

# Measurement Solutions Product Guide



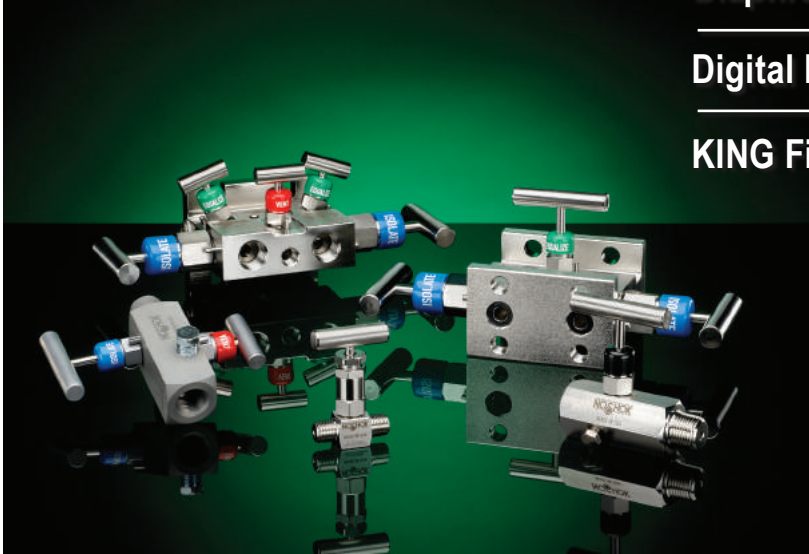
Pressure & Level  
Temperature

Needle Valves  
Manifold Valves

Diaphragm Seals

Digital Indicators

KING Filters



**A**t NOSHOK, we pride ourselves on being innovators in the industry by continually offering the latest technology and measurement solutions, and providing the best customer support in the marketplace.

Established in 1967, NOSHOK was one of the first companies to offer liquid filled pressure gauges. We also took a bold step by backing our quality gauges with an extended 3-year warranty. That unwavering standard of quality has endured for over 50 years, and as we have expanded our product offering we continue to provide industry-leading warranties. NOSHOK also leads the industry as one of the first companies to offer corrosion-resistant zinc nickel plating standard on our carbon Steel valves.

We have the capacity to put together special requirements which are so often hard to find. If you do not find what you need in this catalog, chances are we can still put a solution together.

NOSHOK is committed to providing excellence on every level. Thank you for choosing NOSHOK products.



Jeff N. Scott  
President



**NOSHOK Corporate Headquarters**  
Your Single Source Instrumentation Company

**NOSHOK is a member and actively supports:**

THE **FPDA**   
MOTION & CONTROL NETWORK

**ASME**  
SETTING THE STANDARD  
1884

ASSOCIATION FOR  
HIGH TECHNOLOGY  
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Sanitary Processing

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# PRESSURE GAUGES

## SPECIFICATIONS

**SIZES:** 1-1/2", 2", 2-1/2" and 4"

**CONNECTION:** Bottom, back, panel mount, 1/8" NPT, SAE J1926-3:7/16-20 Adjustable, and 1/4" NPT

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

**LENS:** Acrylic is standard; others available

**MEASURING ELEMENT:** Phosphor bronze Bourdon tube

**MOVEMENT:** Brass and nylon

**ACCURACY:** ±1.6% full scale to ±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:** -4 °F to 140 °F (-20 °C to 60 °C)



## 100 SERIES

**NOSHOK STANDARD GAUGES** are general purpose, non-fillable 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, medical, pumps & compressors, refrigeration controls, utilities and water management.

**WARRANTY:** One Year†

## SPECIFICATIONS

**SIZES:** 2-1/2" and 4"

**CONNECTION:** Bottom, back, panel mount, 1/4" NPT

**CASE:** ABS, black painted Steel or 304 Stainless Steel,

Gas pressure test kit available

(in 2-1/2" size only, 20 oz./35 in.H<sub>2</sub>O)

**LENS:** Acrylic on the 2-1/2" size, instrument glass on the 4" size

**MEASURING ELEMENT:** Phosphor bronze diaphragm capsule

**MOVEMENT:** Brass, bearing parts highly polished nickel silver with zero point adjustment

**ACCURACY:** 2-1/2": ± 1.6% or ± 2.5% full scale; 4": ± 1.6% full scale, optional ± 1% full scale

**AVAILABLE RANGES:** -15 in.H<sub>2</sub>O to 0 in.H<sub>2</sub>O vacuum through 0 psi -10 psi

**OPTIONS AND ACCESSORIES:** Panel mount options, orifices, 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:** -4 °F to 140 °F (-20 °C to 60 °C)



## 200 SERIES

**NOSHOK LOW PRESSURE DIAPHRAGM GAUGES** are sensitive, capsule-type, non-fillable dry gauges designed for extremely low pressure and vacuum measurement. The ultra sensitive phosphor bronze diaphragm capsules are rated for pressure as low as 0 in.H<sub>2</sub>O -10 in.H<sub>2</sub>O and as high as 0 psi -10 psi. Applications include filter monitoring, gas distribution, HVAC, leak detection, level indication and medical.

**WARRANTY:** One Year†

## SPECIFICATIONS

**SIZES:** 2-1/2" and 4"

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

**CASE:** One piece die cast Brass

**LENS:** Acrylic with o-ring seal

**MEASURING ELEMENT:** 2-1/2" size: phosphor bronze "C" tube for ≤ 600 psi, phosphor bronze coiled safety tube for 800 psi to 6,000 psi, and 316 Stainless Steel on 7,500 psi to 15,000 psi.

4" size: 316 Stainless Steel for 1,500 psi to 15,000 psi

**MOVEMENT:** Brass and nickel-silver

**ACCURACY:** 2-1/2": ± 1.6% full scale; 4": ± 1% full scale

**AVAILABLE RANGES:** Vacuum and compound through 0 psi - 15,000 psi

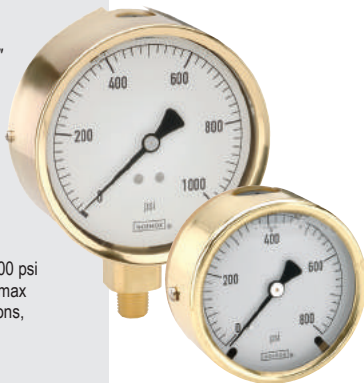
**OPTIONS AND ACCESSORIES:** Panel mount options, cover rings, max indicating pointers, orifices, rubber case protectors, special connections, metric dials and more

**OPERATING LIMITATIONS WORKING PRESSURE:**

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** -4 °F to 140 °F (-20 °C to 60 °C)



## 300 SERIES

**NOSHOK BRASS CASE LIQUID FILLED GAUGES** are high quality, heavy-duty liquid filled gauges. 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, including automotive, construction, hydraulics & pneumatics, mining, stamping & forming presses, and transportation.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**SIZES:** 1-1/2", 2-1/2", 4" and 6"

**CONNECTION:** Bottom and back, 1/8" NPT on 1-1/2" sizes, 1/4" NPT on 2", 2-1/2" and 4" sizes, 1/2" NPT on 4" and 6" sizes.

**CASE:** 304 Stainless Steel

**LENS:** Acrylic on 1-1/2" and 2", Trogamide on 2-1/2",

Instrument glass on 4" and safety glass on 6" sizes

**MEASURING ELEMENT:** 316 Stainless Steel C-Type Bourdon tube for ≤ 600 psi, Coiled safety tube for > 600 psi

**MOVEMENT:** Stainless Steel

**ACCURACY:** 1-1/2": ± 2.5% full scale, 2-1/2": ± 1.6% full scale  
4" and 6": ± 1% full scale

**AVAILABLE RANGES:** Vacuum and compound through 20,000 psi.

**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 392 °F (-40 °C to 200 °C)  
500 Series: -4 °F to 212 °F (-20 °C to 100 °C)



## 400/500 SERIES

**NOSHOK ALL Stainless Steel DRY AND LIQUID FILLED GAUGES** are corrosion-resistant fillable dry or liquid-filled gauges. They are used in corrosive service world-wide where ruggedness and reliability are critical. Typical applications include chemical processing, oil field & offshore, paper mills, agriculture plants, marine, and water & wastewater. Ammonia gauges available in certain ranges.

**WARRANTY:** 400 Series: One Year†  
500 Series: Three Years†

†For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**SIZES:** 4" and 6"

**CONNECTION:** Bottom and lower back; 9/16"-18 UNF 2B high pressure cone connection.

**CASE:** Stainless Steel, solid front with blowout back

**LENS:** Laminated safety glass

**MEASURING ELEMENT:** NiFe alloy

**MOVEMENT:** Stainless Steel

**ACCURACY:** ≤40,000 psi: ±1.6 % full scale, optional 1% increased accuracy;

≥50,000 psi: ±1% full scale (85,000 psi is ±1.6% accuracy)

**AVAILABLE RANGES:** 0 psi to 30,000 psi through 0 psi to 85,000 psi

**OPTIONS AND ACCESSORIES:** Bayonet ring adjustable set pointer, laser marking, maximum indicating pointer, silicone fill, red set pointer, front flange, adjustable pointer and Stainless Steel tagging

**OPERATING LIMITATIONS WORKING PRESSURE:**

**DYNAMIC:** 65% of dial range

**STATIC:** 75% of dial range

**TEMPERATURE:** 402 & 412 Series: -40 °F to 392 °F (-40 °C to 200 °C)  
502 Series: -4 °F to 212 °F (-20 °C to 100 °C) Glycerin fill



## 402/502 SERIES

**NOSHOK EXTREME HIGH PRESSURE ALL Stainless Steel, DRY AND LIQUID FILLED GAUGES** are corrosion-resistant dry or liquid-filled gauges. They are built for extreme high pressure applications, and are used in corrosive service world-wide where ruggedness and reliability are critical. Typical applications include pumps & compressors, high pressure processing, test equipment & systems, and water jet cutting.

**WARRANTY:** 402 Series: One Year<sup>†</sup>  
502 Series: Three Years<sup>†</sup>

## SPECIFICATIONS

**SIZES:** 4-1/2"

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

**CASE:** Turret style dry (field fillable) and liquid filled, black Polypropylene case, solid front, safety case with blow-out back

**LENS:** Acrylic

**MEASURING ELEMENT:** Copper alloy C-Type Bourdon tube, 316 SS C-Type or coiled Bourdon tube or 316 SS coiled safety Bourdon tube, depending on model

**MOVEMENT:** Brass and nickel-silver

**ACCURACY:** ±0.5% full scale

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

**OPTIONS AND ACCESSORIES:** Panel mount options, lens options, MIP, orifices

**OPERATING LIMITATIONS WORKING PRESSURE:**

**DYNAMIC:** 60% of dial range, max. 0.9x full scale

**STATIC:** 90% of dial range, max. 1x full scale

**SHORT TERM MAX.:** 1.5x full scale (<10,000 psi)

**TEMPERATURE:** 640/660 (Glycerin fill): -4 °F to 150 °F (-20 °C to 65 °C);  
740: -40 °F to 212 °F (-40 °C to 100 °C); 760 (Glycerin fill): -4 °F to 212 °F (-20 °C to 100 °C)



## 600/700 SERIES

**NOSHOK PROCESS GAUGES** are turret style dry (field fillable) and liquid filled process gauges. These gauges are made with 316 Stainless Steel and Brass wetted parts, and Polypropylene cases that are specifically designed for demanding service in chemical, petroleum and industrial processing industries. They are widely used throughout the world on applications including injection molding machines, laboratory & test equipment, power generation, oil field & offshore, utilities, and water & wastewater.

**WARRANTY:** 640/740 Series: One Year<sup>†</sup>  
660/760 Series: Three Years<sup>†</sup>

## SPECIFICATIONS

**SIZES:** 6"

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

**CASE:** 304 Stainless Steel

**COVER RING:** 304 Stainless Steel

**LENS:** Instrument glass

**MEASURING ELEMENT:** Beryllium copper Bourdon tube for ≤1,000 psi, 316 SS Bourdon tube for 1,500 to 6,000 psi

**MOVEMENT:** Brass with jeweled bearings & nickel-silver pinion gear & shafts

**ACCURACY:** ± 0.25% full scale

**AVAILABLE RANGES:** Vacuum and compound through 6,000 psi

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

**OPERATING LIMITATIONS WORKING PRESSURE:**

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

**TEMPERATURE:** -40 °F to 180 °F (-40 °C to 80 °C)



## 800 SERIES

**NOSHOK PRECISION TEST GAUGES** are highly accurate dry gauges. 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.)

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**SIZES:** 1-1/2", 2", 2-1/2" and 4"

**CONNECTION:** 1/8" NPT back connection on 1-1/2" size,

1/4" NPT bottom and back on 2-1/2" and 4" sizes,

SAE J1926-3: 7/16-20 Adjustable

**CASE:** ABS or 304 Stainless Steel dependent on model

**LENS:** Acrylic or polycarbonate on 1-1/2" and 2-1/2" ; instrument glass on 4"

**MEASURING ELEMENT:** Phosphor bronze C-Type Bourdon tube for ≤ 600 psi, Coiled safety tube for > 600 psi

**MOVEMENT:** Brass and nylon

**ACCURACY:** ±2.5% full scale on 1-1/2" and 2" sizes;

±1.6% full scale on 2-1/2" sizes; ±1% full scale on 4" sizes

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

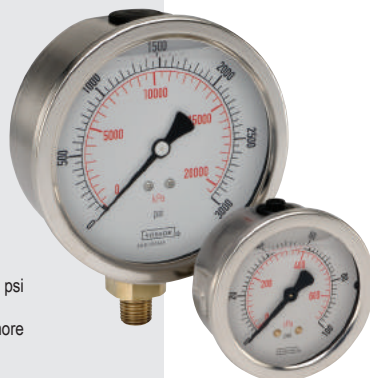
**OPTIONS AND ACCESSORIES:** Panel mount options, orifices, rubber case protectors, special connections, special dials and more

**OPERATING LIMITATIONS WORKING PRESSURE:**

**DYNAMIC:** 60% of dial range

**STATIC:** 90% of dial range

**TEMPERATURE:** -4 °F to 140 °F (-20 °C to 60 °C) (Glycerin fill)



## 900 SERIES

**NOSHOK ABS AND Stainless Steel CASE 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, including automotive, construction, hydraulics & pneumatics, power generation, transportation and water management.

**WARRANTY:** Three Years<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

# PRESSURE GAUGES ACCESSORIES & OPTIONS

## SPECIFICATIONS

**HOUSING MATERIAL:** Stainless Steel

**DISPLAY:** 0.43" high liquid crystal display

**DIGITS:** 4 standard up to 9999, 4-1/2 with enhanced software

**WETTED MATERIALS:** ≤750 psig Stainless Steel, aluminum, Stainless Steel, thin-film measuring element

**UPDATE RATE:** 5 times/second

**PRESSURE RANGES:** Standard ranges to

10,000 psig; compound ranges available

**TEMPERATURE RANGES:** **Storage:** -4 °F to 158 °F

(20 °C to 70 °C); **Media:** -22 °F to 185 °F (-30 °C to 85 °C);

**Ambient:** 14 °F to 140 °F (-10 °C to 60 °C)

**PROOF PRESSURE:** 2 times full scale range, maximum 15,000 psi

**POWER SUPPLY:** 2 x 1.5V AA battery 4,000 hrs (AA 2,000 mAh)

**ON/OFF SWITCH:** Manual; auto shut-off optional

**PROGRAMMABLE FUNCTIONS:** Adjustable through front key pad

**Tare:** ±20% of full scale range; **On/Off:** Adjustable automatic turn off

**Measuring Unit:** bar, psi, MPa

CE Compliant to EN61326, EMI and ESD protection;

NEMA 4X to EN60529/IEC529



## 1000 SERIES



**NOSHOK 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.

Shown with enhanced software.

**WARRANTY:** Three Years†



**PIGTAIL STEAM  
SYPHONS**

**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 316 Stainless Steel or seamless 316 Stainless Steel with ratings to 3800 psi @ 850 °F.



**PISTON TYPE  
SNUBBERS**

**PISTON TYPE 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 316 Stainless Steel in either 1/4" NPT, 1/2" NPT or 7/16-20 SAE-4.

**WARRANTY:** One Year†



**SWIVEL  
ADAPTOR**

**SINTERED SNUBBERS** are a cost-effective solution to protect expensive instrumentation. These snubbers increase gauge readability by smoothing out pressure surges, pulsations and spikes, and they eliminate instrument failure due to pressure shock. Five basic discs are available to accommodate 90% of applications. Snubbing action is achieved by utilizing a corrosion-resistant 316 Stainless Steel sintered element; exotic materials or intermediate disc grades are available on a per order basis. NOSHOK Sintered Snubbers provide long service life with no moving parts to wear out.

**SWIVEL ADAPTORS** are used with gauges and gauge valves to adjust the line of sight. The swivel adaptor rotates 360° to allow the connected instrument to be positioned in the desired direction and has temperature ratings of 15,000 psi @ 200 °F and 3,000 psi @ 1,000 °F. The pressure connection is achieved with a tapered cone style compression fitting simply by tightening the swivel hex nut. They feature all 316 Stainless Steel construction, and are standard with 1/2" NPT male process – 1/2" NPT female instrument connections. Also available with 1/4" NPT connections.

†For further warranty information please consult your specific product catalogs.





