Powtran technology

---Professional manufacturer of frequency inverter based on the motor design and manufacture

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Powtran AC Drives

More information please enter www.powtran.com
Shenzhen Powtran Technology Co., Ltd. is a Hi-Tech enterprise invested by several shareholders, establishing the networks of development, production, logistics and service that extend to the whole country from Shenzhen and Dalian. Integrating the advanced technology from Japan, Europe, America and Taiwan area, based on the research capacities of Tsinghua University, Dalian Maritime University and ours, with advanced manufacture and test equipment, Powtran supply customers automatic and driving products with multi-functions, such as frequency inverters, motor soft starters, servo numerical control systems, servo motor/drives, motor environment protection energy-saving machines, special power supplies, and automatic control systems of product lines. Our products enjoy a good sale in European and American countries, as well as Southeast Asian countries. (Frequency inverter, AC Drives, frequency converter, energy saving product, environment protection product, VFD, AC frequency drive, energy saver, AC motor control system, variable frequency drive, variable speed drive, inverter, soft starter, high-voltage frequency inverter, medium voltage frequency inverter, low voltage frequency inverter, VSD, energy saver, AC motor control system, brake units, servo drives/motor and related spare parts, including the EMI filter and AC Choke and so on.)

We are the special enterprise devoting to the development, design and manufacture of motors and control and driving products.

Being a Chinese inverter manufacturer, we have been taking the lead to attend Hannover Fair in Germany continuously for 7 years.

We are the first standing director of Inverter Institute of China Electrical Equipment Industry.

We are the member unit of China Standardization-Technology Committee of complete switch and control equipment follow-tension.

We are the member unit of China automation academy electric automation Committee.

We are the director company of small and medium motor branch of China Institute of Electrical Equipment Industry.

China ‘Enter Credit Evaluate’ AAA Credit Enterprise.

PRODUCT FEATURES

PI7600/7800 series frequency inverter is a newly-updated product meeting the market requirement. With advanced space voltage vector, SPWM control technology, high-powered IGBT and DSP chip. Built-in current control-loop, achieve high-accuracy closed loop control. Reaches high accuracy requirement on output voltage & frequency. Also brand-new production craft and perfect testing equipments, which ensure the high working stability. PI7600/7800 inverter will offer you better motor control solution.

- Brand-new software & hardware design.
- Excellent feature upgrade
- Higher quality insurance
- Fashionable industrialized appearance
- DSP-base IGBT, achieve high-efficiency & high-powered control.
- V/F, V/F+PG, vector + PG –3 control functions
- 3 types of space voltage vector Wave produce mode
- Dead zone compensation function, achieves low frequency high power output
- Automatic slip compensation
- 10 methods to set frequency, imitation terminals can accept user defined signal with in 0~10V, 0~20A.
- Maximum 7 sections speed and 8 sections acceleration control.
- 6 programmable output control terminals
- Built-in PID control function, achieves high-powered close loop control.
- Supports 0~10V, 1~5V, 0~20mA, 4~20mA return signal.
- PID based DC brake.
- Speed pursue starting and restart after momentary power loss
- Strong communication function, supports standard RS485 and Can Bus, remote keyboard input function as well.
- Human-based display list, LCD display with LED, displays 3 status parameter in the mean time.
- Particular IGBT temperature rise supervising function, adjusts the fan, and reduce the motor noise and temperature rise duly.
- High-efficiency failure checking and recording function, facilitates removal of fault.
- Parameter protect function
- Unique design to reduce the pollution to power
The technology and products from Powtran got a wide application, such as petrochemical industry, coal mine, metallurgy, paper mill, concrete, injection machine, textile, electric, public works, water supply, sewage treatment. Besides "O" general type, we also design some special types of "PI" series inverter according to different applications.

