



# SERIES 615/616

## HIGH ACCURACY HEAVY DUTY PRESSURE TRANSDUCERS

NOSHOK Series 615/616 Pressure Transducers are designed for heavy duty applications requiring high accuracy and durability. Utilizing similar diffused semiconductor or sputtered Thin Film technology found in the 100 series, these transducers are stable, accurate, shock resistant, and extremely durable.

The durability is coupled with the mechanical integrity of the case, process connection, and wetted parts constructed of corrosion resistant stainless steel, completing the NOSHOK product characteristics you have come to expect.

Available in a wide variety of electrical and process configurations and fully adaptable to the 1800, 1900 and 2000 Series Smart System Digital Indicators, the Series 615/616 Pressure Transducers are the choice for heavy duty applications.

A final electrical output and calibration inspection is performed on all NOSHOK transducers prior to shipment to ensure 100% "out of the box" reliability.

### FEATURES

- Advanced diffused semiconductor and sputtered thin film sensor for maximum stability
- High accuracy and long term stability
- Ranges from vacuum to 120000 psi
- Corrosion resistant stainless steel construction
- Span and zero adjustments
- Compatible with NOSHOK 1800, 1900 and 2000 Series Smart System Indicators

### APPLICATIONS

- Hydraulic and pneumatic systems
- Industrial machinery and machine tools
- Injection molding machines
- Stamping and forming presses
- Pumps and compressors
- Laboratory and test equipment
- Railroad equipment
- HVAC systems
- Medical
- Refrigeration equipment
- Marine
- Power generation
- Construction
- Petrochemical
- Water management



Also available with our 1800 Series Attachable Loop Indicator. See page 44 for more information.

### SPECIFICATIONS

<b>Output signals</b>	4 mA to 20 mA, 2-wire; 1 Vdc to 5 Vdc, 1 Vdc to 6 Vdc, 1 Vdc to 11 Vdc, 3-wire; 0 Vdc to 5 Vdc and 0 Vdc to 10 Vdc, 3-wire; 0 Vdc to 5 Vdc and 0 Vdc to 10 Vdc, 4-wire
<b>Pressure ranges</b>	Standard gauge ranges from vacuum to 120000 psig; Standard absolute ranges from 15 psia to 300 psia
<b>Proof pressure</b>	3 times Full Scale for ranges 0 psi to 2 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 1.2 times Full Scale for ranges 0 psi to 20000 psi through 0 psi to 120000 psi
<b>Burst pressure</b>	3.8 times Full Scale for ranges 0 psi to 2 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 1.5 times Full Scale for ranges 0 psi to 20000 psi through 0 psi to 120000 psi
<b>Accuracy</b>	± 0.25 % Full Scale (best fit straight line) Includes the combined effects of linearity, hysteresis and repeatability ± 0.125 % Full Scale (optional)
<b>Repeatability</b>	≤ ± 0.05 % Full Scale
<b>Hysteresis</b>	≤ ± 0.1 % Full Scale
<b>Stability</b>	≤ ± 0.2 % Full Scale for 1 year, non accumulating
<b>Power supply</b>	10 Vdc to 30 Vdc for current output, unregulated 14 Vdc to 30 Vdc for voltage output, unregulated
<b>Load limitations</b>	≤ (VPower-10)/0.020 Amp for 4 mA to 20 mA ≥ 10,000 Ω for 0 Vdc to 10 Vdc, 3-wire ≥ 5,000 Ω for 0 Vdc to 5 Vdc, 3-wire
<b>Wetted materials</b>	316 stainless steel for vacuum through 300 psi; 17-4PH stainless steel sensing diaphragm and 316 stainless steel process connection for higher ranges
<b>Housing materials</b>	316 stainless steel
<b>Temperature ranges</b>	Compensated 32 °F to 175 °F/0 °C to 80 °C Effect ± 0.01 %/°F for zero and span Storage - 40 °F to 212 °F/-40 °C to 100 °C Medium - 20 °F to 212 °F/-30 °C to 100 °C Ambient - 15 °F to 175 °F/-10 °C to 80 °C
<b>Response time</b>	Less than 1 ms (between 10 % and 90 % Full Scale)
<b>Durability</b>	>100,000,000 Full Scale cycles
<b>Adjustment</b>	± 10 % Full Scale for zero and span
<b>Environmental protection</b>	NEMA 4X, IP65 (IEC 529)
<b>Electromagnetic rating</b>	CE compliant to EMC norm EN61326: 1997/A1: 1998 RFI, EMI and ESD protection
<b>Electrical protection</b>	Reverse polarity, overvoltage and short circuit protection
<b>Shock</b>	Less than ± 0.05 % Full Scale effect or 1000 g's @ 20 ms on any axis
<b>Vibration</b>	Less than ± 0.01 % Full Scale effect for 15 g's @ 0 Hz to 2000 Hz on any axis
<b>Weight</b>	Approximately 7.2 oz.

