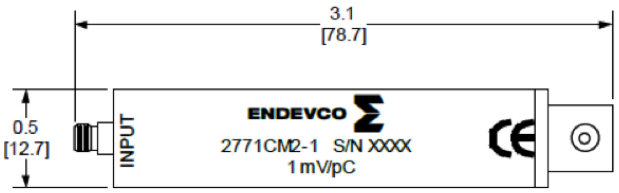
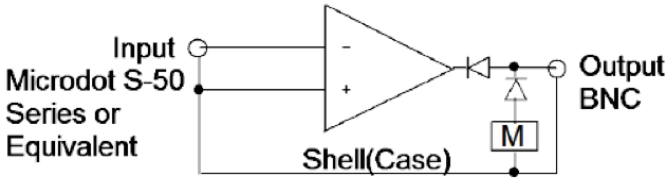
ENDEVCO
AN AMPHENOL COMPANY

Remote charge converter for high temp sensors

Model 2771CM2



Outline drawing



Block Diagram

The model 2771CM2 remote charge converter, is designed to operate with high temperature piezoelectric transducers that have low impedance when exposed to very high temperatures (1200°F, 650°C). The device converts the transducers charge output to a proportional voltage.

This unit is a two-wire device with the output signal available on the same two wires that carry the supply current from the constant current power supply.

The 2771CM2 supports IEEE P1451.4 (A Smart Transducer Interface for Sensors and Actuators) and contains an identification code via TEDS (Transducer Electronics Data Sheet). The charge transducer identification, actual unit gain and calibration data are stored in the TEDS (256-bit Non-volatile memory).

This unit features a fixed gain of 1.0 mV/pC, low noise and operational over a constant current range of 4 to 20 mA and a temperature range of -40°C to +125°C.

Key features

- Designed for use with extreme high temp sensors (1200°F, 650°C)
- Wide frequency response
- Broadband noise down to 5 µVrms
- Rugged small package
- Supports IEEE P1451.4 for smart sensors (TEDS)
- Radiation hardened

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Specifications

Input characteristics		
Input connection	Single ended with one side connected to signal ground.	
Source resistance (min)	10 KOhm	
Source capacitance (max)	20 nF	
Input range	±5000pC	
Output characteristics		
Output connections	Single ended with one side connected to signal ground.	
Output impedance (max)	50 Ohm	
DC output bias	+11.5 to +16.0 VDC	
Output voltage (max)	10V pk-pk	
Broadband noise, 1 Hz to 10 kHz	10 µV rms max	
Spectral density noise, µV/Hz	1 Hz	6
	10 Hz	1.3
	100 Hz	0.1
	1 kHz	0.04
	10 kHz	0.04
Transfer characteristics		
Gain accuracy	±2.5%	
Frequency response (±5%) [1]	3 Hz to 30 KHz	
Gain stability with source capacitance	0.1% per 1 nF source capacitance at the input.	
Gain stability with temperature	±1% referred to the +25°C gain over the temperature range of -40°C to +100°C.	
Gain stability with power	0.01% per mA with changes in supply current over the range of 4 to 20 mA.	
Total harmonic distortion	<1%	
Current requirement	4 to 20 mA	
Voltage supply	+24 to +30 VDC	
Warm up time	30 seconds to meet 10 V pk-pk output voltage.	
Physical		
Dimensions	See outline drawing	
Weight (max)	2.0 oz	
Case material	Stainless steel, with Teflon® sleeve for isolation	
Input connector	Microdot connector, S-50 series or equivalent	
Output connector	BNC Coaxial female connector	
Environmental		
Temperature		
Operating temperature	-40°C to +125°C (-40°F to 257°F)	
Digital communications	-40°C to 85°C (-40°F to 185°F)	
Storage temperature	-65°C to +125°C (-76°F to + 257°F)	
Humidity	The unit will withstand 95% relative humidity	
Vibration	20g pk level with frequency sweep from 55 Hz to 2kHz	
Shock	100g pk amplitude with 3.6 ms haver-sine pulse	
Radiation	1.0 MRads (integrated Gamma)	
Compliance	Industrial CE Class A, RoHS	

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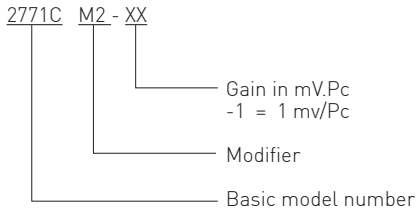
Model number definition



Notes:

1. Low end frequency response is a function of input source resistance. Stated value is at a source resistance = 10KΩ. For source resistance = 28kΩ, low end frequency response (+/-5%) = 7Hz. For source resistance ›28KΩ, low end frequency response (+/-5%) = 10 Hz
2. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

Contact

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