

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 ¹⁾	10000psi ¹⁾	15000psi ¹⁾
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 ²⁾	34,800psi	34,800psi	43,500psi
{vacuum, gauge pressure, compound ranges, and absolute pressure references are available}									
Materials									
■ 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 _B	DC V	10 < U _B ≤ 30 for 4 ... 20 mA, 2-wire							
		6 < U _B < 30 for 1 ... 5 V, 3-wire low power version							
Signal output and maximum load R _A		4...20 mA: R _A ≤ (U _B - 10 V) / 0,02 A with R _A in Ohm and U _B in Volt							
		1 ... 5 V, 3-wire: R _A > 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 ³⁾	% 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

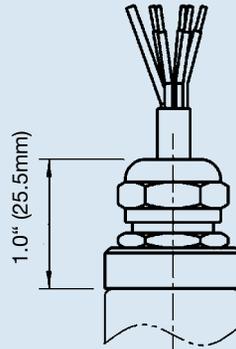
- 1) Only Model N-10.
- 2) For Model N-11: the burst pressure is limited to 21,000 psi unless the pressure seal is accomplished by using the sealing ring underneath the hex.
- 3) Includes linearity, hysteresis and repeatability. Limit point calibration performed in vertical mounting position with pressure 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.

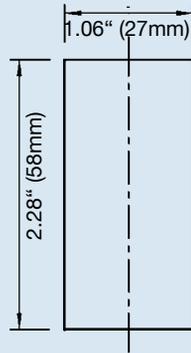
Dimensions in inches (mm)

Electrical connection

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

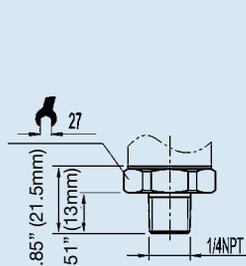


Case

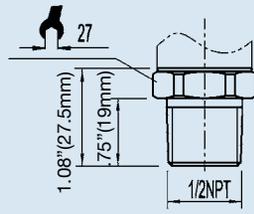


N-10 pressure connections

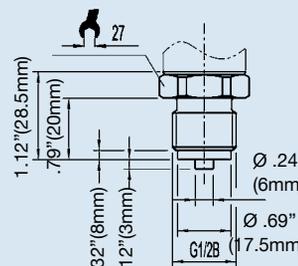
1/4 NPT male
Order code: NB



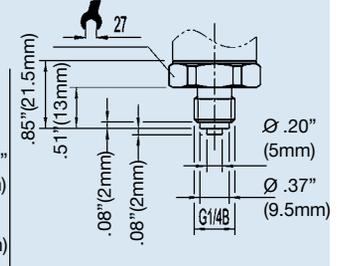
1/2 NPT male
Order code: ND



G 1/2
EN 837
Order code: GD

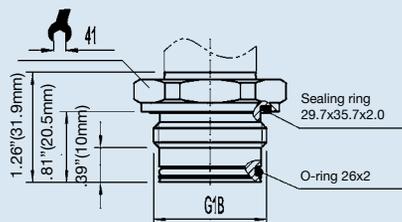


G 1/4
EN 837
Order code: GB

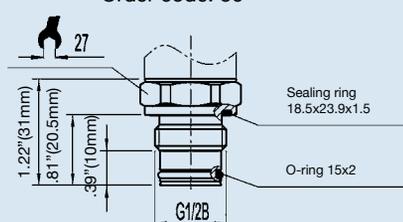


N-11 flush diaphragm pressure connections

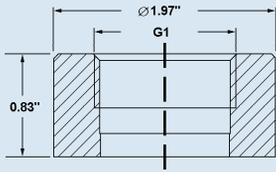
N-11 G 1
50 inWC to 25 psi
Order code: 85



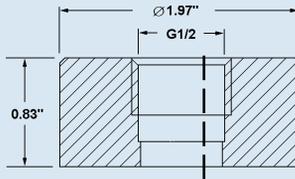
N-11 G 1/2
30 psi to 5,000 psi
Order code: 86



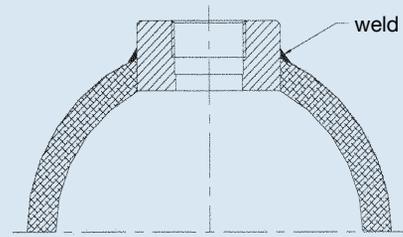
Matching P-1 weld insert adapters for N-11 flush diaphragm transmitters



