



P037 Series

P037 Series

MINIATURE FLUSH MOUNT PRESSURE TRANSDUCER



FEATURES

- Easy-to-Clean Flush Mount Design
- 0-70 thru 0-5,000 psi Pressure Ranges
- 1-2 mV/V Nominal Unamplified Output
- 2 Wire 4-20 mA Output
- 3 Wire 1-5 VDC Amplified Voltage Output

SPECIAL OPTIONS AVAILABLE:

- Monel® Alloy K-500 Wetted Parts
- EM-12 Electrical Connector
- 1-6 VDC Signal Output

OVERVIEW

The P037 Series pressure transducer is designed for a wide variety of industrial type applications requiring a high output signal combined with high reliability, durability and accuracy. They are designed to withstand temperature, shock and vibration.



P037 Flush Mount
0-70 thru 0-5,000 psig



P037 Miniature Flush Mount
0-70 thru 0-5,000 psig

FEATURES

- Reliable bonded foil strain gage technology
- Compact size
- All stainless steel construction
- 1-5 VDC amplified voltage output, 1-2 mV/V nominal unamplified output
- Reverse polarity protection

See section on mounting considerations for flush mount design use (page 10 - 11)

APPLICATIONS

- Automated sampling systems
- Adhesive dispensing systems
- Measuring pressure exerted on structures, i.e. boat hulls
- Laminar fluid systems



TECHNOLOGY

The P037 Series features bonded foil strain gage technology, considered one of the most durable and abuse resistant technologies available today. The bonded foil strain gage transducer measures pressure when a fluid is introduced into a simple low volume chamber (port), where it acts against the diaphragm. Proportional to the applied pressure, the resistance change is conditioned by internal circuit devices to produce the transducer's output.

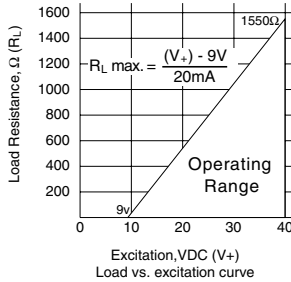
SPECIFICATIONS

MODELS:	P037D
PRESSURE RANGES:	0-70 psi thru 0-5,000 psi 0-5 bar thru 0-350 bar
OUTPUT RANGE:	1-5 VDC $\pm 2\%$ (Type D) 1-2 mV/V nominal (Type M)* 4 to 20 mA $\pm 2\%$ (Type T)
ZERO BALANCE:	$\pm 3.0\%$ FSO
STATIC ERROR BAND: (BSL - Nonlinearity, Hysteresis, and Nonrepeatability combined) BSL: Best Straight Line	$\pm 0.5\%$ FSO
NONREPEATABILITY:	$\pm 0.15\%$ FSO
THERMAL EFFECTS:	$\pm 0.03\%$ FSO/ $^{\circ}$ F $\pm 0.05\%$ FSO/ $^{\circ}$ C
OPERATING TEMPERATURE RANGE:	-30 $^{\circ}$ F to 180 $^{\circ}$ F (Type D) -35 $^{\circ}$ C to 80 $^{\circ}$ C -100 $^{\circ}$ F to 250 $^{\circ}$ F (Type M) -70 $^{\circ}$ C to 125 $^{\circ}$ C
COMPENSATED TEMPERATURE RANGE:	0 $^{\circ}$ F to 160 $^{\circ}$ F -20 $^{\circ}$ C to 70 $^{\circ}$ C
MAX. SAFE EXPOSURE TEMPERATURE:	+250 $^{\circ}$ F, +125 $^{\circ}$ C

*Reduced output in ranges <500 psi

EXCITATION:

9 to 28 VDC (Type D)
 5 to 18 VDC or VAC (Type M)
 4 to 20 mA (Type T)



CURRENT CONSUMPTION

(Typical):

12 mA (D)
 $V_{exc.} / 1000 \text{ ohm}$ (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
 identified on the case

MODEL CHART

The chart below will assist you in selecting a transducer configuration.

