

April 2016

## Description

The high-performance IPT<sup>2</sup> Current-to-Pressure (I/P) Transmitter converts a current signal to a pneumatic signal so that an electronic-based system such as a DCS, PLC, or PC can control a pneumatic actuator, valve, or damper drive. Available models accept a wide range of current inputs (4-20mA, 4-12mA, and 12-20mA) and provide a proportional pneumatic signal (3-15psig, 0.2-1 Bar, 20-100kPA, etc.).

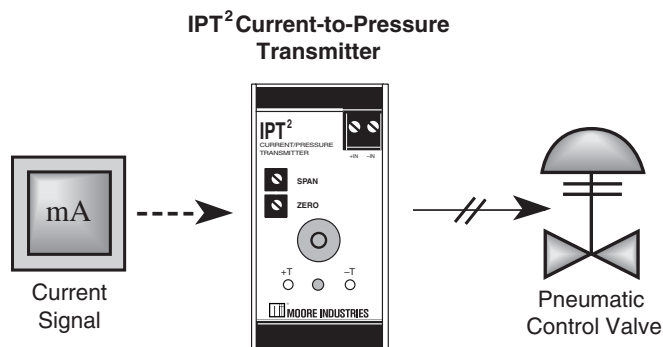
The IPT<sup>2</sup> is available in a compact, 40mm wide aluminum housing that can be conveniently snapped onto a standard mounting rail or Moore Industries pneumatic header rack (such as the RIR and SIR, shown in Figure 4).

Standard features that raise the IPT<sup>2</sup> above the competition include a front panel LED that varies in intensity to reflect the strength of the input current and a built-in orifice cleaning mechanism that eliminates potentially messy clogs. Time-saving equipment such as a pneumatic test jack that simplifies calibration and maintenance is also available.



The IPT<sup>2</sup> pneumatic mounting block allows the unit to be easily snapped onto a DIN rail for high density installation.

Figure 1. A typical IPT<sup>2</sup> application.



### Certification



**CE Conformant** – EMC Directive 2014/30/EU EN61326



**FM Approvals (FM Global):**  
**Non-Incendive**  
 Class I, Division 2, Groups A, B, C and D  
 Temperature Class T5, Tamb = -40°C to +80°C

## Features

- **Wide variety of output and air supply choices.** Choose one of 18 different standard output pressure ranges or contact the Interface Solution Center nearest you for custom ranges.
- **Enhanced circuit design.** Closed loop design delivers quick response to step changes, enhances accuracy, and reduces drift.
- **Low air consumption and high output volume.** The IPT<sup>2</sup> outputs at least 2.0 SCFM while consuming just 0.08 SCFM.
- **High accuracy.** With an accuracy of  $\pm 0.25\%$  of span and a six-month stability rating, you can be confident that the IPT<sup>2</sup> will provide you with an accurate signal for a long time to come.
- **Immune to supply pressure variation.** The IPT<sup>2</sup> maintains its incredible accuracy even when the supply pressure fluctuates between 20 and 40psi.
- **Clog-resistant design.** A larger orifice with an external plunger for cleaning the orifice, provides excellent protection against clogging.
- **Clean start-up.** A valuable feature in cold weather conditions, an advanced mechanical assembly prevents “sticking” upon instrument restart-up.
- **RFI/EMI protection.** Special circuit and housing designs protect against the harmful and unpredictable effects of radio frequency and electromagnetic interference.

