



FEATURES

- Modular in Nature / Custom Configurable
- Hot Field Swappable
- Individual Isolation with Locking Arrangement
- Versatile Mounting

BENEFITS

- No Spurious trips
- Online Maintenance without process interruption
- Local control and/or Remote control
- Valve position indicator with Feedback signal & PST functionality
- High Availability
- Diagnostic Parameters

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Modular Redundant Valve Block
FLUID CONTROLS

Emergency Shutdown System (ESD) is designed to minimize the effects of emergency situations, related to discharge of Hydrocarbons / Hazardous chemical, or outbreak of fire resulting in unplanned shutdown or loss of production. Solenoid Valve in ESD loop plays a major role to vent the actuator to a fail safe state on receipt of signal from ESD controller and/or power failure. Apart from functional safety calculation, it's also important to use application based Solenoid Valve in ESD loop.

Rotex offers range of Solenoid Valve in 3 Port / 5 Port configuration for both direct acting and pilot operation.



APPLICATIONS

- Emergency Shutdown Valves / Systems (ESD)
- Critical Control Systems / HIPPS
- Safety Interlocking Systems
- Trip Valve Control Systems (Burner Management)
- Fuel Gas Valve Systems
- Pressure Venting / Isolation Systems
- Safety Trip Shutdown Systems
- Process / Equipment Protection Systems

Redundant Valve Block - 1oo2

- Modular Redundant Construction
- Solenoid Valve & Actuator Status Indicator
- Termination – Weather Proof / Explosion Proof
- MoC – Aluminium / Stainless Steel
- SIL 3 Capable as per IEC 61508:2010 Parts 1-7

Reliability with **SAFETY** Instrumented

Connection & Working logic for 1oo2		
Channel - 1	Channel - 2	Output
OFF	OFF	OFF
ON	OFF	OFF
OFF	ON	OFF
ON	ON	ON

Redundant Valve Block with Three Solenoid Valve Block - 2oo3

- Triple Redundant Construction
- Manifold Block Solution
- Solenoid Valve & Actuator Status Indicator
- Online Maintenance with By-pass Arrangement
- Online & Offline Diagnostics
- High PFD Value
- Termination – Weather Proof / Explosion Proof
- MoC – Aluminium / Stainless Steel
- SIL 3 Capable as per IEC 61508:2010 Parts 1-7

PATENT
PENDING

Reliability with **AVAILABILITY** and **SAFETY** Instrumented

Connection & Working logic for 2oo3			
Channel - 1	Channel - 2	Channel - 3	Output
OFF	OFF	OFF	OFF
ON	OFF	OFF	OFF
OFF	ON	OFF	OFF
OFF	OFF	ON	OFF
ON	ON	OFF	ON
OFF	ON	ON	ON
ON	OFF	ON	ON
ON	ON	ON	ON

Redundant Valve Block -2oo2

- Modular Redundant Construction
- Solenoid Valve & Actuator Status Indicator
- High PFD Value
- Online Maintenance with By- pass Arrangement
- Termination – Weather Proof / Explosion Proof
- MoC – Aluminium / Stainless Steel
- SIL 3 Capable as per IEC 61508:2010 Parts 1-7

Reliability with **AVAILABILITY** Instrumented

Connection & Working logic for 2oo2		
Channel - 1	Channel - 2	Output
OFF	OFF	OFF
OFF	ON	ON
ON	OFF	ON
ON	ON	ON

Redundant Valve Block - 2oo3 / 3oo4

- Triple Redundant Construction
- Manifold Block Solution
- Solenoid Valve & Actuator Status Indicator
- Online Maintenance / Replacement of SOV with By-pass Arrangement
- Online & Offline Diagnostics
- High PFD Value
- Termination – Weather Proof / Explosion Proof
- MoC – Aluminium / Stainless Steel
- SIL 3 Capable as per IEC 61508:2010 Parts 1-7
- Can be configured as 3oo4

Reliability with **AVAILABILITY** and **SAFETY** Instrumented

Connection & Working logic for 2oo3				
Channel - 1		Channel - 2	Channel - 3	Output
SOV 1	SOV 2	SOV 3	SOV 4	
OFF	OFF	OFF	OFF	OFF
ON	ON	OFF	OFF	OFF
OFF	OFF	ON	OFF	OFF
OFF	OFF	OFF	ON	OFF
OFF	OFF	ON	ON	ON
ON	ON	OFF	ON	ON
ON	ON	ON	OFF	ON
ON	ON	ON	ON	ON

