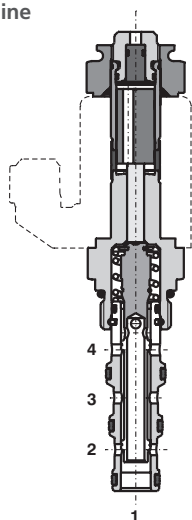


4/2 Directional Valve, Solenoid Operated, Spool Type, Direct Acting

SD2E-A4

3/4-16 UNF • Q_{max} 30 l/min (8 GPM) • p_{max} 350 bar (5100 PSI)

Lightline



Technical Features

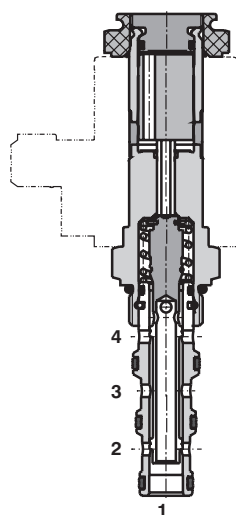
- › Hardened precision parts
- › High flow capacity
- › High transmitted hydraulic power
- › Wide range of manual overrides available
- › All ports may be fully pressurized
- › Variety of optional spools available
- › Coil interchangeability among SD*-A* product line
- › Standard version zinc-coated with surface protection acc. to ISO 9227 (240 h salt spray)

Functional Description

4-way, 2-position high pressure bi-directional spool valve in the form of a screw-in cartridge. The valve is used mainly to direct flow to actuators.

2Z11	2Z51	2X21	2R21	2P51	2Y11	2C51	2Y61

High performance



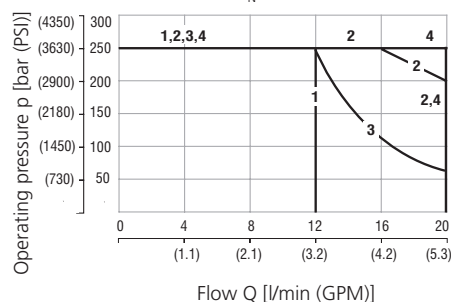
Technical Data

Valve size / Cartridge cavity		3/4-16 UNF-2A / A4 (C-8-4)	
		Lightline	High performance
Max. flow	l/min (GPM)	20 (5.3)	30 (8)
Max. operating pressure	bar (PSI)	250 (3600)	350 (5100)
Max. internal leakage in the direction 4→1 ($v=32 \text{ mm}^2/\text{s}$)	cm^3/min	≤ 35 at 250 bar	
Fluid temperature range (NBR)	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	-30...60 (-22...140)	-30...80 (-22...176)
Fluid temperature range (FPM)	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	-20...60 (-4...140)	-20...80 (-4...176)
Ambient temperature range	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	-30...50 (-22...122)	-30...80 (-22...176)
Fluid viscosity range	mm^2/s	10 ... 500	
Weight without coil	kg (lbs)	0.15 (0.33)	0.23 (0.51)
Datasheet		Type	
General information		Products and operating conditions	
Coil types	HA 0060	C14B*	C19B*
Valve bodies	In-line mounted	HA 0018	SB-A4*
Cavity details / Form tools	HA 0019	SMT-A4*	
Spare parts	HA 8010		

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Operating limits - Lightline

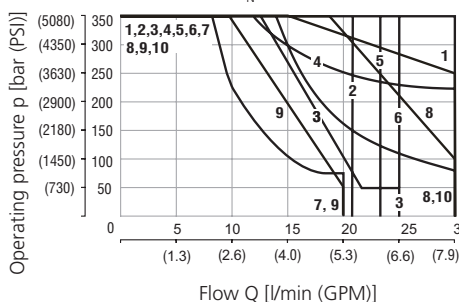
Oil 60 $^{\circ}\text{C}$ (140 $^{\circ}\text{F}$) / Ambient temperature
50 $^{\circ}\text{C}$ (122 $^{\circ}\text{F}$) / Voltage U_N -10% (21.6 V DC)



Model	Connection
1 2Z11	3→2, 4→1
2 2Z51	3→4, 2→1
3 2R21	3→2, 4→1
4 2R21	3→4, 2→1
4 2P51	3→4, 2→1
4 2X21	3→4, 2→1 3→2, 4→1

