Power range:7.5-630kw
Voltage level: 1-phase 220v
                 3-phase   220v
                 3-phase   380v
                 3-phase   690v

Description

Description

In order to meet the industrial application field better , Powtran designed PI500 Series Vector Control Frequency Inverter , which is a high-performance and high stability product, based on stable hardware platform.
This product is a new high-performance current vector control inverter designed by Powtran based on the latest theory of motor running and controlling. Meanwhile keep the excellent basic performance and functions, it significantly Improved on ease of use ,maintainability, environmental protection, installation space saving design standards for users .

Properties

        PI500 Series High-performance Frequency Inverter.With good dynamic characteristics, superior overload capacity, this product added editable function and background monitoring software,s sortsof PG card,and has rich and powerful combination function , stable performance.It is for a variety of industrial machinery drives,fan and water pump drive unit and IF heavy-duty grinding unit.

High performance , excellent quality & high power density design more accord with the experience of users

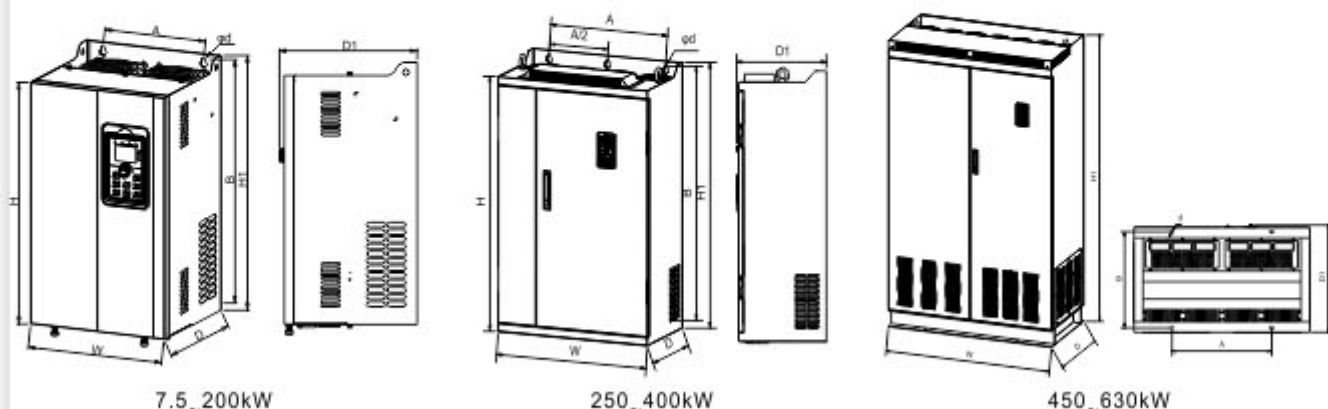**PI500** series

High-performance vector control inverter

• High efficiency and simple saving operation
• Steady speed precision high speed range

- A variety of new process multiple protection mechanism
- optimize structure of the design advanced technology platform

Technical Specification

7.5_200kW   250_400kW   450_630kW

Inverter model	Output power (kW)	Input current (A)	Output current (A)	Dimension(H1xWxD1mm)					Installation (AxB dmm)		
				H	H1	W	D	D1	A	B	d
PI500-7R5G3/011F3	7.5/11	20.5/26	17/25	280	300	190	190	198	140	285	6
PI500-011G3/015F3	11/15	26/35	25/32								
PI500-015G3/018F3	15/18.5	35/38.5	32/37								
PI500-018G3/022F3	18.5/22	38.5/46.5	37/45	330	350	210	190	198	150	335	6
PI500-022G3/030F3	22/30	46.5/62	45/60								
PI500-030G3/037F3	30/37	62/76	60/75	380	400	240	215	223	180	385	7
PI500-037G3/045F3	37/45	76/91	75/90								
PI500-045G3/055F3	45/55	91/112	90/110	500	520	300	275	283	220	500	10
PI500-055G3/075F3	55/75	112/157	110/150								
PI500-075G3	75	157	150								
PI500-093F3	93	180	176	550	575	355	320	328	250	555	10
PI500-93G3/110F3	93/110	180/214	176/210								
PI500-110G3/132F3	110/132	214/256	210/253								
PI500-132G3/160F3	132/160	256/307	253/304	695	720	400	360	360	300	700	10
PI500-160G3/187F3	160/187	307/345	304/340	790	820	480	360	368	370	800	11
PI500-187G3/200F3	187/200	345/385	340/380								
PI500-200G3/220F3	200/220	385/430	380/426								
PI500-220G3	220	430	426								
PI500-250F3	250	468	465	940	980	705	380	388	550	945	13
PI500-250G3/280F3	250/280	468/525	465/520								
PI500-280G3/15F3	280/315	525/590	520/585								
PI500-315G3/355F3	315/355	590/665	585/650								

