



P/I INSTALLATION AND OPERATING INSTRUCTIONS

MOUNTING

The P/I is equipped with two 10-32 mounting holes on the base. A stainless bracket is available to mount the unit to a wall or panel rack. Another option is to support the transmitter with a 1/8" NPT nipple connection to the process being measured.

The NEMA 4 construction of the all-stainless P/I permits mounting in almost any environment, indoors or outdoors. The device is virtually insensitive to mounting attitude and requires only conventional care in mounting and usage. However, be sure to allow approximately 4" of clearance for cover removal.

WIRING

The P/I is a fully-floating, two-wire transmitter. Although not galvanically isolated, the P/I loop can be grounded at any single point as shown in the attached wiring diagrams. The ground point selected must be compatible with the user's existing load or supply grounds. Only one ground within the 2-wire loop may exist.

Refer to the Terminal Head description for a wiring guide. Removal of the cover provides access to the terminal strip shown. This arrangement provides for the monitoring of the loop current without disturbing the field wiring when a milliammeter is placed across the TEST and -IN terminals.

For P/I units without the terminal head, a two-conductor cable with ground wire is furnished. Current enters the red wire (+IN) and exits the black wire (-IN).

An earth connection should be made to the ground lead within the cable in order to maintain a safety ground to the case. This ground connection is to be considered a chassis earth and does not interfere with the placement of a system loop ground discussed earlier.

P/I CALIBRATION

Depress the detent pin and work the cover free to gain access to the signal conditioner. Change of range can be accomplished by using the tabulated span range corresponding to the span desired. The desired span should be compared to the figures given beneath the specific sensor designation in the tables below. Reading horizontally to the right, the switch settings are given for each span range. When more than one combination of switch settings satisfies the required span, select the one with the highest range number, shown horizontally to the left.

Proceeding to fine calibration, apply zero-scale pressure to the P/I and adjust the Zero potentiometer to yield an output of 4.00 mA. Next, apply full-scale pressure and adjust the Span potentiometer to yield an output of 20.00 mA. Although Zero, Span, and the switches are almost totally noninteractive, one more adjustment of the Zero and Span potentiometers will provide the most precise calibration. It is acceptable for the Span potentiometer to be near, but not at, the clockwise extreme when calibration is complete because the switches can always be re-adjusted if another calibration is ever desired.

If clockwise, Span does not provide enough output current, re-adjust the switches to the next lower range number in the table; if counterclockwise, Span gives too much output current, re-adjust the switches to the next higher range number in the table.

Example: If the desired range is 0-11.60 PSIG (11.60 PSIG span) and a 15 PSIG sensor is used, three combinations of switch settings will work. Under the 15 PSIG sensor column in the table below, 11.60 PSIG falls within the second, third and fourth ranges. Selecting the fourth tabulated setting, both switches OPEN, gives the greatest calibration resolution (and best time and temperature stability) but the lowest rangeability from the Span potentiometer. This fourth setting will also leave the Span potentiometer, after subsequent adjustment, permissibly near the clockwise end of the range.

MAINTENANCE

The P/I is NEMA 4, all stainless construction, reverse polarity protected, RFI protected (terminal head version), output current limited, short circuit protected and extremely rugged. To obtain optimum service, please read the attached Installation and Operating Hints attached to these instructions.

