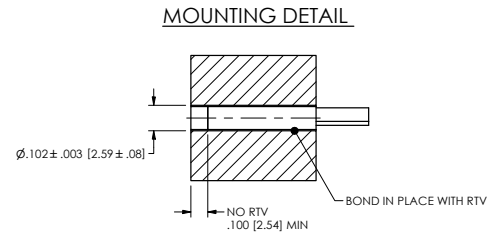
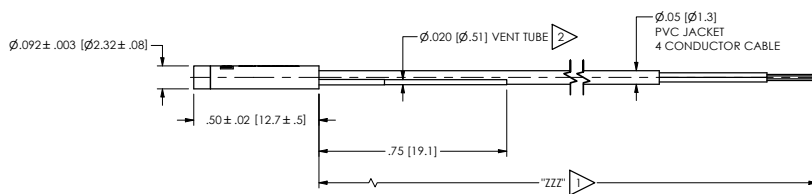


ENDEVCO Piezoresistive Pressure Transducer Model 8507C



Key Features

- 1, 2, 5, and 15 psig
- 300 mV full scale
- Ultra-miniature 0.092" (2.3mm) diameter
- High resonance frequency
- Temperature compensated

Description

The Endevco® model 8507C is a rugged, miniature, high sensitivity piezoresistive pressure transducer. It has a 0.09 inch (2.3 mm) cylindrical case and is available in ranges from 1 psi to 15 psi with full scale output up to 300 mV. Its high sensitivity combined with high resonance makes it ideal for measuring dynamic pressure.

Endevco pressure transducers feature an active four-arm strain gage bridge diffused into a sculptured silicon diaphragm for maximum sensitivity and wideband frequency response. Self-contained hybrid temperature compensation provides stable performance over the wide temperature range of 0°F to 200°F (-18°C to +93°C). Endevco transducers also feature excellent linearity (even to 3X range), high shock resistance, and excellent stability during temperature transients.

The model 8507C is designed for installations which do not require threaded mounting and can be installed in locations which are difficult to reach. Its small size permits flush mounting on curved surfaces. Its high sensitivity combined with small size and high resonance frequency makes the model 8507C ideal for use on small-scale models in wind tunnels.

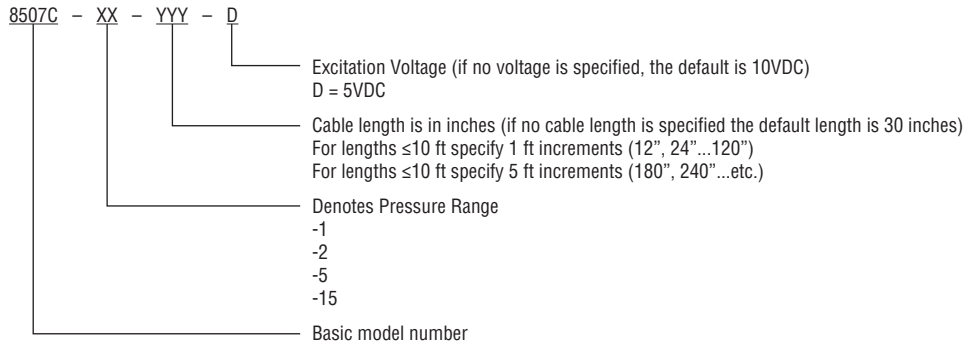
ENDEVCO Piezoresistive Pressure Transducer | Model 8507C

The following performance specifications are referenced at +75°F (+24°C), 100 Hz and 10 Vdc unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Specifications					
Dynamic Characteristics					
	Units	8507C-1	-2	-5	-15
Range [1]	psig	0-1	0-2	0-5	0-15
Positive sensitivity	mV/psi	200 ±50	100 +50/-25	60 ±20	20 ±6.7
Accuracy	% Span, max	1.5	1.5	0.75	0.50
Non-linearity	% Span, typ	1.0	1.0	0.50	0.20
Non-repeatability	% Span, typ	0.1	0.1	0.1	0.05
Pressure hysteresis	% Span, typ	0.1	0.1	0.1	0.1
Zero measurand output	mV max	±20	±20	±20	±20
Proof Pressure	psi	3	6	15	45
Zero shift after proof pressure	% Proof Pressure Span, max	±0.2	±0.2	±0.2	±0.2
Thermal zero shift					
From 0°F to 200°F (-18°C to +93°C)	% Span, max	±3.5	±3.5	±3.5	±3.5
Thermal sensitivity shift					
From 0°F to 200°F (-18°C to +93°C)	% Span, max	±4.5	±4.5	±4.5	±4.5
Resonance frequency	Hz, typ	55,000	70,000	85,000	130,000
Photoflash response	Equiv. psi	0.01	0.01	0.03	0.1
Warm-up time	ms	1	1	1	1
Acceleration sensitivity	psi/g	0.0002	0.0002	0.0002	0.0002
Burst pressure (diaphragm/reference side)	psi	20/20	40/40	100/50	150/50
Electrical					
Supply voltage	10.0 Vdc recommended, 18 Vdc maximum				
Span	300mV nominal at 10 Vdc				
Electrical configuration	Active four-arm piezoresistive bridge				
Resistance					
Input	2000 ±800 ohms				
Output	1500 ±600 ohms				
Isolation	100 megohms minimum at 50 volts; leads to case, leads to shield, shield to case				
Noise	5 microvolts rms typical, dc to 50 000 Hz; 50 microvolts rms maximum, dc to 50 000 Hz				
Mechanical					
Case, material	Nickel - iron alloy				
Cable, integral	Four conductor No. 36 AWG Teflon® insulated leads, braided shield, PVC jacket				
Dead volume	0.00005 in ³ (0.0008 cm ³)				
Mounting	RTV, refer to EDVIM8500 Instruction Manual				
Weight	0.3 gram (cable weighs 3.6 grams/meter)				
Environmental					
Media	Internal seals are epoxy and are compatible with clean dry gas media. Media in (+) measurand port is exposed to nickel-iron alloy, silicon, ceramic, Parylene C, and epoxy. Media in (-) measurand port is exposed to the above and RTV silicone coating.				
Temperature	-65°F to +225°F (-54°C to +107°C)				
Vibration	1000 g pk				
Acceleration	1000 g				
Shock	10,000 g, 100 microsecond haversine pulse				
Humidity	Isolation resistance greater than 100 megohms at 50 volts when tested per MIL-STD-202E, Method 103B, Test condition B				
Calibration					
	ISO17025 calibration to full scale pressure range provided with each sensor, includes: sensitivity, linearity, hysteresis, repeatability, ZMO, zero shift after proof pressure, thermal zero shift, thermal sensitivity shift, input resistance, output resistance and isolation resistance.				

Notes

1. Pressure ranges can be considered bidirectional, e.g., an 8507C-5 can be used to measure +or - 5 psig. Sensitivity on the positive direction is typically within 1% of sensitivity in the negative direction. Sensitivity calibration provided with each unit is for the positive direction.
2. To extend vent tube, use Tygon® micro bore tubing, “.020 I.D X .060 O.D.”, -31°C (-25°F) to +85°C (185°F). For broader temperature range, use silicone tubing.
3. 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.
4. Model Definition:



ELECTRICAL SCHEMATIC