# IPT<sup>2</sup>

## Current-to-Pressure (I/P) Transmitter

### Specifications

<p><b>Performance Accuracy:</b> <math>\leq \pm 0.25\%</math> of span including the combined effect of linearity, hysteresis, and repeatability (between 0.5 and 3psi output, error will not exceed <math>\pm 1.0\%</math> of span)</p> <p><b>Stability:</b> Not to degrade from stated accuracy for six months</p> <p><b>Step Response:</b> <math>&lt; 0.2</math> seconds into 100 M.L. load (6 cubic inches) at 90% output span</p> <p><b>Supply Pressure Effect:</b> Negligible from 20-40psig, steady pressure</p> <p><b>Air Consumption:</b> 0.08 SCFM, typical (0.18 kg/hr)</p> <p><b>Air Capacity:</b> Minimum 2.0 SCFM</p> <p><b>Air Supply:</b> Instrument air only, 20-40psig. (Must be 5psig greater than maximum output)</p>	<p><b>Performance (Continued) Voltage Drop:</b> 7.5V, maximum (5V maximum without LED)</p> <p><b>Mounting Position Effect:</b> Negligible, unit can be mounted in any position</p> <p><b>Shock and Vibration Effect:</b> 0.25%/G or better over 5-15Hz; meets SAMA PMC 31.3</p> <p><b>Ambient Conditions Operating &amp; Storage Range:</b> <math>-40^{\circ}\text{C}</math> to <math>+80^{\circ}\text{C}</math> <math>-40^{\circ}\text{F}</math> to <math>+176^{\circ}\text{F}</math></p> <p><b>Ambient Temperature Effect:</b> <math>&lt; \pm 0.025\%</math> of span/<math>^{\circ}\text{C}</math>, max from <math>0^{\circ}\text{C}</math> to <math>50^{\circ}\text{C}</math>; <math>&lt; \pm 0.1\%</math> of span/<math>^{\circ}\text{C}</math>, max</p> <p><b>RFI/EMI Effect:</b> <math>&lt; \pm 0.1\%</math> of span change at 50V/m @ 20-1000MHz</p> <p><b>Adjustments Zero &amp; Span:</b> Screw adjusts zero or span by <math>\pm 10\%</math> minimum, non-interactive</p>	<p><b>Connections Electrical:</b> Removable front-mounted terminal blocks, 22-14 AWG</p> <p><b>Pneumatic:</b> 1/8-inch NPT female for both supply air and output air on units with optional mounting block</p> <p><b>Pneumatic Test Jacks:</b> Monitors output pressure during calibration</p> <p><b>Current Test Jacks:</b> Input current test jacks (labeled +T, -T) for calibration; accepts 2mm (0.08 in) dia x 13mm (.50 in) long phone tip plugs (handles should be less than 8mm (0.32 in) in diameter)</p> <p><b>Indicators LED:</b> Red light-emitting diode indicates presence and intensity of electrical input signal</p> <p><b>Weight</b> 438g (15.6 oz)</p>
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### Need Additional Accessories?

**Surface- & Rack-Mounted Racks.** Our SIR and RIR multi-unit racks are the answer when you need to cost-effectively mount a row of our IPT<sup>2</sup> units on a surface, rack, or cabinet.

These racks eliminate the wasted time and unnecessary cost of using an individual pneumatic mounting block and piping for each unit. Only one air supply pipe is needed to efficiently handle an entire rack of up to fifteen units. Both racks feature self-sealing pneumatic connections that let you put units in and out of service without air loss.

**Pneumatic Test Accessories.** Moore Industries provides high quality test couplers, gauges, adapters, and clips. See Table 1 for ordering information.

**P/I Converters.** Need a reliable instrument to convert your pressure signal to an easily transmitted electrical signal? We have the solution!

### Signal Isolators/Converters, Temperature Transmitters, Alarm Trips, and more!

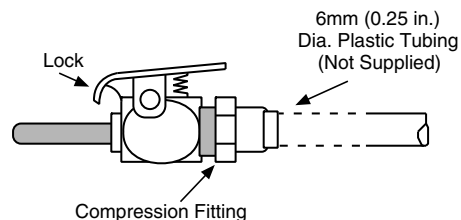
Moore Industries has a variety of complete lines of high quality instruments to meet your process requirements.

Table 1. Additional accessories table.

Part Number	Accessory Name
163-202-00	Pneumatic Test Coupler for test jack
801-868-75	*Gauge, 1" diameter, 0-30 psi, mounts on pneumatic test jack
204-270-09	*Gauge adapter
204-270-10	*Gauge adapter clip

\*All three parts are required for use with the Pneumatic Test Coupler

Figure 2. Pneumatic Test Coupler P/N 163-202-00.