- **VFD special for multi-pump constant water supply**
  Advanced control theory, build in PID and multi pump operation control logic controller, can adjust pump speed and pump switching automatically according to the variation of pipe network pressure, then achieves constant pressure control of the pipe network.

- **VFD special for machine tool**
  When motor runs in low speed, and requires high torque and speed accuracy. Auto-Detect motor dynamic running parameter and adjust according, to ensure the motor run under high efficiency.

- **VFD special for compressor**
  Super strong over-load and over current capacity. Easily meets the compressor heavy load and auto constant pressure requirement. Various input & output ports, can receive various pressure return signal, achieves close-loop control via PID adjustment.

- **VFD special for injector**
  Super strong over-load and over current capacity. Easily meets the injector frequency and rapidly start and brake. Various input & output ports, facilitates the combination with injector controller, easily achieve automatic control.

Motor Pro-environment Energy Saving machine
Got a wide application, such as petrochemical industry, coal, mine, metallurgy, paper mill, concrete, injection machine, textile, electric, public works, water supply, sewage treatment, for motor speed adjustment and energy saving.

Power & control system special for metallurgy mixer
DSP control close-loop self-regulation function, various working mode such as constant mixing positive-reverse alternative mixing. Can set or adjust output frequency and output current independently. Widely applied in many fields such as metallurgy/continuous casting and special steel and aluminum smelting etc.

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**Industry Application**
- Steel converter training, arc smelting, crystal concussor, oegang or coke machine, automatic charging of electric arc stove, continuous casting.
- Port bucket coal whisper, shock absorption for oil dock screw pump, bridge lifting device.
- Municipal administration: Boiler system, central air conditioner system, sewage disposal, water supply and drainage engineering.
- Coal mine: Main fan blower in the entrance of mine, gas concentration control in mine, heavy medium in coal washery.
- Chemical industry: Chemical reaction heating calcination furnace, filter separator, first ammonia pump.
- Textile: Scale linkage, pipeline glue storage, braiding machine, printing machine.
- Oil field: offshore platform, oil electric pump, pump jack, oil conveying system.
- Machine: Food machinery, packing machinery, printing machinery, frequency converter air conditioner, plastic machinery.
- Electric power: boiler system, exhaust boiler system, coal transportation.
- Pharmacy: fermentation tank control, stirring control, correlative blower, control.
- Building: cement plant, rotary kiln, blade type crusher, plastic screw extruding, paper making.

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**Instructions on nameplate**

- **Model designation:**

![Model designation](image)

- **S24 Motor Universal Model**
  - Input spec:
  - Output spec:
  - Source:
  - Output power:
  - Power supply:
  - Motor:
  - Control:

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**POWTRAN TECHNOLOGY CO., LTD.**

- **http://www.powtran.cn**
- **http://www.powtran.com.cn**
- **POWTRAN TECHNOLOGY CO., LTD.**

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**Advanced control theory build in PID and multi pump operation control logic controller, can adjust pump speed and pump switching automatically according to the variation of pipe network pressure, then achieves constant pressure control of the pipe network.**

While sudden electricity failure, it connects to the load circuit at first time, and outputs the motor required voltage and frequency via motor speed following function, then makes the motor continuous running stably when some loads can’t stop. It ensure the production proceeds constantly and safely in time.

**VFD special for machine tool**
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## Standard Specification

**Voltage and frequency**
- Single-phase 220-240V/50/60Hz
- Three-phase 380-415V/50/60Hz

**Applicable fluctuation range**
- Voltage: ±15%, frequency: ±3%

**Output frequency**
- 0~180Hz: ±1.0% at 50Hz, ±1.5% at 60Hz
- 200~300Hz: ±1.5% at 50Hz, ±2.0% at 60Hz

**Protection method**
- Short-circuit protection, over-voltage protection, current overload protection, thermal protection, voltage protection,过流保护,过电压保护

**Auto torque boost function**
- Resistor boost frequency: ±1%, and large torque boost under the V/F control mode.

**Program running control**
- 1-step speed program running, the maximum running time is 9 hours.

**Frequency setting accuracy**
- Digital references: 0.01Hz, and below, 0.1Hz, Hz, Analog references: 0.01Hz, Hz.

**Frequency accuracy**
- Speed control tolerance: ±0.01% (±1Hz).

**PID feedback**
- Fault reset, traverse running, instant stop, multi-segment speed, start signal, frequency setting, jog, running message, fault message, analog output.

