

Non-Incendive Pressure Transmitters



SERIES 623/624

HAZARDOUS LOCATION PRESSURE TRANSMITTERS

The NOSHOK Series 623 and 624 pressure transmitters combine the reliability and long life of diffused semiconductor and sputtered thin film strain gage sensors with safe electronics for outstanding performance and value. These transmitters were designed for applications that require pressure measurement in hazardous environments. The pressure chamber is welded with no internal O-rings, gaskets or seals.

These transmitters are available with a wide variety of pressure ranges to suit most applications. All units undergo extensive testing during the manufacturing process to ensure that the highest performance is achieved in the demanding environments found in today's applications. The transmitters are available with a standard threaded connection as well as a flush diaphragm configuration and are Factory Mutual and Canadian Standards Association approved. All models incorporate significant levels of RFI, EMI and ESD protection.

FEATURES

- Accuracy to $\pm 0.25\%$ Full Scale (Best Fit Straight Line)
- Advanced diffused semiconductor and sputtered thin film sensor for maximum stability
- Welded 316 stainless steel, optional Hastelloy C4 on flush diaphragm model
- 1/2" NPT conduit connection
- Low power voltage outputs available
- NACE MR0175/ISO 15156 compliant
- ANSI/ISA-12.27.01-2003 Approved single seal
- Zener barriers are not required to meet non-Incendive approval

APPLICATIONS

- Hydraulic and pneumatic systems
- Pumps and compressors
- Test equipment and systems
- HVAC systems
- Power generation
- Water and wastewater
- Refrigeration equipment
- Laboratory and test equipment
- Chemical/Petrochemical
- Marine
- Pipeline gas compressors
- Oil field
- Offshore

SPECIFICATIONS

Output signals	4 mA to 20 mA, 2-wire; 1 Vdc to 5 Vdc low power, 3-wire; .5 Vdc to 4.5 Vdc low power, 3-wire
Accuracy	$\pm 0.25\%$ Full Scale (Best Fit Straight Line), including the effects of linearity, hysteresis and repeatability
Hysteresis	$\leq \pm 0.1\%$ Full Scale
Repeatability	$\leq \pm 0.05\%$ Full Scale
Stability	$\leq \pm 0.2\%$ Full Scale for 1 year, non-accumulating
Pressure ranges	Standard ranges from vacuum to 15000 psi
Proof pressure	3 times Full Scale for ranges 0 psi to 15 psi through 0 psi to 200 psi 1.75 times Full Scale for ranges 0 psi to 300 psi through 0 psi to 10000 psi 1.5 times Full Scale for 0 psi to 15000 psi range
Burst pressure	3.8 times Full Scale for ranges 0 psi to 15 psi through 0 psi to 200 psi 4 times Full Scale for ranges 0 psi to 300 psi through 0 psi to 10000 psi 3 times Full Scale for 0 psi to 15000 psi range
Power supply	10 Vdc to 30 Vdc unregulated for 4 mA to 20 mA; 6 Vdc to 30 Vdc for 1 Vdc to 5 Vdc, and .5 Vdc to 4.5 Vdc output, unregulated
Load limitations	$\leq (V_{Power} - 10)/0.020$ Amp for 4 mA to 20 mA $\geq 10,000 \Omega$ for 1 Vdc to 5 Vdc, 3-wire
Power consumption	20 mA maximum for 4 mA to 20 mA output and 2 mA for 1 Vdc to 5 Vdc and .5 Vdc to 4.5 Vdc outputs with power supply ≤ 12 Vdc
Response time	≤ 1 ms (between 10 % and 90 % Full Scale)
Durability	$> 100,000,000$ Full Scale cycles
Temperature ranges	Compensated 32 °F to 176 °F (0 °C to 80 °C) Zero effect is $\pm 0.011\%$ Full Scale/°F within compensated range Span effect is $\pm 0.011\%$ Full Scale/°F within compensated range Ambient -22 °F to 212 °F (-30 °C to 100 °C); -46 °F to 220 °F optional Media -25 °F to 212 °F (-32 °C to 100 °C); -46 °F to 220 °F optional Storage -40 °F to 212 °F (-40 °C to 100 °C)
Wetted materials	Model 623 is 316 stainless steel for ranges up through 0 psi to 300 psi, 316 stainless steel and Elgiloy for ranges 0 psig to 500 psig and higher; Model 624 is 316 stainless steel with BUNA N O-ring; Viton® O-ring optional
Housing material	316 stainless steel
Environmental rating	NEMA 4x, IP65 to IP67 dependent upon electrical connection
Electromagnetic Rating	RFI, EMI and ESD protection
Electrical rating	Reverse polarity, over-voltage and short circuit protected
Shock	1000 g's according to IEC 770 for mechanical shock
Vibration	20 g's according to IEC 770 under resonance conditions
Hazardous approvals	Factory Mutual and Canadian Standards Association approved 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 ratings 30 Vdc, 20 mA ANSI/ISA-12.27.01-2003, Approved single seal
Weight	Approximately 12 oz.

