

PFC375 Series

AC-DC Power Supplies

The PFC375 products of the PerFormanCe Power Series incorporate high performance midrange power, active Power Factor Correction (PFC), and high reliability to meet varied commercial and industrial requirements.

Providing tightly-regulated DC power in a wide variety of single and multiple output configurations, the PFC375 is designed to provide full output power with only 300 Linear Feet per Minute (LFM) forced-air cooling (factory installed fan optional). Other features include remote sense, power fail, logic level inhibit, and DC power good. Main channel current sharing is provided for redundant applications. The PFC375 is available with SAE mountings or optional metric mountings.

The PFC375 product line is approved to the latest international regulatory standards and displays the CE Mark.



Key Features & Benefits

- RoHS Compliant
- Greater than 1 million hours demonstrated MTBF
- Power Factor Correction (PFC) meets EN61000-3-2
- Fully-regulated outputs
- Main output remote sense
- Current Share, Power Fail, and Power Good signals
- Overtemperature, overvoltage, and overcurrent protected
- Available with metric and SAE mountings
- Input transient & ESD compliance to EN61000-4-2/-3/-4/-5
- Fan output voltage and optional fan

1. SINGLE-OUTPUT MODEL SELECTION

| MODEL | OUTPUT VOLTAGE | ADJUSTMENT RANGE | MAX. OUTPUT CURRENT ¹ | LINE REGULATION | LOAD REGULATION | RIPPLE & NOISE % p-p ² | INITIAL SETTING ACCURACY |
|---------------|----------------|------------------|----------------------------------|-----------------|-----------------|-----------------------------------|--------------------------|
| PFC375-1012G | 12V | 10.8V to 13.5V | 30A | 0.2% | 0.8% | 1% | 11.94V to 12.06V |
| PFC375-1015G | 15V | 12.0V to 17.0V | 25A | 0.2% | 0.6% | 1% | 14.94V to 15.06V |
| PFC375-1024G | 24V | 21.6V to 26.4V | 15A | 0.5% | 0.8% | 1% | 23.88V to 24.12V |
| PFC375-1028G | 28V | 25.2V to 30.8V | 13.4A | 0.5% | 0.9% | 0.9% | 27.86V to 28.14V |
| PFC375-1048FG | 48V | 46.0V to 56.0V | 7.8A | 0.5% | 1.0% | 1% | 47.52V to 48.48V |

NOTES:

- ¹ Output currents ratings are expressed with 300 LFM forced air.
 - ² Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
 - ³ Models without suffix G use the lead solder exemption
- Model numbers highlighted in yellow are not recommended for new designs or EOL.

2. MULTIPLE-OUTPUT MODEL SELECTION

Isolated V3 and V4 Can Be Used as Positive Or Negative Output

| MODEL | OUTPUT VOLTAGE | ADJUSTMENT RANGE | OUTPUT CURRENT ¹ | PEAK OUTPUT CURRENT ³ | LINE REGULATION | LOAD REGULATION | RIPPLE & NOISE % p-p ² | INITIAL SETTING ACCURACY |
|---------------------------|----------------|------------------|-----------------------------|----------------------------------|-----------------|-----------------|-----------------------------------|--------------------------|
| PFC375-4000G | +5V | 4.5V to 5.5V | 3.5 - 40A | 40A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 12V | 11.3V to 12.6V | 6A | 6A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 5V | Fixed | 3A | 3A | 2% | 2% | 2.4% | 4.9V to 5.1V |
| PFC375-4001G ⁴ | +5V | 4.5V to 5.5V | 3.5 - 40A | 40A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 12V | 11.3V to 12.6V | 6A | 6A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 12V | 11.0V to 15.8V | 3A | 3A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| PFC375-4002G ⁵ | +5V | 4.5V to 5.5V | 3.5 - 40A | 40A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 12V | 11.3V to 12.6V | 6A | 6A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 24V | 22.0V to 28.0V | 3A | 3A | 0.5% | 0.8% | 1% | 23.8V to 24.2V |
| PFC375-4004G | +5V | 4.5V to 5.5V | 3.5 - 40A | 40A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 15V | 14.2V to 15.8V | 4A | 4A | 0.7% | 0.7% | 1% | 14.9V to 15.1V |
| | 15V | 14.2V to 15.8V | 4A | 4A | 0.7% | 0.7% | 1% | 14.9V to 15.1V |
| PFC375-4005G ⁶ | +5V | 4.5V to 5.5V | 3.5 - 40A | 40A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 24V | 22.0V to 28.0V | 3A | 3A | 0.5% | 0.8% | 1% | 23.8V to 24.2V |
| PFC375-4200G | 24V | 22.0V to 28.0V | 3A | 3A | 0.5% | 0.8% | 1% | 23.8V to 24.2V |
| | +24V | 21.5V to 26.4V | 1 - 10A | 10A | 0.5% | 0.8% | 1% | 23.8V to 24.2V |
| | +5V | 4.5V to 5.5V | 10A | 16A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| PFC375-4201G | 12V | 11.4V to 12.6V | 4A | 4A | 0.5% | 1% | 1% | 11.9V to 12.1V |
| | 12V | 11.4V to 12.6V | 4A | 4A | 0.5% | 1% | 1% | 11.9V to 12.1V |
| | +24V | 21.5V to 26.4V | 1 - 10A | 10A | 0.5% | 0.8% | 1% | 23.8V to 24.2V |
| PFC375-4500G | +5V | 4.5V to 5.5V | 3.5 - 50A | 50A | 0.4% | 0.8% | 1% | 4.98V to 5.02V |
| | +12V | 11.3V to 12.6V | 10A | 16A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| | 12V | 11.3V to 12.6V | 6A | 6A | 0.9% | 0.9% | 1% | 11.9V to 12.1V |
| PFC375-4500G | 5V | 4.5V to 5.5V | 3A | 3A | 2% | 0.9% | 1% | 4.9V to 5.1V |

