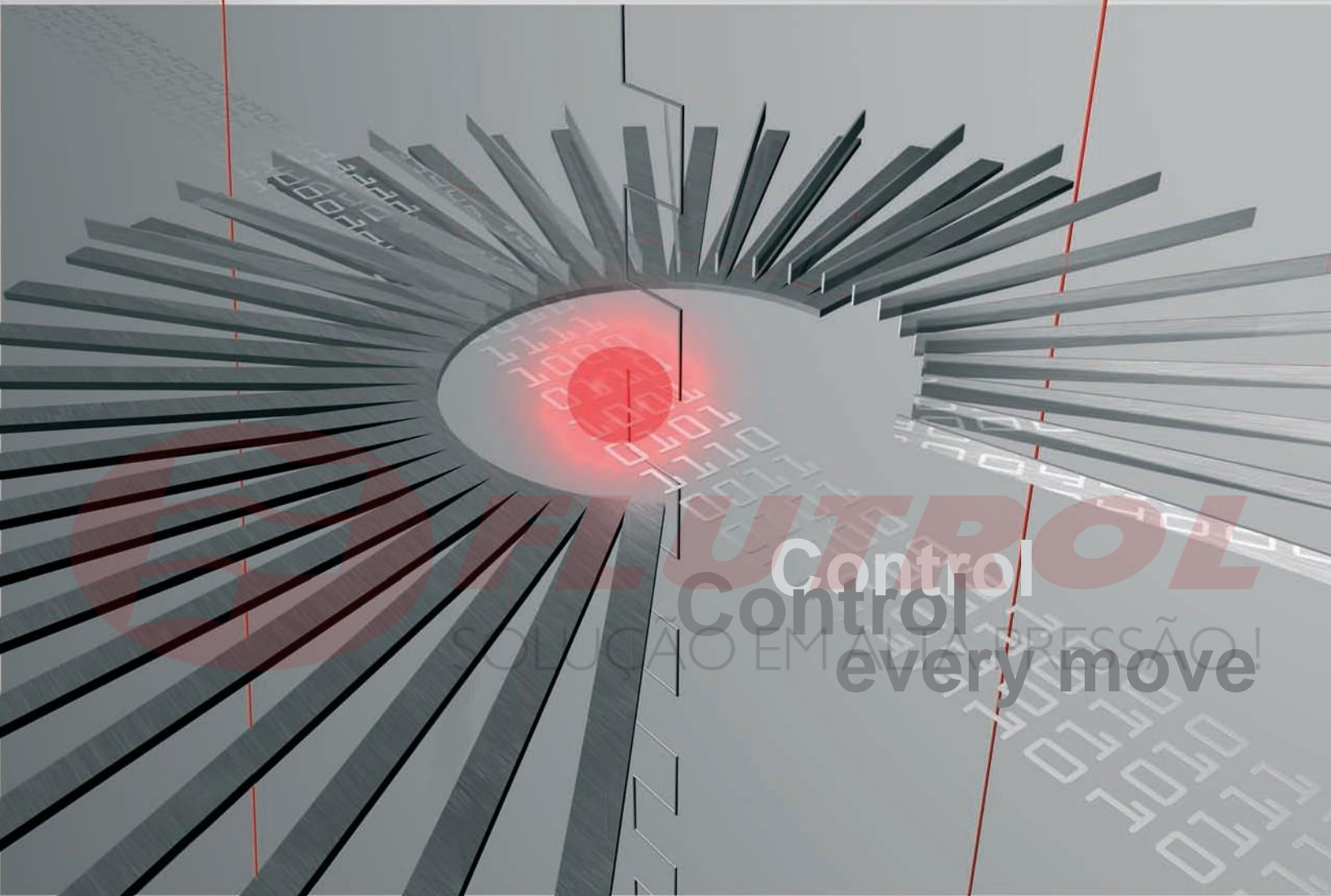


# Product Overview

## Product Overview



Control  
Control  
every move

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

**Barksdale**

CONTROL PRODUCTS

**CRANE** Barksdale, Inc./Barksdale GmbH  
A Subsidiary of Crane Co.

# Solutions

## Barksdale

### State-of-the-art solutions



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

Barksdale gives you the right answers.

How do we do this? First, we offer flexible and effective support services with specialists that understand evolving customer requirements and emerging technologies. This level of know-how enables us to look beyond traditional answers – to improved processes to meet even stringent performance expectations. Second, 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 communication. Based on a thorough understanding of your situation and requirements, our 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.



# Barksdale controls 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.

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.

