

# POWTRAN Marketing Network

202407EV2.0



## PI550 Series

### High-performance vector control inverter

More valuable intelligent products and solutions , well known band in the field of electrical drive and control

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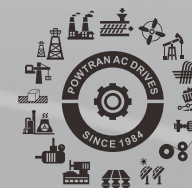
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Due to the continuous upgrading of our products, the content is subject to change without prior notice

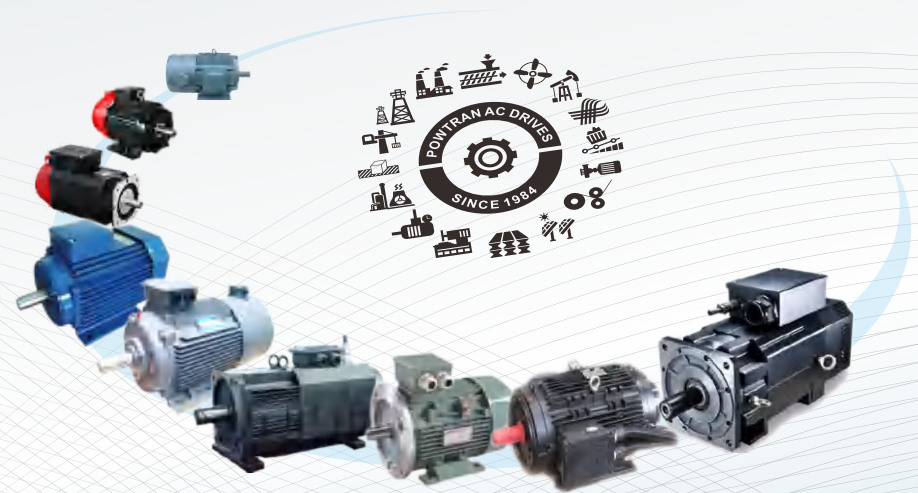
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# Integrity Consensus Synergy Sharing

## PI550 Series

PI550 series inverter is a high-performance current vector inverter developed by Powtran technology based on PI500 series. The product adopts DSP as the core control unit, unique vector control algorithm, and true current vector control that strengthen product operation reliability environmental adaptability, ease of use and maintainability. The communication function is more perfect and the performance is greatly improved. Products are widely used in metallurgy, petroleum, chemical, steel, textile, electricity, building materials, coal, water supply, photovoltaic, cable, and other industries of various automation equipment drive and control.



# Renewed and upgraded with extraordinary intelligent control!

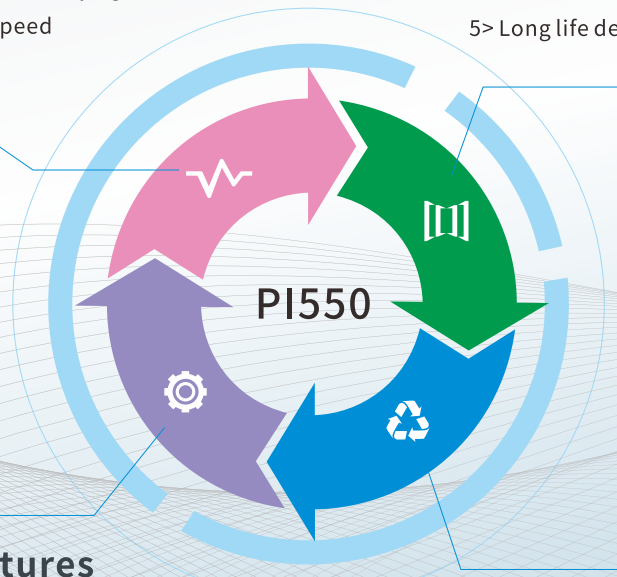
We dedicate ourselves to provide global customers with frequency inverters which can be widely used for asynchronous and permanent magnet synchronous motors in different kinds of application.

### Excellent control performance

- 1> Leading motor drive technology
- 2> Excellent control performance
- 3> Perfect communication function
- 4> Real hard speed tracking function: "Flying start"
- 5> High performance over drain speed and over voltage stall control
- 6> Various interfaces
- 7> Momentary power failure restart function

### Reliable structural design

- 1> Heat dissipation: Excellent air duct design
- 2> Excellent thermal management
- 3> Protection: three anti-paint spraying process
- 4> Interference :EMC performance improvement
- 5> Long life design



### Rich easy to use features

- 1> Wide voltage design to meet international standards
- 2> Self-learning of accurate motor parameters
- 3> Multi-keyboard human-computer interaction
- 4> Support multiple installation methods

### Efficient energy saving performance

- 1> New generation of energy-saving operation
- 2> Meet multiple certifications
- 3> Energy efficiency level improvement

## Serving customers

is the only reason for the existence of POWTRAN





### Company Introduction

POWTRAN Technology as a national high-tech enterprise, set up Wuxi, Guangzhou and more than 30 offices with the center of Shenzhen, Dalian cities and Dongguan and established a worldwide network of R & D, production, logistics and service. Composing the advanced Technology from Japan Toshiba and Taiwan brand, POWTRAN provides a series of energy saving and automatic & drive control products. Such as frequency inverters (including special power supply), soft starters, AC servo drive system, energy saver, vehicle motor drive system. Powtran products are verified by inter-national authoritative organizations and now export to more than 300 countries.

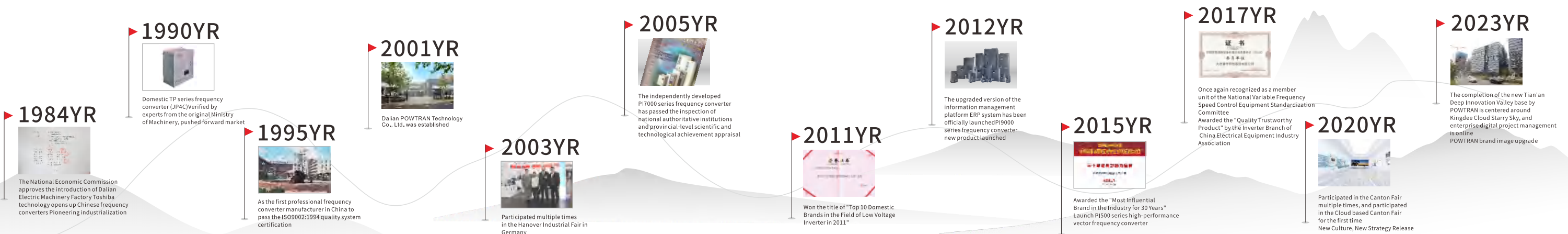
### Qualification Certificate

<p>Obtained high-tech enterprise certification 6 times in 2003, 2009, 2012, 2015, 2018, and 2021</p>	<p>Obtained certification for four versions of ISO9001-1994, 2000, 2008, and 2015 eight times</p>	<p>TUV certification CE certification</p>
<p>Obtained multiple utility model patents, software copyrights, design patents, and well-known trademarks</p>	<p>Won the Vice Chairman Unit of the Inverter Branch of China Electrical Equipment Industry Association for four consecutive years</p>	<p>Scientific and technological achievement appraisal and inspection report</p>

### Company History

## Forge ahead

Hundred years motor, forty years inverter



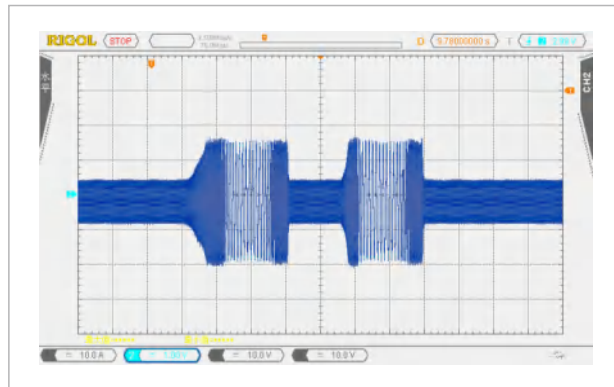


## Excellent control performance



### 1> Leading motor drive technology

- ▶ No PG vector control, PG vector control, VF control to meet different load process requirements.
- ▶ Advanced vector control algorithm can realize the current vector control of induction asynchronous motor and permanent magnet synchronous motor with high performance. (PI550E is special for the permanent magnet synchronous motor)



### 2> Excellent control performance

- ▶ Steady-speed precision:  $\pm 0.5\%$  (not PG vector control),  $\pm 0.02\%$  (PG vector control)
- ▶ Speed range: 1:100 (not PG vector control), 1:1000 (PG vector control)
- ▶ Torque response:  $< 40\text{ms}$  (not PG vector control),  $< 5\text{ms}$  (PG vector control)
- ▶ Heavy load overload capacity: 110% rated stable operation (110% continuously operation) 150% rated load 1Min, 180% rated load 5S
- ▶ Torque characteristics: stable torque output, large low-frequency torque, able to achieve ultra-low speed 0.01Hz stable load operation, torque mode and speed mode can be easily switched. In closed-loop vector mode, the linearity deviation of the torque line is within 3%.
- ▶ With zero servo function, it can reach 0Hz 150% rated torque and can meet the requirements of zero-speed hovering (PI550-L is special for lift)