SELECTION GUIDE

Parameters for selection of Redundant Valve Block

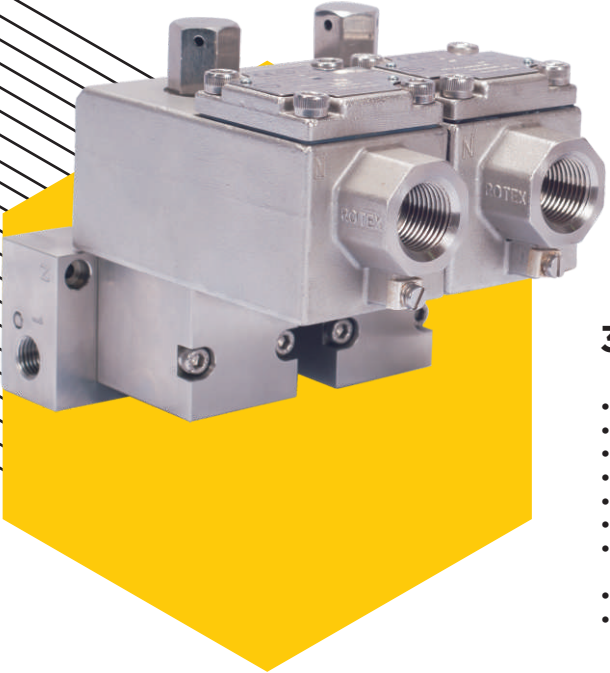
Type	1oo2 / 2oo2 / 2oo3 / 3oo4
Type of Actuator	Single Acting / Double Acting
Common Bypass / Individual Isolation Valve	With or with out control room feedback
Individual SOV Position Feedback	<ul style="list-style-type: none">• With local indicator (Pneumatic Visual indication)• Control Room feedback• Local indicator and control room feedback (Reed Switch)
Mounting	<ul style="list-style-type: none">• Base Plate with Canopy• CRCA Panel box• SS Panel box
Panel Box	<ul style="list-style-type: none">• Weather Proof Terminal Box• Ex Proof junction box
Port Connection	<ul style="list-style-type: none">• ¼"- BSP(F) / NPT(F) with 8mm orifice• ½"- BSP(F) / NPT(F) with 15mm orifice
Material of Construction – Wetted Parts	Aluminium Hard Anodised / SS316L
Material of Construction – Solenoid	Die Cast Aluminium / Cast SS
Solenoid Insulation	Class H
Solenoid Enclosure	Ex Proof / Intrinsically Safe
Supply Voltage	230VAC / 110VAC / 24VDC
Optional Features	<ul style="list-style-type: none">• LED on Solenoid
Approval for Solenoid *	<ul style="list-style-type: none">• PESO• ATEX• Cu-TR• INMETRO

* - ATEX Approval for Position Feedback Solenoid under progress

Standard Specifications :

Function : 3/2, Normally Closed (or) 5/2
Medium : Filtered Compressed Air, Inert Gas
Media Pressure : 1 to 10 bar
Seal : Viton
Media Temperature : -40 °C to + 80 °C
Environment protection : IP 67
Qualification : SIL 3

For other specifications, Please contact ROTEX



3 Port Redundant Solenoid Valve

- Two Direct Acting SOV's in Redundant Configuration
- Special Manifold – Maximum Flow and Ease of Maintenance
- Zero Internal Leakages
- Solenoid Power Consumption – 1.8 W / 3.5 W / 8 W / 15 W
- Orifice – 5 mm / 10 mm
- Operating Pressure upto 16 bar
- Termination – Intrinsically Safe (Ex ia) / Explosion Proof (Ex d) Weather Proof
- MoC – Aluminium / Brass / Stainless Steel
- SIL 3 Capable as per IEC 61508:2010 Parts 1-7

Single Acting Actuators

5 Port Redundant Solenoid Valve with Redundant Operator

- 5/2 SOV with Redundant Operator
- Zero Internal Leakages
- Orifice – 6 mm / 10 mm / 16 mm
- Operating Pressure upto 80 bar
- Termination – Explosion Proof (Ex d) / Weather Proof
- MoC – Aluminium / Brass / Stainless Steel

Double Acting Actuators

