DEVAR Inc.
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Models 18-1000, 18-1000-XP & 18-1000-ER

Current to Pressure Transducer

REV. A

INSTALLATION

Mounting:

Pipe - Due to it's light weight, the transducer may be supported using it's own plumbing on pipes used for air supply and output.

Panel - (with access to rear of panel): Attach transducer to panel using two 10-32 screws into the threaded holes on the back of the transducer.

Panel - (with no access to rear of panel):Attach bracket using two 10-32 screws (supplied) into the threaded holes on the back of the transducer. Using 10-32 screws through holes in bracket to mount transducer to panel.

Mounting Notes:

1. Transducer may be mounted at any angle. See "Calibration".
2. Effect of external vibration can be kept at a minimum if unit is mounted so that vibration is restricted to being along the X and Z axis shown on the Dimensional Drawing.

AIR CONNECTIONS

Supply - Connect air supply to 1/4 NPT port marked "IN" on base of unit. Avoid getting pipe compound in air line and transducer. Supply air must be instrument quality (filtered and dried). For best results, supply pressure should be regulated, since output will vary slightly with larger changes in supply pressure. See column B in table for usable supply pressure range. Higher pressures will allow higher maximum flow rate through transducer.

Output - Connect output to 1/4 NPT post marked "OUT" on base of unit. The unmarked 1/4 NPT ports may be used as alternate output ports or for a gauge to measure output pressure. Unused ports must be plugged.

ELECTRICAL CONNECTIONS

Connect electrical signals to leads exiting side of unit through 1/2 NPT conduit fitting. For direct acting (increasing signal increases output pressure), connect positive signal to black lead and negative to white. For reverse acting (increasing signal decreases output pressure), connect positive signal to white lead and negative to black.

For intrinsically safe installations, see drawing 229-541-000-012. All models can be used in reverse acting mode by reversing the polarity of the signal leads and recalibrating.

Some models can be used at ranges other than the initially designated range by recalibrating. This type of recalibration will not affect the Factory Mutual approval of intrinsically safe models. These ranges are:

Designated Range		**May also be used at:**	
PSIG	kPa	PSIG	kPa
3-15	21-103	3-9	21-62
3-15	21-103	9-15	62-103
3-9	21-62	9-15	62-103
3-9	21-62	3-15	21-103
9-15	62-103	3-9	21-62
9-15	62-103	3-15	21-103
3-27	21-186	6-30	41-207
6-30	41-207	3-27	21-186

CALIBRATION

Transducer should be calibrated **after** mounting. If transducer is calibrated in an upright position, then mounted at an angle, readjustment of the "ZERO" is necessary. "SPAN" readjustment should not be necessary.