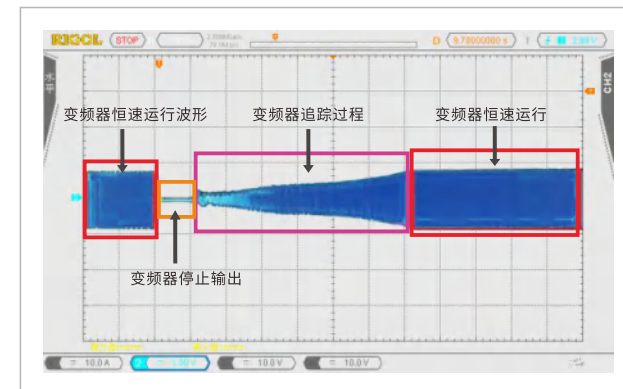
### 3> Perfect communication function design and performance improvement

- ▶ Built-in isolated RS485 communication design, can be extended CANopen, PROFIBUS-DP (supports up to PP05), profinet (using SCI and DSP communication, maximum baud rate: 937.5kHz), etc., to meet the needs of different communication occasions



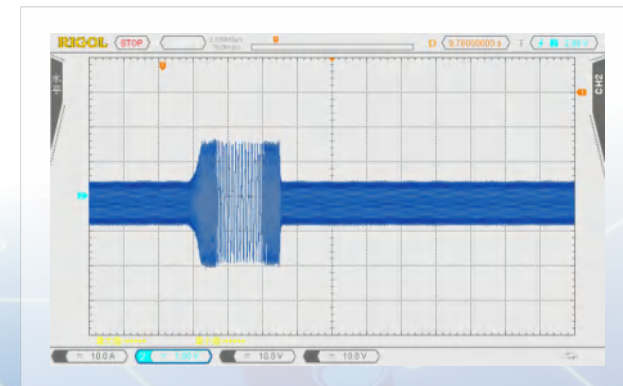
### 4> Realize the hard speed tracking function: "Flying start"

- ▶ Accurate tracking, stable and reliable



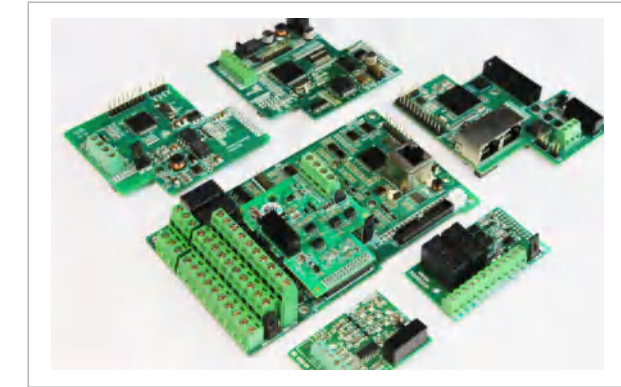
### 5> High performance over-current stall and over-voltage stall control

- ▶ Can meet the needs of mechanical loads with different characteristics and has a wider range of adaptability



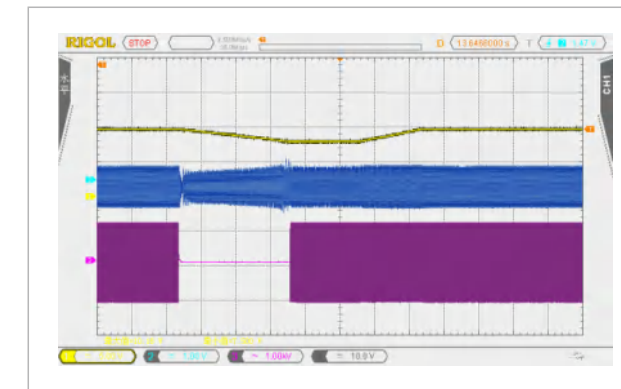
### 6> Supports multiple external expansion cards

- ▶ Include PG cards that meet closed-loop control, communication expansion cards that meet multiple communication protocols, and I/O expansion cards that meet multiple I/O point usage
- ▶ After connect expansion cards, the total number is 10 D1, 4 relays, 2 D0, 3 A1, and 2 DA



### 7> Instantaneous power off don't stop function

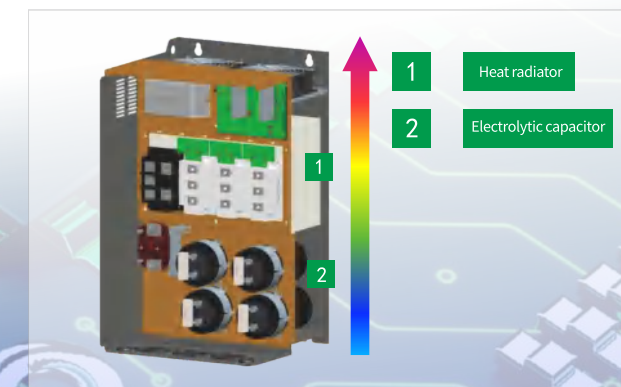
- ▶ When grid instantaneous drops or outages, inverter can borrow feedback energy and keep running without stop in effective time, especially suitable for the equipment which needs higher continuity.



## Reliable structural design

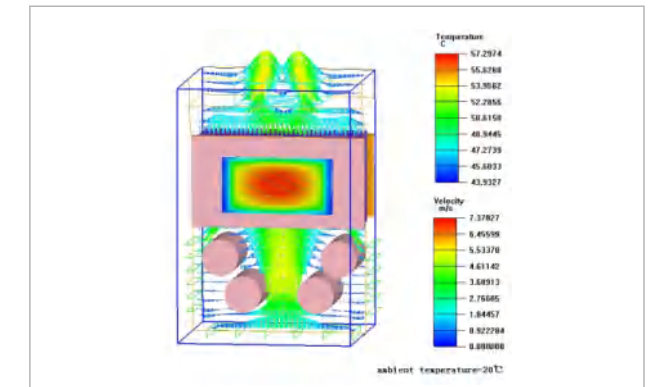
### 1> Heat dissipation: Excellent air duct design

- ▶ A full series of independent air duct design, heat dissipation duct and electrical and electronic circuit separate, reduce the failure rate of electronic circuit part
- ▶ The fan adopts an easy-to-disassemble design for installation and maintenance.



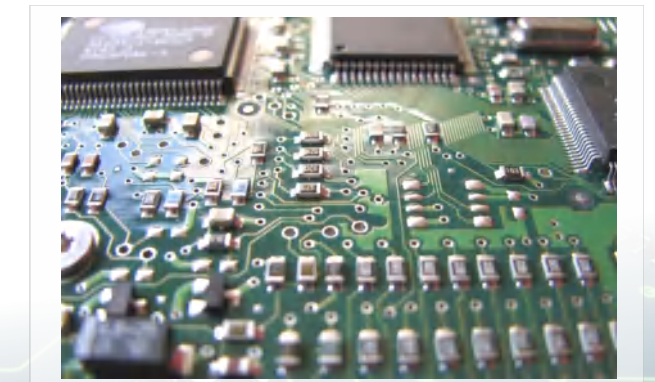
### 2> Excellent thermal management

- ▶ The modular design concept and thermal simulation technology ensure the thermal reliability of the whole machine and the compact structure and small size. The volume is only 70% of the same power of the same brand machine.
- ▶ The rated load temperature rise test and overload temperature rise test of the whole series of inverters are carried out, and the test results meet the thermal design safety standards to ensure the safe and stable operation of the inverters.
- ▶ All series adopt DC fan heat dissipation design, less due to power grid fluctuations caused by fan damage heat dissipation failure.



### 3> Protection: Three anti-paint spraying process

- ▶ Imported three anti-paint, with moisture, dust, oil corrosion, improve product reliability.
- ▶ Using three-dimensional spraying process all-round spraying.

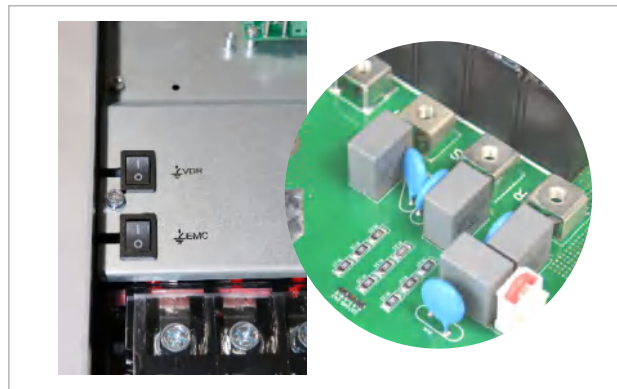




**Technical Features**

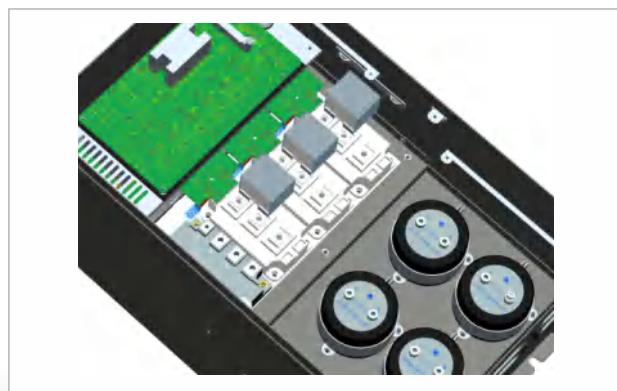
**4> Interference: EMC Design specifications improved**

- ▶ Varistor switches (VDR) and safety capacitor switches (EMC) are suitable for neutral-grounded power grid systems and IT power grid systems.
- ▶ Optional external filter can meet IEC61800-3C2 level requirements
- ▶ The special grounding pile design is used to facilitate grounding and weaken electromagnetic interference, which is more suitable for high-interference occasions.



