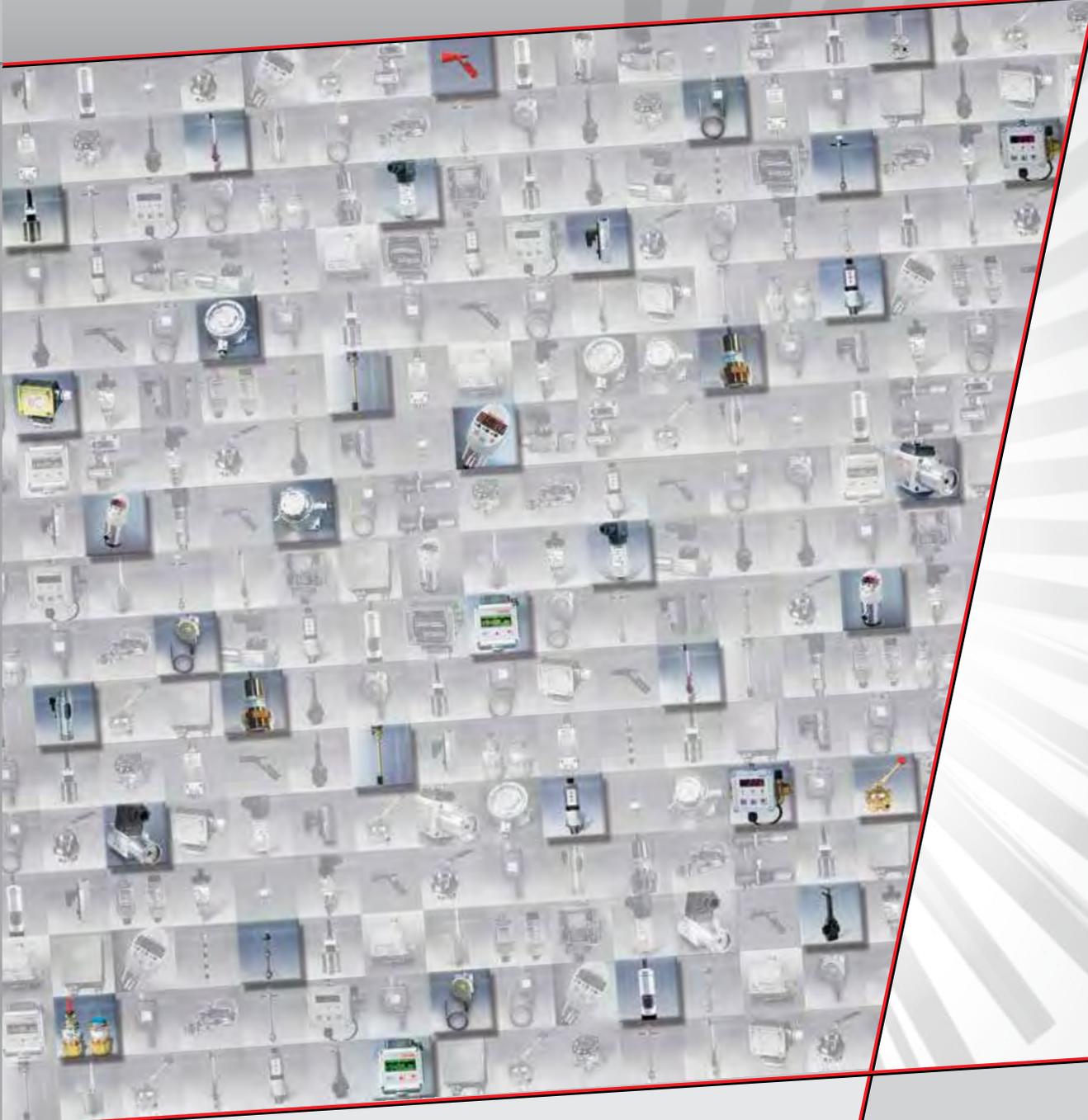


Product Overview

Product Overview



Control
every move

Engineered to excel, our products
measure, monitor and control:

- ▶ Pressure
- ▶ Temperature
- ▶ Level
- ▶ Flow

Barksdale®
CONTROL PRODUCTS
CRANE Barksdale, Inc./Barksdale GmbH
A Subsidiary of Crane Co.



