

400Vac Input, Rugged, Industrial Quality 3kW Power Supply with PFC-Input PHI 3K-3U3 Series



- Electronic power factor correction (PFC)
- Wide AC-input voltage range
- Rugged, industrial quality
- Field-proven design
- Full electronic protection
- N+1 redundancy

This rugged, industrial quality, high input voltage AC-DC power supply with active power factor corrected input utilizes field proven technology to generate the required output power. The unit is built with a PHI 3000 and two KHH 1502 internal power modules. A built-in redundancy diode separates the internal modules and allows for a number of units to be connected in parallel to achieve higher output power, N+1 redundancy or to create a 3-phase high power system. The output redundancy diode also makes the unit suitable for battery charging applications. The input and output are filtered for low noise. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fans draw air into the unit, and exhaust at the terminal side of the unit. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also ensures exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom, and the exclusive use of components with established reliability contribute to a high MTBF. The unit is manufactured at our plant under strict quality control. Several units can be connected parallel for higher output power.

SPECIFICATIONS

Input Voltage

400Vac nominal
340-480Vac operating range
47-63Hz
Input current: 11Arms max.
Power Factor is min.0.97 at full load for the entire input range.
Meets EN61000-3-2

Input Protection

Inrush current limiting
Varistor
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Isolation

2250Vdc input to chassis
4300Vdc input to output
5600V type test
8mm spacing
2250Vdc output to chassis

Standards

Designed to meet EN62368-1 and related standards

EMI

EN55032 Class A with margins

Switching Frequency

55kHz \pm 5kHz

Output Voltage/Current

200Vdc/15A or 400Vdc/7A
3000W continuous output
Output is floating; either terminal can be grounded.
Consult factory for other voltages

Redundancy Diode

Installed internally

Line/Load Regulation

\pm 1% combined from zero load to full load including redundancy diode

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple / Noise

Less than 1% peak-to-peak or 0.2% RMS of the output voltage (20MHz BW)

Output Overload Protection

Rectangular current limiting with short-circuit protection (no hiccup)
Thermal shutdown in case of insufficient cooling (self resetting)

Output Over-voltage Protection

Second regulator loop completely stable and independent of the main regulator loop.

Efficiency

Better than 80% at full load, depending on output voltage

Operating Temperature Range

0 to +50°C for full specification with proper cooling
Extended temp. range available

Temperature Drift

0.03% per °C over operating temperature range

Cooling

By two high quality built-in fans

Environmental Protection

Basic ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5-95% non-condensing

MTBF

90,000 hours @ 45°C (fans excluded)
Demonstrated MTBF is significantly higher.

Indicators

Green Output ON LED on each internal module visible through the cooling slot

Control Input

None
Available as option

Alarm Output

Not installed
Available as option

Package / Dimensions (H x W x D)

3U3: 132 x 187 x 381 mm
5.2 x 7.4 x 15". Excludes terminals and mounting brackets
Mounting holes are clear

Weight

Approx. 6.5 kg (14 lbs.)

Connections

Input: Terminal block
Output: Terminal block

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice. Contamination related failures and shipping costs are excluded

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change

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