MOORE INDUSTRIES WORLDWIDE

PIT, PIF & PIX

Pressure-to-Current Transmitters

July 2023

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.

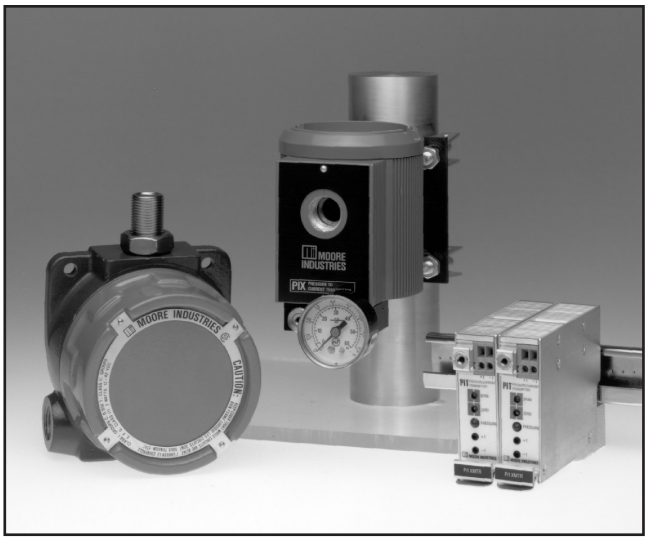
Certifications

Factory Mutual Research Corporation (FMRC)
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]

CE Conformant –
EMC Directive 2014/30/EU
EN61326



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

Features

- **Immune to shock, vibration and position.** Perform with exceptional accuracy (±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.

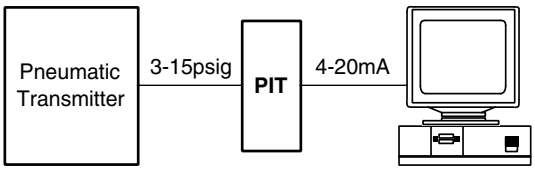


***Figure 1.** Pneumatic Transmitter to Computer System Interface.*

PIT, PIF & PIX

Pressure-to-Current Transmitters

Specifications

Performance

Calibration Capability: Error shall not exceed ±0.2% of span including independent linearity as defined in SAMA Standard PMC 20.1–1973
Repeatability: Within ±0.1% of input span
Resolution: ±0.05% of input span
Maximum Non-Linearity: ±0.2% as per SAMA PMC 20.1–1973
Load Capability: 600 ohms at nominal 24Vdc
Load Effect: ±0.01% of span from zero to maximum load
RFI/EMI Effect: PIT (DIN) and PIF: With field strengths of 10 V/m at frequencies of 20-500MHz, less than ±0.1% span change; PIX: With field strengths of 30 V/m at frequencies of 20-500MHz, less than ±0.1% of span change

Performance (continued)

Input: Instrument air only
Pressure Limit: 150% full scale input pressure without damage
Output Limit: 130% of output span
Output Ripple: Negligible
Line Voltage Effect: Less than ±0.01% of span per volt of line voltage change at the input terminals

Ambient Temperature

Range: –1.1°C to +54°C (+30°F to +129.2°F)
Effect: Less than ±2.0% of full scale input over above range

Connections

PIT (DIN-Style): 1/8-inch NPT female is standard, 1/8-inch NPT male is optional
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)

Connections (continued)

PIX (Hockey-Puck): Pneumatic: 1/4-inch NPT female
PIX (EXI and EXIM): Pneumatic: 1/4-inch NPT female; Electrical: 1/2 NPT female (EXI); M20 x 1.5 female (EXIM)

Adjustments

Type: Multiturn adjustments (no interaction between span and zero adjustments)
Span: Fully adjustable to 100% of output span
Zero: Adjusts 0 to ±10% of span

Weight

PIT (DIN-Style and 4-Wire) and PIX (Hockey-Puck): 340 grams (12 ounces)
PIX (EXI and EXIM): 1.25 kilograms (2 lbs., 13 oz.)
PIF: 490 grams (1 lb., 1 oz.)

