

## INSTALLATION OF PRESSURE TRANSMITTERS SERIES: W10, W20, W30 AND W40

The Series W transmitters measures low differential pressures of gases or liquids compatible with 316 type stainless steel. The normal operating temperature ranges is from 0°C to 50°C (32°F to 122°F), and the normal humidity range from 10% to 90% R.H.

Remove the cover to gain access to the two mounting holes. These holes are suitable for #8 (4mm) max. screws.

Connections to the fluid lines are by means of 1/8-28 Female NPT ports. Make sure the operating static pressure does not exceed the values shown in the table below. The maximum safe momentary overpressure at any port should not exceed 2x the maximum operating static pressure.

STANDARD PRESSURE RANGES								
ENGLISH UNITS			METRIC UNITS					
PRES. CODE	DIFF. PRESS. psid	OPER. STATIC PRESS psi	PRES. CODE	DIFF. PRESS. kPa	OPER. STATIC PRESS. kPa	PRES. CODE	DIFF. PRESS. bar	OPER. STATIC PRESS. bar
31E	0 - 6		31P	0 - 50		31B	0 - 0.5	
32E	0 - 10	0 - 100	32P	0 - 75	0 - 700	32B	0 - 0.75	0 - 7.0
33E	0 - 15		33P	0 - 100		33B	0 - 1.0	
34E	0 - 30		34P	0 - 200		34B	0 - 2.0	
35E	0 - 60		35P	0 - 500		35B	0 - 5.0	
36E	0 - 100	0 - 300	36P	0 - 750	0 - 2000	36B	0 - 7.5	0 - 20
37E	0 - 150		37P	0 - 1000		37B	0 - 10.0	
38E	0 - 200		38P	0 - 1500		38B	0 - 15.0	

Electrical connections are by means of pluggable terminal strips, rated at 250 Vac, with a wire range from 14 to 26 AWG.

### Zero and Span Adjustment

The transmitter may be re-zeroed and re-spanned if a permanent drift is noted. Vent both pressure ports to atmosphere before recalibrating the transmitter.

A. Series W10 or W20- Connect a voltmeter across the signal terminals (see Figure 1 or Figure 2, respectively), and adjust the ZERO potentiometer R2 until the voltage reads 0.01 V (if 0-5V span), or 0.02V (if 0-10V span). Next apply the full rated differential pressure to the high pressure port and adjust the SPAN potentiometer R1 until the output reading is 5.00V (if 0-5V Span), or 10.00V (if 0-10V Span).

B. Series W30 or W40- Connect an ammeter in the loop (see Figure 3 or Figure 4, respectively), and adjust the ZERO potentiometer R2 until the ammeter reads 4.00mA. Next, apply the full rated differential pressure to the high pressure port and adjust the SPAN potentiometer R1 until the output reading is 20.00 mA.

Re-spanning the transmitter requires a source of pressure of satisfactory accuracy.

Check the zero reading again for accuracy, and repeat the above steps if necessary.

Potentiometer R3 should not normally be adjusted unless one of the pressure sensors has been replaced and the span accuracy of the instrument is affected by changes in the static pressure.

### W10 PRESSURE TRANSMITTER

This transmitter is powered by an external power supply between 11 and 32Vdc (14Vdc minimum for 10V output), the current drawn is less than 10mA.

The output voltage is limited to about 5.3V for the 0-5V transmitter and about 1 0.6V for the 0-1 OV transmitter if the differential pressure ~xc~s the range of the transmitter. Short-circuiting the signal terminals~ll;~not damage the transmitter.

Figure 1 shows typical transmitter wiring.

