

# product guide



**NOSHOK**

*your single source instrumentation company*

Pressure Gauges  
Transmitters / Transducers/  
Indicators  
Pressure Switches  
Diaphragm Seals  
Bimetal Thermometers  
Manifold Valves  
Needle Valves  
Solenoid Valves  
Sanitary Instruments  
Force Measurement  
Differential Pressure



*The  
Instrumentation  
Company*

**NOSHOK**  
INCORPORATED

**GOODYEAR**  
RUBBER PRODUCTS INC.

**Call Toll Free: 1-866-711-4673**  
WebSales@GoodyearRubberProducts.com

**We Ship  
World Wide**

**NOSHOK**  
CORPORATE HEADQUARTERS



**GOODYEAR**  
RUBBER PRODUCTS INC.

Call Toll Free: **1-866-711-4673**  
[WebSales@GoodyearRubberProducts.com](mailto:WebSales@GoodyearRubberProducts.com)

**We Ship  
World Wide**

## INTRODUCTION

Established in 1967, NOSHOK was one of the first companies to offer liquid filled pressure gauges, a revolutionary concept at the time. More importantly, NOSHOK was the first company to offer an extended three year warranty on pressure gauges, raising the benchmark on quality throughout the industry. That pioneering standard...and our sincere desire to be the best...has endured for over 36 years. Our commitment to product performance and service is a continuing successful policy applied today to our entire line of Pressure, Temperature and Force Measurement products.

At NOSHOK, complete customer satisfaction is the driving force behind our continued advancements in product research and development. Our goal is to provide you, our customer, with the highest level of quality, reliability and customer service while providing world class instrumentation solutions at competitive prices. We have the capability to provide you with the assistance necessary to put together the special requirement which is often hard to find. If it is not in our catalog, call us, we are confident we can satisfy your needs.

NOSHOK proudly backs its commitment to excellence and while you are viewing this catalog, I believe this commitment will become even more apparent.

Thank you for choosing NOSHOK Products.

  
James B. Cole  
Chief Executive Officer

## Table of Contents

### ALL FROM NOSHOK

Pressure Gauges  
Transmitters / Transducers/ Indicators  
Pressure Switches  
Diaphragm Seals  
Bimetal Thermometers  
Manifold Valves  
Needle Valves  
Solenoid Valves  
Sanitary Instruments  
Force Measurement  
Differential Pressure

*Your Single Source Instrumentation Company*

Please refer to the individual  
product catalogs for detailed  
warranty information.

#### Pressure Gauges

100, 200, 300, 400/500, 600/700, 800 and 900 Series . . . . .4-5

#### Pressure Switches

300, 500, 600 and 700 Series . . . . .6

#### Digital Pressure Gauges & Indicators

1000, 1800, 1900 and 2000 Series . . . . .7

#### Differential Pressure Gauges

1000, 1100, 1200 and 1300 Series . . . . .8

#### Sanitary Pressure Instruments

10, 11, 20 and 21 Series . . . . .9

#### Transmitters & Transducers

100, 200, 600, 612, 615/616, 630, 640, 650, 660, 680, 755/756,  
800 Series and Hazardous Environment . . . . .10-11

#### Needle Valves

100, 200/300, 400, 500 and 600/700 Series . . . . .12

#### Manifold & Solenoid Valves

2000/2100, 3000/3100 and 5000/5100 Series . . . . .13

#### Mechanical Force Measurement

1000, 2000, 3000, 4000 and 5000 Series . . . . .14

#### NOSHOK Custom Force Sensor

. . . . .15

#### Thermometers

800 Series, Bimetal, Remote and Thermowells . . . . .16

#### Diaphragm Seals

Type 10, 10L, 10H, 20, 25, 25H, 29, 30, 30H and 30L . . . . .17

In keeping with and for purpose of product and/or manufacturing process improvements,  
NOSHOK, INC. reserves the right to make design changes without prior notice.

NOSHOK is a Member and Actively Supports:



**GOODYEAR**  
RUBBER PRODUCTS INC.

Call Toll Free: **1-866-711-4673**  
WebSales@GoodyearRubberProducts.com

**We Ship  
World Wide**



# PRESSURE GAUGES

## 100 SERIES



**NOSHOK 100 SERIES STANDARD GAUGES** are high quality dry gauges designed to provide reliable service on applications not corrosive to brass. They are used in almost every area of manufacturing and are especially suited for applications in hydraulics, pneumatics, process, petrochemical, medical, pharmaceutical and most industrial and commercial applications.

### SPECIFICATIONS

**SIZES:** 1 1/2, 2, 2 1/2 and 4 inch sizes

**CONNECTION LOCATION:** Bottom, back, left and right side connections

**CONNECTION SIZE:** 1/8" NPT and 1/4" NPT dependent upon model and size. Other connections available upon special request

**CASE:** ABS is standard. Steel, chrome and stainless steel are available as options

**LENS:** Plexiglass is standard. Glass is available as an option on certain models.

**BOURDON TUBE:** Brass and copper alloys

**MOVEMENT:** All Brass or Brass and Delrin

**ACCURACY:**  $\pm 1\%$  Full Scale to  $\pm 2.5\%$  Full Scale dependent on model

**AVAILABLE RANGES:** Vacuum and compound through 15,000 PSI.

**OPTIONS AND ACCESSORIES:** Panel mount options, cover rings, orifices, rubber case protectors, recalibrators, special connections and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** 0° F to 140° F (-18° C to 60° C)

### WARRANTY:

100 Series: One Year<sup>†</sup>

## 200 SERIES



**NOSHOK 200 SERIES LOW PRESSURE DIAPHRAGM GAUGES** are designed for extremely low pressure and vacuum measurement. The ultra sensitive copper alloy diaphragm capsules are rated for pressure as low as 0 – 10 inches of water and as high as 0 – 10 PSI. Applications include HVAC service, filtration, gas distribution, waste water treatment, medical and everywhere low pressure and vacuum measurement is required.

### SPECIFICATIONS

**SIZES:** 2, 2 1/2 and 4 inch sizes

**CONNECTION LOCATION:** Bottom, back, left and right side connections

**CONNECTION SIZE:** 1/4" NPT Bottom and back connection.

**CASE:** ABS, Black Painted Steel or 304SS dependent on model and size

**LENS:** Clearfront plexiglass on the 2 1/2" size, Instrument glass on the 4" size.

**DIAPHRAGM CAPSULE:** Copper alloy

**MOVEMENT:** Brass, bearing parts highly polished nickel silver

**ACCURACY:** 2 1/2",  $\pm 1.5\%$  Full Scale: 4",  $\pm 1\%$  Full Scale

**AVAILABLE RANGES:** 0-100"H2O

Vacuum through 0-10 PSI

**OPTIONS AND ACCESSORIES:** Panel mount options, orifices, recalibrators, over-pressure protection, custom ranges and dials, special connections and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** 0° F to 140° F (-18° C to 60° C)

### WARRANTY:

200 Series: One Year<sup>†</sup>

## 300 SERIES



**NOSHOK CAST BRASS CASE 300 SERIES GAUGES** are the highest quality, most reliable liquid filled gauges available. Their one piece die cast brass case and heavy duty bourdon tube and movement enables them to stand up to shock and vibration encountered on the most demanding applications.

### SPECIFICATIONS

**SIZES:** 2 1/2 inch and 4 inch sizes

**CONNECTION:** 1/4" NPT Bottom and back. 7/16"-20 SAE and 1/2" NPT available

**CASE:** One Piece Die Case Brass

**LENS:** Molded plexiglass with o-ring seal

**BOURDON TUBE:** 2 1/2" size: Phosphor Bronze through 6,000 PSI and 316SS on higher ranges

**4" size:** Phosphor bronze through 800 PSI and 316SS on higher ranges

**MOVEMENT:** Brass and nickel silver

**ACCURACY:**  $\pm 1.5\%$  Full Scale on 2 1/2" sizes

$\pm 1\%$  Full Scale on 4" sizes

**AVAILABLE RANGES:** Vacuum and Compound through 15,000 PSI.

**OPTIONS AND ACCESSORIES:** Panel mount options, cover rings, max indicating pointers, orifices, rubber case protectors, special connections, metric dials and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** 0° F to 140° F (-18° C to 60° C)

### WARRANTY:

300 Series: Three Years<sup>†</sup>

## 400/500 SERIES



**NOSHOK 400 (dry) and 500 (liquid filled) SERIES ALL STAINLESS STEEL GAUGES** are the ultimate in corrosion resistance, heavy duty, vacuum and pressure gauges. They are used in corrosive service world-wide where ruggedness and reliability are critical. Typical applications include chemical and petroleum refineries, pharmaceutical, offshore drilling and production, paper mills and more.

### SPECIFICATIONS

**SIZES:** 1 1/2, 2, 2 1/2, 4 and 6 inch

**CONNECTION:** 1/8" NPT on 1 1/2" sizes, 1/4" NPT on 2 and 2 1/2 and 4 inch sizes, 1/2" NPT on 4" and 6" sizes. Available in bottom and back configurations

**CASE:** 304SS

**LENS:** Plexiglass on 1 1/2" and 2", Trogamide on 2 1/2", Instrument Glass on 4" and Safety Glass on 6" sizes

**BOURDON TUBE:** 316SS

**MOVEMENT:** Stainless steel

**ACCURACY:**  $\pm 2.5\%$  Full Scale on 1 1/2" and 2" sizes;  $\pm 1.5\%$  Full Scale on 2 1/2" size;  $\pm 1\%$  Full Scale on 4" and 6" sizes

**AVAILABLE RANGES:** Vacuum and compound through 100,000 PSI.

Dependent on model and size

**OPTIONS AND ACCESSORIES:** Panel mount options, orifices, adjustable pointers, max indicating pointers, metric and special dials, special connections and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** 400 SERIES: -40° F to 260° F (-40° C to 127° C)

500 SERIES:

0° F to 160° F (-18° C to 71° C)

### WARRANTY:

400 Series: One Year<sup>†</sup>

500 Series: Three Years<sup>†</sup>

# PRESSURE GAUGES

## 600/700 SERIES



**NOSHOK 4 1/2 inch 600 (COPPER ALLOY) and 700 (316SS) SERIES PHENOLIC CASE, PROCESS GAUGES** are specifically designed for demanding service in chemical, petroleum and industrial processing industries. They are widely used throughout the world on applications where accuracy, readability, safety and reliability are important.

### SPECIFICATIONS

**SIZES:** 4 1/2 inch

**CONNECTION:** Bottom connection, 1/4" or 1/2" NPT

**CASE:** Turret Style, Black Phenolic, Solid Front, Safety Case with Blowout Back

**BAYONET RING:** Threaded Black Phenolic

**LENS:** Acrylic

**BOURDON TUBE:** 600 Series: Copper Alloy through 600 PSI and 316 SS above 600 PSI

**700 Series:** 316Stainless Steel

**MOVEMENT:** 600 Series: Brass and nickel silver; 700 Series: Stainless steel

**ACCURACY:**  $\pm 0.5\%$  Full Scale

$\pm 1.5\%$  on in H<sub>2</sub>O ranges

**RANGES:** Vacuum and compound through 15,000 PSI.

### OPTIONS AND ACCESSORIES:

Dampened movement receiver gauges and Reid Vapor Test configurations, panel mounting options, liquid filling, optional lenses, orifices, metric and special dials, special connections and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** Models 640 and 740 (dry): -40 to 160° F (-40 to 71° C)  
Models 660 and 760 (liquid filled): 0 to 140° F (-18 to 60° C)

### WARRANTY:

640/740 Series: One Year\*

660/760 Series: Three Years\*

## 800 SERIES



**NOSHOK 800 SERIES PRECISION TEST GAUGES** are the highest quality test gauges with accuracy levels meeting ANSI B40.1 Grade 3A. They are used in laboratories, calibration stands, aerospace and wherever accuracy and sensitivity are critical parameters in measurement. The NOSHOK adjustable knife-edge pointer in conjunction with the mirror dial band eliminate parallax\* error. (\*The difference in apparent direction of an object as seen from two different points not on a straight line with the object.)

