Market Leading Portfolio of Actuation Technologies

Bettis™ Actuation Solutions

Electric, Electro-Hydraulic, Hydraulic, and Pneumatic with Network Masters, Controls and Software

EMERSON™


BETTIS™

Actuation Solutions

Bettis™ is a leading brand in the broad offering of Emerson. The actuators and controls are used in almost every energy-related industry, including oil and gas transmission, petrochemical and petroleum refining. Other significant markets include chemical; power industry including nuclear; pulp and paper; food and beverage; pharmaceutical; HVAC and water systems. To serve its customers with the latest technology and complete valve operating systems, Emerson has established a global presence for its Bettis products with strategically located World Area Configuration Centers and a knowledgeable worldwide sales force that is unmatched in the industry. Bettis products are specifically engineered for their intended application, are guaranteed for minimum torque and thrust values, and undergo thorough testing and quality checks before being shipped.

ELECTRIC
Actuator

RELIABLE & DEPENDABLE ACTUATORS FOR PROCESS CONTROL, FAIL-SAFE, AND ON/OFF APPLICATIONS

Bettis RTS
Mechanical Fail-Safe and Precise Process Control Electric Actuators

Key Features

- Highly configurable and intelligent actuator with options for continuous modulation and mechanical fail-safe
- Independently adjustable operating and fail-safe speed, and torque
- Non-intrusive setup via local interface, Bluetooth™, or DCMlink (in development)
- Certified explosion and weatherproof

Protocols

Modbus™, HART™, PROFIBUS™, FOUNDATION Fieldbus™, PROFINET™

Torque/Thrust

- Multi-turn torque up to 64 Nm (47 ft-lb)
- Quarter-turn torque up to 5,000 Nm (3,687 ft-lb)
- Linear force up to 40 kN (8,992 lb)

Bettis XTE3000
Intelligent, Versatile, and Reliable Electric Actuator

Key Features

- Intelligent and versatile actuator with a wide range of torque and speed for on/off and control
- Non-intrusive setup via local interface, Bluetooth, or DCMlink
- Certified explosion and weatherproof

Protocols

- Modbus, HART, FOUNDATION Fieldbus, PROFIBUS, LonWorks™

Torque

- Multi-turn torque up to 57,000 Nm (42,000 ft-lb)
- Quarter-turn torque up to 1,000,000 Nm (737,500 ft-lb)
- Linear force up to 150 kN (33,720 lb)

Bettis M2CP
Rugged, Heavy-Duty, and Easy-to-Service Quarter-turn/Multi-turn Electric Actuator

Key Features

- Robust, easy to service, conventional actuator
- Compatible with DCMlink
- Certified explosion and weatherproof

Protocols

- Modbus, HART, FOUNDATION Fieldbus, PROFIBUS, DeviceNet™, Ethernet

Torque

- Multi-turn torque up to 21,693 Nm (16,000 ft-lb)
- Quarter-turn torque up to 370,000 Nm (273,000 ft-lb)
- Linear force up to 2,224 kN (500,000 lb)

Bettis SCE300
Smart Compact Quarter-Turn Actuator

Key Features

- Highly configurable with variable speed and torque settings
- Certified explosion and weatherproof

Torque/Thrust

- Quarter-turn torque from 63 Nm to 2,000 Nm (46 ft-lb to 1,475 ft-lb)

Protocols

PROFIBUS, DeviceNet™

Bettis TorqPlus
Robust, Easy-to-Service, Fail-Safe Compact Quarter-Turn Actuator

Key Features

- Robust, easy to service, conventional actuator
- Compact design with mechanical fail-safe option
- Certified explosion and weatherproof

Torque/Thrust

- Torque from 11 Nm to 2,260 Nm (8 ft-lb to 1,667 ft-lb)

SOFTWARE AND NETWORK CONTROLS

INNOVATIVE SOFTWARE PLATFORM

DCMlink Software

DCMlink provides a common platform to diagnose, configure, and monitor all electric actuators

