

May 2010

Description

Moore Industries' family of pressure-to-current transmitters provide an economical solution when a pneumatic device must interface with a data acquisition/control system, controller, recorder, or other electronic instrument.

These compact, yet powerful units accept a pneumatic signal (3-15 psig, 0.2-1 bar, 3-27 psig, etc.) and accurately convert it to a proportional 4-20mA (or 10-50mA) output.

Control Room and Field Mounting—Our complete line of P/I transmitters includes models perfect for both control room and field mounting. Moore Industries' P/I transmitters are available with a wide variety of housings, and with special features and options. For detailed information, see Table 1 and the Ordering Specifications table.



Moore Industries' complete line of reliable P/I transmitters includes units suitable for mounting in almost any field and control room environment.

Certifications



Factory Mutual Research Corporation (FMRC)

Intrinsically-Safe – PIT [DIN] & PIX [HP]:

Class I, Division 1, Groups A, B, C, D

Non-Incendive – PIT [DIN] & PIX [EXI, EXIP, HP]

Class I, Division 2, Groups A, B, C, D

Explosion-Proof – PIX [EXI, EXIP]:

Class I, Division 1, Groups A, B, C, D

NEMA 4X; IP65



Canadian Standards Association (CSA)

General Location – PIX [HP]

Intrinsically-Safe – PIX [HP] with -ISC option: Class I, Group D; Class II, Groups E, F, G; Class III

Explosion-Proof – PIX [P3LS]

Class I, Groups C, D;

Class II, Groups E, F, G; Class III



Canadian International (Canada & US)

General/Ordinary Locations – PIT [DIN]



European Approvals by:

BASEEFA



Type N – PIF [WP, WPM]: Ex N IIC; T5

PIX [EXI]: Ex N IIC; T5

BASEEFA

Intrinsically-Safe – PIF [WP, WPM]: EEX ia IIC; T4

PIT [DIN]: EEX ia IIC; T4



CE Conformant –

EMC Directive 89/336/EEC

EN61326

Features

- **Immune to shock, vibration and position.** Perform with exceptional accuracy ($\pm 0.2\%$ of span) even in unstable environments. Mount in any position without performance loss.
- **Long, trouble-free service life.** Being 100% solid state, there are no moving parts to wear out or adjust.
- **Self-sealing pneumatic connection.** The PIT and PIX (HP) can be taken out of service without disconnecting the pneumatic line and with no air loss.

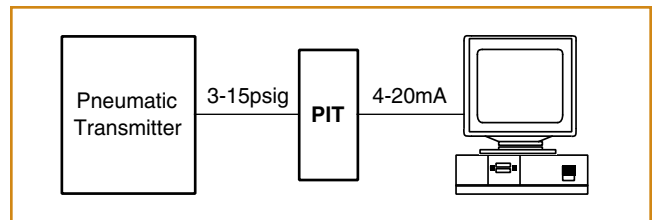


Figure 1. Pneumatic Transmitter to Computer System Interface.