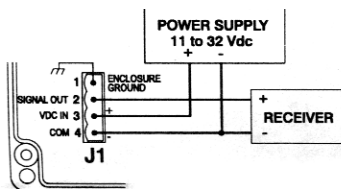


Figure 1

**CAUTION: REVERSAL OF THE "VDC IN" AND "SIGNAL OUT" MAY RESULT IN PERMANENT DAMAGE TO THE TRANSMITTER.**

### W20 PRESSURE TRANSMITTER

This transmitter is powered with 24 Vac, 120 Vac or 240 Vac (depending on the model number) and supplies a voltage output:

W20-XXXCXXX is 24 Vac (20-30 Vac), 50/60Hz

W20-XXDXXX is 120 Vac (100-140 Vac), 50/60Hz

W20-XXEXXX is 240 Vac (200-260 Vac), 50/60Hz

Power consumption is under 1.5 Watt

The power supply leads are connected to the two leftmost terminals (terminals 4 and 5) on the pluggable terminal strip (see Figure 2). Terminal 3 is enclosure ground. The output signal is accessed across terminals 2 and 1, the rightmost terminals, labeled "-" and "+" (see Figure 2). The signal output is transformer-isolated from the power supply. The output signal is totally floating and either the "+" or the "-" terminal may be grounded. The output current, whether sinking or sourcing, should be limited to about

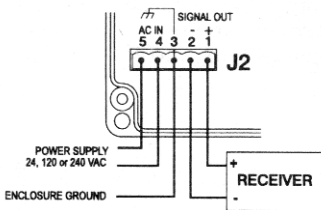


Figure 2

3.5 mA. The maximum output voltage may not be reached if this current is exceeded. The output voltage is limited to about 5.3V for the 0-5V transmitter and about 10.6V for the 0-10V transmitter if the differential pressure exceeds the range of the transmitter. Short-circuiting the signal terminals will not damage the transmitter.

### W30 PRESSURE TRANSMITTER

This is a 2-wire, 4-20 mA pressure transmitter which requires an external DC power supply of 11 to 32 Vdc to power the loop. The supply voltage should not exceed 32 Vdc (see Figure 3).

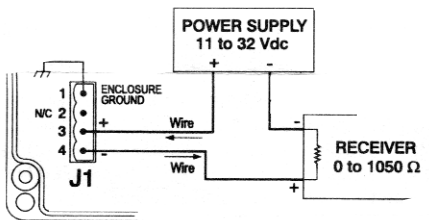
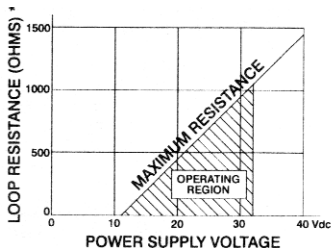


Figure 3

The following graph (see Figure 4) illustrates the maximum wire and receiver resistances as a function of supply voltage. For example: the total loop resistance should not exceed 650 Ohms for a typical supply voltage of 24 Vdc.



\* Loop resistance = Wire res. + Receiver res.

Figure 4

The standard transmitter is current-limited to about 3.85 mA at the low end and 25 mA at the high end. An internal diode protects the transmitter against reversal of polarity (there is no current flowing through the loop if the leads are reversed).

## W40 PRESSURE TRANSMITTER

This transmitter may be powered with a 24 Vac, 120 Vac or 240 Vac input voltage (depending on the model number) and supplies a 4-20 mA current to a loop. No external DC supply is needed to power the loop.

W40-XXXCXX is 24 Vac (20-30 Vac), 50/60Hz

W40-XXXDXX is 120 Vac (100-140 Vac), 50/60Hz

W40-XXXEXX is 240 Vac (200-260 Vac), 50/60Hz

Power consumption is about 1.5 Watt.

The supply voltage to the loop is 12 Volts and the current is limited to 27 mA, should the maximum differential pressure be exceeded. Receiver and wire resistances should not exceed 600 Ohms for full output of 20 mA.

The power supply leads are connected to the two leftmost terminals (terminals 4 and 5) on the pluggable terminal strip (see Figure 5). Terminal 3 is enclosure ground. The output signal is accessed across terminals 2 and 1, the rightmost terminals, labeled "-" and "+" (see Figure 5). The output terminals are transformer-isolated from the power supply. The output current is totally floating and either the "+" or "-" terminal may be grounded.

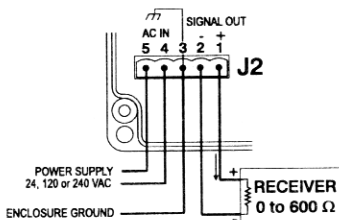


Figure 5



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