Key Features

- Diagnose, configure, calibrate, and monitor all electric actuators from a central location, independent of the protocol, actuator, or host system
- Real-time monitoring and control of asset data, profiles, alarm, and event logs
- Integrates with Emerson PlantWeb, AMS Snap-On, and Bluetooth
- Downloadable from Emerson.com

Controlinc Network Master

Key Features

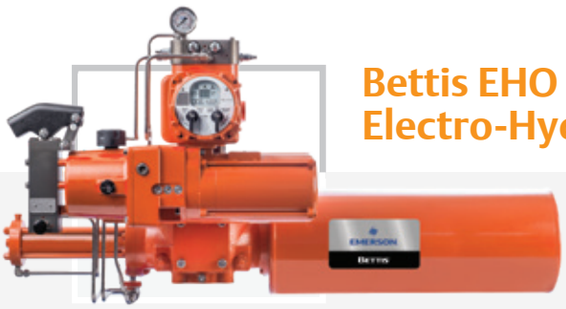
- Control and monitor up to 250 actuators
- Graphical, full-color touch panel interface
- Hot standby redundant units to eliminate downtime
- Common functions come pre-configured
- Connect multiple masters to automate 1000+ actuators
- Supports redundant RS485 ring networks

Protocols

Modbus, Ethernet

ELECTRO-HYDRAULIC
Actuator

DESIGNED FOR CRITICAL SHUTDOWN APPLICATIONS WHERE RELIABILITY IS CRUCIAL



Bettis EHO
Electro-Hydraulic Operator

A smart, self-contained, electro-hydraulic, quarter-turn, valve actuator, combining field-proven technologies, designed for reliable, critical shutdown applications.

Key Features

- Utilizes a dependable spring-return actuator for the fail-safe stroke combined with an integral hydraulic power pack and electronic control module
- Designed as an emergency shutdown actuation solution to stop process flow upon the detection of a command signal or loss of power, protecting personnel, equipment, and the environment
- Consistently operates in challenging, hostile and remote environments, and even when the power source is challenged
- Over fifteen system alerts and alarms

Operating Pressure

Up to 207 bar (3,000 psi)

Operating Temperature

Standard:
-29 °C to +60 °C
(-20 °F to +140 °F)

Optional Temperature:
-40 °C to +60 °C
(-40 °F to +140 °F)

Typical Application

Biofuels, industry gases, petrochemical, marine, metals and mining, oil and gas, refining, renewable energy, pulp and paper, water and waste

Torque/Thrust

143 Nm to 79,959 Nm
(1,264 in-lb to 707,696 in-lb)

Bettis actuators can be powered by compressed gas, hydraulics or electricity to satisfy a vast range of automation requirements

HYDRAULIC
Actuator

HYDRAULIC ACTUATORS ENGINEERED FOR TOUGH ENVIRONMENTS AND ESD APPLICATIONS

Bettis GH Series
Scotch Yoke, Gas Hydraulic Valve Actuator

Designed specifically for gas transmission pipelines, the Bettis GH uses the high pressure pipeline gas as the power source for the actuator.

Key Features

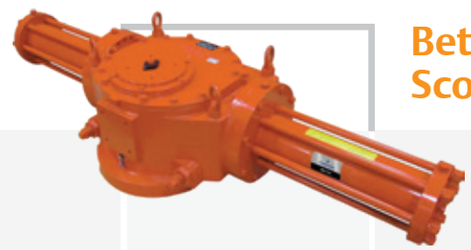
- Converts pipeline gas pressure into powerful hydraulically controlled torque to open and close pipeline valves
- The standard actuator design is well suited for cold temperature applications
- Provides local valve control, remote control or automatic control depending on our client's needs
- Field proven design has been in service for over 40 years
- Linear versions for gate valves are also available

Torque/Thrust
Quarter-turn models with torque up to 170,000 Nm (1,504,628 lbf-in) and linear models with thrust up to 2,891,200 kN (650,000 lb)

Operating Pressure
20.6 bar to 102 bar (300 psi to 1,480 psi)

Operating Temperature
-46 °C to 93 °C (-50 °F to 200 °F)

Typical Application
Mainline valves, compressor station ESD, remote valve control, linebreak and low pressure shutdown



Bettis G-Series
Scotch Yoke Hydraulic Valve Actuator

A hydraulic, scotch yoke, valve actuator for operating ball, butterfly or plug valves along with louvers, dampers and other 90 degree rotating mechanisms. Suitable for use in demanding SIL-required applications.