Controls

Barksdale –

The business of critical controls



Market-focused. Technology-driven. Customer-intimate. These fundamental values are what guide the Barksdale team in developing advanced solutions for the mechanical and electronic control of liquid and gas media. As a premier provider of quality control products, the Barksdale name is synonymous with providing sophisticated system solutions, exceptional support service and ongoing product innovations to clients in numerous industries.

Our products cover a full range of mechanical and electronic control products – from pressure, temperature, level and flow switches, to transducers, valves and solid state devices. Barksdale consistently provides state-of-the-art solutions through development of products with the highest standard of reliability for the most challenging control tasks in diverse manufacturing environments.

All of our facilities are certified to ISO 9001:2008 to assure the highest quality for incoming materials through assembly and test.

Our experts have developed innovative solutions for customers in the fluid power, transportation and specialty industrial markets, focusing on applications that include:

- ▶ Mobile and stationary hydraulics
- ▶ Renewable energy
- ▶ Oil and gas exploration
- ▶ Marine and shipbuilding
- ▶ Transportation



Barksdale solutions are found in chemical processing plants, paper mills, steel mills, pool and spa equipment, medical equipment, emergency rescue equipment, amusement parks and much, much more.

We offer a wide range of modifications and options on most of our products, allowing you to customize our standard products to meet your specific application needs. Using existing technologies or by developing new ones, our engineers go the extra mile to ensure total customer satisfaction.

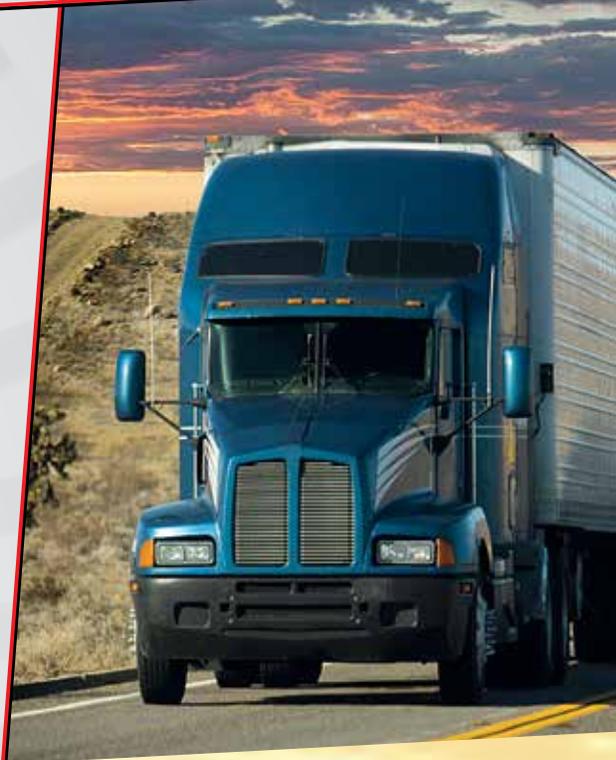
Barksdale invented the Shear-Seal® principle, and since 1949 has used the technology in our valves with great success in demanding applications such as work holding, oil exploration and processing, and defence. Utilization of Shear-Seal® technology in air suspension height control valve applications yielded breakthrough improvements in durability and performance. With Shear-Seal® products, precision engineering and manufacturing combine for unmatched performance and reliability.

We are proud to be a part of the Crane Co. family, one of the world's largest manufacturer of highly engineered products. With over 160-year history and three billion in sales, Crane's diverse business units work together in developing synergies to grow our business and benefit our customers.

Barksdale has the advantage of over 65 years of experience, production centers in America, Europe and China, sale centers in China and India and a global network of technology centers and support representatives. With all of this as a foundation, it's easy to see why we stand by our motto: "Control every move."



Barksdale offers the most widely recognized approvals on select models.



