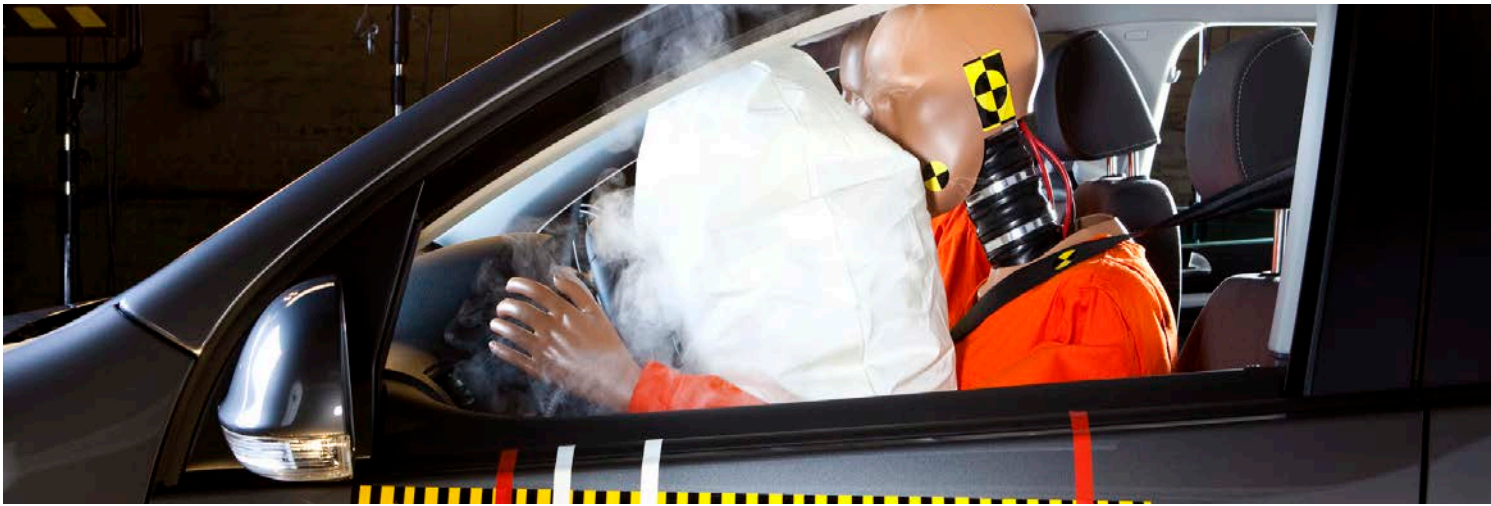




DYNAMIC UNDER PRESSURE

Endevco's piezoresistive pressure sensors offer accurate and reliable performance at pressure extremes



For decades, Endevco® pressure sensors have set the standard for reliable performance in the most demanding environments for automobile, train, aircraft, and weapons testing. The MEMS sensing elements are designed for extremely high output and high resonance combined with exceptional linearity and hysteresis performance. Whether your application calls for measurement of 1 psi or 20,000 psi — a light wind or an explosive blast — Endevco has a pressure sensor that will give you the data you need.

Miniature piezoresistive pressure transducers are designed to measure both dynamic and static pressure to a high degree of accuracy. MEMS sensing elements feature a unique diaphragm design manufactured at Endevco's USA-based MEMS facility, resulting in a range of pressure sensors with an extremely high output signal and high resonant frequency, as well as extraordinary linearity and repeatability, and virtually no hysteresis.

All models feature internal temperature compensation to provide stable performance over temperature. Absolute pressure sensors are available in ranges as low as 0-15 psia and as high as 0-2000 psia, while gage/differential sensor models span from 0-1 psig to 0-20,000 psig. All units are shipped in specially designed electrostatic discharge (ESD) packaging, to reduce the potentially harmful effects of static electricity on critical components, as well as to further support customer in-house ESD control procedures.

In 2019, PCB Piezotronics (PCB®) acquired Endevco's full line of automotive safety testing sensors. This means all Endevco sensors are now backed by PCB's Total Customer Satisfaction (TCS) guarantee.

APPLICATIONS

- Hypersonic, transonic, and "quiet flow" wind tunnel testing
- Jet airflow fields and inlet pressure
- Turbulent airflow measurements
- Rocket motor analysis
- Blast testing
- ABS testing
- Airbag inflation testing
- Side impact testing
- Transmission testing*
- Automotive and rail wind tunnel testing
- Railway tunnel and platform testing
- Process control
- Hydraulic measurements*

*For short-term testing only

ENDEVCO PIEZORESISTIVE PRESSURE SENSORS COME WITH A2LA ACCREDITED CALIBRATION

Static calibrations of Endevco piezoresistive pressure sensors are now American Association for Laboratory Accreditation (A2LA) accredited (Certificate Number 1862.02).