Key Features

- Consistently operates in challenging environments, hostile environments, and when power is challenged
- Modular design improves efficiency reduces wear extends life
- Patented Tension-Lok™ device positively locks the spring module to allow its safe removal and installation, eliminating accidental release of the spring force
- PED 97/23/EC compliant to meet the stringent requirements of pressure mounting vessels
- Meets both IP66 and IP67M specifications for submergence and high pressure water deluge test and offers superior water ingress and corrosion protection

Torque/Thrust
Up to 56,492 Nm (500,000 in-lb)

Operating Pressure
Up to 345 bar (5,000 psig)

Operating Temperature
-54 °C to +204 °C (-65 °F to +400 °F)

Typical Application
Severe environmental conditions like: corrosive salt spray, submergence, wash down, harsh chemical exposure, or even extreme low or high temperatures

Bettis GS-Series Subsea Actuator

The GS-Series is a scotch-yoke, hydraulic powered actuator especially suited for fail-safe or spring-return operation. The pressure compensated design gives the actuator the capability for shallow or deep water installation.

Key Features

- Subsea valve control at depths up to 2,000 meters
- ROV intervention and override
- Subsea installation and retrieval capability

Torque

End to close or spring ending torque up to 14,872 Nm (131,637 lbf-in)

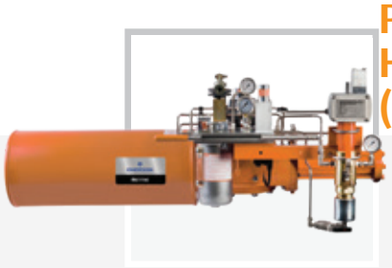
Operating Pressure

Up to 207 bar (3,000 psi)

Typical Application

Platform riser, fail-safe valves, subsea isolation valves, PLEM valve control

PressureGuard™ Self-Contained Hydraulic Emergency Shutdown (ESD) Systems with Bettis G-Series



This hydraulic actuator provides reliable valve shutdown capability when an external power source is either not available or not dependable. They can be used with rotary hydraulic operators to provide a fail-safe solution for use with ball, plug and other quarter-turn valves, as well as non 6A linear operated valves.

Key Features

- Adaptable for use with SCADA systems or remote signals
- Suitable for remote, unmanned, unpowered and critical service
- Adaptable to quarter-turn or linear operated valves
- Standard hydraulic model available for all valve sizes and configurations
- Adaptable to 6A, 6D linear or quarter-turn operated valves

Operating Pressure

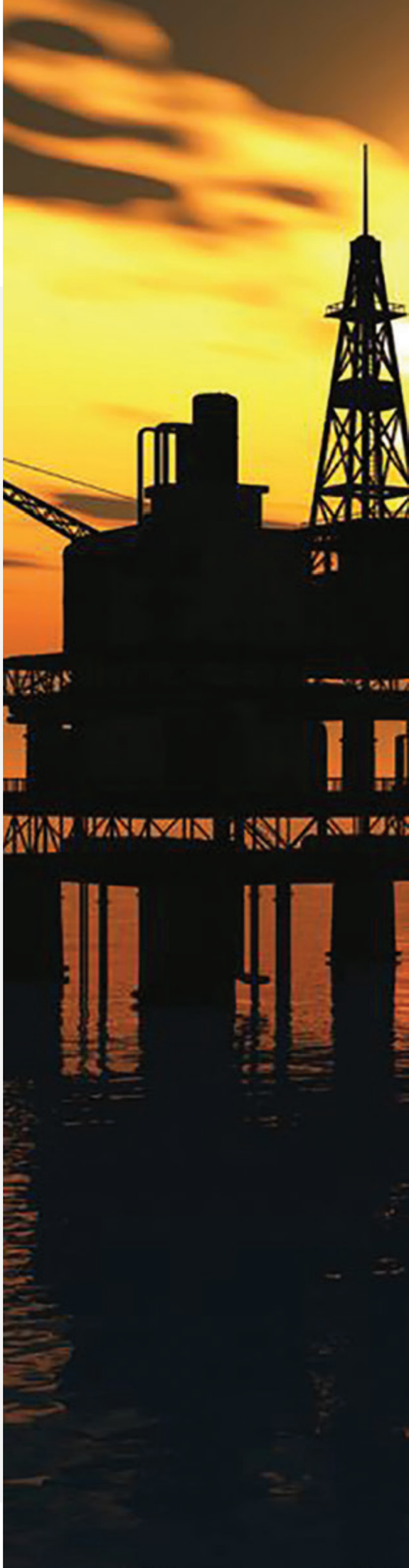
Up to 138 bar (2,000 psi)

