

# Hazardous Area Non-incendive OEM Transmitters

## Type N-10/N-11



### Applications

- Natural gas compressors
- Wellhead monitoring
- Pipeline pressure
- General industrial applications

### Special Features

- FM approved Non-incendive for Class I Division 2 hazardous locations
- Engineered to meet the harsh demands of gas compressor applications
- Do not require the use of intrinsically safe barriers
- NACE MR-01-75 compliant
- 4-20 mA or low power 1-5 volt output signals available

### Description

Model 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. This is designed for use with viscous fluids, or media containing particulates that could clog the pressure port of the standard NPT version.



**Left: N-10 pressure transmitter with NPT connection**  
**Right: N-11 flush diaphragm pressure transmitter**

The transmitters are engineered to meet Class I Division 2 Non-incendive protection requirements 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.

**Datasheet: [N-10, N-11](#)**

**Specifications**
**Model N-10 / N-11**

Pressure range	5psi	10psi	15psi	25psi	30psi	60psi	100psi	200psi	300psi
Maximum pressure*	29psi	58psi	72psi	145psi	145psi	240psi	500psi	1160psi	1160psi
Burst pressure**	35psi	69psi	87psi	170psi	170psi	290psi	600psi	1390psi	1390psi
Pressure range	500psi	1000psi	1500psi	2000psi	3000psi	5000psi	8000psi <sup>1</sup>	10000psi <sup>1</sup>	15000psi <sup>1</sup>
Maximum pressure*	1160psi	1740psi	2900psi	4600psi	7200psi	11,600psi	17,400psi	17,400psi	21,750psi
Burst pressure**	5800psi	7970psi	11,600psi	14,500psi	17,400psi	24,650psi <sup>2</sup>	34,800psi	34,800psi	43,500psi
{vacuum, gauge pressure, compound ranges, and absolute pressure references are available}									
<b>Materials</b>									
■ Wetted parts									
> N-10									
Stainless steel (≥ 300 psi stainless steel and Elgiloy)									
> N-11									
Stainless steel; O-ring: NBR {Viton or EPDM}									
■ Case									
Stainless steel									
Internal transmission fluid									
Synthetic oil (only for pressure ranges up to 300 psi or flush diaphragm units)									
Power supply U <sub>B</sub>	DC V	10 < U <sub>B</sub> ≤ 30 for 4 ... 20 mA, 2-wire							
		6 < U <sub>B</sub> < 30 for 1 ... 5 V, 3-wire low power version							
Signal output and maximum load R <sub>A</sub>		4...20 mA: R <sub>A</sub> ≤ (U <sub>B</sub> - 10 V) / 0,02 A with R <sub>A</sub> in Ohm and U <sub>B</sub> in Volt							
		1 ... 5 V, 3-wire: R <sub>A</sub> > 10 kOhm							
Response time (10 ... 90 %)	ms	≤ 1 (≤ 10 ms when media temperatures are below -22 ° F ( -30 ° C) for pressure ranges up to 300 psi or with flush diaphragm)							
Accuracy <sup>3)</sup>	% of span	≤ 0.25 (BFSL)							
	% of span	≤ 0.5 (limit point calibration)							
Non-repeatability	% of span	≤ 0.05							
Hysteresis	% of span	≤ 0.1							
1-year stability	% of span	≤ 0.2 (at reference conditions)							
Permissible temperature of									
■ Medium									
-22 ... +212 °F    {-40 ... +221 °F}    -30 ... +100 °C    {-40 ... +105 °C}									
■ Ambient									
-22 ... +212 °F    {-40 ... +221 °F}    -30 ... +100 °C    {-40 ... +105 °C}									
■ Storage									
-40 ... +221 °F    {-58 ... +221 °F}    -40 ... +105 °C    {-50 ... +105 °C}									
Compensated temp. range		32 ... +176 °F				0 ... +80 °C			
Temperature coefficients in compensated temp range:									
■ Mean TC of zero									
% of span    ≤ 0.2 / 10 K (< 0,4 for pressure range < 100 inWC)									
■ Mean TC of range									
% of span    ≤ 0.2 / 10 K									
Approval authority									
■ Factory Mutual (FM) Non-incendive with entity approval for:									
Class 1, Division 2, Groups A, B, C, D									
■ Dust-ignitionproof for 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									
HF-immunity	V/m	10							
Burst	KV	4							
Ingress protection		NEMA 4X (IP 67)							
Shock resistance	g	1000 according to IEC 60068-2-27 (mechanical shock)							
Vibration resistance	g	20 according to IEC 60068-2-27 (vibration under resonant conditions)							
Wiring protection		Protected against reverse polarity, overvoltage, and short circuiting							
Weight	lb	0.4							