**5> Long life design**

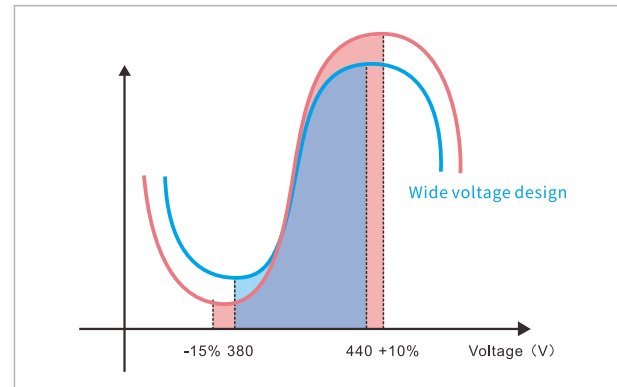
- ▶ Adopting the first class manufacturers of rectifier bridge and IGBT, higher configure, greater device selection, and monitor all the temperature rise of key components and PCB board;
- ▶ Vibration testing to ensure safe transportation design
- ▶ Internal logistic management (bar code technology, RF technology);
- ▶ Sheet Metal design, adopting Cold-rolled steel and galvanized sheet and powder spraying process on the cover



**Rich in easy-to-use features**

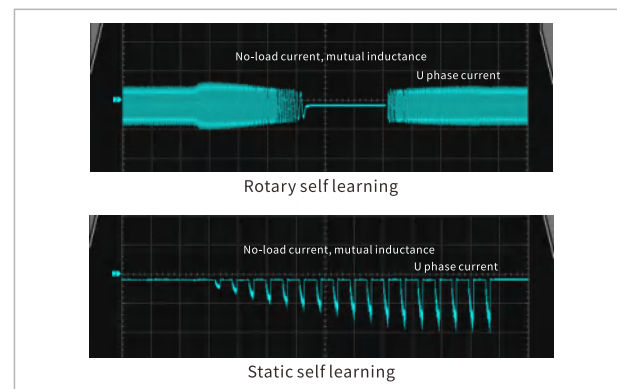
**1> Meet the international standard of wide voltage input range**

- ▶ Wide voltage input range, rated voltage: Ac 3phase 380v(-15%)440v(+10%)



**2> Precise motor parameter self learning**

- ▶ Convenient, simple operation, providing higher control accuracy and response speed
- ▶ Motor parameters can be comprehensive self-study (rotary self learning) or still learning (motor) with the occasion of the load cannot escape, convenient debugging



**3> Multiple keyboard human-computer interaction**

- ▶ LED single display, LED dual display, potentiometer, film button, silicone button, LCD display and smart backlight (optional)
- ▶ Film button (suitable for high protection requirements)

**4> Supporting various kinds of installation ways**

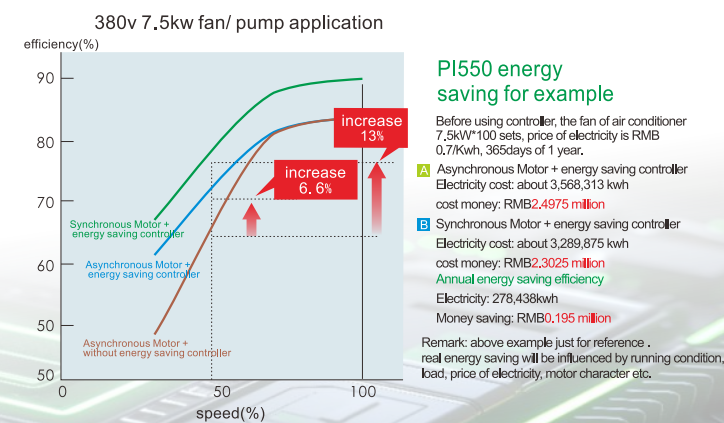
power(kW)	Installation ways			
	Din-rail mounting	Wall-mounting	flange mounting	Landing-mounted
0.75-4.0	★	★		
5.5-22		★		
30-110		★	★	
132-200		★	★	★
220-450		★		★
500-800				★



**Efficient energy-saving performance**

**1> New generation energy saving running**

- ▶ Adopt the advanced energy control technology to realize the high efficient running of motor;
- ▶ Super energy saving while running with synchronous motor, better than asynchronous motor, realize the super energy saving



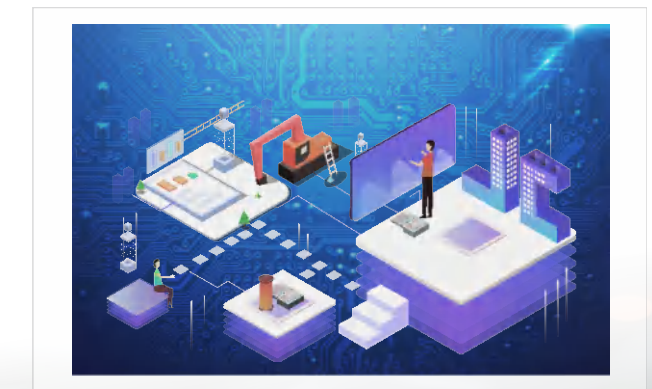
**2> Meet a number of certification standards**

- ▶ Products meet the EU CE certification standard and meet the RoHS directive.
- ▶ Product design meets international standards of EMC and safety regulations.



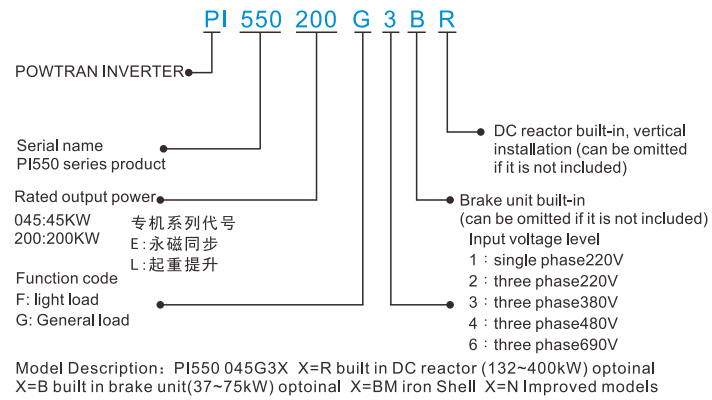
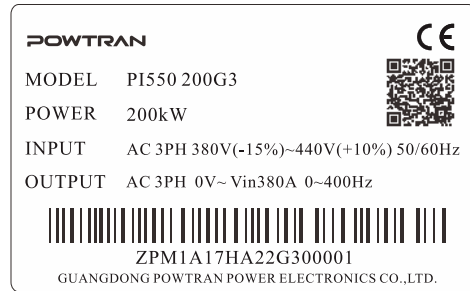
**3> Energy efficiency level improvement:**

- ▶ Meet GB/T 12668.902-2021/IEC61800-9-2:2017 "Electrical Requirements for Speed Control"  
"Part 9-2 Energy Efficiency Indicators for Electrical Transmission Systems and Motor Starters" and NB/T 10463-2020 "Energy Efficiency Limit Values and Energy Efficiency Grades for Variable Frequency Speed Control Equipment" and other standards "

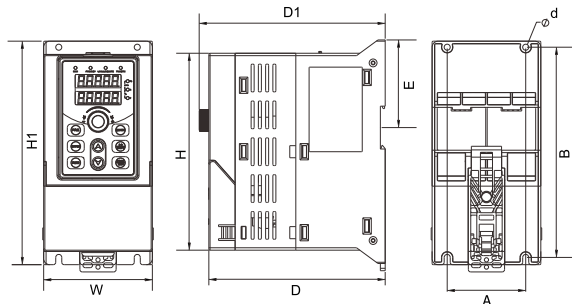




**Nameplate instruction**

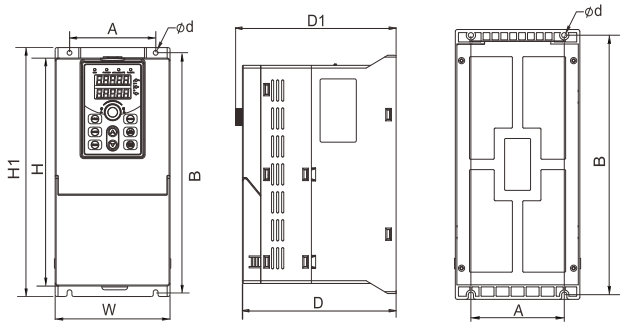


**Technical Specification**

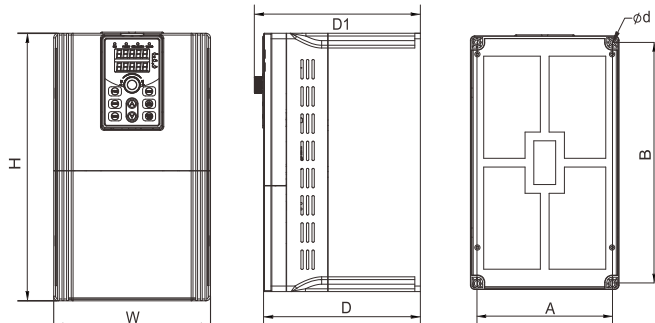


0.75~4kW G3(plastic shell) support Din-rail installation (Base No. A1~A2)