**POLISHED Brass  
FRONT FLANGE**



**CHROME  
FRONT FLANGE**



**CHROME TRIANGULAR BEZEL  
WITH U-CLAMP**



**REAR FLANGE**

**MAXIMUM INDICATING  
POINTERS**



**SET POINTERS**

**RUBBER CASE PROTECTORS**



**AMMONIA REFRIGERATION  
GAUGES**

## PANEL MOUNTING

Many panel mounting options are available and can be installed in the field. Options include polished Brass front flanges (BFF), black painted Steel front flanges (BLFF), chrome front flanges (CFF), polished Stainless Steel front flanges (SSFF), chrome triangular bezel front flanges with U-clamp (CBU), black painted Steel triangular bezels with U-clamp (BBU-clamp), polished Stainless Steel narrow bezel front flanges (SSBU), and panel mount clamps (PMC). Chrome-plated Steel adapter rings (AR) are available in conjunction with several of these flanges to adapt to oversized panel cut outs. A selection of flange rings are also offered: polished Stainless Steel flange rings (SSFR), chrome plated Steel flange rings (CFR), and black or chrome panel mount rings (BPMR & CPMR). rear flanges (RF) and black rear flanges (BLRF) for front of panel mounting are also available on some models. Rear Flanges are a factory installed option.

## CASES AND COVER RINGS

Black painted Steel, chrome plated Steel and 304 Stainless Steel cases and cover rings are available on many models as production options.

## LENSES

Instrument glass lenses, laminated safety glass lenses, acrylic lenses, and homalite lenses (resistant to many industrial solvents) are available on many models. NOTE: A Steel or Stainless Steel case and cover ring is required when other than acrylic lenses are utilized. Some models are also available with a solid front, safety case configuration as a production option.

**MAXIMUM INDICATING POINTERS (MIP)** are an invaluable tool for identifying pressure spikes in a system. They are very helpful during system start up and trouble shooting. MIPs add an additional  $\pm 1\%$  error to the gauge because of the increased load on the Bourdon tube. On ranges of 60 psi and lower, MIPs may double the allowed error of the gauge.

**SET POINTERS (SP)** are used to identify an operating minimum or maximum pressure or vacuum value. Set pointers are available on most gauges.

## RUBBER CASE PROTECTORS (RCP)

Rubber case protectors (RCP) are ideal for gauges that are subjected to direct physical shock. 2-1/2" covers are blue and 4" covers are black.

## ORIFICES

Press-fit Brass orifices or threaded 316 Stainless Steel orifices are available on all NOSHOK pressure gauges. They are standard with .012" I.D or .032" I.D, depending on the model. Orifices are used in a gauge to restrict the flow of rapidly increasing and decreasing pressures, thereby lessening the immediate effect of pulsations and pressure spikes. Orifices are recommended for all dynamic applications.

## RECALIBRATORS

The option of an adjustment screw accessible through the dial facilitates re-setting the zero point without disassembling the gauge.

## OVER PRESSURE PROTECTION

Over pressure protection of up to 200% of the dial range is available on some models as a production option.

## AMMONIA REFRIGERATION GAUGES

Ammonia refrigeration gauges with dials reading in both pressure and temperature are available in 400/500 Series 2-1/2" and 4" sizes.

## LIQUID FILLING OPTIONS

Many NOSHOK gauges are available with liquid filling options. Our standard fill is Glycerin and water; however, optional fill liquids include Dow Corning® 200 silicone and Halocarbon®.

## SPECIAL CONNECTIONS

Special connections are available on most NOSHOK gauges. Some examples include: metric threads, female threads, straight threads (flare or swivel type) and special o-ring connections. Please contact us with your requirements for prices, availability and minimum quantities.

# PRESSURE GAUGES ACCESSORIES & OPTIONS

## REID VAPOR TEST GAUGES

A Reid Vapor test gauge configuration which includes a handle, special dial and special pressure part is available in 600/700 Series gauges with pressure ranges of 0 psi-5 psi, 0 psi-15 psi and 0 psi-30 psi.

## RECEIVER GAUGES

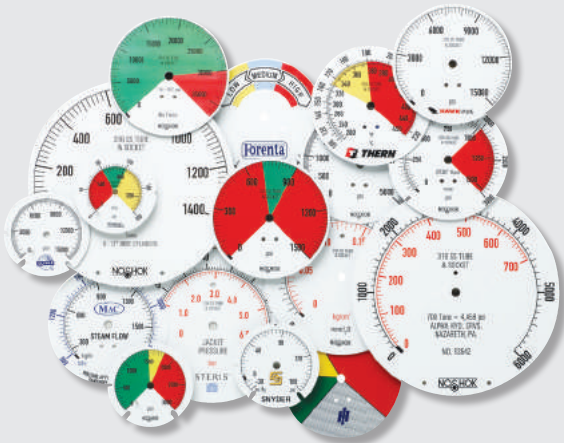
3-15 psi receiver gauges are available in both 600 Series (Brass) and 700 Series (316 Stainless Steel) configurations.

## METRIC DIALS AND CUSTOMIZED SPECIAL DIALS

Dual scale metric dials in psi/bar, psi/kPa and psi/kg/cm<sup>2</sup> are available on many models. Certain other scales are available for specific sizes and ranges, such as single scale bar and kPa, refrigerant scales and altitude scales. Please consult the factory for availability. Special Dials such as non-standard metric scale, tons of ram, lbs. of force, etc. are available in small quantities (as few as one piece) on some models.

## CERTIFIED CALIBRATION

Certified calibration is available on all NOSHOK gauges. Certified calibration provides the user with a serial numbered gauge along with a calibration sheet against a primary pressure standard and is traceable to the National Institute of Standards and Technology.



# DIFFERENTIAL PRESSURE GAUGES

## SPECIFICATIONS

**SIZES:** 2-1/2", 4-1/2", 6"

**CASE MATERIAL:** Engineered plastic

**LENS:** Shatter-resistant acrylic - standard; safety glass and MIP optional

**SENSOR HOUSING MATERIAL:** Clear anodized aluminum—standard; 316L Stainless Steel optional

**PROCESS CONNECTION:** 1/4" NPT female, back connection

**ACCURACY:** ±3/2/3% of full scale on rising pressure

**RANGES:** 0 psid to 5 psid through 0 psid to 110 psid

**OPTIONAL FILL FLUID:** Glycerin, Silicone

**OPERATING LIMITATIONS: TEMPERATURE:**

-40 °F to 200 °F (-40 °C to 93 °C)

**MAXIMUM WORKING STATIC PRESSURE:**

Aluminum 3,000 psig; Stainless Steel 6,000 psig



## 1000 SERIES

**NOSHOK PISTON TYPE DIFFERENTIAL GAUGES** are designed for measuring pressure drops 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 psid to 5 psid through 0 psid to 110 psid with maximum working/static pressure to 3,000 psig (Aluminum) and 6,000 psig (Stainless Steel).

**WARRANTY:** Five Years\*

## SPECIFICATIONS

**SIZES:** 2-1/2", 4-1/2", 6"

**CASE MATERIAL:** Engineered plastic

**LENS:** Shatter-resistant acrylic - standard; safety glass & MIP opt.

**SENSOR HOUSING MATERIAL:** Black anodized aluminum

standard; Brass and 316L Stainless Steel optional

**PROCESS CONNECTION:** 1/4" NPT female dual top & bottom, back, side or bottom; 9/16-20 female (back or side only)

**ACCURACY:** ±3/2/3% of full scale on rising pressure

**RANGES:** 0 inH<sub>2</sub>O to 20 inH<sub>2</sub>O through 0 psid to 100 psid

**OPTIONAL FILL FLUIDS:** Glycerin, Silicone

**OPERATING LIMITATIONS: TEMPERATURE:**

-40 °F to 200 °F (-40 °C to 93 °C)

**MAXIMUM WORKING STATIC PRESSURE:**

Aluminum & Stainless Steel 3,000 psig; Brass 1,500 psig



## 1100 SERIES

**NOSHOK 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.

**WARRANTY:** Five Years\*

\*For further warranty information please consult your specific product catalogs.



## SPECIFICATIONS

**DISPLAY:** 0.4" LCD  
**DIGITS:** 4, from -1999 to 9999  
**ACCURACY:**  $\pm 0.2\%$  full scale,  $\pm 1$  digit  
**UPDATE RATE:** 5 times/sec  
**RANGE:** The 4 mA to 20 mA 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 40 mA and voltage drop of 3 Vdc

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



## 1800 SERIES



**NOSHOK ATTACHABLE LOOP-POWERED DIGITAL INDICATORS** utilize a transmitters' 4 mA to 20 mA 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. Available with optional relay that is programmable through the front of the meter.

**WARRANTY:** One Year†

## SPECIFICATIONS

**DISPLAY:** 3-1/2" digit LCD from -1999 to 1999  
**INPUT SIGNAL:** Current: 4 mA to 20 mA  
**SPAN RANGE:** 0 to 1999  
**OFFSET RANGE:** -1999 to 1999  
**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 to EN60529/IEC529



## 1900C SERIES



**NOSHOK COMPACT 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 has a positive image reflective LCD.

**WARRANTY:** Two Years†

## SPECIFICATIONS

**ENCLOSURE:** Black painted Steel or off-white fiberglass optional  
**DISPLAY:** 5 digit, 0.48" high (-9999 to 99999) LCD  
**INPUT SIGNAL:** Current: 4 mA to 20 mA  
**Voltage:** 0 Vdc to 10 Vdc; Resistance: 100  $\Omega$  pt  
**POWER REQUIREMENT:** 9 Vdc to 28 Vdc (optional power supply available for 85 Vac to 250 Vac excitation)  
**ELECTRICAL CONNECTIONS:** Terminal block in rear, recommended wire: 30 to 14 AWG copper

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



## 1950 SERIES



**NOSHOK COMPACT SMART SYSTEM DIGITAL INDICATORS** offer all the features of a full size panel meter compressed into a small design for ease of installation in almost any application. The 5 digit display has a span range of -9999 to 99999 and is available in reflective LCD and selectable red or green backlit versions. The display can accept a variety of process signals for applications in pressure, flow, level, force and temperature. All programming can be done easily through the front of the meter. The display is fully expandable to accommodate applications requiring relays, dual sinking outputs, and serial communications by RS232 or RS485. NOSHOK calibrates all of its indicators to your transducer requirements at no additional cost.

**WARRANTY:** Two Years†

## SPECIFICATIONS

**INPUT SIGNALS:** Current, voltage or resistance  
**POWER REQUIREMENTS:** 115/230 Vac or 11 Vdc to 36 Vdc  
**INTERNAL POWER SUPPLY:** 24 Vdc  
**ELECTRICAL CONNECTION:** Terminal blocks in rear  
**UPDATE RATE:** Up to 20 times per second adjustable (Up to 105 times per second, adjustable for 2100 Series)  
**LINEARIZATION:** 16 point scaling of non linear input  
**ACCURACY:**  $\pm 0.03\%$  of reading  $+3 \mu A$  for 4 mA to 20 mA input;  $\pm 0.03\%$  of reading  $+3 mV$  for 0 Vdc to 5 Vdc and 0 Vdc to 10 Vdc 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



## 2000/2100 SERIES



**NOSHOK SMART SYSTEM "INTELLIGENT" DIGITAL INDICATORS** are field upgradeable digital process indicators with single or dual input which 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.

**WARRANTY:** Two Years†

## SPECIFICATIONS

**DISPLAY:** Upper 6 digit, 0.71", tri-color LED (red, green, orange); Lower 9 digit, 0.35", green LED  
**INPUT SIGNALS:** Thermocouple, RTD, current, voltage, resistance and process signals  
**POWER REQUIREMENTS:** AC input 40 Vac to 250 Vac, 50/60 Hz, 20 VA; DC input 21.6 Vdc to 250 Vdc, 8 W  
**ELECTRICAL CONNECTION:** Screw terminals at back of case, USB port for configuring with a computer  
**UPDATE RATE:** 160/sec  
**LINEARIZATION:** 2 to 16 points, selectable  
**ACCURACY:**  $< 0.03\%$  of full scale, 64 °F to 82 °F (18 °C to 28 °C);  $< 0.12\%$  of full scale, 32 °F to 122 °F (0 °C to 50 °C)

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



## 2200 SERIES



**NOSHOK DUAL DISPLAY DIGITAL INDICATORS** accept a wide variety of input signals including thermocouples or RTDs, current, voltage, resistance & process signals, and feature a dual display with tri-color and variable intensity digits. The NOSHOK 2200 Series Dual Display Digital Indicator has a universal power input accepting either AC or DC voltage, along with a 24 Vdc sensor excitation, as well as a built-in USB port for configuring with a computer. Plug-in option cards are available for field upgrading. Interface software available on request.

**WARRANTY:** Two Years†

†For further warranty information please consult your specific product catalogs.

# PRESSURE AND LEVEL TRANSMITTERS AND TRANSDUCERS

## SPECIFICATIONS

**OUTPUT SIGNAL:** 4 mA to 20 mA, 2-wire  
**RANGES:** Standard gauge ranges from vacuum to 15,000 psi; absolute ranges also available  
**ACCURACY:**  $\pm 0.5\%$  full scale (BFSL);  
 Optional  $\pm 0.25\%$  full scale (BFSL)  
**HOUSING MATERIAL:** 316 Stainless Steel  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA) - Unregulated  
**ADJUSTMENT:**  $\leq \pm 10\%$  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



## 100 SERIES



**NOSHOK CURRENT OUTPUT PRESSURE 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. CE compliance, which includes substantial levels of RFI, EMI and ESD protection combined with reverse polarity and over-voltage protection, ensures that these transmitters perform well in the most demanding applications.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 0 Vdc to 5 Vdc, 0 Vdc to 10 Vdc, 1 Vdc to 5 Vdc, 1 Vdc to 6 Vdc & 1 Vdc to 11 Vdc, 3-wire  
**RANGES:** Standard gauge ranges from vacuum to 15,000 psi; absolute ranges also available  
**ACCURACY:**  $\pm 0.5\%$  full scale (BFSL);  
 Optional  $\pm 0.25\%$  full scale (BFSL)  
**HOUSING MATERIAL:** 316 Stainless Steel  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 10 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 10 Vdc to 30 Vdc (1 Vdc to 6 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire); 14 Vdc to 30 Vdc (1 Vdc to 11 Vdc, 3-wire) - Unregulated  
**ADJUSTMENT:**  $\pm 10\%$  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 VOLTAGE OUTPUT PRESSURE 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. CE compliant.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire;  
 0 Vdc to 5 Vdc, 3-wire; 1 Vdc to 5 Vdc, 3-wire;  
 0 Vdc to 10 Vdc, 3-wire;  
 .5 Vdc to 4.5 Vdc ratiometric, 3-wire  
**RANGES:** Standard from 0 psig to 15 psig; through 0 psig to 10,000 psig, standard absolute ranges 15 psig through 300 psig  
**ACCURACY:**  $\pm 0.5\%$  full scale (BFSL);  
 Optional  $\pm 0.25\%$  full scale (BFSL)  
**HOUSING MATERIAL:** 316L Stainless Steel  
**POWER SUPPLY:** 8 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 8 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 8 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 8 Vdc to 30 Vdc (0.5 Vdc to 4.5 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire); 5  $\pm 10\%$  (0.5 Vdc to 4.5 Vdc ratiometric, 3-wire) - Unregulated

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



## 300 SERIES



**NOSHOK COMPACT OEM PRESSURE TRANSDUCERS** rugged, compact design delivers solid durability and long term stability during operation. Engineered for use in general industrial applications, it features technical specifications exceeding those of competitors' transducers costing much more. A wide variety of electrical and mechanical connections are available for easy installation into most applications, along with most popular analog output signals. All electrical components carry a high degree of EMC protection compliant with EN 61326, which makes it ideal for areas where RFI, EMI or ESD signals are present. Its high quality Stainless Steel construction is compatible with chemically aggressive media.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire, 4 mA to 20 mA + HART®, 2-wire  
 4 mA to 20 mA x 2 (pressure and temperature), 0.1 Vdc to 2.5 Vdc, 3-wire,  
 0.1 Vdc to 2.5 Vdc x 2 (pressure and temperature)  
**RANGES:** 0 inH<sub>2</sub>O to 50 inH<sub>2</sub>O through 0 psig to 100 psig  
**CABLE:** PUR cable standard; FEP or PUR with 1/2" NPT conduit connection optional  
**ACCURACY**  $\pm 1.0\%$  of span; Optional  $\pm 0.5\%$  of span  
**HOUSING MATERIAL:** 316 Stainless Steel, 318 LN optional  
**POWER SUPPLY:** 4mA to 20 mA: 8 Vdc to 36 Vdc, 4 mA to 20 mA and HART®: 12-36 Vdc - Unregulated

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



## 611 SERIES



**NOSHOK SMALL DIAMETER SUBMERSIBLE PRESSURE & LEVEL TRANSMITTERS** provide hydrostatic level measurement for use in applications including bore holes and wells with small diameters (outer diameter 0.87). Low power output signals are available for battery-powered applications, and optional temperature output is available. Features a 5:1 turndown using optional HART® signal. ATEX, CSA and IECEx certifications pending.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire & 0 Vdc to 5 Vdc, 0 Vdc to 10 Vdc, 0.5 Vdc to 2.5 Vdc, 3-wire  
**RANGES:** 0 inH<sub>2</sub>O to 50 inH<sub>2</sub>O through 0 psi to 1,000 psi  
**CABLE:** PUR cable standard; FEP and water-blocked PVC optional  
**ACCURACY**  $\pm 0.25\%$  full scale (BFSL); Optional  $\pm 0.125\%$  full scale (BFSL)  
**HOUSING MATERIAL:** 316 Stainless Steel  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 10 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 5 Vdc to 30 Vdc (0.5 Vdc to 2.5 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire) - Unregulated

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



## 612 SERIES



**NOSHOK SUBMERSIBLE LEVEL TRANSMITTERS** offer a previously unequalled level of performance. Utilizing diffused semiconductor and proven sputtered thin film sensor technology they are highly accurate, shock resistant and extremely stable for long periods of time. Reverse polarity protection and short circuit protection have been installed as standard features. Lightning protection is optional.

**WARRANTY:** Three Years†

†For further warranty information please consult your specific product catalogs.