NOTE:

1. The pneumatic test coupler is used to monitor output pressure during calibration on units with an optional pneumatic test jack.

### Ordering Information

Unit	Input	Output*	Supply Pressure**	Options	Housing
IPT2 DIN-Style Current-to- Pressure Transmitter	4-20MA	0-20PSIG	25PSI	<b>*Access Designation (Required Selection):</b> -FA1 -FA2 -FA3 -FA4 -FA5 -FA6 -FA7* (Required for WTI Housing) -FA8* (Required for WTI Housing) -FA9 -FA10 -FA11 -FA12  † See Table 2 for more information * Also for use with SIR or RIR rack installation  -VTD Standard Factory Calibration with NIST Test Data Report	DIN Aluminum, DIN-style housing assembly WTI Rain-proof as defined by NEMA 3R (-FA7 or -FA8 required) WTIP Rain-proof as defined by NEMA 3R with plate and u-bolts for 2" pipe mounting
	4-12MA	1-17PSIG	25PSI		
	12-20MA	3-15PSIG	20PSI		
	into	3-16.6PSIG	25PSI		
	375 ohms	3-18PSIG	25PSI		
	maximum	3-27PSIG	35PSI		
	(250	6-30PSIG	35PSI		
	ohms	.2-1BAR	1.4BAR		
	maximum	20-100KPA	140KPA		
	for units	.2-1KGCM2	1.4KGCM2		
	without	.02-.10MPA	.14MPA		
	LED)	Reverse Output:			
	Custom	20-0PSIG	25PSI		
	ranges also	17-1PSIG	25PSI		
	available.	15-3PSIG	20PSI		
		16.6-3PSIG	25PSI		
		18-3PSIG	25PSI		
		27-3PSIG	35PSI		
		30-6PSIG	35PSI		
		1-.2BAR	1.4BAR		
	100-20KPA	140KPA			
	1-.2KGCM2	1.4KGCM2			
	.10-.02MPA	.14MPA			
	*The unit's output must match the supply pressure to its right.				
	**Supply Pressure must be at least 5psi (0.3 Bar) higher than output pressure.				

**When ordering, specify:** Unit / Input / Output / Supply Pressure / Options [Housing]  
**Model number example:** IPT2 / 4-20MA / 3-15PSIG / 20PSI / -FA1 [DIN]

**Table 2.** Description of access designation options. (See Figure 3 for illustration)

Option	LED & Current Test Jacks	Electrical Input Location	Pneumatic Output Supply Location	Pneumatic Test Jack Location
-FA1	Yes	Front	Bottom	None
-FA2	Yes	Front	Rear	None
-FA3	Yes	Front	Bottom	Front
-FA4	Yes	Front	Rear	Front
-FA5	None	Front	Bottom	None
-FA6	None	Front	Rear	None
-FA7	Yes	Front	No mounting block	None
-FA8	Yes	Front	No mounting block	Front
-FA9	None	Front	No mounting block	None
-FA10	None	Front	No mounting block	Front
-FA11	None	Front	Bottom	Front
-FA12	None	Front	Rear	Front

# IPT<sup>2</sup>

## Current-to-Pressure (I/P) Transmitter

Figure 3. IPT<sup>2</sup> dimensions.

