

3/2 ways/positions flow diverters

RE 18302-02/07.12

1/8

Replaces: 12.09

L705... (VS81-VS82-VS85)

Size 6

Series 00

Maximum operating pressure 310 bar [4500 psi]

Maximum flow 60 l/min [15.85 gpm]

Ports G 3/8 - G 1/2 - SAE8



DVI0048

Summary

Description

General specifications

Ordering details

Spool variants

Principles of operation, cross section

Technical data

Δp - Q_v characteristic curves

External dimensions and fittings

Electric connections

Page

- 3 way 2 position valve.
- 1 - Directional spool valve with direct solenoid control.
- 2 - Hydraulic / pneumatic pilot, or manual push and twist control available as option.
- 2
- 3 - Control spool operated by solenoid, with easily removable coil fastened by a ring nut.
- 3
- 5 - Wet pin tube for DC coil, with push rod for mechanical override in case of voltage shortage.
- 5
- 6 - Unrestricted 360° orientation of DC coil.
- 6
- 7 - Control spool held in normal position by return spring.
- 7
- Optional manual override (push-button or screw type).
- Connectors available: DIN 43650 – ISO 4400, AMP Junior, DT04-2P (Deutsch), Free leads.

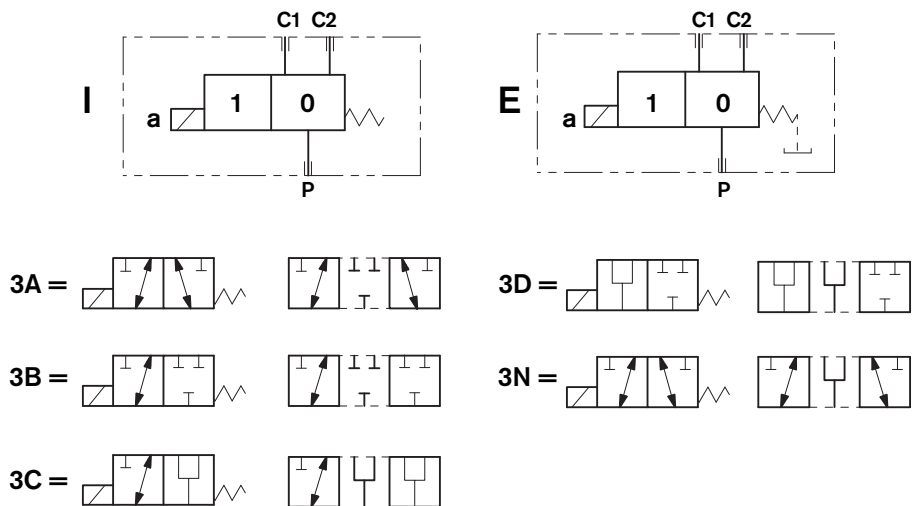
General specifications

Ordering details

	L	7	0	5	_	_	_	_	_	_	0																					
Family Compact directional valve																																
Type Flow Diverters																																
Ports G3/8 DIN 3852 = 3 G1/2 DIN 3852 = 4 3/4-16 UNF-2B (SAE8) = C																																
Control type Solenoid (coil C 48) without manual override = 11 Solenoid (coil C 48) with push-button type manual override = 1P Solenoid (coil C 48) with screw type manual override = 1F Hydraulic / pneumatic control = P1 Manual push and twist control = H1																																
Spool variants 3 Ways / 2 position = 3_																																
Electric connections																																
00 = Without coils 01** = With coils, without mating connector DIN EN 175301-803 03 = With coils, with bi-directional diode, without mating connector vertical Amp-Junior 07 = With coils, with bi-directional diode, without mating connector DT04-2P 31 = With coils and bipolar sheathed lead 350mm [13,8 in] long																																
Voltage supply																																
SG = Manual push and twist control 00 = Without coil 0B = 12V DC AD = 13V DC 0C = 24V DC AC = 27V DC 0D = 48V DC																																
<table border="1" style="border-collapse: collapse; margin: auto;"> <tr> <td style="padding: 2px;">SG</td> <td style="padding: 2px;">00</td> <td style="padding: 2px;">0B</td> <td style="padding: 2px;">AD</td> <td style="padding: 2px;">0C</td> <td style="padding: 2px;">AC</td> <td style="padding: 2px;">0D</td> </tr> <tr> <td style="padding: 2px;">31</td> <td style="padding: 2px;">07</td> <td style="padding: 2px;">03</td> <td style="padding: 2px;">01</td> <td style="padding: 2px;">00</td> <td colspan="2"></td> </tr> <tr> <td colspan="7" style="text-align: center; padding: 2px;">Available connections</td> </tr> </table>												SG	00	0B	AD	0C	AC	0D	31	07	03	01	00			Available connections						
SG	00	0B	AD	0C	AC	0D																										
31	07	03	01	00																												
Available connections																																
Drain type																																
I = Internal drain E = External drain																																