Operating Temperature

-29˚C to 82˚C (-20˚F to 180˚F)

Typical Application

Gas processing, oilfield services, onshore and offshore exploration and production, terminal and storage



Bettis BHH Series
Helical Spline Actuator

This is a compact, rugged, hydraulic, quarter-turn, actuator perfect for use in tight space applications.

Key Features

- Compact design with a very small footprint to torque ratio
- Concentric design resists vibration and eliminates side loading on the valve assembly and stem
- Both double-acting and spring-return designs
- Adapts and mounts to all types of quarter-turn valves, dampers or louvers in any orientation

Torque/Thrust

30 Nm to 32,000 Nm
(265 lbf-in to 283,224 lbf-in)

Operating Pressure

30 bar to 207 bar
(435 psi to 3,000 psi)

Operating Temperature

-29 °C to 80 °C (-20 °F to 180 °F)

Typical Application

Shale fields, pipelines, offshore platforms, terminal and storage

Bettis GVO Series
Hydraulic Linear Valve Actuator

A linear valve actuator designed for shutdown and control applications. Proven suitable for automating most types of rising stem valves.

Key Features

- Full stainless steel construction and standard carbon-fiber material for lightweight durability and low friction (steel, stainless steel, aluminum and brass optional)
- Suitable for dirty environments; scale build-up on the piston rod will not affect the cylinder performance
- Conventional linkage arms replace a fully-enclosed transducer, which is a major design innovation
- Backed by a five-year material and workmanship warranty

Torque/Thrust

Up to 56,492 Nm
(500,000 in-lb)

Operating Pressure

Up to 200 bar (3,000 psig)

Operating Temperature

-54 °C to +204 °C
(-65 °F to +400 °F)

Typical Application

Severe environmental conditions like: corrosive salt spray, submergence, wash down, harsh chemical exposure, or even extreme low or high temperatures

A scotch yoke valve actuator for operating ball, butterfly or plug valves along with louvres, dampers and other 90 degree rotating mechanisms. Suitable for demanding SIL-required applications.

Reliable actuators for control applications from fail-safe to extreme environment without compromising performance

PNEUMATIC
Scotch Yoke Actuator

LIGHTWEIGHT, EFFICIENT AND RELIABLE - ALL IN A COMPACT, MODULAR PACKAGE

Bettis G-Series
Scotch Yoke Pneumatic Actuator

Key Features

- Modular design improves efficiency, reduces wear, and extends life
- Patented Tension-Lok™ device positively locks the spring module allowing safe removal and installation, eliminating accidental release of the spring force
- PED 97/23/EC compliant meeting stringent requirements of pressure mounting vessels
- Meets both IP66 and IP67M specifications for submergence and high pressure water deluge test and offers superior water ingress and corrosion protection

Torque/Thrust

Spring-return models:
in excess of 339,000 Nm
(3,000,000 in-lb)

Double-acting:
1,420 Nm to 678,000 Nm
(12,581 in-lb to 6,000,000 in-lb)

Operating Pressure

3 bar to 14 bar
(40 psig to 200 psig)

Operating Temperature

-29 °C to +93 °C
(-20 °F to +200 °F)
Optional high and low temperature trims available

