

The Falcon solenoid valve is an integral part of Westlock Quantum control monitors and is engineered specifically to address low power valve actuation requirements. It is available for single-acting or dual acting actuators.



Features

- Power levels for actuation control reduced to 5% that of conventional valves.
- Rapid and safe coil replacement for easy maintenance.
- Operates in any position.
- Approved for general purpose; Division 2 (Non-incendive) and Divisions 1 & 2 (Explosionproof and Intrinsically Safe) applications when integrated with in Quantum housing.

Technical Data

Operating pressure	45 - 120 psi (3.1 - 8.3 bar)
Operating temperature	-4°F to +149°F (-20°C to + 65°C) - IS only -4°F to +180°F (-20°C to + 82°C)
Operating media	Filtered air to 20 microns
Standard specification	
Materials	Anodized aluminum, nickel plated brass, stainless steel.
Valve flow rates	
Falcon	0.5, 1.2, 3.5 C _v
Standard coil voltages	
Falcon	24 V DC (XP coil) 120 V AC (XP coil)
Valve port tapping	
Falcon	¼" NPT air ports for inlet, outlet and exhaust (3.5 C _v valve has ½" NPT air ports)

Pneumatic operation

Air line designation

1/4" NPT or 1/4" BSP air ports for inlet, outlet and exhaust. (3.5 C_v valve has 1/2" NPT air ports)

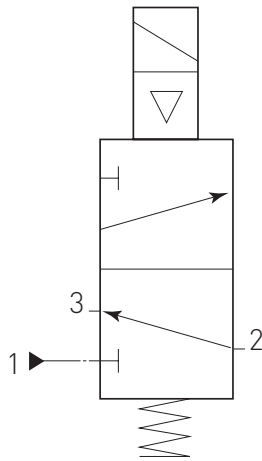


Fig. 1 Spring return valve 3-way

Operation:

Solenoid de-energized – air flows from outlet port 2 to exhaust port 3.

Solenoid energized – air flows from inlet port 1 to outlet port 2.

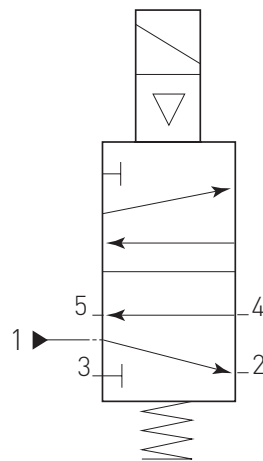


Fig. 2 Spring rreturn valve 4-way

Operation:

Solenoid de-energized – air flows from inlet port 1 to outlet port 2 and exhausts from port 4 to port 5.

Solenoid energized – air flows from inlet port 1 to outlet port 4 and exhausts from port 2 to port 3.

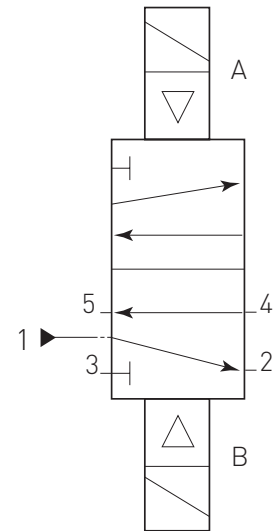


Fig. 3 Dual coil valve

Operation:

Coil B de-energized – air flows from inlet port 1 to outlet port 2 and exhausts from port 4 to port 5.

Coil A energized – air flows from inlet port 1 to outlet port 4 and exhausts from port 2 to port 3.

Falcon material specifications

Components	Aluminum valve body	316 stainless steel valve body	Ni-plated brass valve body
Valve body	Black anodized aluminum	Passivated 316 SS	Ni-plated brass
Pilot piston end cap	Black anodized aluminum	Passivated 316 SS	Ni-plated brass
Spring end cap	Black anodized aluminum	Passivated 316 SS	Ni-plated brass
Spool	PTFE impregnated hard anodized aluminum	303 SS	PTFE impregnated hard anodized aluminum
Seals (Std. operating temp.)	Nitrile	Nitrile	Nitrile
Bushes	Brass	Brass	Brass
Spring	Stainless steel	Stainless steel	Stainless steel

Falcon® Integral Solenoid Valves

Falcon valve body options

The standard range of Falcon valve options is shown below. Please consult individual control monitor product datasheets for availability as applicable.

Code	C _v	Mode	Material	Code	C _v	Mode	Material	Code	C _v	Mode	Material
22	0.5	3-way	Brass	20	0.5	dual coil	Brass	26	0.5	4-way	Brass
32	0.5	3-way	Aluminum	2Y	1.2	dual coil	Brass	36	0.5	4-Way	Aluminum
52	0.5	3-way	316 SS	3Z	3.5	dual coil	Aluminum	56	0.5	4-way	316 SS
23	1.2	3-way	Brass	30	0.5	dual coil	Aluminum	27	1.2	4-way	Brass
33	1.2	3-way	Aluminum	50	0.5	dual coil	316 SS	37	1.2	4-way	Aluminum
53	1.2	3-way	316 SS	3Y	1.2	dual coil	Aluminum	57	1.2	4-way	316 SS
34	3.5	3-way	Aluminum	5Y	1.2	dual coil	316 SS	38	3.5	4-way	Aluminum
54	3.5	3-way	316 SS					58	3.5	4-way	316 SS

Options

- Momentary, maintained overrides (see below).
- External pilot options are offered with 1/8" size tapping.
- Non-venting available in 1.2 C_v and 3.5 C_v Falcon only.

Manual override options

N – No-voltage release (latching)

With the coil first energized, the palm button is pushed in and latched. The inward movement of the palm button causes the valve to shift. When the coil is de-energized, the palm button and latching mechanism are tripped automatically, allowing the valve to return to its original position.

M – Momentary override

Spring return momentary push type. Must be held in to actuate.

R – No-voltage release (non-latching)

With the coil first energized, the palm button is pushed in. The inward movement of the palm button causes the valve to shift. When the coil is de-energized, the valve automatically returns to its original position.

L – Manual locking override

The palm button is pushed in and rotated clockwise to lock in position. It must be disengaged manually to return to its original position.

E – External pilot

The 1/8" NPT external pilot connection requires a separate auxiliary pressure line to the valve. This feature should be used when the controlled pressure is below the minimum 45 psi (3.1 bar) operating pressure.

V – Internal venting

Falcon pilot exhaust is channelled internally to the solenoid valve's exhaust port to contain dangerous process gases or prevent intrusion of unwanted moisture and chemicals.

I – Same as 'V'

Falcon without an indicator on the main valve body.



N – No-voltage release (latching)



M – Momentary override



L – Manual locking override

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