PIT, PIF & PIX

Pressure-to-Current Transmitters

Specifications

<p>Performance</p> <p>Calibration Capability: Error shall not exceed $\pm 0.2\%$ of span including independent linearity as defined in SAMA Standard PMC 20.1-1973</p> <p>Repeatability: Within $\pm 0.1\%$ of input span</p> <p>Resolution: $\pm 0.05\%$ of input span</p> <p>Maximum Non-Linearity: $\pm 0.2\%$ as per SAMA PMC 20.1-1973</p> <p>Load Capability: 600 ohms at nominal 24Vdc</p> <p>Load Effect: $\pm 0.01\%$ of span from zero to maximum load</p> <p>RFI/EMI Effect: PIT (DIN) and PIF: With field strengths of 10 V/m at frequencies of 20-500MHz, less than $\pm 0.1\%$ span change; PIX: With field strengths of 30 V/m at frequencies of 20-500MHz, less than $\pm 0.1\%$ of span change</p>	<p>Performance (continued)</p> <p>Input: Instrument air only</p> <p>Pressure Limit: 150% full scale input pressure without damage</p> <p>Output Limit: 130% of output span</p> <p>Output Ripple: Negligible</p> <p>Line Voltage Effect: Less than $\pm 0.01\%$ of span per volt of line voltage change at the input terminals</p> <p>Ambient Temperature Range: -1.1°C to $+54^{\circ}\text{C}$ ($+30^{\circ}\text{F}$ to $+129.2^{\circ}\text{F}$)</p> <p>Effect: Less than $\pm 2.0\%$ of full scale input over above range</p> <p>Connections</p> <p>PIT (DIN-Style): 1/8-inch NPT female is standard, 1/8-inch NPT male is optional</p> <p>PIF: Pneumatic: 1/4-18 NPT female is standard, plastic tube fitting for 1/4-inch O.D. tubing is optional; Electrical: 1/2 NPT female (WP), M20 X 1.5 female (WPM)</p>	<p>Connections (continued)</p> <p>PIX (Hockey-Puck): Pneumatic: 1/4-inch NPT female</p> <p>PIX (EXI and EXIM): Pneumatic: 1/4-inch NPT female; Electrical: 1/2 NPT female (EXI); M20 x 1.5 female (EXIM)</p> <p>Adjustments</p> <p>Type: Multiturn adjustments (no interaction between span and zero adjustments)</p> <p>Span: Fully adjustable to 100% of output span</p> <p>Zero: Adjusts 0 to $\pm 10\%$ of span</p> <p>Weight</p> <p>PIT (DIN-Style and 4-Wire) and PIX (Hockey-Puck): 340 grams (12 ounces)</p> <p>PIX (EXI and EXIM): 1.25 kilograms (2 lbs., 13 oz.)</p> <p>PIF: 490 grams (1 lb., 1 oz.)</p>
--	---	--

Table 1. Unit Descriptions and Special Features.

Unit	Housing	Mounting Options	Special Features
PIT 2-Wire	Aluminum DIN-style housing (DIN)	Snaps on a G rail or Moore Industries DPR DIN-style rack	<ul style="list-style-type: none"> Only 1-inch wide, perfect for installation in a control room or field-mounted cabinet. Front panel LED varies in intensity with the level of the input signal. Available with pneumatic test jack (use with pneumatic test coupler P/N 163-202-00) and a removable terminal block. A wide range of certifications, including Intrinsic Safety, available.
PIX 2-Wire	Hockey-puck (HP, FL and P3LS) and Extruded Aluminum (EXI and EXIM) housings	Explosion-proof enclosures mount on a 2-inch pipe or surface; hockey-puck with flanges mounts on a relay track	<ul style="list-style-type: none"> Explosion-proof enclosures mount in rugged field environments. Models with a wide range of certifications, including explosion-proof and Intrinsic Safety, available. Explosion-proof versions have inherent 30V/m RFI/EMI protection.
PIF 2-Wire	NEMA 4X (IP55) Polyetherimide thermoplastic housing (WP and WPM)	Mounts (vertical or horizontal) on a 2-inch pipe or surface	<ul style="list-style-type: none"> Watertight, dust-tight, and corrosion-resistant; superior heat, flame (rated UL94V-0 flame retardant), impact and chemical resistance. Certifications, including Intrinsic Safety and Type N, available.
PIT 4-Wire	Standard housing (AB and WT)	Mounts on a surface or in a protective enclosure	<ul style="list-style-type: none"> Can be powered directly from a 117, 220, or 240Vac source.

