

ROSS[™]
a global family



Safety Solutions

Solving Your Application Challenges



As a Rockwell Technology Partner, **ROSS CONTROLS**[®] works with Rockwell to provide fluid power safety solutions tailored to customer's specific automation needs.

ROSS CONTROLS[®]

Safety Focus

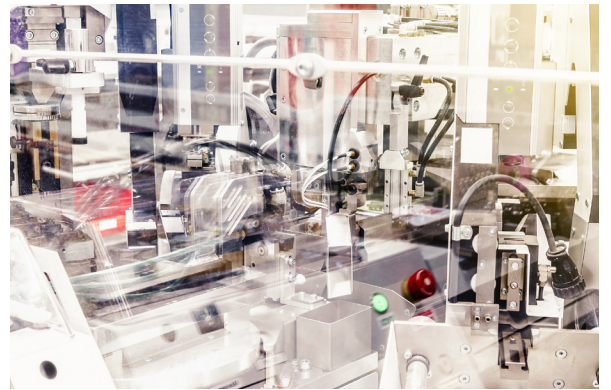
For almost half a century, ROSS® has developed industry-leading safety solutions, originally with pneumatics, hydraulics and more recently with electrical isolation devices and systems.

Our safety solutions can be classified in: Safe Energy Isolation Lockout Valves and Systems, Safe Exhaust (Dump) Valves, Safe Return Valves, Safe Cylinder Control Valves, Hazardous Location Valves, and Hydraulic Safe Valve Systems.



Rugged & Robust Designs

Since 1921, ROSS has designed and manufactured pneumatic valves for automation. Our product line includes directional control valves, manual valves, mechanical valves, flow control valves, and air preparation solutions to complement the safety products mentioned above.



Problem Solvers

In addition to standard products, ROSS/FLEX® service and technology is a unique resource for a total system solution. Our ROSS/FLEX® engineering team can design and build custom solutions specific to client application requirements. Customized unique systems designed to meet the needs of industry applications.



Worldwide

Headquartered in the United States, ROSS CONTROLS® has facilities in Germany, Japan, United Kingdom, India, Brazil, China, France, and Canada. In addition to its global sales team, ROSS has a worldwide network of over 100 stocking distributors to help customers select the best products for their applications.



BRONZE
Technology Partner

A ROCKWELL AUTOMATION PARTNER

Energy Isolation Valves

3/2 Lockout L-O-X® Valves 15 & 27 Series

- In-line mounted
- Cast aluminum construction
 - » Port Size 1/4" through 3"
 - » Cv up to 140
- 316 stainless steel construction
 - » Port Size 1/4" through 2"
 - » Cv up to 39
- Spool construction
- Integrated sensing port for pressure verification or visual indicator option
- Lockable only in the OFF position



Safe Exhaust Single Valves

Up to



3/2 Valves with EEZ-ON® Soft-Start function MDC1 & MDC2 Series

- In-line mounted
- Port Size 3/8" through 1-1/4"
- Cv up to 4.0
- Single poppet construction
- MDC2 Series valve is equipped with a solid state pressure sensor for external monitoring



Safe Exhaust Double Valves

Up to



3/2 Valves with or without EEZ-ON® Soft-Start function for External Monitoring M35 Series

- In-line mounted
- Port Size 1/2" and 3/4"
- Cv up to 4.3
- Dual poppet construction
- Solid state pressure sensor for external monitoring



3/2 Valves for External Monitoring RSe Series

- Base mounted
- Port Size 1/8" through 1/2"
- Cv up to 1.9
- Dual spool construction
- Position sensors for valve fault monitoring – external monitoring device required



3/2 Valves Control Reliable with Internal Monitoring DM Series

- Base mounted
- Dual poppet construction
- Self-contained dynamic monitoring system

DM²® Series C

- » Port Size 1/4" through 1-1/2"
- » Cv up to 22
- » Dynamic memory of abnormal function retains lockout condition
- » Electrical reset or pneumatic reset option

DM¹ Series C

- » Port Size 1/4" through 1"
- » Cv up to 13
- » Automatic reset upon de-actuation



Safe Control & Load Holding Double Valves

Up to



4/3 Valves Control and Stop for External Monitoring CC4 Series

- Sub-base mounted
- Port Size 1/4" through 3/4"
- Cv up to 1.7
- Dual poppet design
- Redundant control with position feedback
- Closed Center valve function - allows full control of double-acting cylinders, including jog and load-holding functions
- For external monitoring - allows full safety control and feedback monitoring of cylinder control circuit
- Mid-position sensing - for detection of safe, closed center position



Safe Cylinder Control Double Valves

Up to



5/2 Valves Safe Cylinder Return for External Monitoring RSe Series

- Base mounted
- Port Size 1/8" through 1/2"
- Cv up to 1.9
- Dual spool construction
- Rapid response for minimum actuating time
- Position sensors for valve fault monitoring – external monitoring device required