# PRESSURE AND LEVEL TRANSMITTERS AND TRANSDUCERS

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc, 0 Vdc to 10 Vdc, 3-wire; 0.5 Vdc to 2.5 Vdc, 3-wire  
**RANGES:** 0 inH<sub>2</sub>O to 50 inH<sub>2</sub>O through 0 psig to 300 psig  
**CABLE:** Durable high performance PUR cable enhances reliability; FEP optional  
**ACCURACY:** ±0.25% full scale (BFSL); optional ±0.125% full scale (BFSL)  
**HOUSING MATERIAL:** 316 Stainless Steel  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 10 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 5 Vdc to 30 Vdc (0.5 Vdc to 2.5 Vdc, 3-wire), 4 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire) - Unregulated



## 613 SERIES

**NOSHOK CAGE-PROTECTED SUBMERSIBLE LEVEL TRANSMITTERS** are ideal for a wide variety of industrial and municipal liquid level measurement applications requiring watertight protection. These anti-clogging transmitters are designed for severe high solids environments such as sewage, lift stations, storm canals, wet wells and slurry tanks where sludge, slurry or turbulence may be present. It features durable all 316 Stainless Steel construction and a large 2.14" diameter diaphragm which is extremely responsive, even when monitoring low levels or buried in media.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc, 0 Vdc to 10 Vdc, 1 Vdc to 5 Vdc, 1 Vdc to 6 Vdc & 1 Vdc to 11 Vdc, 3-wire  
**RANGES:** Standard gauge ranges from vacuum to 145,000 psi; absolute ranges also available  
**ACCURACY:** ±0.25% full scale (BFSL); Optional ±0.125% full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 10 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 10 Vdc to 30 Vdc (1 Vdc to 6 Vdc, 3-wire); 10 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire); 14 Vdc to 30 Vdc (1 Vdc to 11 Vdc, 3-wire) - Unregulated  
**ADJUSTMENT:** ±10% 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



## 615/616 SERIES



**NOSHOK HIGH ACCURACY HEAVY-DUTY PRESSURE 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. The durability is coupled with the mechanical integrity of the case, process connection, and wetted parts constructed of corrosion-resistant Stainless Steel.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA or 1 Vdc to 5 Vdc or 0.5 Vdc to 4.5 Vdc low power outputs  
**RANGES:** From vacuum to 15,000 psi-gauge, compound or absolute  
**ACCURACY:** ±0.25% full scale (BFSL)  
**CONNECTION:** 1/2" NPT male conduit electrical connection  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 6 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 6 Vdc to 30 Vdc (0.5 Vdc to 4.5 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire) - Unregulated

FM and CSA approved; XP / Class I / Division 1 / Groups A, B, C and D; DIP / Class II and III / Division 1 / Groups E, F and G

CE compliant to EMC norm EN 61326: 1997/A1  
 1998 RFI, EMI and ESD protection / ANSI/ISA-12.27.01-2003 approved single seal



## HAZARDOUS LOCATION PRESSURE TRANSMITTERS

## 621/622 SERIES



**NOSHOK EXPLOSION-PROOF PRESSURE TRANSMITTERS** are designed for applications that require pressure measurement in hazardous environments. They utilize either proven sputtered thin film sensor technology or a reliable diffused semiconductor strain gauge sensor 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.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA or 1 Vdc to 5 Vdc or 0.5 Vdc to 4.5 Vdc low power outputs  
**RANGES:** From vacuum to 15,000 psi-gauge, compound or absolute  
**ACCURACY:** ±0.25% full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 6 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 6 Vdc to 30 Vdc (0.5 Vdc to 4.5 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire) - Unregulated

FM and CSA approved; NI / Class I / Division 2 / Groups A, B, C, DIP; Class II / Division 1 / Groups E, F and G

CE compliant to EMC norm EN 61326: 1997/A1  
 1998 RFI, EMI and ESD protection / ANSI/ISA-12.27.01-2003 approved single seal



## HAZARDOUS LOCATION PRESSURE TRANSMITTERS

## 623/624 SERIES



**NOSHOK NON-INCENDIVE PRESSURE TRANSMITTERS** combine advanced diffused semiconductor and proven 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.

**WARRANTY:** Three Years†

†For further warranty information please consult your specific product catalogs.



# PRESSURE AND LEVEL TRANSMITTERS & TRANSDUCERS

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire  
**RANGES:** From vacuum to 15,000 psi-gauge, compound or absolute  
**WETTED PARTS:** Stainless Steel standard, welded  
**ACCURACY:**  $\pm 0.25\%$  full scale (BFSL); Optional  $\pm 0.125\%$  full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire) - Unregulated power supplies

FM and CSA approved; IS / Class I, II and III / Division 1 / Groups A, B, C, D, E, F and G; Class I / Zone 0 / AEx ia / Group IIC; DIP / Class II and III / Division 2 / Groups F and G; NI / Class I / Division 2 / Groups A, B, C and D

CE compliant to EMC norm EN 61326: 1997/A1, 1998 RFI, EMI and ESD protection / ANSI/ISA-12.27.01-2003 approved single seal



## HAZARDOUS LOCATION PRESSURE TRANSMITTERS

### 625/626 SERIES



**NOSHOK 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 are designed for applications that require pressure measurement in hazardous locations. Multiple pressure connections, ranges and electrical connections are available. Low pressure ranges are also available for vapor recovery applications.

**WARRANTY:** Three Years<sup>†</sup>

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire  
**RANGES:** From 50 inH<sub>2</sub>O to 350 psig  
**CABLE:** PUR jacketed cable; PTFE cable optional  
**ACCURACY:**  $\pm 0.25\%$  full scale (BFSL);  
 Optional  $\pm 0.125\%$  full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire) - Unregulated power supplies

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

FM and CSA approved; IS / Class I, II and III / Division 1 / Groups A, B, C, D, E, F and G; Class I / Zone 0 / AEx ia / Group IIC; DIP / Class II and III / Division 2 / Groups F and G; NI / Class I / Division 2 / Groups A, B, C and D



## HAZARDOUS LOCATION PRESSURE TRANSMITTERS

### 627 SERIES



**NOSHOK INTRINSICALLY SAFE SUBMERSIBLE LEVEL 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.

**WARRANTY:** Three Years<sup>†</sup>

## SPECIFICATIONS

**OUTPUT SIGNAL:** 4 mA to 20 mA, 2 wire  
**RANGES:** 0 psig to 5,000 psig through 0 psig to 20,000 psig  
**WETTED PARTS:** Inconel X-750  
**ACCURACY:**  $\pm 0.25\%$  full scale (BFSL) (Includes the effects of non-linearity, hysteresis, non-repeatability, zero point and full scale errors)  
**POWER SUPPLY:** 10 Vdc to 28 Vdc - Unregulated power supplies

CSA approved; IS / Class I, DIV 1, Groups A, B, C, D, -40°C, Tamb < +85°C T4 Class II, DIV 1, Groups E, F, G, Class III, Class I, Zone 0 AEx/Ex ic IIC T4 Non-Incendive / Class I, DIV 2, Groups A, B, C, D, -40°C, Tamb < +85°C T4 Class II, DIV 2, Groups F, G, Class III Class I, Zone 2 AEx/Ex ic IIC T4 seal



Shown with Electrical Connector Cage.

### 628 SERIES



**NOSHOK INTRINSICALLY SAFE HAMMER UNION TRANSMITTERS** Constructed with a heavy-duty Inconel X-750 diaphragm and connection, the NOSHOK Intrinsically Safe Hammer Union Transmitter offers ranges from 5,000 psig through 20,000 psig and has a 4 mA to 20 mA, 2-wire output signal. Each sensor comes with a Certificate of Calibration. This transmitter is CSA compliant for hazardous location equipment, and is ideal for applications including acidizing, choke & kill manifold, fracturing & cementing, mud logging & mud pumps, oil field & offshore and wellhead measurement. Optional electrical connector cage is available to protect the electrical connection during installation or removal.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc, 0 Vdc to 20 Vdc, 3-wire; 0 Vdc to 10 Vdc, 3-wire; 0 mA to 20 mA, 3-wire  
**RANGES:** Standard gauge ranges from vacuum to 15,000 psi; absolute ranges also available  
**ACCURACY:**  $\pm 0.05\%$  full scale (BFSL);  
 Optional  $\pm 0.025\%$  full scale (BFSL)  
**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 interface RS232-C - Unregulated

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



### 640 SERIES



**NOSHOK PRECISION HEAVY-DUTY PRESSURE TRANSDUCERS** have been designed for industrial and laboratory applications requiring high accuracy and repeatability with excellent compensation for temperature.

**WARRANTY:** Three Years<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 to 10 Vdc, 1 to 5 Vdc, 3-wire; 0.5 Vdc to 4.5 Vdc, 3-wire ratio-metric  
**RANGES:** 0 psig to 100 psig to 0 psig to 8,000 psig  
**ACCURACY:**  $\pm 0.5\%$  full scale (BFSL)  
**POWER SUPPLY:** 8 Vdc to 36 Vdc (4 mA to 20 mA, 2-wire); 8 Vdc to 36 Vdc (0 Vdc to 5 Vdc, 3-wire); 8 Vdc to 36 Vdc (1 Vdc to 5 Vdc, 3-wire); 8 Vdc to 36 Vdc (0.5 Vdc to 4.5 Vdc, 3-wire); 14 Vdc to 36 Vdc (0 Vdc to 10 Vdc, 3-wire);  $5 \pm 10\%$  (0.5 Vdc to 4.5 Vdc ratio-metric, 3-wire) - Unregulated power supplies

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



## 650 SERIES

**NOSHOK HIGH VOLUME OEM PRESSURE 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.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNAL:** 4 mA to 20 mA 2-wire, 1 Vdc to 5 Vdc, and 0.1 Vdc to 10 Vdc 3-wire  
**RANGES:** Standard ranges from 200 psig to 15,000 psig  
**ACCURACY:**  $\pm 0.25\%$  full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 36 Vdc (4 mA to 20 mA, 2-wire); 8 Vdc to 36 Vdc (1 Vdc to 5 Vdc, 3-wire); 14 Vdc to 36 Vdc (0.1 Vdc to 10 Vdc, 3-wire) - Unregulated power supplies

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



## 660 SERIES

**NOSHOK MICRO-SIZE PRESSURE 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.

**WARRANTY:** Three Years†

# PRESSURE SWITCHES

## SPECIFICATIONS

**CASE:** Brass or Zinc-nickel depending on model  
**MEASURING ELEMENT:** 100V: Brass, Buna-N diaphragm  
 100L: Brass, Polyimide diaphragm  
 100H: Zinc-nickel plated Steel, Buna-N diaphragm  
**SWITCHING FUNCTION:** SPST N.O. or N.C.  
**CONTACT RATING:** 100 VA Max Voltage 42 Vdc  
**SWITCH TYPE:** Creep action  
**AVAILABLE RANGES:** Vacuum through 6,000 psi depending on model  
**CONNECTIONS:** 1/8" NPT male, 1/4" NPT male, G 1/4B, 9/16-18 SAE Male, Non-Adjustable, G 1/8B and 7/16-20 SAE Male, Non-Adjustable  
**ELECTRICAL CONNECTIONS:** Spade Terminals (1/4 x 1/32), Deutsch Integral 2-Pin (DT04-2P), 18" Flying Leads, 6-32 Terminal Screws, Weatherpack Tower, 2-Pin Female or Male, Weatherpack Shroud, 2-Pin Female or Male, Deutsch 2-Pin Male or Female  
**MEDIA TEMPERATURE:** -13 °F to 185 °F (-25 °C to 85 °C)



## 100 SERIES

**NOSHOK MECHANICAL COMPACT SPST SWITCHES** are available in vacuum, low pressure and high pressure models. These creep action, low current switches are intended to be laboratory set, and feature Silver-plated contacts with switch adjustment ranges from vacuum through 6,000 psi. The 100 Series switch series offers Brass and Zinc-nickel housing material options with Buna-N and Polyimide wetted parts depending on the model. A wide variety of process connections and electrical connections are available.

**WARRANTY:** One Year†

## SPECIFICATIONS

**CASE:** Brass or Zinc-nickel depending on model  
**MEASURING ELEMENT:** 200V: Brass, Buna-N diaphragm  
 200L: Brass, Buna-N diaphragm  
 200H: Zinc-nickel, Buna-N diaphragm  
**SWITCHING FUNCTION:** SPST or SPDT  
**CONTACT RATING:** 5A @ 125/250 Vac, 5A @ 12/24 Vdc  
**SWITCH TYPE:** Snap action  
**AVAILABLE RANGES:** Vacuum through 6,000 psig depending on model  
**CONNECTIONS:** 1/8" NPT male, 1/4" NPT male, G 1/4B, 9/16-18 SAE Male, Non-Adjustable, G 1/8B and 7/16-20 SAE Male, Non-Adjustable  
**ELECTRICAL CONNECTIONS:** Spade Terminals (1/4 x 1/32), Hirschmann (DIN EN 175301-803 Form A), Packard 3-Pin, Deutsch Integral 3-Pin (DT04-3P), Deutsch Integral 2-Pin (DT04-2P), M12 x 1 3-Pin, 18" Flying Leads, 6-32 Terminal Screws, Weatherpack Tower, 2-Pin Female or Male, Weatherpack Shroud, 2-Pin Female or Male, Deutsch 2-Pin Male (DT04-2P), Deutsch 3-Pin Male (DT04-3P), Deutsch 2-Pin Female Socket (DT06-2S), Deutsch 3-Pin Female Socket (DT06-3S), Weatherpack Tower, 3-Pin Female or Male, Weatherpack Shroud, 3-Pin Female or Male  
**MEDIA TEMPERATURE:** -4 °F to 176 °F (-20 °C to 80 °C)



## 200 SERIES

**NOSHOK MECHANICAL COMPACT SPDT PRESSURE SWITCHES** are SPST or SPDT snap-action switches with solid Silver contacts. These switches provide adjustment ranges from vacuum through 6,000 psig, and feature Brass or Zinc-nickel housing material with Buna-N diaphragm wetted parts. A wide variety of process connections and electrical connections are available.

**WARRANTY:** One Year†

†For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**CASE:** Zinc-nickel  
**MEASURING ELEMENT:** Buna-N  
**SWITCHING FUNCTION:** SPDT with adjustable hysteresis  
**CONTACT RATING:** 6A @ 125/250 Vac, 6A @ 12/24 Vdc  
**SWITCH TYPE:** Snap action with adjustable hysteresis  
**AVAILABLE RANGES:** Vacuum through 4,600 psig depending on model  
**CONNECTIONS:** 1/8" NPT male, 1/4" NPT male, G 1/4B, G 1/8B and 7/16-20 SAE Male, Non-Adjustable  
**ELECTRICAL CONNECTIONS:** 36" Cable, Hirschmann, M12 x 1 4-Pin, 3' Integral Cable, Deutsch Integral 2-Pin (DT04-2P), Weatherpack Tower, 2-Pin Female or Male, Weatherpack Shroud, 2-Pin Female or Male, Deutsch 2-Pin Male (DT04-2P), Deutsch 3-Pin Male (DT04-3P), Deutsch 2-Pin Female Socket (DT06-2S), Deutsch 3-Pin Female Socket (DT06-3S), Weatherpack Tower, 3-Pin Female or Male, and Weatherpack Shroud, 3-Pin Female or Male.  
**MEDIA TEMPERATURE:** -4 °F to 176 °F (-20 °C to 80 °C)



## 300 SERIES



**NOSHOK MECHANICAL COMPACT SPDT PRESSURE SWITCHES WITH ADJUSTABLE HYSTERESIS** is a SPST or SPDT snap-action switch with solid Silver contacts. The 300 Series offers switch adjustment ranges from vacuum through 4,600 psig depending on model and a standard Zinc-nickel housing with Buna-N diaphragm wetted parts. The NOSHOK 300 Series switch provides an excellent contact rating of 6A 125V/250VAC, and 6A 12/24VDC. Multiple process connection and electrical connection options are available.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**CASE:** Zinc-plated Steel  
**MEASURING ELEMENT:** NBR diaphragm ≤ 230 psig, Stainless Steel piston with NBR seal ≥ 500 psig, 1/4" NPT and 7/16-20 SAE zinc-plated Steel connections standard, others available on request  
**SWITCHING FUNCTION:** SPST or SPDT snap-action micro switch  
**CONTACT RATING:** 6A @ 125/250 Vac, 6A @ 12/24 Vdc  
**SWITCH TYPE:** Snap action  
**AVAILABLE RANGES:** Vacuum through 4,600 psig depending on model  
**CONNECTIONS:** 1/4" NPT male, 1/4" NPT female, G 1/4B male, G 1/4B female, and 7/16-20 SAE Male, Non-Adjustable  
**ELECTRICAL CONNECTIONS:** 36" Cable, Hirschmann (DIN EN 175301-803 Form A), M12 x 1 4-Pin, Hirschmann with LED Status Indicator  
**REPEATABILITY:** ±2% of full scale of adjustment range



## 400 SERIES



**NOSHOK MECHANICAL HEAVY-DUTY PRESSURE SWITCHES** are snap action, high current devices that offer field adjustability. The 400 Series offers switch adjustment ranges from vacuum through 4,600 psig with a Standard Zinc-nickel with Buna-N diaphragm wetted parts. This switch also provides an excellent contact rating of 6A 125V/250VAC, and 6A 12/24VDC. Multiple process connection and electrical connection options are available.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**CASE:** Stainless Steel  
**WETTED PARTS:** <150 psi: 316L, ≥150 psi: 316L, PH grade Steel  
**CONNECTION:** 1/4" NPT standard, other options available  
**ELECTRICAL CONNECTION:** M12 x 1 (4-pin or 5-pin)  
**ACCURACY:** ≤ ±0.5 % of span  
**AVAILABLE RANGES:** Vacuum and compound ranges through 0 psig to 7,500 psig, absolute ranges available  
**SWITCHING FUNCTIONS:** 1 or 2 N.O. or N.C. (PNP or NPN)  
**POWER SUPPLY:** 15 Vdc to 35 Vdc  
**ANALOG OUTPUT:** 4 mA to 20 mA and/or 0 Vdc to 10 Vdc; programmable and freely adjustable  
**CE compliant to EMC norm EN 61326: 1997/A1 1998**  
**RFI, EMI and ESD**



## 800 SERIES



**NOSHOK'S ELECTRONIC INDICATING PRESSURE TRANSMITTER/SWITCHES** are available in vacuum and compound ranges through 0 psig to 7,500 psig, with current and voltage output options. This Pressure Transmitter/Switch features a display and electrical connection that can be rotated independently and offers seven different output configurations.