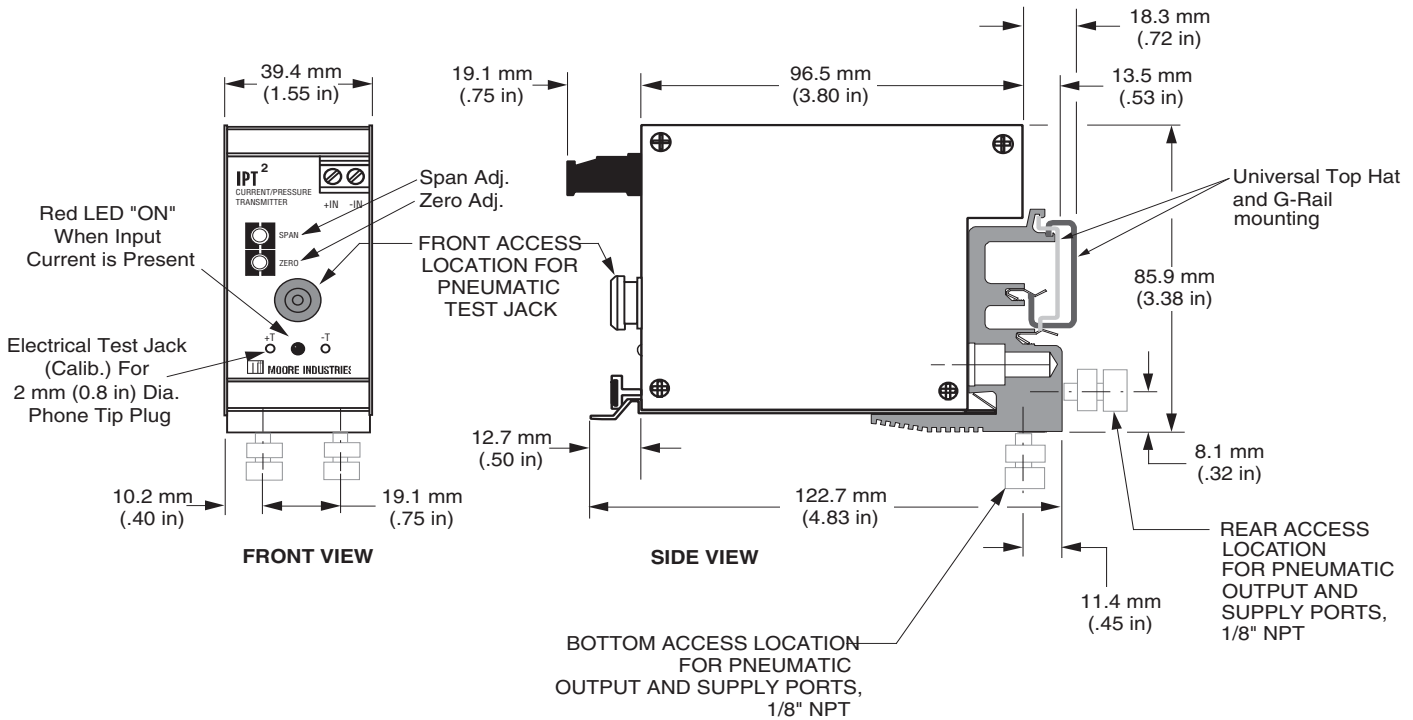
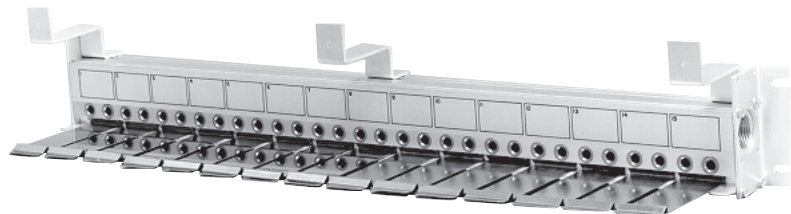
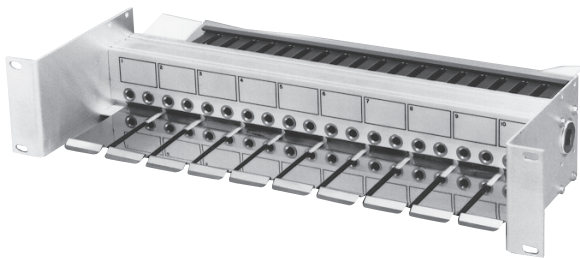


Figure 4. The SIR and RIR mounting racks allow you to mount a large number of IPT<sup>2</sup> units in a small space.

SIR, 5-, 10-, or 15-Position Surface-Mounted Rack (15-Position Rack Shown)



RIR, 10-Position Rack-Mounted Rack



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