Model Selections	
1 Series / Accuracy	
P037	P037 Series with $\pm 0.5\%$ SEB BSL
2 Circuit Type	
D	1-5 VDC Signal Output
M	1-2 mV/V Nominal
T	4-20 mA Signal Output
3 Pressure Connection	
F	Flush Mount Pressure Port
See pages 10 - 11 for mounting considerations	
4 Electrical Connection	
C	Cable 1 meter 28 AWG PVC
D	Cable 1 meter 24 AWG Teflon [®]
F	Flying Leads 1 foot 30 AWG Teflon [®]
5 Common Options / Modifications	
178	1 - 6 VDC Signal Output
180	Monel [®] Alloy K-500 wetted material
184	10 Ft. Cable
220	316L SS Sensor ($\pm 0.5\%$ SEB BSL)
211	2 Ft. Cable
*568	Teflon [®] coated sensor
<i>* minimum order required, consult factory</i>	

Pressure Selections	
6 Pressure Range	
min.	0 - 70 psi
< >	we accommodate any range in between
max.	0 - 5,000 psi
7 Units [Available Pressure Range]	
psi	70 - 5,000 psi
bar	5 - 345 bar
kg/cm ²	5 - 352 kg/cm ²
KPa	500 - 34,500 KPa
"Hg	35 - 2,500 "Hg
other	consult factory
8 Pressure Reference	
gage	Reference to local atmospheric pressure

SEB: Static Error Band
BSL: Best Straight Line

Teflon[®] is a registered trademark of E.I. DuPont
Monel[®] Alloy K-500 wetted material

HOW TO ORDER

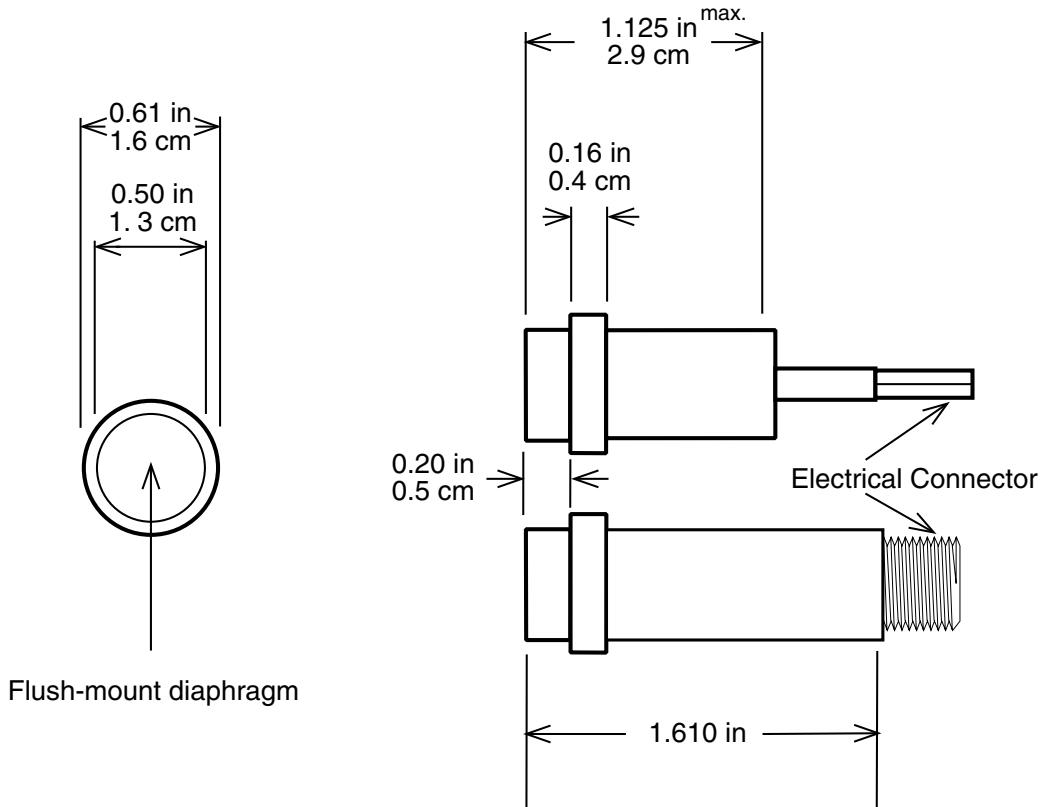
Trans Metrics' P037 Series model numbers are constructed as a series of numbers and letters that identify the accuracy, electrical circuit, pressure connection, electrical connection, and any options or features which may be unique to a particular pressure transducer.