The new 800 Series NOSHOK Electronic Indicating Transmitter/Switch is constructed with 316L Stainless Steel wetted parts and is RoHS compliant, and CE compliant to suppress RFI, EMI and ESD.

**WARRANTY:** Three Years<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.



# SANITARY PRESSURE INSTRUMENTS

**CAUTION:** NOSHOK pressure transmitters are not to be used in heat sterilization systems as stated in 3A Standard 74-03 paragraph D10.1.2. Diaphragm seal must be installed facing downward or in a vertical position for drainability. Do not install diaphragm seal facing in an upward position.

## SPECIFICATIONS

**SIZE:** 2"  
**CASE MATERIAL:** 304 Stainless Steel  
**COVER RING:** 304 Stainless Steel  
**LENS:** Polycarbonate – standard; safety glass – optional  
**BOURDON TUBE:** 316 Stainless Steel  
**ACCURACY:**  $\pm 2.5\%$  full scale  
**PROCESS CONNECTION:** 3/4" clamped-style  
**SEAL HOUSING:** 316L Stainless Steel  
**DIAPHRAGM MATERIAL:** 316L Stainless Steel  
**SEAL FILL:** Glycerin, USP grade  
**RANGES:** 0 psig to 30 psig through 0 psig to 600 psig  
**TEMPERATURE:** -40 °F to 300 °F (-40 °C to 150 °C)



## 10 SERIES FRACTIONAL



**NOSHOK FRACTIONAL SANITARY PRESSURE GAUGES** are designed for compact applications within the food & beverage, dairy, pharmaceutical, and biomedical industry, is 3A certified, and meets the current standards for ASME BPE-2009. The wetted materials are 316L Stainless Steel and electropolished to 32  $\mu$ in Ra or better. Gauges can be cleaned in place (CIP), steamed in place (SIP) or Autoclaved to reduce system shutdown time.

**WARRANTY:** (dry): One Year<sup>†</sup>; (liquid filled): Three Years<sup>†</sup>

## SPECIFICATIONS

**SIZE:** 2-1/2" or 4"  
**CASE MATERIAL:** 304 Stainless Steel  
**COVER RING:** 304 Stainless Steel  
**LENS:** Safety glass – standard  
**BOURDON TUBE:** 316 Stainless Steel  
**ACCURACY:**  $\pm 1.5\%$  full scale on 2-1/2" sizes;  $\pm 1\%$  full scale on 4" sizes  
**OPTIONAL FILL FLUID:** Glycerin or silicone  
**PROCESS CONNECTION:** 1-1/2" or 2" clamped-style  
**SEAL HOUSING:** 316L Stainless Steel  
**DIAPHRAGM MATERIAL:** 316L Stainless Steel  
**SEAL FILL:** Glycerin, USP grade  
**RANGES:** Vacuum and compound through 0 psig to 600 psig  
**TEMPERATURE:** -40 °F to 300 °F (-40 °C to 150 °C)



## 10 SERIES HEAVY-DUTY



**NOSHOK HEAVY-DUTY SANITARY PRESSURE GAUGES** are 3A certified, and meet the current standards for ASME BPE-2009. They are designed for applications throughout the pharmaceutical industry, food & beverage, dairy and biomedical industries. The available 1-1/2" or 2" clamped-style connections are constructed of 316L Stainless Steel welded to the all Stainless Steel 2-1/2" or 4" gauge for greater strength and durability. Wetted parts are electropolished to 32  $\mu$ in Ra or better. Gauges can be cleaned in place (CIP), steamed in place (SIP) or Autoclaved to reduce system shutdown time.

**WARRANTY:** (dry): One Year<sup>†</sup>; (liquid filled): Three Years<sup>†</sup>

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc, 0 to 10 Vdc, 1 Vdc to 5 Vdc, 1 Vdc to 6 Vdc & 1 Vdc to 11 Vdc, 3-wire  
**ACCURACY:**  $\pm 0.25\%$  full scale (BFSL); Optional  $\pm 0.125\%$  full scale (BFSL)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc (4 mA to 20 mA, 2-wire); 10 Vdc to 30 Vdc (0 Vdc to 5 Vdc, 3-wire); 10 Vdc to 30 Vdc (1 Vdc to 5 Vdc, 3-wire); 10 Vdc to 30 Vdc (1 Vdc to 6 Vdc, 3-wire); 14 Vdc to 30 Vdc (0 Vdc to 10 Vdc, 3-wire); 14 Vdc to 30 Vdc (1 Vdc to 11 Vdc, 3-wire) - Unregulated  
**PROCESS CONNECTION:** 1-1/2" or 2" clamped-style  
**SEAL HOUSING:** 316L Stainless Steel  
**DIAPHRAGM MATERIAL:** 316L Stainless Steel  
**SEAL FILL:** White oil, USP grade  
**RANGES:** Vacuum and compound through 0 psig to 400 psig  
**TEMPERATURE:** -40 °F to 300 °F (-40 °C to 150 °C)

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



## 11 SERIES



**NOSHOK CLAMPED-STYLE SANITARY PRESSURE TRANSMITTERS** utilize 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, biotechnology and pharmaceutical industries and are 3A certified, as well as ASME BPE-2009 and CE compliant. Wetted parts are 316L Stainless Steel and electropolished to 32  $\mu$ in Ra or better. Can be cleaned in place (CIP) and steamed in place (SIP).

**WARRANTY:** Three Years<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA 2-wire, 4 mA to 20 mA 2-wire and Hart® signal

**ACCURACY:** 0.1% of adjusted span

**POWER SUPPLY:** 12 Vdc to 36 Vdc - Unregulated

**PROCESS CONNECTIONS:** E&H Universal adapter short version, E&H Universal adapter long version, Anderson Negele Type SL Short, Anderson Negele Type SL Long - 6", King Gage Short, King Gage Standard - 6", King Gage Long - 8", Rosemount Tank Spud - 2", Rosemount Tank Spud - 6", Tank Mate Medium - 6"

**HOUSING:** All polished 316 Stainless Steel

**RANGES:** 16 inH<sub>2</sub>O to 58 psig (1,600 inH<sub>2</sub>O)

**TEMPERATURE:** -4 °F to 212 °F (-20 °C to 100 °C); 293 °F (145 °C) for 45 min.



## 20 SERIES



### NOSHOK INTELLIGENT SILO AND TANK LEVEL

**TRANSMITTERS** feature programming via standard onboard display, and food, beverage and dairy specific process connections. Pressure and temperature sensors are mounted directly behind the diaphragm which minimizes fill fluid and allows the use of a smaller diaphragm. This provides active temperature compensation at the point of measurement to minimize temperature and position error. Turndown ratios up to 10:1 allow greater range adjustment, minimizing required inventory. Accuracies are based on adjusted span, not full scale range. Other features include all polished Stainless Steel construction and a 360° rotatable display.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA 2-wire, 4 mA to 20 mA 2-wire and Hart® signal

**ACCURACY:** 0.2% of adjusted span

**POWER SUPPLY:** 12 Vdc to 36 Vdc - Unregulated

**TRI-CLAMP SIZES:** 1-1/2", 2" & 3"

**HOUSING:** All polished 316 Stainless Steel

**RANGES:** -160 inH<sub>2</sub>O vac to 1,160 psig

**TEMPERATURE:** -4 °F to 212 °F (-20 °C to 100 °C); 293 °F (145 °C) for 45 min.



## 25 SERIES



### NOSHOK INTELLIGENT PRESSURE AND LEVEL

**TRANSMITTERS** feature programming via standard onboard display and a compact, flush diaphragm. Pressure and temperature sensors are mounted directly behind the diaphragm which minimizes fill fluid and allows the use of a smaller diaphragm. This provides active temperature compensation at the point of measurement to minimize temperature and position error. Turndown ratios up to 4:1 allow greater range adjustment, minimizing required inventory. Accuracies are based on adjusted span, not full scale range. Other features include all polished Stainless Steel construction, and a 360° rotatable display.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA 2-wire, 4 mA to 20 mA 2-wire and Hart® signal

**ACCURACY:** 300 & 302 Series: 0.2% of adjusted span,

301 & 304 Series: 0.1% of adjusted span

**POWER SUPPLY:** 12 Vdc to 36 Vdc - Unregulated

**TRI-CLAMP SIZES:** 1-1/2", 2" & 3"

**HOUSING:** All polished 316 Stainless Steel

**RANGES:** 300 Series: Ranges from 40 inH<sub>2</sub>O to 60 psig

302 Series: Adjustable ranges from 40 inH<sub>2</sub>O to 1,160 psig

304 Series: Adjustable ranges from 16 inH<sub>2</sub>O to 1,450 psig

**TEMPERATURE:** 300 Series 14 °F to 158 °F

(-10 °C to 70 °C)

302/304 Series: -4 °F to 212 °F (-20 °C to 100 °C);

293 °F (145 °C) for 45 min.



300 Series

302 Series

304 Series  
with transparent cover

## 30 SERIES



### NOSHOK "SNORKEL" PRESSURE AND LEVEL

**TRANSMITTERS** are developed for wash down applications and where space restricts easy adjustment. Electronics can be remotely mounted in a safe and convenient location. The vented electrical cable connects the sensor to the electronics housing with no fill fluid. Pressure and temperature sensors are mounted directly behind the diaphragm which minimizes fill fluid and allows the use of a smaller diaphragm. This provides active temperature compensation at the point of measurement to minimize temperature and position error. Turndown ratios up to 10:1 allow greater range adjustment, minimizing required inventory. Accuracies are based on adjusted span, not full scale range. Other features include all polished Stainless Steel construction.

**WARRANTY:** Three Years†

†For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**UPPER HOUSING:** Universal Housing w/polypropylene, glass fiber reinforced  
**LOWER HOUSING:** PVC, PP or PVDF  
**DIAPHRAGM:** EPDM-PTFE coated on process side  
**MAX WORKING PRESSURE:** 160 psi



## TYPE 5

**NOSHOK ALL NON-METALLIC, NON-REPLACEABLE DIAPHRAGM SEALS** are designed for wastewater and chemical feed applications, or any application with a corrosive media. These seals protect pressure or vacuum instruments used on ultra-pure or highly corrosive fluid lines such as demineralized water, sulfuric acid, hydrochloric acid, and caustics. Available 100% non-metallic construction assures maximum chemical and temperature compatibility.

**WARRANTY:** One Year†

## SPECIFICATIONS

**LOWER HOUSING:** Epoxy-coated Steel and 316 Stainless Steel  
**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel (Exotic materials available on request)  
**O-RING:** NBR, PTFE, FKM  
**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 10

**NOSHOK STANDARD PRESSURE BOLTED REPLACEABLE DIAPHRAGM SEALS** are designed to utilize a replaceable diaphragm clamped between the metal housings. They are rated to 2,000 psi with a displacement capability of 3.2 ml.

**WARRANTY:** One Year†

## SPECIFICATIONS

**LOWER HOUSING:** PVDF, PP, PVC, PTFE (Other materials available on request)  
**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel, FKM, PTFE (Exotic materials available on request)  
**O-RING:** NBR, PTFE, FKM  
**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 10L

**NOSHOK REDUCED PRESSURE, NON-METALLIC LOWER, BOLTED REPLACEABLE DIAPHRAGM SEALS** utilize a replaceable diaphragm and non-metallic lower housing. They are rated to 200 psi with a displacement capability of 3.2 ml.

**WARRANTY:** One Year†

## SPECIFICATIONS

**LOWER HOUSING:** Epoxy-coated Steel and 316 Stainless Steel  
**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel (Exotic materials available on request)  
**O-RING:** NBR, PTFE, FKM  
**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 10H

**NOSHOK ELEVATED PRESSURE BOLTED REPLACEABLE DIAPHRAGM SEALS** are a threaded connection, off-line seal with a replaceable diaphragm. They are designed for high pressure applications and are rated to 5,000 psi. Displacement capability is 1.4 ml.

**WARRANTY:** One Year†

## SPECIFICATIONS

**UPPER HOUSING:** 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel  
**Stainless Steel ASME-BPE CLAMPS:** 1-1/2", 2", 2-1/2" and 3" options  
**GASKETS:** NBR, PTFE

**CAUTION:** NOSHOK pressure transmitters are not to be used in heat sterilization systems as stated in 3A Standard 74-03 paragraph D10.1.2 Diaphragm seal must be installed facing downward or in a vertical position for drainability. Do not install diaphragm seal facing in an upward position.



## TYPE 12

**NOSHOK SANITARY, CLAMPED-STYLE, ASME-BPE NON-REPLACEABLE DIAPHRAGM SEALS** feature a flush mount diaphragm and all welded construction, making them ideal for food & beverage, pharmaceutical and sanitary markets. They can accommodate process connection pipes from 1-1/2" through 3" sizes. Their clamped connection allows ease of installation and removal of seal for maintenance and cleaning.

**WARRANTY:** One Year†

## SPECIFICATIONS

**HOUSING:** 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel



## TYPE 20

**NOSHOK FRONT FLUSH NON-REPLACEABLE DIAPHRAGM SEALS** are constructed with a 316 Stainless Steel housing and diaphragm. Maximum pressure rating is 9,000 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.

**WARRANTY:** One Year†

## SPECIFICATIONS

**LOWER HOUSING:** 316 Stainless Steel (Exotic materials available on request)  
**UPPER HOUSING:** 316 Stainless Steel  
**DIAPHRAGM MATERIALS:** 316 Stainless Steel (Exotic materials available on request)



## TYPE 25

**NOSHOK STANDARD PRESSURE NON-REPLACEABLE DIAPHRAGM SEALS** utilize an all welded, all metallic housing design, pressure rated to 2,500 psi. The housing and diaphragm are offered in a variety of materials to suit most applications. A flushing port is offered as an option.

**WARRANTY:** One Year†

†For further warranty information please consult your specific product catalogs.



# DIAPHRAGM SEALS

## SPECIFICATIONS

**LOWER HOUSING:** 316 Stainless Steel

(Exotic materials available on request)

**UPPER HOUSING:** 316 Stainless Steel

**DIAPHRAGM MATERIALS:** 316 Stainless Steel  
(Exotic materials available on request)



## TYPE 25H

**NOSHOK ELEVATED PRESSURE NON-REPLACEABLE DIAPHRAGM SEALS** utilize an all welded, all metallic housing design pressure rated to 5,000 psi. The housing and diaphragm are offered in a variety of materials to suit most applications. A flushing port is offered as an option.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**LOWER HOUSING:** 316 Stainless Steel

(Exotic materials available on request)

**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel

**DIAPHRAGM MATERIALS:** 316 Stainless Steel  
(Exotic materials available on request)



## TYPE 29

**NOSHOK HIGH VOLUMETRIC DISPLACEMENT NON-REPLACEABLE DIAPHRAGM SEALS** are an all welded, all metallic housing design that does not utilize an o-ring or gasket. Displacement is limited to 1.5 ml requiring the use of gauges with less than 4-1/2" dial size and Bourdon tube range no lower than 0 psi to 15 psi. Pressure rating is 2,500 psi.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**LOWER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel (Exotic materials available on request)

**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel

**DIAPHRAGM MATERIALS:** 316 Stainless Steel (Exotic materials available on request)

**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 30

**NOSHOK STANDARD PRESSURE, BOLTED, NON-REPLACEABLE DIAPHRAGM SEALS** utilize an all metallic diaphragm welded to the upper housing with a displacement capability of 1.5 ml. Standard pressure rating is 2,500 psi with a wide variety of instrument and process connections available. A flushing connection is offered as an option.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**LOWER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel (Exotic materials available on request)

**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel

**DIAPHRAGM MATERIALS:** 316 Stainless Steel (Exotic materials available on request)

**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 30H

**NOSHOK ELEVATED PRESSURE, BOLTED, NON-REPLACEABLE DIAPHRAGM SEALS** utilize an all metallic diaphragm welded to the upper housing with a displacement capability of 1.5 ml. Pressure rating is 5,000 psi with a wide variety of instrument and process connections available. A flushing connection is offered as an option.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**LOWER HOUSING:** PVDF, PP, PVC, PTFE (Other materials available on request)

**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel

**DIAPHRAGM MATERIALS:** 316 Stainless Steel, FKM, PTFE (Exotic materials available on request)

**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 30L

**NOSHOK REDUCED PRESSURE, NON-METALLIC LOWER, BOLTED, NON-REPLACEABLE DIAPHRAGM SEALS** utilize an all metallic diaphragm welded to the upper housing. Displacement capability is 1.5 ml with a 2.4" diameter diaphragm. Maximum pressure rating is 200 psi with non-metallic lower housing materials.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**UPPER HOUSING:** Epoxy-coated Steel, 316 Stainless Steel

**DIAPHRAGM MATERIALS:** NBR, FKM, EPDM, PTFE (Other materials available on request)

**BOLTING:** Zinc-plated Steel, optional Stainless Steel



## TYPE 40

**NOSHOK FLOW-THROUGH ANNULAR STYLE REPLACEABLE DIAPHRAGM SEALS** are frequently used in abrasive media applications such as slurries, heavy sludges, chemical (synthetic polymers), and diffusers (flow measurement). Process liquid flowing through the pipe exerts pressure onto a flush-mounted flexible inner cylinder containing clean, captive liquid; completely isolating instrumentation from the process flow and preventing plugging.