Base No.	Dimension (mm)					Installation (mm)			Din-Rail mounting (mm) E	N.W (kg)
	H	H1	W	D	D1	A	B	d		
A1	163	185	90	146	154	65	174	5	72.5	1.6
A2	163	185	90	166	174	65	174	5	72.5	1.8
A3	238	260	120	182	190	90	250	5	/	2.7
A4	290	/	170	193	201	155	276	5	/	5.8

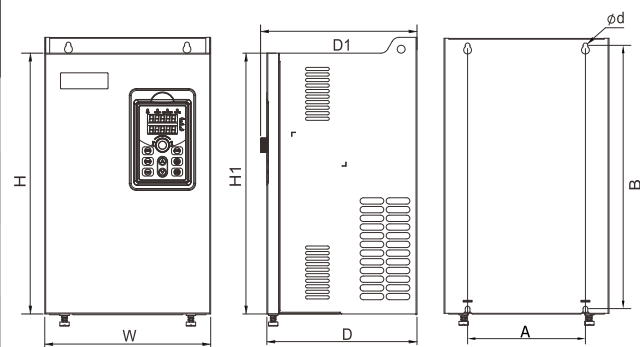


4~11kW G3 (plastic shell) support Wall-mounted installation(Base No. A3)



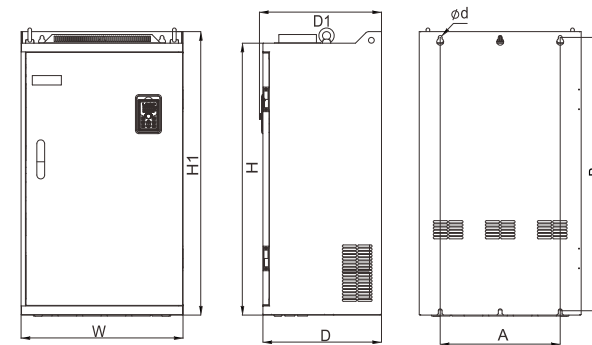
15~22kW G3(plastic shell) support Wall-mounted installation(Base No. A4)

Base No.	Dimension (mm)					Installation (mm)			N.W (kg)
	H	H1	W	D	D1	A	B	d	
A5	330	350	210	190	198	150	335	6	9.5
A6	380	400	240	215	223	180	385	7	13
A7	380	400	280	215	223	180	385	7	14
A8	500	520	300	275	283	220	500	10	42



30~220kW G3(iron shell) support Wall-mounted and Flange installation. (Base No.A5~A11,A19)

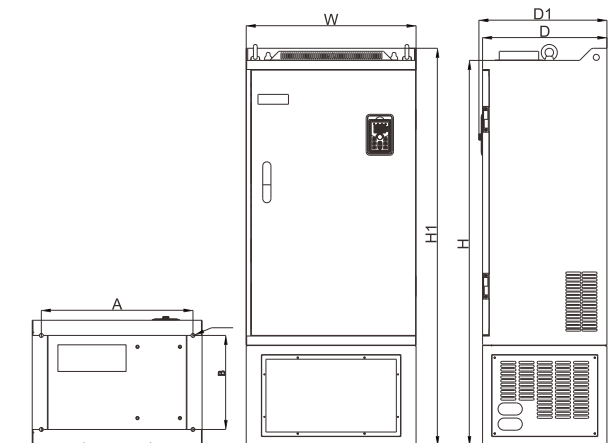
**Technical Specification**



250~450kW G3(iron shell) support Wall-mounted and Floor-mounted installation. (Base No.A12~A13)

Base No.	Dimension (mm)					Installation (mm)			N.W (kg)
	H	H1	W	D	D1	A	B	d	
A9	550	575	355	320	328	250	555	10	58
A10	695	720	400	360	368	300	700	10	73
A11	790	820	480	390	398	370	800	11	108
A12	940	980	560	410	418	415	945	13	153
A13	940	980	705	410	418	550	945	13	190

Base No.	Dimension (mm)					Installation (mm)			N.W (kg)
	H	H1	W	D	D1	A	B	d	
A14	995	1020	400	340	368	350	270	13	115
A15	1230	1260	480	370	398	400	200	13	153
A16	1419	1460	560	410	418	500	310	13	205
A17	1419	1460	705	410	418	645	310	13	249.4
A18	/	1700	1200	600	612	680	550	17	/
A19	500	520	340	275	283	220	500	10	47



132~450kW G3 (Iron shell) with DC reactor base, support Floor-mounted installation(Base No.A14~A18)

**Configuration parameter**

Base No.	Inverter model	Output power (kW)	Input current (A)	Output current (A)	Adapted motor power (kW)	brake unit /brake resistor optional(suggest)						
						Dynamic braking unit		Braking resistance selection (100% braking torque 10% braking amount, maximum 10 seconds)				
						model	quantity	Resistance value (Ω)	Resistance power (kW)	Resistance quantity	Minimum allowable braking resistance (Ω)	
A1	PI550 0R4G1	0.4	5	2.5	0.4	Built-in as standard	/	300	0.07	1	48	
	PI550 0R7G1	0.75	8	4	0.75		/	170	0.12	1	48	
A2	PI550 1R5G1	1.5	14	7	1.5		/	96	0.21	1	32	
	PI550 2R2G1	2.2	23	10	2.2		/	66	0.31	1	32	
A3	PI550 004G1	4	35	16	4		/	36	0.58	1	16	
A4	PI550 5R5G1	5.5	50	25	5.5		/	26	0.8	1	15	
	PI550 7R5G1	7.5	65	32	7.5		/	19	1.1	1	10	
A5	PI550 011G1	11	85	45	11		/	13	1.6	1	8	
A6	PI550 015G1	15	118	60	15		PB200-040-2	1	9.6	2.1	1	9.6
	PI550 018G1	18.5	145	75	18.5			1	7.8	2.6	1	7.6
A8	PI550 022G1	22	178	90	22	PB200-050-2	1	6.6	3.1	1	6.5	
	PI550 030G1	30	219	110	30		PB200-075-2	1	5	4.1	1	4.8
	PI550 037G1	37	302	152	37			1	4	5.1	1	3.9
A9	PI550 045G1	45	353	176	45	PB200-100-2	1	3.2	6.5	1	3.2	
	PI550 055G1	55	426	210	55		1	2.6	8	1	2.4	
A11	PI550 075G1	75	605	304	75	PB200-180-2	1	2.1	10	1	2.1	
	PI550 093G1	93	745	380	93		PB200-250-2	1	1.6	13	1	1.5
A13	PI550 110G1	110	856	426	110			2	2.6	8	2	2.5
	PI550 132G1	132	928	465	132		2	2.2	10	1	2.1	
	PI550 160G1	160	1040	520	160		2	1.8	12	1	1.6	



Base No.	Inverter model	Output power (kW)	Input current (A)	Output current (A)	Adapted motor power (kW)	brake unit /brake resistor optional(suggest)					
						Dynamic braking unit		Braking resistance selection (100% braking torque, 10% braking amount, maximum 10 seconds)			
						model	quantity	Resistance value (Ω)	Resistance power (kW)	Resistance quantity	Minimum allowable braking resistance
A1	PI550 0R4G2	0.4	4	2.5	0.4	Built-in as standard	/	300	0.07	1	48
	PI550 0R7G2	0.75	5	4	0.75		/	170	0.12	1	48
	PI550 1R5G2	1.5	8	7	1.5		/	96	0.21	1	32
A2	PI550 2R2G2	2.2	11	10	2.2		/	66	0.31	1	32
	PI550 004G2	4	18	16	4		/	36	0.58	1	16
A3	PI550 5R5G2	5.5	28	25	5.5		/	26	0.8	1	15
	PI550 7R5G2	7.5	37	32	7.5		/	19	1.1	1	10
A4	PI550 011G2	11	50	45	11		/	13	1.6	1	8
	PI550 015G2	15	65	60	15		1	9.6	2.1	1	9.6
A6	PI550 018G2	18.5	82	75	18.5		1	7.8	2.6	1	7.6
A8	PI550 022G2	22	98	90	22	1	6.6	3.1	1	6.5	
	PI550 030G2	30	122	110	30	1	5	4.1	1	4.8	
	PI550 037G2	37	157	152	37	1	4	5.1	1	3.9	
A9	PI550 045G2	45	185	176	45	1	3.2	6.5	1	3.2	
	PI550 055G2	55	214	210	55	1	2.6	8	1	2.4	
A10	PI550 075G2	75	307	304	75	1	2.1	10	1	2.1	
A11	PI550 093G2	93	383	380	93	1	1.6	13	1	1.5	
	PI550 110G2	110	428	426	110	2	2.6	8	2	2.5	
A13	PI550 132G2	132	467	465	132	2	2.2	10	1	2.1	
	PI550 160G2	160	522	520	160	2	1.8	12	1	1.6	