NOTES:

- ¹ Output currents ratings are expressed with 300 LFM forced air.
 - ² Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
 - ³ Peak loads up to 450 Watts for 60 seconds or less are acceptable, (10% duty cycle max.).
Peak power must not exceed 450 Watts.
 - ⁴ V4 can be adjusted to 16 V with a minimum load of 5 A on V1.
 - ⁵ For operation of V4 greater than 24 V, consult factory.
 - ⁶ V3 and V4 may be series connected to obtain 48 V.
 - ⁷ Models without suffix G use the lead solder exemption
- Model numbers highlighted in yellow are not recommended for new designs or EOL

3. INPUT SPECIFICATIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|----------------------|--|--------------------|-----|----------|-------|
| Input Voltage - AC | Continuous input range. | 85 | | 264 | VAC |
| Input Frequency | AC Input. | 47 | | 63 | Hz |
| Brown Out Protection | Lowest AC input voltage that regulation is maintained with full rated loads. | 85 | | | VAC |
| Hold-Up Time | Over full AC input voltage range at full rated load. | 20 | | | ms |
| Input Current | 85 VAC at full rated load. | | | 6 | ARMS |
| Input Protection | Non-user serviceable internally located AC input line fuse, F10A, 250V. | | | | |
| Inrush Surge Current | Internally limited by thermistor, one cycle, 25°C. | 110 VAC 220 VAC | | 35 65 | APK |
| Power Factor | Per EN61000-3-2. | 0.98 | | | W/VA |
| Operating Frequency | Switching frequency of main transformer. | | 100 | | kHz |

4. OUTPUT SPECIFICATIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|------------------------|---|----------------------------|-----|-----|-------|
| Efficiency | Full rated load, 110 VAC. Varies with distribution of loads among outputs. | 68 | | | % |
| Minimum Loads | Single output models. Multiple output models, 5V main output only. Multiple output models, 24V main output only. | 0 3.5 1 | | | Amps |
| Ripple and Noise | Full load, 20MHz bandwidth. | See Model Selection Charts | | | |
| Output Power | 300 LFM forced air cooling required for operation. See optional fan. Continuous power, multiple output models. Peak power, all models. | | 375 | 450 | Watts |
| Overshoot / Undershoot | Output voltage overshoot/undershoot at turn-on. | | | 0 | V |
| Regulation | Varies by output. Total regulation includes: line changes from 85-132 VAC or 170-264 VAC, changes in load starting at 20% load and changing to 100% load. | See Model Selection Charts | | | |
| Transient Response | Recovery time, to within 1% of initial set point due to a 50-100% load change, 3% max. deviation. (Main output only on multi-output units). | | 1 | | ms |
| Turn-On Delay | Time required for initial output voltage stabilization. | | | 1 | Sec |
| Turn-On Rise Time | Time required for output voltage to rise from 10% to 90%. | | 10 | | ms |



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5. INTERFACE SIGNALS & INTERNAL PROTECTION

