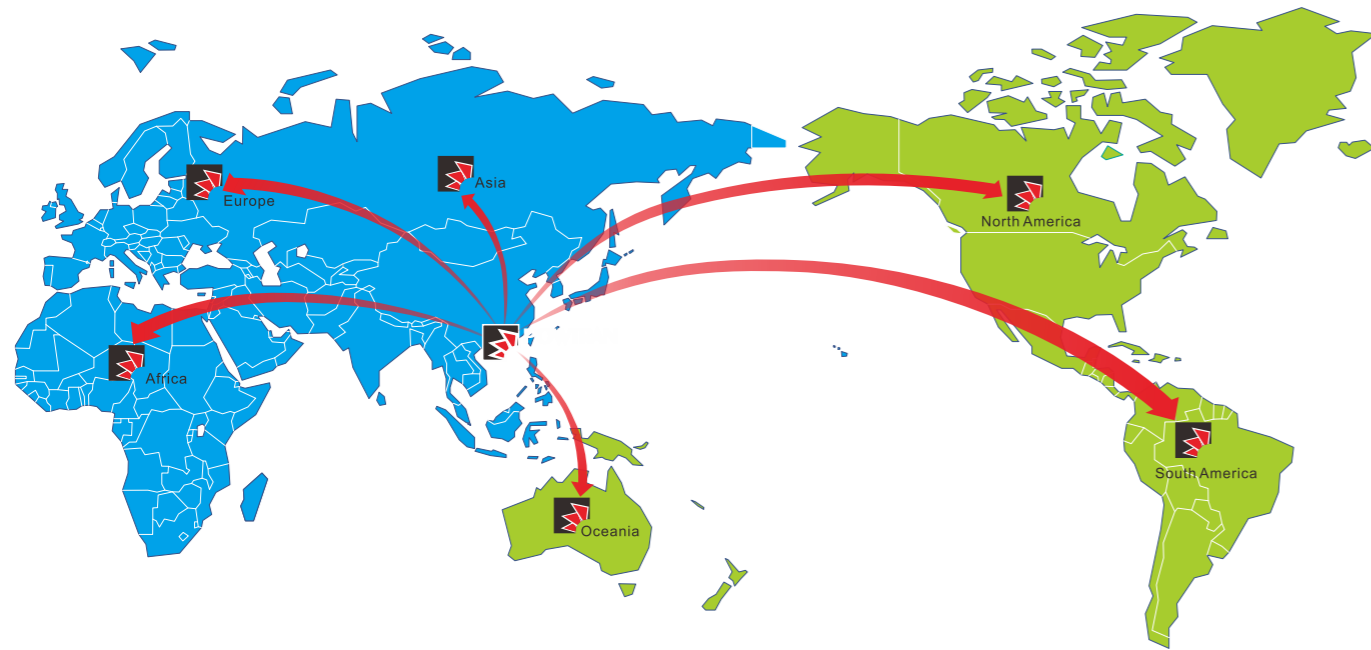


Service Network:



Powtran technology

A manufacturer of motor control intelligent products and devices based on motor design.

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PI150 series

Smart Frequency Inverter



www.powtran.com

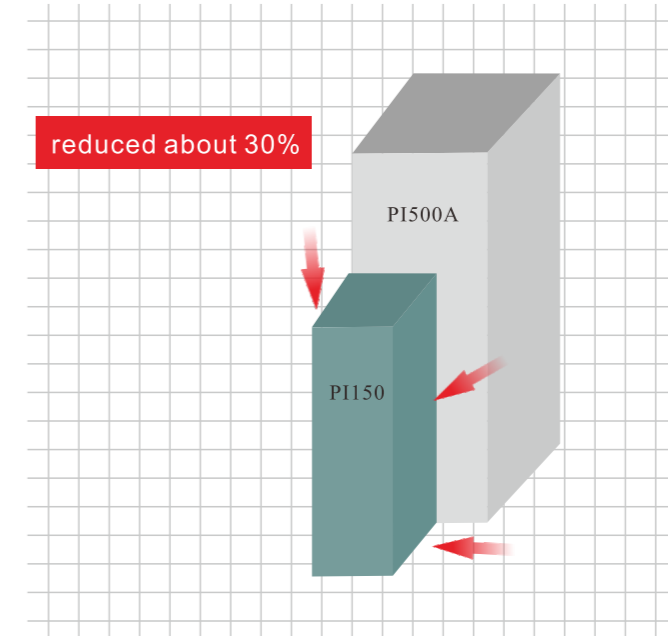
## Product Orientation

Powtran PI150 series smart frequency inverter is based on the market, with brand new design concept, a new generation of low-power inverters has been developed, which makes debugging easier, more efficient, and more reliable.