Base No.	Inverter model	Output power (kW)	Input current (A)	Output current (A)	Adapted motor power (kW)	brake unit /brake resistor optional(suggest)					
						Dynamic braking unit		Braking resistance selection (100% braking torque, 10% braking amount, maximum 10 seconds)			
						model	quantity	Resistance value (Ω)	Resistance power (kW)	Resistance quantity	Minimum allowable braking resistance
A1	PI550 0R7G3	0.75	4	2.5	0.75	Built-in as standard	/	560	0.15	1	250
	PI550 1R5G3	1.5	5	3.8	1.5		/	300	0.25	1	170
	PI550 2R2G3	2.2	6	5.1	2.2		/	215	0.4	1	130
A2	PI550 004G3	4	11	9	4		/	118	0.8	1	80
	PI550 5R5G3	5.5	15	13	5.5		/	86	1	1	60
A3	PI550 7R5G3	7.5	21	17	7.5		/	63	1.5	1	47
	PI550 011F3	11	26	25	11		/	43	2	1	31
	PI550 011G3	11	26	25	11		/	42	2	1	31
A4	PI550 015F3	15	35	32	15		/	31	2.3	1	23
	PI550 015G3/018F3	15/18.5	35/39	32/37	15/18.5		/	26	3	1	19
	PI550 018G3/022F3	18.5/22	39/47	37/45	18.5/22	/	22	3.5	1	17	
	PI550 022G3	22	47	45	22	/	22	3.5	1	17	
A5	PI550 030F3/030G3	30	62	60	30	/	22	3.5	1	17	
A6	PI550 037F3	37	76	75	37	1	17	4	1	16	
	PI550 037G3/045F3	37/45	76/91	75/90	37/45	1	17	5	1	16	
A7	PI550 045G3	45	91	90	45	1	14	6	1	13.5	
A8	PI550 055F3	55	112	110	55	1	14	6	1	13.5	
	PI550 055G3/075F3	55/75	112/157	110/150	55/75	1	9	7	1	8.5	
A9	PI550 075G3	75	157	150	75	1	7	9	1	6.5	
	PI550 093F3	93	180	176	93	1	7	9	1	6.5	
	PI550 093G3/110F3	93/110	180/214	176/210	93/110	1	7	12	1	6.5	
A10	PI550 110G3/132G3/132F3	110/132	214/256	210/253	110/132	1	4	13	1	3.7	
	PI550 160F3	160	307	304	160	1	4	16	1	3.7	
A11	PI550 160G3/187F3	160/187	307/345	304/340	160/187	1	4	19	1	3.7	
	PI550 187G3/200F3	187/200	345/385	340/380	187/200	1	3	23	1	2.7	
	PI550 200G3/220F3	200/220	385/430	380/426	200/220	1	3	24	1	2.7	
	PI550 220G3	220	430	426	220	1	3	26	1	2.7	
A12	PI550 250F3	250	468	465	250	1	3	26	1	2.7	
	PI550 250G3/280F3	250/280	468/525	465/520	250/280	2	4	15	2	3.7	
	PI550 280G3	280	525	520	280	2	4	16	2	3.7	
A13	PI550 315F3	315	590	585	315	2	4	16	2	3.7	
	PI550 315G3/355F3	315/355	590/665	585/650	315/355	2	4	18	2	3.7	
	PI550 355G3/400F3	355/400	665/785	650/725	355/400	2	3	20	2	2.7	
	PI550 400G3	400	785	725	400	2	3	23	2	2.7	

Base No.	Inverter model	Output power (kW)	Input current (A)	Output current (A)	Adapted motor power (kW)	brake unit /brake resistor optional(suggest)					
						Dynamic braking unit		Braking resistance selection (100% braking torque, 10% braking amount, maximum 10 seconds)			
						model	quantity	Resistance value (Ω)	Resistance power (kW)	Resistance quantity	Minimum allowable braking resistance
A1	PI550 0R7G4	0.75	4	2.5	0.75	Built-in as standard	/	700	0.13	1	96
	PI550 1R5G4	1.5	5	3.7	1.5		/	400	0.23	1	96
	PI550 2R2G4	2.2	6	5	2.2		/	300	0.31	1	90
A2	PI550 004G4	4	9	8	4		/	164	0.57	1	80
A3	PI550 5R5G4	5.5	13	11	5.5		/	120	0.78	1	70
	PI550 7R5G4	7.5	18	15	7.5		/	88	1.1	1	40
	PI550 011F4	11	23	22	11		/	60	1.6	1	32
A4	PI550 011G4	11	23	22	11		/	60	1.6	1	32
	PI550 015F4	15	30	27	15		/	60	1.6	1	32
	PI550 015G4/018F4	15/18.5	30/36	27/34	15/18.5		/	44	2.2	1	23
	PI550 018G4/022F4	18.5/22	36/42	34/40	18.5/22	/	35	2.7	1	23	
A5	PI550 022G4	22	42	40	22	/	30	3.1	1	20	
	PI550 030F4/030G4	30	57	55	30	/	30	3.1	1	20	
A6	PI550 037F4	37	67	65	37	1	22	4.2	1	20	
	PI550 037G4/045F4	37/45	67/82	65/80	37/45	1	17.5	5.4	1	17	
A7	PI550 045G4	45	82	80	45	1	15	6.2	1	13.5	
A8	PI550 055F4	55	102	100	55	1	15	6.2	1	13.5	
	PI550 055G4/75F4	55/75	102/137	100/130	55/75	1	12	7.8	1	11	
	PI550 075G4	75	137	130	75	1	8.8	10.7	1	8.2	
A9	PI550 093F4	93	152	147	93	1	8.8	10.7	1	8.2	
	PI550 093G4/110F4	93/110	152/185	147/180	93/110	1	7	14	1	6.5	
	PI550 110G4/132G4/F4	110/132	185/221	180/216	110/132	1	6	17	1	4.5	
A10	PI550 160F4	160	264	259	160	1	5	20	1	4.5	
A11	PI550 160G4/187F4	160/187	264/309	259/300	160/187	1	4.5	24	1	4.5	
	PI550 187G4/200F4	187/200	309/334	300/328	187/200	1	3.5	28	1	3.2	
	PI550 200G4/220F4	200/220	334/364	328/358	200/220	1	3.3	30	1	3.2	
	PI550 220G4	220	364	358	220	1	3.2	33	1	3.2	
A12	PI550 250F4	250	408	400	250	1	3.2	33	1	3.2	
	PI550 250G4/280F4	250/280	408/457	400/449	250/280	2	5.2	19	2	4.5	
	PI550 280G4	280	457	449	280	2	4.7	21	2	4.5	
A13	PI550 315F4	315	533	516	315	2	4.7	21	2	4.5	
	PI550 315G4/355F4	315/355	533/623	516/570	315/355	2	4.2	24	2	4.2	
	PI550 355G4/400F4	355/400	623/707	570/650	355/400	2	3.7	27	2	3.3	
	PI550 400G4	400	707	650	400	2	3.3	30	2	3.3	



