

# 120W, Opto-less, Long Life, AC-DC Power Supply with PFC Universal Input

## PHR 120-F1

- No optocouplers, low component count
- Electronic power factor correction
- Rugged industrial quality construction
- Conformal coating
- Excellent EMI performance
- High input/output isolation
- Conduction/convection cooled
- Operation up to 70°C
- Full electronic protection
- Customized versions available



This rugged, industrial quality AC-DC power supply with PFC input is designed for an operating life extending to 30 years. By eliminating optocouplers in the feedback loop and significantly reducing the component count, the MTBF of the unit is greatly improved over conventional designs. Cooling is by conduction via baseplate. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness. Conformal coating provides additional environmental protection. Large design headroom and the use of components with established reliability also contribute to the long operating life of the unit. Customized versions are available. The unit is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

90-264Vac, 47... 63Hz  
 Input current 1.3A max at 90V  
 Power Factor is better than 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  
 5000VDC input to output  
 10mm spacing  
 500VDC output to chassis

#### Standards

Designed to meet EN 60950-1 and corresponding UL and CSA standards

#### EMI

EN55032 Class B

#### Switching Frequency

50-150kHz, load and input voltage dependent

#### Hold Up Time

Minimum 5ms at full load for 5% drop of output voltage for the entire input voltage range

#### Output Voltages

12V, 24V, 48V or 125Vdc  
 120W continuous  
 The output is floating, either terminal can be grounded  
 Other outputs on request

#### Redundancy Diode

Not installed  
 Available as option

#### Line/Load Regulation

Typically 1% from 5% to full load.  
 Max 1.5% combined from no load to full load

#### Dynamic Response

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

#### Output Ripple/Noise

Line frequency ripple is less than 60mVrms  
 Noise is less than 1%Vout pp (20MHz BW)

#### Output Overload Protection

Rectangular current limiting with short-circuit protection

#### Output Overvoltage Protection

Transzorb clamp on the output

#### Efficiency

Over 85% at full load on the 24V and 48V output models

#### Operating Temperature Range

0°C to 70°C cold plate temperature for full specification  
 Extended temperature ranges available on request

#### Temperature Drift

0.03% per °C, over operating temperature range

#### Cooling

Conduction to customer heat-sink or chassis and natural convection

#### Environmental Protection

Ruggedizing  
 Conformal coating

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 – 95% non-condensing

#### MTBF

170,000 hours @ 45°C  
 Demonstrated MTBF is significantly higher

#### Indicators

Green "Output ON" LED visible through the cooling slots

#### Control Input

None

#### Alarm Output

Not installed on standard version

#### Package/Dimensions (W x H x L)

F1: 113 x 51 x 198 mm (4.45" x 2" x 7.8")  
 includes flanges, excludes terminal block  
 Mounting holes are clear

#### Weight

0.8 kg (1.8 lb)

#### Connections

9-pole barrier-type terminal block, with 3/8" spacing

#### RoHS Compliance

Compliant

#### Warranty

Two years subject to application within good engineering practice

#### Terminal Block Pin-out

DC OUTPUT						AC INPUT		
NOT USED	-	+	NOT USED	NOT USED	NOT USED	⏏	PH	N
1	2	3	4	5	6	7	8	9

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.

*OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility*



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