



## SERIES 100

### HIGH PERFORMANCE CURRENT OUTPUT PRESSURE TRANSMITTERS

NOSHOK 100 Series Current Output Pressure Transmitters are designed to provide a previously unequalled level of performance, utilizing diffused semiconductor and sputtered thin film strain gage technology. 100 Series transmitters are highly repeatable, shock resistant and are extremely stable over long periods of time. CE compliance which includes substantial levels of RFI, EMI and ESD protection combined with reverse polarity and over-voltage protection insure they perform well in the most demanding applications.

Advanced manufacturing techniques combined with technologically advanced standard features allow NOSHOK to offer a level of performance previously found only on transducers costing hundreds of dollars more. Final calibration tests performed on all NOSHOK transmitters prior to shipment ensures 100% "out of the box" reliability.

#### FEATURES

- Accuracy up to  $\pm 0.25$  % Full Scale (BFSL)
- Welded stainless steel pressure chamber
- Advanced diffused semiconductor and sputtered thin film sensor for maximum stability
- Compact size
- High alternating load resistance
- High overpressure protection
- CE compliant to suppress RFI, EMI and ESD
- Compatible with NOSHOK Smart System Indicators

#### APPLICATIONS

- Hydraulic and pneumatic systems
- Injection molding machines
- Railroad engine controls
- HVAC systems
- Stamping and forming presses
- Refrigeration controls
- Industrial machinery and machine tools
- Pumps and compressors

#### SPECIFICATIONS

<b>Output signal</b>	4 mA to 20 mA, 2-wire
<b>Pressure ranges</b>	Standard gauge ranges from vacuum to 15000 psi; Standard Absolute ranges from 15 psia to 300 psia
<b>Proof pressure</b>	3 times Full Scale for ranges 0 psi to 5 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 to 15000 psi range
<b>Burst pressure</b>	3.8 times Full Scale for ranges 0 psi to 5 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 to 15000 psi range
<b>Accuracy</b>	$\pm 0.5$ % Full Scale (BFSL); Optional $\pm 0.25$ % Full Scale (BFSL); (Includes the effects of non-linearity, hysteresis, non-repeatability, zero point and full scale errors)
<b>Repeatability</b>	$\leq \pm 0.05$ % Full Scale
<b>Hysteresis</b>	$\leq \pm 0.1$ % Full Scale
<b>Stability</b>	$\leq \pm 0.2$ % Full Scale for 1 year, non-accumulating
<b>Response time</b>	$\leq 1$ ms (between 10 % and 90 % Full Scale)
<b>Power supply</b>	10 Vdc to 30 Vdc, unregulated
<b>Load limitations</b>	$\leq (V_{\text{power supply}} - 10) / .020$ Amp
<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 material</b>	316 stainless steel
<b>Adjustment</b>	$\pm 10$ % Full Scale for zero and span
<b>Pressure cycle limit</b>	150 Hz
<b>Durability</b>	$> 100,000,000$ Full Scale cycles
<b>Temperature ranges</b>	Compensated 32 °F to 176 °F (0 °C to 80 °C) Effect $\pm 0.017$ % Full Scale/°F for zero and span Ambient -40 °F to 185 °F (-40 °C to 85 °C) Media -22 °F to 212 °F (-30 °C to 100 °C) Storage -40 °F to 212 °F (-40 °C to 100 °C)
<b>Environmental rating</b>	IP65, NEMA 4X according to EN 60529/IEC 529
<b>Electromagnetic rating</b>	CE compliant to EMC norm EN 61326:1997/A1:1998 RFI, EMI and ESD protection
<b>Electrical protection</b>	Reverse polarity, over-voltage and short circuit protection
<b>Shock</b>	1000 g's per IEC 770
<b>Vibration</b>	30 g's per IEC 770
<b>Weight</b>	Approximately 3.5 oz.

**ORDERING INFORMATION**

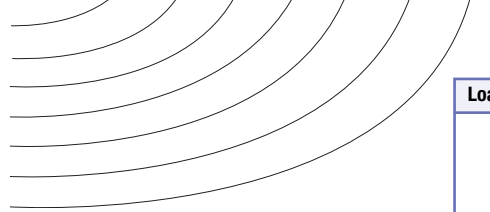
SERIES 100										
<b>PRESSURE RANGES</b>	-30 inHg to 0 psig	<b>30V</b>	0 psig to 5 psig	<b>5</b>	0 psig to 200 psig	<b>200</b>	0 psig to 3000 psig	<b>3000</b>	0 psia to 15 psia	<b>15A</b>
	-30 inHg to 15 psig	<b>30/15</b>	0 psig to 10 psig	<b>10</b>	0 psig to 300 psig	<b>300</b>	0 psig to 4000 psig	<b>4000</b>	0 psia to 30 psia	<b>30A</b>
	-30 inHg to 30 psig	<b>30/30</b>	0 psig to 15 psig	<b>15</b>	0 psig to 500 psig	<b>500</b>	0 psig to 5000 psig	<b>5000</b>	0 psia to 60 psia	<b>60A</b>
	-30 inHg to 45 psig	<b>30/45</b>	0 psig to 25 psig	<b>25</b>	0 psig to 600 psig	<b>600</b>	0 psig to 6000 psig	<b>6000</b>	0 psia to 100 psia	<b>100A</b>
	-30 inHg to 60 psig	<b>30/60</b>	0 psig to 30 psig	<b>30</b>	0 psig to 750 psig	<b>750</b>	0 psig to 7500 psig	<b>7500</b>	0 psia to 150 psia	<b>150A</b>
	-30 inHg to 100 psig	<b>30/100</b>	0 psig to 60 psig	<b>60</b>	0 psig to 1000 psig	<b>1000</b>	0 psig to 10000 psig	<b>10000</b>	0 psia to 200 psia	<b>200A</b>
	-30 inHg to 150 psig	<b>30/150</b>	0 psig to 100 psig	<b>100</b>	0 psig to 1500 psig	<b>1500</b>	0 psig to 15000 psig	<b>15000</b>	0 psia to 300 psia	<b>300A</b>
	-30 inHg to 200 psig	<b>30/200</b>	0 psig to 150 psig	<b>150</b>	0 psig to 2000 psig	<b>2000</b>				
					psig = gauge pressure		psia = absolute pressure	Other ranges available on special request ranges		
<b>ACCURACY</b>	<b>1</b>	±0.5 % Full Scale (BFSL)			<b>2</b>	±0.25 % Full Scale (BFSL)				
<b>OUTPUT SIGNAL</b>	<b>1</b> 4 mA to 20 mA, 2-wire									
<b>PROCESS CONNECTIONS</b>	<b>1</b>	1/8" NPT Male		<b>2</b>	1/4" NPT Male		<b>3</b>	7/16" -20 UNF #4 SAE J-514 Male		
	<b>9</b>	7/16" -20 UNF #4 SAE J-514 Female		<b>10</b>	1/4" BSP Male		<b>4</b>	1/8" NPT Female		
<b>ELECTRICAL CONNECTION</b>	<b>1</b>	36" cable (connected to option 7)			<b>2</b>	4-pin bendix		<b>3</b>	6-pin bendix	
	<b>7</b>	Mini-Hirschmann (DIN EN 175301-803 Form C)			<b>25</b>	M12 x 1 4-pin		<b>6</b>	1/2" NPT conduit (with 36" cable)	
<b>36</b>	Integral cable 36"									
<b>OPTIONS</b>	<b>ORF</b> Threaded orifice									