**WARRANTY:** One Year<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**SIZE:** 1-3/4", 2", 3" and 5"

**CASE & BEZEL:** 304 Stainless Steel, 316 Stainless Steel optional

**WETTED PARTS:** 304 Stainless Steel, 316 Stainless Steel optional

**LENS:** Instrument glass

**CONNECTION:** Center back

**ACCURACY:**  $\pm 1\%$  full scale, Grade A, ASME B40.3

**RANGES:** -100 °F to 100 °F through 200 °F to 1,000 °F;

(-75 °C to 175 °C through 100 °C to 550 °C);

Single scale °F, single scale °C, and dual scales available

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



## 100 SERIES

**NOSHOK INDUSTRIAL TYPE BIMETAL THERMOMETERS** are heavy-duty, industrial thermometers with a weather resistant, tamper proof case. These thermometers feature a highly sensitive bimetallic helix coil which is heat-treated for stress relief, and silicone-coated to minimize pointer vibration and maximize heat transfer and response time.

**WARRANTY:** One Year†

## SPECIFICATIONS

**SIZE:** 1", 1-3/4" and 2"

**CASE & BEZEL:** 304 Stainless Steel

**WETTED PARTS:** 304 Stainless Steel

**LENS:** Instrument glass

**CONNECTION:** Center back (plain stem)

**ACCURACY:**  $\pm 1\%$  full scale, Grade A, ASME B40.3

**RANGES:** -100 °F to 100 °F through 200 °F to 1,000 °F;

(-75 °C to 175 °C through 100 °C to 550 °C);

Single scale °F, single scale °C, and dual scales available

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



## 150 SERIES

**NOSHOK TESTING AND GENERAL PURPOSE BIMETAL THERMOMETERS** are designed for general purpose testing applications, and feature a weather-resistant, tamper-proof case. A pocket sized model is available for use by inspectors, service and maintenance personnel for spot checking.

**WARRANTY:** One Year†

## SPECIFICATIONS

**SIZE:** 2", 3" and 5"

**CASE & BEZEL:** 304 Stainless Steel

**WETTED PARTS:** 304 Stainless Steel, 316 Stainless Steel optional;

316 Stainless Steel for Sanitary options

**LENS:** Instrument glass

**STEM:** 304 Stainless Steel; 2.5" to 24" lengths available

**CONNECTION:** Center back; bottom connection;

adjustable angle connection

**CONNECTION SIZE:** 2" Dial 1/4" NPT, 3" & 5" Dial 1/2" NPT;

3/4" Tri-Clamp through 4" Tri-Clamp for Sanitary options

**ACCURACY:**  $\pm 1\%$  full scale, Grade A, ASME B40.3

**RANGES:** -100 °F to 100 °F through 50 °F to 500 °F;

(-75 °C to 175 °C through 0 °C to 250 °C);

Single scale °F, single scale °C, and dual scales available

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



## 300 SERIES



**NOSHOK INDUSTRIAL TYPE BIMETAL THERMOMETERS WITH EXTERNAL RESET, SANITARY OPTIONS** are the highest quality thermometers available on the market. They feature a sturdy, corrosion resistant 304 Stainless Steel case and bezel which provides a hermetic seal to prevent lens fogging and damage caused by moisture. 1/16" Allen key adjustment offers field calibration for maximum accuracy at a selected range. Sanitary Tri-Clamp® options are available.

**WARRANTY:** Eight Years†

## SPECIFICATIONS

**SIZE:** 1", 1-3/8", 1-3/4", 2" and 3"

**CASE & BEZEL:** 304 Stainless Steel, 316 Stainless Steel optional

**WETTED PARTS:** 304 Stainless Steel, 316 Stainless Steel optional

**LENS:** Convex polycarbonate on 1-3/8" model,

Instrument glass on all other models

**CONNECTION:** Center back (plain stem)

**ACCURACY:**  $\pm 1\%$  full scale, Grade A, ASME B40.3

**RANGES:** -100 °F to 100 °F through 200 °F to 1,000 °F;

(-75 °C to 175 °C through 100 °C to 550 °C);

Single scale °F, single scale °C, and dual scales available



## 350 SERIES

**NOSHOK TESTING AND GENERAL PURPOSE BIMETAL THERMOMETERS WITH EXTERNAL RESET** are designed for general purpose testing applications, and feature a weather-resistant, tamper-proof case. A pocket sized model is available for use by inspectors, service and maintenance personnel for spot checking. A friction adjustment nut design offers easy field calibration for maximum accuracy at a selected range. Adjustable pan clips are standard on 1-3/4", 2" and 3" models with 5" and 8" stems.

**WARRANTY:** One Year†

## SPECIFICATIONS

**SIZES:** 2-1/2", 4", 4-1/2" and 6"

**CASE MATERIAL:** Brass, Stainless Steel or phenolic

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

lower back connection

**OPTIONAL FILL FLUIDS:** Glycerin, -40° service and silicone

**MOUNTING OPTIONS:** Front or rear flange,

bezel & U-clamp

**RANGES:** -40 °F/C to 60 °F/C through 100 °F/C

to 350 °F/C

**CAPILLARY MATERIAL:** Plain or armored copper or Stainless Steel

**BULB MATERIAL & DIMENSIONS:** Plain or 1/2" NPT union copper or Stainless Steel; 2-5/8" x 3/8" through 9" x 3/8"



## 300/400/600/700/900 SERIES

**NOSHOK VAPOR 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.

**WARRANTY:** One Year†

†For further warranty information please consult your specific product catalogs.

# DIAL INDICATING THERMOMETER OPTIONS

## ADJUSTABLE UNION CONNECTION

Can be used to reposition the dial face for better viewing. Also helpful when installing a thermometer where space is limited.

## CERTIFIED CALIBRATION

Certified calibration is available on all NOSHOK thermometers, and provides the user with a serial numbered thermometer along with a calibration sheet against a primary temperature standard, which is traceable to the National Institute of Standards and Technology.

## CONNECTIONS

In addition to our standard 1/2" NPT connection, 1/4" or 3/8" NPT and metric connections are also available. If a special connection is required, please consult the factory. Other options include a plain stem with an adjustable compression fitting, or left, right or top connections.

## GLOW DIAL

Allows up close daylight and/or distant night time viewing. 5" Adjustable angle or back connected. Includes reflective pointer and two reflective clips included to indicate custom minimum and maximum limits.

## LENSES

Laminated safety glass lenses are available on all 3" and 5" NOSHOK bimetal thermometers. Acrylic and polycarbonate lenses are available on all NOSHOK bimetal thermometers also, however they should not be used where case temperature exceeds 300 °F/150 °C.

## MINIMUM OR MAXIMUM INDICATING POINTER

The MIP allows you to view your minimum **or** maximum temperatures for visual clarification of safe operation. Available only on 30-310 and 50-310 models.

## MINIMUM AND MAXIMUM INDICATING POINTER

The MIP2 allows you to view your minimum **and** maximum temperatures for visual clarification of safe operation. Available only on 30-310 and 50-310 models.

## MOUNTING FLANGES

Various sizes and types of mounting flanges are available.

## SILICONE FILLED

All 2", 3" and 5" NOSHOK industrial bimetal thermometers are offered in a silicone filled version. This fill is used for applications where severe vibration may be a factor. Silicone dampens and lubricates the internal mechanism thus reducing pointer oscillation and premature wear. A polycarbonate lens is standard with a silicone filled thermometer. Maximum case temperature not to exceed 300 °F (150 °C).

## SPECIAL DIALS

Special ranges and dials with company names, company logos, part numbers, telephone numbers, and custom layouts are available.

## STEM TYPES

Multiple stem diameters, stem lengths up to 120", sharp tip options and optional 316SS wetted parts are available.





## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire; 0 Vdc to 5 Vdc, 3-wire; 1 Vdc to 5 Vdc, 3-wire and 0 Vdc to 10 Vdc, 3-wire  
**RANGES:** Standard ranges from -40 °F to 120 °F to 50/550 °F  
**ACCURACY:** Class B ( $\pm 0.5\%$  full scale)  
**POWER SUPPLY:** 10 Vdc to 30 Vdc for 4 mA to 20 mA, 2-wire; and 0 Vdc to 5 Vdc, 3-wire; and 1 Vdc to 5 Vdc, 14 Vdc to 30 Vdc for 0 Vdc to 10 Vdc, 3-wire.  
**HOUSING MATERIAL:** 316 Stainless Steel  
**WETTED MATERIAL:** 316 Stainless Steel  
**STEM LENGTHS:** From 2-1/2" to 12" – Stock  
**PROCESS CONNECTION:** 1/2" NPT male; 1/4" NPT male and 1/4" NPT male with adjustable compression fitting available

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



## 800 SERIES



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

Shown with 1800 Series Attachable Loop Indicator.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**OUTPUT SIGNALS:** 4 mA to 20 mA, 2-wire  
**RANGES:** Standard ranges from -22 °F to 302 °F (-30 °C to 150 °C)  
**ACCURACY:** Measuring Element: PT1000 Class A  $\pm 0.80$  °F ( $\pm 0.45$  °C), Temperature Sensor: For °F:  $\pm [1.8(0.15 + 0.002(t - 32) / 1.8)]$ ; For °C:  $\pm (0.15 K + 0.002 |t|)$  per EN 60751  
**POWER SUPPLY:** 10 Vdc to 30 Vdc  
**HOUSING MATERIAL:** 316 Stainless Steel  
**WETTED MATERIAL:** 316 Stainless Steel  
**STEM LENGTHS:** From 1" to 14"  
**PROCESS CONNECTION:** 1/4" NPT Male; 1/2" NPT Male optional

CE compliant to suppress RFI, EMI and ESD, IP67



## 810 SERIES



**NOSHOK COMPACT TEMPERATURE TRANSMITTERS** feature a proven PT1000 platinum resistance sensor that provides reliability, stability and unbeatable performance.

Other features include a 316 Stainless Steel housing and wetted parts. A 4 mA to 20 mA transmitter is included. CE compliant to suppress RFI, EMI, and ESD.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**HOUSING:** 316 Stainless Steel  
**ACCURACY:**  $\leq 0.22\%$  full scale;  $\leq 0.1\%$  full scale optional  
**AVAILABLE RANGES:** Standard ranges from -325 °F to 1,100 °F (-200 °C to 600 °C); Customer rescalable with optional PC interface and software  
**POWER SUPPLY:** 9-36 Vdc, polarity protected  
**CURRENT OUTPUT:** 4 mA to 20 mA (3-wire configuration) linear to temperature  
**ELECTRICAL CONNECTION:** M12 x 1 (5-pin) or integral cable



## 820/821 SERIES

**NOSHOK DIGITAL TEMPERATURE INDICATORS** are an ideal replacement for bimetal, liquid bulb and glass thermometers in applications including pharmaceutical, food preparation, utilities and municipal, refineries, chemical and petrochemical plants, paper mills and hydraulics. Featuring a large 4-digit LED display, they are field re-programmable with optional PC interface module and software, which includes a security feature to prevent accidental reprogramming. NOSHOK Digital Indicators utilize a self-calibration feature for accurate and stable performance, and allow easy installation with various mounting configurations.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**HOUSING:** 316 Stainless Steel  
**ACCURACY:**  $\leq 0.22\%$  full scale;  $\leq 0.1\%$  full scale optional  
**AVAILABLE RANGES:** -58 °F to 392 °F, -50 °C to 200 °C  
**POWER SUPPLY:** Lithium battery (3.6 V)



## 822/823 SERIES

**NOSHOK BATTERY POWERED DIGITAL TEMPERATURE INDICATORS** are an ideal replacement for bimetal, liquid bulb and glass thermometers in applications including pharmaceutical, food preparation, utilities and municipal, refineries, chemical and petrochemical plants, paper mills and hydraulics. These indicators provide a 5 year minimum battery life, and feature a large 4-digit LCD display.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**CASE:** 304 Stainless Steel  
**WETTED PARTS:** 316Ti Stainless Steel  
**CONNECTION:** 1/2" NPT Male standard, 1/4" NPT optional, sliding compression fitting optional  
**ACCURACY:** Analog signal :  $\leq \pm 0.5\%$  of span + temperature sensor error  
 Switching output :  $\leq \pm 0.8\%$  of span + temperature sensor error  
 Display :  $\leq \pm (0.8\%$  of span + temperature sensor error)  $\pm 1$  digit  
 Temperature sensor : For °F:  $\pm [1.8(0.15 + 0.002(t - 32) / 1.8)]$ , For °C:  $\pm (0.15 K + 0.002 |t|)$  per EN 60751  
**AVAILABLE RANGES:** -4 °F to 176 °F (-20 °C to 80 °C) standard, -4 °F to 248 °F (-20 °C to 120 °C) optional  
**SWITCHING FUNCTIONS:** 2 N.O. or N.C. (PNP), 1 N.O. or N.C. (PNP) with 4 mA to 20 mA analog output optional  
**POWER SUPPLY:** 15 Vdc to 35 Vdc  
**ANALOG OUTPUT:** 4 mA to 20 mA and 0 Vdc to 10 Vdc  
**ELECTRICAL CONNECTION:** M12 x 1 (4-pin or 5-pin)

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



## 850 SERIES



**NOSHOK ELECTRONIC INDICATING TEMPERATURE TRANSMITTER/SWITCHES** measure and display temperature, and have one or two switching outputs as well as optional current and voltage outputs. The three buttons on top allow simple adjustment of the temperature set points, reset points, switching functions and the measuring range of the optional analog output. A variety of process connections, including sliding compression fittings, add to the versatility of this sensor. All wetted parts, as well as the housing, are made of Stainless Steel.

**WARRANTY:** Three Years†

†For further warranty information please consult your specific product catalogs.

# ELECTRONIC TEMPERATURE MEASUREMENT AND THERMOWELLS

## SPECIFICATIONS

**SHEATH MATERIAL:** 316 Stainless Steel

**ACCURACY:**  $\pm 0.12\%$  ( $\pm 0.3^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class B standard;  $\pm 0.06\%$  ( $\pm 0.15^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class A or  $\pm 0.04\%$  ( $\pm 0.1^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class AA

**AVAILABLE RANGES:** Standard ranges from  $-50^\circ\text{F}$  to  $400^\circ\text{F}$  to  $-330^\circ\text{F}$  to  $1,100^\circ\text{F}$

**PRESSURE RATING:** 500 psi (34.5 bar), tube only

**RTD ELEMENT:** PT100  $\Omega$  @  $32^\circ\text{F}$  ( $0^\circ\text{C}$ ),  $\alpha=0.00385$  IEC 751

**LEAD WIRES:** Stranded 22 AWG standard, PVC or PTFE insulation

**SELF-HEATING:** 50 mW /  $^\circ\text{C}$  typical in moving water

**INSULATION RESISTANCE:** Single element probes: 100 mega  $\Omega$ /min. at 500 Vdc, leads to case. Dual element probes: 100 mega  $\Omega$ /min. at 100 Vdc, between element and leads to case.

**TRANSITION:** Sheath to wire transition max. temperature  $266^\circ\text{F}$  ( $130^\circ\text{C}$ )



## 900 SERIES

**NOSHOK PROBE TYPE INDUSTRIAL RTDs** are general purpose RTD probes with PVC or PTFE lead wires. They are ideal for OEM applications, and are offered in 2, 3 or 4-wire circuit types. Many options are available, including adjustable and welded fittings, a variety of fitting sizes and probe diameters, and custom designs. RTD PT100  $\Omega$  is standard, others are available on request. Multiple electrical connections are available.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**SHEATH MATERIAL:** 316 Stainless Steel

**ACCURACY:**  $\pm 0.12\%$  ( $\pm 0.3^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class B standard;  $\pm 0.06\%$  ( $\pm 0.15^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class A or  $\pm 0.04\%$  ( $\pm 0.1^\circ\text{C}$ ) at  $0^\circ\text{C}$ , Class AA optional

**AVAILABLE RANGES:** Standard ranges from  $-50^\circ\text{F}$  to  $400^\circ\text{F}$  to  $-330^\circ\text{F}$  to  $1,100^\circ\text{F}$

**PRESSURE RATING:** 500 psi (34.5 bar), tube only

**RTD ELEMENT:** PT100  $\Omega$  @  $32^\circ\text{F}$  ( $0^\circ\text{C}$ ),  $\alpha=0.00385$  IEC 751

**LEAD WIRES:** Stranded 22 AWG standard, PVC or PTFE insulation

**SELF-HEATING:** 50 mW /  $^\circ\text{C}$  typical in moving water

**INSULATION RESISTANCE:** Single element probes: 100 mega  $\Omega$ /min. at 500 Vdc, leads to case. Dual element probes: 100 mega  $\Omega$ /min. at 100 Vdc, between element and leads to case.

**ENVIRONMENTAL PROTECTION:** A1/A2: NEMA 4; P1 & S1/S2: NEMA 4X  
**TRANSITION:** Sheath to wire transition max. temperature  $266^\circ\text{F}$  ( $130^\circ\text{C}$ )



## 910/915 SERIES



**NOSHOK PROBE TYPE INDUSTRIAL RTD WITH CONNECTION HEAD** are available in 2, 3 or 4-wire circuit configurations and they can be ordered with a fixed probe or spring loaded, depending on the application. These RTDs are available with a variety of NEMA 4 and NEMA 4X head types, including aluminum cast, explosion proof aluminum cast, polypropylene, Stainless Steel cast, and explosion proof Stainless Steel cast. Explosion proof versions are Class I, Division I, Groups B, C and D; Class II, Division I, Groups E, F and H.