5/2 Valves CROSSMIRROR® CM & 77 Series

- Base mounted
- Dual spool construction
- Solenoid controlled valves equipped with status indication switch (ready-to-run) to inform machine controller of valve condition
- Pressure Controlled valves, senses asynchronous inputs
- Self-contained dynamic monitoring system requires no additional valve monitoring controls
- Valve fault results in a lockout condition and prevents unintentional reset with removal of air or electricity

Meets Standards EN13736 and ANSI B11.2, Safety requirements for Pneumatic Cylinder Presses and other hazardous pneumatic cylinder applications.



CM Series

- Port Size 1/4" through 1/2"
- Cv up to 3
- Manifoldable for multi-valve applications

77 Series

- Port Size 1/2" through 3/4", SAE12
- Cv up to 3.2
- Automatic reset upon de-actuation



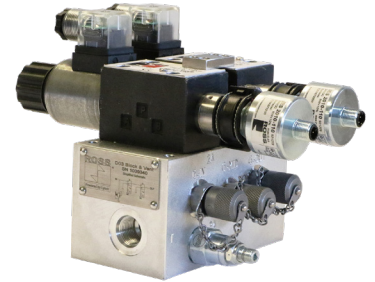
Hydraulic Safety Valve Systems

Up to

Cat. 4
PL e

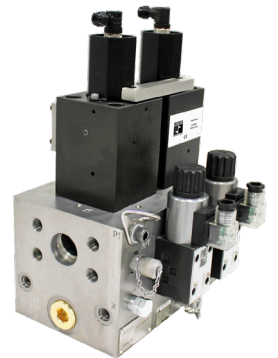
Block & Bleed Safety Valve Systems for External Monitoring HBB Series

- Port Size SAE-8, SAE-12, and 1-1/4" Code 62 Flange
- Body Size D03, D05, and D07
- Base mounted
- Flow up to 50 gpm
- Control Reliable Redundant Valves
- Blocks hydraulic supply pressure and bleeds downstream pressure back to tank
- Includes relief valve on inlet
- Tamper-resistant design prevents unauthorized personnel from altering the valve



Block & Stop Safety Valve Systems for External Monitoring HBH Series

- Port Size 1-1/2" and 2", Code 62 Flange
- Body Size D25 and D32
- Base mounted
- Flow up to 145 gpm
- Control Reliable Redundant Valves
- Stops cylinder motion when switched off or if electrical power is lost
- Tamper-resistant design prevents unauthorized personnel from altering the valve



Dual Block & Stop Safety Valve System for External Monitoring HDBH Series

- ISO 4401-03-02-0-05 (NG 6 or D03)
- Sandwich style mounting between manifold and directional valve
- Flow up to 5 gpm (10 gpm with single line configuration)
- Control Reliable Redundant Valves
- Momentarily stops normal actuator motion when commanded by the safety controls or when there is a fault in the HDBH system
- Tamper-resistant design prevents unauthorized personnel from altering the valve



**Electrical
 Energy Isolation**

e L-O-X® Electrical Isolation Devices

- Electrical isolation device especially useful in situations where the distance to the main electrical disconnect is excessive and causes extra downtime traveling back and forth between the main disconnect and the machine when performing Lockout/Tagout.
- Wall mounted
- Up to 600 VAC 3 phase
- Available in 30 Amp, 60 Amp, 100 Amp, and 200 Amp
- Compact panel design
- Local start/stop(test) button
- Lockable disconnect switch (load-rated – in case machine is still running when power is disconnected)
- 3-phase power indicator - Indicates voltage presence on all phases and, also, if phases are out of balance.



**Low Voltage
 Lockout System**

ElectroGuard® Plus Energy Isolation System – Electric, Pneumatic, Hydraulic

Single-zone ElectroGuard® Plus System Overview

Single-zone ElectroGuard® Plus systems can isolate up to six energy sources (any combination of electrical, pneumatic, & hydraulic), and can utilize as many as thirteen remote lockout stations (RLS).