\* Pressure applied up to the maximum rating will cause no permanent change in specifications but may lead to zero and span shifts

\*\*Exceeding the burst pressure may result in destruction of the transmitter

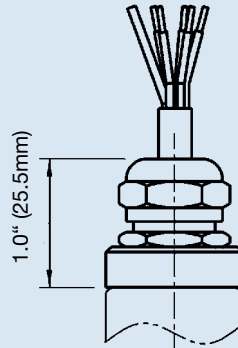
- 1) Only Model N-10.
- 2) For Model N-11: the burst pressure is limited to 21,000 psi unless the pressure seal is accomplished by using the sealing ring underneath the hex.
- 3) Includes linearity, hysteresis and repeatability. Limit point calibration performed in vertical mounting position with pressure connection facing down.
- 4) Transmitters will function when exposed to these extended temperature ranges. The media, when exposed to temperature extremes, may change characteristics that effect transmitter performance.

{ } Items in curved brackets are options available at additional cost.

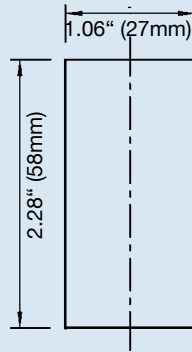
## Dimensions in inches (mm)

### Electrical connection

6 foot cable with free ends  
NEMA 4 / IP 67  
Order code: EM

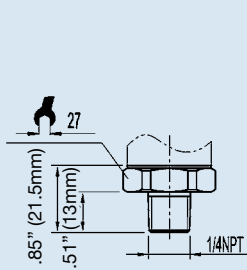


### Case

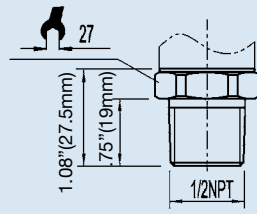


### N-10 pressure connections

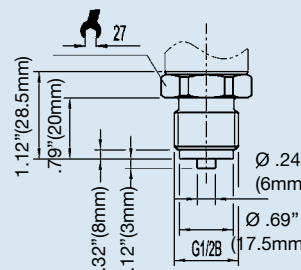
1/4 NPT male  
Order code: NB



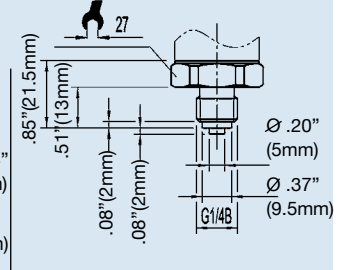
1/2 NPT male  
Order code: ND



G 1/2  
EN 837  
Order code: GD

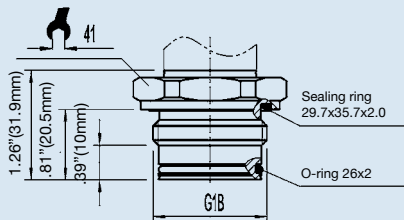


G 1/4  
EN 837  
Order code: GB

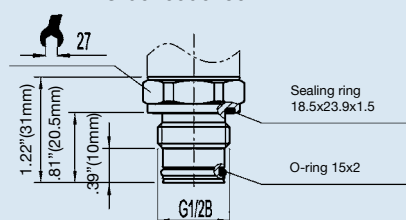


### N-11 flush diaphragm pressure connections

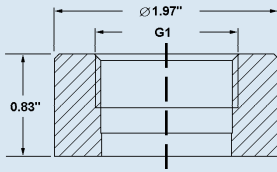
N-11 G 1  
50 inWC to 25 psi  
Order code: 85



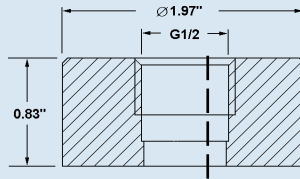
N-11 G 1/2  
30 psi to 5,000 psi  
Order code: 86



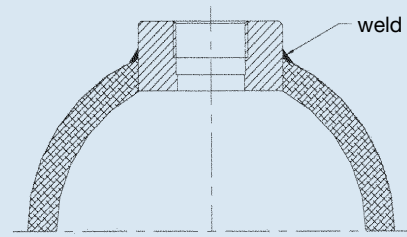
## Matching P-1 weld insert adapters for N-11 flush diaphragm transmitters



