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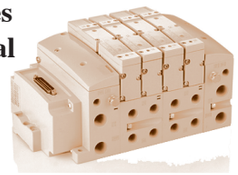
ASCO Numatics 503 Series High Flow Rate Directional Control Valves



ASCO Numatics 503 Series pneumatic directional control valves deliver the industry's highest flow rates per valve size, enabling design engineers to use smaller, lower-cost valves and components that do more work with less air, energy, and cost. Available in spool-and-sleeve or rubber seal models, and proprietary or ISO versions, their unique dual-spool technology means a highly reliable drive train with the highest flow rates, increasing throughput and reducing maintenance costs. When assembled with Numatics' G3 fieldbus electronics, OEMs can leverage assemblies that combine ultra-high flow rates with ease of use, plus fieldbus technology that provides configurability, flexibility, and cost-effective I/O and distribution architecture.

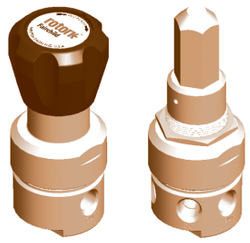
Request ASCO Numatics 503 Series

Gems Sensors CAP-300 Coolant Sensor

The new CAP-300 Series Coolant Level Sensor is designed to perform over long periods of time under the most rugged coolant applications. The CAP-300 operates in a frequency range that minimizes the effects of the conductivity of the media for long-term performance. The sealed design prevents fluid intrusion. It requires almost no maintenance, is only 2" in length, tolerates coating and is reliable even in standby mode. Compatible with temperatures to 257°F, the capacitive based sensor comes in a variety of mounting types and electrical connections, easy installation and can handle supply voltage from 9 to 32VDC. Approvals include CE, IP67, RoHS and IP6K9K.

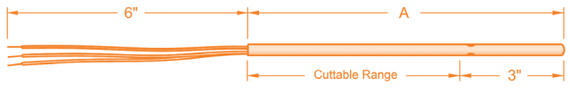
Request Gems Sensors CAP-300

Fairchild High Pressure Precision Regulator (HPD)



The Rotork Fairchild HPD high pressure regulator is designed for applications that have high supply pressures and require a much lower output pressure. It incorporates a new patented valve and valve seat to prevent leakage, which commonly occurs with high supply pressures. Constructed of rugged 316L Stainless Steel for corrosion resistance and durability, the HPD is available in a 2 or 4 port configuration. The Rotork Fairchild HPD pressure regulator will handle a 6000 psi, 414 BAR maximum supply pressure and offers 5 output pressure ranges from 0-25 psi, 0-1.7 BAR, 0-170 kPa, up to 5-500 psi, 0.35-35 BAR, 35-3500 kPa. The HPD high pressure regulator also offers a supply valve Cv of 0.06.

Request Rotork Fairchild HPD



NBS Cuttable RTDs

National Basic Sensors manufactures a variety of Resistance Temperature Detectors suitable for use in a wide range of temperatures and environmental conditions. The NBS Series 10T RTD is a 1/4" OD stainless steel tube that can be cut onsite to a desired length with a tube cutter. Internally sealed to prevent moisture penetration, probes can be shortened to a 3" minimum. Series 10T RTDs are available with single or dual elements and with 2, 3 or 4 wire leadwires, in resistances ranging from 10-1000 ohms.

Request NBS-RTDs

NOSHOK Vapor-Actuated Remote Thermometers

NOSHOK's Vapor-Actuated Remote Thermometers provide highly accurate temperature indication that is not subject to error due to ambient temperature variations along the capillary tube. Media temperature is indicated using a temperature-actuated liquid in the sensing element and a highly accurate, high quality pressure gauge. As the media temperature increases, the capillary fill fluid vaporizes, increasing pressure in the Bourdon tube to activate the movement and pointer for proper indication. Vapor-Actuated Remote Thermometers are available in 2-1/2", 4", 4-1/2" and 6" sizes, from -40° to 60° F/C through 100° to 350° F/C, with a brass or stainless steel case, with bottom, back or lower back connections. Options include dry or liquid fill, front or rear flange, bezel, and U-clamp.

Request NOSHOK Vapor-Actuated Thermometers

Seametrics IP80-Series Insertion Paddlewheel Flow Sensor

The IP80-Series are impeller (or "paddlewheel") insertion meters designed for use with a wide variety of liquids in pipe sizes 1/2" to 8". Sensors are available in brass, 316 stainless steel, PVC, and polypropylene. Bodies are machined from a solid rod for maximum precision.

High-quality jewel bearings and nickel-bound tungsten carbide shafts are used for extreme low friction and long life. The rotation of the rotor is detected by a non-drag Hall-effect sensor. Output is a current-sinking pulse, which can be sent long distances (up to 2,000 feet) without a transmitter. This signal can be connected directly to PLCs, counters, and computer cards, as well as a variety of Seametrics controls and displays.

