W/O PG)	
	Torque boost		Automatic torque boost; manual torque boost(0.1 % to 30.0%)	
	DC braking		DC braking frequency: O.OHz to max. frequency, braking time: 0.0 to 100.0 seconds, braking current value: 0.0% to 100.0%	
	Jogging control		Jog Frequency Range: O.OOHz to max. frequency; Jog Ac/deceleration lime: O.Os to 6500.0s	
	Built-in PID		Easy to realize closed-loop control system for the process control	
	Automatic voltage regulation(AVR)		Automatically maintain a constant output voltage when the voltage of electricity grid changes	
	Torque limit and control		Automatically track current motor torque when the inverter starts	
Personalization Function	Self-inspection of peripherals after power-on		After powering on, peripheral equipment will perform safety testing, such as ground, short circuit, etc.	
	Quick current limiting		The current limiting algorithm is used to reduce the inverter over current probability, an improve whole unit anti-interference capability	
	Timing control		Timing control function: time setting range(Om to 6500m)	
Running	Input Signal	DI1 input terminal	5 digital input terminals	
		AI1 analog input	1 analog input terminals respectively for optional range (0 to 20mA or O to 1 OV)	
		Multi-speed	At most 16-speed can be set(run by using the multi-functionterminals or program)	
		Emergency stop	Interrupt controller output	
		Fault reset	When the protection function is active, you can automatically or manually reset the fault condition	
		PID feedback signal	Including DC(O to 1 OV), DC(O to 20mA)	
	Output signal	Output signal	One way relay output; One way AD1 analog output	
		Relay output	There are 40 signals each way. Contact capacity : normally open contact5A/AC 250V, 1A/DC 30V	
		DA 1 analog output	One way analog output, can select frequency, current ,voltage etc 16 signals Output signals can be sent O~ 1 OV/0~20mA	
	Running command channel		Three channels: operation panel, control terminals and serial communication port. They can be switched through a variety of ways	
	Frequency source		Total 7 frequency sources: digital, analog voltage, analog current, multi-speed and serial port. They can be switched through a variety of ways	
	Run function		Limit frequency, jump frequency, frequency compensation, auto-tuning, PID control	

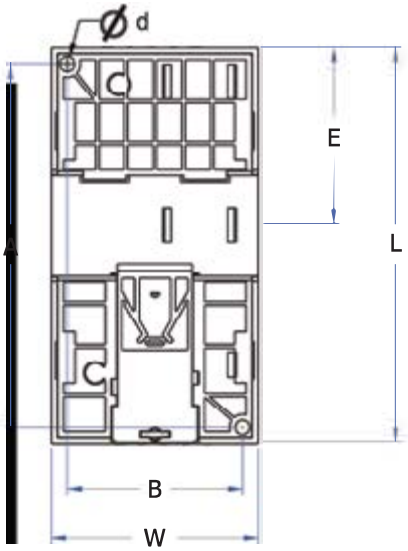
Technical Features (continued)

Item	Function		Specification
Protection function	Inverter protection		Overvoltage protection, undervoltage protection, overcurrent protection, overload protection, overheat protection, overcurrent stall protection, overvoltage stall protection, lasting-phase protection (optional), communication error, PID feedback signal abnormalities, PG failure and short circuit to ground protection
Display	LED display keyboard	Running information	Monitoring objects including: running frequency, set frequency, bus voltage, output voltage, output current, output power, output torque, input terminal status, output terminal status, analog AI1 value, motor Actual running speed, PID set value percentage, PID feedback value percentage
		Error message	At most save three error message, and the time, type, voltage, current, frequency and work status can be queried when the failure is occurred
	Key lock and function selection		Lock part or all of keys, define the function scope of some keys to prevent misuse
	IGBT temperature		Show the inverter inner IGBT temperature
Communication	RS485		Built in RS485
Environment	Environment temperature		-10°C to 40°C (temperature at 40°C to 50°C, please derating for use)
	Storage temperature		-20°C to 65 °C
	Environment humidity		Less than 90% R.H, no condensation
	Vibration		Below 5.9m/s2 (= 0.6g)
	Application sites		Indoor where no sunlight or corrosive, explosive gas and water vapor, dust, flammable gas, oil mist, water vapor, drip or salt, etc
	Altitude		No degrading is used under 1000m,degrade 1% for altitude rise 100m when above 1000m, do not use it above 3000m
	Protection level		IP20
Product standard	Product adopts safety standards		IEC61800-5-1 :2007
	Product adopts EMC standards		IEC61800-3:2005
Other	Cooling method		Forced air cooling
	Install method		DIN-Rail mounting , wall mounting , Installed side by side