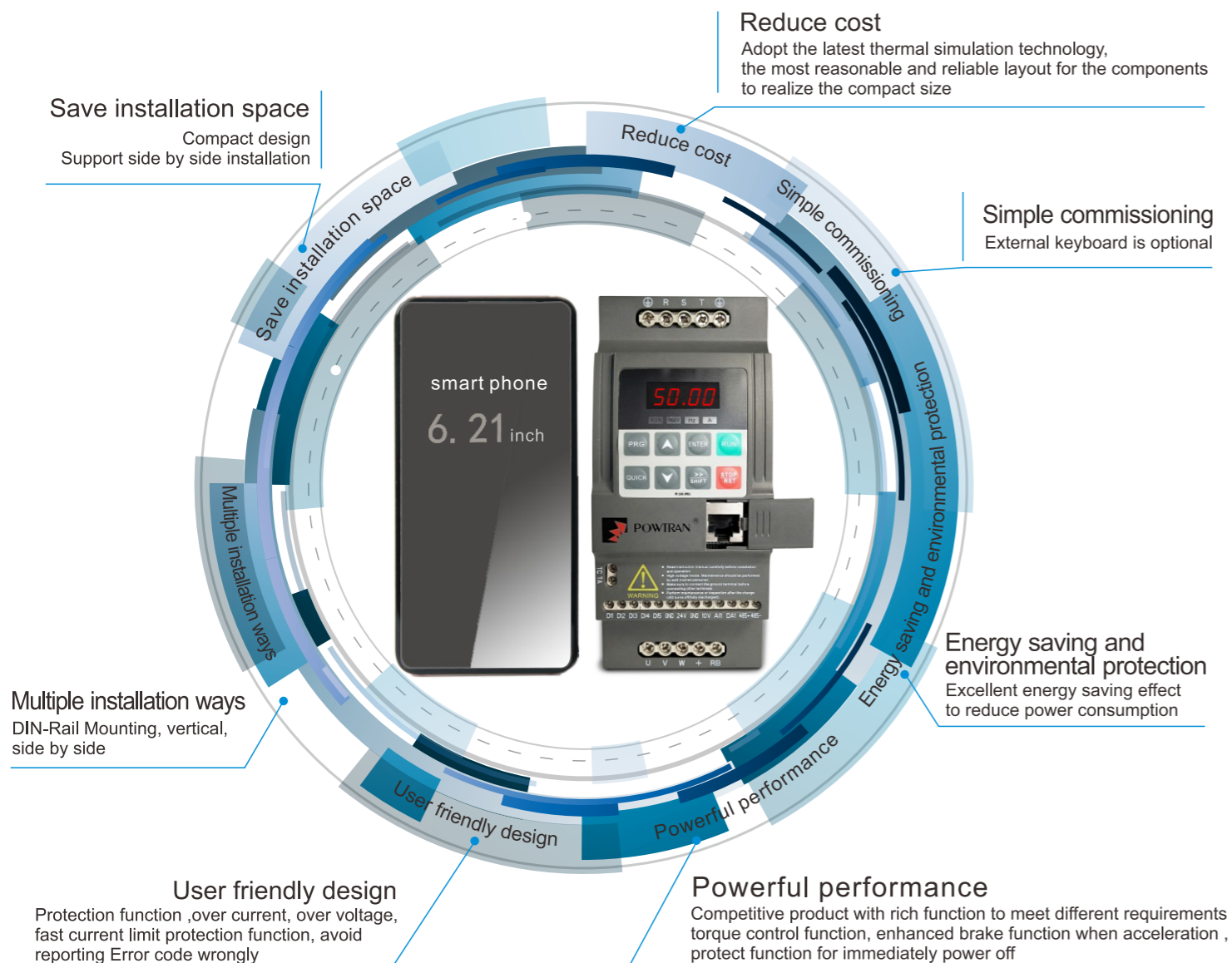
As a compact size frequency inverter, PI150 has obvious advantages such as easy installation, small size, low temperature rise, powerful software performance.