PIT, PIF & PIX

Pressure-to-Current Transmitters

Ordering Information

Unit	Input	Output	Power	Options	Access	Housing
PIT 2-wire, DIN-style Housing	3-15PSIG 3-27PSIG .2-1BAR .2-1KGCM2 20-100KPA (special ranges available, consult factory for specification changes)	4-20MA (10-50mA also available)	12-24DC 12-28DC 12-30DC 12-42DC	-ISB BASEEFA approved Intrinsically-Safe (12-28DC power required) -ISC CSA approved Intrinsically- Safe (12-24DC power required) -ISF Factory Mutual approved Intrinsically-Safe (12-30DC power required) -RTB Removable Terminal Block Note: Standard unit is CSA approved explosion proof	See Table 2	DIN Aluminum DIN-style rail-mount housing WTP1 NEMA 4 enclosure for one or WTP2 for two PITs
PIX 2-wire, Hockey Puck Hous- ing (HP, FL, and P3LS) or Extruded Aluminum Housing (EXI and EXIM)	3-15PSIG 3-27PSIG .2-1BAR .2-1KGCM2 20-100KPA (special ranges available, consult factory for specification changes)	4-20MA (10-50mA also available)	12-24DC 12-28DC 12-42DC	-GA1 Pressure gauge offered as installed accessory (EXI and EXIM housings only) -ISB BASEEFA approved Intrinsically-Safe (12-28DC power required) -ISC CSA approved Intrinsically- Safe (12-24DC power required) -ISF Factory Mutual approved Intrinsically-Safe (12-42DC power required) -NE BASEEFA approved type N (EXI only; 12-42DC power req.) -PTJ Unit comes equipped with pneumatic test jack (EXI and EXIM housings only) -RO Reverse output whereby output decreases proportionally to input increase Note: Standard unit is Factory Mutual and CSA approved explosion proof	Not Required	EXI* Extruded aluminum explosion- proof housing (NPT conduit entry port) (FM Approved) EXI* Extruded aluminum explosion- proof housing (metric conduit entry port) (No FM) HP Hockey-puck housing with spring clips for mounting in an explosion-proof enclosure FL Hockey-puck housing with flanges for surface or relay track mounting P3LS* Hockey-puck housing in a 3-hub, solid cover, explosion-proof enclosure * When P suffix is added to the model number, unit comes equipped with U-bolts for mounting on a 2-inch pipe (e.g. P3LSP, EXIP, P3HS, P3HG) (see the EXPL housing sheet for details)
PIF 2-wire, Thermo- plastic Housing	3-15PSIG 3-27PSIG .2-1BAR .2-1KGCM2 20-100KPA (special ranges available, consult factory for specification changes)	4-20MA	12-28DC 12-42DC	-ISE BASEEFA approved Intrinsically-Safe (12-28DC power required) -NE BASEEFA approved type N, -RO Reverse output whereby output decreases proportionally to input increase -TF1 Plastic tubing fitting offered as installed accessory for 1/4-inch O.D. tubing	Not Required	WP* Polythertymide thermoplastic, NEMA 4X (IP55) housing with 1/2-inch NPT female wire entry threads WPM* Metric version of the housing with M20 x 1.5 female wire entry threads * When P suffix is added to the model number, unit comes equipped with U-bolts for mounting on a 2-inch pipe (e.g. WPP)
PIT 4-wire, Standard Housing	3-15PSIG 3-27PSIG .2-1BAR .2-1KGCM2 20-100KPA (special ranges available, consult factory for specification changes)	4-20MA (10-50mA also available)	117AC 220AC 240AC (50/60Hz, ±10%)	-4W Required option for PIT 4-wire -BF Female bulkhead fitting (1/4-inch NPT) -RF RFI/EMI protection rated 50V/m - ABC = ±0.1% when tested according to SAMA Standard PMC 33.1	Not Required	AB Standard housing with angle flanges for surface mounting (see the AB housing sheet for details) WT AB housing mounted in water- tight, NEMA 4 enclosure (-BF option required) * When P suffix is added to the model number, unit comes equipped with U-bolts for mounting on a 2-inch pipe (e.g. WPP)

To order, specify: Unit / Input / Output / Power / Access (PIT DIN-style only) / Options [Housing]

Model Number Examples: PIT / 3-15PSIG / 4-20MA / 12-42DC / -FA1 [DIN], PIF / 3-15PSIG / 4-20MA / 12-42DC / -TF1 [WP]

PIX / 3-15PSIG / 4-20MA / 12-42DC [WP], PIT / 3-15PSIG / 4-20MA / 117AC / -4W [AB]