COARSE SPAN CALIBRATION SETTINGS

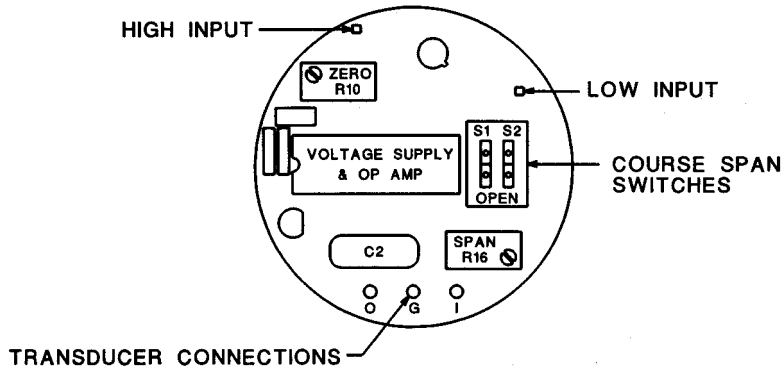
POSITIVE RANGES		SENSOR NUMBER AND SPAN RANGE						Switch Positions	
RANGE NO.	5108 84"WC	5006 140"WC	5009 15 PSIG	5010 30 PSIG	5012 100 PSIG	5056 200 PSIG	5014 300 PSIG	S1	S2
1	30-35"	40-64"	4.2-6.9#	8.4-13.8#	29-46#	58-92#	85-138#	Closed/On	Closed/On
2	36-55"	60-109"	6.4-11.7#	12.9-23.4#	43-78#	86-156#	129-234#	Closed/On	Open/Off
3	54-79"	84-154"	9.0-16.5#	18.0-33.0#	60-110#	120-220#	180-330#	Open/Off	Closed/On
4	75-99"	108-168"	11.5-18#	23.1-36#	77-120#	154-240#	231-360#	Open/Off	Open/Off

POSITIVE RANGES		SENSOR NUMBER AND SPAN RANGE							Switch Positions	
RANGE NO.	GB12W 42"WC	GB14W 84"WC	GB16W 160"WC	GB20W 15 PSIG	GB22W 30 PSIG	GB24W 60 PSIG	GB28W 150 PSIG	GB30W 300 PSIG	S1	S2
1	10-14.5"	20-28"	35-57"	86-138"	6-10.1#	12-20#	29-49.5#	60-102#	Closed/On	Closed/On
2	14.25-22"	28-45"	55-96"	137.5-238"	9.6-17#	20.2-34#	49.3-84#	100-164#	Closed/On	Open/Off
3	21-31"	45-65"	80-130"	205-335"	14.5-24#	29-48#	74.5-120#	145-243#	Open/Off	Closed/On
4	27-44"	65-87"	105-175"	260-435"	18.5-31.3#	37.5-63#	94.3-155#	185-307#	Open/Off	Open/Off

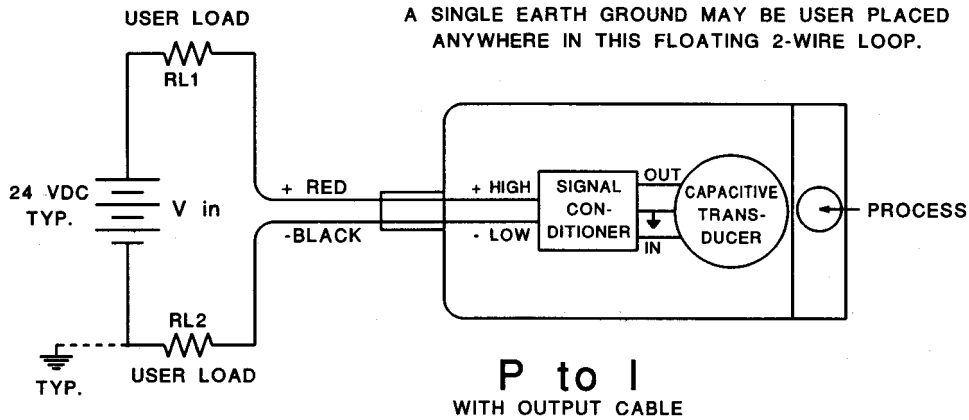
VACUUM RANGES		SENSOR NUMBER AND SPAN RANGE				Switch Positions	
RANGE NO.	5078 NEG. 3 PSIG	5107 NEG. 14 PSIG	5030 15 PSIA	5031 30 PSIA	5029 50 PSIA	S1	S2
1	-0.87 to -1.38	-4.0 to -6.2	4.2-6.9	8.4-13.8	14.5-23.0	Closed/On	Closed/On
2	-1.29 to -2.34	-6.0 to -10.0	6.4-11.7	12.9-23.4	21.5-39.0	Closed/On	Open/Off
3	-1.80 to -3.30	-8.5 to -13.5	9.0-16.5	18.0-33.0	30.0-55.0	Open/Off	Closed/On
4	-2.31 to -3.75	-11.3 to full vacuum	11.5-18.0	23.1-36.0	38.5-60.0	Open/Off	Open/Off

