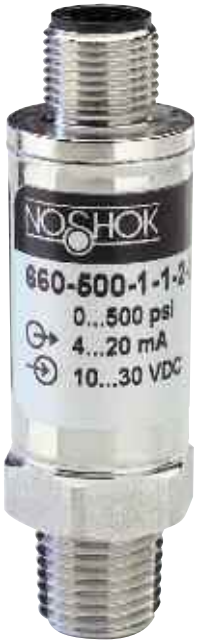
Micro Size Pressure Transducers



SERIES 660

HIGH PERFORMANCE MICRO-SIZE PRESSURE TRANSDUCERS

NOSHOK Series 660 pressure transducers combine high performance with small size to produce an exceptional product. These transducers are designed with high overpressure capability to provide reliability and long life in hydraulic and pneumatic applications containing process pulsations and high vibration. The sensor utilizes sputtered thin film strain gage technology that provides stainless steel media compatibility and long term measurement stability. All of this in a small package that is more easily designed into applications than conventional transducers. This package is all metal and welded for reliable and trouble-free performance in high shock and vibration conditions often found in off road applications. Variations in pressure connections, outputs and electrical connections are available and custom configurations are possible for volume applications.

FEATURES

- Accuracy to ±0.25 % Full Scale (Best Fit Straight Line)
- Welded stainless steel pressure chamber
- Sputtered thin film sensor for maximum stability
- Designed to handle pressure spikes and process pulsation
- Off road capable due to high vibration and shock resistance
- CE compliant

APPLICATIONS

- Hydraulic and pneumatic systems
- Off road vehicles
- Refrigeration controls
- Industrial machinery and machine tools
- Pumps and compressors

SPECIFICATIONS

Output signal	4 mA to 20 mA 2-wire, 1 Vdc to 5 Vdc 3-wire; 0.1 Vdc to 10 Vdc, 3-wire
Pressure ranges	Standard gauge ranges from 200 psig to 15000 psig
Proof pressure	2 times Full Scale for ranges 0 psi to 200 psi through 0 psi to 10000 psi 1.5 times Full Scale for 0 psi to 15000 psi range
Burst pressure	9 times Full Scale for 0 psi to 200 psi through 0 psi to 1000 psi 3 times Full Scale for ranges 0 to 3000 psi through 0 psi to 15000 psi
Accuracy	±0.25 % Full Scale (Best Fit Straight Line) (Includes the combined effects of linearity, hysteresis and repeatability)
Repeatability	≤ ±0.05 % Full Scale
Hysteresis	≤ ±0.5 % Full Scale
Stability	≤ ±.2 % Full Scale for 1 year, non-accumulating
Response time	<2 ms (between 10 % and 90 % Full Scale)
Power supply	10 Vdc to 30 Vdc for 4 mA to 20 mA, 2-wire; 8 Vdc to 30 Vdc for 1 Vdc to 5 Vdc, 3-wire; 0.1 Vdc to 10 Vdc, 3-wire, unregulated
Load limitations	Requires 10 Vdc across transmitter connections minimum for the 4 mA to 20 mA output; requires receiving instrument input resistance greater than 5000 Ω for the 1 Vdc to 5 Vdc, 0.1 Vdc to 10 Vdc outputs
Wetted materials	17-4PH stainless steel sensing diaphragm and 316 stainless steel pressure connection
Housing material	316 stainless steel
Temperature ranges	Compensated -4 °F to 185 °F (-20 °C to 85 °C) Zero effect ±0.01 % Full Scale/°F Span effect ±0.01 % Full Scale/°F Ambient -4 °F to 185 °F (-25 °C to 85 °C) Media -13 °F to 185 °F (-40 °C to 100 °C); -40 °F to 257 °F (-40 °C to 125 °C) available on special request Storage -40 °F to 212 °F (-40 °C to 100 °C)
Environmental rating	IP65, NEMA 4X according to EN 60529/IEC 529; IP67 M12x1 electrical connection for pressure ranges 0 psig to 1500 psig or higher
Electromagnetic rating	CE compliant to EMC norm EN 61326:1997/A1:1998 RFI, EMI and ESD protection
Electrical protection	Reverse polarity, over-voltage and short circuit protection
Shock	1000 g's per IEC 770
Vibration	20 g's per IEC 770
Weight	Approximately 1.75 oz.