P-1 G1 weld insert adapter  
Part # 1206974  
for pressure ranges  $\leq 25$  psi

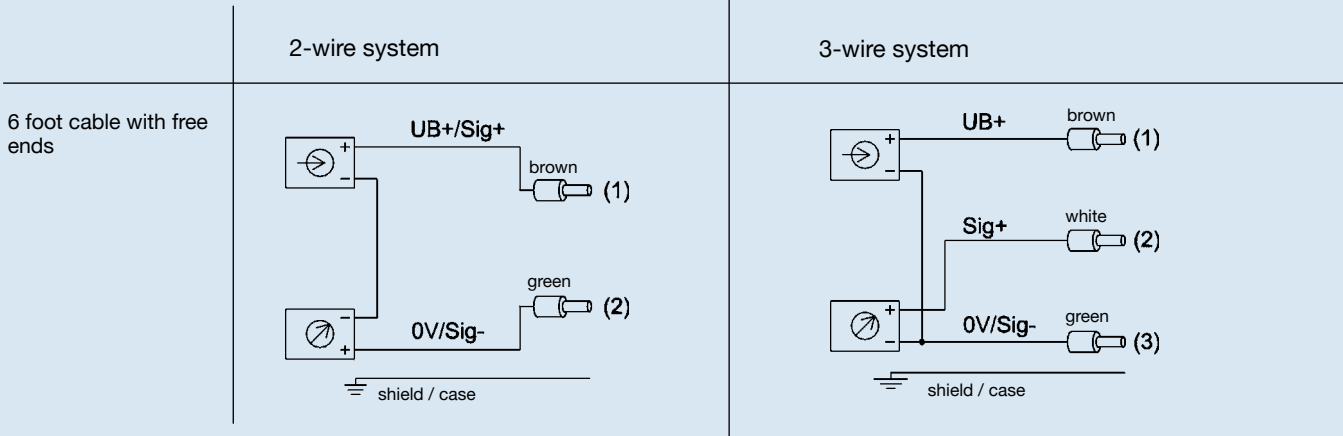


P-1 G1/2 weld insert adapter  
Part # 1097008  
for pressure ranges  $\geq 30$  psi

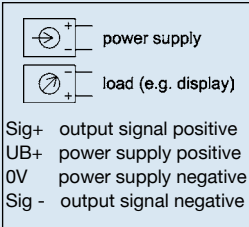


Cross section view of P-1 adapter installed in pipe.

## Wiring details



### Legend:



# Type N-10 Non-Incendive Pressure Transmitter Vacuum to 15,000 psi

## Standard Features

- **Signal Output:** 4-20 mA 2-wire or 1-5 V 3-wire
- **Supply Voltage:** 10-30 DC  
(6-30 VDC for 1-5 V version)
- **Process Connection:** 1/4 NPT Male
- **Electrical Connection:** 1/2" NPT male conduit with 6 foot cable



N-10 Gauge Ranges		
Description		
Range	Part #	
	4-20 mA 2-wire	1-5 V 3-wire
30" INHG Vacuum	4348296	4354619
30"-0-30 psi	<b>4348309</b>	<b>4354627</b>
30"-0-100 psi	4332431	4354636
0-15 psi	<b>4348317</b>	4354644
0-30 psi	<b>4348326</b>	4354652
0-60 psi	4348334	4354660
0-100 psi	<b>4348342</b>	<b>4354678</b>
0-200 psi	<b>4348350</b>	<b>4354686</b>
0-300 psi	<b>4348368</b>	4354695
0-500 psi	<b>4346216</b>	<b>4354708</b>
0-1000 psi	<b>4332440</b>	<b>4354716</b>
0-1500 psi	<b>4338597</b>	4354725
0-2000 psi	<b>4348376</b>	<b>4354733</b>
0-3000 psi	<b>4347000</b>	<b>4354741</b>
0-5000 psi	<b>4347018</b>	<b>4354759</b>
0-8000 psi	4348385	4354767
0-10,000 psi	<b>4348393</b>	4354776
0-15,000 psi	<b>4348406</b>	<b>4354784</b>

NOTE: Ready-to-ship part numbers shown in **bold, blue** print.