PIT, PIF & PIX

Pressure-to-Current Transmitters

Figure 2. PIT DIN-Style Housing Dimensions

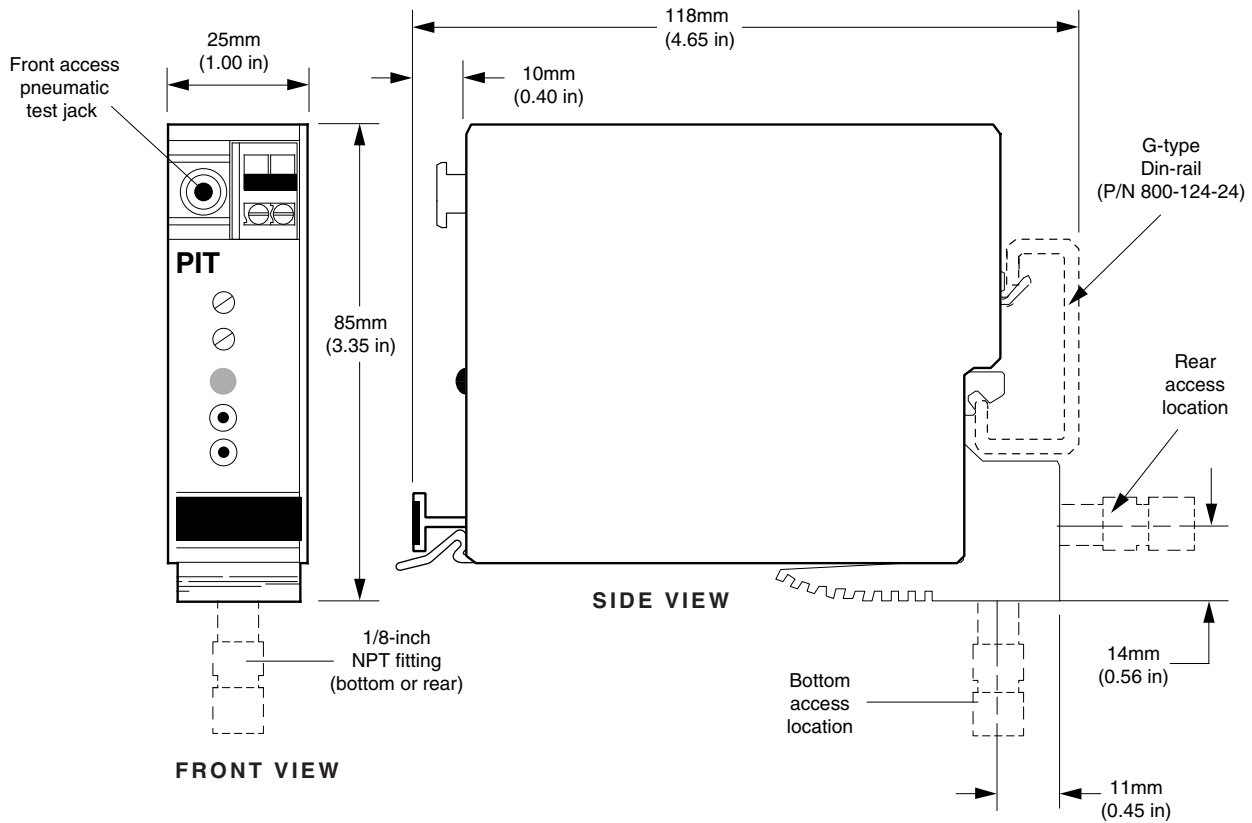


Figure 3. G-Type Mounting Rail (P/N 800-124-24, Specify Length)

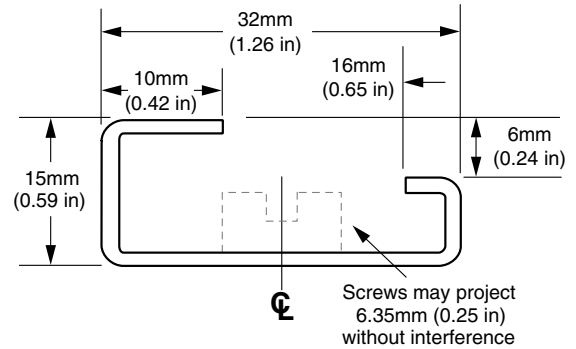


Figure 4. Test Coupler (P/N 163-202-00) for units with pneumatic test jack

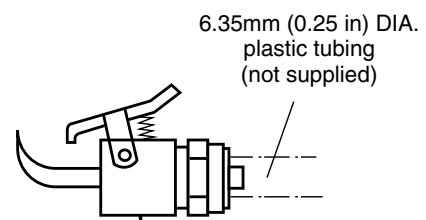


Table 2. Access Designations for DIN housing

Electrical Output Location	Pneumatic Input Location	Pneumatic Test Jack Location	Access Designation
Front	Bottom	None	-FA1
Front	Rear	None	-FA2
Front	Bottom	Front	-FA3
Front	Rear	Front	-FA4
Front	(no mtg. block)	None	-FA7
Front	(no mtg. block)	Front	-FA8
Rear	Rear	None	-RA1
Rear	Bottom	None	-RA2
Rear	Rear	Front	-RA3
Rear	Bottom	Front	-RA4
Rear	Rear	Rear	-RA5
Rear	Bottom	Rear	-RA6
Rear	(no mtg. block)	None	-RA7
Rear	(no mtg. block)	Front	-RA8
Rear	(no mtg. block)	Rear	-RA9

