

## 100 - 150W, Rugged, Configurable, Triple-output, Industrial Quality AC/DC Power Supply MIW 133-F2 Series

- Triple output, fully regulated, isolated
- Rugged industrial quality
- Conduction/convection cooled
- Full electronic protection
- Field-proven design in a wide range of applications



This rugged, triple output industrial quality AC/DC power supply on 100 x 220mm PCB size uses field-proven double conversion topology to generate the required output power. The main input converter generates an internal bus voltage, which is converted to the individual outputs with three separate switching regulators. This provides high flexibility for customizing. The outputs can be set to the required output configuration. There are no optocouplers in the circuit, which contributes to high reliability. Cooling is via baseplate to a heat-sinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. Full electronic protection, low component count, large design headroom and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

95-264Vac universal, 47-63Hz  
Input current: 1.9Arms max  
Other inputs upon request

#### 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  
700Vdc output to chassis  
700V between outputs

#### Standards

Designed to meet EN60950-1

#### EMI

EN55022 Class A with margins

#### Hold up Time

Min. 10msec at  $\geq 115$ Vac input

#### Switching Frequency

47 kHz  $\pm$  2 kHz main PWM  
72 kHz  $\pm$  7 kHz for output regulators

#### Output Voltage

V1: 5.1Vdc  $\pm$  0.05V / 4A  
V2: 12Vdc  $\pm$  0.2V / 3A  
V3: 12Vdc  $\pm$  0.2V / 3A

Above is one possible output configuration.  
Please discuss the required output parameters with factory.  
All outputs are fully regulated, floating and isolated from each other  
Either side of each output can be grounded

#### Redundancy diode

None

#### Line/Load Regulation

$\pm$  1% combined from 10% load to full load on all outputs

#### Dynamic Response

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

#### Output Ripple/Noise

Better than 0.3%rms and 1% pp on all outputs (20MHz BW)

#### Output Overload Protection

Individual rectangular current limiting on all three outputs. Short circuit protection

#### Output Overvoltage Protection

Transzorb on all outputs

#### Efficiency

80% at full load depending on input/output configuration

#### Operating Temperature

0°C to +50°C for full specification with proper installation  
Extended temperature ranges available on request

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Conduction to customer heatsink or chassis and natural convection

#### Environmental Protection

Ruggedizing  
Conformal coating

#### Shock/Vibration

IEC 61373 Cat 1 A&B

#### Humidity

5 – 95% non-condensing

#### MTBF

Min. 140,000 hours @45°C  
Demonstrated MTBF is significantly higher

#### Indicators

None

#### Control Input

None

#### Alarm Output

None

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

F2: 114 x 58 x 256 mm  
(4.5" x 2.3" x 10.1") including terminal block and flanges.  
Mounting holes are clear

#### Weight

1.2 kg (2.6 lb)

#### Connections

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

#### RoHS

Fully compliant

#### Warranty

Two years subject to application within good engineering practice

#### Standard Terminal Block Pin-Out

DC OUTPUTS						GND	AC INPUT	
V3	V2	V1					PH	N
+	-	+	-	+	-		~	~
1	2	3	4	5	6	7	8	9

**Note:** A few existing designs of this extensive series have a slightly different Pin-out



European Stocking Distributor

Phone: +41 44 730 33 53

Email: [sales@hvps-condatas.com](mailto:sales@hvps-condatas.com) / [www.hvps-condatas.com](http://www.hvps-condatas.com)

Rietbachstrasse 7, 8952 Schlieren (ZH), Switzerland