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



## Performance Feature



## ★ 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



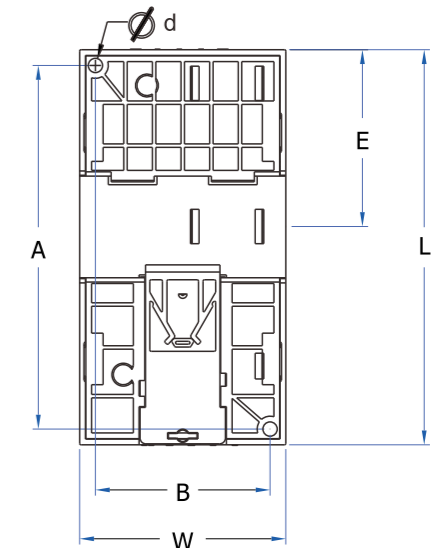
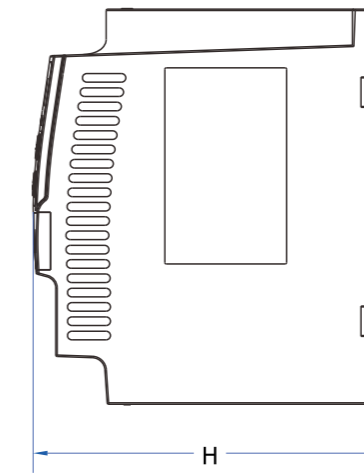
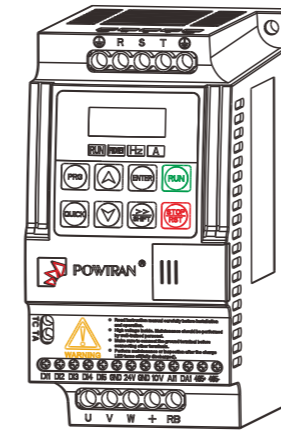
DIN-Rail mounting, quick and convenient



## 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: $\pm 10\%$ Less than 3% of voltage unbalance rate 3% Input frequency fluctuation: $\pm 5\%$ 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 (1Hz) 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: 0 to 300Hz; 2、 V/F control: 0 to 3200Hz	
	Carrier Frequency	0.5 to 16kHz; automatically adjust carrier frequency according to the load characteristics	
	Input frequency resolution	Digital setting: 0.01Hz 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: $\leq \pm 0.5\%$ (rated synchronous speed)	
	Torque response	$\leq 40\text{ms}$ (vector control W/O PG)	
	Torque boost	Automatic torque boost; manual torque boost(0.1% to 30.0%)	
	DC braking	DC braking frequency: 0.0Hz to max. frequency, braking time: 0.0 to 100.0 seconds, braking current value: 0.0% to 100.0%	
	Jogging control	Jog Frequency Range: 0.00Hz to max. frequency; Jog Ac/deceleration time: 0.0s 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, and improve whole unit anti-interference capability	
Timing control		Timing control function: time setting range(0m to 6500m)	
Running	Input signal	DI input terminal	5 digital input terminals
		AI1 analog input	1 analog input terminals respectively for optional range (0 to 20mA or 0 to 10V)
		Multi-speed	At most 16-speed can be set(run by using the multi-function terminals 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(0 to 10V), DC(0 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 contact 5A/AC 250V, 1A/DC 30V
		DA1 analog output	One way analog output. can select frequency, current, voltage etc 16 signals Output signals can be sent 0~10V/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		
Protection function	Inverter protection	Overvoltage protection, undervoltage protection, overcurrent protection, overload protection, overheat protection, overcurrent stall protection, overvoltage stall protection, losing-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	
Communication	IGBT temperature	Show the inverter inner IGBT temperature	
	RS485	Built in 485	
Environment	Environment temperature	-10℃ to 40℃ (temperature at 40℃ to 50℃, please derating for use)	
	Storage temperature	-20℃ to 65℃	
	Environment humidity	Less than 90% R.H, no condensation	
	Vibration	Below 5.9m/s <sup>2</sup> (= 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 need degrade use under 1000m, degrade 1% for altitude rise 100m when above 1000m, do not use it above 3000m	
Product standard	Protection level	IP20	
	Product adopts safety standards	IEC61800-5-1:2007	
Other	Product adopts EMC standards	IEC61800-3:2005	
	Cooling method	Forced air cooling	
	Install method	DIN-Rail mounting, wall mounting, Installed side by side	

