

SERIES 640

PRECISION HEAVY DUTY PRESSURE TRANSDUCERS WITH SERIAL INTERFACE



NOSHOK Series 640 Transducers have been designed for industrial and laboratory applications requiring high accuracy and repeatability with excellent compensation for the effects of temperature. The temperature compensation system practically eliminates temperature induced errors from 50 °F to 104 °F.

Series 640 Transducers utilize thin film and diffused semiconductor technology dependent on pressure range. These sensors are highly accurate, shock resistant and extremely stable over long periods of time.

Standard output is a digital output with an RS232-C serial interface. Other outputs and electrical connections are available to meet the demands of almost any precision application.

A final electrical output and calibration inspection is performed on all NOSHOK Series 640 Transducers prior to shipment to ensure 100% “out of the box” reliability.

FEATURES

- Advanced diffused semiconductor and sputtered thin film sensor for maximum stability
- Gauge or absolute
- High accuracy and long term stability
- Ranges include vacuum through 15000 psi
- High over range protection
- Serial or analog outputs
- Standard 1/2" NPT process connection
- Corrosion resistant stainless steel construction

APPLICATIONS

- Research
- Testing
- Aeronautical
- Calibration
- Precision controls
- Marine
- Power generation
- Medical

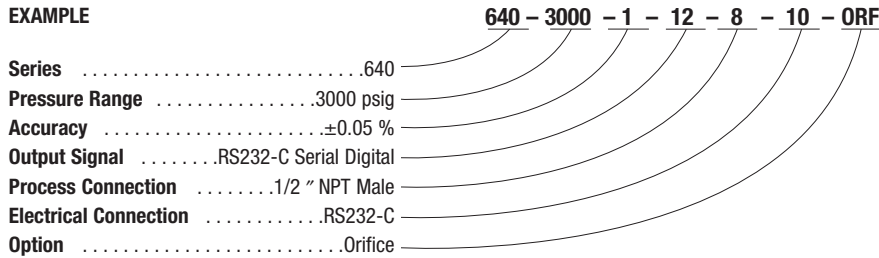
SPECIFICATIONS

Output signals	4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc and 0 Vdc to 10 Vdc, 3-wire; RS232-C digital output
Pressure ranges	Standard gauge ranges from vacuum to 15000 psig Standard absolute ranges from 15 psia to 300 psia
Proof pressure	3 times Full Scale for ranges 0 psi to 5 psi through 0 psi to 200 psi 2 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	4 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 psi to 15000 psi range
Accuracy	± 0.05 % Full Scale (Best fit straight line) (Includes the combined effects of linearity, hysteresis and repeatability) ± 0.025 % Full Scale (optional)
Hysteresis	≤ ± 0.03 % Full Scale
Stability	≤ ± 0.1 % Full Scale; 5 psi ± 0.2 % Full Scale per year
Power supply	10 Vdc to 30 Vdc for analog output, unregulated 14 Vdc to 30 Vdc for 0 to 10 Vdc output, unregulated Voltage supply from interface for RS232-C, unregulated
Repeatability	≤ ± 0.03 % of Full Scale
Load limitations	≤ (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
Wetted materials	316 stainless steel for vacuum through 300 psi; 17-4PH stainless steel sensing diaphragm and 316 stainless steel process connection for higher ranges
Housing materials	316 stainless steel
Temperature ranges	Compensated 32 °F to 160 °F/0 °C to 70 °C Effect: ± 0.005 %/°F (32 °F-50 °F) to zero point and pressure range no effect (50 °F-104 °F) for zero and span ± 0.005 %/°F (104 °F-158 °F) to zero point and pressure range Storage -5 °F to 160 °F/-20 °C to 70 °C Medium -5 °F to 160 °F/-20 °C to 70 °C Ambient 32 °F to 160 °F/0 °C to 70 °C
Response time	< 300 ms (between 10 % to 90 % Full Scale)
Durability	> 100,000,000 Full Scale cycles
Adjustment	± 5 % Full Scale of zero and span (programmable with serial interface, communication software included)
Environmental protection	NEMA 4x, IP65 (IEC 529)
Electromagnetic rating	CE compliant to EMC norm EN61326: 1997/A1: 1998 RFI, EMI and ESD protection
Electrical protection	Reverse polarity, overvoltage and short circuit protection
Shock	Less than ± 0.05 % Full Scale effect for 100 g's @ 20 ms on any axis
Vibration	Less than ± 0.01 % Full Scale effect for 15 g's @ 5 Hz to 2000 Hz on any axis
Weight	Approximately 11 oz.