** For connectors ordering code see data sheet RE 18325-90.

Spool variants



Principles of operation, cross section

A valve basically consists of a housing (1), a control spool (2), a return spring (3) and a solenoid (5). It is designed to select which one of two circuits (C1 or C2) is to be supplied with the oil delivered from one single hose (P): with spool in position "0", when the solenoid is de-energized, the flow goes from P to C1, with spool in position "1", when the solenoid is energized the flow goes from P to C2.

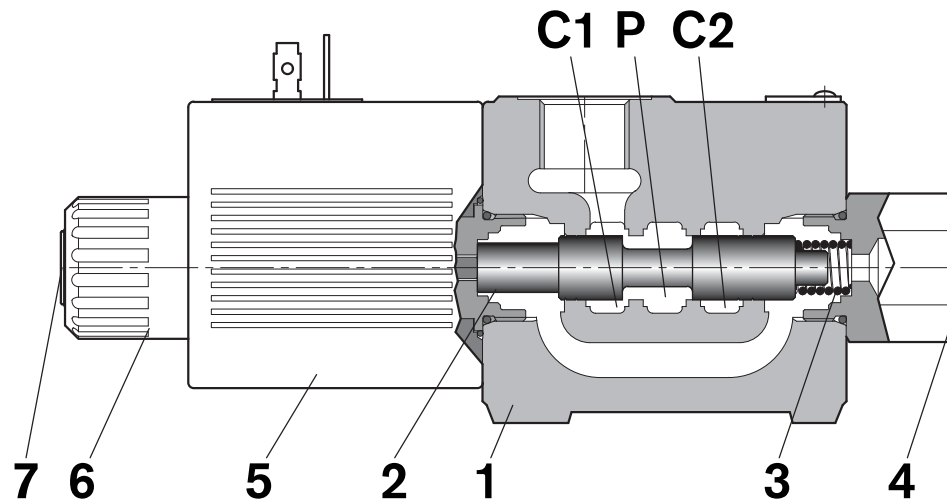
With the coil de-energized, the return spring (3) pushes back the spool (2) and holds it in position "0".

The coil (5) is fastened to the tube by the ring nut (6).

The manual override (7) allows to shift the spool (2) also in case of voltage shortage.

An external drain, to be connected to tank, ensures shifting operations also at higher working pressure.

Hydraulic / pneumatic pilot control, or manual push and twist control for spool shifting are available upon request.



Technical Data (for applications with different specifications consult us)

General

Valve weight	kg [lbs]	2.06 [4.54]
Ambient Temperature	°C [°F]	-20...+50 [-4...+122] (NBR seals)

Hydraulic

Maximum pressure with external drain ("E" type)	bar [psi]	310 [4500]
Maximum pressure with internal drain ("I" type)	bar [psi]	250 [3625]
Maximum flow	l/min [gpm]	60 [15.85]
Hydraulic fluid		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C [°F]	-20...+80 [-4...+176] (NBR seals)
Permissible degree of fluid contamination		ISO 4572: $\beta_x \geq 75$ X=12...15 ISO 4406: classe 20/18/15 NAS 1638: classe 9
Viscosity range	mm ² /s	5...420
Internal leakage with 100 bar [1450 psi] secondary pressure at C	cc/min [in ³ /min]	min.10 [0.61] max. 20 [1.2]