A2LA accreditation means that PCB's Endevco piezoresistive pressure sensor calibrations have demonstrated compliance with the ISO/IEC 17025 standard in its Halifax, North Carolina facility. This new accreditation demonstrates PCB's commitment to providing accurate and reliable calibrations so that our customers can be confident in their test results. The calibration certificates include valuable information including linearity over full-scale pressure, thermal sensitivity, and thermal zero from -18 to +93°C (0 to 200°F).

~ Calibration Certificate ~

Test Sensor:		Test Equipment:	
Model Number:	8530C-15	Calibration Method:	AT620-1
Serial Number:	EN6318	Pressure Source:	Fluke 6270A S/N 0
Manufacturer:	Endevco	Test Sensor Readout:	DAQ973A S/N MY59001471
Description:	Pressure Sensor	Ambient Temp:	74°F
Pressure Range:	0 to 15 psi [0 to 103.4 kPa]	Relative Humidity:	51%
Mode:	Absolute	Atmospheric Pressure:	14.6 psi
Test Voltage:	10 VDC	Pressure Medium:	Nitrogen

Calibration Data:			
Sensitivity^[1]:	11.10 mV/psi [1.61 mV/kPa]	Linearity^[1]:	0.13 %FSO
Zero Measurand Output^[1]:	-10.43 mV	Hysteresis:	0.03 %FSO
Full Scale Output:	155.86 mV	Repeatability:	0.01 %FSO
Span:	166.28 mV	Accuracy^[6]:	0.14 %FSO
Output Resistance:	1500 Ω	Zero Shift After 3X FSO	0.00 %3X FSO
Input Resistance:	2000 Ω	Thermal Zero Shift:	1.68 %FSO
Isolation Resistance:	>100 MΩ	Thermal Sensitivity Shift:	2.18 %

Reference Pressure		Test Sensor Output
(psi)	(kPa)	(mV)
1.00	6.9	0.51
3.00	20.7	22.85
6.00	41.4	56.31
9.00	62.1	89.65
12.00	82.7	122.84
15.00	103.4	155.86

Linearity

Temperature Response

Equipment Condition: As Found: N/A
As Left: In Tolerance

Notes:

- [1] Linearity, sensitivity, and ZMO calculated using least-squares, straight-line method.
- [2] Calibration certificate may not be reproduced, except in full, without written approval from PCB Piezotronics of NC, Inc. d/b/a Endevco.
- [3] Calibration is performed in compliance with ANSI Z540.3; ISO 17025 and ISO 10012-1.
- [4] NIST Traceable per Deadweight Calibration.
- [5] Measurement results relate only to the items tested. Refer to Manufacturer's Specification Sheet for performance details.
- [6] Accuracy defined as square root of the sum of the squares of linearity, hysteresis and repeatability data.
- [7] Measurement uncertainty (95% confidence level with a coverage factor of 2) is ±0.20 %FSO.

Technician:	Bunk Moreland	Calibration Date:	8/16/2024
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ACCREDITED
CALIBRATION CERT #1862.02

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(Where provided, statements of conformity are made in accordance with Simple Acceptance decision rule as defined in ILAC G8 with TUR of 4:1 or greater)