Pressure Transmitter

Pressure Transmitter and Switches

- ▶ Ranges: 0 – 72,000 psi (0...200 mbar up to 6,000 bar)
- ▶ Analog output: 4 – 20 mA/0 – 10 VDC
- ▶ Single switch point (adjustable)
- ▶ Front flush diaphragm and flange available
- ▶ Compact, accurate, long life
- ▶ UL and CSA listed models; Class I, Div 1 models available
- ▶ PED 97/23/CE models available
- ▶ ATEX: Ex d and Ex i models available
- ▶ TR-TS
- ▶ GL approved models available

Industries & Applications

Construction machines, machine tools and systems, hydraulics and pneumatics, mobile hydraulics, oil and gas applications



Electronic Pressure

Electronic Pressure Switches

- ▶ Ranges: 0 – 1.5 psi up to 0 – 9,000 psi
(0...200 mbar up to 0...600 bar)
- ▶ 1, 2 or 4 switch points (adjustable)
- ▶ Multi function digital rotatable display
- ▶ Records and stores peak pressure
- ▶ State-of-the-art microprocessor controlled
- ▶ Keypad with easy response pushbuttons
- ▶ Easily programmable
- ▶ Self diagnostics
- ▶ Option: Analog output 4 – 20 mA/0 – 10 VDC
- ▶ UL and CSA listed models
- ▶ PED 97/23/CE models available
- ▶ GL models available
- ▶ TR-TS
- ▶ IP65 /IP67

Industries & Applications

Automotive industry, machine tools and systems, hydraulic and pneumatic, test bench, steel industry, filter monitoring, pressure and level measurement of fluids, shipbuilding



Pressure Pressure Switches

Metal Diaphragm – Pressure and Differential Pressure Switches

- ▶ Adjustable Ranges: 30 Hg vac – 150 psi (-1...10.3 bar)
- ▶ 1, 2 or 3 switch outputs
- ▶ UL and CSA listed models; Class I, Div 1 models available
- ▶ PED 97/23/CE models available
- ▶ ATEX: Ex d and Ex i
- ▶ TR-TS, Shipbuilding approvals
- ▶ SIL2/3 redundant
- ▶ Optional hermetically sealed, oxygen cleaned
- ▶ Low to high contact loads
- ▶ All welded stainless steel pressure capsule
- ▶ Rugged design

Industries & Applications

Chemical process industry, nuclear power stations, medical and autoclave systems, filter monitoring, cooling systems



Bourdon Tube Pressure Switches

- ▶ Adjustable Ranges: 50 – 18,000 psi (up to 1250 bar)
- ▶ UL and CSA listed models; Class I, Div 1 models available
- ▶ PED 97/23/CE models available
- ▶ ATEX: Ex d and Ex i
- ▶ TR-TS, Shipbuilding approvals
- ▶ SIL2
- ▶ Optional hermetically sealed
- ▶ Low to high contact loads
- ▶ Stainless steel sensor
- ▶ Rugged design

Industries & Applications

Process industry, hydrocarbon processing industry, oil and gas drilling, nuclear power plant, power stations, hydraulic systems

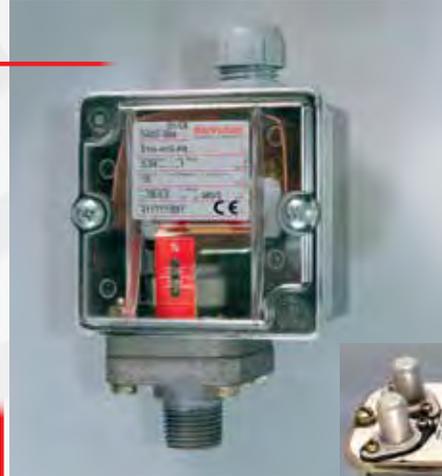


Diaphragm-sealed Piston Pressure Switches

- ▶ Largest industrial product breadth
- ▶ Adjustable ranges: -30 Hg Vac – 1500 psi (-1...110 bar)
- ▶ Piston up to 13,000 psi (900 bar)
- ▶ UL and CSA listed models; Class I, Div 1 models available
- ▶ PED 97/23/CE models available
- ▶ ATEX: Ex d and Ex i
- ▶ TR-TS
- ▶ Low to high contact loads
- ▶ Rugged and economical

Industries & Applications

Commercial to heavy industrial systems,
mobile equipment, machine tools, medical
and water treatment systems, power plants



Compact Pressure Switches

- ▶ Adjustable Range: 1 – 10,000 psi (1...689 bar)
Vacuum: -14.5 – 0 psi (-1...0 bar)
- ▶ High proof pressure: up to 15,000 psi (1035 bar)
- ▶ Adjustable or fixed set setpoints
- ▶ Nema 1, 4, 4X, 7, 9
- ▶ UL and CSA listed models; Class I, Div 1 models available
- ▶ PED 97/23/CE models available
- ▶ ATEX: Ex d and Ex i
- ▶ TR-TS
- ▶ SIL2
- ▶ Compact, rugged, economical