Aluminum Cast

Polypropylene

SS Cast

**WARRANTY:** Three Year†



## SPECIFICATIONS

**HOUSING MATERIAL:** Die-cast zinc, enamel painted

**HOUSING DIMENSIONS:** 1.82" dia. x 1.15" H

**INPUT:** PT100, 3-wire,  $\alpha=0.00385$ , DIN EN 60751

**OUTPUT:** 4 mA to 20 mA loop powered or voltage, linear to temperature

**POWER SUPPLY:** 12-32 Vdc, polarity protected

**SUPPLY EFFECT:** 0.02%/V, 0.001%/V with computer programmable version

**SENSOR LEAD RESISTANCE RTD:** 500  $\Omega$  max.

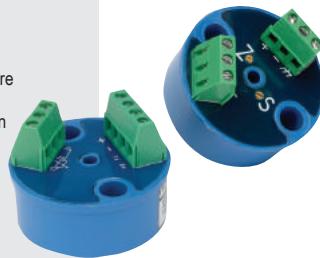
**ACCURACY:** 0.1% FS (includes effects of linearity, hysteresis and repeatability)

**SPAN/ZERO ADJUSTMENT:** 20 turn potentiometer,  $\pm 10\%$  for zero and span

**MAXIMUM LOOP RESISTANCE:**  $R_{max} = (V_{supply} - 9 \text{ Vdc}) / 20 \text{ mA}$

**OPEN CIRCUIT DETECTION:** Overscale limit (27.0 mA) or underscale limit (2.2 mA)

\* Max. error on complete span. Error at calibration point  $\leq 0.1^\circ\text{C}$ .



## 920 SERIES

**NOSHOK RTD TRANSMITTERS** are high accuracy ( $\pm 0.1\%$ ) transmitters with a 2-wire loop-powered 4 mA to 20 mA output. They feature a PT100 input with 3-wire compensation, and have an analog design with an adjustable potentiometers. These RTD transmitters are factory calibrated for a fixed range, and fit standard heads. An optional model is fully field re-programmable with module and PC-based software.

**WARRANTY:** Three Year†

## SPECIFICATIONS

**MATERIALS:** Brass, 304 Stainless Steel or 316 Stainless Steel

**INSERTION:** 1-5/8" to 22-1/2", 25 mm to 350 mm

**BORE DEPTH:** 2-1/2" to 24"

**PROCESS CONNECTION:** 3/4" NPT – standard; Others available upon request



## 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.

**WARRANTY:** One Year†

**RTD CONNECTOR HEADS** meet the NEMA requirements for indoor or outdoor use, providing protection against dust, rain, splashing and hose-directed water. Featuring easy access, one-turn caps, these connection heads accept standard and DIN terminal blocks and transmitters, and provide greater volume for ease of wiring. Available in aluminum, polypropylene, and Stainless Steel (explosion-proof versions available).



## RTD TERMINAL BLOCKS

These terminal blocks are provided with a steatite ceramic base, Brass terminal pieces and Stainless Steel screws, and can be used in the temperature sensor or low voltage Class 2 circuits. Material options include Bakelite and ceramic, and multiple configurations are available including 2, 3, 4 and 6 position.



†For further warranty information please consult your specific product catalogs.

## HARD SEAT & SOFT TIP

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel, 360 Brass

**CONNECTIONS:** 1/8" NPT, 1/4" NPT, 7/16"-20 UNF-2B, 9/16"-18 UNF-2B, Male-male, Male-female, Female-female, in-line and angled configurations

**PRESSURE RATINGS\*:** Brass: 6,000 psi @ 200 °F, zinc-nickel plated Steel: 10,000 psi @ 200 °F, Stainless Steel: 10,000 psi @ 200 °F

**ORIFICE SIZE:** 0.172"

**FLOW COEFFICIENT:** C<sub>v</sub> 0.42

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.

100/140 Series: U.S. Patent 7,758,014

150/190 Series: U.S. Patent 6,820,857 and 7,758,014

\* These pressure ratings apply except the following which have pressure ratings as shown:

Stainless Steel 7/16"-20 UNF-2B connection: 9,000 psi

Steel 7/16"-20 UNF-2B connection: 8,000 psi

Brass 7/16"-20 UNF-2B connection: 5,000 psi

Stainless Steel 9/16"-18 UNF-2B connection: 5,000 psi

Steel 9/16"-18 UNF-2B connection: 4,000 psi

Brass 9/16"-18 UNF-2B connection: 2,000 psi



### 100/150 SERIES



**NOSHOK MINI VALVES** are small in size but deliver maximum strength and durability. Available in zinc nickel-plated Steel, electropolished Stainless Steel and Brass, these rugged mini valves are equipped with an FKM o-ring and PTFE back-up ring below the stem threads to protect against corrosion and galling. Stem threads are rolled for greater strength and ease of operation. 100 Series feature a metal-to-metal hard seat, and have a maximum pressure of 10,000 psi for Stainless Steel and Steel models, and 6,000 psi for Brass. 150 Series valves feature a patented Delrin® non-rotating soft tip stem. They have a max pressure of 6,000 psi for Stainless Steel and Steel models, and 3,000 psi for Brass.

**WARRANTY:** Three Years†

## HARD SEAT & SOFT SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTIONS:** 1/2" NPT to 3/4" NPT Male-female

**PRESSURE RATING:** 200 Series: 10,000 psi @ 200 °F; 300 Series: 6,000 psi @ 200 °F

**ORIFICE SIZE:** 200/300 Series: 0.187"

**FLOW COEFFICIENT:** 200 Series: C<sub>v</sub> 0.44;

300 Series: C<sub>v</sub> 0.64

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.



### 200/300 SERIES



**NOSHOK MULTIPORT 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 10,000 psi @ 200 °F. The soft seat design, with the replaceable Delrin® seat, is pressure rated to 6,000 psi @ 200 °F.

**WARRANTY:** Three Years†

## HARD SEAT & SOFT SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTIONS:** 1/4", 3/8", 1/2", 3/4", 1", 1-1/4" & 1-1/2" NPT; 7/16"-20 UNF (#4 SAE, J1926); Male-female, Female-female, in-line and angled configurations

**PRESSURE RATING:** 400 Series: 10,000 psi @ 200 °F;

500 Series: 6,000 psi @ 200 °F

**ORIFICE SIZES:** 400 Series: 1/4" - 1/2" NPT: 0.187"

with C<sub>v</sub> 0.44; 3/4" - 1-1/2" NPT: 0.438" with CV 2.70

**ORIFICE SIZES:** 500 Series: 1/4" - 1/2" NPT: 0.187";

with C<sub>v</sub> 0.76; 3/4" - 1-1/2" NPT: 0.438" with C<sub>v</sub> 4.0

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional for 1/4", 3/8" & 1/2" NPT only

**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.



### 400/500 SERIES



**NOSHOK STANDARD NEEDLE VALVES** are the work horses of the industry. The 400 Series' metal-to-metal hard seat design is pressure rated to 10,000 psi @ 200 °F and helium leak tested to 1x10<sup>-4</sup> ml/s for guaranteed performance and reliability. The 500 Series valves are fitted with a precision molded, replaceable Delrin® soft seat which is the key to the bubble tight seal. They have a maximum pressure rating of 6,000 psi @ 200 °F with straight through porting for bi-directional, high capacity flow and easy roddable cleaning. The all 316 Stainless Steel blow out proof stem provides greater service life and provides a secondary stem seal in the full open position. On the 400 Series, the stem and the one piece bonnet threads are rolled for greater strength and ease of operation. Both the 400 and 500 Series feature stem seal below the threads to protect against corrosion and galling.

**WARRANTY:** Three Years†

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

†For further warranty information please consult your specific product catalogs.



# NEEDLE VALVES

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTIONS:** 1/4" & 1/2" NPT, Male-female & Female-female configurations  
**PRESSURE RATING:** 600 Series: 10,000 psi @ 200 °F; 700 Series: 6,000 psi @ 200 °F  
**ORIFICE SIZE:** 600/700 Series: 0.187" (both series)  
**FLOW COEFFICIENT:** 600 Series:  $C_v$  0.44; 700 Series:  $C_v$  0.76

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional  
**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## 600/700 SERIES



**NOSHOK BLOCK & BLEED NEEDLE 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 6,000 psi @ 200 °F. The all 316 Stainless Steel blow out proof stem provides greater service life and a secondary stem seal in the full open position. Stem seals, with the FKM o-ring and PTFE back up ring, are below the threads and protect against galling and corrosion.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel, 360 Brass  
**CONNECTIONS:** 1/4" & 1/2" NPT  
**HARD SEAT PRESSURE RATINGS:** Brass: 6,000 psi @ 200 °F; Steel: 10,000 psi @ 200 °F; Stainless Steel: 10,000 psi @ 200 °F  
**SOFT TIP PRESSURE RATINGS:** Brass: 3,000 psi @ 200 °F; Steel: 6,000 psi @ 200 °F; Stainless Steel: 6,000 psi @ 200 °F  
**BLEED PORT:** 800/850 Series: 0.159" (both series)  
**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® (800 Series only) packing optional  
**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.

U.S. Patent 6,820,857  
U.S. Patent 7,758,014



## HARD SEAT & SOFT TIP

## 800/850 SERIES



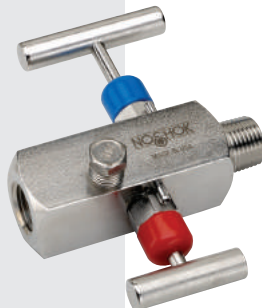
**NOSHOK BLEED VALVES** provide a convenient means to relieve process pressures trapped between a shut off valve and the instrument. The 800/850 Series valves use the same bonnet assemblies as the 100 and 150 Series mini valves with an integrated single threaded body for insertion into a vent port. NOSHOK Soft tip valves feature a patented Delrin® non-rotating soft tip stem, a back-up metal-to-metal seal and a 0.159" bleed port. Our patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve. All stem threads are rolled for strength and ease of operation.

**WARRANTY:** Three Years†

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTION:** 1/2" & 1/4" NPT, Male-female & Female-female configurations available, right venting optional  
**PRESSURE RATING:** 2070 Series: 10,000 psi @ 200 °F; 2170 Series: 6,000 psi @ 200 °F  
**ORIFICE SIZE:** 2070/2170: 0.187" (both series)  
**FLOW COEFFICIENT:** 2070 Series:  $C_v$  0.44; 2170 Series:  $C_v$  0.76  
**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional  
**LENGTH:** 4" standard and 5-3/8" extended length available  
**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## HARD SEAT & SOFT SEAT

## 2070/2170 SERIES



**NOSHOK BLOCK & BLEED 2-VALVE NEEDLE VALVES** combine isolating and venting in a single valve, eliminating the need for tubing and fittings. The block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation. The 1/4" NPT vent plug may be removed and replaced with exhaust piping to direct the fluids to a safe location. 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 6,000 psi @ 200 °F. The all 316 Stainless Steel blow out proof stem provides greater service life and a secondary stem seal in the full open position. The standard stem seal is below the threads and protects against galling and corrosion.

**WARRANTY:** Three Years†

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

†For further warranty information please consult your specific product catalogs.

## HARD SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTION:** 1/2" & 1/4" NPT Male-female & Female-female configurations available, right venting optional

**PRESSURE RATING:** 10,000 psi @ 200 °F

**ORIFICE SIZE:** 0.187"

**FLOW COEFFICIENT:**  $C_v$  0.44

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**LENGTH:** 4" standard and 5-3/8" extended length available

**OPTIONS:** Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



### 3070 SERIES



**NOSHOK DOUBLE BLOCK & BLEED 2-VALVE NEEDLE VALVES** combine double isolation and venting in a single valve, eliminating the need for tubing and fittings. The double block and bleed valve isolates the downstream process fluids, or isolates the upstream instrument pressure. The bleed valve exhausts either upstream or downstream fluid pressure depending on which block valve is used. The 1/4" NPT vent port is located on the opposite side of the process block valve and 90° from the instrument block valve. 10,000 psi hard seat pressure rating @ 200 °F. Blow-out proof stem provides a secondary stem seal in the full open position. All stem threads are rolled for strength and ease of operation. These valves feature a one-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads, and a slotted spring pin to prevent accidental loosening.

**WARRANTY:** Three Years<sup>†</sup>

## 2-VALVE STATIC PRESSURE & LIQUID LEVEL MANIFOLDS

### HARD SEAT & SOFT SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTION:** 1/2" NPT, 1/4" NPT, NPT-flange, Flange-flange, NPT-NPT configurations available

**PRESSURE RATINGS:** 2000 Series: 10,000 psi @ 200 °F; 2100 Series: 6,000 psi @ 200 °F

**ORIFICE SIZE:** 0.187"

**FLOW COEFFICIENT:** 2000 Series:  $C_v$  0.44;

2100 Series:  $C_v$  0.76

**STEM SEAL & TYPES:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



### 2000/2100 SERIES



**NOSHOK BLOCK & BLEED 2-VALVE STATIC PRESSURE MANIFOLD VALVES** combine isolating and venting in a single manifold eliminating the need for tubing and fittings. The block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation. The block valve is located on the side and the bleed valve is located on top in a 90° orientation. Venting is to the right. The all 316 Stainless Steel blow out proof stem provides longer service life and a secondary stem seal in the full open position. The stem seal, with the FKM o-ring and PTFE back up ring, is below the threads and protects against galling and corrosion.

**WARRANTY:** Three Years<sup>†</sup>

### HARD & SOFT SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTIONS:** Flange-flange, 1/2" NPT-flange

**PRESSURE RATINGS:** 2020 Series: 10,000 psi @ 200 °F; 2120 Series: 6,000 psi @ 200 °F

**ORIFICE SIZE:** 0.187"

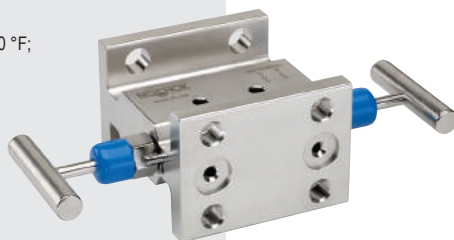
**FLOW COEFFICIENT:** 2020 Series:  $C_v$  0.44;

2120 Series:  $C_v$  0.76

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



### 2020/2120 SERIES



**NOSHOK 2-VALVE LIQUID LEVEL MANIFOLD VALVES** 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. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning.

**WARRANTY:** Three Years<sup>†</sup>

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

<sup>†</sup>For further warranty information please consult your specific product catalogs.

# 2-VALVE STATIC PRESSURE & NATURAL GAS MANIFOLDS

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

### CONNECTIONS:

200002/210002 Series: Flange-flange, 1/4" NPT vent;  
200402/210402 Series: 1/2" NPT-flange, 1/4" NPT vent;  
200202/210202 Series: 1/4" NPT-flange, 1/4" NPT vent; Left venting optional

### PRESSURE RATINGS:

200002 & 200402 Series: 10,000 psi @ 200 °F;  
210002 & 210402 Series: 6,000 psi @ 200 °F

**Orifice size:** 0.187"

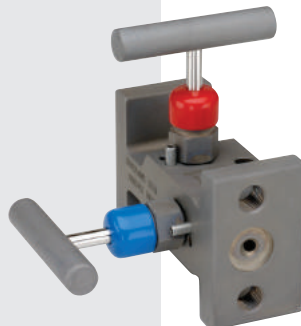
### FLOW COEFFICIENT:

200002 & 200402 Series:  $C_v$  0.44;  
210002 & 210402 Series:  $C_v$  0.76

**STEM SEAL:** All 316 Stainless Steel stems with FKM o-ring and type PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

### CONNECTIONS:

Flange-flange 90° Angle

### PRESSURE RATINGS:

6,000 psi @ 200 °F

**Orifice size:** 0.375"

### FLOW COEFFICIENT:

$C_v$  3.0

**STEM SEAL:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads

**OPTIONS:** O-ring materials and soft seats

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTIONS:** 1/4" NPT, 1/8" NPT, right venting optional

### PRESSURE RATINGS:

2602 Series: 10,000 psi @ 200 °F;

2702 Series: 6,000 psi @ 200 °F

**ORIFICE SIZE:** 0.141"

**FLOW COEFFICIENT:** 2602 Series:  $C_v$  0.38;

2702 Series:  $C_v$  0.38

**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.

U.S. Patent 6,820,857

U.S. Patent 7,758,014



## HARD SEAT & SOFT SEAT

## 200002/210002 SERIES 200402/210402 SERIES



**NOSHOK NARROW BLOCK & BLEED 2-VALVE STATIC PRESSURE MANIFOLD VALVES** combine isolating and venting in a single manifold eliminating the need for tubing and fittings. The block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation. The block valve is located on the side and the bleed valve is located on top in a 90° orientation. Venting is to the right. The all 316 Stainless Steel blow out proof stem provides greater service life and a secondary stem seal in the full open position. The stem seal, with the FKM o-ring and PTFE back up ring, is below the threads and protects against galling and corrosion.

**WARRANTY:** Three Years†

## SOFT SEAT (0.375" ORIFICE)

## 2530 SERIES



**NOSHOK LARGE BORE, 90° ANGLE NATURAL GAS MANIFOLD VALVES** incorporate two isolation valves for natural gas applications. These valves feature a double flange 90° angle connection for remote or direct installation. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning.

**WARRANTY:** Three Years†

## HARD SEAT & SOFT TIP (0.141" ORIFICE)

## 2602/2702 SERIES



**NOSHOK MINI BLOCK & BLEED 2-VALVE STATIC PRESSURE MANIFOLD VALVES** combine isolating and venting in a single manifold eliminating the need for tubing and fittings. The block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation. The valves are located on the top to fit into compact spaces and two holes are provided for mounting. Venting is to the left. The all 316 Stainless Steel blow out proof stem provides greater service life and a secondary stem seal in the full open position. The stem seal, with the FKM o-ring and PTFE back up ring, is below the threads and protects against galling and corrosion.

**WARRANTY:** Three Years†

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

†For further warranty information please consult your specific product catalogs.



# 2-VALVE STATIC PRESSURE & NATURAL GAS MANIFOLDS

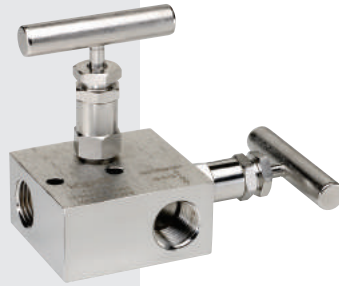
## HARD SEAT & SOFT TIP (0.156" ORIFICE)

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTIONS:**  
 2603/2703 Series: 3/8" NPT;  
 2604/2704 Series: 1/2" NPT, right venting optional  
**PRESSURE RATINGS:**  
 2603 & 2604 Series: 10,000 psi @ 200 °F;  
 2703 & 2704 Series: 6,000 psi @ 200 °F  
**ORIFICE SIZE:** 0.156"  
**FLOW COEFFICIENT:** C<sub>v</sub> 0.44  
**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional  
**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.