### SPECIFICATIONS

**SIZES:** 6 inch

**CONNECTION:** 1/4" NPT Bottom Connection

**CASE:** 304 Stainless steel

**BEZEL:** 304 Stainless steel

**LENS:** Instrument glass

**BOURDON TUBE:** Beryllium Copper

**MOVEMENT:** Jeweled, Brass and Nickel Silver

**ACCURACY:**  $\pm 0.25\%$  Full Scale

**AVAILABLE RANGES:** Vacuum and compound through 15,000 PSI

**OPTIONS AND ACCESSORIES:** Panel mounting options, orifices, special connections, carrying cases and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**STATIC:** 100% of dial range  
(Not recommended for dynamic applications)

#### TEMPERATURE:

0° F to 140° F (-18° C to 60° C)

Reference calibration temp: 70° F (21° C)

### WARRANTY:

800 Series: One Year\*

## 900 SERIES



**NOSHOK 900 SERIES LIQUID FILLED GAUGES** are high quality gauges that incorporate unique design features aimed at extended service life and reliability. They are used world-wide where pulsation, vibration and shock are present and the media is not corrosive to brass.

### SPECIFICATIONS

**SIZES:** 1 1/2, 2 1/2 and 4 inch

**CONNECTION:** 1/8" NPT back connection on 1 1/2" size, 1/4" NPT Bottom and back on 2 1/2" and 4" sizes

**CASE:** ABS or 304SS dependent on model

**LENS:** Plexiglass on 1 1/2" and 2 1/2" Instrument Glass on 4"

**BOURDON TUBE:** Brass and Copper Alloy

**MOVEMENT:** Brass and Delrin and all Brass

**ACCURACY:**  $\pm 1.5\%$  Full Scale on  $\pm 2.5\%$  Full Scale on 1 1/2", 2 1/2" sizes  $\pm 1\%$  Full Scale on 4" sizes

**AVAILABLE RANGES:** Vacuum and Compound through 10,000 PSI.

**OPTIONS AND ACCESSORIES:** Panel mounting options, orifices, rubber case protectors, special connections, special dials and more

### OPERATING LIMITATIONS

#### WORKING PRESSURE:

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** 0° F to 140° F

(-18° C to 60° C)

### WARRANTY:

900 Series: Three Years\*

## ACCESSORIES



### SNUBBERS

**NOSHOK PISTON TYPE SNUBBERS**, unlike sintered metal snubbers, resist clogging and are self cleaning. Five different sized pistons are included with each snubber to insure the correct amount of snubbing for virtually every application.

They are available in brass and 316SS in either 1/4" NPT, 1/2" NPT or 7/16-20

**WARRANTY:** One Year\*

### STEAM SYPHONS

**NOSHOK PIGTAIL STEAM SYPHONS** protect the instrument from the damaging effects of high temperature steam and should be used in all steam applications. They are available in 1/4" and 1/2" NPT sizes in welded steel, welded 316SS or seamless 316SS with ratings to 3800 PSI @ 850° F

### CUSTOM DIALS

NOSHOK will provide that special dial or custom scale to fit the needs of your special application or requirement. You can personalize the dials with your company logo, names, part numbers or telephone numbers. The scales are available in metric, measurement of pounds per square inch, pounds of force, tons-on-ram, liters for oxygen or any indication of pressure, vacuum, flow or altitude.



# PRESSURE SWITCHES

## 300 SERIES



**NOSHOK 300 SERIES MECHANICAL PRESSURE SWITCHES** are constructed with zinc plated housing and proven diaphragm pressure sensing technology to provide a highly reliable and accurate pressure switch. The micro switch contacts are silver plated for extended service life and exceptional reliability. Switching functions are field adjustable, while under pressure, over the full scale range with 1 N.O (normally open) or 1 N.C (normally closed) configuration. Available pressure ranges include gauge ranges from 0 to 3 psi through 0 to 3000 psi with a 1/4" NPT connection standard.

### SPECIFICATIONS

**CASE:** Zinc plated steel  
**MEASURING ELEMENT:** Diaphragm – Buna N

**SWITCHING ELEMENT:** Silver plated contact – STD; Gold plated contact – Optional

**SWITCHING FUNCTION:** 1 N.O or 1 N.C

**ADJUSTMENT:** On site, via adjustment screw, while under pressure

**AVAILABLE RANGES:** 0 to 3 psig through 0 to 30 psig

**CONNECTION:** 1/4" NPT, male

**ELECTRICAL CONNECTION:** Hirschmann

**MEDIA TEMPERATURE:** -13 °F to 185 °F (-25 °C to 85 °C)

**WARRANTY:**  
300 Series: One Year†

## 500 SERIES



**NOSHOK SERIES 500 MAG SWITCH** is an electronic pressure switch that utilizes proven diaphragm pressure sensing technology coupled with Hall Effect magnetic field sensing technology and semiconductor switching technology to provide a highly reliable, accurate, repeatable pressure switch without mechanical contacts. NOSHOK Mag-Switches are available in either one or two switch functions of PNP (positive) output or NPN (negative) output in N.O (normally open) or N.C (normally closed) configurations. Available pressure ranges include vacuum through 0 to 15,000 psig. The standard electrical connection is a 4-pin M12 X 1 threaded connector which carries a NEMA 4: IP65 (IEC529) rating.

### SPECIFICATIONS

**CASE:** Brass through 350 psi; Aluminum 600 psi and higher

**WETTED PARTS:** Copper alloy; 316SS above 600 psi

**CONNECTION:** 1/4" NPT, brass

**ACCURACY:** ≤1% full scale

**AVAILABLE RANGES:** Vacuum through 0 to 15,000 psi

**SWITCHING FUNCTIONS:** 1 N.O or 1 N.C contact standard, 2 N.O or 2 N.C contacts are optional, p-switching or n-switching

**WARRANTY:**  
500 Series: Three Years†

## 600 SERIES



**NOSHOK SERIES 600 SMART SWITCH** is a truly "State of the Art" pressure switch. Its design is based upon the proven sputtered thin film and diffused semiconductor sensor technology. Switching is accomplished digitally by means of an integral signal conditioner which means there are never any mechanical contacts to wear out. They are available with either one or two switch functions of PNP output or NPN output in normally open or normally closed configurations. Set points and hysteresis are fully adjustable and completely tamperproof. All wetted areas are 316SS and welded with no o-rings, gaskets or seals to leak or fail. Programming can be done at the factory or in the field by means of NOSHOK Smart Switch Software.

### SPEIFICATIONS:

**CASE:** 316SS

**WETTED PARTS:** 316SS

**CONNECTION:** 1/4" NPT – STD; 1/2" NPT – Optional

**ACCURACY:** ≤1% full scale (limit point setting); ≤0.5% (B.F.S.L)

**AVAILABLE RANGES:** Vacuum, compound, 0 to 5 psi through 0 to 15,000 psi and absolute

**SWITCHING FUNCTIONS:** 1 or 2; N.O or N.C; p or n-switching

**POWER SUPPLY:** 10Vdc to 30Vdc (>12Vdc for programming mode); Increase time when switching on the supply 50 V/sec

**WARRANTY:**  
600 Series: Three Years†

## 700 SERIES



**NOSHOK 700 SERIES ELECTRONIC PRESSURE SWITCH** with DIGITAL DISPLAY offers outstanding performance and reliability in a pressure switch, with local indication and fully programmable hysteresis. These switches utilize proven sputtered thin film or ceramic thick film sensor technology and are highly accurate, stable and durable. Switching is accomplished with either one or two switch functions of N.O or N.C with PNP (positive) output, analog output with one switching function or with switch two programmed for failure indication. Standard gauge ranges from 0 to 15 psi through 0 to 7500 psi are available.

### SPECIFICATIONS

**CASE:** Zinc die cast

**WETTED PARTS:** Stainless steel

**CONNECTION:** 1/4" NPT, male – STD; 1/2" NPT – Optional

**ACCURACY:** ±0.5% Full Scale (B.F.S.L)

**AVAILABLE RANGES:** Standard gauge ranges from 0 to 15 psi through 0 to 7500 psi

**SWITCHING FUNCTION:** 1 or 2; N.O or N.C; p-switching

**POWER SUPPLY:** 15Vdc to 30Vdc

**ANALOG OUTPUT:** 4mA to 20mA

**ELECTRICAL CONNECTIONS:** Hirschmann, M12 X 1 4-pin; M12 X 1 5-pin

**WARRANTY:**  
700 Series: Three Years†



# DIGITAL PRESSURE GAUGES & INDICATORS

## 1000 SERIES



**NOSHOK 1000 SERIES HIGH PERFORMANCE DIGITAL PRESSURE GAUGES** are designed to exceed the industry's most demanding application requirements. Using the latest in reliable ceramic thick film strain gage technology combined with low power electronics, these gauges are accurate, stable and extremely reliable. The 1000 SERIES gauges are ideally suited for local indication and with the analog voltage output or limit switch option they can interface with other monitoring and control systems.

### SPECIFICATIONS

**HOUSING MATERIAL:** Polyamid  
**DISPLAY:** 4 digit, up to 9999  
**WETTED MATERIALS:** Ceramic diaphragm, 316SS body with Viton® internal seal  
**ACCURACY:**  $\pm 0.5\%$  Full Scale  
**UPDATE RATE:** 5 times/sec  
**RANGES:** Standard gauge ranges from vacuum through 5000 psig  
**POWER SUPPLY:** 9Vdc battery (internal); 5000 hrs with standard 600mAh battery; 10000hrs with 1200 mAh battery  
**ON/OFF SWITCH:** Manual; auto shut-off optional

CE Compliant to EMC norm  
 EN61326:1997/A1:1998 RFI, EMI, ESD protection; NEMA 4X to EN60529/IEC529

**WARRANTY:**  
 1000 Series: Three Year†

## 1800 SERIES



**NOSHOK SERIES 1800 ATTACHABLE LOOP POWERED DIGITAL INDICATOR** utilizes a transmitters' 4mA to 20mA output signal and the Hirschmann connector for local pressure indication. It is simply inserted between the transmitter body and the connector without the need for additional wiring or power source. The indicator is programmable to display a range of -1999 to 9999 and may be tilted for better viewing. There is a user selectable digital filtering to improve readability in rapidly varying pressure pulsations.

### SPECIFICATIONS

**DISPLAY:** 0.4" Liquid crystal display  
**DIGITS:** 4, from -1999 to 9999  
**ACCURACY:**  $\pm 0.2\%$  Full Scale,  $\pm 1$  digit  
**UPDATE RATE:** 5 times/sec  
**RANGE:** The 4mA to 20mA signal from the transmitter can be assigned any display value within the display range.  
**POWER:** Loop-powered; No additional power supply required; Maximum current rating is 40mA and voltage drop of 3Vdc

CE Compliant to EMC norm  
 EN61326:1997/A1:1998 RFI, EMI, ESD protection; NEMA 4X to EN60529/IEC529

**WARRANTY:**  
 1800 Series: One Year†

## 1900 SERIES



**NOSHOK SERIES 1900 LOOP POWERED DIGITAL INDICATORS** provide digital display of any desired unit of pressure, temperature, level, and force or flow measurement. Their 3 1/2" digit display has a span range of 0 to 1999 and is available in a positive image reflective LCD or in an optional red or yellow/green back-lit version.