PI500-355G3/400F3	355/400	665/785	650/725								
PI500-400G3	400	785	725								
PI500-450F3	450	883	820								
PI500-450G3/500F3	450/500	883/920	820/860								
PI500-500G3/560F3	500/560	920/1010	860/950	/	1700	1200	600	612	680	550	17
PI500-560G3/630F3	560/630	1010/1160	950/1100								
PI500-630G3/700F3	630/700	1160/1310	1100/1250								

Remark: After installing the screw rings ,the height dimensions is :H1+15mm。

Technical Features

Superior performance in motor drive
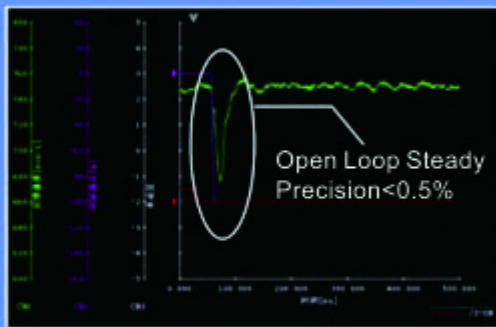

Asynchronous motor   Synchronous motor   Frequency conversion motor   Direct drive motor

Steady speed precision, wide speed range

■ Open-loop steady speed precision <0.5%
High steady speed precision, wide adjust speed range
Steady speed precision: ±0.5% (open-loop vector control)
±0.02% (close-loop vector control)
Adjust speed range: 1:100 (open-loop vector control),
1:1000 (close-loop vector control),
Torque response: <20ms <20ms(open-loop vector control)
<5ms (close-loop vector control)
■ Heavy load overload capacity :110% rate stable operation
 (110% continuously operation)
150% rate load 1Min
180% rate load 5S

Open Loop Steady
Precision<0.5%

Low speed with high torque small torque ripple
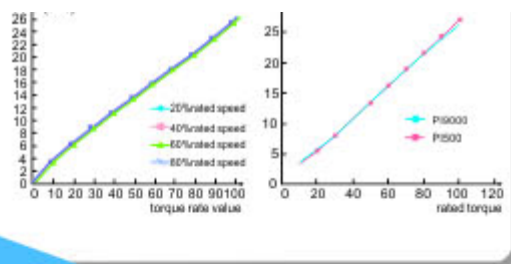
The actual output torque
ﻠ (Nm)

The actual output torque
30ｋ (Nm)

stable Torque output , high torque with low frequency ,
to realize the stable load of low speed 0.01 Hz, torque
mode and speed mode can be convenient to switch

- ■ stable Torque output , high torque with low frequency ,
to realize the stable load of low speed 0.01 Hz, torque
mode and speed mode can be convenient to switch
- ■ In close-loop vector control , linear torque linearity
deviation within 3%.

Precise motor parameter self learning

| Rotary self learning	Static self learning
the learning must release load, it is suitable for requiring high control precision	it is suitable for motor can't release load occasions, to avoid can't rotate self-learning after installation

- ☐ Motor parameters can be comprehensive self-study (rotary self learning) or still learning (motor) with the occasion of the load cannot escape, convenient debugging, simple operation, provide higher control accuracy and response speed
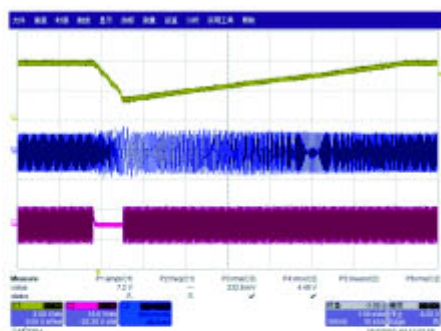
Instantaneous power off don't stop function

- ■ When grid instantaneous drops or outages, inverter can borrow feedback energy and keep running without stop in effective time,especially suitable for the equipments which needs higher continuity , such as textile production line, chemical fiber.