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|----------------------------|---|--------------|-----|--------------|-------|
| Overvoltage Protection | Provided on single output units and the main output only of multiple output units. | | | | |
| | PFC375-30XXG, PFC375-40XXG, PFC375-45XXG | 6.0 | | 6.4 | |
| | PFC375-1012G | 13.5 | | 15.5 | |
| | PFC375-1015G | 17.0 | | 19.5 | V |
| | PFC375-1024G | 27.0 | | 30.7 | |
| | PFC375-1028G | 30.8 | | 35.0 | |
| | PFC375-1048G PFC375-42XXG | 60.0 27.0 | | 70.0 30.7 | |
| Overload Protection | Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition. | | | | |
| Overtemperature Protection | System shutdown due to excessive internal temperature, automatic reset. | | | | |
| Remote Sense | Total voltage compensation for cable losses with respect to the main output. | | | 250 | mV |
| Current Share | Accuracy of shared current with up to 6 parallel units. | | | 10 | % |
| Inhibit | TTL compatible logic signal will inhibit outputs by the application of a logic low signal. An open circuit or external TTL high signal allows normal operation. | | | | |
| Input Power Fail Warning | TTL compatible logic signal. Time before regulation dropout due to 5% loss of input power at 110 VAC. | 5 | | | ms |
| Power Good | TTL compatible signal. Signal is low if main output is greater or less than 10% of nominal. | | | | |
| Fan Voltage | Provides 170 mA current to user-supplied fan, if fan option is not selected. | | 12 | | V |

6. SAFETY, REGULATORY AND EMI SPECIFICATIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|------------------------------|--|----------------|----------|-----|-------|
| Agency Approvals | Approved to the latest edition of the following standards. UL/CSA60950-1, EN60950-1 and IEC60950-1 | | Approved | | |
| Dielectric Withstand Voltage | Input to Output per EN60950. | 2600 | | | VDC |
| Electromagnetic Interference | FCC CFR title 47 Part 15 Sub-Part B - Conducted. EN55022 / CISPR 22 Conducted. | B B | | | Class |
| ESD Susceptibility | Per EN61000-4-2, level 4. | 8 | | | kV |
| Radiated Susceptibility | Per EN61000-4-3, level 3. | 10 | | | V/M |
| EFT/Burst | Per EN61000-4-4, level 4. | ± 4 | | | kV |
| Input Transient Protection | Per EN61000-4-5 level 3. | Line-to-Line | 1 | | kV |
| | | Line-to-Ground | 2 | | |
| Insulation Resistance | Input-to-Output. | | 10 | | MΩ |
| Leakage Current | Per EN60950, 264 VAC. | | | 2.0 | mA |

7. ENVIRONMENTAL SPECIFICATIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|-------------------------|--|--------|--------|-------------------|-------------------------|
| Altitude | Operating. Non-Operating. | | | 10k 40k | ASL Ft. |
| Operating Temperature | Derate linearly above 50°C by 2.5% per °C. At 100% load: At 50% load: | 0 0 | | 50 70 | °C |
| Storage Temperature | | -55 | | 85 | °C |
| Forced Air Cooling | Forced air cooling of 300 LFM is required if the internal fan option is not specified. Cooling air velocity is measured 1/4" above, at the middle of the chassis. Airflow direction is from the input section to the output section. | | | | |
| Temperature Coefficient | 0°C to 70°C (after 15 minute warmup). | | ± 0.02 | ± 0.05 | %/°C |
| Relative Humidity | Non-Condensing. | 5 | | 95 | %RH |
| Shock | Operating: 10±3mS, 3 axis, Halfsine. 20 G Non-operating: 10±3mS, 3 axis, Halfsine. | | | 20 40 | G |
| Vibration | Operating: 5-32 Hz 32-2000 Hz Sinusoidal Non-operating: | | | 0.02 1 6.15 | in (DA) GRMS GRMS |

8. MECHANICAL SPECIFICATIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|------------|--------------------------|--|----------------|-----|----------|
| Dimensions | Overall Size | 228.6 x 127.0 x 63.5 9.00 x 5.00 x 2.50 | | | mm in |
| | Overall Length With Fan | | 266.7 10.50 | | mm in |
| | Weight | | 1.95 4.3 | | kg lb |

9. OPTIONS

| PARAMETER | CONDITIONS / DESCRIPTION | MIN | NOM | MAX | UNITS |
|-----------------|---|---|-----|-----|----------|
| Metric Mounting | Add "M" as a suffix to the model number to order chassis with M4 x 0.7 mounting inserts. | 228.6 x 127.0 x 63.5 9.00 x 5.00 x 2.50 | | | mm in |
| Fan | Add "F" as a suffix to the model number to order integral fan. (Provides required 300 LFM of forced air cooling). | 266.7 x 127.0 x 63.5 10.50 x 5.00 x 2.50 | | | mm in |

10. INPUT AND OUTPUT CONNECTIONS

6-32 Screw Terminal on 0.375" (9.5mm) Centers
 Bus Bar Main Output, E1 & E2, 10-32 Screw Terminal
 Chassis: 0.090" (2.3mm) Aluminum Alloy, With Clear Finish

TERMINAL BLOCKS have 6-32 (PHILSLOT) screw connections on 0.375" (9.53mm) centers; open space clearance for connections is 0.31" (7.87mm).