PIT, PIF & PIX

Pressure-to-Current Transmitters

Figure 5. Up to 16 high-density DIN-style PIT's mount on a DPR Multi-Unit Rack

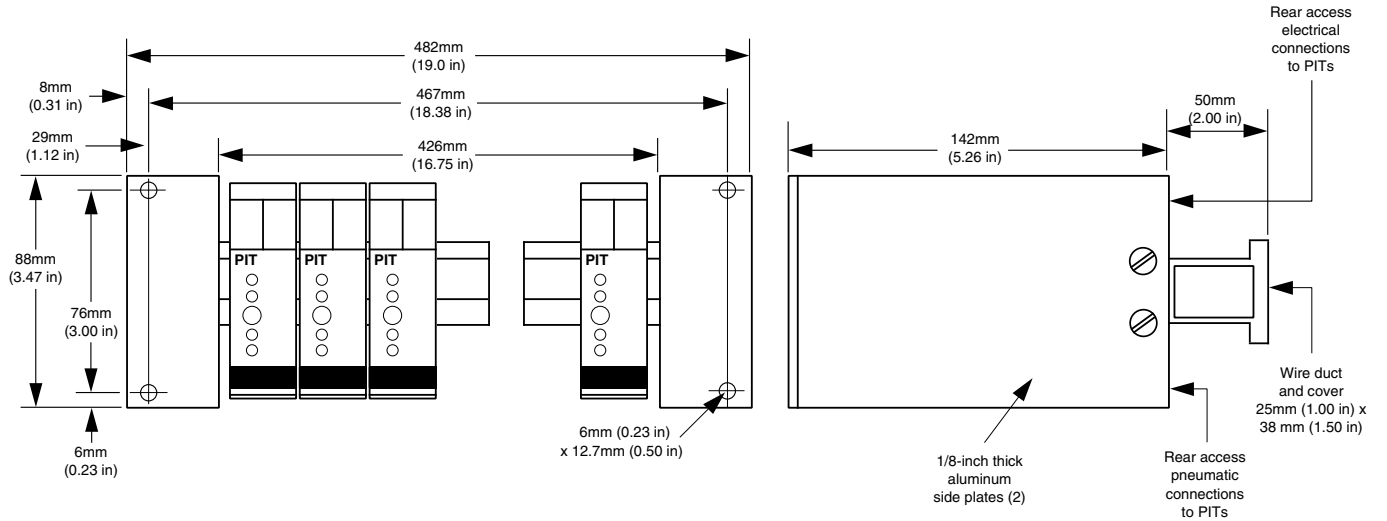
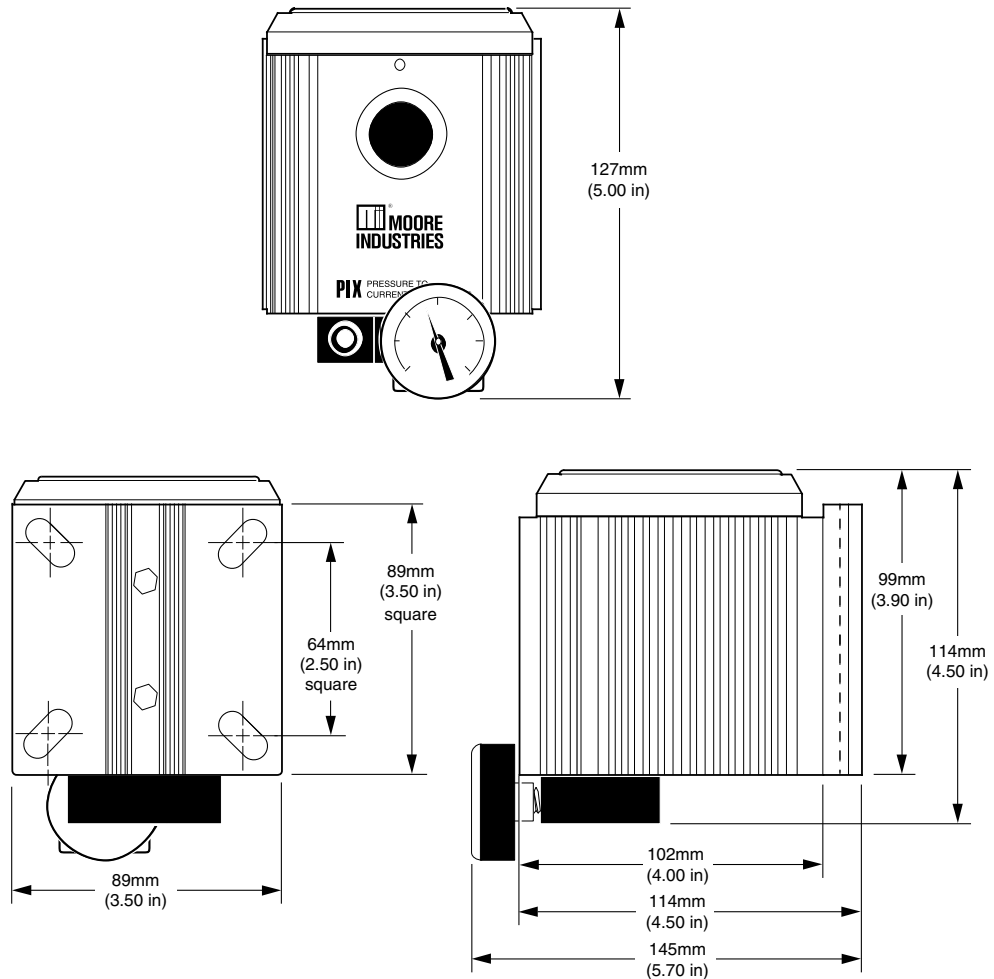