## Shape structure

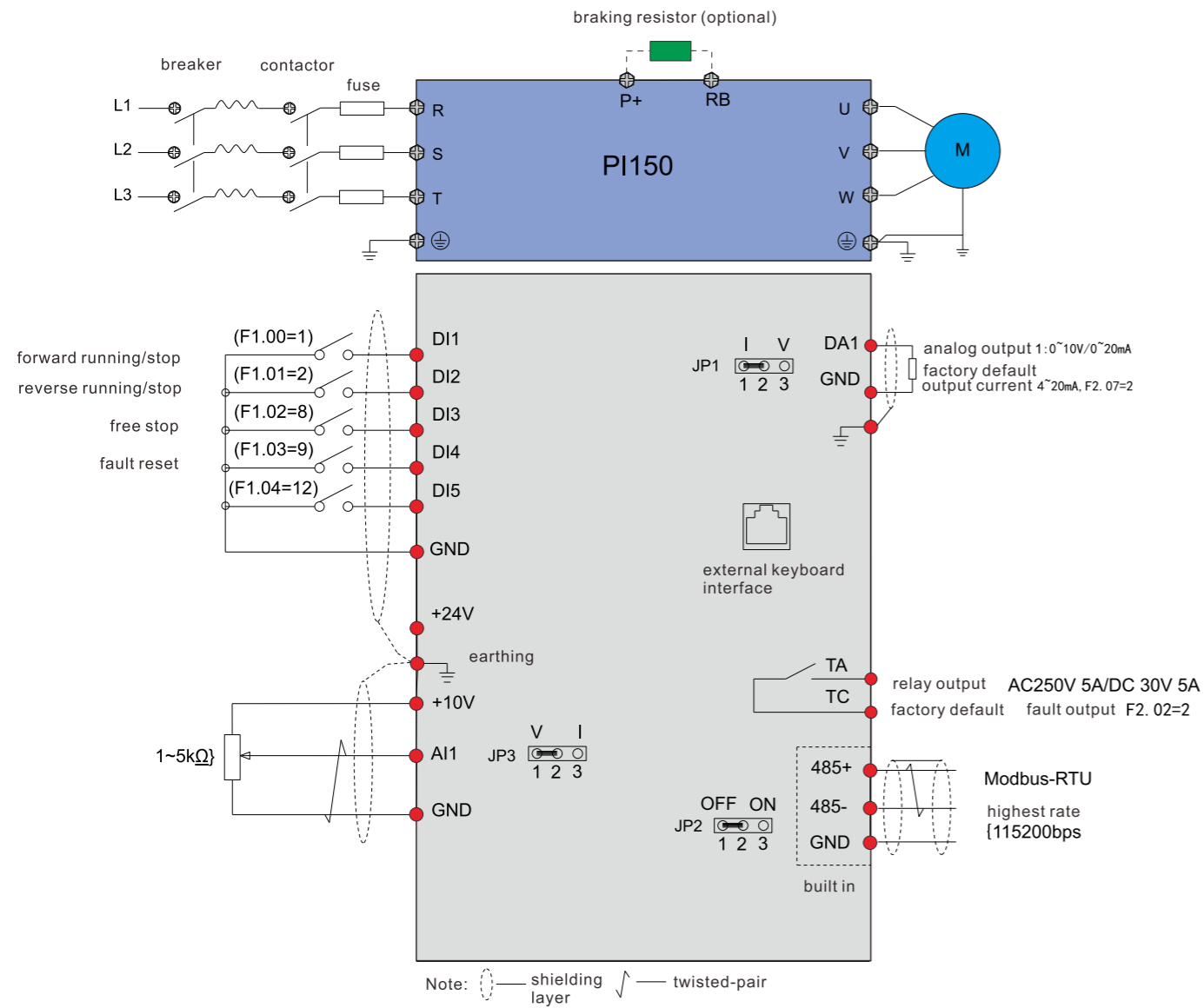


## Specification and size

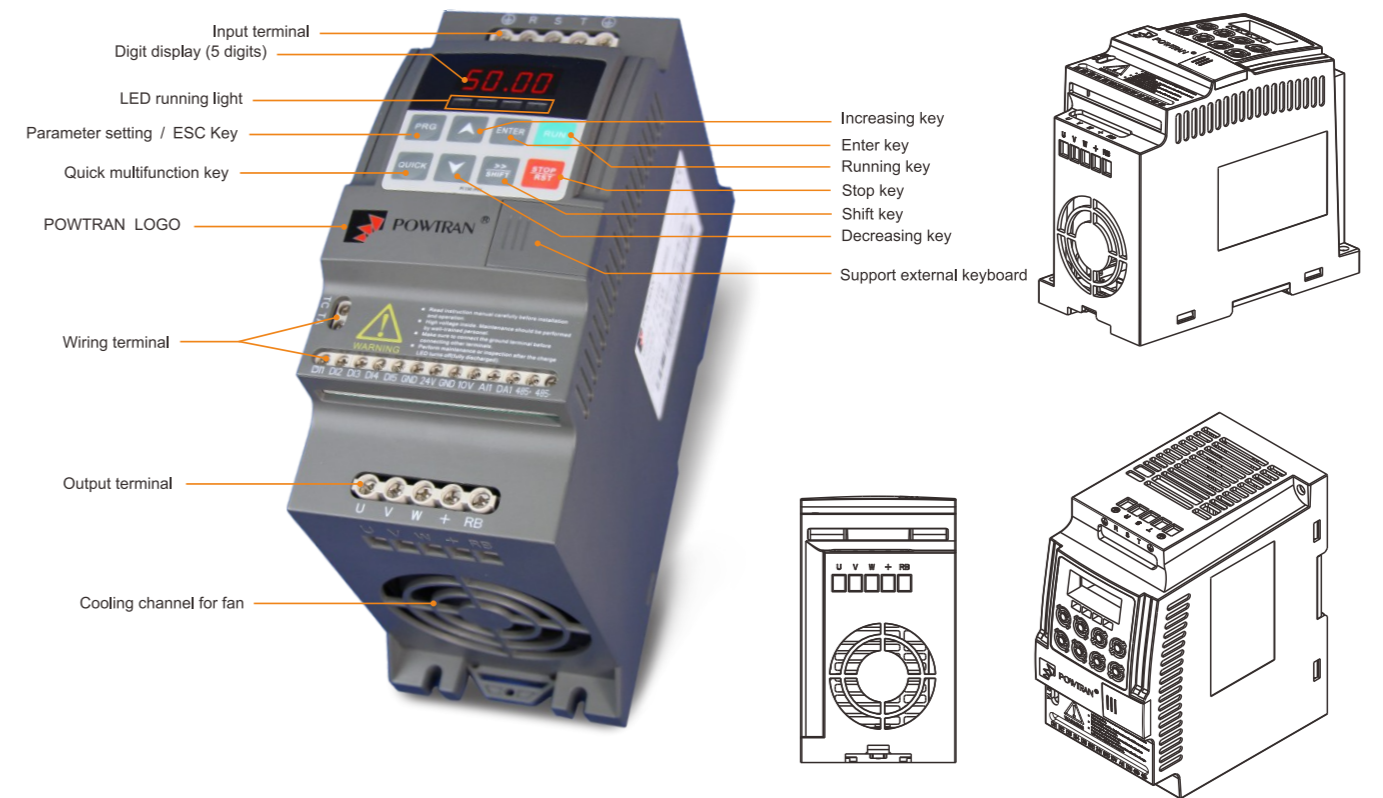
Inverter model	Input voltage (V)	Output power (kW)	Input current (A)	Output current (A)	Dimensions(mm)			Installation dimensions(mm)			DIN-Rail mounting (mm)	N.w. (kg)
					L	W	H	a	b	d		
PI150 0R4G1(Z)	1PH 220	0.4	5.4	2.5	138	72	123.5	127	61	Ø5	62	1.1
PI150 0R4G2(Z)	3PH 220		4.1	2.5								
PI150 0R7G1(Z)	1PH 220	0.75	8.2	4.0								
PI150 0R7G2(Z)	3PH 220		5.3	4.0								
PI150 0R7G3(Z)	3PH 380	1.5	4.3	2.5								
PI150 1R5G1(Z)	1PH 220		14.0	7.0								
PI150 1R5G2(Z)	3PH 220		8.0	7.0								
PI150 1R5G3(Z)	3PH 380	2.2	5.0	3.8								
PI150 2R2G3(Z)			2.2	5.8								
PI150 2R2G1(Z)	1PH 220	2.2	23	10								
PI150 2R2G2(Z)	3PH 220		11.8	10								
PI150 004G3(Z)	3PH 380	4	10.5	9								
PI150 5R5G3(Z)			5.5	14.6	13							

\* The Model(Z) with brake unit is Optional

# Wiring diagram



# Configuration



# Application

