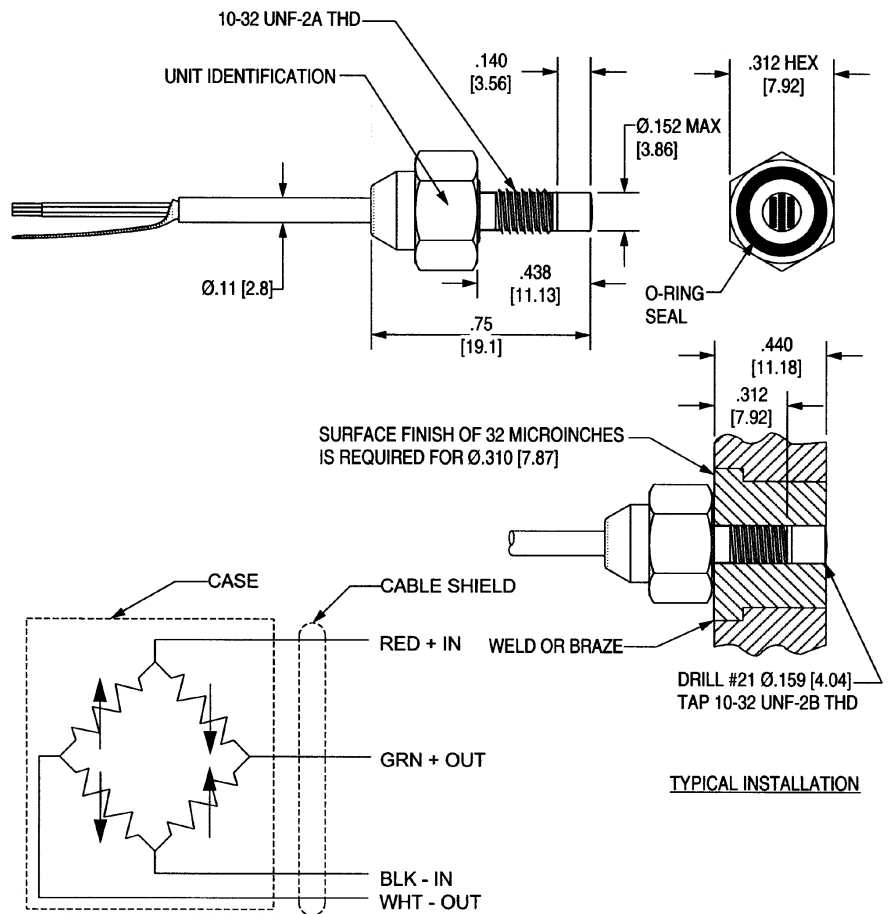


# Piezoresistive pressure transducer

## Model 8530B



STANDARD TOLERANCE

INCHES	[MILLIMETERS]
.XX = ± .03	[.X = ± .8]
.XXX = ± .010	[.XX = ± .25]

### Key features

- 200, 500, 1000 and 2000 psia ranges
- Absolute reference
- 300mV full scale output
- Rugged, miniature

### Description

Model 8530B is a miniature, high sensitivity piezoresistive pressure transducer for measuring absolute pressure. The volume behind the diaphragm is evacuated and glass sealed to provide an absolute pressure reference. Full scale output is 300 mV with high overload capability and high frequency response. It is available in ranges from 200 psia to 2000 psia. See model 8530C for lower pressure ranges.

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 temperature range of 0°F to 200°F (-18°C to +93°C). Endevco's brand transducers also feature excellent linearity, high shock resistance, and high stability during temperature transients.

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### Specifications

All specifications assume +75°F (+24°C) and 10 Vdc excitation, unless otherwise stated. Calibration data, traceable to the National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics	Units	-200	-500	-1000	-2000
Range	psia	0–200	0–500	0–1000	0–2000
Sensitivity	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 [1]	% 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	mV max	±20	±20	±20	±20
Zero shift after 3X over range	±% 3X FSO max (typ)	0.2 (0.05)	0.2 (0.05)		
after 2.5X over range	±% 2.5X FSO max (typ)			0.2 (0.1)	
after 1.5X over range	±% 1.5X FSO max (typ)				0.2 (0.1)
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
Resonant frequency	Hz	750 000	1 000 000	> 1 000 000	> 1 000 000
Non-linearity at 3X over range	% 3X FSO	1.5	2.0	2.0 @ % 2.5X FSO	2.0 @ % 1.5X FSO
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 [2]	equiv psi	5	10	20	20
Warm-up time [3]	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 [4]	psia min	1000	5000	5000	5000
<b>Electrical</b>					
Supply voltage [5]		10.0 Vdc standard, 18 Vdc maximum			
Electrical configuration		Active four-arm piezoresistive bridge			
Polarity		Positive output for increasing pressure			
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			
<b>Mechanical</b>					
Case, material		Stainless steel (17-4 PH CRES)			
Cable, integral		Four conductor No. 32 AWG ETFE insulated leads, braided shield, silicone jacket			
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 (cable weighs 9 grams/meter)			
<b>Environmental</b>					
Media [6] [7]		Clean dry gas. Contact factory for protective modifications for other media.			
Operating 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			

# Piezoresistive pressure transducer

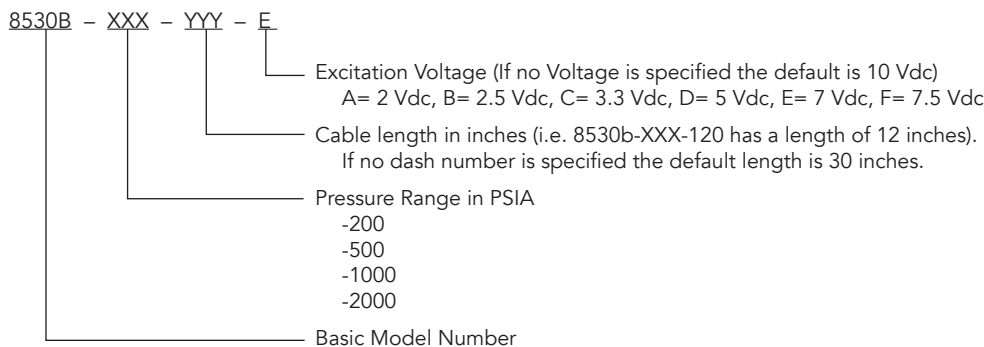
## Model 8530B

### Accessories

Product	Description	8530B
EHR93	O-ring, Viton	Included
EHR96	O-ring, fluorosilicone	Optional

### Notes

- FSO (Full Scale Output) is defined as transducer output change from 0 to + full scale pressure.
- 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.
- Case pressure identifies media containment pressure in the event of diaphragm rupture.
- Please specify the excitation voltage you will use and we will calibrate at that voltage for highest accuracy. See model definition.
- Internal seals are epoxy and are compatible with clean dry gas media. 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<sup>®</sup>) is supplied unless otherwise specified on purchase order. Fluorosilicone O-ring, for leak tight operation below 0°F is available on special order.
- Model number definition:



### Ordering information

- 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.

### Other options

- M5 Metric thread
- M6 No screen
- M8 "B" screen, black grease
- M9 "A" screen, black grease
- M37 Integral connector
- M57 No screen, gel