Figure 6. EX1 and EXIM Housing Dimensions



PIT, PIF & PIX

Pressure-to-Current Transmitters

Figure 7. Hockey-Puck Housing Dimensions

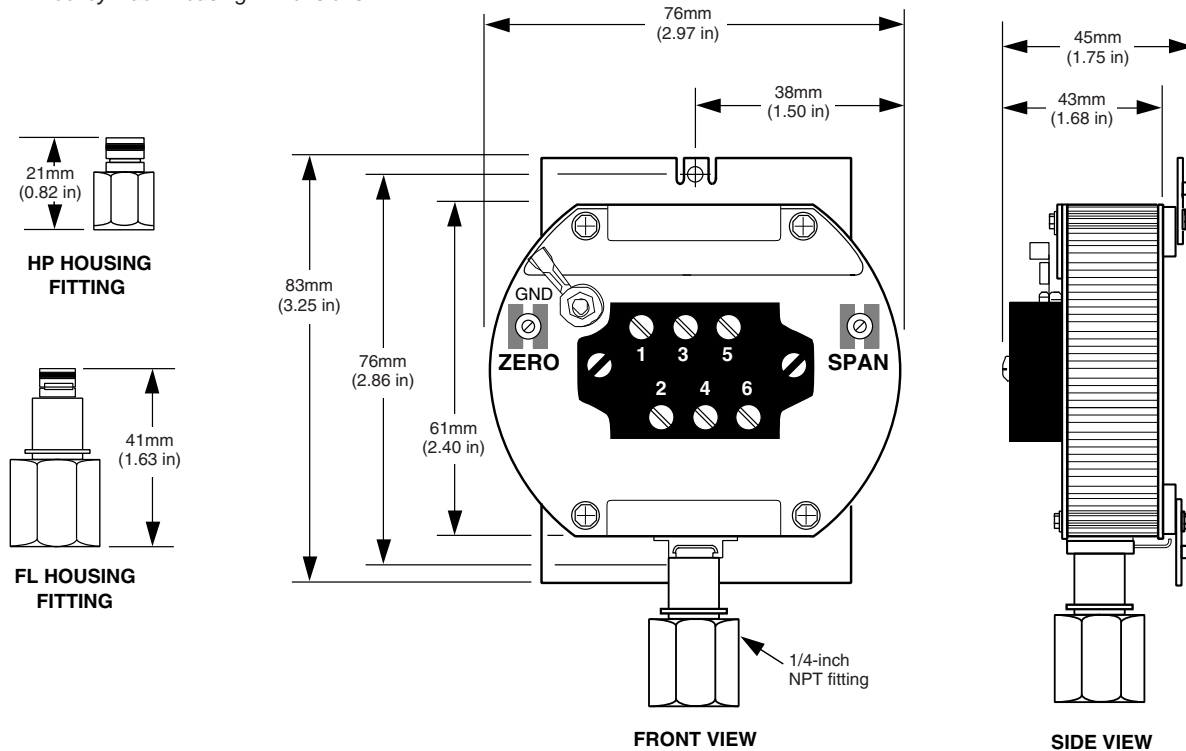
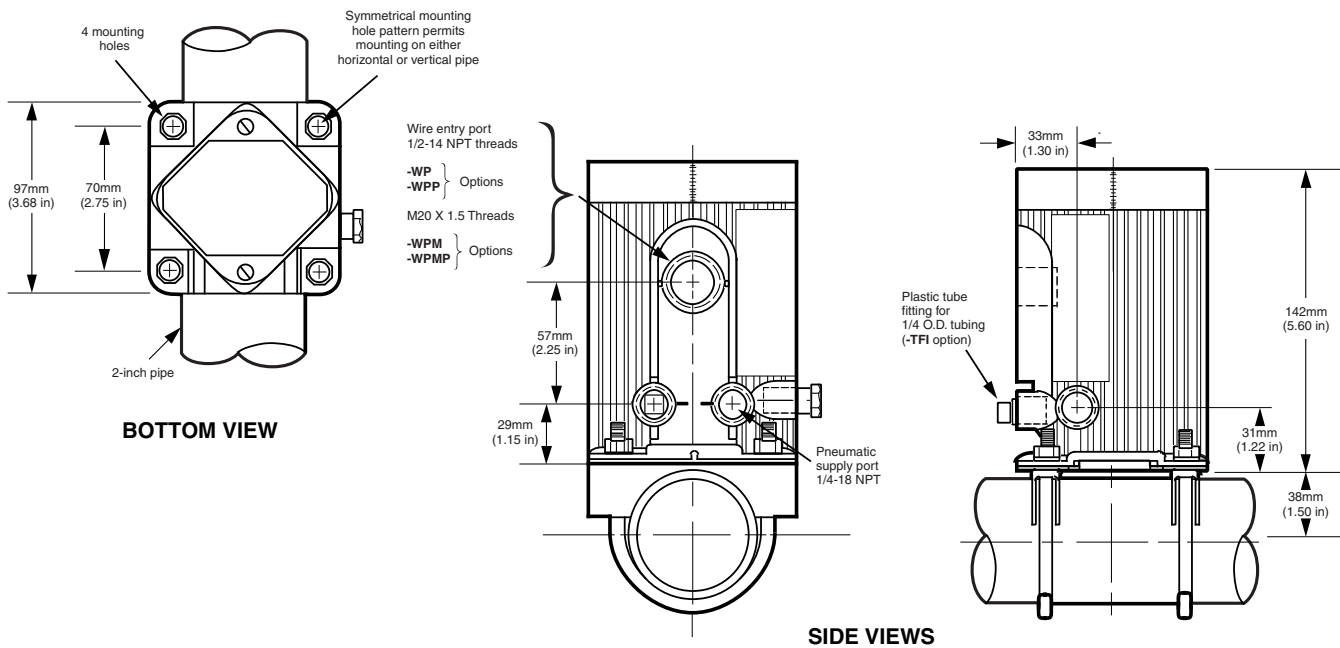


Figure 8. WP and WPM Housing Dimensions



United States • info@miinet.com
Tel: (818) 894-7111 • FAX: (818) 891-2816
Australia • sales@mooreind.com.au
Tel: (02) 8536-7200 • FAX: (02) 9525-7296

Belgium • info@mooreind.be
Tel: 03/448.10.18 • FAX: 03/440.17.97
The Netherlands • sales@mooreind.nl
Tel: (0)344-617971 • FAX: (0)344-615920

China • sales@mooreind.sh.cn
Tel: 86-21-62491499 • FAX: 86-21-62490635
United Kingdom • sales@mooreind.com
Tel: 01293 514488 • FAX: 01293 536852