**Analog output**
- 28 0~10V/0~20mA, motor state display, stop, accelerate/decelerate, seven-speed, program running state.

**Running mode**
- Keypad/Terminal/Communication mode.

**Input signal**
- Keypad/Terminal/Communication mode.

**Multi-segment acceleration**
- At most 8 steps acceleration can be set during multi-function or program running.

**Instant stop**
- Emergency controller's output.

**Reverse running**
- Program controller setting.

**PID**
- PID integral: 0.002000.0Hz, the maximum frequency range is 10.002000.0Hz.

**Speed setting**
- (3~phase 380V~415V 50/60HZ)

### Installation dimension

#### PI 7800 series

<table>
<thead>
<tr>
<th>2 N1</th>
<th>2 N2</th>
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<tbody>
<tr>
<td>376</td>
<td>378</td>
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</table>

#### PI 7600 series

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<tr>
<td>382</td>
<td>384</td>
</tr>
</tbody>
</table>

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**Communications**
- CAN BUS: multi-drop, data length: 8, 9, 10, parity: Even, Odd, None, stop bit: 1 or 2, baud rate: 1200~125Kbps.

**Environment temperature**
- -40~65℃

**Storage temperature**
- -20~85℃

**Humidity**
- Less than 95% RH

**Application place**
- Where there is no rust gas, no flammable gas, no powder and dust.
The series can acquire the peripheral equipment by user because of the different using condition and requirement. See the wiring diagram as below:
Parameter setting

**JPSE7000 Keyboard** Specification and function description

The standard keypad for PIT800, PIT6000 Family inverters.

For the 4 keypads, when the keypad is unlocked, press and simultaneously for 3 seconds, the keypad is locked.

LED displays normally after displaying "LoC" for 2 seconds; when the keypad is locked, press and simultaneously for 3 seconds, the keypad is unlocked. LED displays normally after displaying "ULoC" for 2 seconds.

**JPSE67000, JP6C7000 keyboard** Specification and function description

The standard keyboard for PI7800, PI7600 Family inverter. The JP6E7000 keyboard has the same instruction and indication as JP6E7000. The difference is that the lower LED display is changed into LCD display which displays the state and parameters in English. JP6C700 is the optional keyboard for PI7800, PI7600. The standard keyboard for PI7800, PI7600 Family inverter.

The standard keyboard for PI7800, PI7600 Family inverter.

Parameters setting

<table>
<thead>
<tr>
<th>Parameter Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Inverter type</td>
<td>Light Load</td>
</tr>
<tr>
<td></td>
<td>Standard Load</td>
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<tr>
<td></td>
<td>Medium Load</td>
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<tr>
<td></td>
<td>Heavy Load</td>
</tr>
<tr>
<td></td>
<td>Specification</td>
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<table>
<thead>
<tr>
<th>Phase voltage</th>
<th>1 phase voltage 220V 50/60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pit800</td>
<td>2.15 1.5 4 6 4 6 4 6 4 6 4 8</td>
</tr>
<tr>
<td>Pit600</td>
<td>1.5 1.3 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7</td>
</tr>
</tbody>
</table>

Please contact us for above 400KW
Motor soft starter

Standard specification

- Advanced five kinds of startup modes: Voltage slope startup mode; current limiting startup mode; trip and current limiting startup mode; trip and increase voltage startup mode; current slope startup mode; double close loop startup mode.
- Braking mode: voltage slope soft braking and free braking.
- Main circuit is 3 lines input and 6 lines output, which can realize automatic monitoring.
- Programmable delay startup mode, programmable interlocks control and programmable malfunction junction point output.
- The startup and braking time can be revised by program.
- Comprehensive protection functions: over current, over load, over heat and Default Phase of input and output.
- There relay and one analog output.
- Automatic discerns phase sequence and protection function.
- Special compact design.
- High reliability.