### SPECIFICATIONS

**DISPLAY:** 3 1/2" digit display from -1999 to 1999  
**INPUT SIGNAL:** 4mA to 20mA or 10mA to 50mA  
**SPAN RANGE:** 0 to 1999  
**OFFSET RANGE:** -1999 to 9999  
**LINEARITY:**  $\pm 0.1\%$  to 1 digit  
**READING RATE:** 2.5 readings per second, nominal  
**RESPONSE TIME:** 1.5 seconds to settle for a step change

CE Compliant to EMC norm  
 EN61326:1997/A1:1998 RFI, EMI, ESD protection; NEMA 4X/IP65 sealed front bezel

**WARRANTY:**  
 1900 Series: One Year†

## 2000 SERIES



**NOSHOK SERIES 2000 SMART SYTEM "INTELLIGENT" DIGITAL INDICATORS** suit a wide range of indication and control requirements. They can accept a variety of standard process signals and precisely scale them into any desired unit of measure. The indicator employs advanced technology for stable, drift free readout, while incorporating added features such as an optional analog output card, dual or quad relay cards or serial communication cards. The easy menu driven programming or available PC software allows the user to quickly and easily set system configurations.

### SPECIFICATIONS

**INPUT SIGNALS:** Current, voltage or resistance  
**POWER REQUIREMENTS:** 115/230 Vac or 11Vdc to 36Vdc  
**INTERNAL POWER SUPPLY:** 24Vdc  
**ELECTRICAL CONNECTION:** Terminal blocks in rear  
**UPDATE RATE:** Up to 20 times per second  
**LINEARIZATION:** 16 point scaling of non linear input  
**ACCURACY:**  $\pm 0.03\%$  of reading +3 $\mu$ A for 4mA to 20mA input;  $\pm 0.03\%$  of reading +3mV for 0 to 5Vdc and 0 to 10Vdc inputs over the range of 18 °C to 28 °C

CE Compliant to EMC norm  
 EN61326:1997/A1:1998 RFI, EMI, ESD protection; NEMA 4X/IP65 sealed bezel only

**WARRANTY:**  
 2000 Series: One Year†

# DIFFERENTIAL PRESSURE GAUGES

## 1000 SERIES



**NOSHOK 1000 SERIES PISTON TYPE DIFFERENTIAL GAUGES** are designed for measuring pressure drop across filters, strainers, separators and valves. The single piece construction of the ceramic magnet/piston is designed to reduce "blow by" and increase gauge accuracy. These gauges can be found in applications requiring high differential pressure from 0 to 5 psid to 0 to 100 psid with maximum working/static pressure to 6000 psig.

### SPECIFICATIONS

**SIZES:** 2 1/2 inch and 4 1/2 inch sizes

**CASE MATERIAL:** Fiberglass reinforced plastic – STD; Aluminum, black – Optional

**LENS:** Acrylic – STD; Laminated safety glass – Opt.; Acrylic w/ MIP – Opt.; Acrylic with alarm contacts – Opt.

### SENSOR HOUSING MATERIAL:

Aluminum, black – STD; 316L SS – Opt.

**PROCESS CONNECTION:** 1/4" F-F NPT, back connection – STD; Other 1/4" and 1/2" F-F NPT with back or side connections available

**ACCURACY:** ±2% Full Scale on rising pressure

**RANGES:** 0 psid to 5 psid through 0 psid to 100 psid

**OPTIONAL FILL FLUIDS:** Glycerine, Silicone or Halocarbon

### OPERATING LIMITATIONS:

**TEMPERATURE:** -40 °F to 200 °F (-40 °C to 193 °C)

**MAXIMUM WORKING STATIC PRESSURE:** 6000 psig

### WARRANTY:

1000 Series (dry): One Year†  
1000 Series (liquid filled): Three Years†

## 1100 SERIES



**NOSHOK 1100 SERIES DIAPHRAGM TYPE DIFFERENTIAL GAUGES** are designed for applications where higher levels of solids are present in the measuring media. The magnetic piston and polymeric diaphragm are utilized to measure the low to high differential pressure. The isolation of the high and low inlets prevents fluid movement between the ports. They are used in measuring pressure drops across filters, strainers, separators, heat exchangers and more.

### SPECIFICATIONS

**SIZES:** 2 1/2 inch and 4 1/2 inch sizes

**CASE MATERIAL:** Fiberglass reinforced plastic – STD; Aluminum, black – Opt.

**LENS:** Acrylic – STD; Laminated safety glass – Opt.; Acrylic w/ MIP – Opt.; Acrylic with alarm contacts – Opt.

### SENSOR HOUSING MATERIAL:

Aluminum, black – STD; 316L SS – Opt. Brass – Opt.

**PROCESS CONNECTION:** 1/4" F-F NPT, back connection – STD; Other 1/4" and 1/2" F-F NPT with back or side connections available

**ACCURACY:** ±2% Full Scale on for ranges 0 to 15 psid and above; ±5% Full Scale for ranges below 0 to 15psid

**RANGES:** 0 psid to 5 psid through 0 psid to 100 psid

**OPTIONAL FILL FLUIDS:** Glycerine, Silicone or Halocarbon

### OPERATING LIMITATIONS:

**TEMPERATURE:** -40 °F to 200 °F (-40 °C to 193 °C)

**MAXIMUM WORKING STATIC PRESSURE:** 3000 psig

1500 psig - Brass

### WARRANTY:

1100 Series (dry): One Year†  
1100 Series (liquid filled): Three Years

## 1200 SERIES



**NOSHOK SERIES 1200 MEMBRANE TYPE DIFFERENTIAL GAUGES** are designed for applications requiring high static pressure and high differential pressure measurement. Utilizing opposing Monel membranes, Halocarbon fill and a bi-directional overpressure valve these gauges are suited for applications in hydraulic and pneumatic systems, filters, flow indicators and caustic liquid or gaseous media. A liquid filled case is available to dampen the effects of pulsation, vibration and shock.

### SPECIFICATIONS

**SIZES:** 4 1/2 inch and 6 inch sizes

**CASE MATERIAL:** Aluminum, black – STD; 316L SS – Optional

**LENS:** Acrylic – STD; Laminated safety glass

**SENSOR HOUSING MATERIAL:** 316L SS – STD

**PROCESS CONNECTION:** 1/4" F-F NPT, back connection – STD; Other 1/4" and 1/2" F-F NPT with back or dual top and bottom connection available

**ACCURACY:** ±1% Full Scale on rising pressure

**RANGES:** 0 to 100 inH2Od through 0 to 600 psid

**OPTIONAL FILL FLUIDS:** Glycerine, Silicone or Halocarbon

### OPERATING LIMITATIONS:

**TEMPERATURE:** -40 °F to 200 °F (-40 °C to 193 °C)

**MAXIMUM WORKING STATIC**

**PRESSURE:** 3000 psig

### WARRANTY:

1200 Series (dry): One Year†  
1200 Series (liquid filled): Three Years

## 1300 SERIES



**NOSHOK SERIES 1300 MEMBRANE TYPE DIFFERENTIAL GAUGES** are designed for integral process applications requiring nominal static and low differential pressure measurement. Utilizing opposing Monel membranes, Halocarbon fill and a bi-directional overpressure valve these gauges are suited for applications in hydraulic and pneumatic systems, filters, flow indicators and caustic liquid or gaseous media. A liquid filled case is available to dampen the effects of pulsation, vibration and shock.

### SPECIFICATIONS

**SIZES:** 4 1/2 inch and 6 inch sizes

**CASE MATERIAL:** Aluminum, black – STD; 316L SS – Optional

**LENS:** Acrylic – STD; Laminated safety glass

**SENSOR HOUSING MATERIAL:** 316L SS – STD

**PROCESS CONNECTION:** 1/4" F-F NPT, dual top and bottom connection – STD; Other 1/4" and 1/2" F-F NPT with back or dual top and bottom connection available

**ACCURACY:** ±1% Full Scale on rising pressure

**RANGES:** 0 to 100 inH2Od through 0 to 400 psid

**OPTIONAL FILL FLUIDS:** Glycerine, Silicone or Halocarbon

### OPERATING LIMITATIONS:

**TEMPERATURE:** -40 °F to 200 °F (-40 °C to 193 °C)

**MAXIMUM WORKING STATIC PRESSURE:** 600 psig

### WARRANTY:

1300 Series (dry): One Year†  
1300 Series (liquid filled): Three Years



# SANITARY PRESSURE INSTRUMENTS



## SERIES 10



**NOSHOK SERIES 10 FRACTIONAL SANITARY GAUGE** is designed for compact applications within the food & beverage, dairy, pharmaceutical, and biomedical industry while meeting the current 3A standards and ASME BPE-2002. The wetted materials are electropolished 316L SS to Ra25 microinch or better. Gauges can be cleaned in place, steamed in place or autoclaved to reduce system shutdown time.

### SPECIFICATIONS

**SIZE:** 2 inch gauge  
**CASE MATERIAL:** 304SS  
**COVER RING:** 304SS  
**LENS:** Polycarbonate – STD; Safety Glass – Optional  
**BOURDON TUBE:** 316SS  
**ACCURACY:**  $\pm 2.5\%$  Full Scale  
**PROCESS CONNECTION:** 3/4" Tri-Clamp®  
**SEAL HOUSING:** 316L SS  
**DIAPHRAGM MATERIAL:** 316L SS  
**SEAL FILL:** Glycerine, USP grade  
**RANGES:** 0 to 15 psig through 0 to 600 psig  
**TEMPERATURE:** -40°F to 300°F (-40°C to 150°C)

**WARRANTY:**  
 Series 10 (dry): One Year†

## SERIES 10



**NOSHOK SERIES 10 HEAVY DUTY SANITARY PRESSURE GAUGE** meets the current standards for 3A and ASME BPE-2002. They are designed for applications throughout the pharmaceutical industry, food & beverage, dairy and biomedical industries. The available 1 1/2" or 2" Tri-Clamp® connections are constructed of 316L SS welded to the all stainless steel 2 1/2" or 4" gauge for greater strength and durability. Wetted parts are electropolished to Ra 25 microinch or better.

### SPECIFICATIONS

**SIZE:** 2 1/2 inch or 4 inch size  
**CASE MATERIAL:** 304SS  
**COVER RING:** 304SS  
**LENS:** Safety Glass – STD  
**BOURDON TUBE:** 316SS  
**ACCURACY:**  $\pm 1.5\%$  Full Scale on 2 1/2" sizes;  $\pm 1\%$  Full Scale on 4" sizes  
**OPTIONAL FILL FLUID:** Glycerine or Silicone  
**PROCESS CONNECTION:** 1 1/2" or 2" Tri-Clamp®  
**SEAL HOUSING:** 316L SS  
**DIAPHRAGM MATERIAL:** 316L SS  
**SEAL FILL:** Glycerine, USP grade  
**RANGES:** Vacuum and compound through 0 to 600 psig  
**TEMPERATURE:** -40°F to 300°F (-40°C to 150°C)

\*C.I.P, S.I.P and Autoclave

**WARRANTY:**  
 Series 10 (dry): One Year†  
 Series 10 (liquid filled): Three Years†

## SERIES 11



**NOSHOK SERIES 11 HIGH ACCURACY, HEAVY DUTY SANITARY TRANSMITTER** utilizes diffused semiconductor and proven sputtered thin film sensor technology to produce a highly accurate, stable, shock resistant and durable pressure transmitter. They are suited for applications in the food & beverage, dairy, biotech and pharmaceutical industries and meet the current 3A standards as well as ASME BPE-2002 and CE compliant. Wetted parts are 316L SS and electropolished to Ra 25 or better. Can be cleaned in place and steamed in place.