Shape structure



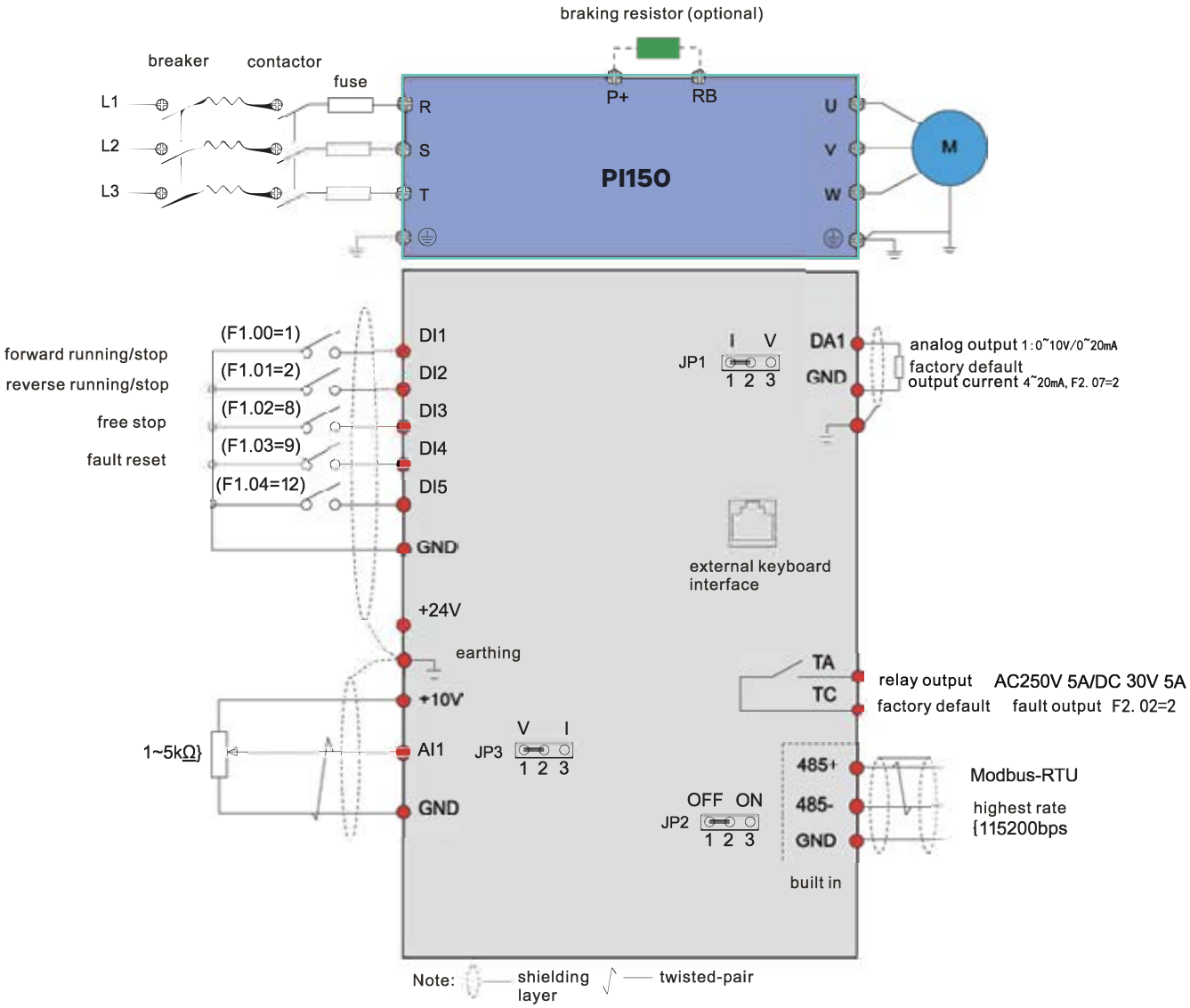




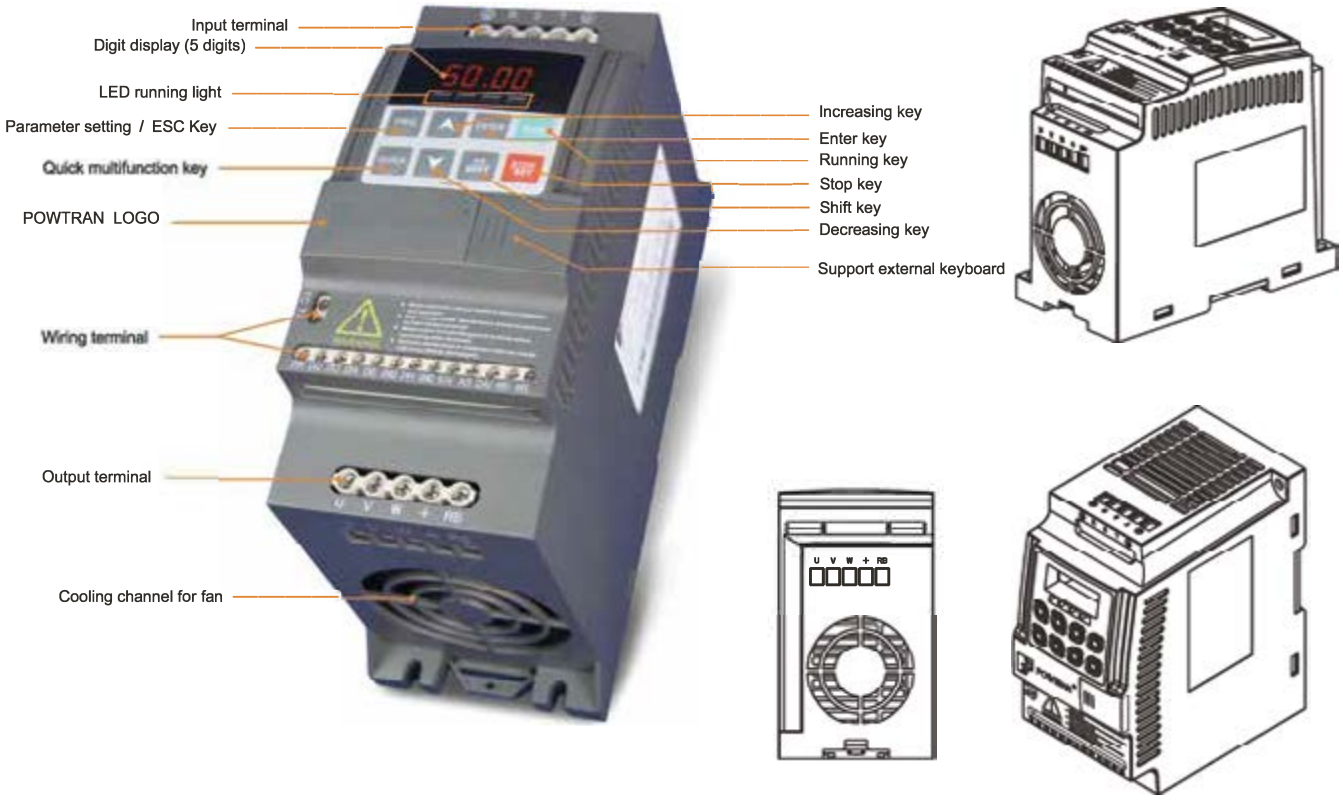
Specification and size

Inverter model	Input voltage (v)	Output power (kW)	Input current (A)	Output current (A)	Dimensions(mm) L	W	H	Installation dimensions(mm) a	b	d	DIN-Rail mounting (mm)	N.w. (kg)
PI1500R4G1(Z)	1 PH 220	0. 4	5.4	2. 5	138	72	123.5	127	61	Ø5	62	1.1
PI150 0R4G2(Z)	3PH 220		4.1	2.5								
PI1500R7G1(Z)	1 PH 220	0. 75	8.2	4.0								
PI150 0R7G2(Z)	3PH 220		5.3	4.0								
PI150 0R7G3(Z)	3PH 380		4.3	2. 5								
PI1501 R5G1(Z)	1 PH 220	1.5	14.0	7.0								
PI150 1 R5G2(Z)	3PH 220		8.0	7.0								
PI150 1 R5G3(Z)	3PH 380		5.0	3.8								
PI 50 2 R2G3(Z)		2.2	5.8	5.1								
PI1502 R2G1(Z)	1 PH 220	2.2	23	10	185	72	134	175	45	Ø5	82	1.3
PI150 2 R2G2(Z)	3PH 220		11.8	10								
PI150 004G3(Z)	3PH 380	4	10.5	9								
PI150 5 R5G3(Z)		5.5	14.6	13								

Wiring diagram



Configuration



Application

Document Rev-V1.1

PX Electronics
13b Southview Park,
Marsack Street,
Reading
Berkshire
RG4 5AF
United Kingdom

PX ELECTRONICS

Tel: +44 118 206 7525
Email: info@pxelectronic.com
Website: www.pxelectronic.com