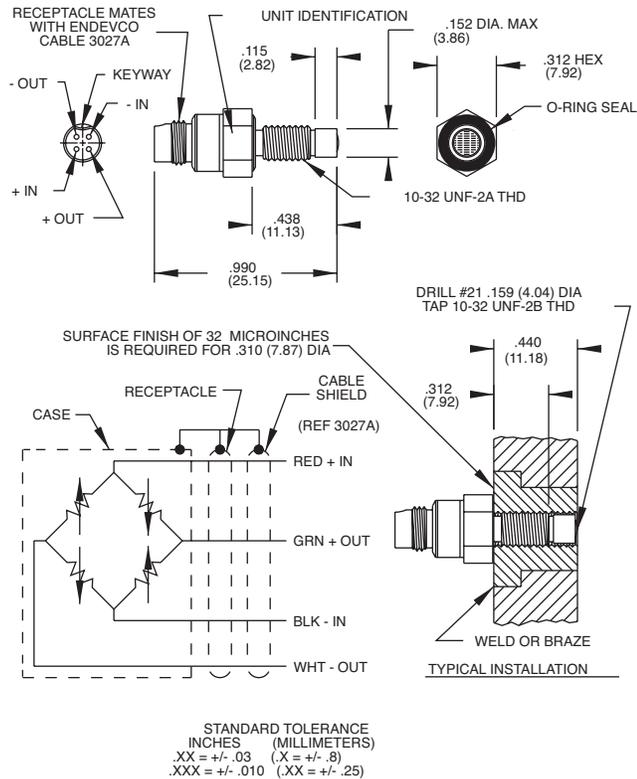


Piezoresistive pressure transducer

Model 8530BM37



Key features

- Available full scale ranges:
 - 200 psia (13.8 bar)
 - 500 psia (34.5 bar)
 - 1000 psia (69 bar)
 - 2000 psia (138 bar)
- Detachable cable
- Full scale output:
 - 300 mV for -200, -500 and -1K
 - 600 mV for -2K
- Absolute reference

The Endevco® model 8530BM37 is a miniature, high sensitivity piezoresistive transducer for measuring dynamic pressure. The transducer is designed with a miniature receptacle to allow for detachment of the model 3027A-120 cable assembly. This pressure transducer is ideal for automotive brake line pressure measurements in Anti-lock Brake System (ABS) studies. With broad frequency response and excellent overload capability, the 8530BM37 suits many applications where a rugged, high performance sensor is needed.

Endevco brand 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 from 0°F to +200°F (-18°C to +93°C), with a wide operating temperature range from -65°F to +250°F (-54°C to +121°C). Endevco brand transducers also feature excellent linearity, high shock resistance, and high stability during temperature transients.

Endevco 4430A signal conditioner or 4990A (Oasis) are recommended as signal conditioner and power supply.

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Specifications

	Units	-200	-500	-1K	-2K
Range	psia	0-200	0-500	0-1000	0-2000
Sensitivity [1]	mV/psi	1.5 ±0.5	0.6 ±0.2	0.3 ±0.1	0.3 ±0.1
Combined: non-linearity, non repeatability, pressure hysteresis [2]	% FSO RSS max	0.50	0.50	1.0	1.0
Non-linearity, independent	% FSO typ	0.2	0.2	0.2	0.2
Non-repeatability	% FSO typ	0.1	0.1	0.1	0.1
Pressure hysteresis	% FSO typ	0.1	0.1	0.1	0.1
Zero measurand output [3]	mV max	±10	±10	±10	±10
Thermal zero shift					
From 0 to 200°F (-18°C to +93°C)	±% FSO max	3	3	3	3
Thermal sensitivity shift					
From 0 to 200°F (-18°C to +93°C)	±% max	4	4	4	4
Resonance frequency	Hz	750 000	1 000 000	> 1 000 000	> 1 000 000
Thermal transient response per ISA-S37.10, PARA. 6.7, procedure I	psi / °F	0.02	0.02	0.04	0.04
	psi / °C	0.04	0.04	0.07	0.07
Photoflash response [4]	equiv psi	5	10	20	20
Warm-up time [5]	ms	1	1	1	1
Acceleration sensitivity	equiv. psi/g	0.0003	0.0002	0.0002	0.0002
Burst pressure (diaphragm)	psia min	800	2000	4000	4000
Case pressure	psia min	1000	5000	5000	5000

Electrical

Full scale output	300 ±100 mV [-100, -500 and -1K] or 600 ±200 mV [-2K] at 10.0 Vdc
Supply voltage [6]	10.0 Vdc recommended, 18 Vdc maximum
Electrical configuration	Active four-arm piezoresistive bridge
Polarity	Positive output for increasing pressure
Resistance	
Input	2000 ±800 ohms
Output	1600 ±500 ohms
Isolation	100 megohms minimum at 50 Volts, leads to case
Noise	5 microvolts rms typical, DC to 50 000 Hz; 50 microvolts rms maximum, DC to 50 000 Hz

Mechanical

Case, material	Stainless steel (17-4 PH CRES)
Electrical connections	Endevco model 3027A-120 (supplied)
Dead volume (+) port	0.0003 cubic inches (0.005 cc)
Mounting/torque	10-32 UNF-2A threaded case 0.438 inch (11.12 mm) long / 15 ±5 lbf-in (1.7 ±0.6 Nm)
Weight	2.3 grams (without cable assembly)

Environmental

Media [7] [8]	Clean dry gas and brake line fluids
Temperature	-65°F to +250°F (-54°C to +121°C)
Vibration	1000 g pk
Acceleration	1000 g
Shock	20 000 g, 100 microsecond haversine pulse
Humidity	Isolation resistance greater than 100 megohms at 50 V when tested per MIL-STD-202E, method 103B, test condition B

Calibration data

Data supplied for all parameters in Certified Performance section. Optional calibrations available for all parameters in Typical Performance section [11]

Piezoresistive pressure transducer

Model 8530BM37

Accessories

Product	Description	8530BM37
EHR93	O-ring, Viton	Included
3027A-120	Cable assembly	Included
EHR96	O-ring, Fluorosilicone	Optional
4430A	Ultra low noise bridge signal conditioner	Optional
4990A	Oasis rack, 16 card	Optional

Notes:

- 1 psi = 6.895 kPa = 0.069 bar.
- FSO (Full Scale Output) is defined as transducer output change from 0 to + full scale pressure.
- Zero Measurand Output (ZMO) is the transducer output with 0 psia applied.
- Per ISA-S37.10, Para. 6.7, Proc. II.
- Warm-up time is defined as elapsed time from excitation voltage "turn on" until the transducer output is within $\pm 1\%$ of reading accuracy.
- Use of excitation voltages other than 10.0 Vdc requires manufacture and calibration at that voltage since thermal errors increase with high excitation voltages.
- Internal seals are epoxy and are compatible with clean dry gas media and brake line fluids. Media in measurand port is exposed to CRES, Parylene C, epoxy and the Viton O-ring. Not suitable for use with high pH or low pH liquids, long term exposure to water, or exposure to solvents which may attack epoxies.
- O-ring, Parker 5-125, compound V747-75 (Viton®) is supplied unless otherwise specified on purchase order. Fluorosilicone O-ring, for leak tight operation below 0°F is available on special order.
- Case pressure is the media containment pressure in the event of diaphragm rupture.
- Units can be compensated over any 200°F (93°C) span from -65°F to +250°F (-54°C to +121°C) on special order.
- 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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Model number definition