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-Type and Top Hat DIN Rails or Moore Industries DPR DIN-style rack	• 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	• Explosion-proof enclosures mount in rugged field environments. • Models with a wide range of certifications including explosion-proof 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	• Watertight, dust-tight, and corrosion-resistant; superior heat, flame (rated UL94V-0 flame retardant), impact and chemical resistance.
PIT 4-Wire	Standard housing (AB and WT)	Mounts on a surface or in a protective enclosure	• Can be powered directly from a 117, 220, or 240Vac source.

Ordering Information

Unit	Input	Output	Power	Options	Housing
PIT 2-wire, DIN-style Housing	**0-5PSIG** **0-7PSIG** **0-10PSIG** **0-15PSIG** **0-27PSIG** **0-30PSIG** **0-60PSIG** **0-100PSIG** **3-15PSIG** **3-27PSIG** **5-25PSIG** **6-30PSIG** **10-50PSIG** **.2-1BAR** **.4-2BAR** **0-6BAR** **20-100KPA** **20-186KPA** **0-500KPA** **.02-.10MPA** **.2-1KGCM2** **0-30INHG** (special ranges available, consult factory for specification changes)	**4-20MA** (10-50mA also available)	**12-24DC** **12-30DC** **12-42DC**	**-FA*** **-RA*** **-RTB** Removable Terminal Block * 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 Housing (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** **12-42DC**	**-GA1** Pressure gauge offered as installed accessory (EXI and EXIM housings only) **-ISC**** CSA approved Intrinsically-Safe (12-24DC power required) **-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 ** -IS options not available with HP housing	**EXI*** Extruded aluminum explosion-proof housing (NPT conduit entry port) (FM Approved) **EXIM*** 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) ** -IS options not available with HP housing
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**	**12-42DC**	**-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	**WP*** Polyetherimide 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 **-FA*** **-BF** Female bulkhead fitting (1/4-inch NPT) **-RA*** * See Table 2	**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 / Options [Housing]
Model Number Examples: PIT/3-15PSIG/4-20MA/12-42DC/-FA7 [DIN], PIF / 3-15PSIG / 4-20MA / 12-42DC / -TF1 [WP]
PIX / 3-15PSIG / 4-20MA / 12-42DC [EXI], PIT / 3-15PSIG / 4-20MA / 117AC / -4W [AB]