High temperature version available on request

**ORDERING INFORMATION**

SERIES 615 (internal diaphragm)	SERIES 616 (front flush diaphragm)					
<b>PRESSURE RANGES</b>	-30 inHg to 0 psig 30V -30 inHg to 15 psig 30/15 -30 inHg to 30 psig 30/30 -30 inHg to 60 psig 30/60 -30 inHg to 100 psig 30/100 -30 inHg to 150 psig 30/150 -30 inHg to 200 psig 30/200 -30 inHg to 300 psig 30/300	0 psig to 2 psig 2 0 psig to 3 psig 3 0 psig to 5 psig 5 0 psig to 10 psig 10 0 psig to 15 psig 15 0 psig to 30 psig 30 0 psig to 60 psig 60 0 psig to 100 psig 100	0 psig to 150 psig 150 0 psig to 200 psig 200 0 psig to 300 psig 300 0 psig to 500 psig 500 0 psig to 600 psig 600 0 psig to 750 psig 750 0 psig to 1000 psig 1000 0 psig to 2000 psig 2000	0 psig to 3000 psig 3000 0 psig to 4000 psig 4000 0 psig to 5000 psig 5000 0 psig to 6000 psig 6000 0 psig to 7500 psig 7500 0 psig to 10000 psig 10000 0 psig to 15000 psig 15000 0 psig to 20000 psig 20000	0 psig to 30000 psig 30000 0 psig to 40000 psig 40000 0 psig to 50000 psig 50000 0 psig to 60000 psig 60000 0 psig to 75000 psig 75000 0 psig to 85000 psig 85000 0 psig to 100000 psig 100000 0 psig to 120000 psig 120000	0 psia to 15 psia 15A 0 psia to 30 psia 30A 0 psia to 60 psia 60A 0 psia to 100 psia 100A 0 psia to 150 psia 150A 0 psia to 200 psia 200A 0 psia to 300 psia 300A
	psig = Gauge Pressure    psia = Absolute Pressure    Other ranges available on special request    NOTE: Series 616 is not available in pressure ranges 10,000 psig and above.					
<b>ACCURACY</b>	1 ± 0.25 % Full Scale (Best fit straight line)		2 ± 0.125 % Full Scale (Best fit straight line)			
<b>OUTPUT SIGNALS</b>	1 4 mA to 20 mA, 2-wire		4 1 Vdc to 6 Vdc, 3-wire*		NOTE: 0 Vdc to 5 Vdc and 0 Vdc to 10 Vdc outputs are also available in 4-wire configurations for use with other electrical systems.	
*Ranges up to 0 psig to 60000 psig	2 0 Vdc to 5 Vdc, 3-wire		5 0 Vdc to 10 Vdc, 3-wire			
	3 1 Vdc to 5 Vdc, 3-wire		6 1 Vdc to 11 Vdc, 3-wire*			
<b>PROCESS CONNECTIONS</b>	615: 616:	2 1/4" NPT male 11 G 1/2 B (pressure ranges 0 psig to 60 psig and higher)	6 9/16"-18 aminco (std on 30000 to 120000 psig) 13 G 1 B (pressure ranges 0 psig to 30 psig and below)	8 1/2" NPT male Other connections available upon request		
<b>ELECTRICAL CONNECTIONS</b>	1 3/6" cable (connected to option 8) 3 6-pin Bendix 6 1/2" NPT conduit w/3/6" cable		8 Hirschmann (DIN EN 175301-803 Form A) 14 Hirschmann type with 1/2" NPT female conduit		25 M12 x 1 4-pin 36 Integral 3/6" Cable	
<b>OPTIONS</b>	ORF SS Threaded Orifice					

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

**EXAMPLE**

615 - 500 - 1 - 1 - 8 - 1 - ORF

- Series .....615
- Pressure Range .....500 psig
- Accuracy .....± 0.25 %
- Output Signal .....4 mA to 20 mA, 2-Wire
- Process Connection .....1/2" NPT Male
- Electrical Connection .....3/6" Cable
- Option .....Orifice

**Outline Dimensions**



\*Note: mate supplied separately or customer supplied

**2-WIRE WIRING**

	Hirschmann	Cable	M12	Bendix
+ Supply	1	Red	1	A
+ Output	2	Black	3	B

**3-WIRE WIRING**

	Hirschmann	Cable	M12	Bendix
+ Supply	1	Red	1	A
Common	2	Black	3	B
+ Output	3	White	4	C

**Hirschmann**

**NOTE**  
See 621/622 Series for G1/2B and G1B Front Flush Process Connection Dimensions pg. 28