reliable design
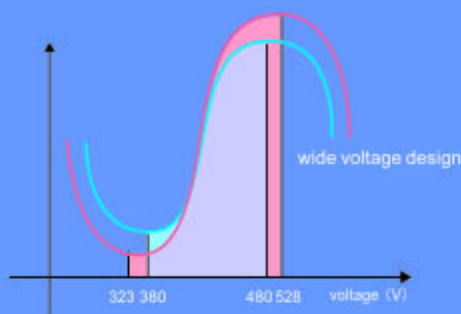
Meet the international standard of wide voltage input range

- ■ Rated voltage: 3phase 380-480v 50Hz/60Hz
  Allow voltage float range: rated voltage±15%

EMC Design specifications Improved

- ■ EMC built-in a set of safety capacitance, optional external capacitance group, simple filter, optional filter schaffner can meet C2 international standards
- ■ Using professional grounding pile design, convenient
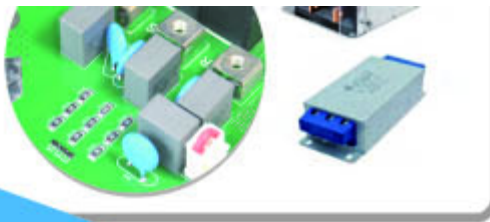
grounding and weaken the electromagnetic interference
At the scene of the bad to actual application provides EMC
filter, common mode rejection, simple filter configuration
of a complete set of plan, optimize the environment of EMC
electric field devices

Remark: optional filter match CE approve, C2 EMC
standard, recommend SCHAFFNER & JIA NLI model.

Meet a number of certification standards

- Product is suitable for Euro < Technical coordination and
  standardization methods> requirements.
  EMC directive 2004/108/CE Electromagnetic compatibility
  directive and LVD directive
  2006/95/EC low voltage directive IEC61000-2-2:2002,
  IEC61000-4-2:2008, IEC61000-4-3:2008;
  IEC61800-5-1:2007 etc.
- Meet the ROHS directive

Independent air duct design

- Independent air duct design, the effect of heat dispelling
  is better, improve the reliability, which can effectively prevent
  dust into the converter internal to avoid a short-circuit fault etc
- Select longevity's deadly air cooling fan, effectively reduce
  the temperature rise of frequency converter, inverter reliable
  and stable operation

1 heat radiator
2 electrolytic capacitor

Anti-corrosion paint spraying process
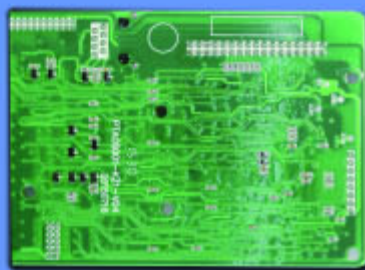
- High protection design, use the import anti-corrosion paint,
  moisture proof, dustproof, oil proof, corrosion resistance,
  improve the product reliability, 3D painting, no dead Angle

Thermal reliability of the machine

- Adopted high precision thermal simulation platform software,
  ensuring the thermal reliability of the machine.
  PI500 series inverter, all must go through thermal simulation
  test.Thermal design is scientific simulation tested, good
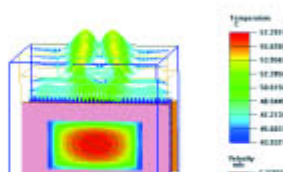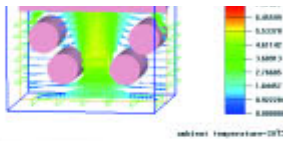
accuracy, quick efficiency, good stability, especially in the condition of limit test, thermal simulation can replace the actual load test simulation, equivalent to more than a layer of scientific thermal test

Machine temperature rise test

■ The full series of frequency converter had done the rated load temperature rise test and overload temperature rise test, test results accord with thermal design safety margin, ensure safe and stable operation of the converter

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;
■ Big temperature rise range, longer life;
■ Vibration test to make sure the safety of 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

The advanced function of changing the class of machines

The compact design to improve the speed of realizing machines minimizing

■ Collect the minimum frequency inverter with small and light synchronous motor to speed up the machines minimizing;
■ Selecting the long life, big wind cooling fans, new generation IGBT module technology ,high efficiency of power, reducing the temperature rise of frequency inverter efficiently, make sure the frequency inverter run steadily.
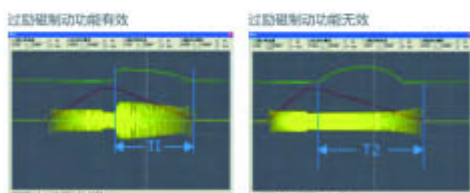
Over-excitation function

■ Fast braking and easy operating without any other periphery braking resistor, etc;
■ Inhibit the increasing of DC-bus voltage while deceleration,

avoid the frequent err, and fast braking, fast stop.