Configuration parameter

Base No.	Inverter model	Output power (kW)	Input current (A)	Output current (A)	Adapted motor power (kW)	brake unit /brake resistor optional(suggest)						
						Dynamic braking unit		Braking resistance selection (100% braking torque, 10% braking amount, maximum 10 seconds)				
						model	quantity	Resistance value (Ω)	Resistance power (kW)	Resistance quantity	Minimum allowable braking resistance (Ω)	
F6	PI550 011G6/015F6	11/15	15/20	12/15	11/15	PB200-075-6	1	108	1.65	1	15	
	PI550 015G6/018F6	15/18.5	20/30	15/20	15/18.5		1	78	2.3	1	15	
	PI550 018G6/022F6	18.5/22	30/35	20/24	18.5/22		1	65	2.7	1	15	
	PI550 022G6/030F6	22/30	35/45	24/33	22/30		1	53	3.3	1	15	
	PI550 030G6/037F6	30/37	45/55	33/41	30/37		1	39	4.5	1	15	
F8	PI550 037G6/045F6	37/45	55/65	41/50	37/45		PB200-100-6	1	32	5.6	1	15
	PI550 045G6/055F6	45/55	65/70	50/62	45/55			1	26	6.8	1	15
	PI550 055G6/075F6	55/75	70/90	62/85	55/75			1	21	8.3	1	15
	PI550 075G6/093F6	75/93	90/105	85/102	75/93			1	15.6	11.3	1	15
	PI550 093G6	93	105	102	93			1	12.5	14	1	11
F9	PI550 110F6	110	130	125	110	PB200-180-6		1	12.5	14	1	11
	PI550 110G6/132F6	110/132	130/170	125/150	110/132			1	10.6	16.5	1	6
	PI550 132G6/160F6	132/160	170/200	150/175	132/160			1	8.8	20	1	6
	PI550 160G6/187F6	160/187	200/210	175/198	160/187			1	7.3	24	1	6
F11	PI550 187G6/200F6	187/200	210/235	198/215	187/200	1		6.2	28	1	6	
F12	PI550 200G6/220F6	200/220	235/247	215/245	200/220	PB200-250-6	1	5.8	30	1	4.3	
	PI550 220G6/250F6	220/250	247/265	245/260	220/250		1	5.3	33	1	4.3	
F13	PI550 250G6/280F6	250/280	265/305	260/299	250/280		PB200-180-6	1	4.7	38	1	4.3
	PI550 280G6/315F6	280/315	305/350	299/330	280/315			1	4.2	42	1	4.3
	PI550 315G6/355F6	315/355	350/382	330/374	315/355	2		7.4	24	2	6	
	PI550 355G6/400F6	355/400	382/435	374/410	355/400	2		6.6	27	2	6	
	PI550 400G6/450F6	400/450	435/490	410/465	400/450	2		5.8	30	2	4.3	

PI550 series inverters 030G3 and below, as well as special models 37-75G3B, all have built-in braking units. Models 037F3 and above require the use of external braking units. Please select the resistance and power of the braking resistor based on the specific on-site conditions (braking torque requirements and braking utilization requirements).

Standard specification

Item	Function	Specification
Power	Rated voltage level	AC 1PH 220V(-15%)~240V(+10%) AC 3PH 220V(-15%)~240V(+10%) AC 3PH 480V(-10%)~480V(+10%) AC 3PH 380V(-15%)~440V(+10%) AC 3PH 690V(-10%)~690V(+10%)
	Input frequency	50Hz/60Hz
	Allowable fluctuation	Voltage continued volatility±10% ; Input frequency volatility:±5% Voltage unbalance rate less than 3% ; Distortion meet IEC 61800-2 standard
Control System	Control system	High performance vector control inverter based on DSP
	Control method	V/F control,vector control W/O PG,vector control W/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
		F type: rated current 120%-1 minute, rated current 150%-2 seconds
	Maximum frequency	Vector control:0 to 300Hz 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×0.1%
	Start torque	G type: 0.5Hz/150%(vector control W/O PG)F type:0.5Hz/100%(vector control W/O PG)
	Speed range	1:100 (vector control W/O PG)1:1000 (vector control W/PG)
	Steady-speed precision	Vector control W/O PG:≤±0.5%(rated synchronous speed); Vector control W/PG:≤±0.02% (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: 0.0Hz to max. frequency, braking time:0.0 to 100.0 seconds, braking current value: 0.0~100.0s	
Jogging control	Jog Frequency Range: 0.00Hz to max.frequency; Jog Ac/deceleration time: 0.0s-6500.0s	
Multi-speed operation	Achieve up to 16-speed operation through the control terminal	
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	"Excavator" feature-torque is automatically limited during the operation to prevent frequent overcurrent trip;the closed-loop vector mode is used to control torque.	
Personalization function	Self-inspection of peripherals after power-on	After powering on,peripheral equipment will perform safety testing,such as ground, short circuit,etc.
	CommonDC bus function	Multiple inverters can use a common DC bus.
	Quick current limiting	The current limiting algorithm is used to reduce the inverter overcurrent probability, and improve whole unit anti-interference capability.
	Timing control	Timing control function: time setting range(0h to 6500m).



## Standard specification

Item	Function	Specification	
Input signal	Running method	Keyboard/terminal/communication	
	Frequency setting	10 frequency setting modes, including adjustable DC 0~10V/-10~+10V ,adjustable DC 0~20mA , panel potentiometer	
	Start signal	Rotate forward/reverse	
	Multi-speed	At most 16-speed can be set(run by using the multi-function terminals or program)	
	Emergency stop	Interrupt controller output	
	Wobulate run	Process control run	
	Fault reset	When the protection function is active,you can automatically or manually reset the fault condition.	
	PID feedback signal	In cluding DC(0 to 10V),DC(0 to 20mA)	
	Output signal	Running status	Motor status display,stop,ac/deceleration,constant speed,program running status.
		Fault output	Contact capacity:normal-closed contact 3A/AC 250V;normal-opened contact 5A/AC 250V;1A/DC 30V.
Analog output		Two-way analog output,16 signals can be selected such as frequency ,current,voltage and other,output signal range (0 to 10v/0 to 20mA).	
Output signal		At most 4-way output,there are 40 signals each way	
Frequency converter efficiency	>96%		
Run function	Limit frequency,jump frequency,frequency compensation,auto-tuning,PID control		
DC current braking	Built-in PID regulates braking current to ensure sufficient braking torque under no overcurrent condition.		
Running command channel	Three channels:operation panel,control terminals and serial communication port. They can be switched through a variety of ways.		
Frequency source	There are 10 frequency sources: digital, analog voltage , analog current , multi-speed and serial port. They can be switched through a variety of ways.		
Input terminals	Eight digital input terminals, compatible with active PNP or NPN input mode, one of them can be for high-speed pulse input (0~100Hz square wave); three analog output terminals, AI1 and AI2 can choose 0~10V or 0~20mA input, AI3 voltage -10~+10V input.		
Output terminals	2 digital output terminals, one of them can be for high-speed pulse output (0~100kHz square wave); One relay output terminal; Two analog output terminals, respectively for optional range (0~20mA or 0~10V),they can be used to set frequency, output frequency, speed and other physical parameters.		
Protection function	Inverter protection	Overvoltage protection,undervoltage protection,overcurrent protection,overload protection,overheat protection (optional), external fault,communication error.PID feedback signal abnormalities,PG failure and short circuit to ground protection.	
	IGBT temperature display	Displays current temperature IGBT	
	Inverter fan control	Can be set	
	Instantaneous power-down restart	Less than 15 milliseconds: continuous operation; More than 15 milliseconds: automatic detection of motor speed, instantaneous power-down restart	
	Speed start tracking method	The inverter automatically tracks the motor speed when it starts	
Display	Parameter protection function	Protect inverter parameters by setting administrator Password and decoding	
	LED/LCD display	Running information	Monitoring objects include: operating frequency, set frequency, actual motor current , DC bus voltage , output current, output power, output torque, input terminal state output terminal state, analog AI value , analog AI2 value , actual motor running speed, PID set value percentage, PID feedback value percentage, etc
		Error message	Up to 3 error messages can be saved to query the fault type, voltage, current, frequency, and working status at the time of fault occurrence
	LCD display	Display parameters	
	LCD display	Optional,prompts operation content in Chinese/English text.	
	Parameters copy	Lock part or all of keys,define the function scope of some keys to prevent misuse	
Key lock and function selection	Realize partial or full locking of keys, define the scope of action of some keys, to prevent misuse		
Communication	RS485	Built-in isolation 485	
Environment	Environment temperature	-10°C~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 of moisture	
	Vibration	Below 5.9m/s <sup>2</sup> (=0.6g)	
	Application sites	Indoor where no sunlight or corrosive,explosive gas, dust, combustible gas, oil mist, water vapor, dripping water or salt, etc	
	Altitude	No derating is used below 1000m, and 1% derating is used for every 100m increase above 1000m. The highest altitude is 3000m	
	IP degree	IP20	
Product standard	Product adopts safety standards	IEC61800-5-1:2007	
	Product adopts EMC standards	IEC61800-3:2005	
	Cooling method	Forced air cooling	

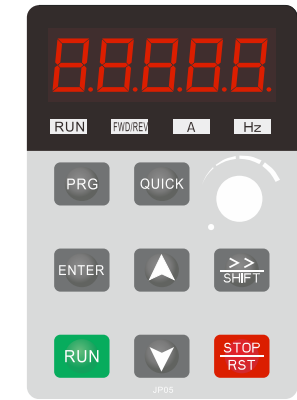
## Operating keyboard (button key description)