U.S. Patent 6,820,857; U.S. Patent 7,758,014



## 2603/2703 SERIES 2604/2704 SERIES



### NOSHOK BLOCK & BLEED 2-VALVE STATIC PRESSURE

**MANIFOLDS** combine isolating and venting in a single manifold eliminating the need for tubing and fittings. The block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation. The block valve is located on the side and the bleed valve is located on top in a 90° orientation. Venting is to the left. The all 316 Stainless Steel blow out proof stem provides greater service life and a secondary stem seal in the full open position. The stem seal, with the FKM o-ring and PTFE back up ring, is below the threads and protects against galling and corrosion.

**WARRANTY:** Three Years<sup>†</sup>

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTION:** 1/4" NPT  
**PRESSURE RATING:** 6,000 psi @ 200 °F  
**ORIFICE SIZE:** 0.187"  
**FLOW COEFFICIENT:** C<sub>v</sub> 0.76  
**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional  
**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.



## 2180 SERIES



**NOSHOK 2-VALVE STATIC PRESSURE NATURAL GAS METER MANIFOLDS** are designed for use with orifice meters. These manifolds feature a replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning. A blow-out proof stem provides a secondary stem seal in the full open position, and all stem threads are rolled for strength and ease of operation. These valves feature a one-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads, and a slotted spring pin to prevent accidental loosening. Vinyl dust caps are included for bonnets and stems (non-packing).

**WARRANTY:** Three Years<sup>†</sup>

Optional 3 and 5 valve configurations also shown. Additional needle valves sold separately.

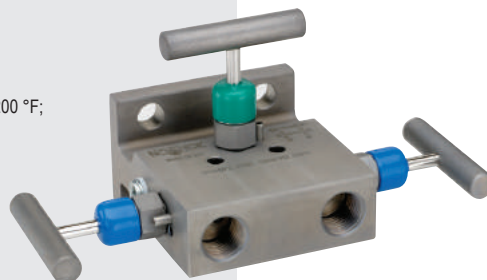
# 3-VALVE DIFFERENTIAL PRESSURE MANIFOLDS

## HARD SEAT & SOFT SEAT

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTION:** Flange-flange, 1/2" NPT-flange, 1/2" NPT-1/2" NPT  
**PRESSURE RATINGS:** 3010 Series: 10,000 psi @ 200 °F;  
 3110 Series: 6,000 psi @ 200 °F  
**ORIFICE SIZE:** 0.187"  
**FLOW COEFFICIENT:** 3010 Series: C<sub>v</sub> 0.44;  
 3110 Series: C<sub>v</sub> 0.76  
**STEM SEAL & TYPE:** All 316 stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional  
**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to 1 X 10<sup>-4</sup> ml/s for guaranteed performance and reliability.



## 3010/3110 SERIES



### NOSHOK 3-VALVE DIFFERENTIAL PRESSURE MANIFOLD

**VALVES** 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. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning.

**WARRANTY:** Three Years<sup>†</sup>

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

<sup>†</sup>For further warranty information please consult your specific product catalogs.

# 3-VALVE DIFFERENTIAL PRESSURE MANIFOLDS

## HARD SEAT

### SPECIFICATIONS

**MATERIALS:** Electropolished 316 Stainless Steel\*

**CONNECTION:** 1/2" NPT-flange

**PRESSURE RATINGS:** 6,000 psi @ 200 °F

**ORIFICE SIZE:** 0.125"

**FLOW COEFFICIENT:**  $C_v$  0.30

**STEM SEAL & TYPE:** All 316 Stainless

Steel stems with FKM o-ring and

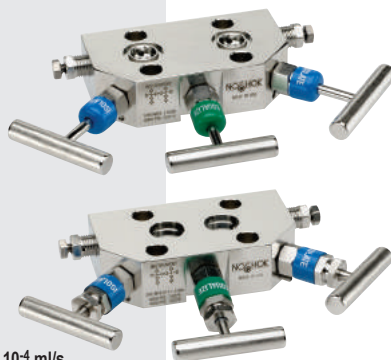
PTFE back-up ring below the threads,

PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

\* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## 3040 SERIES

**NOSHOK 3-VALVE DIFFERENTIAL PRESSURE COMPACT STYLE MANIFOLD VALVES** are designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement. These manifolds provide instrument port spacing that is compatible with either standard SP-99 or the Rosemount™ Coplanar™ platform. Optional packings, stem tips, o-rings and handle types are available. Labeled and color coded vinyl dust caps for bonnets and stems are included.

**WARRANTY:** Three Years†

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel,

electropolished 316 Stainless Steel

**CONNECTION:** Flange-flange, 1/2" NPT-flange,

1/2" NPT-1/2" NPT

**PRESSURE RATINGS:** 6,000 psi @ 200 °F

**ORIFICE SIZE:** 0.375"

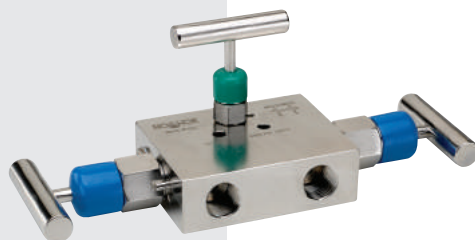
**STEM SEAL & TYPE:** All 316 Stainless Steel

stems with FKM o-ring and

PTFE back-up ring below the threads

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## 3510 SERIES

**NOSHOK 3-VALVE DIFFERENTIAL PRESSURE MANIFOLD VALVES** 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. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning.

**WARRANTY:** Three Years†



### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel

**CONNECTION:** 1/4" NPT

**PRESSURE RATINGS:**

3610 Series: 10,000 psi @ 200° F; 3710 Series: 6,000 psi @ 200° F

**ORIFICE SIZE:** 0.141"

**FLOW COEFFICIENT:**  $C_v$  0.44

**STEM SEAL & TYPE:** All 316 Stainless Steel

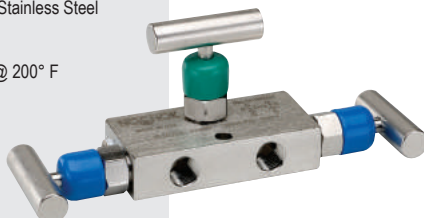
stems with FKM o-ring and PTFE back-up ring

below the threads, PTFE or Grafoil® packing optional

**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.

U.S. Patent 6,820,857; U.S. Patent 7,758,014



## HARD SEAT & SOFT TIP (0.141" ORIFICE)

## 3610/3710 SERIES

**NOSHOK MINI 3-VALVE DIFFERENTIAL PRESSURE MANIFOLD VALVES** are identical to the 3000/3100 Series Manifold Valves, but in miniature version. They are designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement.

**WARRANTY:** Three Years†



All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

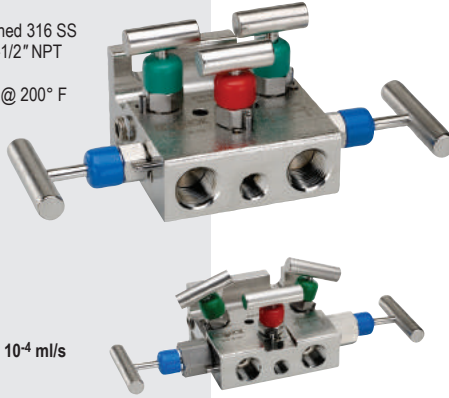
†For further warranty information please consult your specific product catalogs.

# 5-VALVE NATURAL GAS MANIFOLDS

## HARD SEAT & SOFT SEAT/TIP

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated carbon Steel, electropolished 316 SS  
**CONNECTION:** Flange-flange, 1/2" NPT-flange, 1/2" NPT-1/2" NPT  
**PRESSURE RATINGS:**  
 5030 Series: 10,000 psi @ 200° F; 5130 Series: 6,000 psi @ 200° F  
**ORIFICE SIZE:** 0.187"  
**FLOW COEFFICIENT:**  
 5030 Series:  $C_v$  0.44; 5130 Series:  $C_v$  0.76  
**STEM SEAL & TYPE:** All 316 SS stems with FKM o-ring and PTFE back-up ring below the threads.  
**ADDITIONAL FEATURES:** Two static (test) ports, color coded vinyl bonnet and stem dust cap, patented soft seat/tip stem design on equalizing and vent valves  
**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips seal  
**All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.**  
 U.S. Patent 6,820,857; U.S. Patent 7,758,014



Flare Pattern™ option

### 5030/5130 SERIES



**NOSHOK 5-VALVE NATURAL GAS 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. A Flare Pattern™ valve configuration is optional, which provides maximum clearance for fingers during operation. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning\*.  
 \*Isolation valves only

**WARRANTY:** Three Years†

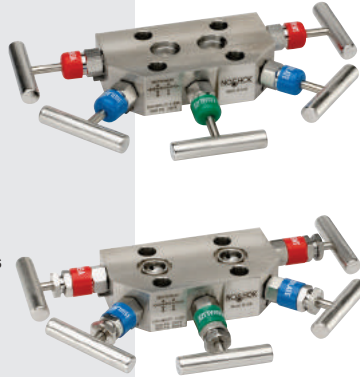


### SPECIFICATIONS

**MATERIALS:** Electropolished 316 Stainless Steel\*  
**CONNECTION:** 1/2" NPT-flange  
**PRESSURE RATINGS:** 6,000 psi @ 200° F  
**ORIFICE SIZE:** 0.125"  
**FLOW COEFFICIENT:**  $C_v$  0.30  
**STEM SEAL & TYPE:** All 316 SS stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional  
**OPTIONS:** O-ring materials, handles, packings, regulating stem and stem tips seal

\* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability.



## HARD SEAT

### 5040/5090 SERIES

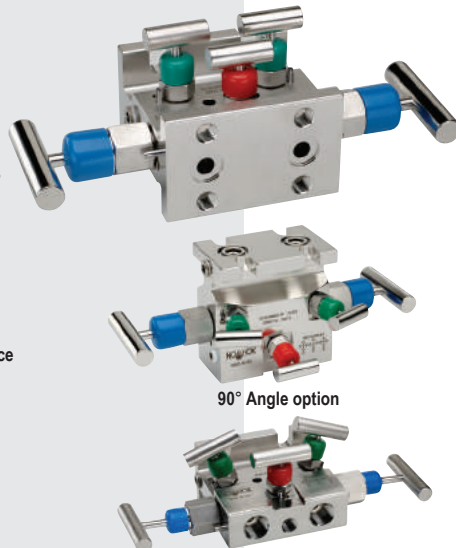
**NOSHOK 5-VALVE DIFFERENTIAL POWER PATTERN AND NATURAL GAS COMPACT STYLE MANIFOLDS** provide instrument port spacing that is compatible with either standard SP-99 or the Rosemount™ Coplanar™ platform. Compact style, power pattern is designed for use with differential pressure transmitters incorporating two isolation valves, one equalizing valve and two vent valves in power pattern applications. Compact style, natural gas flow is designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications. Optional packings, stem tips, o-rings and handle types are available. Labeled and color coded vinyl dust caps for bonnets and stems are included.

**WARRANTY:** Three Years†

### SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated Steel, electropolished 316 Stainless Steel  
**CONNECTIONS:** Flange-flange, 1/2" NPT-flange, 1/2" NPT-1/2" NPT, Flange-flange 90° Angle  
**PRESSURE RATINGS:** 6,000 psi @ 200° F  
**ORIFICE SIZE:** 0.375"  
**STEM SEAL & TYPE:** All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads  
**ADDITIONAL FEATURES:** Two static (test) ports, color coded vinyl bonnet and stem dust cap, patented soft tip stem design on equalizing and vent valves

All NOSHOK valves are 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability. U.S. Patent 6,820,857



90° Angle option

Flare Pattern™ option

## SOFT SEAT/TIP (0.375" ORIFICE)

### 5530 SERIES



**NOSHOK 5-VALVE NATURAL GAS MANIFOLDS** are designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve for natural gas applications. These valves are available in block, single flange, double flange, or double flange 90° angle connection for remote or direct installation. Flare Pattern™ configurations are optional, which provides maximum clearance for fingers during operation. The soft seat design features a replaceable Delrin® seat with straight through porting for bi-directional flow and easy roddable cleaning\*.  
 \*Isolation valves only

**WARRANTY:** Three Years†



All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.



# STABILIZED & NON-STABILIZED CONNECTORS

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated carbon Steel, 316 Stainless Steel  
**CONNECTION:** 1/2" NPT-flange



Stabilized Connectors



Non-stabilized Connector

## SZ SERIES

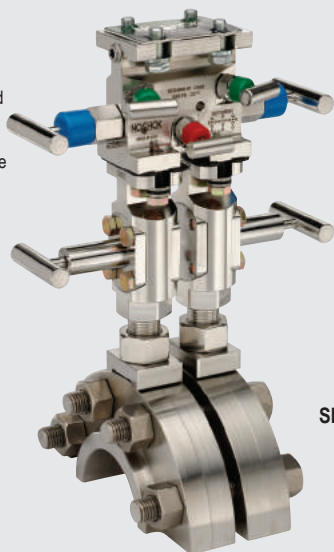
**NOSHOK STABILIZED & NON-STABILIZED CONNECTORS** are designed to reinforce the entire installation by shifting radial-stress load away from the NPT connections, and are available in 3-3/8" and 5" lengths.

SZ Series Stabilized & Non-Stabilized Connectors are available in zinc-nickel plated carbon Steel and 316 Stainless Steel, and feature slotted bolt holes that allow for 2-1/8" and 2-1/4" bolt spacings.

A single piece dielectric gasket (DK1) is available as an option to create a non-conductive shield between the process piping and the instrument. A two piece dielectric kit (DK2) is also available as an alternative when a separate sealing gasket or o-ring is required.

## SPECIFICATIONS

**MATERIALS:** Zinc-nickel plated carbon Steel, 316 Stainless Steel  
**CONNECTION:** 1/2" NPT-flange



Shown with flange adaptor for round installations.

## SV SERIES

**NOSHOK STABILIZED CONNECTORS WITH INTEGRAL VALVE** are also designed to reinforce an installation by shifting radial-stress load away from the NPT connections, but also feature a block valve that can be installed on either side of stabilized body, allowing 1/2 turn installation.

SV Series Stabilized Connectors with Integral Valve are available in zinc-nickel plated carbon Steel and 316 Stainless Steel, and feature slotted bolt holes that allow for 2-1/8" and 2-1/4" bolt spacings. The integral valve has a 0.375" bore for unrestricted passage of process gas, and a standard non-rotating stem tip. This application will work on both flat surfaces (orifice fitting) and round surfaces (orifice flange) with flange adaptor.

A single piece dielectric gasket (DK1) is available as an option to create a non-conductive shield between the process piping and the instrument. A two piece dielectric kit (DK2) is also available as an alternative when a separate sealing gasket or o-ring is required. Stainless Steel bolts are also available.

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

## 50FA1 SERIES FUTBOLS

Futbols (flange adapters) bolt to the process side of a flange-flange manifold to allow connection of process flange taps or process root valves. Futbols also allow flanges to be connected to threaded process piping while maintaining the ease of removal or repair of the manifold if maintenance is required.

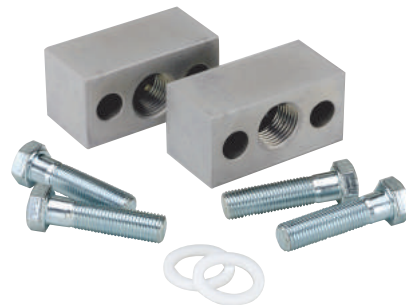
The futbols provide a 1/16" offset connection from the bolt holes to give connection centers of 2", 2-1/8", or 2-1/4"

### SPECIFICATIONS

**MATERIAL:** Zinc-nickel plated Steel, 316 Stainless Steel

**CONNECTIONS:** 1/2" NPT

**KIT INCLUDES :** (2) Futbols, (4) hex bolts 7/16-20, (2) PTFE face seals



## SA SERIES STATIC ADAPTORS

Static adaptors are used to join threaded ports to a flange style connection. They are often used to join the NPT port of a static transmitter with a flange mounted connection on a differential pressure to static adaptor plate. They are available in zinc-nickel plated Steel and electropolished Stainless Steel.

### SPECIFICATIONS

**MATERIAL:** Zinc-nickel plated Steel, electropolished Stainless Steel,

**CONNECTIONS:** 1/2" NPT Male - flange, 1/2" NPT Female-flange



## DIELECTRIC KITS

The dielectric kit is designed to maintain the integrity and reliability of the pipeline and piping system through safety and corrosion protection. Dielectric kits provide a non-conductive barrier between the process piping and the instrument and isolate components from the effects of electrical current. By eliminating metal-to-metal contact, current is halted to prevent corrosion and aid in the cathodic protection of the system.

### DK1

- Single piece design combining a Delrin® sealing gasket and dielectric
- Bolts, washers and dielectric bushings are included with the kits
- Cannot be used in conjunction with seal rings or o-rings

### DK2

- Used as an alternative to a one piece design when a separate sealing gasket or o-ring is required
- Two piece design consisting of a PTFE sealing gasket and PVC dielectric shim
- Bolts, washers and dielectric bushings are included with the kits

### SPECIFICATIONS

**MATERIAL:** Delrin®, PVC

**MAX OPERATING TEMP:** 150° F (66° C)

**DIELECTRIC STRENGTH:** Exceeds 1/32 air arc gap approx 2,500 Vdc



DK1



DK2

All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

# VALVE ACCESSORIES

## MANIFOLD MOUNTING KIT

Designed for direct or remote mounting to a 2" pipe stand, can be utilized with any NOSHOK 2, 3 or 5 valve manifold by mounting a Steel or Stainless Steel bracket directly to the manifold body.