Various kinds of terminals functions, easier for operation

- There are 51kinds of multi-function terminals DI , 41 kinds of DO, and 16kinds of AO logical function choice, and meet general purpose frequency inverter normal requirements.
- AI can be used as multi-function terminals'DI freely;
- AI1~AI3 can be set 4 respectively polylines and five kinds of curves corresponding relationship separately, support the client to adjust the EXW parameters with the site, expanded AI3 is isolated inputs, support PT100 or ±10 v input,easily operation;
- Good5groups of built-in analog DI and DO function choice, reducing external DI/DO cables,DI5 high-speed pulse input terminal and FM high-speed pulse output terminal support the highest 100khz pulse.A
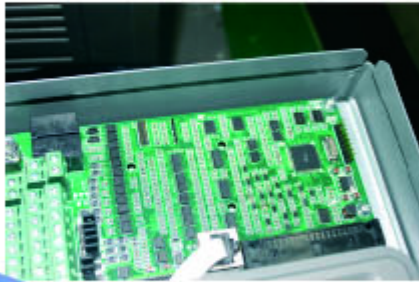
Built in self-adjusting PID function module

- Built in two groups of PID parameters, it is changeable automatically according to the deviation, DI terminal ,frequency ;
- various given and feedback source, variable and practical type
- PID feedback lost inspection function, it is convenient for user to inspect the fault function;
- Setting factory parameters for special fields to meet the requirements, such as Printing and package, drawing machine, cables etc ,these sites are influenced by changeable diameters, simplify the debugging process ,and easy to maintain the device.

Easy to use PC software

- Easy to use PC monitoring software, enables tracking and fault location, and with oscilloscope function, it's more convenient for clients to program, debug, real time monitoring is very good for analyzing and management.
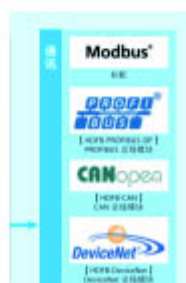
Communication interface application is very flexible

- Support Modbus RTU,CANopen,Profibus-DP bus Protocol;
- Through a dedicated distribution point of the inverter parameters, to realize a good multi-level load distribution, multi-machine control applications droop.

Supporting various kinds of installation ways

- Wall-mounted, flange installation is available for 7.5-110kw (flange mounting needs peripheral accessories); Wall-mounted, flange installation, floor installation is available for 132-220kw(flange mounting, floor installation needs peripheral accessories); Wall-mounted, floor installation is available for 250-400kw (floor installation needs peripheral accessories); Wall-mounted is available for 450-630kw

Simple maintenance

- Fan can be disassembled, easy to install, clean and replace.

| 1 | fans terminals |
| 2 | fans fastening screw |

Operating keyboard(button key description)

Sign	Name	Function
PRG	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	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	Run Key	*Used for running operation in the keyboard mode.
STOP RST	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	Enter Key	*Enter into levels of menu screen,confirm settings.
QUICK	Quick multifunction key	*This key function is determined by the function code F6.21.
(encoder)	Keyboard encoder	*In query status: functional items increasing and decreasing *In modify status: function feagues or editing increasing or decreasing *In monitoring status: setting frequency increasing or decreasing
RUN	Running indicatorlight	*ON: the inverter is working *OFF: the inverter stops
LOCAL/ REMOTE	Command indicator light That is the indicator for keyboard operation, terminal operation and remote operation (communication control)	*ON: terminal control working status *OFF: keyboard control working status *Flashing: remote control working status
FWD/REV	Forward/reverse running light	*ON: in forward status *OFF: in reversal status
TUNE/TC	Motor self-learning/ Torque control/ Fault indicator	*ON: in torque control mode *Slow flashing: in the motor tunning status *Quick flashing: in the fault status
HzAV	HzAV	* Hz frequency unit * A current unit * V voltage unit * RPM speed unit * % percentage

Application indicator

Application Industry

Metallurgy,petroleum, chemical,textile,electric power,building materials,coal,medicine, food,papermaking, plastics,printing and dyeing,lifting, Cables, washing, water supply,hvac,sewage treatment and other industries. . .