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GAGE PRESSURE TRANSDUCERS				
Model Number	8507C	8510B	8510C	8511A
Description	Gage High sensitivity Temp compensation	Gage Vent tube Temp compensation	Gage High resonance Temp compensation	Rugged Gage High pressure Temp compensation
Full scale pressure (psig)	1 / 2 / 5 / 15	1 / 2 / 5 / 200 / 500 / 2000	15 / 50 / 100	5000 / 10,000 / 20,000
Sensitivity (mV/psi)	200 / 100 / 60 / 20	200 / 100 / 60 / 1.5 / 0.6 / 0.15	15 / 4.5 / 2.25	0.1 / 0.05 / 0.025
Resonance frequency (kHz)	55 / 70 / 85 / 130	55 / 70 / 85 / 320 / 500 / 900	180 / 320 / 500	greater than 1000
Non linearity (% FSO typical)	1.5 / 1.0 / 0.5 / 0.2	2.5 / 1.0 / 0.5 / 0.25 / 0.25 / 0.25	0.15 / 0.1 / 0.1	1.2 / 2.5 / 2.5
Operating temperature (°C (°F))	-54 to +107 (-65 to +225)	-54 to +121 (-65 to +250)	-54 to +121 (-65 to +250)	-54 to +121 (-65 to +250)
Burst pressure (psi)	20 / 40 / 100 / 150	25 / 40 / 100 / 1000 / 2500 / 10,000	75 / 250 / 400	20,000 / 30,000 / 40,000
Face diameter (mm (in))	2.34 (0.092)	3.86 (0.152)	3.86 (0.152)	8.13 (0.320)
Weight (grams)	0.3	2.3	2.3	11
Mounting method	RTV bond	10-32 UNF-2A	10-32 UNF-2A	3/8-24 UNF-2A
Screen	"A" screen	"A" screen	7 to 36 or 5V (R option)	No screen
Cable P/N	22409	24328-3	24328-3	24328-3
Accessories	---	EHR93, O-ring, viton EHR96, O-ring, fluorosilicone	EHR93, O-ring, viton EHR96, O-ring, fluorosilicone	22688, gasket, copper 22686 washer, high pressure
OPTIONS				
Input voltage variable	---	Yes	Yes	---
2.5V calibration	---	N/A	N/A	---
5V calibration	M6	N/A	N/A	---
No vent tube	---	M1	M1	---
No vent tube, no screen	---	---	M2	---
Metric thread	N/A	M5	M5	---
No screen	---	M7	M7	Std
Integral connector	---	---	---	---
Integral connector, no vent tube, hole inside	---	M37	M37	M37
"A" screen, black grease	---	M8	M8	M1 (star screen)
"B" screen	---	M11	M11	---
"B" screen, black grease	---	M43	---	M8
Gel	---	M41	M4	---
No screen, gel	M8	---	M41	---



ABSOLUTE PRESSURE TRANSDUCERS			
Model Number	8515C	8530B	8530C
Description	0.03 inch thin Surface mount High sensitivity	Absolute High resonance Temp compensation	Absolute High sensitivity Temp compensation
Full scale pressure (psig)	15 / 50	200 / 500 / 1000 / 2000	15 / 50 / 100
Sensitivity (mV/psi)	13.3 / 4.0	1.5 / 0.6 / 0.3 / 0.3	15 / 4.5 / 2.25
Resonance frequency (kHz)	180 / 320	750 / 1000 / >1000 / >1000	180 / 320 / 500
Non linearity (% FSO typical)	0.2	0.2	0.15 / 0.1 / 0.1
Operating temperature (°C (°F))	-54 to +121 (-65 to +250)	-54 to +121 (-65 to +250)	-54 to +121 (-65 to +250)
Burst pressure (psi)	75 / 250	800 / 2000 / 4000 / 4000	75 / 250 / 400
Face diameter (mm (in))	6.35 (0.25)	3.86 (0.152)	3.86 (0.152)
Weight (grams)	0.08	2.3	2.3
Mounting method	RTV bond	10-32 UNF-2A	10-32 UNF-2A
Screen	"B" screen	"A" screen	"A" screen
Cable P/N	EW862	24328-3	24328-3
Accessories	30042, mounting pad	EHR93, O-ring, viton EHR96, O-ring, fluorosilicone	EHR93, O-ring, viton EHR96, O-ring, fluorosilicone
OPTIONS			
Input voltage variable	---	Yes	Yes
2.5V calibration	M33	N/A	N/A
5V calibration	M39	N/A	N/A
No vent tube	---	---	---
No vent tube, no screen	---	---	---
Metric thread	N/A	M5	M5
No screen	---	M6	M59
Integral connector	---	M37	M37
Integral connector, no vent tube, hole inside	---	---	---
"A" screen, black grease	M32	M9	M1
"B" screen	Std	---	M58
"B" screen, black grease	---	M8	M2
Gel	M35	---	M35
No screen, gel	---	---	---