Figure 2. *PIT DIN-Style Housing Dimensions*

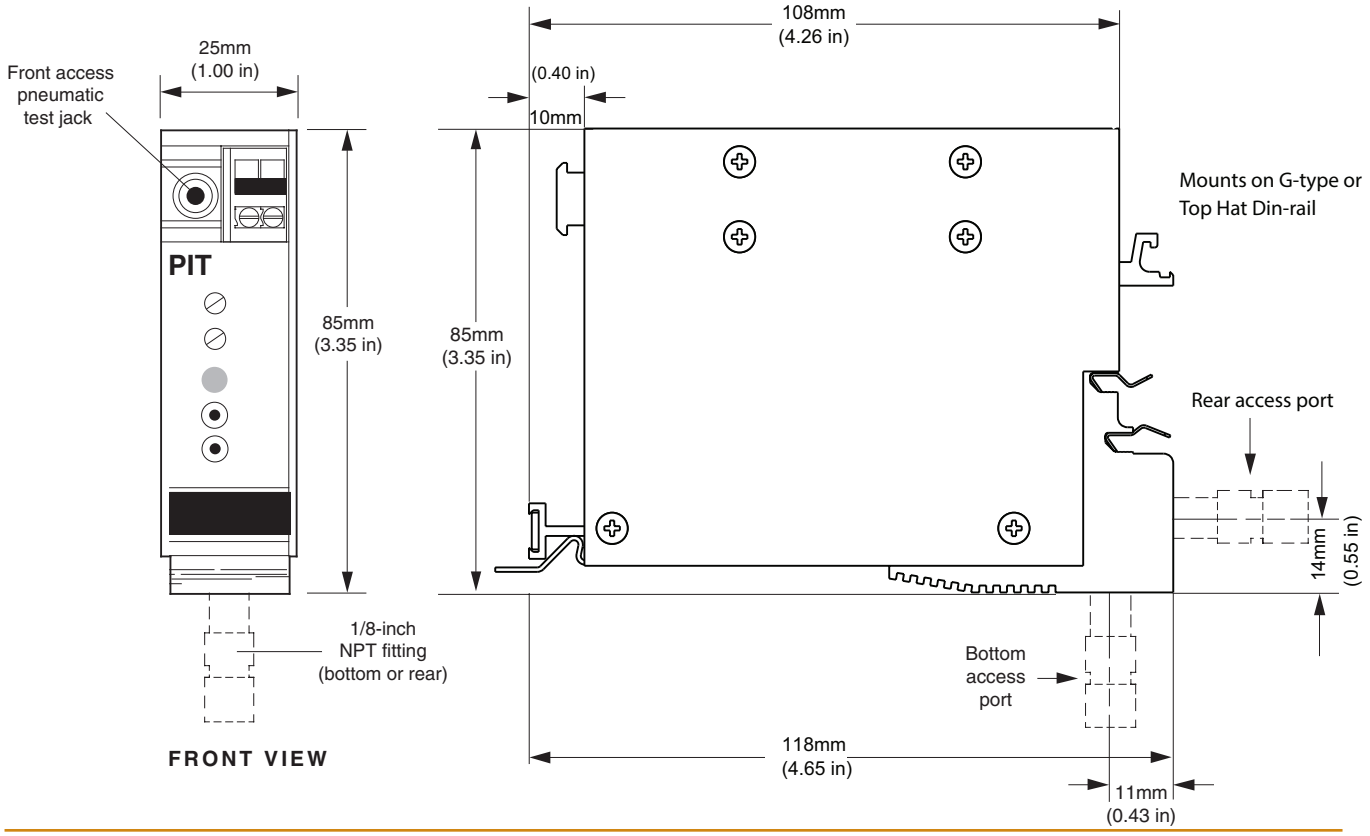


Table 2. *Access Designations for DIN housing*

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

Figure 3. *Test Coupler (P/N 