Precision Heavy-Duty Pressure Transducers with Serial Interface

640 SERIES

- Designed for industrial and laboratory applications requiring high accuracy and repeatability
- Temperature compensation system virtually eliminates temperature induced errors from 50 °F to 104 °F
- Ranges include vacuum through 15,000 psi; Absolute ranges from 15 psia to 300 psia
- Standard output is USB (other outputs & electrical connections available)
- Advanced diffused semi-conductor and sputtered thin film sensor provide maximum stability
- Gauge or absolute pressure ranges
- Outstanding accuracy and long term stability
- High over range protection
- Standard 1/2" NPT process connection
- Corrosion resistant stainless steel construction
- CE compliant to suppress RFI, EMI and ESD
- Final calibration tests prior to shipment ensures 100% "out of the box" reliability
- Communication software allows the capability of display, zero point adjustment and data logging of pressure and temperature through a PC

FEATURES

- Advanced diffused semiconductor and sputtered thin film sensor for
- Gauge or absolute
- High accuracy and long term stability
- Ranges include vacuum through 15,000 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, USB
Pressure ranges	Standard gauge ranges from vacuum to 15,000 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 10,000 psi 1.5 times full scale for 0 psi to 15,000 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 10,000 psi 3 times full scale for 0 psi to 15,000 psi range
Accuracy	± 0.05% full scale (BFSL); optional ± 0.025% full scale (BFSL); (includes the effects of non-linearity, hysteresis, non-repeatability, zero point and full scale errors)
Hysteresis	≤ ±0.03% full scale
Stability	≤ ± 0.1% full scale; 5 psi ± 0.2% full scale per year
Power supply*	9 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire) 9 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire) 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire) Voltage supply via RS232 interface (RS232)
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	2004/108/EEC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)
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 2,000 Hz on any axis
Weight	Approximately 11 oz.

* Unregulated power supplies

ORDERING INFORMATION

SERIES	640									
PRESSURE RANGES	30vac	-30 inHg to 0 psig	30/300	-30 inHg to 300 psig	150	0 psig to 150 psig	3000	0 psig to 3,000 psig	30A	0 psia to 30 psia
	30/15	-30 inHg to 15 psig	5	0 psig to 5 psig	200	0 psig to 200 psig	5000	0 psig to 5,000 psig	60A	0 psia to 60 psia
	30/30	-30 inHg to 30 psig	10	0 psig to 10 psig	300	0 psig to 300 psig	6000	0 psig to 6,000 psig	100A	0 psia to 100 psia
	30/60	-30 inHg to 60 psig	15	0 psig to 15 psig	500	0 psig to 500 psig	7500	0 psia to 7,500 psig	150A	0 psia to 150 psia
	30/100	-30 inHg to 100 psig	30	0 psig to 30 psig	750	0 psig to 750 psig	10000	0 psia to 10,000 psig	200A	0 psia to 200 psia
	30/150	-30 inHg to 150 psig	60	0 psig to 60 psig	1000	0 psig to 1,000 psig	15000	0 psia to 15,000 psig	300A	0 psia to 300 psia
	30/200	-30 inHg to 200 psig	100	0 psig to 100 psig	2000	0 psig to 2,000 psig	15A	0 psia to 15 psia		
		psig = gauge pressure		psia = absolute pressure		Other ranges available on special request				
ACCURACIES	1	±0.05% full scale (BFSL)			2	±0.025% full scale (BFSL)				
OUTPUT SIGNALS	1	4 mA to 20 mA, 2-wire analog			5	0 Vdc to 10 Vdc, 3-wire analog			21	0 mA to 20 mA, 3-wire analog
	2	0 Vdc to 5 Vdc, 3-wire analog			12	RS232, 8N1/9600 Baud			35	USB
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)
OPTION	ORF	Threaded orifice								

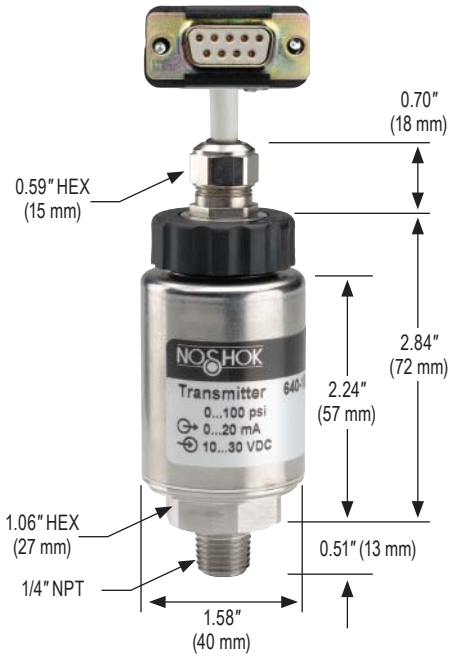
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

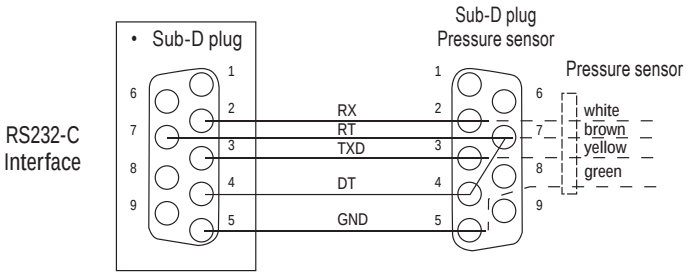
EXAMPLE

640 – 3000 – 1 – 12 – 8 – 10 – ORF

Series 640
Pressure ..... 0 psig to 3,000 psig
Accuracy ..... ±0.05%
Output signal ..... RS232, 8N1/9600 Baud
Process connection ..... 1/2″ NPT Male
Electrical connection RS232-C
Option ..... Threaded orifice

Outline Dimensions





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