Standard Configuration



Optional configuration



Optional configuration

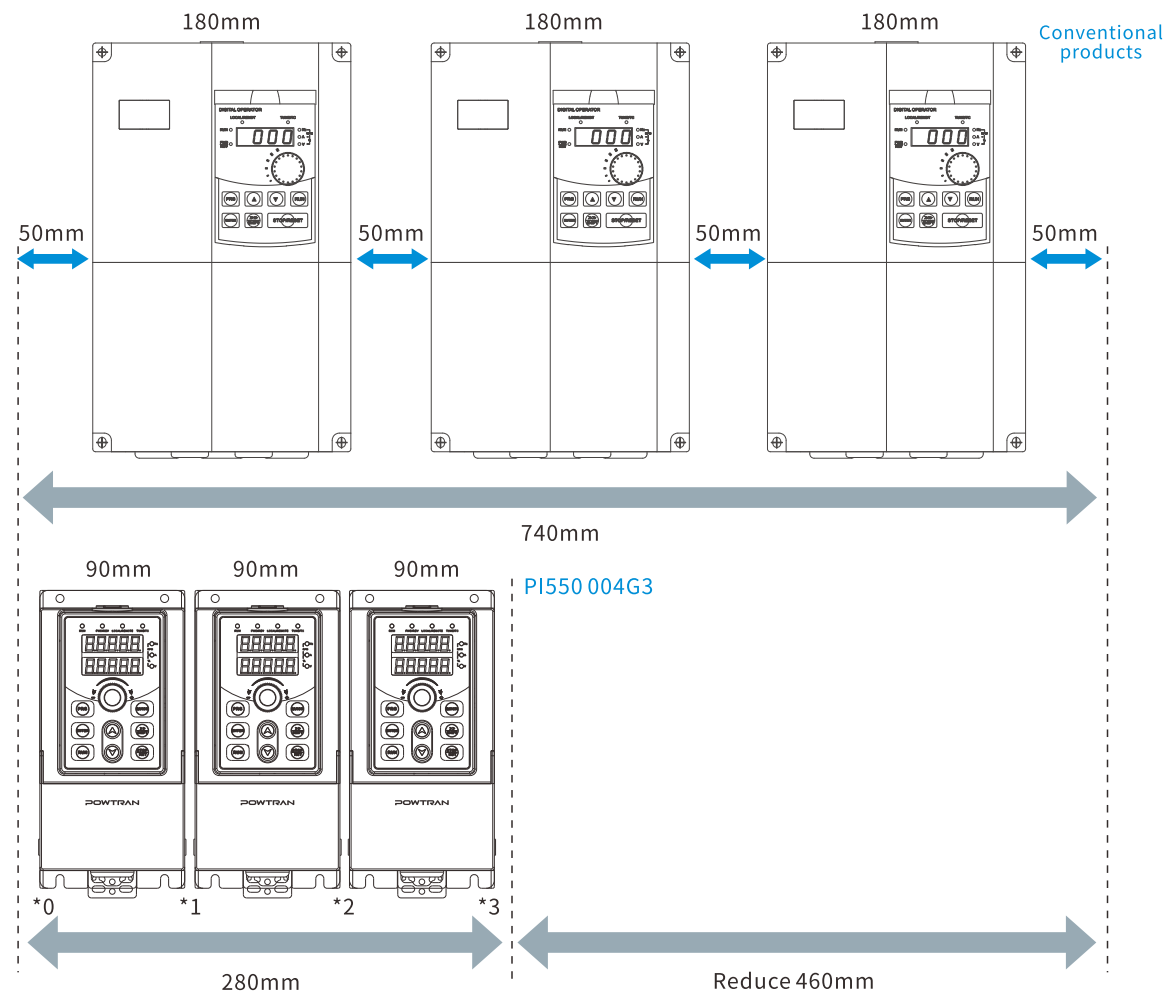
Sign	Name	Function
	Parameter Setting/ Exit Key	Enter top menu parameter change status Exit from function option change Return to status display menu from sub-menu or function option menu
	Shift Key	Select circularly parameters under run or stop interface; Select parameters when modifying the parameters.
	Ascending Key	UP key setted by parameter F6.18
	Decending Key	DOWN key setted by parameter F6.19
	Run Key	Used for running operation in the keyboard mode.
	Stop/Reset Key	For stopping running in the running status; for resetting the operation in fault alarm status. The function of the key is subject to F6.00
	Enter Key	Enter into levels of menu screen,confirm settings.
	Quick multifunction key	This key function is determined by the function code F6.21.
	Keyboard encoder	In query status: functional items increasing and decreasing In modify status: function features or editing increasing or decreasing In monitoring status: setting frequency increasing or decreasing



**Optimized structural design**

Book style narrow body design, reasonable utilization of space, greatly saving customers' main cabinet space and main cabinet costs. 11kw and below can be installed side by side

**380V 4kW Example**



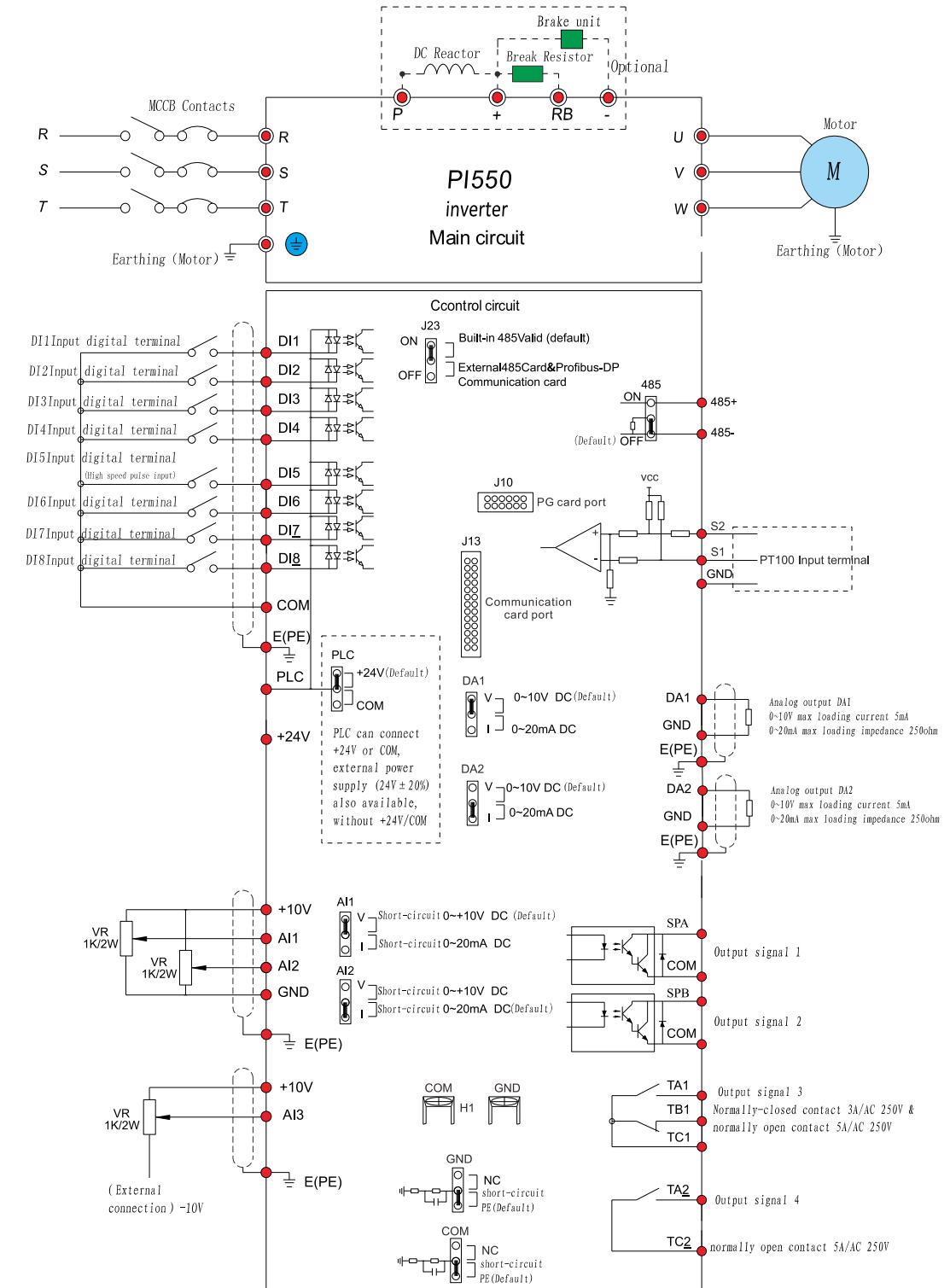
**Use of the environment**

- 1.Environmental temperature -10°C to 50°C Above 40°C,the capacity will decrease 3%by each 1°C. So it is not advisable to use inverter above 50°C
- 2.Prevent electromagnetic interference, and keep away from interference sources.
- 3.Prevent the ingress of droplets, vapor, dust, dirt, lint and metal fine powder.
- 4.Prevent the ingress of oil, salt and corrosive gases.
- 5.Avoid vibration, Maximum amplitude is less than 5.9m/s(0.6g).
- 6.Avoid high temperature and humidity or to exposure to rain, humidity shall be less than 90%RH (non-condensing). In the presence of corrosive gas, maximum relative humidity is no more than 60%.
- 7.Altitude:When the altitude exceeds 1000m, please reduce the rating by 1% according to the ratio of 100m;When the altitude exceeds 3000m, please contact the staff
- 8.Never use in the dangerous environment of flammable, combustible, explosive gas, liquid or solid.

**Wiring**

Frequency inverter wiring is divided by main circuit and control circuit. Users must properly connect frequency inverter in accordance with the wiring connection diagram showing below.