SIGNAL CONDITIONER FOR MINI PT-EL, PT-EL & P to I

(150% ACTUAL SIZE)

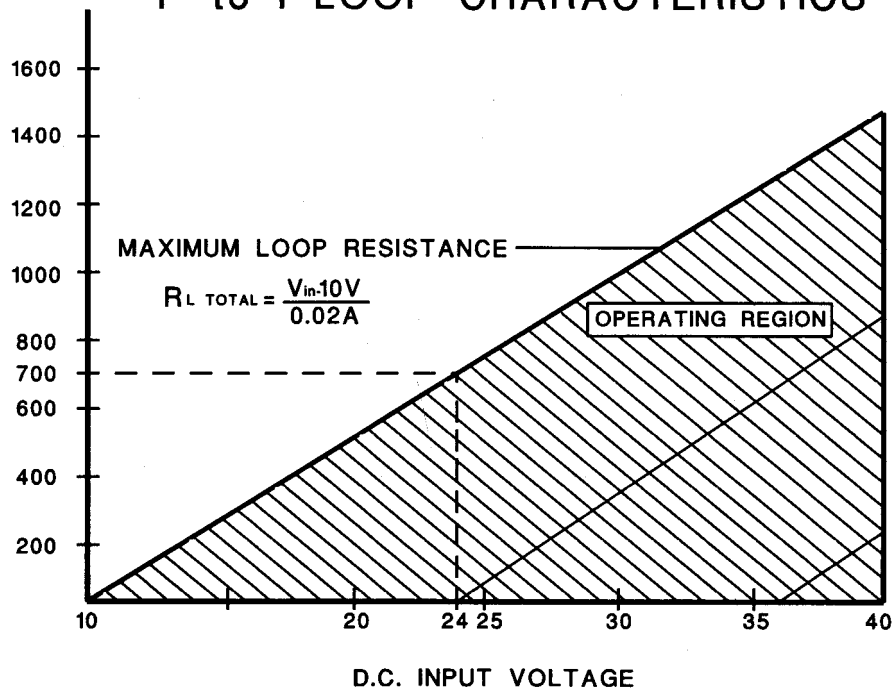


WIRING DIAGRAM



TOTAL LOOP
RESISTANCE
OHMS

P to I LOOP CHARACTERISTICS





PAPER MACHINE COMPONENTS, INC.