163-202-00) for units with pneumatic test jack*

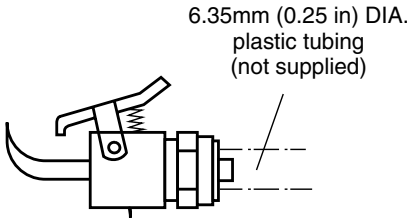


Figure 4. *Up to 16 high-density DIN-style PIT's mount on a DPR Multi-Unit Rack*

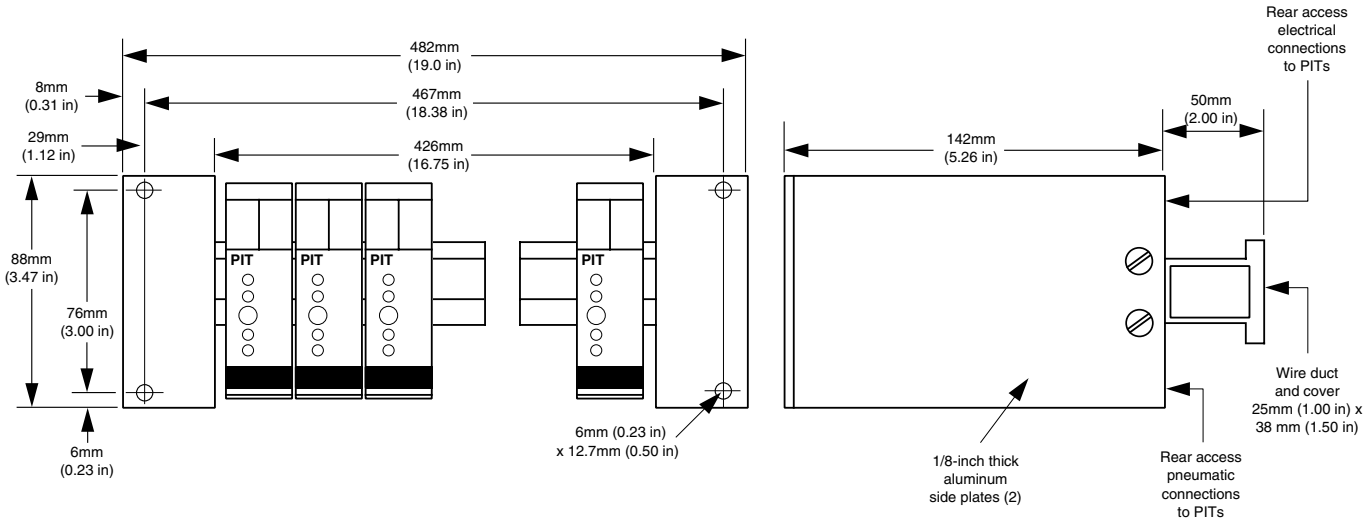