Form a complete set of machinery, wire drawing machine,mixer,cutting machine,winding machine, compressor,blower pump,grinding machine,conveyor belt,Hoist, centrifuges, and various speed machinery. . .

Product use

Textile machinery

food machinery

plastic machinery

printing machinery

cnc machine tools

woodworking machinery

产品实拍图

front

top

bottom

Inspection and safety precautions

POWTRAN frequency inverters have been tested and inspected before leaving factory. After purchasing, please check if its package is damaged due to careless transportation, and if the specifications and model of the product are consistent with your order requirements. For any problem, please contact your local authorized powtran dealer or directly contact this company.

Inspection after unpacking

※ Check if that packing container contains this unit, one manual and one warranty card.
※ Check the nameplate on the side of the frequency inverter to ensure that the product you have received is right the one you ordered.

Nameplate instruction

Inverter model	→	**POWTRAN**	CE
		MODEL : PI500 018G3	
Output rating	→	POWER : 18.5kW	
Input rating	→	INPUT : AC 3PH 380V(-15%)-440V(+10%) 50Hz/60Hz	
Output specifications	→	OUTPUT : AC 3PH 0V-Vin37A 0~400Hz	
Bar code	→	‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖	
Serial No.	→	ZPB1A8888888	
Manufacturer address	→	DALIAN POWTRAN TECHNOLOGY CO.,LTD.	

Model Description

PI 500 018 G 3

POWTRAN INVERTER●

Serial name
PI500 series product

● Input voltage level
1：single phase220V
2：three phase220V
3：three phase380V
6：three phase690V
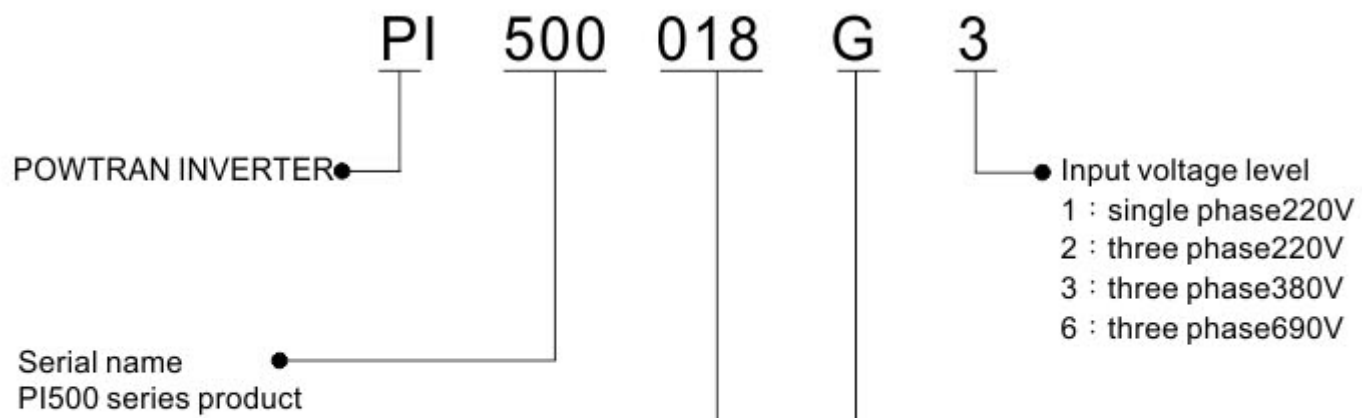
Rated output power
018:18.5KW
132:132KW

Function code

F: light load

G: General load

Using range

* This converter is suitable for the three-phase ac asynchronous motor and permanent magnet synchronous motor.
* Does this inverter can only be used in place of the company recognition, unauthorized use of the environment may cause a fire, get an electric shock, such as explosion event.
* Does if used for the inverter failure and loss of life or personal injury may cause equipment(such as transport personnel, fall equipment, air systems, safety equipment, etc),must be handled carefully, in this case, please refer to the factory a consulting.