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

**EXAMPLE**

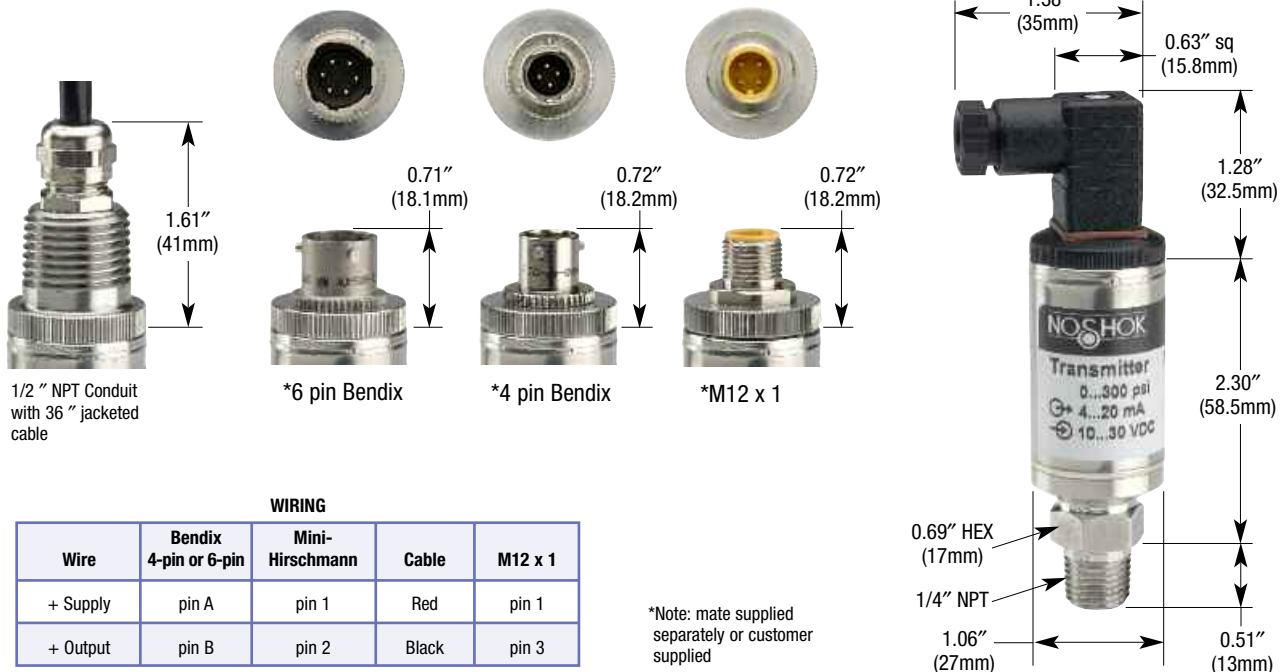
Series ..... 100  
 Pressure Range ..... 0 psig to 500 psig  
 Accuracy ..... ±0.50 % Full Scale  
 Output Signal ..... 4 mA to 20 mA  
 Process Connection ..... 1/4" NPT Male  
 Electrical Connection ... Mini-Hirschmann  
 Option ..... Orifice

**100 - 500 - 1 - 1 - 2 - 7 - ORF**



Load Limitations 4mA to 20mA output
$V_{min} = 10V + (.020 \times R_L)$
$R_L = \text{Loop resistance } (\Omega)$
$R_L = R_S + R_W$
$R_S = \text{Sensor resistance } (\Omega)$
$R_W = \text{Wire Resistance } (\Omega)$

**Outline Dimensions**



WIRING				
Wire	Bendix 4-pin or 6-pin	Mini- Hirschmann	Cable	M12 x 1
+ Supply	pin A	pin 1	Red	pin 1
+ Output	pin B	pin 2	Black	pin 3

\*Note: mate supplied separately or customer supplied

Mini-Hirschmann