P-1 G1 weld insert adapter
Part # 1206974
for pressure ranges ≤ 25 psi

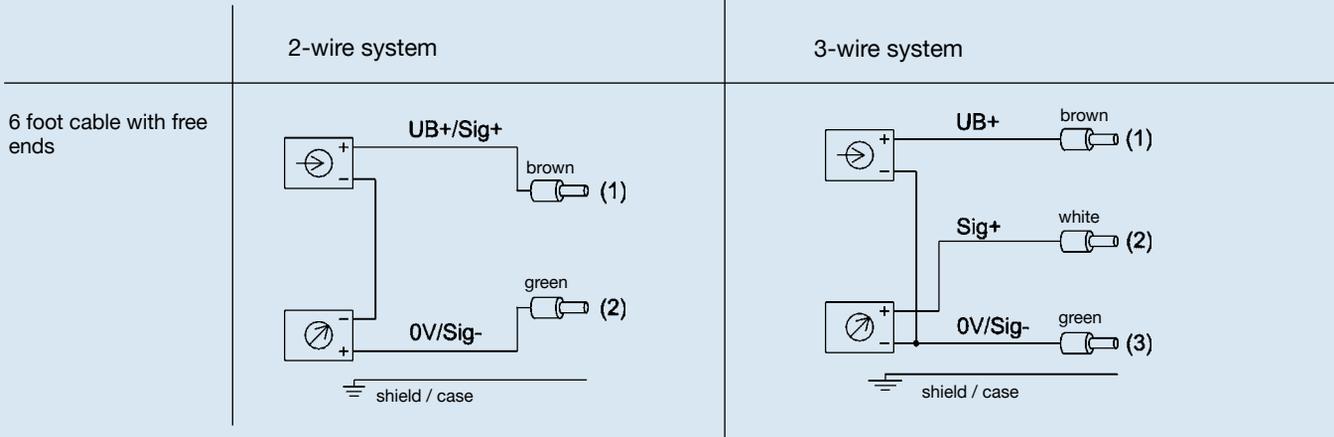


P-1 G1/2 weld insert adapter
Part # 1097008
for pressure ranges ≥ 30 psi

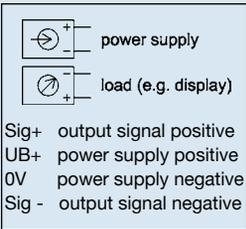


Cross section view of P-1 adapter installed in pipe.

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	4348309	4354627
30"-0-100 psi	4332431	4354636
0-15 psi	4348317	4354644
0-30 psi	4348326	4354652
0-60 psi	4348334	4354660
0-100 psi	4348342	4354678
0-200 psi	4348350	4354686
0-300 psi	4348368	4354695
0-500 psi	4346216	4354708
0-1000 psi	4332440	4354716
0-1500 psi	4338597	4354725
0-2000 psi	4348376	4354733
0-3000 psi	4347000	4354741
0-5000 psi	4347018	4354759
0-8000 psi	4348385	4354767
0-10,000 psi	4348393	4354776
0-15,000 psi	4348406	4354784

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
Signal Output
4... 20 mA, 2-wire
1... 5 V, 3-wire
Unit
psi
psi absolute
On inquiry
Pressure Range
-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
Process Connection
1/4" NPT
On inquiry
Special Design Features
Without
Low power
Electrical Connection
1/2" NPT male conduit with free ends (NEMA 4 / IP 67)
Cable Length
6 feet
10 feet
20 feet
30 feet
On inquiry
Approvals
EEx nA II 3G T6 7 II 3D per ATEX
FM, CSA
Quality Certificates
Without
NIST Certificate of Calibration
Additional Order Details
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 ¹	4354822	4354792
0-100 psi	4358428	4354806
0-300 psi	4364410	
0-1000 psi	4364690	4364428
0-2000 psi	4358436	4354814
0-3000 psi	4364509	

NOTES:

¹Pressure 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
Signal Output
4... 20 mA, 2-wire
1... 5 V, 3-wire
Unit
psi
psi absolute
On inquiry
Pressure Range
-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
Process Connection
G 1 B, flush diaphragm with O-ring
G 1/2 B, flush diaphragm with O-ring
Material of Wetted Parts
Stainless Steel and O-ring from EPDM
On inquiry
Special Design Features
Without
Low power
Electrical Connection
1/2" NPT Male Conduit with Free Ends (NEMA 4 / IP 67)
Cable Length
6 feet
10 feet
20 feet
30 feet
On inquiry
Approvals
EEx nA II 3G T6 7 II 3D per ATEX
FM, CSA
Quality Certificates
Without
NIST Certificate of Calibration
Additional Order Details
Without
Additional Text