trans metrics, Division of United Electric Controls

Miniature Flush Mount Transducer P037 Series

FEATURES:

- Easy-to-clean flush mount design
- 0-70 thru 0-5,000 PSI pressure ranges
- 1-5 VDC and 1-2 mV/V output
- 3 or 4-wire circuitry
- Integral electronics (P037D)
- Gage pressure reference (now also available in absolute pressure reference)
- Compact size (.61"D x 1.04"L)
- Reverse polarity protection
- All stainless steel construction
- Teflon® coating available
- See instruction manual for mounting

DESCRIPTION:

Applications

The Trans Metrics' P037 pressure transducer is specifically made for applications which require high reliability and high durability in a compact, easy-to-clean package.

Applications can be static or dynamic in nature.

Design

P037 models incorporate three major design elements that allow them to measure pressure under the above conditions: bonded foil strain gages configured in a Wheatstone bridge (for accuracy, reliability, and stability), flush mount diaphragm (for easy cleaning), and stainless steel construction (for durability and corrosion resistance).

Pressure References

All P037 models are available in three pressure references: gage (referenced to local atmospheric pressure), sealed gage (referenced to standard atmospheric pressure at sea level) and absolute (referenced to a vacuum).

All P037's can have a vacuum applied to the diaphragm.

Output/Circuit Types

Two output types (1-5 VDC, 1-2 mV/V) and two circuit types (D, M) are available for standard P037 models. Circuits are three or four wire (circuit diagrams. Specifications can be found on page 2).

Calibration and Compensation

Trans Metrics individually calibrates and temperature compensates each P037. Transducers are calibrated against standards traceable to the National Institute of Standards and Technology. A certificate of calibration is supplied with each unit.

Options/Modifications*

Numerous options and modifications are available and are designated by a dash number after the model number. Selected options for P037 models appear below and on the price list. If a desired option is not listed, or if multiple options are required, please call the factory for availability.

-178	1-6 VDC output
-220	316L ss sensor

Ordering

Specify model no. (P037), circuit (D, M), pressure port (F), electrical connection (C, D, F) options (-xxx), pressure range (xxxxx PSI; can be calibrated in units other than PSI), pressure references: g - gage, s - sealed gage and a - absolute.

Example: P037DFC178 5000 PSIG.

* Some options may alter transducer performance and/or mechanical characteristics.

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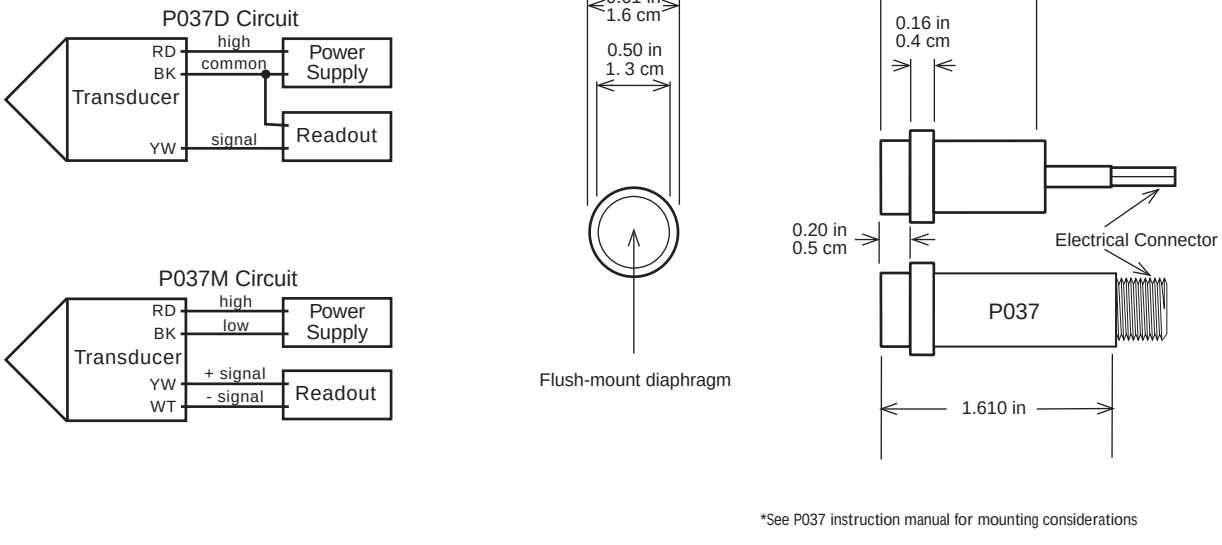
CIRCUITS/DIMENSIONS:

P037 SERIES



SPECIFICATIONS:

Standard Models:	P037D (3-wire circuit) P037M (4-wire circuit)
Pressure Ranges:	0-70 PSI thru 0-5,000 PSI *0-5 Bar thru 0-350 Bar*
Output Range:	1-5 VDC ±2% (D) *1-2 mV/V nominal (M)* Reduced output in ranges <500 PSI
Zero Balance:	±3.0% FSO
Static Error Band: (BSL - Nonlinearity, Hysteresis, and Nonrepeatability combined)	±0.5% FSO
Nonrepeatability:	±0.15% FSO
Thermal Effects:	±0.03% FS0/°F *±0.05% FSO/°C*
Operating Temperature Range:	-30°F to 180°F (D) *-35°C to 80°C* -100°F to 250°F (M) *-70°C to 125°C*
Compensated Temperature Range:	0°F to 160°F *-20°C to 70°C*
Max. Safe Exposure Temp.:	+250°F, *+125°C*

Excitation:	10.5 to 24 VDC (D) *5 to 18 VDC or VAC (M)*
Current Consumption (Typical)**:**	12 mA (D) *Vexc./1000 ohm (M)*
Natural Frequency:	Approximately 12 KHz for 70 PSI range rising to 65 KHz for 5,000 PSI range
Rise Time (10-90%)**:**	less than 1 ms typical
Proof Pressure:	1.5 times rated pressure
Burst Pressure:	4 times rated pressure
Material:	15-5 PH stainless steel
Weight:	Approximately .45 oz. or *13 g*
Identification:	Model, range, serial#, connections, manufacturer and country of origin are inscribed on the case.
Operation:	Reference P037 instruction manual.

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Trans Metrics' P037 series model numbers are constructed as a series of numbers and letters that identify the accuracy, electrical circuit, pressure connection, electrical connection, and any options or features which may be unique to a particular pressure transducer.

The model number below features Ⓐ a P037 series pressure transducer, Ⓑ 1-5 VDC output, Ⓒ Flush mount pressure port, Ⓓ Cable 1 meter 28 AWG PVC. Any other options selected Ⓔ would be assigned a three (3) digit number which would be added to the end of the model number. In this example, 220 specifies 316L wetted material.

Pressure selections should be specified including the Ⓕ pressure range, Ⓖ units and Ⓗ pressure reference.

example:

model	P037	D	F	C	220	range	100	psi	g
	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ		Ⓕ	Ⓖ	Ⓗ
	Series/Accuracy	Circuit Type	Pressure Connection	Electrical Connection	Options		Pressure Range	Units	Pressure Reference

The chart below will assist you in selecting a transducer configuration and obtaining pricing information.

	Model Selections	
A	**Series / Accuracy**	
	P037	P037 Series with ±0.5% SEB BSL
B	**Circuit Type**	
	D	1-5 VDC Signal Output
	M	1-2 mV/V Nominal
C	**Pressure Connection**	
	F	Flush Mount Pressure Port
	See instruction manual for mounting considerations	
D	**Electrical Connection**	
	C	Cable 1 meter 28 AWG PVC
	D	Cable 1 meter 24 AWG Teflon®
	F	Flying Leads 1 foot 30 AWG Teflon®
E	**Common Options / Modifications**	
	178	1 - 6 VDC Signal Output
	184	10 Ft. Cable
	220	316L SS Sensor (±0.5% SEB BSL)
	211	2 Ft. Cable
	*568	Teflon® coated sensor

** minimum order 5 pieces or $100 per order*

	Pressure Selections	
F	**Pressure Range**	
	min.	0 - 70 psi
	< >	we accomodate any range in between
	max.	0 - 5,000 psi
G	**Units [Available Pressure Range]**	
	psi	70 - 5,000 psi
	bar	5 - 345 bar
	kg/cm²	5 - 352 kg/cm²
	KPa	500 - 34,500 KPa
	in Hg	35 - 2,500 in Hg
	other	*consult factory*
H	**Pressure Reference**	
	gage	Reference to local atmospheric pressure
	absolute*	Reference to a vacuum
	sealed*	Reference to standard atmospheric pressure at sea level

* Add $55 for psia

SEB: Static Error Band
BSL: Best Straight Line

If you need an option not listed above, please consult factory for availability

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