The model number below features **1** a P037 series pressure transducer, **2** 1-5 VDC output, **3** Flush mount pressure port, **4** Cable 1 meter 28 AWG PVC. Any other options selected **5** 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 **6** pressure range, **7** units and **8** pressure reference.

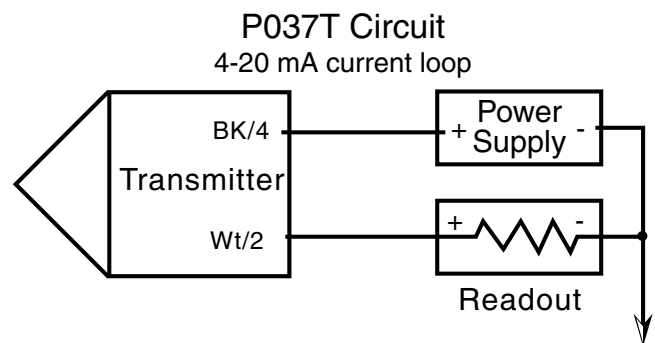
Example: Model P037	D	F	C	220	Range 100	psi	g
1	2	3	4	5	6	7	8
Series Accuracy	Circuit Type	Pressure Connection	Electrical Connection	Options	Pressure Range	Units	Pressure Reference

CIRCUIT & DIMENSIONAL DRAWINGS

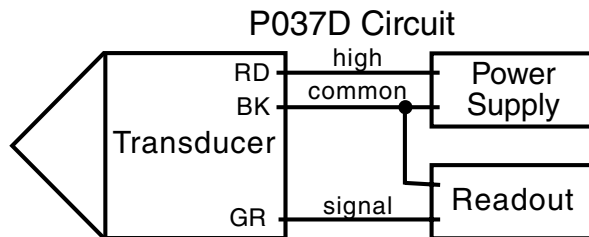


Flush-mount diaphragm

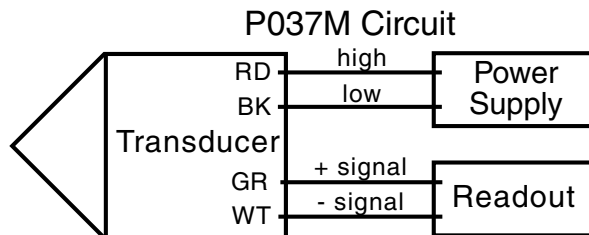
2-Wire Circuits



3-Wire Circuits



4-Wire Circuits



MOUNTING CONSIDERATIONS

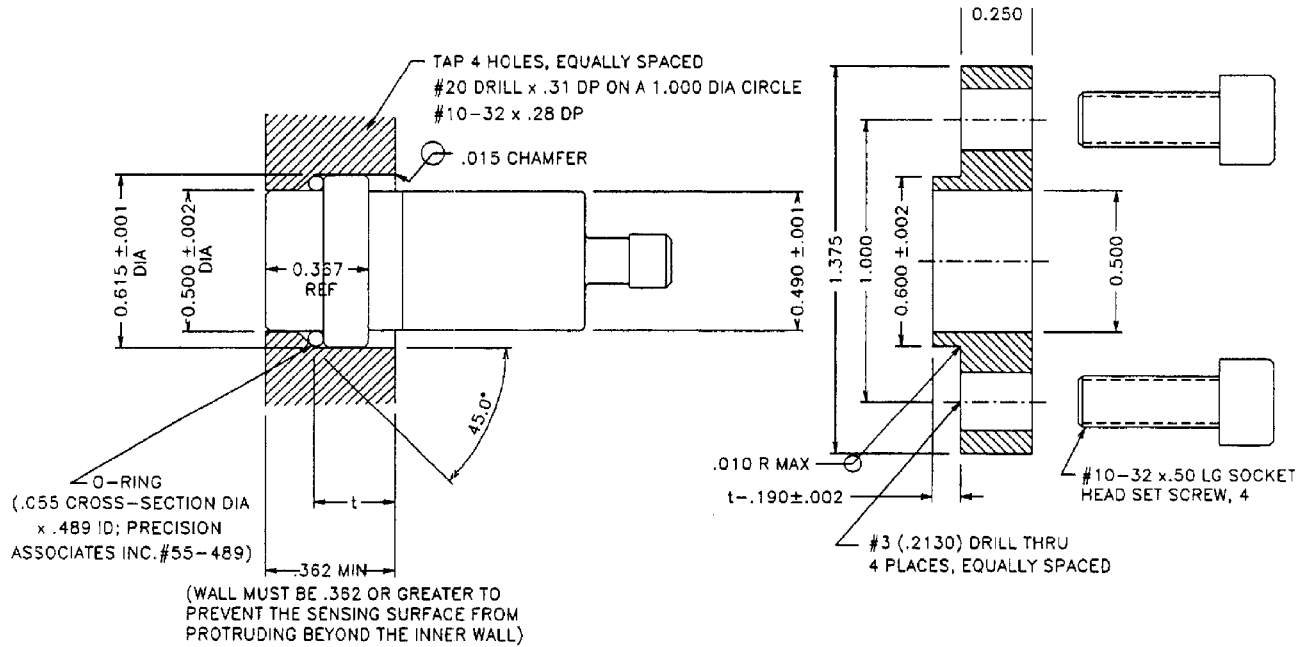


Fig. 1: End user bores hole into area they desire to measure pressure and holds transducer in with bracket.

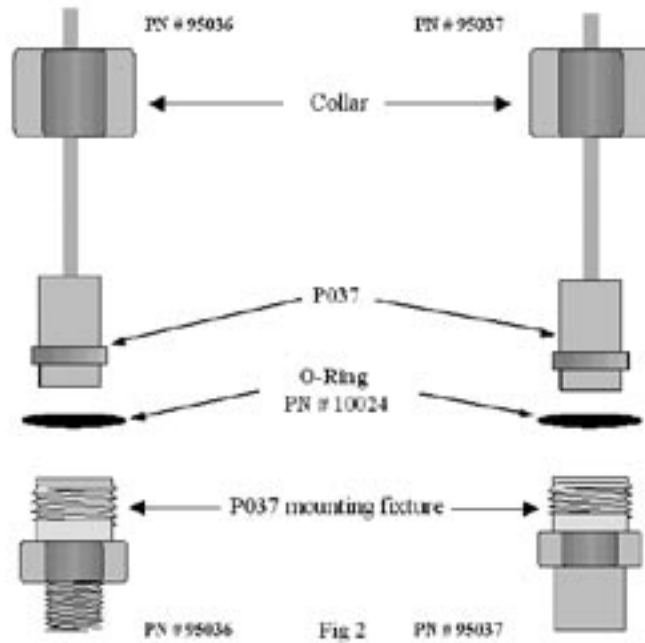


Fig. 2: Mounting fixture: #95036 - 1/4-18 NPT male process connection, # 95037- weldable tube stub
Torque rating: Collar to fixture is 20 in lbs.

RECOMMENDED PRACTICES AND WARNINGS

Trans Metrics recommends careful consideration of the following factors when specifying and installing Trans Metrics pressure units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

- To avoid damaging unit, proof pressure and max. temperature limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to proof pressure or max. temperature is acceptable on a limited basis (i.e., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at proof pressure or maximum temperature limits could reduce sensor life.
- A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where dangerous runaway conditions could result.
- Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. Orient unit so that moisture does not enter the enclosure via the electrical connection.
- Unit must not be altered or modified after shipment. Consult Trans Metrics if modification is necessary.
- Monitor operation to observe warning signs of possible damage to unit. Check unit immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.
- For all applications, a factory set unit should be tested before use.
- Electrical ratings stated in literature and on nameplate must not be exceeded. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.
- Use only factory authorized replacement parts and procedures.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY OF REPAIR AND REPLACEMENT

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (F.O.B. Trans Metrics); provided, however, that this warranty applies only to equipment found to be so defective within a period of 12 months from the date of manufacture by the Seller. Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives.

EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE

LIABILITY LIMITATION

SELLER'S LIABILITY TO BUYER FOR ANY LOSS OR CLAIM, INCLUDING LIABILITY INCURRED IN CONNECTION WITH (I) BREACH OF ANY WARRANTY WHATSOEVER EXPRESSED OR IMPLIED, (II) A BREACH OF CONTRACT, (III) A NEGLIGENT ACT OR ACTS (OR NEGLIGENT FAILURE TO ACT) COMMITTED BY SELLER, OR (IV) AN ACT FOR WHICH STRICT LIABILITY WILL BE IMPUTED TO SELLER IS LIMITED TO THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED HEREIN. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES OF A LIKE GENERAL NATURE, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS OR PRODUCTION, OR LOSS OR EXPENSES OF ANY NATURE INCURRED BY THE BUYER OR ANY THIRD PARTY.

Trans Metrics specifications subject to change without notice.

INTERNATIONAL OFFICES

AUSTRALIA

United Electric Controls
(Australia) PTY Ltd
Unit 2, 615 Warrigal Road
Locked Bag 600
Ashburton, Victoria
3147, Australia
Phone: 613-9567-0750
FAX: 613-9567-0755

BELGIUM

United Electric Controls-Europe
G. Van Gervenstraat 19A
B-9120 Beveren-Waas, Belgium
Phone: 32-37554-383
FAX: 32-37552-747

CANADA

United Electric Controls
(Canada) Ltd
5320 Bradco Boulevard
Mississauga, Ontario
L4W 1G7 Canada
Phone: 905-625-5082
FAX: 905-625-5709

GERMANY

United Electric Controls
An Der Zentlinde 21
D-64711 Erbach, Germany
Phone: 496-062-7400
FAX: 496-062-7501

INDIA

United Electric Controls
Amar Hill, Saki Vihar Road
Powai, Mumbai 400 072
Phone: 91-22-857-6921
FAX: 91-22-857-1707

MALAYSIA

United Electric Controls, Far East
No. 1-2-2, 2nd Floor
Jalan 4/101C
Cheras Business Centre
Batu 5, Jalan Cheras
56100 Kuala Lumpur, Malaysia
Phone: 603-9133-4122
FAX: 603-9133-4155

MEXICO

United Electric Controls
Chihuahua 129-1 NTE
Unidad Nacional 89410
Madero, TAM
Mexico
Phone: 52-833-210-0646
FAX: 52-833-210-5761

U.S. SALES OFFICES

United Electric Controls/
Headquarters
180 Dexter Ave.
Watertown, MA 02472
Phone: 617-926-1000
FAX: 617-926-2568
www.ueonline.com

United Electric Controls
32 Highland Rd.
South Hampton, NH 03827
Phone: 603-394-0078
FAX: 603-394-0175

United Electric Controls
28 N. Wise Ave.
Freeport, IL 61032
Phone: 815-235-3501
FAX: 815-235-3847

United Electric Controls
1022 Vineyard Drive
Conyers, GA 30013
Phone: 770-483-8400
FAX: 770-929-8716

United Electric Controls
5829 Grazing Court
Mason, OH 45040
Phone: 513-398-3175
FAX: 513-398-3076

United Electric Controls
19335 Hadley
Stilwell, KS 66085
Phone: 913-685-2775
FAX: 913-685-2774

United Electric Controls
1753 Beach Street
San Francisco, CA 94123
Phone: 415-563-5811
FAX: 415-563-5909

5325 Naiman Parkway
Solon, Ohio 44139
Phone: 440-248-2229 / 888-782-2229
Fax: 440-248-7780
www.trans-metrics.com
email: sales@trans-metrics.com