### SPECIFICATIONS

**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional  
**POWER SUPPLY:** 10Vdc to 30Vdc for Current Output  
 14Vdc to 30Vdc for Voltage Output  
**PROCESS CONNECTION:** 1 1/2" or 2" Tri-Clamp®  
**SEAL HOUSING:** 316L SS  
**DIAPHRAGM MATERIAL:** 316L SS  
**SEAL FILL:** White oil, USP grade  
**RANGES:** Vacuum and compound through 0 to 400 psig  
**TEMPERATURE:** -40°F to 300°F (-40°C to 150°C)

**WARRANTY:**  
 Series 11: Three Years†

## SERIES 20



**NOSHOK SERIES 20 SANITARY HOMOGENIZER GAUGE** meets the current 3A standards and ASME BPE-2002. They are designed for high pressure applications in the dairy, food & beverage, pharmaceutical and biotechnology industries. The 4" all stainless steel gauge is welded to the flanged homogenizer connection. Wetted parts are 316L SS and electropolished to Ra 25 or better. These gauges may be cleaned in place, steamed in place or autoclaved to reduce process shutdown time.

### SPECIFICATIONS

**SIZE:** 4 inch size  
**CASE MATERIAL:** 304SS  
**COVER RING:** 304SS  
**LENS:** Laminated safety glass – STD  
**BOURDON TUBE:** 316SS  
**ACCURACY:**  $\pm 1\%$  Full Scale  
**OPTIONAL FILL FLUID:** Glycerine or Silicone  
**PROCESS CONNECTION:** 1 1/8" Homogenizer flange  
**SEAL HOUSING:** 316L SS  
**DIAPHRAGM MATERIAL:** 316L SS  
**SEAL FILL:** Glycerine, USP grade  
**RANGES:** 0 to 1000 psig through 0 to 15000 psig  
**TEMPERATURE:** -40°F to 300°F (-40°C to 150°C)

**WARRANTY:**  
 Series 20 (dry): One Year†  
 Series 20 (liquid filled): Three Years†

## SERIES 21



**NOSHOK SERIES 21 SANITARY HOMOGENIZER TRANSMITTER** is a high accuracy, heavy duty transmitter that utilizes proven sputtered thin film sensor technology to meet the demands of the dairy, food & beverage and pharmaceutical industries. These transmitters are shock resistant, highly accurate, stable and durable and meet the current standards for 3A, CE compliance and ASME BPE-2002. Wetted parts are 316L SS and electropolished to Ra 25 or better. Can be cleaned in place and steamed in place.

### SPECIFICATIONS

**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**RANGES:** STD gauge ranges from vacuum to 120,000 psi. Absolute ranges also available  
**ACCURACY:**  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional  
**POWER SUPPLY:** 10Vdc to 30Vdc for Current Output  
 14Vdc to 30Vdc for Voltage Output  
**PROCESS CONNECTION:** 1 1/2" or 2" Tri-Clamp®  
**SEAL HOUSING:** 316L SS  
**DIAPHRAGM MATERIAL:** 316L SS  
**SEAL FILL:** White oil, USP grade  
**RANGES:** 0-1000 psig through 0-15000 psig  
**TEMPERATURE:** -40°F to 300°F (-40°C to 150°C)

**WARRANTY:**  
 Series 21: Three Years†

# TRANSMITTERS & TRANSDUCERS

## 100 SERIES



**NOSHOK 100 SERIES CURRENT OUTPUT TRANSMITTERS** are designed utilizing advanced diffused semiconductor and proven sputtered thin film sensor technology for maximum stability. They are highly repeatable, shock resistant and extremely stable over long periods of time.

### SPECIFICATIONS

**Output Signal:** 4mA to 20mA, 2-wire  
**Ranges:** STD gauge ranges from vacuum to 15000 psi.  
 Absolute ranges also available  
**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L);  $\pm 0.25\%$  -Optional  
**Housing Material:** 316SS  
**Power Supply:** 10Vdc to 30Vdc, unregulated  
**Adjustment:**  $\pm 10\%$  Full scale for zero and span  
 CE compliant to EMC norm EN 61326: 1997/A1 1998  
 RFI, EMI and ESD protection  
 IP65, NEMA 4X to EN 60529/IEC 529

## 200 SERIES



**NOSHOK 200 SERIES VOLTAGE OUTPUT TRANSDUCERS** are highly repeatable, shock resistant and extremely stable over long periods of time. Utilizing advanced diffused semiconductor and proven sputtered thin film sensor technology they are highly accurate and stable.

### SPECIFICATIONS

**Output Signals:** 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**Ranges:** STD gauge ranges from vacuum to 15000 psi.  
 Absolute ranges also available  
**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L);  $\pm 0.25\%$  -Optional  
**Housing Material:** 316SS  
**Power Supply:** 10Vdc to 30Vdc, 14Vdc to 30Vdc for 1 to 11Vdc & 0 to 10Vdc, unregulated  
 CE compliant to EMC norm EN 61326: 1997/A1 1998  
 RFI, EMI and ESD protection  
 IP65, NEMA 4X to EN 60529/IEC 529

## 600 SERIES



**NOSHOK 600 SERIES HEAVY DUTY OEM TRANSDUCERS** utilize advanced diffused semiconductor and proven sputtered thin film sensor technology to produce a highly accurate, stable, and yet affordable pressure transducer for the high volume OEM.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire & 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc, 3-wire  
**Ranges:** STD gauge ranges from vacuum to 15000 psi.  
 Absolute ranges also available  
**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L)  
**Housing Material:** 316SS  
**Power Supply:** 10Vdc to 30Vdc & 14Vdc to 30Vdc for 0 to 10Vdc

CE compliant to EMC norm EN 61326: 1997/A1 1998  
 RFI, EMI and ESD protection  
 IP65, NEMA 4X to EN 60529/IEC 529

## 612 SERIES



**NOSHOK SERIES 612 SUBMERSIBLE LEVEL TRANSDUCERS** offer a previously unequalled level of performance. Utilizing diffused semiconductor and sputtered thin film sensor technology they are highly accurate, shock resistant and extremely stable for long periods of time.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire & 0 to 5Vdc, 0 to 10Vdc, 0.5 to 2.5Vdc, 3-wire  
**Ranges:** 0 to 50 inH<sub>2</sub>O through 0 to 500 psi  
**Accuracy:**  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional  
**Housing Material:** 316SS  
**Power Supply:** 10Vdc to 30Vdc for Current Output 14Vdc to 30Vdc for Voltage Output 6Vdc for 0.5Vdc to 2.5Vdc

CE compliant to EMC norm EN 61326: 1997/A1 1998  
 RFI, EMI and ESD protection  
 IP68, NEMA 6P

## 615/616 SERIES



**NOSHOK SERIES 615/616 TRANSDUCERS** are designed for heavy duty applications requiring high accuracy and durability. Utilizing advanced diffused semiconductor and proven sputtered thin film sensor technology they are stable, accurate, shock resistant and extremely durable.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**Ranges:** STD gauge ranges from vacuum to 120,000 psi. Absolute ranges also available  
**Accuracy:**  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional  
**Power Supply:** 10Vdc to 30Vdc for Current Output 14Vdc to 30Vdc for Voltage Output  
 CE compliant to EMC norm EN 61326: 1997/A1 1998 RFI, EMI and ESD protection IP65, NEMA 4X to EN

## 630 SERIES



**NOSHOK SERIES 630 HALL EFFECT TRANSDUCER** utilizes a proven Hall Effect sensor to provide excellent performance and reliability at an economical price. The nearly frictionless transduction method provides exceptional repeatability and long service life.

### SPECIFICATIONS

**Output Signals:** 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 3-wire; .5Vdc to 4.5Vdc, 3-wire ratio-metric  
**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L)  
**Housing Material:** Copper alloy with Polyamid cap  
**Power Supply:** 9Vdc to 30Vdc for 0 to 5Vdc & 1 to 5Vdc; 12Vdc to 30Vdc for 0 to 10Vdc; 5Vdc  $\pm 10\%$  for .5Vdc to 4.5Vdc  
 CE compliant to EMC norm EN 61326: 1997/A1 1998 RFI, EMI and ESD protection IP67, NEMA 4X to EN 60529/IEC 529

## HAZARDOUS ENVIRONMENT APPROVED PRESSURE TRANSMITTERS



**621/622 EXPLOSION PROOF PRESSURE TRANSMITTERS** are designed for applications that require pressure measurement in hazardous environments. They combine proven sputtered thin film sensor technology or the reliable, long life diffused semiconductor with safe electronics to provide outstanding performance and value in a hazardous location transmitter. All wetted parts are made of stainless steel and Elgiloy welded with no internal O-rings, gaskets or seals.

### FEATURES

- FM and CSA approved Class I, II, III, Division I, Groups A, B, C, D, E, F and G
- Pressure ranges from vacuum to 15,000 psi-gauge, compound or absolute
- 4mA to 20mA or 1Vdc to 5Vdc or 0.5Vdc to 4.5Vdc Low Power Outputs
- Accuracy:  $\pm 0.25\%$  Full Scale (B.F.S.L)
- 1/2" NPT male conduit electrical connection
- 3 year warranty

### 623/624 NON-INCENDIVE PRESSURE TRANSMITTERS

combine advanced diffused semiconductor and sputtered thin film sensor technology with safe electronics for outstanding performance and value in a hazardous environment pressure transmitter. The wetted parts are made of stainless steel and a welded pressure chamber with no internal O-rings, gaskets or seals.

### FEATURES

- FM and CSA approved Class I, II, III, Division I, Groups A, B, C, D, E, F and G
- Pressure ranges from vacuum to 15,000 psi-gauge, compound or absolute
- 4mA to 20mA or 1Vdc to 5Vdc or 0.5Vdc to 4.5Vdc Low Power Outputs
- 3 year warranty
- Accuracy:  $\pm 0.25\%$  Full Scale (B.F.S.L)

# TRANSMITTERS & TRANSDUCERS

## 640 SERIES



**NOSHOK 640 SERIES PRECISION TRANSDUCERS** have been designed for industrial and laboratory applications requiring high accuracy and repeatability with excellent compensation for temperature.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire & 0 to 5Vdc, 0 to 10Vdc, 0.5 to 2.5Vdc, 3-wire

**Ranges:** STD gauge ranges from vacuum to 15000 psi.

Absolute ranges also available

**Accuracy:**  $\pm 0.05\%$  Full Scale (B.F.S.L);  $\pm 0.025\%$  - Optional

**Power Supply:** 10Vdc to 30Vdc for Analog Output 14Vdc to 30Vdc for 0Vdc to 10Vdc Output; Voltage supply from interface RS232-C

CE compliant to EMC norm EN 61326: 1997/A1 1998

RFI, EMI and ESD

IP65, NEMA 4X (IEC 529)

## 650 SERIES



**NOSHOK 650 SERIES HIGH VOLUME OEM TRANSDUCERS** combine high performance with off road vehicle reliability under severe process and environmental conditions. They are designed to handle high pressure spikes and process pulsation. Utilize advanced diffused semiconductor and proven sputtered thin film sensor technology for maximum stability.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire; 0 to 10Vdc, 1 to 5Vdc, 3-wire; .5Vdc to 4.5Vdc, 3-wire ratio-metric

**Ranges:** 0 to 400psig to 0 to 8000psig

**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L)

**Power Supply:** 10Vdc to 36Vdc for 4 to 20mA & 1 to 5Vdc; 14Vdc to 36Vdc for 0 to 10Vdc; 5Vdc  $\pm .5$ Vdc for .5Vdc to 4.5Vdc

CE compliant to EMC norm EN 61326: 1997/A1 1998

RFI, EMI and ESD

## 660 SERIES



**NOSHOK 660 SERIES MICRO-SIZE TRANSDUCERS** are designed with high overpressure capability to provide long service life and reliability in hydraulic and pneumatic applications containing process pulsations and high vibration. Utilizes proven sputtered thin film sensor technology for maximum stability and accuracy.