## Δ PRESSURE TO STATIC ADAPTOR

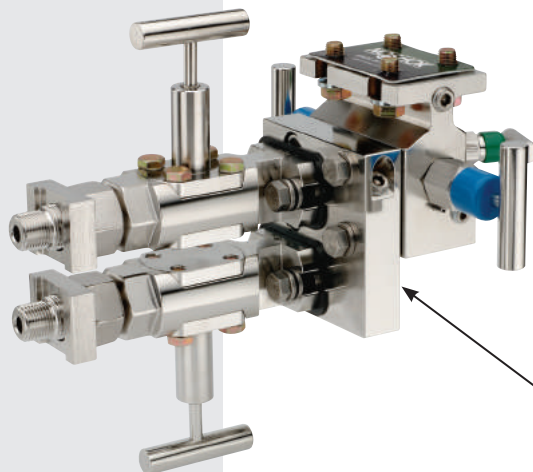
Used in direct mount systems for gas pipelines, the pressure to static adaptor plate is used to mount a differential pressure transmitter and a static pressure transmitter to a five valve flange-flange manifold. They are available in zinc-nickel plated Steel or electropolished Stainless Steel. An integral mini style bleed valve is incorporated in the plate and a 1/4" NPT vent plug is provided. The mini style bleed valve is equipped with a FKM o-ring and PTFE 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 10,000 psi for Steel & Stainless Steel models.

## Δ PRESSURE TO Δ PRESSURE ADAPTORS

NOSHOK differential pressure to differential pressure adaptors allow two differential pressure transmitters to be mounted on a single set of orifice taps. This configuration is ideal for applications such as bi-directional flow, and custody transfer where only a single set of orifice taps is available. Multiple adaptors are available for various application configurations and space restrictions.

## VERTICAL TO HORIZONTAL ADAPTOR KIT

The Vertical to Horizontal Adaptor Kit converts vertically mounted Stabilized Connectors to a horizontal position for mounting additional valves and instrumentation.



Vertical to Horizontal Adaptor Kit



DP1-DP1-CS / DP1-DP1-SS

3/8" bore, 23" length



DP2-DP2-CS / DP2-DP2-SS

3/8" bore, 9" length



All NOSHOK 316SS valve products meet the requirements of NACE MR0175/ISO 15156-3.

All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.



## NOSHOK FORCE PRODUCTS

NOSHOK offers mechanical and electronic force measurement instrumentation, including hydraulic load cells, load pins, tension and compression force transducers, S-type force transducers, custom force sensors, and chain hoist and weld force test kits.

Applications for NOSHOK Force Measurement Solutions include industrial weighing, spot welding, printing equipment, control systems, robotic equipment, extruders, vices, weight and level measurement for tanks, bunkers and silos, measurement of bearing and support forces for bridges (supporting framework and lifting gear), rock thrust measurement in fore poles in mines and tunnel construction, shear force measurement and many more.

Contact your NOSHOK Regional Sales Manager or the NOSHOK Customer Support Team for more information.



## SPECIFICATIONS

**MAXIMUM INLET PRESSURE:** 150 psig (10.3 bar)  
**CAPACITY (FLOW):** 20 scfm @ 100 psig (34 m<sup>3</sup>/hr @ 7 bar)  
**RATED EFFICIENCY:** 99.9% @ 0.1 micron  
**CONNECTIONS (INLET/OUTLET):** 1/2" NPT, female  
**HOUSING MATERIAL:** Cast aluminum  
**SUMP MATERIAL:** Polycarbonate  
**SUMP DRAIN:** U201/U203: auto drain, U200/U202: manual drain  
**CARTRIDGE ELEMENTS:**  
 U202/U203: Dual cartridge, 1st stage scrubber, 2nd stage polisher  
 U3002 scrubber (Type 750), U3003 indicating polisher (Type 750)  
 U200/U201: Single cartridge coalescing scrubber, U3002 scrubber (Type 750)



## U200/U201/U202/U203 SERIES

**KING ULTRA-C 20 SCFM FILTERS** are demanding ultra clean compressed air filters for packaging, paint/coating systems, machine tools, and pneumatic instrumentation. These high efficiency two-stage filters use a self-draining coalescing element to remove large amounts of solid and liquid contaminants from the airline.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM INLET PRESSURE:** 150 psig (10.3 bar)  
**CAPACITY (FLOW):** 20 scfm @ 100 psig (34 m<sup>3</sup>/hr @ 7 bar)  
**RATED EFFICIENCY:** 99.98% @ 0.1 micron  
**REGULATED PRESSURE RANGE:** 0–100 psig (0–6.9 bar)  
**DIAL PRESSURE RANGE:** 0–160 psig (0–11.0 bar)  
**CONNECTIONS (INLET/OUTLET):** 1/2" NPT, female  
**TEMPERATURE LIMIT:** 125°F/52°C  
**MATERIALS OF CONSTRUCTION:**  
 Housing: Cast aluminum  
 Upper bowl: Polycarbonate  
 Sump: Polycarbonate  
 Regulator: Cast zinc  
**SUMP DRAIN:** U205: Auto drain, U206: Manual drain  
**CARTRIDGE ELEMENTS:**  
 Dual cartridge, 1st stage scrubber, 2nd stage polisher  
 U3002 scrubber (Type 750)  
 U3003 indicating polisher (Type 750)



## U205/U206 SERIES

**KING ULTRA-C AIR CONTROL STATION 20 SCFM FILTERS** provides clean, dry, oil-free compressed air and include a color change cartridge life indicator. Includes filter, regulator, and auto drain trap.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM INLET PRESSURE:** 150 psig  
**RATED FLOW:** 20 scfm @ 100 psig  
**CONNECTION:** 1/2" NPT  
**FILTER TYPE:** Dual cartridge coalescing elements  
**HOUSING:** Bronze  
**EFFICIENCY:** 99.98% of 0.1 micron or greater



## 9313 SERIES

**KING AIR-GUARD BRONZE 20 SCFM FILTERS** provide clean, dry and oil-free compressed air with long life cartridges that reduce filter maintenance. Their rugged bronze construction is ideal for marine applications including tank level, draft monitoring and vessel management. An air-conserving automatic sump discharges only when needed.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psig  
**RATED FLOW:** 20 scfm @ 100 psig  
**CONNECTION:** 1/2" NPT  
**FILTER TYPE:** Dual cartridge coalescing elements  
**HOUSING:** Bronze  
**EFFICIENCY:** 99.98% of 0.1 micron or greater



## 72/74 SERIES

**KING AIR-GUARD BRONZE 20 SCFM AIR CONTROL STATION** is a Rugged bronze filter that provides clean, dry, oil-free compressed air for marine applications including tank level, draft monitoring and vessel management. Features include dual cartridges to ensure long service life and an air-conserving automatic drain sump.

**WARRANTY:** One Year<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 100 scfm @ 100 psig; 2832 l/min @ 7 Kg/cm<sup>2</sup>; 170 m<sup>3</sup>/hr @ 7 bar  
**EFFICIENCY:** 99.998% of 0.1 micron  
**CONNECTION:** 1" NPT  
**FILTER TYPE:** Dual cartridge coalescing elements  
**HOUSING:** Aluminum



## 2260 SERIES

### KING AIR-GUARD DUAL STAGE 100 SCFM FILTERS

have a 100 scfm flow rating which offers high efficiency coalescing action to deliver clean, dry, and oil-free air. These filters are ideal for installation in main distribution air piping to remove residual oil, condensed water, and abrasive particulates. Their dual cartridge design provides long service life, and they are supplied with a KING Type 750/800 element set that includes coalescing scrubber and adsorptive polisher cartridges. The KING Type 300/300 element set is optional.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 80 scfm @ 100 psig; 2265 l/min @ 7 Kg/cm<sup>2</sup>; 136 m<sup>3</sup>/hr @ 7 bar  
**EFFICIENCY:** 99.98% of 0.1 micron  
**CONNECTION:** 1" NPT  
**FILTER TYPE:** Dual cartridge coalescing elements  
**HOUSING:** Aluminum  
**SUMP:** Aluminum



## 2479 SERIES

**KING AIR-GUARD DUAL STAGE 80 SCFM FILTERS** are large capacity filters designed to remove particulate dust, water/oil aerosols, and condensation often present in main compressed air supply lines. These filters are supplied with a KING Type 750/800 element set that includes coalescing scrubber and adsorptive polisher cartridges. The KING Type 300/300 element set is optional.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 60 scfm @ 100 psig; 1699 l/min @ 7 Kg/cm<sup>2</sup>; 102 m<sup>3</sup>/hr @ 7 bar  
**CONNECTION:** 1" NPT  
**FILTER TYPE:** Dual cartridge coalescing elements  
**HOUSING:** Aluminum  
**SUMP:** Aluminum  
**EFFICIENCY:** 99.998% of 0.1 micron



## 9460 SERIES

**KING AIR-GUARD DUAL STAGE 60 SCFM FILTERS** are designed for main supply line applications where pipe scale, residual oil aerosols, and condensation can degrade air quality. Their dual cartridge design provides long service life and they are supplied with KING Type 750/800 element set that includes coalescing scrubber and adsorptive polisher cartridges. The KING Type 300/300 element set is optional.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 100 scfm @ 100 psig; 2832 l/min @ 7 Kg/cm<sup>2</sup>; 170 m<sup>3</sup>/hr @ 7 bar  
**CONNECTION:** 1" NPT  
**FILTER TYPE:** Single adsorptive element  
**HOUSING:** Aluminum  
**EFFICIENCY:** 98% of 0.1 micron



## 2160 SERIES

**KING 100 SCFM AEROSOL FILTERS** are designed for final clean-up of compressed air. These filters utilize media with a natural affinity for fine droplets (aerosols) of oils and water. An adsorptive element removes even the smallest sub-micron particles and contaminants to deliver clean, dry, and oil-free air. Recommended for end use applications having higher air consumption such as blow molding, packaging, and paint/coatings systems. Aerosol filter should be used in conjunction with an upstream coalescing compressed air filter such as the KING Air-Guard 2260.

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 25 psi  
**RATED FLOW:** 2 scfm @ 100 psig; 566 l/min @ 7 Kg/cm<sup>2</sup>; 3 m<sup>3</sup>/hr @ 7 bar  
**CONNECTION:** 1/4" NPT  
**FILTER TYPE:** Single adsorptive element  
**HOUSING:** Steel/Zinc  
**EFFICIENCY:** 97% of 0.3 micron



## 2201 SERIES

**KING AEROSOL STRAINERS (DISPOSABLE)** are designed for low-volume point of use. This disposable strainer can remove even sub-micron sized contaminants often present in compressed air. Ideal for low volume discharge such as air guns, air cylinders or use it as disposable inline protection. Aerosol strainer should be used in conjunction with upstream coalescing compressed air filters.

**WARRANTY:** One Year<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.



## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 12 scfm @ 100 psig; 340 l/min @ 7 Kg/cm<sup>2</sup>; 20 m<sup>3</sup>/hr @ 7 bar  
**CONNECTION:** 1/2" NPT  
**FILTER TYPE:** Coalescing element, 2nd stage desiccant bed  
**HOUSING MATERIAL:** Aluminum/Acrylic  
**EFFICIENCY:** 99.9% @ 0.1 micron, vapor content ≤ 0.5 ppm



## 4532 SERIES

**KING VISI-GUARD FILTER/DRYER 12 SCFM, POLYCARBONATE SUMP** are a combination coalescing filter and desiccant dryer that provides a complete solution for critical end use applications. These filter/dryers incorporate a first stage submicron filter element and second stage vapor removal (oil or water) for applications including product packaging and precision laboratory equipment and instrumentation. Desiccant selection determines application: AC-1 reduces oil vapor to ≤ 0.5 ppm (w/w); water vapor reducing desiccants allow for dew points as low as -100°F/-73°C (MS-1) or -50°F/-45°C (SG-1)..

**WARRANTY:** One Year<sup>†</sup>

## SPECIFICATIONS

**MAXIMUM PRESSURE:** 150 psi  
**RATED FLOW:** 12 scfm @ 100 psig; 340 l/min @ 7 Kg/cm<sup>2</sup>; 20 m<sup>3</sup>/hr @ 7 bar  
**CONNECTION:** 1/2" NPT  
**EFFICIENCY:**  
 Water vapor (-50 °F/-45 °C dew point) with SG-1 desiccant,  
 Water vapor (-100 °F/-73 °C dew point) with MS-1 desiccant,  
 Oil vapor (≤ 0.5 ppm w/w) with AC-1 desiccant  
**FILTER TYPE:** Desiccant bed  
**HOUSING:** Aluminum/Acrylic



## 1716 SERIES

**KING METL-GUARD/VISI-GUARD DESICCANT DRYER 12 SCFM, WITHOUT SUMP** are compressed air dryers are intended for instrumentation, laboratory applications and other low-flow uses that require extremely dry or oil-free air. These desiccant driers remove contaminants in vapor form, which cannot be removed by filtration. The type of application should be specified as to whether dew point reduction (water vapor) or the removal of oil vapor is required.

**WARRANTY:** One Year<sup>†</sup>

<sup>†</sup>For further warranty information please consult your specific product catalogs.

## CARTRIDGE SETS AND RATINGS







KING compressed air filter cartridges are available in different grades. Recommended options are listed below. Our Ultra-C and Type 750/800 cartridges meet the particulate requirements of ISO 8573-1\* Quality Class 1 specification for compressed air. Type 300/300 cartridge sets provide lower pressure drop in applications and meet ISO 8573-1 Quality Class 3 specification for particulate removal.

KING filter cartridge elements provide equal efficiency regardless of flow rate. Filtering efficiency does not diminish during the life of the cartridges so you can be assured of consistent performance and air quality.





Without question, most compressed air systems contain solid and liquid contaminants that affect performance and increase wear on equipment. Precision pneumatic instrumentation including KING-GAGE tank level gauging systems require clean, dry, and oil-free compressed air for trouble free operation.

\*ISO 8573-1:2010 specifies purity classes of compressed air with respect to particles, water and oil independent of the location in the compressed air system at which the air is specified or measured. ISO Class noted is for particulate removal only.





### 20 scfm cartridge sets

0.1 micron U3002, U3003	99.998%		Ultra-C scrubber		Ultra-C polisher
0.1 micron A22-11-6-5 cartridge set	99.998%		Type 750 scrubber		Type 800 polisher
2.0 micron A22-11-1-1 cartridge set	98.0%		Type 300 scrubber		Type 300 polisher





### 60 scfm cartridge sets

0.1 micron 22-31-6-5 cartridge set	99.998%		Type 750 scrubber		Type 800 polisher
2.0 micron 22-31-1-1 cartridge set	98.0%		Type 300 scrubber		Type 300 polisher





### 80 scfm cartridge sets

0.1 micron 22-41-6-5 cartridge set	99.998%		Type 750 scrubber		Type 800 polisher
2.0 micron 22-41-1-1 cartridge set	98.0%		Type 300 scrubber		Type 300 polisher

### 100 scfm cartridge sets

0.1 micron A22-51-6-5 cartridge set	99.998%		Type 750 scrubber		Type 800 polisher
2.0 micron A22-51-1-1 cartridge set	98.0%		Type 300 scrubber		Type 300 polisher

### 12 scfm cartridge & desiccant

0.1 micron 9318-80	99.9%		Type 750 scrubber	See desiccant selections below:	
1730	SG-1 desiccant		Water vapor (-50° F / -45° C dew point)	Service Temp. 100° F / 38° C	
1730-5	MS-1 desiccant		Water vapor (-100° F / -73° C dew point)	Service Temp. 200° F / 93° C	
1730-4	AC-1 desiccant		Oil vapor (≤ 0.5 ppm w/w)	Service Temp. 120° F / 49° C	

# CANADIAN REGISTRATION NUMBERS

CRN documents are available at [www.noshok.com](http://www.noshok.com).

Category:	C. Valves	F. Measuring Devices
Type of Fitting:	All line valves	Including pressure gauges, level gauges, sight glasses, level or pressure transmitters

Alberta	0C15217.52	0F15217.52
British Columbia	Exempt	0F15217.51
Manitoba	0C15217.54	0F15217.54
New Brunswick	0C15217.57	0F15217.57
Newfoundland & Labrador	0C15217.50	0F15217.50
Northwest Territories	0C15217.5T	0F15217.5T
Nova Scotia	0C15217.58	0F15217.58
Nunavut	0C15217.5N	0F15217.5N
Ontario	0C15217.5	0F15217.5
Prince Edward Island	0C15217.59	0F15217.59
Quebec	CSA-0C15217.56	CSA-0F15217.56
Saskatchewan	CSA-0C15217.56	CSA-0F15217.56
Yukon Territory	0C15217.5Y	0F15217.5Y



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VISIT [WWW.NOSHOK.COM](http://WWW.NOSHOK.COM)

# Quality Policy

NOSHOK is committed to providing a high degree of value and continually improving processes to enhance customer satisfaction by focusing on customer requirements for the design, manufacture and distribution of pressure, level, temperature, and force measurement instrumentation, needle, manifold valves, custom manifold systems for industrial applications and compressed air filters.

All from world class technology.

Combined with real-world stamina.

The highest value with the industry's best warranty.

And all from a company with a 50+ year record of customer satisfaction.

All from your Single Source Instrumentation Company.



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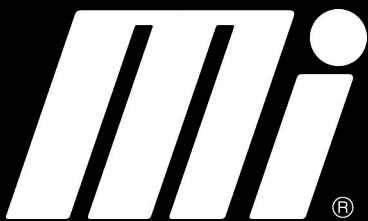
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Looking for specialized solutions for fluid power operations? Talk to the experts at Mi Fluid Power Solutions for expertise related to hydraulic power units, gearbox, and cylinder repair.

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**MORE CHOICES. MORE INVENTORY. MORE EXPERTISE.**