Our processes adhere to ISO 9001:2000 and QS 9000 standards – 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:

- ▶ Oil and gas
- ▶ Bus, truck and trailer air suspension
- ▶ Mobile and industrial hydraulics
- ▶ Marine and Shipbuilding





# Barksdale

## Engineering the future



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 defense. Utilization of Shear-Seal® technology in air suspension height control valve applications yielded breakthrough improvements in durability and performance. 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 manufacturers of engineered products. With a 150-year history and over two 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 50 years of experience, facilities in North America, Europe and Asia, 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."

## The Barksdale product families

### Pressure

Pinpoint accuracy and extended life cycles are just some of the advanced features of our pressure products. Barksdale offers a complete line of mechanical and electronic pressure products for almost any pressure application.



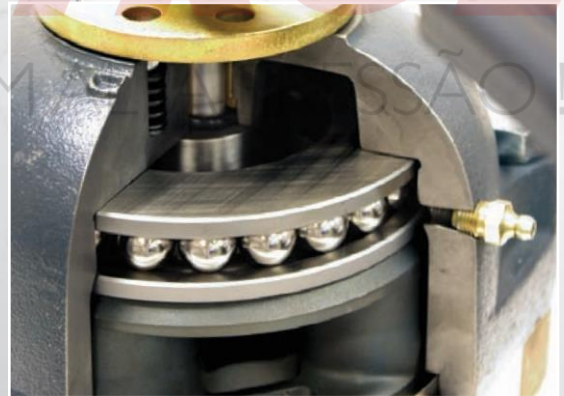
### Valves

Look for our valves in a wide variety of applications. We offer a complete line of directional and air suspension valve products which utilize Barksdale's unique, patented Shear-Seal® technology.

**FLUTROL**

### Temperature

Barksdale temperature switches offer superb stability and are the ideal choice for accurate stable measurements in critical application.



### Level

Our wide range of level sensors and switches are used in a multitude of industrial applications.

### Flow

We also offer a range of flow sensors for common flow detection applications for liquid media.



# pressure

## Pressure switches

### Metal Diaphragm – Pressure and Differential Pressure Switches

- ▶ Adjustable Ranges: 30 Hg vac – 150 psi (-1...12.5 bar)
- ▶ UL/CSA listed - PED 97/23/CE
- ▶ Hazardous models: Class I, Div 1 & 2; Class II, Div 1 & 2
- ▶ EEX-d and EEx-i ATEX - GOST Russia
- ▶ 1, 2 or 3 setpoints
- ▶ All welded stainless steel pressure capsule
- ▶ Hermetically sealed, oxygen cleaned
- ▶ Low to high contact loads

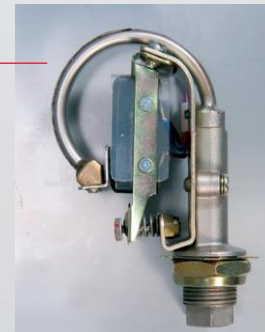
#### Applications

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)
- ▶ Proof pressure up to 24,000 psi (1654 bar)
- ▶ UL/CSA listed - PED 97/23/CE
- ▶ Hazardous models: Class I, Div 1 & 2; Class II, Div 1 & 2
- ▶ EEX-d and EEx-i ATEX - GOST Russia
- ▶ Hermetically sealed, oxygen cleaned
- ▶ Low to high contact loads
- ▶ Stainless steel sensor



#### Applications

Chemical process industry, hydrocarbon processing industry, oil and gas drilling, medical systems, power stations, hydraulic systems



## Dia-seal and Piston Pressure and Differential Pressure Switches

- ▶ Largest industrial product breadth
- ▶ Dial-Seal adjustable ranges: -30 Hg Vac – 1500 psi (-1...110 bar)
- ▶ Piston adjustable range: 50 – 12,000 psi (3.4...900 bar)
- ▶ UL/CSA listed - PED 97/23/CE
- ▶ Hazardous models: Class I, Div 1 & 2; Class II, Div 1 & 2
- ▶ EEX-d and EEx-i ATEX - GOST Russia
- ▶ Low to high contact loads
- ▶ Rugged and cost-effective



### Applications

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

## Compact Pressure Switches

- ▶ Adjustable Range: 1 – 8700 psi (0...600 bar)
- ▶ High proof pressure: 15,000 psi (1035 bar)
- ▶ Adjustable or fixed setpoints
- ▶ UL/CSA listed - PED 97/23/CE
- ▶ Hazardous models: Class I, Div 1 & 2; Class II, Div 1 & 2
- ▶ EEX-d and EEx-i ATEX - GOST Russia GOST K
- ▶ NEMA 1, 4, 4X, 7, 9
- ▶ Extensive range of electrical and process port connections
- ▶ Reliable, rugged, economical



### Applications

Machine tools, mobile hydraulics, high pressure compressors, hydraulics, accumulators