Operating limits - High performance

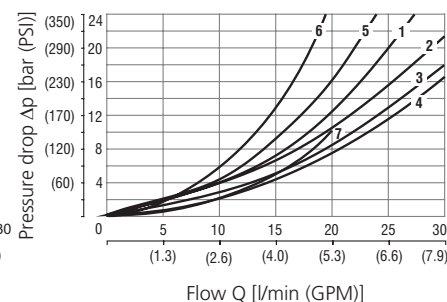
Oil 80 $^{\circ}\text{C}$ (176 $^{\circ}\text{F}$) / Ambient temperature
50 $^{\circ}\text{C}$ (122 $^{\circ}\text{F}$) / Voltage U_N -10% (21.6 V DC)



Model	Connection
1 2Z51	3→4, 2→1
2 2Z11	3→2, 4→1
3 2R21	3→2, 4→1
4 2X21	3→4, 2→1
5 2X21	3→2, 4→1
1 2R21	3→4, 2→1
6 2Y11	3→2, 4→1
7 2C51	3→1
8 2Y61	3→2
9 2Y61	4→1
10 2Y61	1→4

Pressure drop related to flow rate

- Lightline, High performance

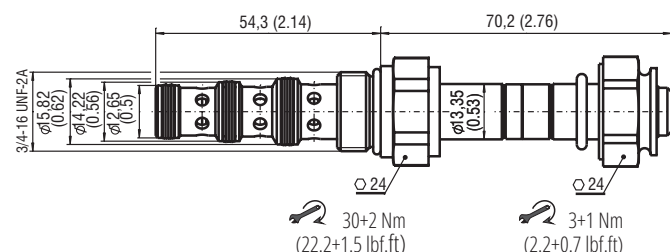


Model	Connection	Model	Connection
1 2Z11	4→1	2R21	2→1
1 2Y61	3→2		
2 2Z11	3→2	2Z51	2→1
2 2X21	3→4, 4→1	2R21	3→2
3 2Z51	3→4	2R21	3→4
3 2Y11	3→2, 4→1		
4 2X21	3→2, 2→1	2C51	3→2, 4→1
5 2R21	4→1		
6 2C51	3→1		
7 2Y61	4→1		

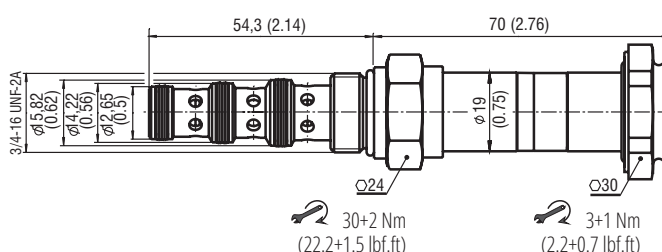
For operating limits under conditions and flow directions other than shown contact our technical support.

Dimensions in millimeters (inches)

Lightline



High performance



Manual Override in millimeters (inches)

No Designation - standard	Designation M2 - rubber boot protected	Designation M4 - hand screw (only for High performance)	Designation M5 - socket head screw, size 2.5	Designation M9 - without manual override
 L ~ 70,2 (2.63) H ~ 70,0 (2.76)	 L ~ 81,7 (3.22) H ~ 81,5 (3.21)	 H ~ 89,6 (3.53)	 L ~ 77,2 (3.04) H ~ 77,6 (3.06)	 L ~ 67,2 (2.65) H ~ 70,0 (2.76)

In case of solenoid malfunction or power failure, the valve spool can be shifted by manual override under the condition that the pressure in the back line does not exceed 25 bar (363 PSI). For alternative manual overrides contact our technical support.

Ordering Code

SD2E-A4 / -

**4/2 directional valve,
solenoid operated,
spool type, direct acting,**

Valve cavity
3/4-16 UNF (C-8-4)

Model
Lightline
High performance

L
H

Surface treatment
A zinc-coated (ZnCr-3), ISO 9227 (240 h)
B zinc-coated (ZnNi), ISO 9227 (520 h)

Functional symbol

		2Z11
		2Z51
		2X21
		2R21
		2P51 only for L
		2Y11 only for H
		2Y61 only for H
		2C51 only for H

No designation
V

Seals
NBR
FPM (Viton)

No designation
M2
M4
M5
M9

Manual override
standard
rubber boot protected
hand screw (only for High performance)
socket head screw
without manual override