ORDERING INFORMATION								
Series 623	Stainless steel threaded connection	Series 624S	316 stainless steel flush diaphragm	Series 624H	Hastelloy flush diaphragm			
PRESSURE RANGES	-30 inHg to 0 psig	30V	0 psig to 30 psig	30	0 psig to 500 psig	500	0 psig to 5000 psig	5000
	-30 inHg to 30 psig	30/30	0 psig to 60 psig	60	0 psig to 1000 psig	1000	0 psig to 8000 psig	8000
	-30 inHg to 60 psig	30/60	0 psig to 100 psig	100	0 psig to 1500 psig	1500	0 psig to 10000 psig	10000
	-30 inHg to 100 psig	30/100	0 psig to 200 psig	200	0 psig to 2000 psig	2000	0 psig to 15000 psig	15000
	0 psig to 15 psig	15	0 psig to 300 psig	300	0 psig to 3000 psig	3000	0 psia to 15 psia	15A
psig = Gauge Pressure		psia = Absolute Pressure		Other ranges available on special request		0 psia to 100 psia		100A
NOTE: Series 624 is available for pressure ranges up to 0 psig to 8000 psig								
ACCURACY	1 ±0.25 % Full Scale (Best Fit Straight Line)							
OUTPUT SIGNALS	1 4 mA to 20 mA, 2-wire	3 1 Vdc to 5 Vdc, 3-wire Low Power	31 .5 Vdc to 4.5 Vdc, 3-wire Low Power					
PROCESS CONNECTIONS	2 1/4" NPT male			8 1/2" NPT male				
	11 G1/2B male flush (model 624 only) (pressure ranges 0 psi to 30 psi and higher)			13 G1B male flush (model 624 only) (pressure ranges less than 0 psi to 30 psi)				
ELECTRICAL CONNECTIONS	6 1/2" NPT male conduit with 5 foot integral cable							
OPTIONS	ORF Threaded Orifice (model 623 only)							

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

Series623
 Pressure Range0 psig to 500 psig
 Accuracy±0.25 % Full Scale
 Output Signal4 mA to 20 mA
 Process Connection1/2" NPT male
 Electrical ConnectionIntegral cable
 OptionThreaded orifice

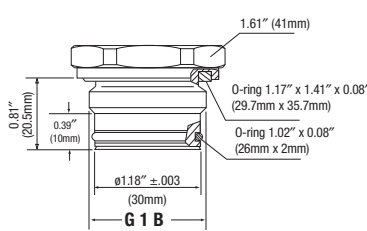
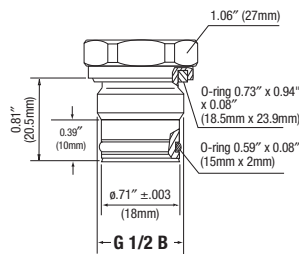
623 - 500 - 1 - 1 - 8 - 6 - ORF

Outline Dimensions

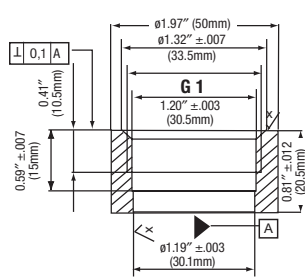
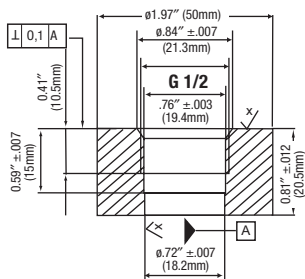
Front flush process connections

For ranges 0 psi to 30 psi and higher

For ranges less than 0 psi to 30 psi



Flush corresponding port weld-on adapters



2-WIRE WIRING

+ Supply	Brown
+ Output	Green

3-WIRE WIRING

+ Supply	Brown
Common	Green
+ Output	White