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Rated current per connection is 20 Amps maximum. UL94V-0 thermoplastic rating. Recommended torque is 6-8 inch lbs.

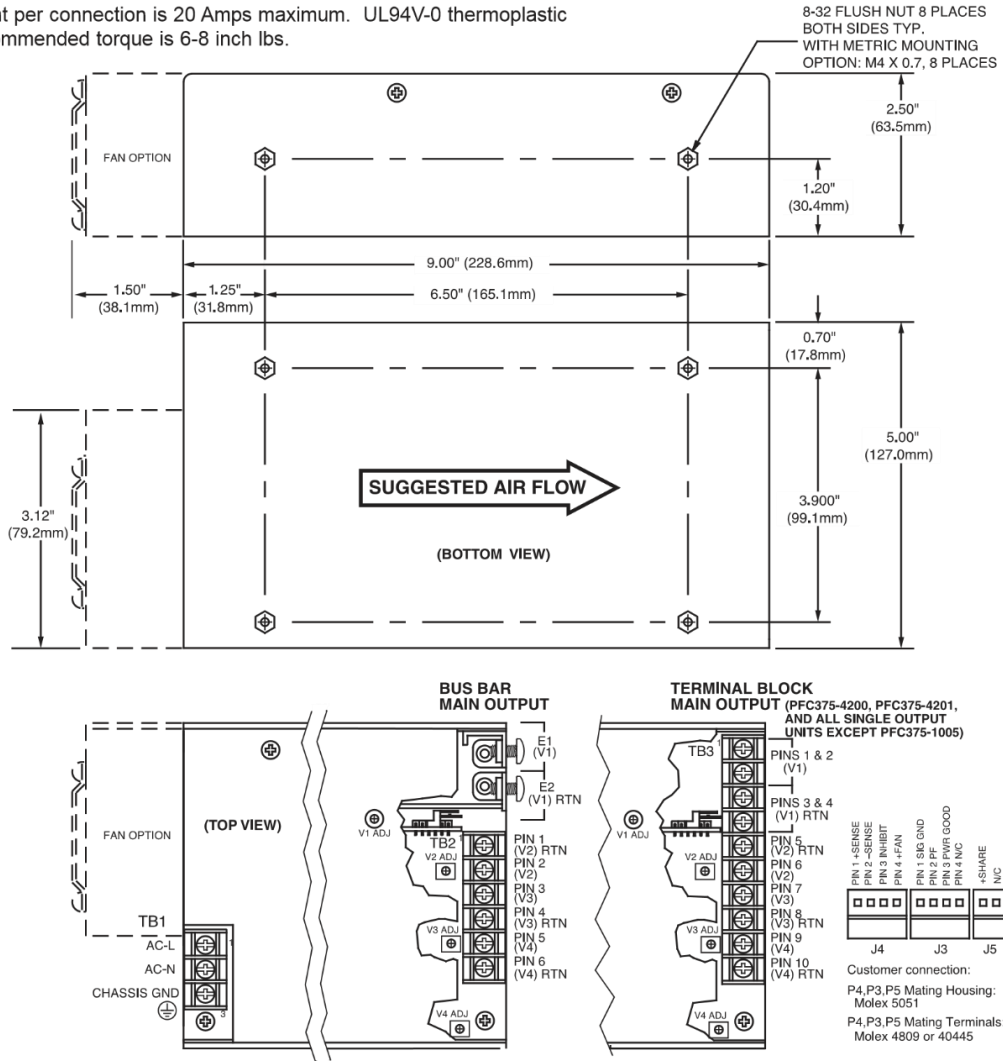


Figure 1. Mechanical Drawing PFC375

11. REVISION HISTORY

| DATE | REVISION | DESCRIPTION OF CHANGE | ECO/MCO REFERENCE NO. |
|-------------|----------|--|-----------------------|
| 2019-Jun-27 | AC | Page 4: Insulation Resistance updated from 10 M to 10 MΩ | C94228 |

For more information on these products consult: tech.support@psbel.com

NUCLEAR AND MEDICAL APPLICATIONS - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

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