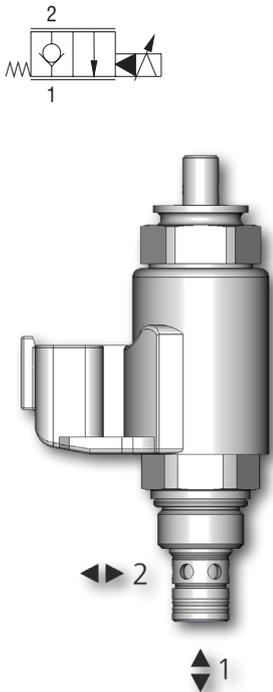


2/2 Proportional Directional valve, Solenoid Operated, Poppet Type, Piloted

SD3P-A2/H

3/4-16 UNF • Q_{max} 50 l/min (13.2 GPM) • p_{max} 350 bar (5100 PSI)



Technical Features

- › Hardened precision parts
- › High flow capacity and leak-free closing
- › High transmitted hydraulic power, max. operating pressure 350 bar
- › Normally closed version
- › Available Manual Overrides
- › Both ports may be fully pressurized
- › In the standard version, the valve is zinc-coated for 520 h protection acc. to ISO 9227

Functional Description

2/2 screw-in cartridge, proportional, directional, solenoid operated, piloted, poppet type valve normally closed version. When the the coil is not energized, in flow direction 1 → 2, the valve works as a non-return valve. In flow direction 2 → 1 the valve is closed with minimal volume loss.

When the coil is energized, in flow direction 2 → 1 the valve controls flow in proportion to the current. The valve is commonly used to hold a load with minimal volume loss and smooth control.

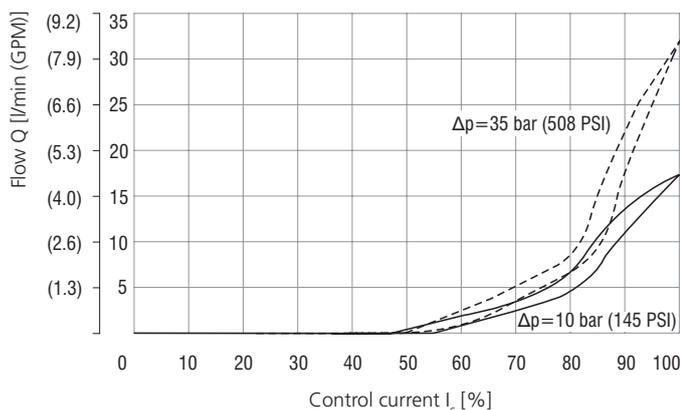
An electronic control unit (ECU) EL7 is used for the valve control. The ECU converts the input command signal into an output current control PWM signal for solenoid coils. The ECU EL7 is available as external for connection to the DIN rail (EL7-E, see datasheet HA 9152) or integrated on the valve in the form of connector plug (EL7-I, see datasheet HA 9151).

Technical Data

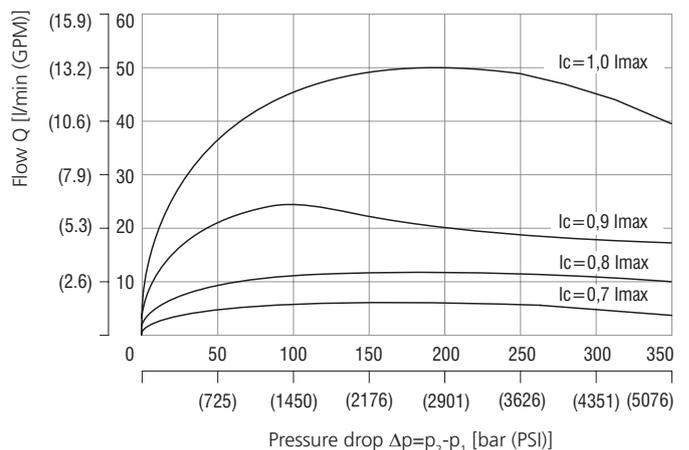
Valve size / Cartridge cavity		3/4-16 UNF-2A / A2 (C-8-2)	
Max. flow	l/min (GPM)	50 (13.2)	
Max. operating pressure	bar (PSI)	350 (5076)	
Nominal flow rate Q_N at $\Delta p=35$ bar (508 PSI), direct. 2→1	l/min (GPM)	30 (7.9)	
Flow losses at $\Delta p=250$ bar (3625 PSI), direct. 2→1	ml/min	0.3	
Fluid temperature range (NBR)	°C (°F)	-30 ... +80 (-22 ... +176)	
Fluid temperature range (FPM)	°C (°F)	-20 ... +120 (-4 ... +248)	
Ambient temperature range	°C (°F)	-30 ... +80 (-22 ... +176)	
Service life	cycles	10 ⁶	
Weight - valve with solenoid	kg	0.257 (0.567)	
Technical Data of the Proportional Solenoid			
Nominal supply voltage	V	12 DC	24 DC
Limit current	A	0.950	0.475
Rated resistance at 20 °C (68 °F)	Ω	6.55	26.2
Duty cycle	%	100	
Dither frequency	Hz	100	
		Datasheet	Type
General information		GI_0060	Products and operating conditions
Coil types		C_8007	C 14B*
Valve bodies	In-line mounted	SB_0018	SB-A2*
	Sandwich mounted	SB-04(06)_0028	SB-*A2*
Cavity details / Form tools		SMT_0019	SMT-A2*
Spare parts		SP_8010	
Compatible control unit			EL7-E*