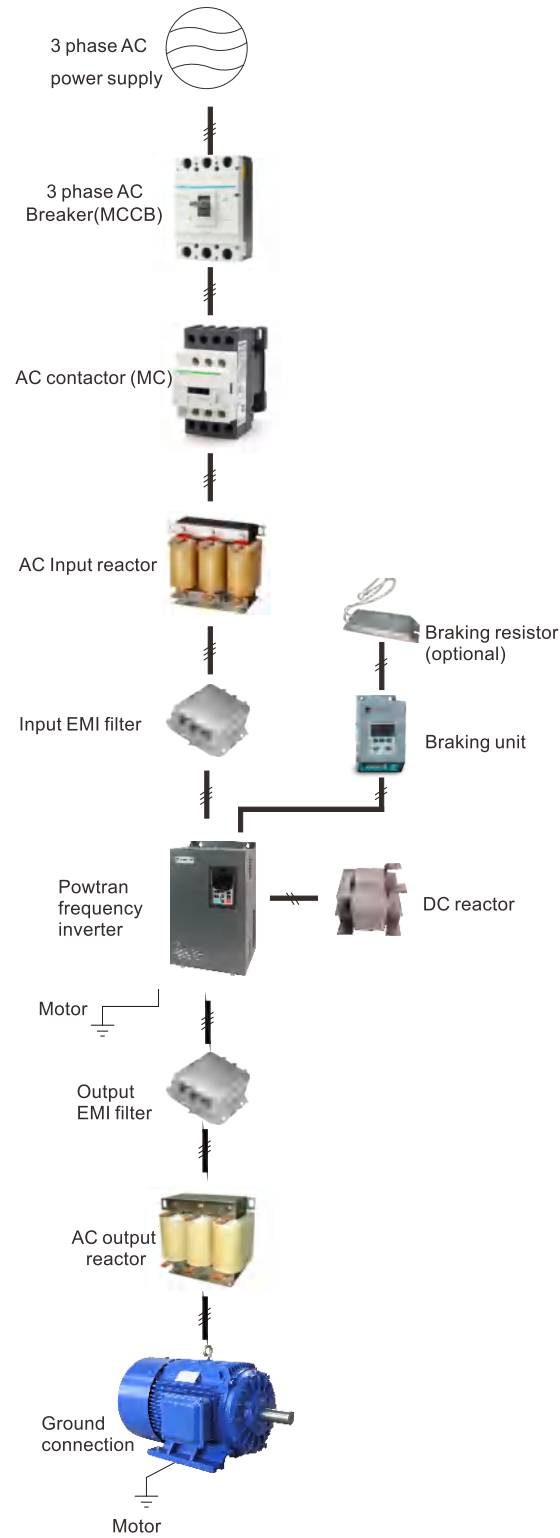
**Wiring diagram**



Name	Specification
Electric cable	Device for transmitting signals
Breaker	To prevent electric shock accidents and protect against short circuits to ground that may cause leakage current fires, please select leakage circuit breakers for inverter devices with high-order harmonic suppression functions. The rated sensitivity of the circuit breaker should be greater than 30mA for one inverter.
Input reactor DC reactor	Applicable to improving the power factor on the input side of the inverter and suppressing high-order harmonic currents Models 5R5G and above can be connected to an external DC reactor
Input filter	To suppress electromagnetic interference transmitted from the inverter to the public power grid through the input power line, please install it as close to the input terminal side of the inverter as possible during installation.
Breaking Unite Breaking resistor	Use resistors or resistor units to consume the regenerative energy of the motor to reduce the deceleration time. A1~A5 (A7 and A19, special customized products have the suffix letter "B") frame sizes only need to be equipped with brake resistors, while A8~A18 and A6 frame sizes also need to be equipped with brake units.
Output filter	Suppress the interference generated from the inverter output wiring. Please install as close to the inverter output terminal as possible.
AC output reactor	Used to extend the effective transmission distance of the inverter and effectively suppress the instantaneous high voltage generated when the IGBT module of the inverter is switched

Notice:

1. PI550 series comes standard with a film-coated LED keyboard, and an optional LCD keyboard;
2. PI550G3 30kW and below models and P1550G3B 37-75kW, built-in braking unit;
3. Braking unit adopts POWTRAN standard braking unit PB200 series. Please refer to the PB200 manual for details.



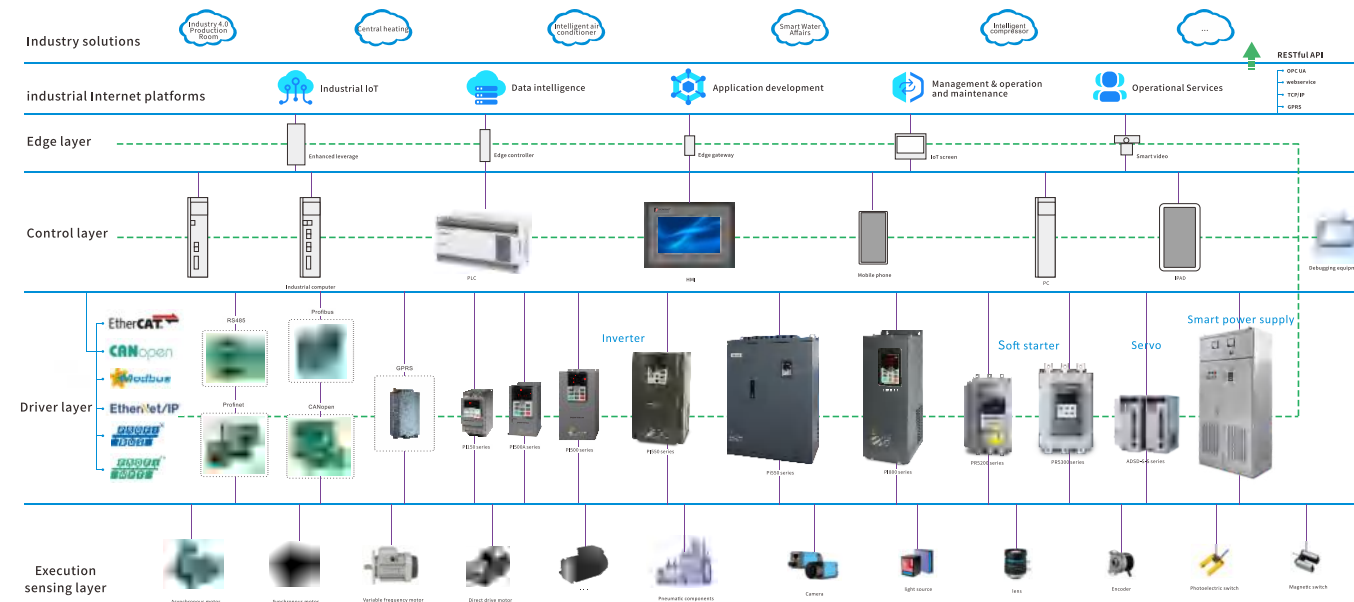
## Universal encoder and Communication & I/O Expansion Cards

PI550 series is equipped with various types of expansion cards, In order to facilitate customer selection, mainly including PG cards that meet closed-loop control, communication expansion cards that meet multiple communication protocols, and I/O expansion cards that meet multiple I/O points. The main introduction is as follows:

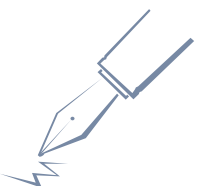
Pictures	Name	Description
	PI9000_PG 1 ABZ incremental encoder	Differential input PG card, without frequency dividing output. OC input PG card, without frequency dividing output 5V, 12V, 24V voltage is optional. please provide voltage and pulse input mode information when ordering.
	PI9000_PG 3 UVW incremental encoder	UVW Differential input PG card, without frequency dividing output 5V voltage
	PI9000_PG 4 Rotational transformer	Adjusting the output voltage and frequency of rotational transformer, Frequency inverter can achieve precise control of the motor to meet different working requirements.
	PI9000_PG 5 ABZ incremental encoder	OC input PG card, with 1:1 frequency dividing output 5V, 12V, 24V voltage is optional, please provide voltage and pulse input mode information when ordering.
	Profibus-DP : PI9000_DP1	Supports the use of PPO1, PPO2, PPO3, and PPO5 to meet users' perfect control of multiple functions of Frequency inverter.
	Profinet : PI9000_CAN.T021	It complies with the internationally accepted Profinet Ethernet standard, improves communication efficiency, facilitates the realization of the inverter networking function, and enables frequency inverter to become a slave station of the fieldbus and accept the control of the fieldbus master station.
	CANopen : PI500_PN_T03	CAN bus interface fully complies with the ISO/DIS11898 standard, allowing frequency inverter to be connected to the CANopen fieldbus network as a slave station, following the CAN2.0A standard and compliant with the CANopen standard protocol DS01.
	I/O expansion card PI9000_IO2	Expand 2 DI input terminals and 2 relay output terminals, which can be expanded for STO function



## Industrial automation and digital solution platform



## Empower intelligent manufacturing, support dual carbon goals



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