### SPECIFICATIONS

**Output Signal:** 4mA to 20mA 2-wire, 1Vdc to 5Vdc, 1Vdc to 6Vdc and 0Vdc to 10Vdc 3-wire

**Ranges:** Standard ranges from 200psig to 15000psig

**Accuracy:**  $\pm 0.25\%$  Full Scale (B.F.S.L)

**Power Supply:** 10Vdc to 30Vdc for 4mA to 20mA; 14Vdc to 30Vdc for 1Vdc to 5Vdc, 1Vdc to 6Vdc & 0Vdc to 10Vdc 3-wire

CE compliant to EMC norm EN 61326: 1997/A1 1998

RFI, EMI and ESD

IP65, NEMA 4X (IEC 529)

## 680 SERIES



**NOSHOK 680 SERIES THICK FILM TRANSDUCERS** provide an unbeatable level of performance at a competitive price. Using proven ceramic thick film strain gage technology they are reliable and offer a broad array of choices to the end user and OEM alike.

### SPECIFICATIONS

**Output Signal:** 4mA to 20mA, 2-wire & .1Vdc to 5Vdc, 1Vdc to 10Vdc, .5 to 4.5Vdc, 3-wire ratio-metric

**Ranges:** STD gauge ranges from vacuum through 15000 psig

**Accuracy:**  $\pm 0.5\%$  Full Scale (B.F.S.L)

**Power Supply:** 8Vdc to 30Vdc for 4 to 20mA & 1 to 5Vdc; 14Vdc to 30Vdc for .1Vdc to 10Vdc; 5Vdc  $\pm 10\%$  for .5Vdc to 4.5Vdc 3-wire ratio-metric output

CE compliant to EMC norm EN 61326: 1997/A1 1998

RFI, EMI and ESD

IP65, NEMA 4X (IEC 529)

## HAZARDOUS ENVIRONMENT APPROVED PRESSURE TRANSMITTERS



625/626

**625/626 INTRINSICALLY SAFE PRESSURE TRANSMITTERS** combine the reliability and long life of diffused semiconductor and proven sputtered thin film sensor technology with safe electronics for outstanding performance and value. These transmitters were designed for applications that require pressure measurement in hazardous locations. They are available in a wide variety of pressure connections, ranges and electrical connections to suit most applications.

### FEATURES

■ FM and CSA approved Class I, II, III, Division I, II, Groups A, B, C, D, E, F and G

■ Pressure ranges from vacuum to 60,000 psi-gauge, compound or absolute

■ All wetted parts are constructed of stainless steel (Hastelloy C4 optional on front flush), welded with no internal O-rings, gaskets or seals

■ 4mA to 20mA, 2-wire output signal

■ Accuracy:  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional

### 627 INTRINSICALLY SAFE SUBMERSIBLE LEVEL



627

**TRANSMITTERS** combine the reliability and long life of diffused semiconductor or proven sputtered thin film strain gage sensors with safe electronics to provide outstanding performance and value in a liquid level transmitter designed for hazardous environments. They are available with a stainless steel nosecone, weighted stainless steel nosecone or NPT adapter and ranges to suit most applications.

### FEATURES

■ FM and CSA approved Class I, II, III, Division I, II, Groups A, B, C, D, E, F and G

■ Pressure ranges from 50in H2O to 500 psig

■ Durable high performance Polyurethane jacketed cable enhances reliability

■ 4mA to 20mA, 2-wire output signal

■ Accuracy:  $\pm 0.25\%$  Full Scale (B.F.S.L);  $\pm 0.125\%$  - Optional

## 755/756 SERIES



**NOSHOK 755/756 SERIES DIGITAL PRESSURE TRANSMITTERS** combine advanced diffused semiconductor and proven sputtered thin film sensor technology with digital electronics for outstanding performance and value. They offer maximum flexibility with up to 20:1 span turn down and -2.5 to 99% zero adjustment.

### SPECIFICATIONS

**Output Signal:** 4mA to 20mA, 2-wire

**Ranges:** STD gauge ranges from vacuum through 15000 psig

**Accuracy:**  $\pm 0.05\%$  Full Scale (B.F.S.L);  $\pm 0.15\%$  Full Scale for 0 to 15000psig range

**Power Supply:** 10Vdc to 30Vdc, unregulated

• Built in process temperature display

• Built in selectable process digital filtering

• 32 point process linearization

CE compliant to EMC norm EN 61326: 1997/A1 1998 RFI, EMI and ESD

## 800 SERIES



**NOSHOK 800 SERIES PLATINUM RESISTANCE TEMPERATURE TRANSMITTERS** use the proven reliability and stability of the platinum 100 ohm sensor to provide unbeatable performance at an economical price.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire; 0Vdc to 10Vdc, 3-wire

**Ranges:** STD ranges from -40 °F to 1000 °F

**Accuracy:** Class B ( $\pm 0.5\%$  Full Scale)

**Power Supply:** 10Vdc to 30Vdc for Current Output 14Vdc to 30Vdc for Voltage Output

**Housing Material:** 316SS

**Wetted Material:** 316SS

**Stem Lengths:** From 2.5" to 12"-Stock

**Process Connection:** 1/2" NPT male

CE compliant to EMC norm EN 61326: 1997/A1 1998

RFI, EMI and ESD

IP65, NEMA 4X (IEC 529)



# NEEDLE VALVES

## 100 SERIES



### 100 SERIES MINI VALVES

**NOSHOK 100 SERIES MINI VALVE** is a big valve in a little package. They are available in electroless nickel plated steel, electropolished stainless steel and brass. All mini valves are equipped with a Viton® O-ring and Teflon® back up ring below the stem threads to protect against corrosion and galling. Stem threads are rolled for greater strength and ease of operation and all NOSHOK valves are 100% Helium leak tested for guaranteed reliability. Maximum pressure rating of 6000 psi for steel and SS models, 3000 psi for brass models.

#### SPECIFICATIONS

**SEAT TYPE:** Metal to metal hard seat with bubble tight seal

**MATERIAL:** Electroless nickel steel, electropolished stainless steel, brass

**CONNECTIONS:** 1/8" NPT, 1/4" NPT, 7/16"-20 UNF -2B M-M, M-F, F-F in-line and angled configurations

**OPTIONS:** Panel mounting options, o-ring materials, handle options

**ORIFICE SIZE:** 0.172", Maximum Cv of 0.42

#### WARRANTY:

100 Series: Three Years\*

## 200 & 300 SERIES



### 200 & 300 SERIES MULTI-PORT VALVES; HARD & SOFT SEAT

#### NOSHOK 200 & 300 SERIES MULTI-PORT GAUGE VALVES

reduce the number of gauge and other instrument connections to permanent piping installations, therefore decreasing possible leak points (paths). Optional bleed plugs further allow pressure to be bled off without disturbing the permanent piping installation. The metal to metal hard seat design has a maximum pressure rating to 10000 psi @ 200 °F. The soft seat design, with the replaceable Delrin seat, is pressure rated to 6000 psi @ 200 °F. All NOSHOK valves are 100% Helium leak tested for guaranteed performance and reliability.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel steel, electropolished stainless steel

**CONNECTIONS:** 1/2" NPT, to 3/4" NPT, M-F, straight through porting for bi-directional, high capacity flow

**ORIFICE SIZE:** 0.187", Maximum Cv for 200 Series: 0.44; Maximum Cv for 300 Series: 0.64

**STEM PACKING & TYPE:** All 316SS stems with Viton® O-ring and Teflon® back up ring below the threads

#### WARRANTY:

200 & 300 Series: Three Years\*

## 400 SERIES



### 400 SERIES HARD SEAT VALVES

**NOSHOK 400 SERIES HARD SEAT VALVE** is the work horse of the industry. The metal to metal hard seat design is pressure rated to 10,000 psi @ 200 °F and 100% Helium leak test to 1 X 10-4 ml/s for guaranteed performance and reliability. The all 316SS blow out proof stem provide greater service life and provides a secondary stem seal in the full open position. Stem and the one piece bonnet threads are rolled for greater strength and ease of operation. Stem packing below the threads with the Viton® O-ring and Teflon® back up ring prevents thread galling and corrosion.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel steel, electropolished stainless steel

**CONNECTIONS:** 1/4", 3/8", 1/2", 3/4", 7/16"-20 UNF -2B, 1", & 1 1/2" 1/4 NPT, M-F, F-F, in-line and angled configuration  
**ORIFICE SIZE:** Models 402-404: 0.187" with max. Cv of 0.44; 0.438"; Models 406-412 with Max. Cv 0.438"

#### WARRANTY:

400 Series: Three Years\*

## 500 SERIES



### 500 SERIES SOFT SEAT VALVES

**NOSHOK 500 SERIES SOFT SEAT VALVES** are fitted with a precision molded, replaceable Delrin soft seat that is the key to the bubble tight seal. Maximum pressure rating is 6,000 psi @ 200 °F with straight through porting for bi-directional, high capacity flow and easy rodable cleaning. The all 316SS blow out proof stem provides greater service life and a secondary stem seal in the full open position. Stem packing, with the Viton® O-ring and Teflon® back up ring, is below the threads and prevents galling and corrosion. All NOSHOK valves are 100% Helium leak test to 1 X 10-4 ml/s for guaranteed performance and reliability.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel steel, electropolished stainless steel

**CONNECTIONS:** 1/4", 3/8" & 1/2" NPT; M-F, F-F configurations available

**ORIFICE SIZE:** 0.187" with maximum Cv of 0.76

#### WARRANTY:

500 Series: Three Years\*

## 600 & 700 SERIES



### 600 & 700 SERIES BLOCK & BLEED VALVES; HARD & SOFT SEAT

#### NOSHOK 600 & 700 SERIES BLOCK & BLEED VALVES

allow pressure to be bled off without disturbing the permanent piping installation thereby enabling the user to quickly and easily remove and/or replace instruments. The metal to metal hard seat design is pressure rated to 10,000 psi @ 200 °F and the soft seat design, with a replaceable Delrin seat, is rated to 6000 psi @ 200 °F. The all 316SS blow out proof stem provides greater service life and a secondary stem seal in the full open position. Stem packing, with the Viton® O-ring and Teflon® back up ring, is below the threads and prevents galling and corrosion. All NOSHOK valves are 100% Helium leak test to 1 X 10-4 ml/s for guaranteed performance and reliability.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel steel, electropolished stainless steel

**CONNECTIONS:** 1/4" NPT & 1/2" NPT; M-F, F-F configurations available

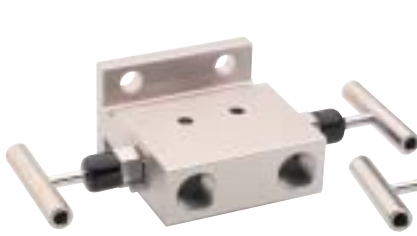
**ORIFICE SIZE:** 600 Series: 0.187" with max. Cv of 0.44; 700 Series: 0.187" with max. Cv of 0.76

