



# Non-Incendive Pressure Transmitter Type N-10

## Flush Diaphragm Type N-11

### Tronic

- FM approved non-incendive for Class I Division 2 hazardous locations
- Engineered to meet the harsh demands of gas compressor applications
- NACE MR0175 compliant
- Retrofits existing compressor applications
- Low power voltage signal outputs available



**Non-incendive:**  
Class I, Division 2, Groups A, B, C, and D

**Dust-ignitionproof:**  
Class II/III, Division 1, Groups E, F, and G

Type N-10 pressure transmitters are specifically designed to meet the durability and performance requirements of gas compressor systems. These pressure transmitters feature an industry standard 4-20 mA 2 wire signal output, NEMA 4X (IP 67) weather protection, and are extremely resistant to pressure spikes, vibration, and moisture intrusion. NACE MR-01-75 compliance provides extra resistance against sulfide stress cracking when exposed to gases containing sulphur.

Type N-11 pressure transmitters feature a flat, non clogging diaphragm for applications using media incompatible with the standard NPT version.

The transmitters are engineered to meet Class I Division 2 Non-incendive protection in hazardous environments. Each undergoes extensive quality control testing and calibration to achieve a linearity of  $\leq 0.25\%$  full scale. In addition, each pressure transmitter is temperature compensated to assure accuracy and long term stability when exposed to severe ambient temperature variations.



N-10



N-11

### STANDARD RANGES

RANGE	MAXIMUM*	BURST**	RANGE	MAXIMUM*	BURST**
30"-0 HgVac	70 PSI	70 PSI	0-500 PSI	1100 PSI	5800 PSI
30"-0-30 PSI	250 PSI	250 PSI	0-1000 PSI	1750 PSI	8000 PSI
30"-0-100 PSI	500 PSI	500 PSI	0-1500 PSI	2900 PSI	11,600 PSI
0-15 PSI(A)	70 PSI	70 PSI	0-2000 PSI	4600 PSI	14,500 PSI
0-30 PSI	145 PSI	145 PSI	0-3000 PSI	4600 PSI	14,500 PSI
0-60 PSI	250 PSI	250 PSI	0-5000 PSI	11,600 PSI	25,000 PSI
0-100 PSI(A)	500 PSI	500 PSI	0-8000 PSI <sup>1</sup>	17,400 PSI	35,000 PSI
0-200 PSI	500 PSI	500 PSI	0-10,000 PSI <sup>1</sup>	17,400 PSI	35,000 PSI
0-300 PSI	1100 PSI	1100 PSI	0-15,000 PSI <sup>1</sup>	21,750 PSI	43,500 PSI

<sup>1</sup> Type N-11 flush diaphragm not available above 5000 PSI.

Notes:

\* Pressure applied up to the maximum rating will cause no permanent change in specifications.

\*\* Exceeding the burst pressure may result in destruction of the transmitter and loss of media.

(A) identifies standard ranges available with absolute pressure reference.