Industries & Applications

Process industry, hydrocarbon processing industry,
oil and gas drilling, nuclear power plant,
power stations, hydraulic systems
general industrial



Valves

Shear-Seal® Actuated Heavy Duty Valve

- ▶ Integrated actuator
- ▶ 1/4" to 1-1/2" NPT or SAE porting
- ▶ 2-Position and 3-Position
- ▶ Corrosion resistant materials
- ▶ Pressures to 6,000 psi (400 bar)
- ▶ Automated valve shifting
- ▶ Position indication option available



Industries & Applications

Remote operated circuits, offshore systems, shipboard controls

Shear-Seal® Directional Control Valve

- ▶ 1/4" to 1-1/2" NPT or SAE porting
- ▶ Selector, open center, shut-off manipulator
- ▶ Pressures to 6,000 psi (400 bar)
- ▶ High velocity flow
- ▶ Low pressure drop
- ▶ Tolerates contaminants

Industries & Applications

High-pressure hydraulic controls, steel mills



Pressure Regulator

- ▶ Shear-Seal® technology
- ▶ 1/2" to 1-1/2" NPT or SAE porting
- ▶ Code 62 flange options available
- ▶ Self adjusting
- ▶ High flow capacity
- ▶ Tolerates contaminants
- ▶ Manual set or fail-safe motor control
- ▶ High repeatability

Industries & Applications

Land-based and offshore oil drilling controls, high-pressure hydraulic controls, pressure sensitive applications



Shear-Seal® Microtorque® Control Valve

- ▶ 1/4" NPT or SAE Porting
- ▶ DO3 manifold mounting
- ▶ Pressures to 10,000 psi (700 bar)
- ▶ Multiple flow patterns
- ▶ Low handle load
- ▶ Spring return

Industries & Applications

Construction machines, machine tools and systems, hydraulics and pneumatics, mobile hydraulics



Hydraulic Relief Valve

- ▶ Settable pressures up to 5,500 psi (380 bar)
- ▶ 3/4" NPT ports
- ▶ High flow capacity
- ▶ Anti-chatter
- ▶ Corrosion resistant materials

Industries & Applications

Oil and gas safety, pressure protection applications



Shear-Seal® OEM Valve

- ▶ Shear-Seal® technology
- ▶ 1/4" to 1-1/2" NPT or SAE porting
- ▶ Selector, bypass, open center, manipulator
- ▶ Pressures to 3,000 psi (200 bar)
- ▶ High velocity flow
- ▶ Tolerates contaminants
- ▶ Spring returnn

Industries & Applications

High-pressure hydraulic controls, light industrial applications



Temperature

Temperature

Mechanical Temperature Switches

- ▶ Ranges: -50 °F – +600 °F (-45 °C...+316 °C)
- ▶ For fluids and gases
- ▶ Ambient temperature compensation
- ▶ For low to high contact loads
- ▶ Optional Ex d and Ex ia versions
- ▶ Rugged and very accurate
- ▶ Max. length of capillary tube: 7.5 m
- ▶ Marine approvals, SIL2, UL and CSA models available

Industries & Applications

Chemical process industry, shipbuilding, power stations, heat exchangers, heat tracing



Electronic Temperature Sensors and Switches with and without display

- ▶ Ranges: -22 °F – + 302 °F (-30 °C...+150 °C)
- ▶ With integrated PT100 or external sensor
- ▶ 1, 2 and 4 set points, free adjustable
- ▶ Compact and microprocessor versions
- ▶ Peak value memory
- ▶ Long life, self-diagnostic
- ▶ Option: analog output 4 – 20 mA/0 – 10 V
- ▶ Multi function digital rotatable display

Industries & Applications

Hydraulic and pneumatic, machine tools and systems



Level control

Mechanical

Single Level Switches

- ▶ SPST or SPDT reed contacts
- ▶ All metal and non-metal versions
- ▶ Vertical or horizontal mounting
- ▶ Protection class IP54/IP68
- ▶ Ex i versions cRUus
- ▶ Marine approvals, (bilge guard)