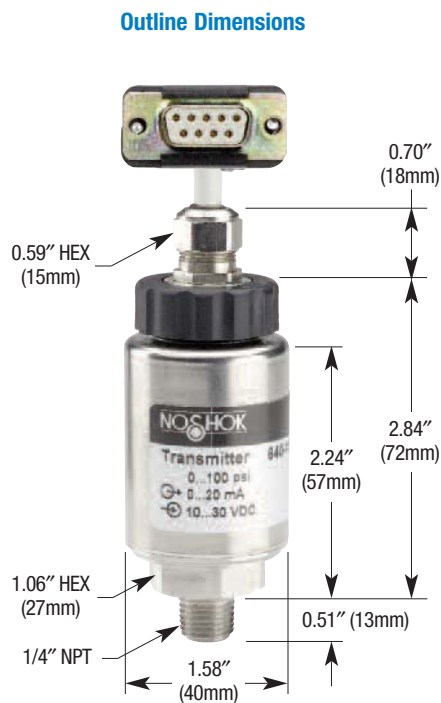
ORDERING INFORMATION												
SERIES 640												
PRESSURE RANGES	-30 inHg to 0 psig	30V	-30 inHg to 200 psig	30/200	0 psig to 60 psig	60	0 psig to 500 psig	500	0 psig to 5000 psig	5000	0 psia to 15 psia	15A
	-30 inHg to 15 psig	30/15	-30 inHg to 300 psig	30/300	0 psig to 100 psig	100	0 psig to 750 psig	750	0 psig to 6000 psig	6000	0 psia to 30 psia	30A
	-30 inHg to 30 psig	30/30	0 psig to 5 psig	5	0 psig to 150 psig	150	0 psig to 1000 psig	1000	0 psig to 7500 psig	7500	0 psia to 60 psia	60A
	-30 inHg to 60 psig	30/60	0 psig to 10 psig	10	0 psig to 200 psig	200	0 psig to 2000 psig	2000	0 psig to 10000 psig	10000	0 psia to 100 psia	100A
	-30 inHg to 100 psig	30/100	0 psig to 15 psig	15	0 psig to 300 psig	300	0 psig to 3000 psig	3000	0 psig to 15000 psig	15000	0 psia to 150 psia	150A
	-30 inHg to 150 psig	30/150	0 psig to 30 psig	30	psig = Gauge Pressure psia = Absolute Pressure Other ranges available on special request						0 psia to 200 psia	200A
											0 psia to 300 psia	300A
ACCURACY	1 ±0.05 % Full Scale (Best fit straight line)				2 ±0.025 % Full Scale (Best fit straight line)							
OUTPUT SIGNALS	1 4 mA to 20 mA, 2-wire analog				2 0 Vdc to 5 Vdc, 3-wire analog				5 0 Vdc to 10 Vdc, 3-wire analog			
	12 RS232-C serial interface digital											
PROCESS CONNECTIONS	2 1/4" NPT male				8 1/2" NPT male other connections available upon request							
ELECTRICAL CONNECTIONS	1 54" Integral cable				10 RS232-C w/58" cable & plug				25 M12 x 1 4-pin			
OPTIONS	ORF SS Threaded Orifice											

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

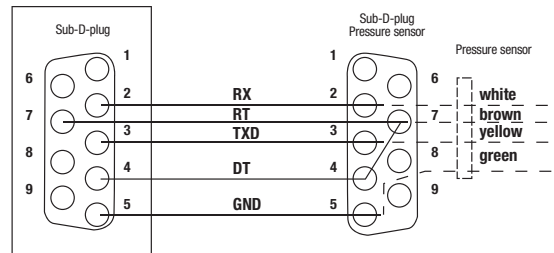
EXAMPLE



Outline Dimensions



RS232-C Interface



2-WIRE WIRING

Wiring	M12	Cable
+ Supply	1	Brown
+ Output	3	Green

3-WIRE WIRING

Wiring	M12	Cable
+ Supply	1	Brown
Common	3	Green
+ Output	4	White