

## 100W, Opto-less, Long Life, AC/DC Power Supply with Universal Input MHR 100-F0T

- No optocouplers, low component count
- 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 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. All heat generating components are installed on aluminum heatsink blocks which are cooled via baseplate to a heat-sinking surface and by natural convection. Conformal coating provides additional environmental protection. Large design headrooms 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 1.8A max at 95Vac  
110...360Vdc operating range

#### 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

EN55022 Class B

#### Switching Frequency

40-150kHz, load and input voltage dependent

#### Hold Up Time

Minimum 20ms at full load for 5% drop of output voltage at 115Vac

#### Output Voltages

12V, 24V, 48V or 125Vdc  
100W 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

Switching frequency ripple is 60mVrms, 300mVpp (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 output model

#### Operating Temperature Range

0 °C to 70 °C 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)

F0: 94 x 48 x 160 mm (3.7" x 1.9" x 6.3") including terminal block and flanges  
Mounting holes are clear

#### Weight

0.5 kg (1.2 lbs)

#### Connections

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

#### RoHS Compliance

Fully compliant

#### Warranty

Two years subject to application within good engineering practice

#### Terminal Block Pin-out

DC OUTPUT		AC INPUT			
-	+	NOT USED	GND	(+) PH	(-) N
1	2	3	4	5	6



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