Industries & Applications

Everywhere in fluid storage, handling and controlling, ship bilge



Multi Level Switches

- ▶ Up to 6 levels SPST or SPDT reed contacts
- ▶ Metal and non-metal versions
- ▶ Shipbuilding and Ex i approvals, cRUus
- ▶ Protection class IP54/IP68
- ▶ Max. length from mating surface: 3000 mm
- ▶ Optional with temperature sensor (PT100) or temperature switch

Industries & Applications

Pump controller, level monitoring, machine industry, shipbuilding, mobile and stationary applications

Bypass Level Indicators

- ▶ Continuous level indication, purely mechanical, no power needed
- ▶ Temperatures up to 608 °F (320 °C)
- ▶ Pressure up to 3,625 psi (250 bar)
- ▶ Material: stainless steel according to PED 97/23/EG
- ▶ Mounting tankside, bypass or tanktop
- ▶ Optional transmitter 4–20 mA
- ▶ Optional level trip points
- ▶ Ex c, Ex i and shipbuilding approvals
- ▶ Interface optional
- ▶ Bistable reed switch usable as Limit
- ▶ Max. Measuring length: 5.700 mm (one piece)

Industries & Applications

Replaces sightglasses,
level monitoring where legibility
up to 100 ft (33m) is needed, offshore



Level Electronic control



Electronic Level Probes

- ▶ Continuous level measurement
- ▶ Probe material CuNiFe alloy or stainless steel
- ▶ Measuring range from 0–0.6 up to 0–200 m WC
- ▶ Signal output 4–20 mA/0–10 V
- ▶ Ex i and shipbuilding approvals
- ▶ Different materials and mounting alternatives

Industries & Applications

Multiple level control for shipbuilding, ground water level measurement, level indication in wells and open tanks, even with low filling levels, waste-water purification, chemical plants, pharmaceutical industry, balast tank control, offshore.



Tank Level Gauging

- ▶ Semi-continuous level monitoring
- ▶ Incremental accuracy 4–16 mm execution
- ▶ All metal versions
- ▶ Mounting: vertical or custom made
- ▶ Integrated transmitter 4–20 mA
- ▶ Optional: Interface level measurement
- ▶ Ex i and shipbuilding approvals
- ▶ Analog output , 4–20 mA or 0–10 V
- ▶ Max. length from mating surface: 6000 mm

Industries & Applications

Utilities, industrial, barges, shipbuilding, offshore oil and gas.

Flow

Flow Switches

- ▶ Pipe sizes G1/4" – G1 1/2"
- ▶ Stainless steel 1.4571 or nickel plated brass
- ▶ Displacer-in-tube design
- ▶ Calibrated scale with optional viscosity compensation up to 600cSt available
- ▶ Optional visual indication
- ▶ NO/NC, SPST or SPDT output
- ▶ Ex ia version
- ▶ Marine approvals

Industries & Applications

Flow control in liquids and gases, lubrication and cooling system protection



Electronic Flow Transmitters with Ultrasonic Sensor

- ▶ Ranges: 0 – 10 l/min up to 0 – 1000 l/min
- ▶ 2 set points and analog output
- ▶ 7-segment LED display
- ▶ Microprocessor-controlled, self monitoring with error display
- ▶ All parameters are configured by keypad
- ▶ Tamper proof, keypad lock
- ▶ Rugged construction, vibration- and shock-proof
- ▶ Long term stability

Industries & Applications

Utilities, industrial, barges, shipbuilding, offshore oil and gas.

Dynalco

Tachometers, Speed Switches & Magnetic Pickups

DYNALCO® Now part of Barksdale's family of products.

Dynalco products provides rugged and dependable instrumentation for monitoring and controlling rotating equipment in the oil and gas, marine, power generation and processing industries. Products include speed sensors, tachometers, process monitors and speed switches for hazardous areas.

Dynalco products come in a variety of configurations to meet your application requirements. Tested over time, these highly reliable and rugged products are available with a variety of agency approvals.