P TO I TERMINAL HEAD

PMC ELECTRONIC TRANSMITTER

MIRY BROOK ROAD, DANBURY, CONNECTICUT, U.S.A. 06810 ~ Tel. (203) 792-8686 Fax (203) 743-2051

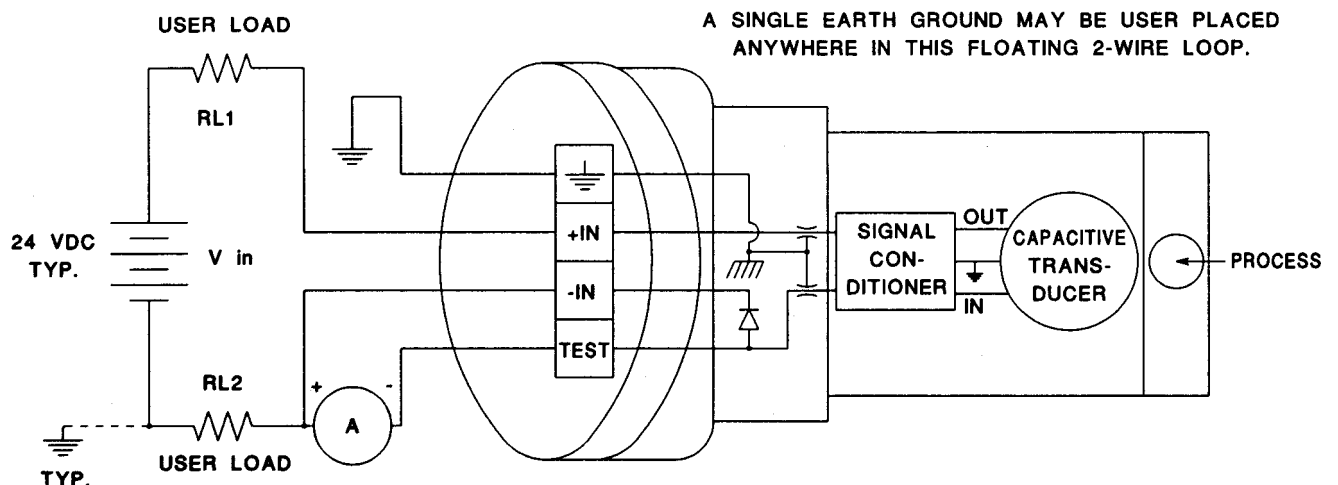
The **PMC P to I Terminal Head** is offered in lieu of the cable interface furnished with the standard P to I. The Terminal Head serves as an integral junction box for the P to I.

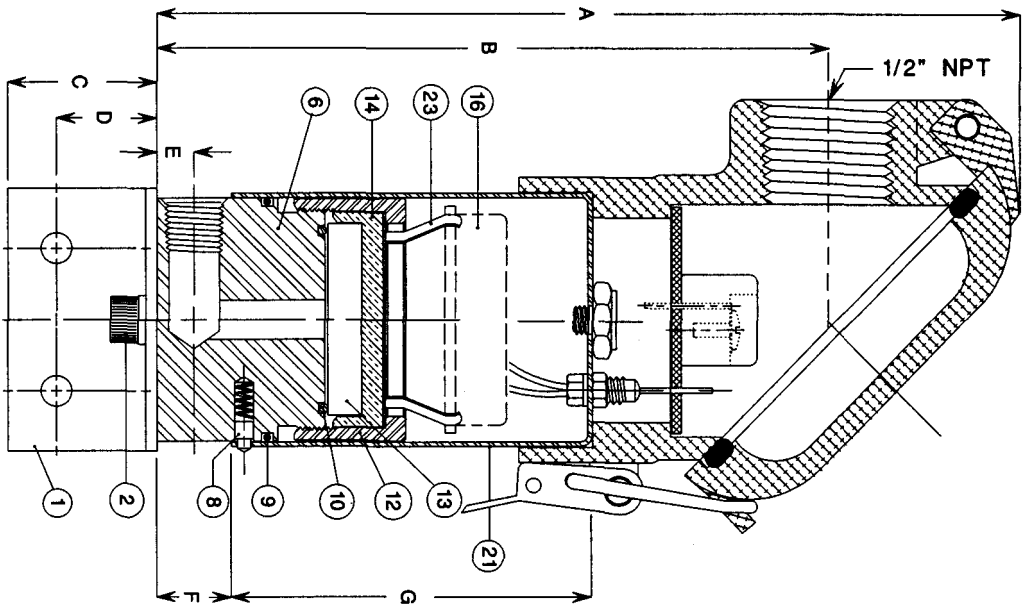
User wiring is brought to the terminal head through a 1/2" NPT conduit entry. A four-position terminal strip with #4-32 screw clamps accepts the field wiring. The four terminals are: +IN, -IN, TEST, and EARTH GROUND. Two-wire current enters the +IN terminal and exits the -IN terminal. In-process current monitoring is possible using a milliammeter across the TEST (+ lead) and -IN (- lead) terminals without disconnecting field wiring. The milliammeter should have less than 20 ohms series resistance in order to preserve measurement accuracy. The EARTH GROUND terminal is connected to the chassis of the transmitter and provides a user safety-ground connection as well as enabling the EMI/RFI immunity inherent in the terminal head design.