Typical Application

Safety shutdown system, double block valves, bleed valves/ blowdown valves, gas exhaust valves and compressor knockdown drum

Bettis CBB-Series
Scotch Yoke Pneumatic Actuator

Key Features

- Symmetrical mounting pads allows field reversal of spring-return actuator failure mode with no disassembly required (CW or CCW)
- Compact and lightweight
- Economical jackscrew manual override available to ensure reliable valve control in the event of the power loss
- Backed by a five-year material and workmanship warranty

Torque/Thrust

Double-acting:
1,384 Nm (12,245 in-lb)
Spring-return:
up to 562 Nm (4,971 in-lb)

Operating Pressure

3 bar to 10 bar
(40 psig to 150 psig)

Operating Temperature

Standard:
-30 °C to +95 °C
(-20 °F to +200 °F)
High:
-18 °C to +177 °C
(0 °F to +350 °F)

Typical Application

Safety shutdown system, double block valves,
bleed valves/blowdown valves, gas exhaust valves and compressor knockdown drum

"A scotch yoke actuator that iseconomical, low maintenance and independently certified to IEC 60529 IP66 and IP67M for water ingress protection."

Bettis CBA300
Scotch Yoke Pneumatic Actuator

Key Features

- NAMUR standardization allows direct or close coupling of accessory hardware
- Economical jackscrew manual override available to ensure reliable valve control in the event of the power loss
- ISO/DIN bottom mounting for close or direct coupling to the valve topworks
- Backed by a five-year material and workmanship warranty

Torque/Thrust

Double-acting:
835 Nm to 2,492 Nm
(7,388 in-lb to 22,055 in-lb)
Spring-return:
286 Nm to 1,182 Nm
(2,532 in-lb to 10,457 in-lb)

Operating Pressure

3 bar to 10 bar
(40 psig to 150 psig)

Operating Temperature

Standard:
-30 °C to +95 °C
(-20 °F to +200 °F)
High:
-18 °C to +177 °C (0 °F to +350 °F)

Typical Application

Safety shutdown system, double block valves, bleed valves / blowdown valves, gas exhaust valves and compressor knockdown drum

"A scotch yoke actuator that combines the strengths of the G-series actuator and is compact, lightweight, efficient and very cost-effective."

Bettis Stainless Steel M-Series Actuator

Engineered and manufactured to provide torque output with SY mechanism to maximize corrosion protection and minimized cost and dimensions impact.

Key Features

- Innovative 316 stainless steel construction as standard provides superior corrosion resistance both internally and externally
- Scotch yoke design using precision bearings eliminates dead band in the yoke mechanism, providing the greatest torque output at the beginning and end of stroke
- Air or any gas compatible with materials of construction Water hydraulic optional
- PTFE piston bearings, piston rod bushings, and output shaft bushings provide longer life, reduce maintenance and require no lubrication

Torque/Thrust

In excess of 13,560 Nm (120,000 in-lb)

Operating Pressure

3 bar to 11 bar (40 psig to 160 psig)

Operating Temperature

Standard:
-29 °C to 99 °C (-20 °F to 210 °F)

Optional trims:
-54 °C to 149 °C (-65 °F to +300 °F)

Typical Application

Chemical process, food and beverage, iron and steel, off-shore marine, pharmaceutical, power, oil and gas, pulp and paper, and textile industries

PNEUMATIC
Rack & Pinion Actuator

A TOUGH, RELIABLE RACK AND PINION ACTUATOR FOR COUNTLESS PROCESS APPLICATIONS

Bettis RPE-Series Rack & Pinion Actuator

A rugged, reliable rack and pinion actuator for countless process applications. Compact and lightweight, suitable for tight piping configurations. Available in 13 sizes.