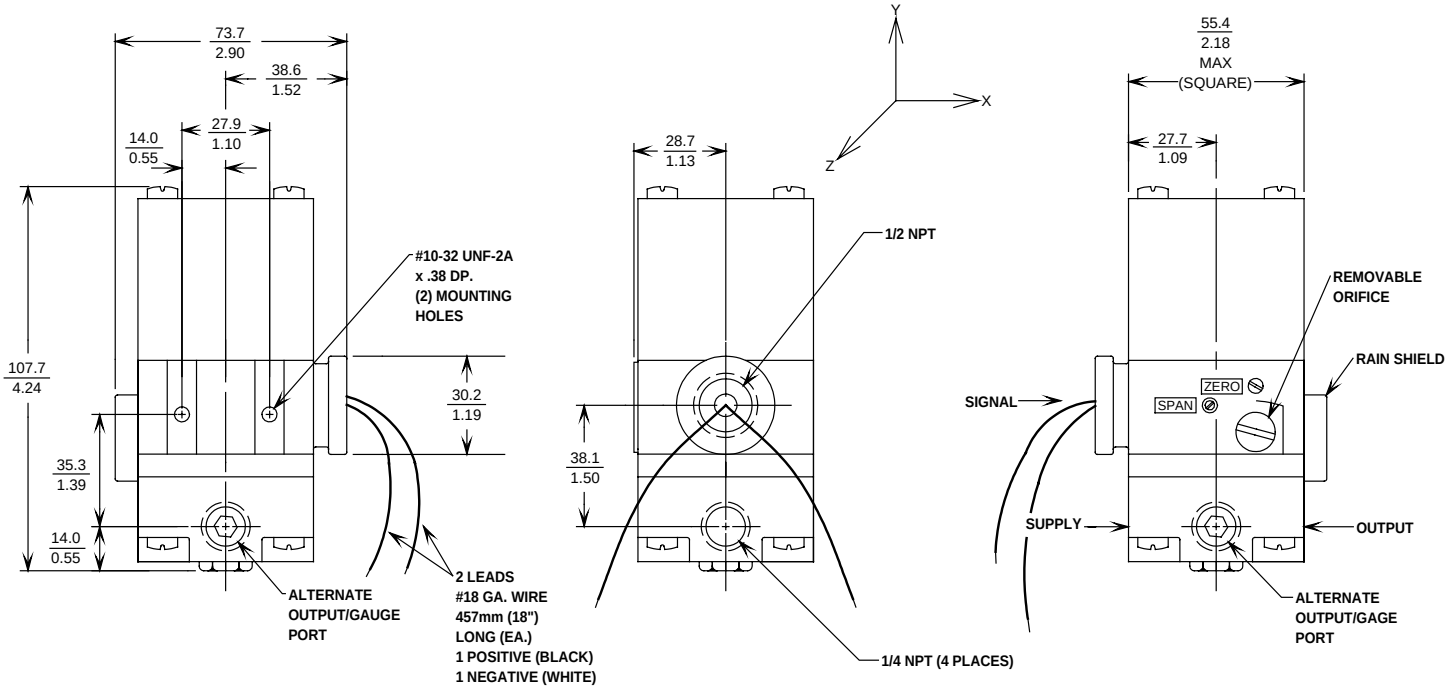
1. Remove plastic caps from "ZERO" and "SPAN" adjustment screw access holes.
2. Set signal to value shown in column C of table. (For reverse acting, set to column D value.)
3. Adjust "ZERO" screw until output pressure is that shown in column E of table. Turn counterclockwise to increase pressure, clockwise to decrease pressure. If output pressure does not change when screw is turned, turn screw counterclockwise until pressure starts to rise.
4. Set signal to value shown in column D of table. (For reverse acting, set to column C)
5. Adjust "SPAN" screw until output pressure is that shown in column F of table.
6. Repeat steps 2, 3, 4, and 5 until no further readjustment is necessary.
7. Replace protective caps.

MAINTENANCE

If internal clogging occurs due to improper filtering of the air, the orifice can be cleaned without removing the unit from its mounting or plumbing. Turn off the supply air. Unscrew and remove the orifice assembly. Clean the orifice through the side of the orifice assembly using a wire that has a smaller diameter than 0.015 in. (0.38 mm). Shake out any loose particles inside of the orifice assembly. Screw orifice assembly back into unit.

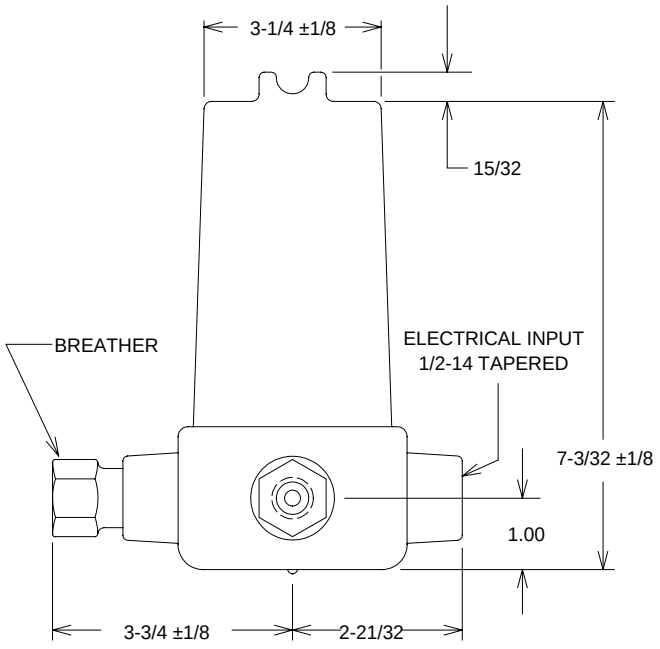
Type 18-1000 Transducer

DIMESIONAL DRAWING mm/in



Type 18-1000-XP Transducer

DIMENSIONAL DRAWING mm/in.