Ready-to-ship part numbers are available from stock (subject to prior sale). Items without part numbers are available on special order.

## N-10 Option List

Feature
<b>Signal Output</b>
4... 20 mA, 2-wire
1... 5 V, 3-wire
<b>Unit</b>
psi
psi absolute
On inquiry
<b>Pressure Range</b>
-30 inHg ... 0
-30 inHg ... 30 psi
-30 inHg ... 100 psi
0 psi ... 15 psi
0 psi ... 30 psi
0 psi ... 60 psi
0 psi ... 100 psi
0 psi ... 200 psi
0 psi ... 300 psi
0 psi ... 500 psi
0 psi ... 1000 psi
0 psi ... 1500 psi
0 psi ... 2000 psi
0 psi ... 3000 psi
0 psi ... 5000 psi
0 psi ... 8000 psi
0 psi ... 10000 psi
0 psi ... 15000 psi
0 psi ... 15 psi absolute
0 psi ... 100 psi absolute
On inquiry

Feature
<b>Process Connection</b>
1/4" NPT
On inquiry
<b>Special Design Features</b>
Without
Low power
<b>Electrical Connection</b>
1/2" NPT male conduit with free ends (NEMA 4 / IP 67)
<b>Cable Length</b>
6 feet
10 feet
20 feet
30 feet
On inquiry
<b>Approvals</b>
EEx nA II 3G T6 7 II 3D per ATEX
FM, CSA
<b>Quality Certificates</b>
Without
NIST Certificate of Calibration
<b>Additional Order Details</b>
Without
Additional text

# Type N-11 Non-Incendive Flush Diaphragm Pressure Transmitter Vacuum to 5,000 psi

## Standard Features

- **Signal Output:** 4-20 mA 2-wire or 1-5 V 3-wire
- **Supply Voltage:** 10-30 DC  
(6-30 VDC for 1-5 V version)
- **Process Connection:** G1B or G1/2B flush diaphragm depending on pressure range
- **Electrical Connection:** 1/2" NPT male conduit with 6 foot cable



## N-11 standard stocked part numbers

N-11 Gauge Ranges Ready-To-Ship Transmitters		
Description		
Range	Part #	
	4-20 mA 2-wire	1-5 V 3-wire
30"-0-30 psi	4372579	
0-15 psi <sup>1</sup>	<b>4354822</b>	4354792
0-100 psi	<b>4358428</b>	4354806
0-300 psi	<b>4364410</b>	
0-1000 psi	4364690	4364428
0-2000 psi	4358436	4354814
0-3000 psi	4364509	

**NOTES:**

<sup>1</sup>Pressure ranges from 50 inWC to 30 psi are supplied with G1B flush process connections. See Datasheet for details

NOTE: Ready-to-ship part numbers shown in **bold, blue** print.

Ready-to-ship part numbers are available from stock (subject to prior sale). Items without part numbers are available on special order.

## N-11 Option List

Feature
<b>Signal Output</b>
4... 20 mA, 2-wire
1... 5 V, 3-wire
<b>Unit</b>
psi
psi absolute
On inquiry
<b>Pressure Range</b>
-30 inHg ... 0
-30 inHg ... 30 psi
-30 inHg ... 100 psi
0 psi ... 15 psi
0 psi ... 30 psi
0 psi ... 60 psi
0 psi ... 100 psi
0 psi ... 200 psi
0 psi ... 300 psi
0 psi ... 500 psi
0 psi ... 1000 psi
0 psi ... 1500 psi
0 psi ... 2000 psi
0 psi ... 3000 psi
0 psi ... 5000 psi
0 psi ... 15 psi absolute
0 psi ... 100 psi absolute
On inquiry

Feature
<b>Process Connection</b>
G 1 B, flush diaphragm with O-ring
G 1/2 B, flush diaphragm with O-ring
<b>Material of Wetted Parts</b>
Stainless Steel and O-ring from EPDM
On inquiry
<b>Special Design Features</b>
Without
Low power
<b>Electrical Connection</b>
1/2" NPT Male Conduit with Free Ends (NEMA 4 / IP 67)
<b>Cable Length</b>
6 feet
10 feet
20 feet
30 feet
On inquiry
<b>Approvals</b>
EEx nA II 3G T6 7 II 3D per ATEX
FM, CSA
<b>Quality Certificates</b>
Without
NIST Certificate of Calibration
<b>Additional Order Details</b>
Without
Additional Text