ORDERING INFORMATION

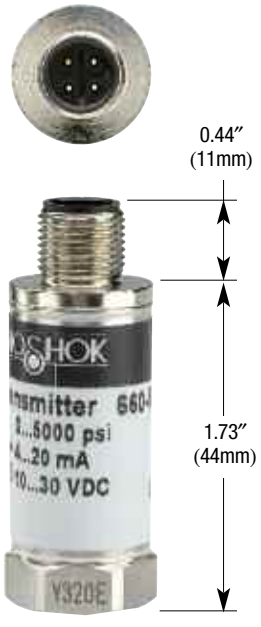
SERIES 660									
PRESSURE RANGES	0 psig to 200 psig	**200**	0 psig to 500 psig	**500**	0 psig to 3000 psig	**3000**	0 psig to 10000 psig	**10000**
	0 psig to 300 psig	**300**	0 psig to 1000 psig	**1000**	0 psig to 5000 psig	**5000**	0 psig to 15000 psig	**15000**
	psig = Gauge Pressure		Other ranges available on special request					
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		**27** 0.1 Vdc to 10 Vdc, 3-wire			
PROCESS CONNECTIONS	**1** 1/8 ″ NPT male		**2** 1/4 ″ NPT male		**3** 7/16 ″-20 UNF adjustable per SAE J-514 male			
ELECTRICAL CONNECTIONS	**1** 36 ″ cable (connected to option 7)		**7** Mini-Hirschmann (DIN EN 175301-803 Form C)				**25** M12 x 1 4-pin	
OPTIONS	**ORF** Threaded Orifice							

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

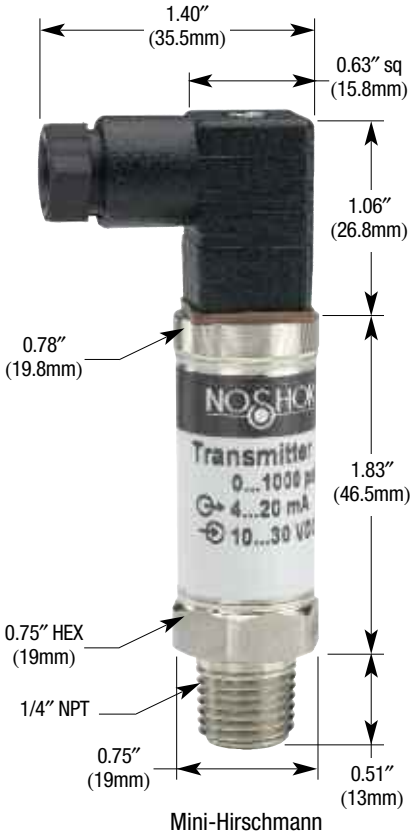
EXAMPLE **660 – 500 – 1 – 1 – 2 – 25 – ORF**

Series 660
Pressure Range . . . . . .0 psig to 500 psig
Accuracy . . . . . .±0.25 % Full Scale
Output Signal . . . . . .4 mA to 20 mA
Process Connection . . . . . .1/4 ″ NPT Male
Electrical Connection . . . . . .M12 x 1
Option . . . . . .Orifice

Outline Dimensions



M12 X 1



Mini-Hirschmann

2-WIRE WIRING

Wiring	M12	Mini-Hirschmann	Cable
+ Supply	1	1	Red
+ Output	3	2	Black

3-WIRE WIRING

Wiring	M12	Mini-Hirschmann	Cable
+ Supply	1	1	Red
Common	3	2	Black
+ Output	4	3	White