SST7000 Series Digital Speed Switch/Transmitter

- ▶ DIN rail mountable
- ▶ 4-20mA, 0-5VDC or 0-10VDC output options
- ▶ PC programmable for ease of commission
- ▶ Test/verify circuit allows for over-speed testing
- ▶ Available with up to 4 relay outputs for actuation of multiple devices
- ▶ Accepts both 2 wire and 3 wire sensors
- ▶ Available with input isolation transformer



SST2000 Series Speed Switch/Transmitter



- ▶ Rugged, reliable, and highly accurate
- ▶ Multiple product configurations to meet application needs
- ▶ Transmitter and isolated transmitter models available
- ▶ Up to 4 field configurable relays models available with transmitter options
- ▶ Over/under speed protection
- ▶ CSA Class 1, Div 2, CE and ABS certified
- ▶ 4-20mA, 0-5V, or 0-10V; field selectable options

Temperature Meters & Pyrometers

- ▶ UM 200 & UM 600 - 2 & 6 Channel with differentials, accepts J & K thermocouples, relay output
- ▶ Displays absolute and differential readings
- ▶ Data logging alarm history with date/time stamp
- ▶ TMP-100 - Up to 24 Channels of RTD's or thermocouples, battery powered
- ▶ CSA Class 1, Div 1 and Div 2 available
- ▶ Modbus communication available



Tachometers & General Purpose Meters

- ▶ SPD Series – The “Industry Standard” self-powered intrinsically safe tachometer
- ▶ SPH Series – Steam turbine tachometer with “Peak Speed” recording
- ▶ LST Series – AC or DC powered
- ▶ DST Series – Direction sensing tachometer, a favorite of the marine industry
- ▶ MTH Series – Tachometer, hour-meter, speed switch
- ▶ LMD Series – 4-20mA Loop powered meter
- ▶ DPM Series – Universal input powered meter
- ▶ CSA Class 1, Div. 1. and Div. 2; and ABS approvals available



Scanners / Monitors / Data loggers

- ▶ 2, 6 or 24 channel models
- ▶ Large user definable alpha-numeric display for messages you can understand
- ▶ Universal inputs – 0-1VDC, 0-5VDC, 0-10VDC, 4-20mA, RTD's & thermocouples
- ▶ 2 set-points per channel
- ▶ Up to 4 relay outputs
- ▶ Modbus communication
- ▶ CSA Class 1, Div. 2 approved

Magnetic Pickups

- ▶ Rugged fully potted body with a 316 stainless steel housing
- ▶ Wide variety of passive (non-powered) and active (powered) models available
- ▶ Variable Reluctance (VR) and Hall-Effect (HE) technologies available
- ▶ Special bi-directional versions available
- ▶ Standard, high and ultra-high sensitivity
- ▶ CSA Class 1, Div. 1 and Div. 2 and ATEX approvals
- ▶ Industry leading life-time warranty on passive pickups
- ▶ Temperature rating from -65 °F to +225 °F





Barksdale

Engineering the future

Today's market demands suppliers that are flexible and dynamic – for innovative new products, efficient management and comprehensive customer service.

Barksdale gives you the right answers.

We offer flexible and effective support services. Our specialists understand evolving customer requirements and emerging technologies. This level of know-how enables Barksdale to look beyond traditional answers to improved processes and to meet stringent performance expectations. We do this no matter where you are, around the world. Our global network includes manufacturing facilities in Germany and the USA, backed by technology centers and support representatives in every major country.

Finding the right solution is always a result of good communication. Based on a thorough understanding of your situation and requirements, Barksdale's experts work towards the right solution – and we find them.

Your advantage is our history of delivering intelligent and sustainable control products. When you work with our highly qualified specialists – all with wide-ranging knowledge in the fields of mechanical and electronic engineering – you become part of an interdisciplinary team that can develop concepts and the corresponding solutions, which usually surpass conventional engineering performance. We work with you until we are certain that our products satisfy all your requirements – excellent quality, high performance, on-time delivery and a fair price.

Our goal is to make today's industrial measurement and control devices and processes even more accurate and reliable.

We put an extremely high priority on maintaining the highest quality and reliability of our products while continually working to improve product performance. R&D at Barksdale is not simply a response to market demands, but an integral part of our vision.

With extensive application experience in our targeted industries, we have the know-how to help customers choose the right product for their specific requirements. This helps them achieve significant and lasting improvements in efficiency, productivity, and profitability.

We are ready to work with you to provide a solution that drives results and gives you a competitive advantage in the marketplace. Call us today at 1-800-835-1060, ask for our Product Manager - or e-mail us at sales@barksdale.com.



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Specifications are subject to changes without notice.

Barksdale, Inc. • Los Angeles, CA 90058 • Specifications are subject to changes without notice • Bulletin #M0021-F • 11/15 • ©2015 • Printed in the U.S.A.

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