Potential capacity could be:

- 1 zone
- Up to 6 RLS Stations or up to 13 with external RLS Interface Panel (RIP)
- Controls up to 6 Energy Sources (combination of EIP, PIP, & HIP)

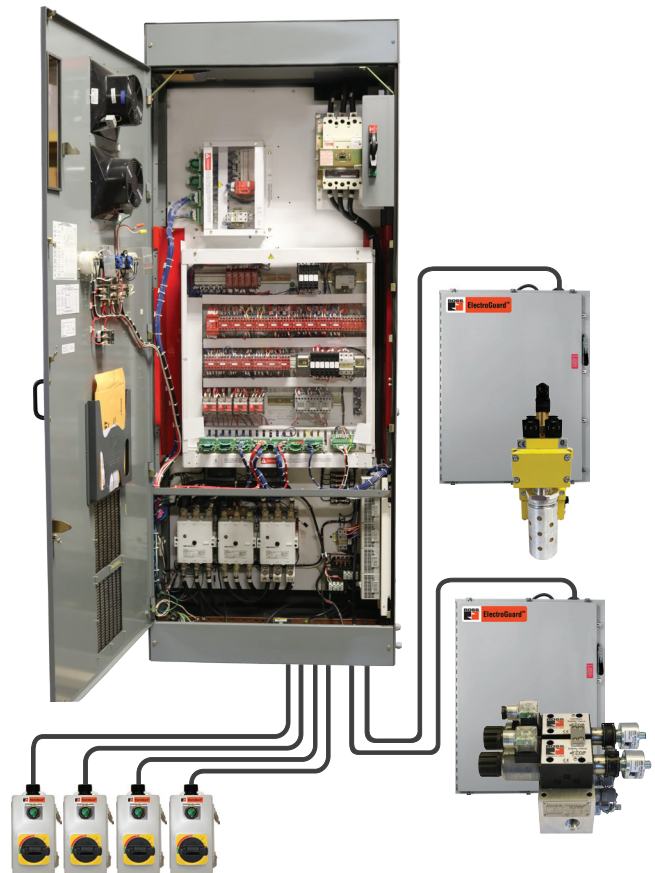
Multi-Zone ElectroGuard® Plus System Overview

(8 Zones, 69 Remote Lockout Stations, and 32 Energy Sources)

The ElectroGuard® Plus main Control Panel can be extended to include an 8 port or 16 port Ethernet Switch to expand system capacity.

Potential capacity could be:

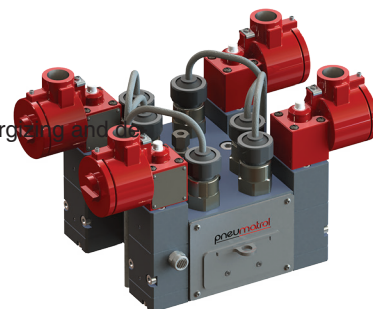
- 8 zones (Base + 7 remote)
- 69 RLS Stations (Base + 7 RIP)
- 32 Energy Sources (Base + 8 OCP)



Safe Redundant Systems

Redundant Valve Manifold Systems PA1 Series

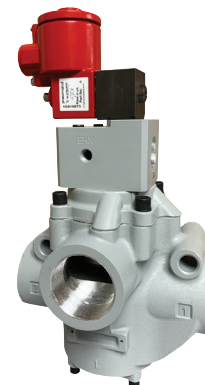
- Base mounted
- Port Size 1/4"
- Compact manifold designs
- Uses a Fail-safe trip system with 2oo3 and 3oo4 voting logic for energizing and de-energizing signals.
- Interchangeable CNOMO interface coil units, including various hazardous area options
- Solenoid Operator: SIL 2 on energizing, SIL 3 on de-energizing
- ATEX, IECEx, GOST CUTR and NEPSI coil certification
- Individual pneumatic visual indication for each solenoid and for the input to and output from the whole system
- Individual solenoid isolation allows any solenoid to be serviced while the other solenoids can continue to operate normally; thus, solenoids can be maintained without interrupting the operation of the manifold system



High Flow Directional Control Valves

2/2, 3/2, and 4/2 High-performance Valves HV Series

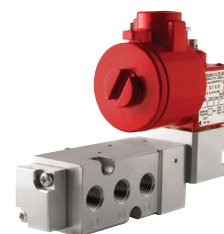
- Inline mounted
- Port Size 1/4" through 2-1/2"
- Cv up to 70
- Proven poppet technology
- Fastest response times
- Maximum shifting forces eliminates valve sticking problems
- Withstands dirt, debris, water and air quality deficiencies
- SIL 2 certified
- Safety solenoid pilot options with standard CNOMO Interface



NAMUR Interface

3/2, and 5/2 NAMUR Interface Valves P Series

- NAMUR Interface
- Top face air connection
- Port size 1/4" inlet, 1/8" exhaust ports
- Cv up to 0.7
- Spool construction
- Single coil spring return function or double coil stay put function
- Pilot exhaust dust caps fitted as standard
- Integrated Exhaust to Sprint (ETS) feature in 3/2 position
- Built in 3/2 to 5/2 function conversion facility for spring return and double acting actuators respectively
- SIL 2 or SIL 3 capable when used in 3/2 mode
- Global certification Atex, IECEx, FM, CCCex, Exia, Exd & Exm and other hazardous area coils





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