

## 50W, Rugged, Ultra-compact, Industrial Quality DC-DC Converter MIM 105-FM Series



- Rugged industrial quality
- Conduction/convection cooled
- Full electronic protection
- Field-proven design
- Cost optimized

This rugged, industrial quality DC/DC converter series uses a field proven technology to generate the required output power. It is a mature design with a track record in numerous applications. This converter is a complete turn-key unit with input filter, hold-up capacitors and output filter. This series is suitable for building complex, multi-output DC-DC systems with virtually no NRE cost. Multiple output versions with two, three or four outputs are also available. Cooling is via baseplate to a heatsinking surface and 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 protection against humidity and airborne contaminants. Customized, potted versions are also available for operation in extreme environments. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. It is manufactured at our plant under strict quality control.

### SPECIFICATIONS

<p><b>Input Voltage</b> 12Vdc, 24Vdc or 48Vdc Other inputs upon request</p> <p><b>Input Protection</b> Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than the specified minimum input will not damage the unit.</p> <p><b>Isolation</b> Depends on the required input/output configuration. At a minimum: 500VDC input to chassis, 500VDC input to output, 500VDC output to chassis</p> <p><b>Standards</b> Designed to meet EN 60950-1 and related standards</p> <p><b>EMI</b> EN55032 Class A with margins</p> <p><b>Switching Frequency</b> 120kHz <math>\pm</math> 5kHz</p>	<p><b>Output Voltage/Current</b> 5Vdc/10A, 12Vdc/4A, 24Vdc/2A, 36Vdc/1.5A, 48Vdc/1A or 72Vdc/0.5A are standard Other outputs on request</p> <p><b>Redundancy Diode</b> None</p> <p><b>Line/Load Regulation</b> <math>\pm</math> 1% combined from no load to full load</p> <p><b>Dynamic Response</b> Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time</p> <p><b>Output Ripple / Noise</b> Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHz BW)</p> <p><b>Output Overload Protection</b> Current limiting with short circuit protection (hiccup mode)</p> <p><b>Output Overvoltage Protection</b> Double regulator loop and transzorb clamp</p>	<p><b>Efficiency</b> Output voltage dependent. Typically 85% at full load</p> <p><b>Operating Temperature Range</b> 0°C to 50°C cold plate temperature for full specification without derating Extended temperature ranges available</p> <p><b>Temperature Drift</b> 0.03% per °C over operating temperature range</p> <p><b>Cooling</b> Conduction to customer heatsink or chassis and natural convection</p> <p><b>Environmental Protection</b> Basic ruggedizing Conformal coating</p> <p><b>Humidity</b> 5 – 95% non-condensing</p> <p><b>MTBF</b> 150,000 hours @ 45°C Demonstrated MTBF is significantly higher</p>	<p><b>Indicators</b> None on standard version</p> <p><b>Control Input</b> None</p> <p><b>Alarm Output</b> None</p> <p><b>Packaging/Dimensions/Weight</b> FM: 66 x 38 x 163 mm (2.6" x 1.5" x 6.4") including terminal block and flanges. Mounting holes are clear</p> <p><b>Weight</b> Approx: 0.4 kg (0.9 lb)</p> <p><b>Connections</b> 5-pole barrier-type terminal block</p> <p><b>RoHS Compliance</b> Compliant</p> <p><b>Warranty</b> Two years subject to application within good engineering practice</p> <p><b>Terminal Block Pin-out</b></p>
---	---	---	---

DC OUTPUT		DC INPUT		
-	+	GND	+	-
1	2	3	4	5

*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.*



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0 CANADA  
Tel: +1-613-836-3511 | Fax: +1-613-836-7488

<https://absopulse.com/contact> | <https://www.absopulse.com>