#### WARRANTY:

600 & 700 Series: Three Years\*

# MANIFOLD & SOLENOID VALVES

## 2000/2100 SERIES



### 2000/2100 SERIES MANIFOLD VALVES: HARD & SOFT SEAT

**NOSHOK 2000 SERIES HARD AND SOFT SEAT 2 VALVE MANIFOLDS** are designed for use with differential pressure transmitters in liquid level applications. These valves are available in either single flange or double flange connection for direct installation. All manifold bodies are machined from cold drawn extrusion allowing NOSHOK to hold tighter tolerances and greater mechanical strength than any other manifold valve in the industry. The metal to metal hard seat valve is pressure rated to 10,000 psi @ 200 °F with a flow coefficient factor of 0.44. The soft seat design features a replaceable Delrin seat with straight through porting for bi-directional flow and easy roddable cleaning. Maximum pressure rating on the soft seat is 6000 psi @ 200 °F with a flow coefficient factor of 0.76. All NOSHOK valves are 100% Helium leak test to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel plated carbon steel, Electropolished stainless steel

**CONNECTION:** Flange – Flange, 1/2" NPT – Flange

**STEM PACKING & TYPE:** All 316SS stems with Viton® O-ring and Teflon® back up ring below the threads

## 3000/3100 SERIES



### 3000/3100 SERIES MANIFOLD VALVES: HARD & SOFT SEAT

**NOSHOK 3000 SERIES HARD & SOFT SEAT 3 VALVE MANIFOLDS** are designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement. These valves are available in block, single flange or double flange connection for remote or direct installation. All manifold bodies are machined from cold drawn extrusion allowing NOSHOK to hold tighter tolerances and greater mechanical strength than any other manifold valve in the industry. The metal to metal hard seat valve is pressure rated to 10,000 psi @ 200 °F with a flow coefficient factor of 0.44. The soft seat design features a replaceable Delrin seat with straight through porting for bi-directional flow and easy roddable cleaning. Maximum pressure rating on the soft seat is 6000 psi @ 200 °F with a flow coefficient factor of 0.76. All NOSHOK valves are 100% Helium leak test to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.

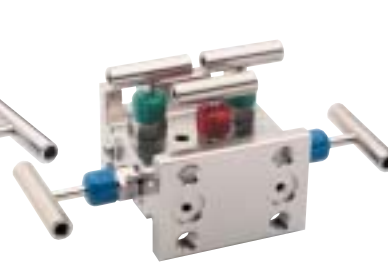
#### SPECIFICATIONS

**MATERIAL:** Electroless nickel plated carbon steel, Electropolished stainless steel

**CONNECTION:** Flange – Flange, 1/2" NPT – Flange, 1/2" NPT – 1/2" NPT

**STEM PACKING & TYPE:** All 316SS stems with Viton® O-ring and Teflon® back up ring below the threads

## 5000/5100 SERIES



### 5000/5100 SERIES MANIFOLD VALVES: HARD & SOFT SEAT

**NOSHOK 5000 SERIES HARD & SOFT SEAT 5 VALVE MANIFOLDS** are designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications. These valves are available in block, single flange or double flange connection for remote or direct installation. All manifold bodies are machined from cold drawn extrusion allowing NOSHOK to hold tighter tolerances and greater mechanical strength than any other manifold valve in the industry. The metal to metal hard seat valve is pressure rated to 10,000 psi @ 200 °F with a flow coefficient factor of 0.44. The soft seat design features a replaceable Delrin seat with straight through porting for bi-directional flow and easy roddable cleaning. Maximum pressure rating on the soft seat is 6000 psi @ 200 °F with a flow coefficient factor of 0.76. All NOSHOK valves are 100% Helium leak test to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.

#### SPECIFICATIONS

**MATERIAL:** Electroless nickel plated carbon steel, Electropolished stainless steel

**CONNECTION:** Flange – Flange, 1/2" NPT – Flange, 1/2" NPT – 1/2" NPT

**STEM PACKING & TYPE:** All 316SS stems with Viton® O-ring and Teflon® back up ring below the threads

**ADDITIONAL FEATURES:** Two static (test) ports, color coded vinyl bonnet and stem dust cap, patent pending soft tip stem design on equalizing and vent valves

## SOLENOID VALVES



**NOSHOK SOLENOID VALVES** are available in a multitude of configurations including 2-way normally open, 2-way normally closed, 3-way normally open, 3-way normally closed, 3-way universal, vacuum breaker, water resistant designs. All NOSHOK solenoid valves are available in brass and stainless steel models with a variety of NPT port fittings and orifices to help you choose the right combination of fitting and flow control for your application. NOSHOK Solenoid Valves are typically found in shut off control for air, oil, water and other fluids not corrosive to brass and stainless steel, control for pneumatic and hydraulic cylinders, flow diversion from one line to another, mixer control for 2 separate pressure sources and more. NOSHOK offers a wide variety of additional options including standard Class A coils, Class H coils, Rectified coils, seals, mounting brackets, and water tight enclosures to fit the needs of demanding applications.

**SERIES 90:** 2-Way Solenoid Valves; N.O., N.C.; Brass and stainless steel valves; 1/8" NPT, 1/4" NPT

**SERIES 95 & SERIES 96:** 3-Way Solenoid Valves; N.O., N.C., Universal; Brass & SS valves; 1/8" NPT, 1/4" NPT

# MECHANICAL FORCE MEASUREMENT

## SERIES 1000



**NOSHOK SERIES 1000 HYDRAULIC LOAD CELLS** are engineered with a compact flat body design for use within control systems of spot welding machines, robots, printing machines and other compression force measurement applications. The stainless steel housing and piston provide for exceptional corrosion resistance and extended service life. Accuracy levels range from  $\pm 0.25\%$  full scale (B.F.S.L.) to  $\pm 1.5\%$  full scale depending on the measuring instrument.

### SPECIFICATIONS

**NOMINAL DIAMETER:** 6cm2  
**LOAD CELL HOUSING MATERIAL:** Stainless steel  
**PISTON:** SS – STD; Plastic – Optional  
**CONNECTING LINE:** 50mm adapter – STD; others available  
**RANGES:** From 150 lbs-force through 7000 lbs-force

### MEASURING INSTRUMENT

**PRESSURE GAUGE:** 2 1/2" 300 Series, one piece die cast brass case; Dry or liquid filled  
**TRANSDUCER:** 100, 200 or 615 Series transducer  
**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.50\%$  Full Scale (B.F.S.L.) to  $\pm 0.125\%$  Full Scale  
**OPERATING TEMP:** 14 °F to 122 °F (-10 °C to 50 °C)  
**AMBIENT TEMP:** -4 °F to 140 °F (-20 °C to 60 °C)

## SERIES 2000



**NOSHOK SERIES 2000 HYDRAULIC LOAD CELLS** are designed for measuring axial loads and bearing forces in turning and drilling machines, extruders, and other compression or tension force applications. The self adapting piston and housing are constructed of high grade, corrosion resistant stainless steel and are available in standard or ring form. A high quality, highly accurate NOSHOK pressure gauge or transducer is attached for measurement indication.

### SPECIFICATIONS

**NOMINAL DIAMETER:** 20cm2  
**LOAD CELL HOUSING MATERIAL:** Stainless steel  
**PISTON:** Stainless steel  
**CONNECTING LINE:** Direct connection – STD; flexible tubing, capillary restrictor  
**RANGES:** From 300 lbs-force through 22000 lbs-force

### MEASURING INSTRUMENT

**PRESSURE GAUGE:** 2 1/2" 300 Series, one piece die cast brass case; dry or liquid filled; 4" 901 Series SS case; dry or liquid filled  
**TRANSDUCER:** 100, 200 or 615 Series transducer  
**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.50\%$  Full Scale (B.F.S.L.) to  $\pm 0.125\%$  Full Scale  
**OPERATING TEMP:** 14 °F to 122 °F (-10 °C to 50 °C)  
**AMBIENT TEMP:** -4 °F to 140 °F (-20 °C to 60 °C)

## SERIES 3000



**NOSHOK SERIES 3000 HYDRAULIC LOAD CELLS** are constructed from a high grade, corrosion resistant stainless steel and joined with a high quality NOSHOK pressure gauge or transducer to measure axial loads and bearing forces in turning and drilling machines, extruders and other compression force measurement applications. Accuracy levels range from  $\pm 0.25\%$  full scale (B.F.S.L.) to  $\pm 1.5\%$  full scale depending on the measuring instrument with measuring ranges from 25000 lbs-force through 70000 lbs-force.

### SPECIFICATIONS

**NOMINAL DIAMETER:** 80cm2  
**LOAD CELL HOUSING MATERIAL:** Stainless steel  
**PISTON:** Stainless steel  
**CONNECTING LINE:** Direct connection – STD; flexible tubing, capillary restrictor  
**RANGES:** From 25000 lbs-force through 70000 lbs-force

### MEASURING INSTRUMENT

**PRESSURE GAUGE:** 2 1/2" 300 Series, one piece die cast brass case; dry or liquid filled; 4" 901 Series SS case; dry or liquid filled  
**TRANSDUCER:** 100, 200 or 615 Series transducer  
**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.50\%$  Full Scale (B.F.S.L.) to  $\pm 0.125\%$  Full Scale  
**OPERATING TEMP:** 14 °F to 122 °F (-10 °C to 50 °C)  
**AMBIENT TEMP:** -4 °F to 140 °F (-20 °C to 60 °C)

## SERIES 4000



**NOSHOK SERIES 4000 HYDRAULIC LOAD CELLS** are designed for level measurement, rope and belt tension and torque measurement, bearing support forces on lifting equipment and other compression force measurement applications. The cell housing is built from a durable galvanized and chrome plated steel while the piston is constructed from a high grade stainless steel for exceptional corrosion resistance. Measuring ranges vary from 90,000lbs-force through 220,000lbs-force with accuracy levels ranging from  $\pm 0.25\%$  full scale (B.F.S.L.) to  $\pm 1$  full scale depending on the measuring instrument.

### SPECIFICATIONS

**NOMINAL DIAMETER:** 40cm2, 100cm2  
**LOAD CELL HOUSING MATERIAL:** Galvanized and chrome plated steel  
**PISTON:** Stainless steel  
**CONNECTING LINE:** Rigid tubing; flexible tubing, capillary restrictor  
**RANGES:** From 90000 lbs-force through 220,000 lbs-force

### MEASURING INSTRUMENT

**PRESSURE GAUGE:** 4" 901 Series SS case; dry or liquid filled; 6" 400/500 Series all SS gauge  
**TRANSDUCER:** 100, 200 or 615 Series transducer  
**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.50\%$  Full Scale (B.F.S.L.) to  $\pm 0.125\%$  Full Scale  
**OPERATING TEMP:** 14 °F to 122 °F (-10 °C to 50 °C)  
**AMBIENT TEMP:** -4 °F to 140 °F (-20 °C to 60 °C)

## SERIES 5000



**NOSHOK SERIES 5000 HYDRAULIC LOAD CELLS** are designed in a distinctive ring shaped form for compression and tension force measurement in injection molding machine screws, tailstock spindles, propeller shafts, rope and torque measurement applications and more. The high grade stainless steel housing and piston provide exceptional corrosion resistance and durability. Measuring ranges vary from 75,000lbs-force through 250,000lbs-force with accuracy levels ranging from  $\pm 0.25\%$  full scale (B.F.S.L.) to  $\pm 1$  full scale depending on the measuring instrument.