OPTION DESCRIPTIONS

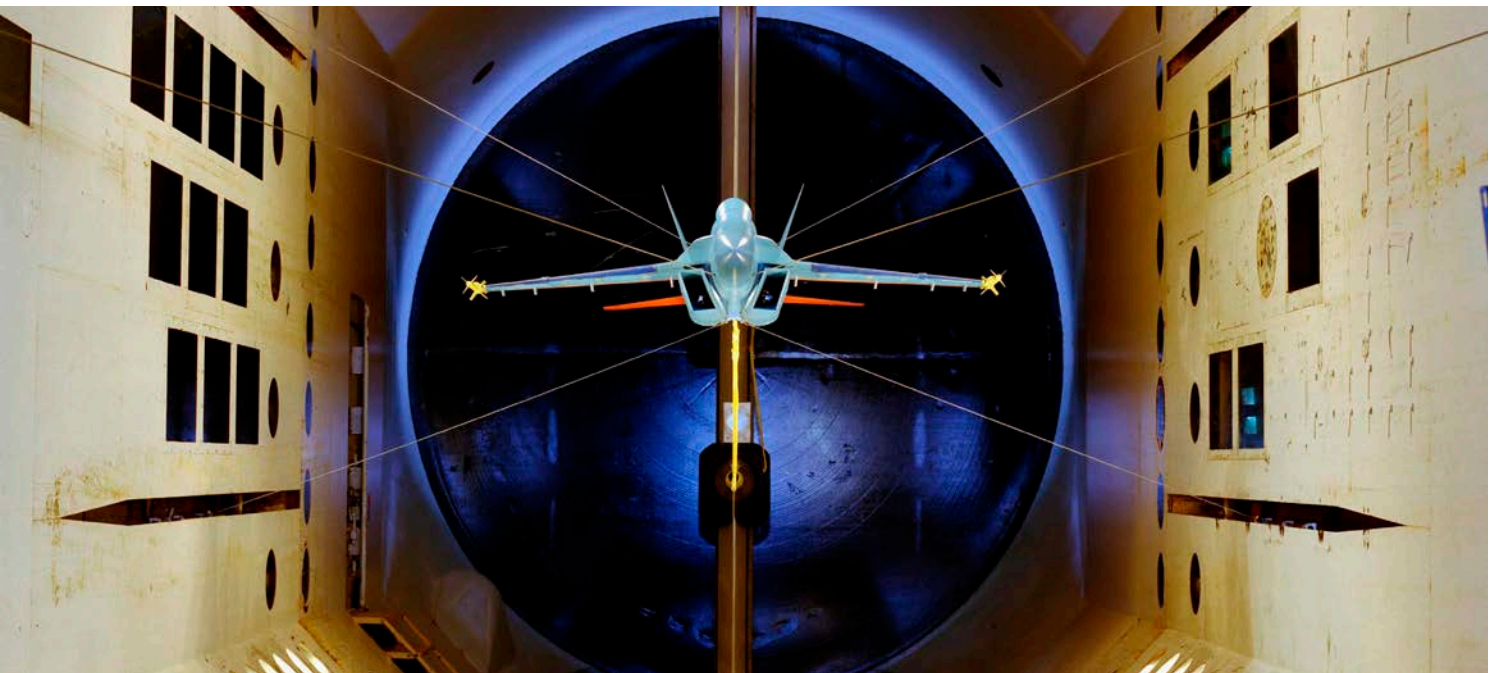
All units come standard with 10V calibration. Other voltages are available and should be specified at the time of order to ensure accurate calibration.

All units are supplied with a 30-inch integral cable. Longer lengths should be specified at the time of order, subject to the following guidelines: for lengths less than 10 feet, in increments of 1 foot; for lengths greater than 10 feet, in increments of 5 feet. The M37 or integral connector option comes standard with a 3027B/120 cable assembly.

Black grease is added to protect the piezoresistive gages from light, particularly the flash of light which is common with blast testing applications.

Gel is added to improve water resistance, enabling the sensors to be used in a wet environment for as long as 4 hours, or a humid environment for as long as 8 hours. The sensors will stop functioning when they become thoroughly wet, but will work again once allowed to dry for 24 hours.

All sensors come with internal temperature compensation to provide stable performance over temperature. Most models are compensated between 0°F and 200°F (-18°C to +93°C). Upon request, this range can be modified to better suit your application to any 200°F range that is inside the normal operating range of the sensor.



ELECTRONICS & ACCESSORIES



SPECIFICATIONS			
Model Number	ENDEVCO 4418	PCB 482C27	PCB 483C28
Features	PR	PR / ICP®	PR / ICP®
Channels	1	4	8
Gain	1, 10, 100	0.1 to 200	0.1 to 200
Power Requirements (VAC)	Battery powered, rechargeable	AC	AC



SPECIFICATIONS	
Model Number	ENDEVCO 30042
Features	Aerodynamic mounting pad Compatible with 8515C



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