> Only trained personnel allowed to operate this device, please read this manual in detail before use for safety, installation, operation and maintenance. The equipment safe operation depends on the right transportation, installation, operation and maintenance.

Product information feedback

Dear user:

Thank you for your interest in and purchasing Powtran products! In order to better serve you, we want to be able to timely get your personal information and the related information of the purchased Powtran products so as to understand your current and future further demand to Powtran products, we would appreciate your valuable feedback. For your convenience, please visit our website **http://www.powtran.com** and then click "Technologies and Services" and "Download" columns to submit your feedback information.

1) Download the update product manuals you need
2) View the technical information on products, such as operation instructions, specifications and features, FAQ, etc.
3) Share application cases.
4) Technical advisory and online feedback
5) Feedback the product and demand information for via e-mail
6) Inquire the latest products and access to various types of warranty and extend additional services
7) When product improvements, this manual content will change without prior notice.

Production package

Wooden package

Paper carton package

Some application cases

Fan Industry
centrifugal compressor, axial-flow compressor, centrifugal blower, roots blower, centrifugal fan, axial flow fan, Enke blower

machine tool industry
NC Electro-spindle, vertical lathe spindle, surface grinder, spindle boring machine, spindle sewing machine

coal mining industry
engine analyzer, slag pot carrier, feeding machine, iron ladle motor, fireproof door, motor ore washing pump, suction fan in the pit, air supply system, hauling machine

Injection molding machine
extruding machine, injection machine, disc refiner, Internal Mixer, granulate machine

Pump
petroleum pump, Metallurgical pump, chemical pump, Fishing pump, Mining pump, Power Pump, water conservancy pump, sewage pump, food pump, Brewing pump, Pharmacy pump, Beverage pump, Fuel Pump, Condiment pump, Paper pump, Textile pump, Printing and dyeing pump, Ceramic pump, paint conveyor pump, agricultural chemical pump, Fertilizer pump, sugar-syrup pump, methanol pump, spary pump, Salt pump, Beer pump, Starch pump, Feed pump

hoisting industry
mine hoist, mining electric locomotive, Port hoist, builders' lift, pile driver, large crane motor, tower crane, lifting

petroleum industry
plunger pump, beam pumping unit, oil transfer pump, gas transmission pipeline system compressor,

winding machine
lithium battery winding machine, capacitor core winding machine, Textile winding machine

chemical industry
Vacuum Kneader, agitator), dryer, Film blowing machine, plastic mill pulverizer, Drafting device for short fiber, high speed spinning machine for chemical fiber, feedstock pump for oil refinery, pump for caking unit

conveyor belt
Belt-type conveyor, plate conveyor, car type conveyor, escalator, passenger conveyor, scraper conveyor, embedded scraper conveyor, bucket conveyor, bucket elevator, underslung conveyor, underslung conveyor

Iron and steel industry
winding engine for iron-smelting blast furnace, dust removing blower for blast furnace, air blower for blast furnace gas blanketing blowing engine, Roots blower for Digital thermometer, Variable frequency exhaust fan for steel furnace, Roasting and purifing fan, hot rolling machine, cold tandem rolling mill, feeding system, mill exhauster, vibrating sieving machine, wire drawing machine, winding machine, blender mixer, drying machine, slime pump, draining pump, water supply pump, unbender, pipemaking machine, ladle crane motor

heating system
constant pressure water supply system for boiler, mill exhauster, belt conveyor for coal, Coal breaker, air blower, induced draft fan, cold-rolling mill

Power Industry
boiler blower, induced draft fan, boiler feeding pump, Circulating water pump, low pressure drain pump, condensate pump, Cooling water pump, mortar pump, coal feeder,

compressor
piston compressor, screw compressor, centrifugal compressor, Linear compressor

textile industry
spinning machine, lapping machine, Pounding machine, knitting machine, centrifugal dehydrator, spinning frame, aeration machine for print works, lentering and thermo-fixing machine, high temperature dyeing machine, decorating machine, Bleaching machine, Dyeing jiggers

photovoltaic
microwave relay station, Optical cable communication system, wireless paging station, Satellite communication and satellite television receiving system, computerized telephone system in countryside, communication system in troops, railway and Highway signaling system, lighthouse and beacon light, meteorological station, seismic station

POWTRAN AC DRIVES
SINCE 1984