### SPECIFICATIONS

**NOMINAL DIAMETER:** 160cm2  
**LOAD CELL HOUSING MATERIAL:** Stainless steel  
**PISTON:** Stainless steel  
**CONNECTING LINE:** Rigid tubing; flexible tubing, capillary restrictor  
**RANGES:** From 75,000 lbs-force through 250,000 lbs-force

### MEASURING INSTRUMENT

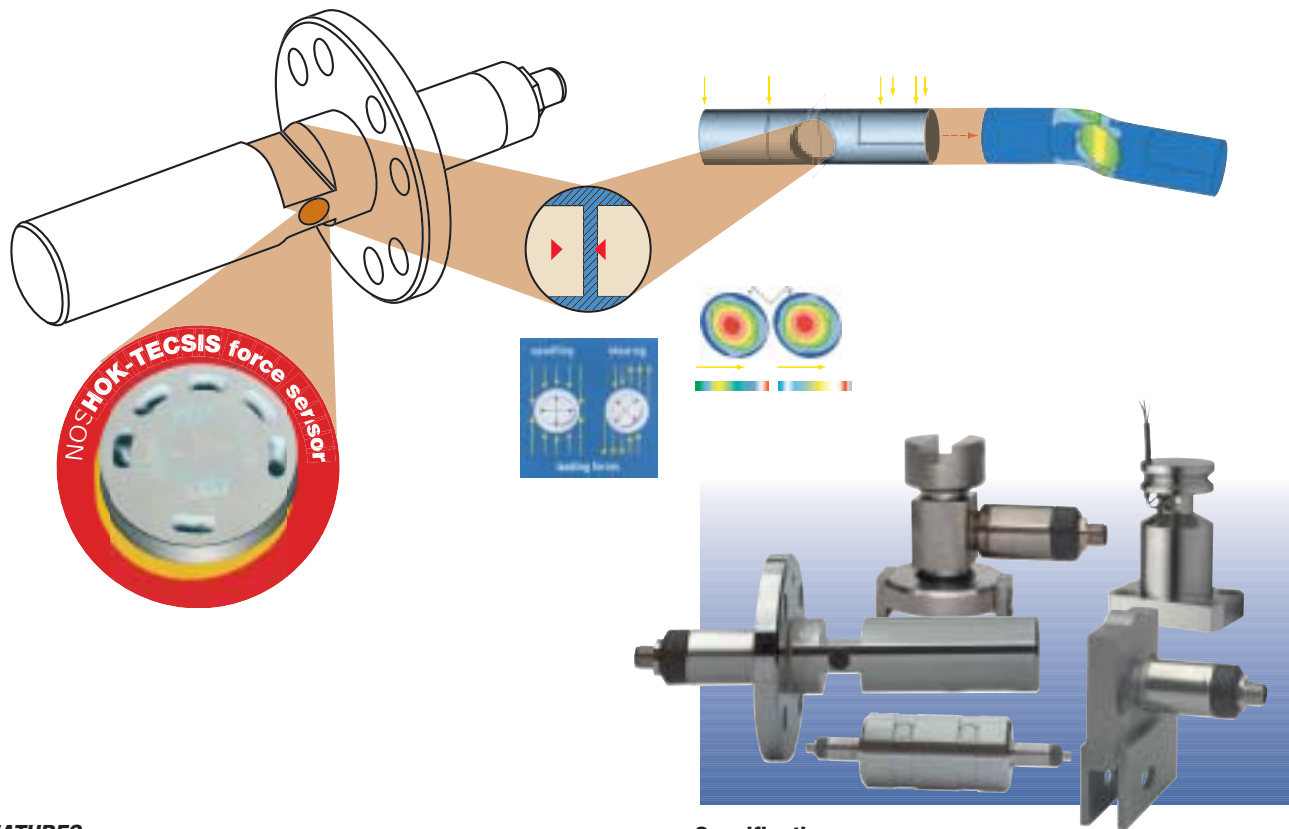
**PRESSURE GAUGE:** 4" 901 Series SS case; dry or liquid filled; 6" 400/500 Series all SS gauge  
**TRANSDUCER:** 100, 200 or 615 Series transducer  
**OUTPUT SIGNALS:** 4mA to 20mA, 2-wire: 0 to 5Vdc, 0 to 10Vdc, 1 to 5Vdc, 1 to 6Vdc & 1 to 11Vdc, 3-wire  
**ACCURACY:**  $\pm 0.50\%$  Full Scale (B.F.S.L.) to  $\pm 0.125\%$  Full Scale  
**OPERATING TEMP:** 14 °F to 122 °F (-10 °C to 50 °C)  
**AMBIENT TEMP:** -4 °F to 140 °F (-20 °C to 60 °C)



# NOSHOK-TECSIS CUSTOM FORCE SENSOR

The NOSHOK-TECSIS Custom Force Sensor is a break through in force measurement. Utilizing proven thin film sensor technology combined with an advanced automated production process we create a highly adaptive force transmitter that is suitable for industrial use. This development process gives the customer complete freedom in creating a high quality, highly accurate force sensor that is custom designed and engineered to meet their specific application needs.

NOSHOK-TECSIS Custom Force Sensors provide the OEM and end user alike with unsurpassed flexibility to achieve a previously unattainable solution because of nonconforming standard designs and high accuracy requirements. NOSHOK achieves this solution in a way that is performance and reliability enhancing while remaining cost effective.



## FEATURES

- Custom designed and built to the exact application specifications requiring less space for mounting and installation
- The NOSHOK-TECSIS proven thin film sensor is LASER WELDED to the deformation body for superior strength and performance
- Extremely accurate, with the help of Finite Element Method Analysis, the sensor is able to reach accuracies from 0.2% to 1% full scale.
- Available in a variety of standard current and voltage output signals, with others available upon request
- High quality product produced in an automated system with cost effective pricing
- Deformation body is constructed from a high grade, high quality stainless steel that provides exceptional durability and contributes to extended service life

## Specifications

**OUTPUT SIGNAL** 4 mA to 20 mA, 2-wire, 0 Vdc to 5 Vdc, 3-wire, 0 Vdc to 10 Vdc, 3-wire

**NOMINAL RANGES** 1 kN (225lbs-force) to 500 kN (112,500/lbs-force).

Standard Others Available – Please Consult Factory

**LIMIT FORCE** 150% F<sub>nom</sub>

**FRACTURE FORCE** >300% F<sub>nom</sub>

**ACCURACY** < 1% Full Scale

**HYSTERESIS** < 0.5% Full Scale

**POWER SUPPLY** 10 Vdc to 30 Vdc; 14 Vdc to 30 Vdc for 0Vdc to 10Vdc output

**HOUSING MATERIAL** 316 Stainless Steel

**RESPONSE TIME** ≤ 0.5s (between 10% to 90% Full Scale)

**ENVIRONMENTAL RATING** IP 67, NEMA 4X to EN 60529/IEC 529

**ELECTRICAL PROTECTION** Reverse polarity, over-voltage and short circuit protection

**VIBRATION** 20 g's per IEC 68-2

**ELECTRICAL CONNECTION** M12 X 1, 4-pin Standard; Others Available– Please Consult Factory

# THERMOMETERS

## 800 SERIES



**NOSHOK 800 SERIES PLATINUM RESISTANCE TEMPERATURE TRANSMITTERS** use the proven reliability and stability of the platinum 100 ohm sensor to provide unbeatable performance at an economical price.

### SPECIFICATIONS

**Output Signals:** 4mA to 20mA, 2-wire; 0Vdc to 10Vdc, 3-wire

**Ranges:** STD ranges from -40 °F to 1000 °F

**Accuracy:** Class B ( $\pm 0.5\%$  Full Scale)

**Power Supply:** 10Vdc to 30Vdc for Current Output 14Vdc to 30Vdc for Voltage Output

**Housing Material:** 316SS

**Wetted Material:** 316SS

**Stem Lengths:** From 2.5" to 12" – Stock

**Process Connection:** 1/2" NPT male

CE compliant to EMC norm  
EN 61326: 1997/A1 1998  
RFI, EMI and ESD IP65, NEMA 4X  
(IEC 529)

**WARRANTY:**  
800 Series: Three Years<sup>†</sup>

## BIMETAL THERMOMETERS



**NOSHOK 100 SERIES INDUSTRIAL TYPE BIMETAL THERMOMETERS** are a high quality, low cost thermometer designed for limited space applications or where a weather resistant, tamper proof case is required. The bimetal element is an extremely responsive temperature sensing helix which has been carefully sized and tested, heat treated and aged to relieve inherent stresses and insure continued accuracy.

### SPECIFICATIONS

**SIZE:** 2 inch and 3 inch sizes

**CASE:** 304SS

**BEZEL:** 304SS

**LENS:** 2 inch – Convex glass; 3 inch – Instrument glass

**STEM:** 304SS; 2.5 inch to 24 inch lengths available

**CONNECTION:** center back – STD; 2 inch – 1/4" NPT; 3 inch – 1/2" NPT, 3/8" NPT - Optional

**ACCURACY:** 2 inch -  $\pm 1\%$  Full Scale; 3 inch -  $\pm 2\%$  -  $1\%$  -  $2\%$  Full Scale

**RANGES:** -100 to 150 °F through 200 to 1000 °F; Single and Dual Scales available

**WARRANTY:**  
100 Series: One Year<sup>†</sup>



**NOSHOK 300 SERIES INSTRUMENT TYPE BIMETAL THERMOMETERS** are the highest quality thermometers available in today's market. They feature a sturdy, corrosion resistant 304SS case and bezel which provides a hermetic seal to prevent crystal fogging and damage caused by moisture. A slotted hex adjustment head offers field calibration for maximum accuracy at a selected range.

### SPECIFICATIONS

**SIZE:** 3 inch and 5 inch sizes

**CASE:** 304SS

**BEZEL:** Electropolished 304SS

**LENS:** Instrument glass

**STEM:** 304SS; 2.5 inch to 24 inch lengths available

**CONNECTION LOCATION:** center back; bottom connection; adjustable angle connection

**CONNECTION SIZE:** 1/2" NPT – STD; 1/4" NPT & 3/8" NPT – Optional

**ACCURACY:**  $\pm 1\%$  Full Scale

**RANGES:** -100 to 150 °F through 200 to 1000 °F; Single and Dual Scales available

A silicone liquid filled option is available for applications where severe vibration may be a factor.

**WARRANTY:**  
300 Series: Five Years<sup>†</sup>

## REMOTE THERMOMETERS



**NOSHOK VAPOR or GAS ACTUATED REMOTE THERMOMETERS** operate using a temperature actuated liquid in the sensing element and a highly accurate, high quality pressure gauge to indicate media temperature. As the media temperature increases the capillary fill fluid vaporizes, causing an increase of pressure within the bourdon tube, and activates the movement and pointer for proper indication. Dial scale graduations are non linear, therefore, the highest degree of accuracy and readability is found in the upper half of the scale.

### SPECIFICATIONS

**SIZES:** 2, 2 1/2, 3 1/2, 4 and 4 1/2 inch sizes

**CASE MATERIAL:** Brass or stainless steel (dry or liquid filled)

**CONNECTION:** Bottom connection; back connection; lower back connection

**OPTIONAL FILL FLUIDS:** Glycerine, glycerine-H<sub>2</sub>O and silicone

**MOUNTING OPTIONS:** Front or rear flange, bezel & U-clamp

**RANGES:** -40 to 60 °F/C through 50 to 400 °F/C

**CAPILLARY LENGTH &**

**MATERIAL:** Copper & SS; 5 foot to 40 foot

**BULB MATERIAL &**

**DIMENSIONS:** Copper or SS; 2 5/8"x 7/16" through 7"x 12"

## THERMOWELLS

**NOSHOK THERMOWELLS** are recommended whenever the process being measured may be under pressure, is corrosive, abrasive or may be at a high velocity. They are also recommended as protection to the operator. The correct thermowell will reduce the possibility of damage to the temperature instrument and allows an instrument to be removed and replaced without shutting down and possibly draining the process. Standard thermowells are supplied with 1/2" NPSM instrument connection. The female thread will accept the 1/2" NPT male thread without galling or seizing.