Request Seametrics IP80-Series

Gems Sensors CT-1000 Potentiometric Sensor

This high precision and robust level sensor is designed for use in continuous filling level measurement or continuous separating layer coverage. Suitable for all electrically conductive liquids, the measuring result is independent of pressure, temperature and density. The sensor works according to the potentiometric measuring principle. Using micro-controlled sensor electronics, the current impulses are transmitted through the sensor electrode, which is electrically insulated from the tank or external tube. This leads to a linear voltage drop on its electrical resistance. If the sensor electrode is dipped into a conductive liquid (≥1 µS/cm) an electrical connection to the environment is created. The electrical potential is proportional to the filling level and is measured via a counterelectrode or the tank wall. For the input resistance of the measuring electronics to be big enough compared to the electrical resistance of the medium, conductivity of the liquids must be ≥1 µS/cm.

The CT-1000 has a temperature range up to 390°F (200°C) and pressure up to 2175 psi (150 bar) at a resolution of better than ±0.039 (1 mm). Other features include very short measuring times, micro-controlled measurement analysis, Hart protocol v. 6.0, and 2-wire terminal (4-20 mA). The CT-1000 is available in lengths from 8" to 19.7'.

Request Gems Sensors CT-1000

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Tech Tips *from ASCO Numatics*

Selecting low-temperature valves

For valves used in low temperatures, degraded performance arises from two main causes: lack of resiliency/flexibility and dormancy.

Resiliency and flexibility suffer as temperatures drop. This is bad news for the elastomers in a valve disc or diaphragm, which depend on their resilient, elastic consistency to make a good seal with the valve seat. As they get colder, elastomeric polymers shrink – and also undergo glass transition, entering a hard, brittle, glass-like state. Both of these changes prevent consistent conformity of the disc against the seat, allowing a leak path to form.

Dormancy occurs when valves are operated at infrequent intervals (as in low-cycling applications). When a valve's O-ring seals stay in uninterrupted contact with the body or main spool of the valve for days or even months, the seal can actually adhere against the grooves or imperfections in the metal surface of its mating components. Once operated, it responds slowly, or not at all.

Both these issues threaten reliable operation of the valve. Simple steps during assembly, such as applying high-grade lubricants that maintain serviceable consistency in the cold, can help combat surface friction. High-quality valve suppliers will also address potential problems by carefully selecting elastomers that stand up to low temperatures, as well as by designing valve seals that are optimized for frigid conditions. Dormancy may be virtually eliminated with innovative construction such as replacing O-ring seals with new T-shaped seals, which present a much smaller surface area at the point of contact.

As with valves, cylinders used in low ambient temperatures can face their own issues. When it comes to resiliency, cylinder seal elastomers can encounter brittleness and shrinkage, as well as different rates of thermal expansion and contraction for adjoining materials. So potential leak paths can also be a concern. The best cylinder manufacturers counter these risks by designing for minimal gap tolerances, and by selecting special cold-tested O-ring and seal materials that can retain sufficient flexibility at low temperatures.

Cylinders used in frigid conditions may also face the same dormancy challenges as valves, with stick and slip problems possible for surfaces that remain in contact for long periods. To fight friction and counteract dormancy, advanced models may be permanently lubricated during assembly with carefully selected low-temperature lubricants. In addition, on critical dynamic parts such as rod and piston seals, innovative manufacturers may incorporate special constructions such as spring-energized lip seals.

When considering products for duty in low ambient temperatures, users must ask prospective suppliers the hard questions about performance issues such as flexibility and dormancy. They must also evaluate each vendor's reputation and record of reliability. Consider ASCO Numatics, for example. Its valves, cylinders, and other fluid automation products incorporate the best of the design strategies above. They have provided proven service in the most challenging low-temperature environments for more than 40 years.

Excerpted from the Numatics white paper, "Cold Hard Facts: Five key criteria for selecting low-temperature valves" by Bob Cadwell, Business Development Manager, ASCO

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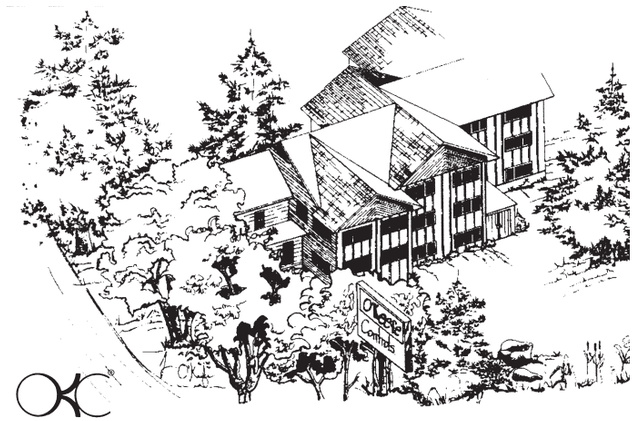

3rd Quarter 2013

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