Characteristics measured at $v = 32$ mm²/s (156 SUS)

Flow characteristic - flow direction 2-1
at different pressure levels



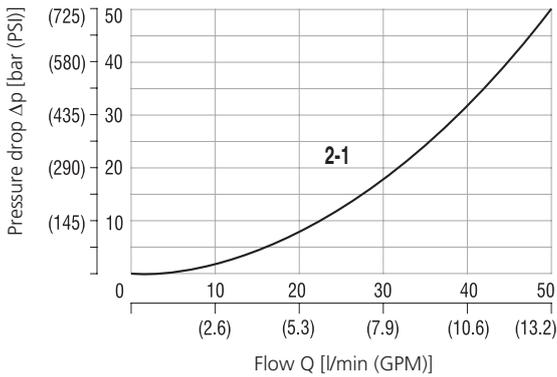
Operating limits - flow direction 2-1
at different current levels



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

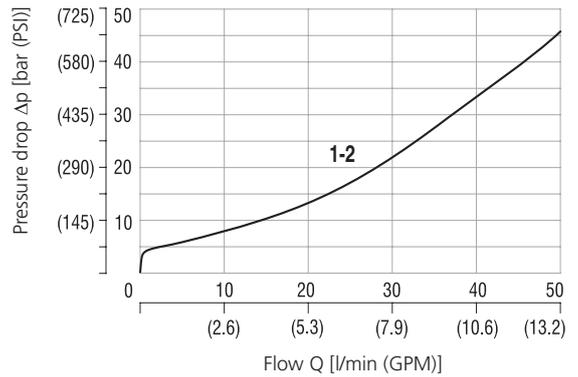
Pressure drop related to flow rate

Flow direction 2→1, Control current $I_c = 1,25 \cdot I_{\text{max}}$



Pressure drop related to flow rate

Flow direction 1→2, Control current $I_c = 0 \text{ mA}$



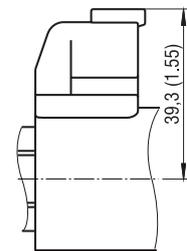
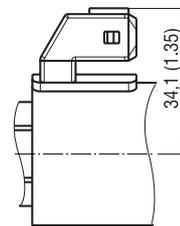
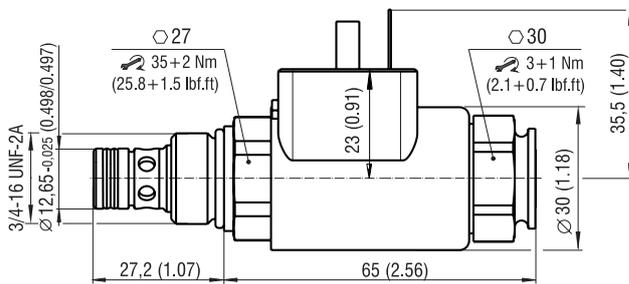
Dimensions in millimeters (inches)

Connector type

E1, E2 - IP65
EN 175301-803-A

E3A, E4A - IP67
AMP Junior Timer

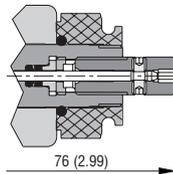
E12, E13 - IP67 / IP69K
Deutsch DT04-2P



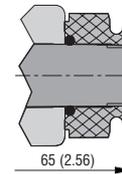
The specified IP rating applies only in the case of correctly connected connectors (male + female) with the corresponding IP rating.

Manual Override dimensions in millimeters (inches)

Designation M5 - socket head screw, size 2.5



Designation M9 - without manual override



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

Ordering Code

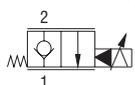
SD3P-A2 / H 2L2 / 30 - [] [] [] [] - B

2/2 Proportional directional valve, solenoid operated, poppet type, piloted

Valve cavity
3/4-16 UNF-2A (C-8-2)

Model
High performance

Functional symbol



Nominal flow rate
30 l/min at 35 bar (7.9 GPM at 508 PSI)

Rated supply voltage / limit current
12 V DC / 0.95 A
24 V DC / 0.475 A

12
24

Surface treatment
zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
NBR
FPM (Viton)

Manual override
M5 socket head screw, size 2.5
M9 without manual override

Connector
E1 EN 175301-803-A
E2 E1 with quenching diode
E3A AMP Junior Timer - axial direction (2 pins; male)
E4A E3A with quenching diode
E12A Deutsch DT04-2P - axial direction
E13A E12A with quenching diode