Figure 5. *EXI and EXIM Housing Dimensions*

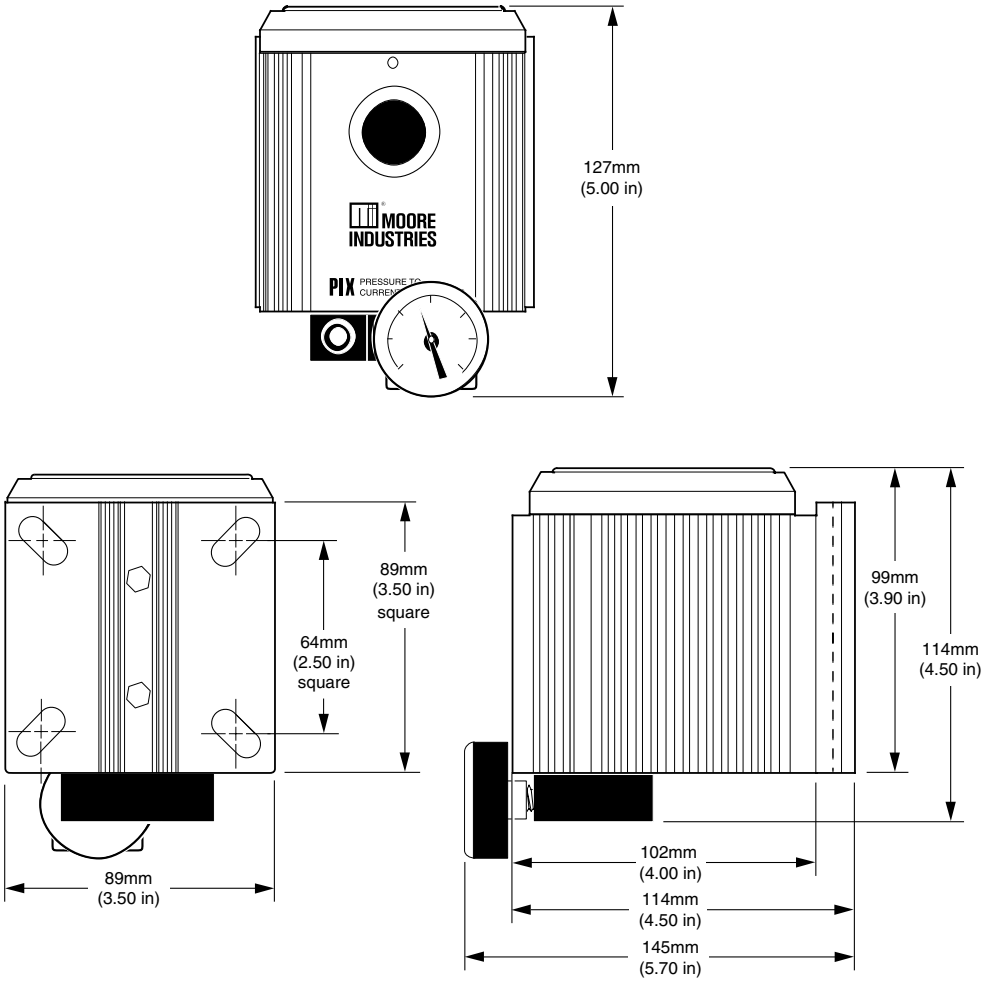


Figure 6. *Hockey-Puck Housing Dimensions (PIX Model Shown)*

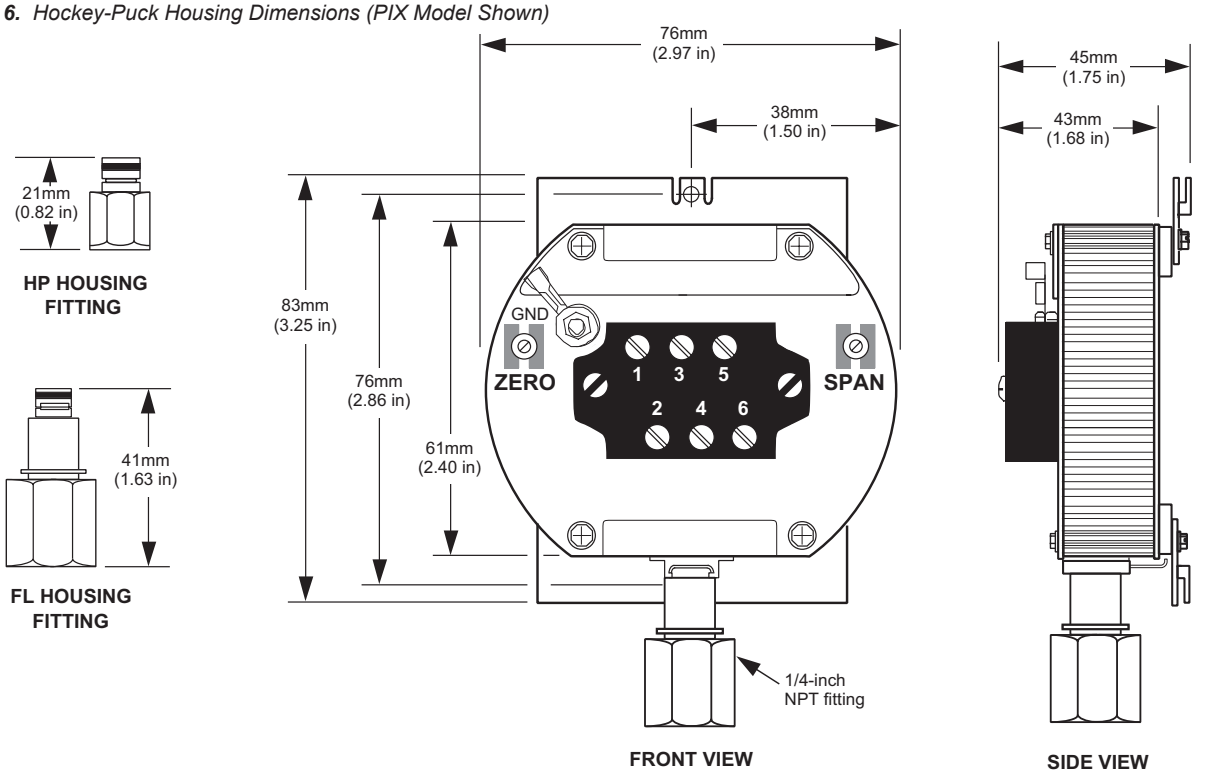


Figure 7. *WP and WPM Housing Dimensions - PIX shown*