

# REMOTE CHARGE CONVERTER

## Model 1772M1-X



### Product description

This specification describes the Parker Meggitt Model 1772M1 Remote Charge Converters are designed for high-temperature PE (HTPE) transducers that can operate at temperatures up to + 815°C (+ 1500°F).

The circuit is connected to the PE with a high temperature coaxial cable. The circuit makes it possible to operate with high-temperature PE typically having resistance as low as 10 kΩ at high temperatures. The 1772M1 has a gain of 1 or 2. The sensitivity of the circuit is not affected by the PE transducer's and cable capacitances.

Model Number Definition:

1772M1-1 Fixed gain of 1 mV/pC

1772M1-2 Fixed gain of 2 mV/pC

### Key features and benefits

- Sensitivities: 1 mV/pC, and 2 mV/pC
- Capable to operate with PEs having resistance  $\geq$  10 kΩ
- Output signal on same 2 wires that carry supply current from constant current power supply
- Operation over a constant current range of 4 to 20 mA and temperature range of +14°F to +212°F (-10°C to +100°C).
- Radiation resistant: 1.0 MRads (integrated Gamma)
- Compliance: Industrial CE Standard Class A
- RoHS Compliant

### Applications

- Operates with extreme high temperature PE transducers having resistance of 10 kΩ
- Has a gain of 1 or 2



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Specifications																						
The following performance specifications are typical values, referenced at +75°F (+24°C) unless otherwise noted.																						
<b>Electrical Characteristics</b> <b>Input characteristics</b> Input Connection  Source Impedance Source Resistance, RPE Source Capacitance, CPE Input Range	The input is single ended with one side connected to signal ground Input Source Impedance  RPE ≥ 10 kΩ CPE ≤ 1000 pF 5000 pCpk (-1) and 2500 pCpk (-2)																					
<b>Output characteristics</b> Output Connections Output Impedance Capacitive Load DC Output Bias Maximum Output Voltage Electrical Noise at the output CPE = 50 pF Broadband noise (1 Hz - 10 kHz) Spectral density noise	The output is single ended with one side connected to signal ground 50 Ohm maximum The output is direct coupled and requires capacitive decoupling for resistive loads +11.5 Vdc to +16.0 Vdc over all temperature range 5 Vpk-pk, 10 Vpkpk  <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">(-1)</th> <th style="width: 20%; text-align: center;">(-2)</th> </tr> </thead> <tbody> <tr> <td>μV rms</td> <td style="text-align: center;">10</td> <td style="text-align: center;">15</td> </tr> <tr> <td>1 Hz</td> <td style="text-align: center;">9</td> <td style="text-align: center;">10</td> </tr> <tr> <td>10 Hz</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>100 Hz</td> <td style="text-align: center;">0.1</td> <td style="text-align: center;">0.2</td> </tr> <tr> <td>1 kHz</td> <td style="text-align: center;">0.04</td> <td style="text-align: center;">0.03</td> </tr> <tr> <td>10 kHz</td> <td style="text-align: center;">0.04</td> <td style="text-align: center;">0.03</td> </tr> </tbody> </table>		(-1)	(-2)	μV rms	10	15	1 Hz	9	10	10 Hz	1	2	100 Hz	0.1	0.2	1 kHz	0.04	0.03	10 kHz	0.04	0.03
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<b>Transfer Characteristics</b> Gain -1 Gain -2	1 mV/pC +2.5% 2 mV/pC +2.5%																					
<b>Gain Stability</b> With Temperature  Total Harmonic Distortion	The gain will change less than ±1% referred to the +25°C gain over the temperature range +14°F to +212°F (-10°C to +100°C) Less than 1% for output signals																					
<b>Power requirements</b>  Current Requirement Voltage Supply Warm Up Time	The remote charge converter is designed to be powered from a positive constant current supply +4 mA to +20 mA +24 Vdc to +30 Vdc 3 minutes to meet 10 V pk-pk output voltage																					



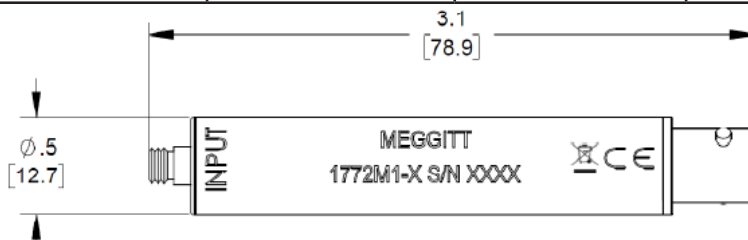
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<b>Physical</b>	
Dimensions	See Outline Details, inch[mm]
Weight	Maximum 2.0 oz
Case material	
Case Material	Stainless steel
Input Connector	Microdot Connector, S-50 series or equivalent
Output Connector	BNC Coaxial Connector
<b>Environmental</b>	
Temperature	
Operating Temperature	+14°F to +212°F (-10°C to +100°C)
Humidity	The unit will withstand 95% relative humidity.
Vibration	20 g pk level with frequency sweep from 55 Hz to 2000 Hz
Shock	100g pk amplitude with 3.6ms haver-sine pulse
Radiation	1.0 MRads (integrated Gamma)
Compliance	Industrial CE standard class A
<b>Accessories</b>	
	Optional: Model 1001-XXX Cable assembly (10-32/10-32), 10 ft, for under +550°F (288°C) Model 1001M1-XXX Cable assembly (10-32/BNC) , 10 ft, for under +550°F (288°C), BNC +330°F (165°C)

Frequency Response (ref 100 Hz)			
		1772M1-1	1772M1-2
<b>RPE &gt;20kΩ</b>	+5%	<11 Hz - >50 kHz	<15 Hz - >50 kHz
	+10%	<6 Hz - >50 kHz	<8 Hz - >50 kHz
	-3dB	<3 Hz - >50 kHz	<4 Hz - >50 kHz
<b>RPE =20kΩ</b>	+5%	<7 Hz - >50 kHz	<7 Hz - >50 kHz
	+10%	<4 Hz - >50 kHz	<5 Hz - >50 kHz
	-3dB	<2.5 Hz - >50 kHz	<3.5 Hz - >50 kHz
<b>RPE =10kΩ</b>	+5%	<4 Hz - >50 kHz	<5 Hz - >50 kHz
	+10%	<3 Hz - >50 kHz	<4 Hz - >50 kHz
	-3dB	<2 Hz - >50 kHz	<2.5 Hz - >50 kHz



Continued product improvement necessitates that MEGGITT reserve the right to modify these specifications without notice. MEGGITT maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. 010121



Note: Due to continuous process improvement, specifications are subject to change without notice. TCO Review # 315