# pressure Transducer

## Electronic Pressure Sensor and Switches

- ▶ Ranges: 1.5 – 72,520 psi (0...100 mbar up to 5000 bar)
- ▶ Analog output: 4 – 20 mA/0 – 10 VDC
- ▶ Single switch point (adjustable)
- ▶ Front flush diaphragm and flange available
- ▶ Compact, accurate, long life
- ▶ EEx versions, high temperature versions
- ▶ GL approvals

## Applications

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





# pressure

## Solid State

### Electronic Indicating Pressure Switches Analog and Binary Output

- ▶ Ranges: 1.5 – 14,503 psi (0...100 mbar up to 1000 bar)
- ▶ 1, 2 or 4 switch points (adjustable)
- ▶ Multi- function digital 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
- ▶ EExi versions
- ▶ GL-, UL-, CSA-approvals

#### Applications

Automotive industry, machine tools and systems,  
hydraulic and pneumatic, test bench, steel industry,  
filter monitoring



# valves

## Valves



### Shear-Seal® Microtorque Valve

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



#### Applications

Hydraulic control circuits, mobile hydraulics, work holding, test stands



### Shear-Seal® Integral Control Valve

- ▶ Integrated actuator
- ▶ 1/4" to 1" NPT
- ▶ 2-Position and 3-Position
- ▶ Corrosion resistant materials
- ▶ Pressures to 6,000 psi (400 bar)
- ▶ Automated valve shifting
- ▶ High velocity flow

#### Applications

Remote operated circuits, offshore systems, shipboard controls, oil and gas controls

### Shear-Seal® Directional Control Valve

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

#### Applications

High-pressure hydraulic controls, oil and gas controls, steel mills



### Shear-Seal® OEM Valve

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

#### Applications

High-pressure hydraulic controls,  
oil and gas controls, light industrial applications



### Hydraulic Relief Valve

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

#### Applications

Oil and gas safety, pressure protection applications



- ▶ Shear-Seal® technology
- ▶ 1/2" and 3/4" full flow
- ▶ Self adjusting
- ▶ High flow capacity
- ▶ Tolerates contaminants
- ▶ Manual set or fail-safe motor control
- ▶ High repeatability

#### Applications

Coiled tube reels, oil and gas systems,  
pressure sensitive applications



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# valves

## Air suspension



### Integral Dump Leveling Valve

- ▶ Shear-Seal® technology for Zero-Leak\*
- ▶ Hardened rotor
- ▶ Long-wear pressure seals
- ▶ Precise deadband
- ▶ Multiple flow characteristics available
- ▶ Customized mounting and handle configurations available
- ▶ Integral valve with dump features:
  - Built in quick-dump lowers plumbing and fitting costs
  - Fast-flow dump circuits
  - Eliminates multiple valve components



#### Applications

Truck primary suspensions, trailer suspensions

### Standard Leveling Valve

- ▶ Shear-Seal® technology for Zero-Leak\*
- ▶ Hardened rotor
- ▶ Long-wear pressure seals
- ▶ Precise deadband
- ▶ Multiple flow characteristics available
- ▶ Customized mounting and handle configurations available

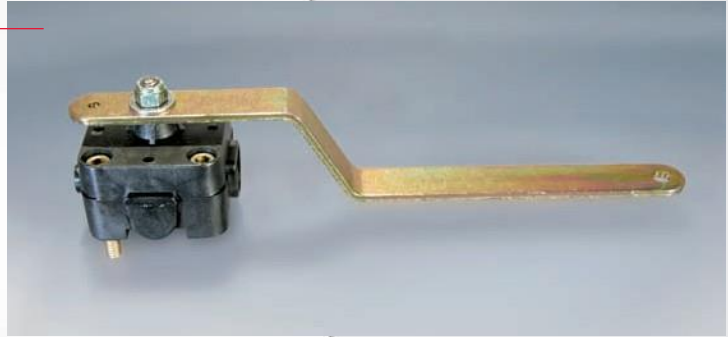


#### Applications

Truck primary suspensions, trailer suspensions, bus suspensions

## Cab Leveling Valve

- ▶ Our standard leveling valve in an engineering grade thermoplastic housing
- ▶ Multiple flow characteristics available
- ▶ Push-to-connect fittings
- ▶ Customized mounting and handle configurations available



### Applications

Truck cab air suspensions, front suspensions



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## Pressure Protection Valve

- ▶ Compact size for easy installation
- ▶ Light weight
- ▶ Direct tank mounting
- ▶ Available with two outlet ports
- ▶ Factory calibrated and locked at specified open or closing pressure



### Applications

Primary air suspensions, cab air suspensions, air seats, auxiliary vehicle air systems