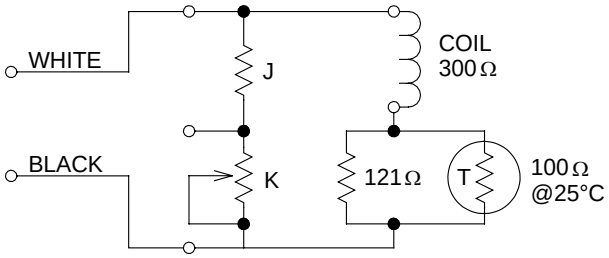


FIGURE 1
I/P WIRING SCHEMATIC

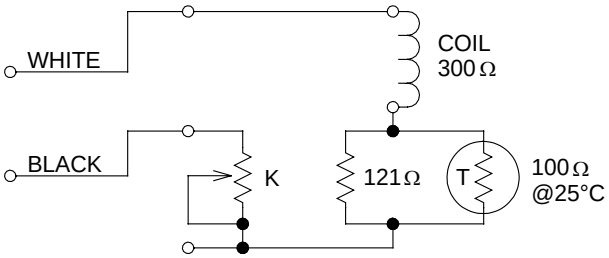


FIGURE 2
E/P WIRING SCHEMATIC

A	B		C	D	E		F		G	H	J	K
			Signal		Output							
	Supply Pressure Range		Low End	High End	Low End		High End		Nominal Impedance	Wiring Schematic	Resistor	Potentiometer
Part Number	(PSIG)	(kPa)	(mA)	(mA)	(PSIG)	(kPa)	(PSIG)	(kPa)	(Ohms)	(Fig. #)	(Ohms)	(Ohms)
221-961-070-000	18-100	125-690	4	20	3	21	15	103	180	1	68	1000
221-961-072-000	12-100	82-690	4	20	3	21	9	62	90	1	68	1000
221-961-073-000	18-100	125-690	4	20	9	62	15	103	90	1	68	1000
221-961-074-000	30-100	206-690	4	20	3	21	27	186	215	1	68	1000
221-961-075-000	33-100	228-690	4	20	6	41	30	207	215	1	68	1000
221-961-076-000	18-100	125-690	10	50	3	21	15	103	70	1	68	100
221-961-077-000	30-100	206-690	10	50	3	21	27	186	85	1	68	100
221-961-078-000	33-100	228-690	10	50	6	41	30	207	85	1	68	100
[1]221-961-099-000	18-100	125-690	4	20	3	21	15	103	180	1	68	1000
[1]221-961-100-000	30-100	206-690	4	20	3	21	27	186	215	1	68	1000
[2]221-961-105-000	18-100	125-690	4	20	3	21	15	103	180	1	68	1000
[3]221-961-108-000	18-100	125-690	4	20	3	21	15	103	180	1	68	1000
[3]221-961-109-000	30-100	206-690	4	20	3	21	27	186	215	1	68	1000
221-961-111-000	125-150	863-1035	4	20	3	21	120	828	265	1	68	1000
			(V)	(V)								
221-961-079-000	18-100	125-690	0	5	3	21	15	103	615	2	---	500
221-961-080-000	30-100	206-690	0	5	3	21	27	186	530	2	---	500
221-961-081-000	33-100	22-690	0	5	6	41	30	207	530	2	---	500
221-961-085-000	18-100	125-690	1	9	3	21	15	103	985	2	---	1000
221-961-086-000	30-100	206-690	1	9	3	21	27	186	840	2	---	1000
221-961-087-000	33-100	228-690	1	9	6	41	30	207	840	2	---	1000
221-961-112-000	125-150	863-1035	0	10	3	21	120	828	800	2	---	1000

[1] FACTORY MUTUAL APPROVED AS INTRINSICALLY SAFE
[2] CANADIAN STANDARDS ASSOCIATION APPROVED AS INTRINSICALLY SAFE
[3] CENELEC APPROVED AS INTRINSICALLY SAFE

EXTENDED RANGE (-ER), TYPE 18-1000 I/P AND E/P TRANSDUCERS

Specifications:

Input Signal Range: 4/20 mA
Output Range: 3/120 PSI
Supply Pressure Range:
Minimum: 35 kPa (5 PSIG) above maximum output
Maximum: 1050 kPa (150 PSIG)
Supply Pressure Sensitivity: < ±0.004% of span per 1.0 kPa (1.0 PSIG) change in supply pressure
Terminal Based Linearity: See Table below
Repeatability: <0.5% of span
Hysteresis: <0.5% of span
Flow Rate at Midrange (Typical): 40.8 m^3/hr. ANR (24 SCFM) at 1050 kPa (150 PSIG) supply
Air Consumption (Maximum): 0.12 m^3/hr. (0.07 SCFM) at midrange
Nominal Impedance: See Table below.
Port Sizes: 1/4 NPT (pneumatic); 1/2 NPT (electric)
Size: 54 mm × 54 mm × 102mm (2-1/8 in. × 2-1/8 in. × 4 in.)
Weight: 0.94 kg (2.1 lbs)