The Terminal Head is an aluminum die-casting with a black anodized finish. It measures 3" at its widest diameter and adds approximately 3" to the length of the P to I and 9 ounces to the weight. The cover, with an O-ring seal, is retained by a snap clip. There is easy access to the internal terminal strip. The entire assembly provides NEMA 4 protection and measures 6" in length.

The combination Terminal Head/Stainless Can assembly may be removed for field calibration or service by depressing the detent pin. This procedure, as with all others associated with user application of the Terminal Head, is identical to that performed on the standard PT-EL.

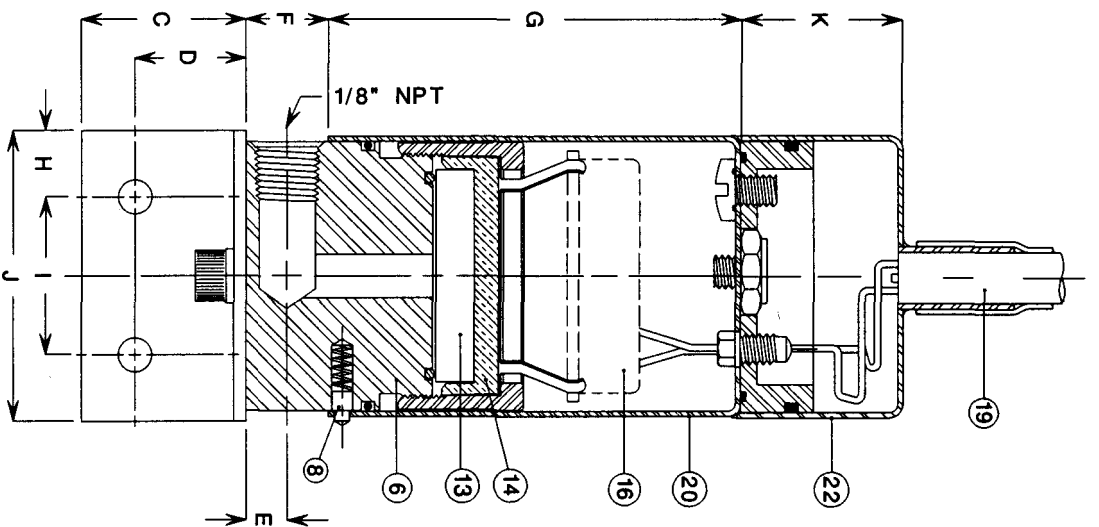
TERMINAL HEAD WIRING DIAGRAM





Part Description

- 1 Mounting Bracket (optional)
- 2 Bracket Screws
- 6 Transmitter Body - 304 S/S
- 8 Cover Detent Lock Pin
- 9 Cover Seal
- 10 Sensor O-Ring Seal
- 12 Pressure Sensor Retainer Ring
- 13 Capacitance Pressure Sensor
- 14 Pressure Sensor Spacer
- 16 Signal Conditioner
- 19 Two-Wire Vented Cable
- 20 Cover - 304 S/S
- 21 Cover with Terminal Head Assembly
- 22 Cover - 304 S/S w/Barrier
- 23 Signal Conditioner Retainer



PAPER MACHINE COMPONENTS

DANBURY, CONNECTICUT U.S.A.

PART NAME		P-1 PNEUMATIC TO CURRENT CONVERTER	
MATERIAL		SEE DETAILS	
DATE	SCALE	DATE	SCALE
FEB. 7, 2000	NONE	FEB. 7, 2000	NONE
DRAWN BY	ASSY. DWG.	ORIG. DWG.	ASSY. DWG.
L.W.			
QUANTITY		DWG. NO.	
		2700-A	
BREAK ALL SHARP EDGES AND CORNERS			
FRACT. DIMS. +/- 1/64". DECIMAL DIMS. +/- .005"			
ANGLES +/- 1/4" UNLESS OTHERWISE SPECIFIED			

CERTIFIED PRINT