# temperature

## Temperature

### Mechanical Temperature Switches

- ▶ Ranges: -50 °F – +600 °F (-45 °C...+316 °C)
- ▶ UL/CSA listed - CE
- ▶ Hazardous models: Class I, Div 1 & 2;  
Class II, Div 1 & 2
- ▶ Local, remote bulb & capillary and ambient sensing
- ▶ EEX-d and EEx-i ATEX - GOST Russia
- ▶ Designed for fluids and gases
- ▶ NEMA 1, 4, 4X, 7, 9, 13
- ▶ Ambient temperature compensation
- ▶ Low to high contact loads
- ▶ Accurate and dependable

### Applications

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





## Electronic Temperature Sensor 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

### Applications

Energy and environmental systems, air conditioning, machine tools, hydraulic systems, analyzers and medical systems



# mechanical

## Level control

### Single Level Switches

- ▶ SPST or SPDT reed contacts
- ▶ All metal and non- metal versions
- ▶ Vertical or horizontal mounting
- ▶ Protection class IP54/IP68
- ▶ Many approvals

### Applications

Everywhere in fluid storage, handling and controlling, and ship bilge



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### Multi Level Switches

- ▶ Up to 6 levels SPST or SPDT reed contacts
- ▶ Metal and non- metal versions
- ▶ EExi- and shipbuilding approvals
- ▶ Protection class IP54

### Applications

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



## Bypass Level Indicators



- ▶ Continuous level indication, purely mechanical, no power needed
- ▶ Temperatures up to 662 °F (350 °C)
- ▶ Pressure up to 928 psi (64 bar)
- ▶ All metal or plastics
- ▶ Mounting tankside, bypass or tanktop
- ▶ Optional transmitter 4–20 mA
- ▶ Optional level trip points
- ▶ EExi- and shipbuilding approvals
- ▶ Interface optional

### Applications

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



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# electronic Level control

## Electronic Level Probes

- ▶ Continuous level measurement
- ▶ Measuring range from 0–0.6 up to 0–200 m WC
- ▶ Signal output 4–20 mA/0–10 V
- ▶ EExi- and shipbuilding approvals
- ▶ Different materials and mounting alternatives

### Applications

Ground water level measurement, level indication in wells and open tanks, even with low filling levels, waste-water purification, chemical plants, pharmaceutical industry, ballast tank control, offshore.



## Ultrasonic Level Switch

- ▶ 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

### Applications

Continued minimum/maximum control of fluids in storage tanks, for fluid and high viscous media.



## Tank Level Gauging

- ▶ Continuous level monitoring
- ▶ Incremental accuracy 4 mm or 6.4 mm
- ▶ All metal or plastic versions
- ▶ Mounting: vertical or custom made
- ▶ Integral transmitter 4–20 mA
- ▶ Optional: Interface level measurement

### Applications

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

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# flow Flow

## Flow Switches and Monitors

- ▶ Pipe sizes 0.25" to 1.5" BSN/NPT
- ▶ 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, SPDT also in EEx-d version

## Applications

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



## Electronic Flow Switches 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

### Applications

OEM-applications, automotive,  
automobile industry, cooling





# On time

## Barksdale

### on time, all the time



It's really a matter of getting the job done on time.

Innovative products, more efficient processes, problem-solving capabilities, and continuous improvement – these now play a key role in our industry and in mechanical engineering.

But when time is short, these capabilities become really crucial. Every one of our employees accepts this challenge. They have learned to embrace permanent change to remain in step with the new and emerging demands of a global marketplace. Short lead times and on time delivery are the standards that transform our people into perfect customer support teams.



Behind the scenes at Barksdale: our customers benefit from internal programs to maintain our know-how and competitiveness. These include Operational Excellence, Kaizen, One-Piece-Flow and Focus Factory.



# Reliability

Barksdale

## We improve on reliability

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 – and the resulting product concepts.

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.

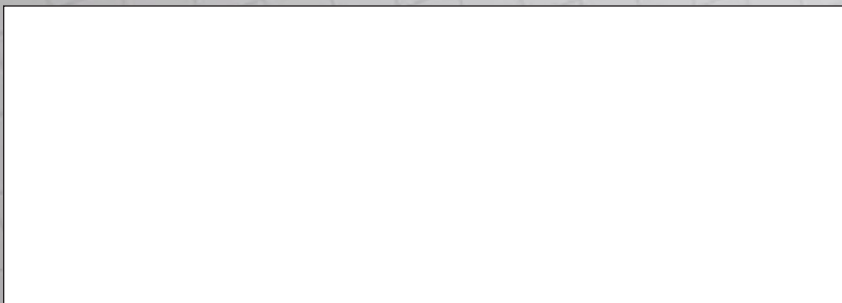
We are ready to work with you to provide a solution that drives results and gives you a competitive advantage in the marketplace. Call us today at 1-800-835-1060, ask for our Product Manager - or e-mail us at [sales@barksdale.com](mailto:sales@barksdale.com)





**Global Presence**

**FLUTROL**  
SOLUÇÃO EM ALTA PRESSÃO



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