Key Features

- Electrophoretic finish on springs protects from corrosion, and good chemical resistance against acids, solvents, alkalis and oils at normal temperatures
- Housing and end caps have anodizing, chromate pretreatment prior to painting
- Excellent exterior and mechanical durability
- High grade and hard anodized aluminum pinions, passed a 1,000 hours salt spray test

Torque

Double-acting: ranging up to 4,537 Nm at 5.5 barg (40,293 in-lb at 80 psig)

Spring-end for Spring-return: 1,958 Nm (17,333 in-lb)

Operating Pressure

Up to 8.3 bar (120 psig)

Operating Temperature

-20 °C to +80 °C
(-4 °F to +176 °F)
Optional high or low temperature trims available

Typical Application

Chemical, oil and gas, industrial manufacturing, power, pulp and paper, refining, water and waste, metals and mining, life sciences, food and beverages, medical

Bettis RPX Rack & Pinion Valve Actuator

A rack and pinion actuator that is designed to automate the most popular quarter turn valves and is easily adaptable for almost any other quarter turn (90° rotation) application.

Key Features

- Optimum corrosion resistance is achieved with anodized housing, zinc plated/chromated pinion, powder coated end caps, chromated pistons and stainless steel fasteners
- Equipped with O-ring seals, low-friction piston and pinion bearing materials and grease for a low maintenance and trouble-free cycle life
- Dual travel stops allow for fine adjustment of the open and closed positions

Torque

Double acting:
11 Nm to 4173 Nm
(197 to 36955 lbf-in)

Spring-return:
6 Nm to 1663 Nm
(151 lbf-in to 14729 lbf-in)

Operating Pressure

MOP: 8.3 bar (120 psi) max

Operating Temperature

-20 °C to +80 °C
(-4 °F to +176 °F)

Typical Application

Chemical, oil and gas, industrial manufacturing, power, pulp and paper, refining, water and waste, metals and mining, life sciences, food and beverages, medical

PNEUMATIC
Linear Actuator

FIELD-PROVEN FOR SAFETY SHUTDOWN AND CONTROL

Bettis GVO-Series Pneumatic Linear Valve Actuator

A smart, self-contained, electro-hydraulic, quarter-turn, valve actuator, combining field-proven technologies, designed for reliable, critical shutdown applications.

Key Features

- Utilizes a dependable spring-return actuator for the fail-safe stroke combined with an integral hydraulic power pack and electronic control module
- Designed as an emergency shutdown actuation solution to stop process flow upon the detection of a command signal or loss of power, protecting personnel, equipment, and the environment
- Consistently operates in challenging, hostile and remote environments, and even when the power source is challenged
- Over fifteen system alerts and alarms

Torque/Thrust

143 Nm to 79,959 Nm (1,264 in-lb to 707,696 in-lb)

Operating Pressure

Up to 207 bar (3,000 psi)

Operating Temperature

Standard: -29 °C to +60 °C (-20 °F to +140 °F)
Optional temperature: -40 °C to +60 °C (-40 °F to +140 °F)

Typical Application

Biofuels, industry gases, petrochemical, marine, metals and mining, oil and gas, refining, renewable energy, pulp and paper, water and waste

Bettis as an innovator, with products that fully automate valves under the most rigorous conditions and in some of the most remote areas in the world.

VALVE OPERATING SYSTEM™

The Bettis VOS is a turnkey solution that includes an actuator, air filter regulators, relief valves, solenoid valves, limit switches, positioners, as well as the piping and engineering. It includes all related documentation from installation manuals, quick service guides, drawings to warranty certificate and maintenance schedules. Everything the end-user needs to maintain and operate their actuation package.

Bettis VOS-PAC™ Cataloged Actuation Package

A pre-engineered and pre-specified turnkey solution, allows instant quotes, pricing, and quicker deliveries. This standard package allows quick access to related documentation, and remotely maintain your actuation package with a unique QR Code.

Key Features

- Fast configuration, installation and commissioning
- Easy to maintain and repair with standardized design
- True Modular Control System - Every part can be disassembled and replaced easily for maintenance and repair in the field
- Five-year industry-leading warranty

Operating Pressure

60 psig and 80 psig

Operating Temperature

30 °C to +95 °C (-20 °F to +200 °F)
Optional high and low temperature trims available

Typical Application

Chemical, industrial manufacturing, oil and gas, power, pulp and paper, refining, water and waste, metals and mining,

life sciences, food and beverages, medical

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