

**General Specifications**

Temperature ranges	<ul style="list-style-type: none"> <li>- Operating</li> <li>- Case temperature</li> <li>- Storage</li> </ul>	-40°C to +75°C +115°C max. -55°C to +125°C
Thermal impedance	<ul style="list-style-type: none"> <li>- without heat-sink</li> <li>- with heat-sink</li> </ul>	6.1°C/W 5.1°C/W
Power Derating	<ul style="list-style-type: none"> <li>- without heat-sink</li> <li>- with heat-sink</li> <li>- with iron base plate (19" x 3.5" x 0.063")</li> </ul>	depending on installation! 1.5 %/K above +25°C 1.5 %/K above +40°C 1.8 %/K above +60°C please refer to application note for temperature measure point that should not exceed 115°C.
Over temperature protection		at +120°C
Thermal shock, mechanical shock & vibration	<ul style="list-style-type: none"> <li>- Test conditions</li> </ul>	EN 61373, MIL-STD-810F <a href="http://www.tracopower.com/products/mil810.pdf">www.tracopower.com/products/mil810.pdf</a>
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at +70°C, ground benign)		350'000 h
Isolation voltage (60sec.)	<ul style="list-style-type: none"> <li>- Input to output</li> <li>- Input/output of case</li> </ul>	2'250 VDC (basic insulation) 1'600 VDC
Isolation capacitance	<ul style="list-style-type: none"> <li>- Input to output</li> </ul>	2500 pF max.
Isolation resistance	<ul style="list-style-type: none"> <li>- Input to output (500 VDC)</li> </ul>	>1 GOhm min.
Switching frequency		250 kHz typ. (puls width modulation)
Safety standards	<ul style="list-style-type: none"> <li>- UL online certification E188913, QQQQ2</li> <li>- Railway immunity</li> <li>- Certification documents</li> </ul>	UL 60950-1 2nd edition + AM1 EN 50155 IEC/EN 60950-1 <a href="http://www.tracopower.com/overview/tep160wir">www.tracopower.com/overview/tep160wir</a>
Remote On/Off	<ul style="list-style-type: none"> <li>- positive logic (standard)</li> <li>- negative logic (option)</li> <li>- Off idle current:</li> </ul>	On: 3 to 12 VDC or open circuit Off: 0 to 1.2 VDC or short circuit pin 1 and 3 On: 0 to 1.2 VDC or short circuit pin 1 and 3 Off: 3 to 12 VDC or open circuit 3 mA
Environmental compliance	<ul style="list-style-type: none"> <li>- Reach</li> <li>- RoHS</li> <li>- Flamability identified acc. EN 45545-2</li> </ul>	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> RoHS directive 2011/65/EU <a href="http://www.tracopower.com/info/en45545-declaration.pdf">www.tracopower.com/info/en45545-declaration.pdf</a>

**Application note:** [www.tracopower.com/overview/tep160wir](http://www.tracopower.com/overview/tep160wir)

Max. capacitive load [µF]	12 VDC	15 VDC	24 VDC	28 VDC	48 VDC
24 VDC Input models	10'000	6'300	2'500	1'700	620
48 VDC Input models	10'800	6'600	2'700	1'900	660
110 VDC Input models	12'500	8'000	3'100	2'300	790

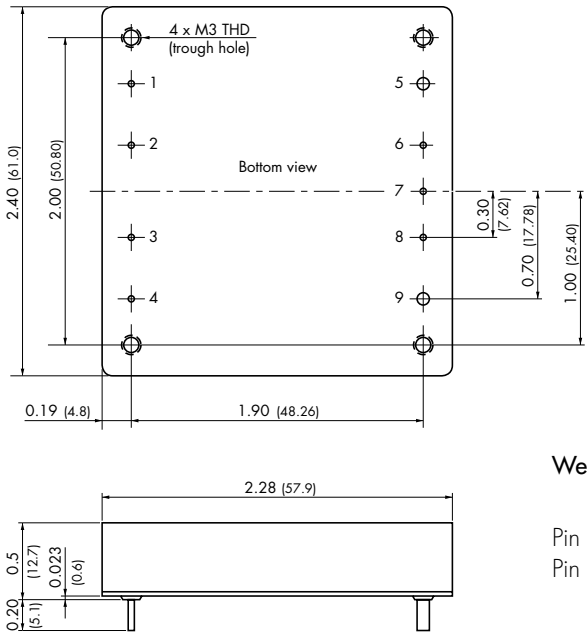
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**General Specifications**

Casing material	metal
Potting material	silicone (UL94V-0 rated)
Base material	FR4

**Dimensions**

TEP 160WIR module



Weight: 105 g (3.70oz)

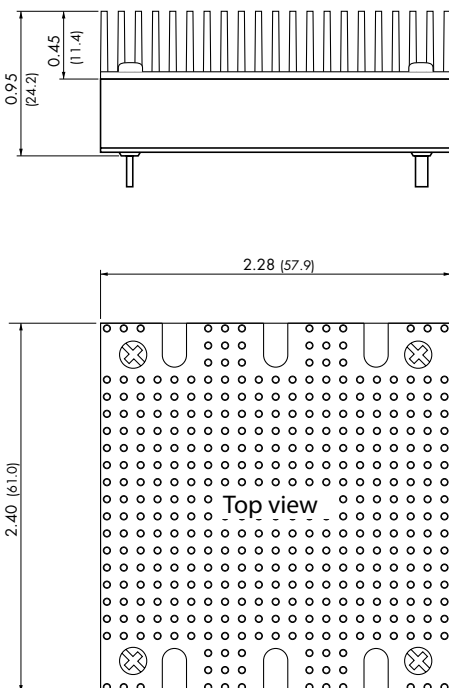
Pin diameter pin 5 & 9: 0.08 (2.0)  
Pin diameter other pins: 0.04 (1.0)

**Pin-Out**

Pin	Pin-Out
1	- Vin
2	Case
3	Remote On/Off
4	+ Vin
5	- Vout
6	- Sense*
7	Trim
8	+ Sense*
9	+ Vout

\*Sense line to be connected to the output either at the module or at the load under regard of polarity.

**TEP-HS1 Heatsink (pictured with heatsink mounted)**



Order code: TEP-HS1

Includes heatsink with thermal pad and mounting screws  
To order modules with mounted heatsink ask factory.

Weight: 142 g (5.01oz)  
(Heatsink + Converter)

Dimensions in Inch, ( ) = mm  
Tolerances  $\pm 0.02$  ( $\pm 0.5$ )  
Pin pitch tolerances  $\pm 0.01$  ( $\pm 0.25$ )  
Mounting hole pitch tolerances  $\pm 0.01$  ( $\pm 0.25$ )