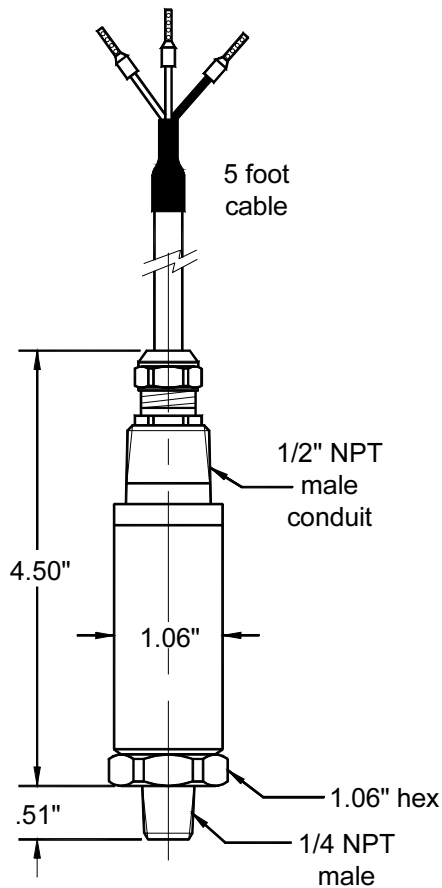
Specifications		Type N-10 and N-11
Sensing principle Pressure ranges Pressure reference	PSI	piezoresistive up to 300 PSI, thin film $\geq$ 400 PSI standard ranges as listed {custom ranges available} relative pressure {absolute reference to 300 PSIA}
<b>Pressure connection</b> Type N-10  Type N-11  <b>Material:</b> -wetted parts Type N-10 above 300 PSI Type N-11  -case -internal transmitting liquid		1/4"NPT male {others available}  for ranges < 30 PSI: G1B flush diaphragm for ranges 30 PSI to 5000 PSI: G1/2B flush diaphragm  1.4571 stainless steel (316 ss) 1.4571 stainless steel (316 ss) and 2.4711 (Elgiloy) 1.4571 stainless steel (316 ss), Buna-N O-ring {Viton}  1.4571 stainless steel (316 ss) synthetic oil for piezoresistive sensors to 300 PSI and all N-11 flush diaphragm transmitters, no liquid fill used for Type N-10 thin film sensors above 300 PSI
<b>Supply voltage</b> $V_s$  <b>Output and load limitations:</b> Output signal and maximum load  Power consumption: 4-20 mA 2-wire 1-5 V and 0.5-4.5V 3-wire  Response time (10...90%)	DC Volts    mA  milliseconds	10 - 30 6 - 30 {1-5 V 3-wire low power system} 5 - 30 {0.5-4.5 V 3-wire ratiometric output low power system}  4-20 mA 2-wire system $R_{(max)} [Ohm] = (V_s - 10V) / 0.02 A$ {1-5 V 3-wire} $R_{(min)} [Ohm] = 5 kOhms$ {0.5-4.5V 3-wire ratiometric} $R_{(min)} [Ohm] = 5 kOhms$  20 (maximum under full pressure) $\leq 2 (V_s \leq 12 V)$  $\leq 1$
<b>Accuracy</b> ( linearity, including hysteresis and repeatability )  Repeatability Hysteresis 1 year stability Zero and span offset	% of span  % of span	$\leq 0.25\%$ (B.F.S.L.)  $\leq 0.05$ $\leq 0.1$ $\leq 0.2$ (under reference conditions) $\leq 0.5$
<b>Temperature</b> Media Ambient Storage Compensated range  Temperature error (reference 70°F): on zero point on span  Total temperature compensation error: within compensated range between -4°F to +176°F	% of span  % of span	-22°F to +212°F (-30°C to +100°C) {-46°F to +221°F (-43°C to +105°C)} <sup>1</sup> -22°F to +212°F (-30°C to +100°C) {-46°F to +221°F (-43°C to +105°C)} <sup>1</sup> -40°F to +221°F (-40°C to +105°C) {-58°F to +221°F (-50°C to +105°C)} <sup>1</sup> +32°F to +176°F (0°C to +80°C)  $\leq 0.2$ per 18°F (10°C) change $\leq 0.2$ per 18°F (10°C) change  1.6% (typical) 2.0% (typical)
Approval authority		see table on page 3
EMI specifications		Interference emission and immunity per EN 61326
Shock resistance Vibration resistance	g g	1000 per IEC 770 for mechanical shock 20 per IEC 770 for vibration under resonance conditions
Electrical connection  Weight  Dimensions Electrical protection Environmental protection	  lb	1/2" male conduit with 5 foot cable {DIN 43 650 with 1/2 "NPT female conduit plug connector}  approximately 0.4 (0.2 Kg) not including cable  see drawings protected against reverse polarity NEMA 4X (IP 67) {NEMA 5 / IP 65 with plug connector}

Note: Items in curved brackets { } are available as special order options

<sup>1</sup> Transmitters function when exposed to these extended temperature ranges. The media, when exposed to temperature extremes, may change characteristics that effect transmitter performance. Contact the factory for additional information.

