ARTESYN ERM50 SERIES

50 Watts



Advanced Energy's Artesyn ERM50 series high performance 50 watt isolated DC-DC converter modules are designed specifically for railway applications. The high input versions feature a 66 to 160 Vdc input that complies with the European EN50155 standard for electronic equipment used on railway rolling stock. There is a choice of four single output models, offering voltages of 5 V, 12 V, 15 V or 24 V.

DATA SHEET

Total Power:

50 W

Input Voltage:

72 or 110 V

# of Outputs:

Single

RoHS 6/6 COMPLIANT

SPECIAL FEATURES

- Small 57.9 x 36.8 x12.7 mm package
- Input ranges 43 - 101 Vdc or 66 - 160 Vdc
- High efficiency up to 92%
- No minimum load requirement
- Operating temperature range -40 °C to +85 °C
- Reinforced insulation 3000 VAC rms
- Undervoltage shutdown
- Remote On/Off
- Metal case with isolated baseplate
- Vibration and thermal shock to EN61373
- Safety meets EN60950-1 and Railway Standard EN50155 (IEC60571) and EN50121-3-2
- EN45545-2 flammability

SAFETY

- UL/cUL/IEC/EN 62368-1 (60950-1) Safety Approval & CE Marking

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ELECTRICAL SPECIFICATIONS

Input	
Input range	43 - 101 Vdc; 66 - 160 Vdc
Efficiency	92% @ 12 Vo
Output	
Voltage tolerance	±1.0%
Line regulation	±0.2%
Load regulation	±0.3%
Noise/ripple	24 V model: 150 mV, other models: 100 mV
Overload protection	150% typ of Io max, hiccup
Short circuit protection	Hiccup mode
Switching frequency	320 KHz
Isolation	
I/O isolation	Reinforced insulation, 3000 Vac rms; I/Case. O/Case: 1500 Vdc
Insulation resistance	1000 Mohm
Insulation capacitance	3000 pF

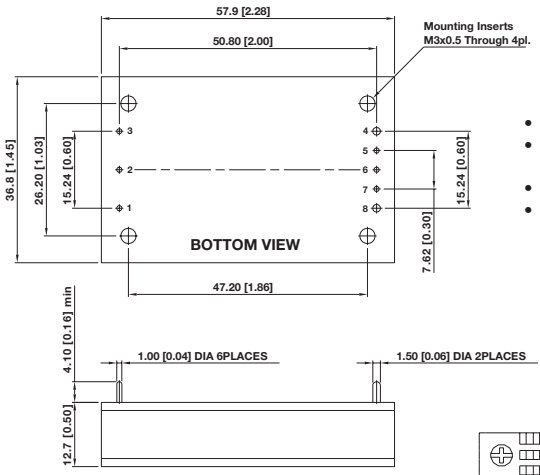
ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature range	-40 °C to +85 °C
Storage temperature	-55 °C to +125 °C
Humidity	5% to 95% non-condensing
MTBF	472 Khrs calculated

ORDERING INFORMATION

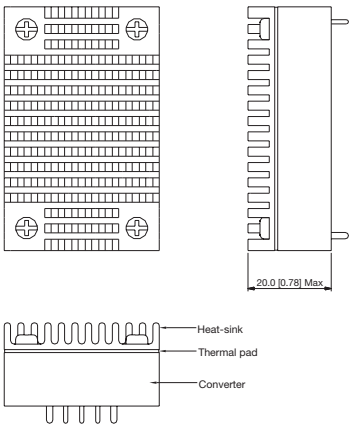
Input Voltage	Output	Efficiency @ Max Load	Max Power	Model Number
43 - 101 V	5 V @ 10 A	90%	50 W	**ERM10A72**
43 - 101 V	12 V @ 4.17 A	92%	50 W	**ERM04B72**
43 - 101 V	15 V @ 3.33 A	92%	50 W	**ERM03C72**
43 - 101 V	24 V @ 2.08A	91%	50 W	**ERM02H72**
66 - 160 V	5 V @ 10 A	90%	50 W	**ERM10A110**
66 - 160 V	12 V @ 4.17 A	91%	50 W	**ERM04B110**
66 - 160 V	15 V @ 3.33 A	92%	50 W	**ERM03C110**
66 - 160 V	24 V @ 2.08 A	91%	50 W	**ERM02H110**

MECHANICAL DIMENSIONS



- All dimensions in mm (inches)
- Tolerance: X.X±0.5 (X.XX±0.02) X.XX±0.25 (X.XXX±0.01)
- Pin diameter Ø 1.0 ±0.05 (0.04±0.002)
- Pin diameter Ø 1.5 ±0.05 (0.06±0.002)

Heatsink Option



Pin Connections	
Pin	Function
1	+Vin
2	Remote On/Off
3	-Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

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