Nameplate specification

- Type: JR 2 017-3
- Powtran Technology Co., Ltd
- 17KW 35A
- Standard motor capacity 017

<table>
<thead>
<tr>
<th>MOTOR</th>
<th>Voltage (V)</th>
<th>Power (KW)</th>
<th>Current (A)</th>
<th>keyboard Model</th>
<th>G. W (Kg)</th>
<th>N. W (Kg)</th>
<th>Size L/B/H (mm)</th>
<th>Installation A/B/C (mm)</th>
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</thead>
<tbody>
<tr>
<td>JR 2-15</td>
<td>380</td>
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<td>12</td>
<td>P JR 2</td>
<td>5</td>
<td>3</td>
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<td>120/285</td>
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<td>12</td>
<td>P JR 2</td>
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<td>3</td>
<td>145/270/167</td>
<td>120/285</td>
</tr>
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<td>JR 2-17</td>
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<td>P JR 2</td>
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<td>120/285</td>
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<tr>
<td>JR 2-19</td>
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<td>5.5</td>
<td>12</td>
<td>P JR 2</td>
<td>5</td>
<td>3</td>
<td>145/270/167</td>
<td>120/285</td>
</tr>
</tbody>
</table>

Standard specification

- 3-phase power voltage
- Frequency
- Rated current
- Motor panel
- Rated voltage
- Motor current
- Motor rated current in can be adjusted between 0.5-3 times of rated current.
- Startup mode
- Stop mode
- Display and keyboard
- Output relay
- Protection
- Option of starter

Figure: developed electronic soft starter and stop device and passed Feature standard and most national standard (SUL/3432-1995)
As a professional frequency inverter manufacturer based on technique of motor design and motor manufacture, POWTRAN design PI7500 and PI7800 series of inverters by applying DSP control which now enjoying good popularity by customers in current market. In the meantime, we put onto market a new series PI7550 for small power inverters. The power range for this new series is 0.75KW-1.5KW, and the voltage grade is 220V-460V.

PI7550 series of inverters don’t only inherit POWTRAN product’s advantages of stable performance and multi-function, but also specialize in its compact plastic housing, smart and unique design, advanced technique and flexible settings. It is easy to handle and operation with great performance and competitive price, providing a practical and effective solution of motor control for customers.

PI7550 series of inverters putting on market enrich Powtran’s production line for POWTRAN “J” series. Application filed: various of industries such as textile, printing, dye, paper mill, package mill, foodstuff’s factory, medicine, etc.

Application filed
Steel, Port, Municipal administration, Coal mine, Chemical industry, Textile, Oil field, Machine, Electric power, Pharmacy, Paper making

Powtran Energy Consuming Brake Unit

**Application field**

Powtran Brake Unit mainly suits to the status when the inverter decelerates because of the load inertia, kinetic energy will turn into electric energy which is saved on the DC bus. To consume such regenerated energy is by using brake unit (resistor), otherwise frequency inverter will trip OU or be faulted.

**Function**

- For all brands inverter;
- 200V/380V/440V/480V;
- It could be paralleled connected, no capacity limited; Unit range 0.75-30KW/37-55KW/75-110KW/400V;
- Allowable for the occasion with electricity fluctuation;
- Special design, the ordinary resistor could be used so no need to use senseless resistor. Resistor box could be specially ordered;
- Ensure the brake IGBT in saturation;
- Protection: short-circuit, low voltage, over voltage, fast fuse, over heated, etc;