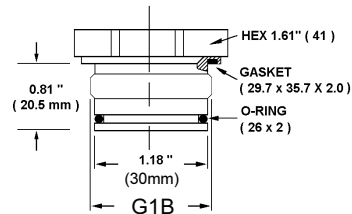
## Dimensions

### Type N-10

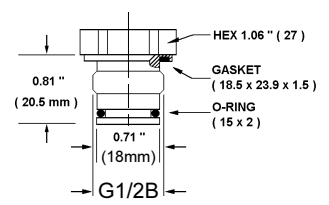


### Type N-11 process connection

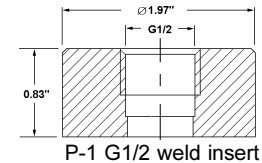
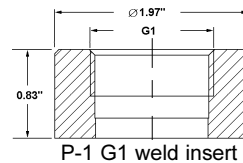
#### Ranges < 30 PSI



#### Ranges $\geq$ 30 PSI



### Matching P-1 weld insert



The N-11 flush diaphragm version provides a flat, non-clogging process connection for use with sludge, slurry, viscous, or crystallizing media. Pressure ranges below 30 PSI are G1B, 30 PSI and up are G1/2B.

### Approval authority

**FACTORY MUTUAL (FM)** non-incendive with entity approval for:

Class I, Division 2, Groups A, B, C, and D  
Class II and III, Division 1, Groups E, F, and G

Maximum electrical ratings 30 V, 20 mA.

FM Standards according to FMRC 3600, 3611, 3810

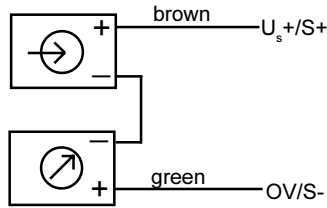
## Wiring

4-20 mA output signal

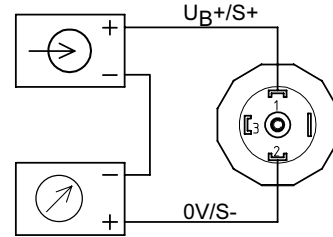
### 2-wire system

Wire	Coding	DIN Plug	Wire Color
Supply +	$U_B+ / S+$	pin 1	brown
Signal -	$0V / S-$	pin 2	green

### Cable connection



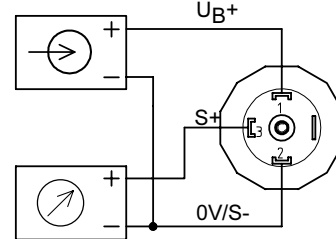
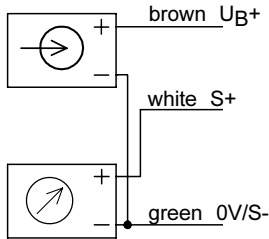
### Optional DIN 43 650 plug connector



Voltage output signals

### 3-wire system

Wire	Coding	DIN Plug	Wire Color
Supply +	$U_B+$	pin 1	brown
Supply - Signal -	$0V / S-$	pin 2	green
Signal +	$S+$	pin 3	white



**NOTE:** a barrier is not required when installed in hazardous locations rated non-incendive for Class I, Division 2, Groups A, B, C, and D, and Class II/III, Division 1, Groups E, F, and G.

Install to NEC (National Electric Code) and local codes as applicable.

## Ordering Information:

State computer part number (if available) / type number / range / signal output / process connection / electrical connection / other options required.

Specifications provided in this data sheet represent the state of engineering at the time of printing. Modifications may take place and the specified materials may change without prior notice.



**WIKAI Instrument Corporation**

1000 Wiegand Boulevard

Lawrenceville, Georgia 30043-5868

Tel: 770-513-8200 Fax: 770-277-2641

<http://www.wika.com> e-mail: [Tronic@wika.com](mailto:Tronic@wika.com)