### SPECIFICATIONS

**MATERIALS:** Brass, 304SS or 316SS

**INSERTION:**

1 5/8 inch to 22 inch sizes

**BORE DEPTH:**

2 1/2 inch to 24 inch sizes

**PROCESS CONNECTION:** 3/4 inch – STD; Others available upon request

# DIAPHRAGM SEALS

## TYPE 10



**NOSHOK TYPE 10 STANDARD PRESSURE SEAL** are designed to utilize a replaceable diaphragm clamped between the metal housings. They are rated to 2000 psi with a displacement capability of 0.09 cubic inches.

### SPECIFICATIONS

**LOWER HOUSING:** All metallic  
**UPPER HOUSING:** Carbon steel or 316SS

### DIAPHRAGM MATERIALS:

All metallic or elastomers  
**O-ring:** Buna-N, Teflon, Viton  
**BOLTING:** Carbon steel or 300 series stainless steel

## TYPE 10L



**NOSHOK TYPE 10L NON-METALLIC LOWER HOUSING, REDUCED PRESSURE SEALS** utilize a replaceable diaphragm and non-metallic lower housing. They are rated to 200 psi with a displacement capability of 0.09 cubic inches.

### SPECIFICATIONS

#### LOWER HOUSING:

All non-metallic  
**UPPER HOUSING:** Carbon steel or 316SS

#### DIAPHRAGM MATERIALS:

All metallic or elastomers  
**O-ring:** Buna-N, Teflon, Viton  
**BOLTING:** Carbon steel or 300 series stainless steel

## TYPE 10H



**NOSHOK TYPE 10H ELEVATED PRESSURE SEALS** are a threaded connection, off-line seal with a replaceable diaphragm. They are designed for high pressure applications and are rated to 20,000 psi. Displacement capability is 0.05 cubic inches.

### SPECIFICATIONS

**LOWER HOUSING:** All metallic  
**UPPER HOUSING:** Carbon steel or 316SS

#### DIAPHRAGM MATERIALS:

All metallic  
**O-ring:** Buna-N, Viton  
**BOLTING:** Carbon steel or 300 series stainless steel

## TYPE 20



**NOSHOK TYPE 20 FRONT FLUSH BUTTON STYLE ALL WELDED SEAL** is constructed with a 316SS housing and diaphragm. Maximum pressure rating is 9000 psi. Available instrument connection sizes are 1/4" and 1/2" with a process connection size of 1/2" NPT male to 2" NPT male.

### SPECIFICATIONS

**HOUSING:** 316SS  
**DIAPHRAGM MATERIALS:** 316SS

## TYPE 25



**NOSHOK TYPE 25 STANDARD PRESSURE SEALS** utilize an all welded, all metallic housing design with pressure rated to 2500 psi. The housing and diaphragm are offered in a variety of materials to suit most applications. A flushing port is offered as an option.

### SPECIFICATIONS

**LOWER HOUSING:** 316SS, Hastelloy C, Hastelloy B, Carpenter 20 and Monel

**UPPER HOUSING:** 316SS, Carpenter 20 and Monel

**DIAPHRAGM MATERIALS:** 316SS, Hastelloy C, Hastelloy B, Carpenter 20 and Monel

## TYPE 25H



**NOSHOK TYPE 25H ELEVATED PRESSURE SEALS** utilize an all welded, all metallic housing design with pressure rated to 5000 psi. The housing and diaphragm are offered in a variety of materials to suit most applications. A flushing port is offered as an option.

### SPECIFICATIONS

**LOWER HOUSING:** 316SS, Hastelloy C, Hastelloy B, Carpenter 20 and Monel

**UPPER HOUSING:** 316SS, Carpenter 20 and Monel

**DIAPHRAGM MATERIALS:** 316SS, Hastelloy C, Hastelloy B, Carpenter 20 and Monel

## TYPE 29



**NOSHOK TYPE 29 HIGH DISPLACEMENT SEALS** are an all welded, all metallic housing design that does not utilize an o-ring or gasket. Displacement is limited to 0.035 cubic inches requiring the use of gauges with less than 4 1/2" dial size and bourdon tube range no lower than 0 to 15 psi. Pressure rating is 2500 psi.

### SPECIFICATIONS

**LOWER HOUSING:** 316SS, Hastelloy C, Hastelloy B and Monel

**UPPER HOUSING:** 316SS and Monel

**DIAPHRAGM MATERIALS:** 316SS, Hastelloy C, Hastelloy B and Monel

## TYPE 30



**NOSHOK TYPE 30 STANDARD PRESSURE WELDED SEALS** utilize an all metallic diaphragm welded to the upper housing with a displacement capability of 0.05 cubic inches. Standard pressure rating is 2500 psi with a wide variety of instrument and process connections available. A flushing connection is offered as an option.

### SPECIFICATIONS

**LOWER HOUSING:** All metallic  
**UPPER HOUSING:** Carbon steel or 316SS

**DIAPHRAGM MATERIALS:** All metallic

**BOLTING:** Carbon steel or 300 series stainless steel

## TYPE 30H



**NOSHOK TYPE 30H ELEVATED PRESSURE WELDED SEALS** utilize an all metallic diaphragm welded to the upper housing with a displacement capability of 0.05 cubic inches. Pressure rating is 5000 psi to 20000 psi with a wide variety of instrument and process connections available. A flushing connection is offered as an option.

### SPECIFICATIONS

**LOWER HOUSING:** All metallic  
**UPPER HOUSING:** Carbon steel or 316SS

**DIAPHRAGM MATERIALS:** All metallic

**BOLTING:** Carbon steel or 300 series stainless steel

## TYPE 30L



**NOSHOK TYPE 30L REDUCED PRESSURE WELDED SEALS** utilize an all metallic diaphragm welded to the upper housing. Displacement capability is 0.05 cubic inches with a 2.4" diameter diaphragm. Maximum pressure rating is 200 psi with non-metallic lower housing materials. A flushing connection is offered as an option.

### SPECIFICATIONS

**LOWER HOUSING:** Non-metallic  
**UPPER HOUSING:** Carbon steel or 316SS

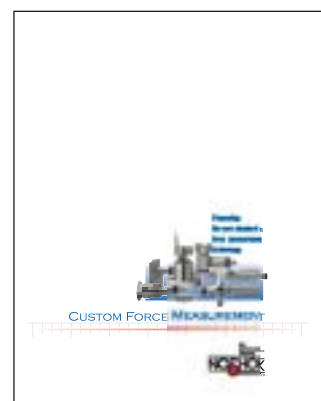
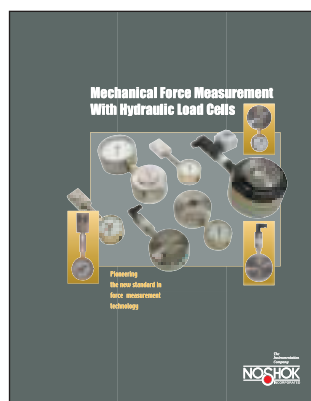
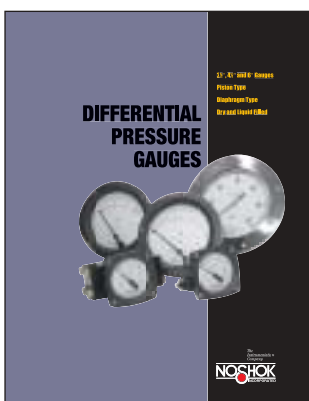
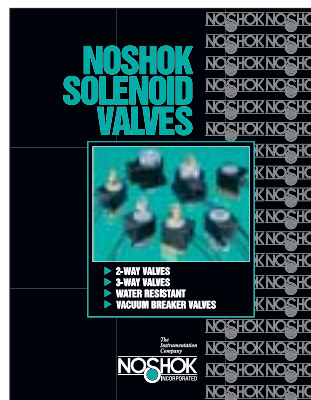
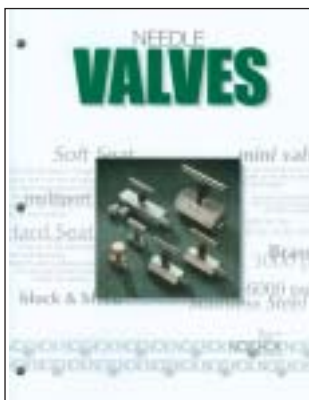
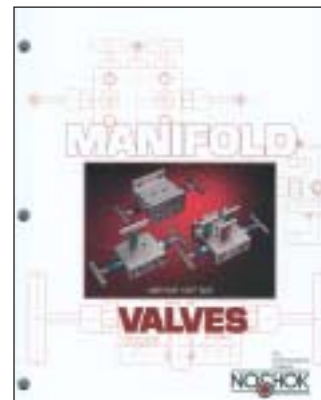
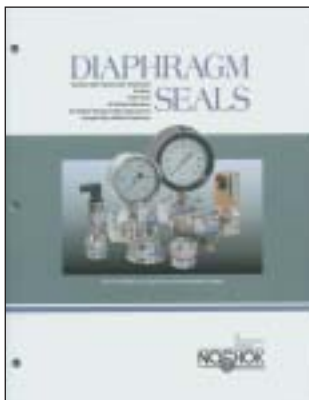
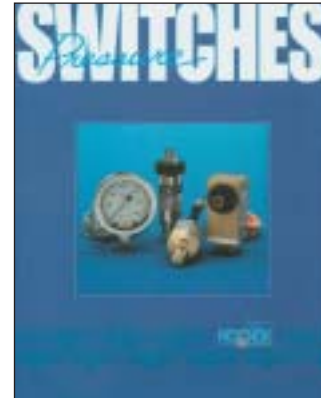
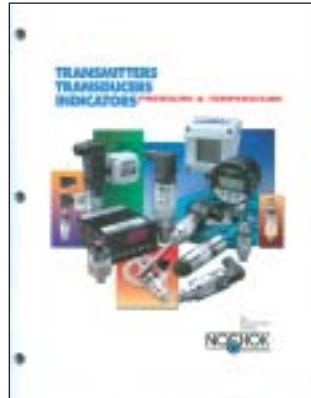
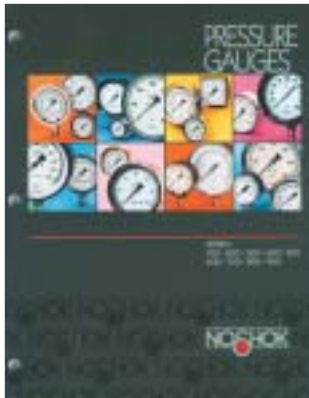
**DIAPHRAGM MATERIALS:** All metallic

**BOLTING:** Carbon steel or 300 series stainless steel



## NOTES

FOR DETAILED INFORMATION PLEASE REQUEST THE SPECIFIC PRODUCT LITERATURE SHOWN BELOW



*The  
Instrumentation  
Company*

**NOSHOK**  
INCORPORATED

**CORPORATE HEADQUARTERS**

1010 West Bagley Road • Berea, Ohio 44017 • 440-243-0888 • Fax 440-243-3472

**GOODYEAR**  
RUBBER PRODUCTS INC.

**Call Toll Free: 1-866-711-4673**  
[WebSales@GoodyearRubberProducts.com](mailto:WebSales@GoodyearRubberProducts.com)

**We Ship  
World Wide**