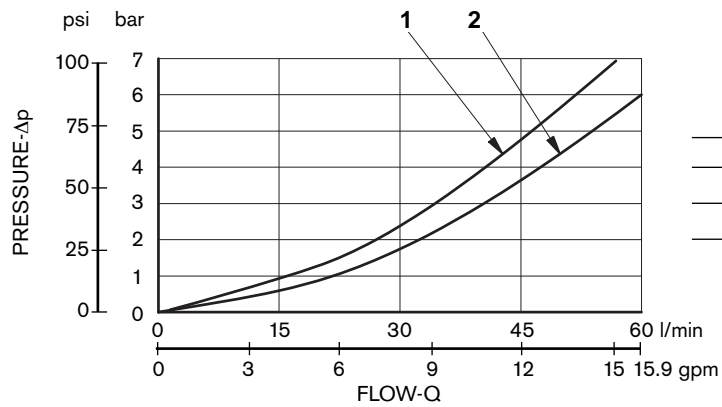
Electrical

Voltage type	DC										
Voltage tolerance (nominal voltage)	%	-10 ... +10									
Duty	%	Continuous, with ambient temperature $\leq 50^{\circ}\text{C}$ [122°F]									
Coil wire temperature not to be exceeded	$^{\circ}\text{C}$ [°F]	150 [302]									
Insulation class	H										
Compliance with	Low Voltage Directive LVD 73/23/EC (2006/95/EC), 2004/108/EC										
Coil weight with DIN 43650 – ISO 4400 connector	kg [lbs]	0.215 [0.44]									
Voltage	V	12	13	24	27	48					
Voltage type		DC	DC	DC	DC	DC					
Power consumption	W	36	36	36	36	36					
Current (nominal at 20°C [68°F])	A	3.0	2.77	1.53	1.32	0.75					
Resistance (nominal at 20°C [68°F])	Ω	3.97	4.68	15.67	20.42	63.60					

	Voltage (V)	Connector type	Coil description	Marking	Coil Mat no.
=OB 01	12 DC	EN 175301-803 (Ex. DIN 43650)	C4801 12DC	12 DC	R933000063
=OB 03	12 DC	AMP JUNIOR	C4803 12DC	12 DC	R933000065
=OB 07	12 DC	DEUTSCH DT 04-2P	C4807 12DC	12 DC	R933000068
=OB 31	12 DC	Cable 350 mm long	C4831 12DC	12 DC	R933000064
=AD 01	13 DC	EN 175301-803 (Ex. DIN 43650)	C4801 13DC	13 DC	R933000069
=AD 07	13 DC	DEUTSCH DT 04-2P	C4807 13DC	13 DC	R933000073
=OC 01	24 DC	EN 175301-803 (Ex. DIN 43650)	C4801 24DC	24 DC	R933000076
=OC 03	24 DC	AMP JUNIOR	C4803 24DC	24 DC	R933000071
=OC 07	24 DC	DEUTSCH DT 04-2P	C4807 24DC	24 DC	R933000075
=OC 31	24 DC	Cable 350 mm long	C4831 24DC	24 DC	R933000070
=AC 01	27 DC	EN 175301-803 (Ex. DIN 43650)	C4801 27DC	27 DC	R933000077
=AC 07	27 DC	DEUTSCH DT 04-2P	C4807 27DC	27 DC	R933000074
=OD 01	48 DC	EN 175301-803 (Ex. DIN 43650)	C4801 48DC	48 DC	R933000078

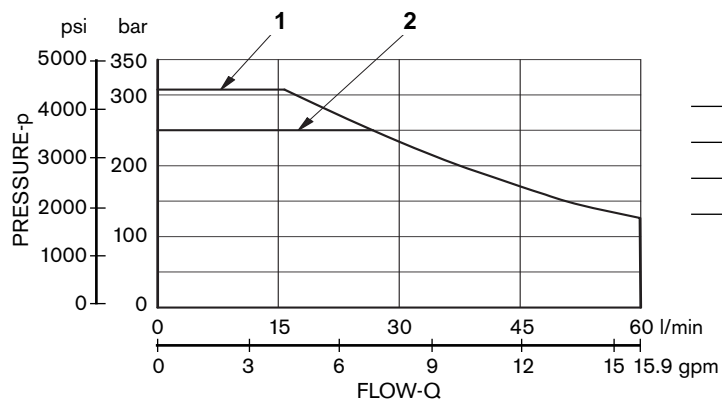
Characteristic curves

Measured with hydraulic fluid ISO-VG32 at $45^{\circ} \pm 5^{\circ} \text{ C}$ [$113^{\circ} \pm 9^{\circ} \text{ F}$]; ambient temperature 20° C [68° F].



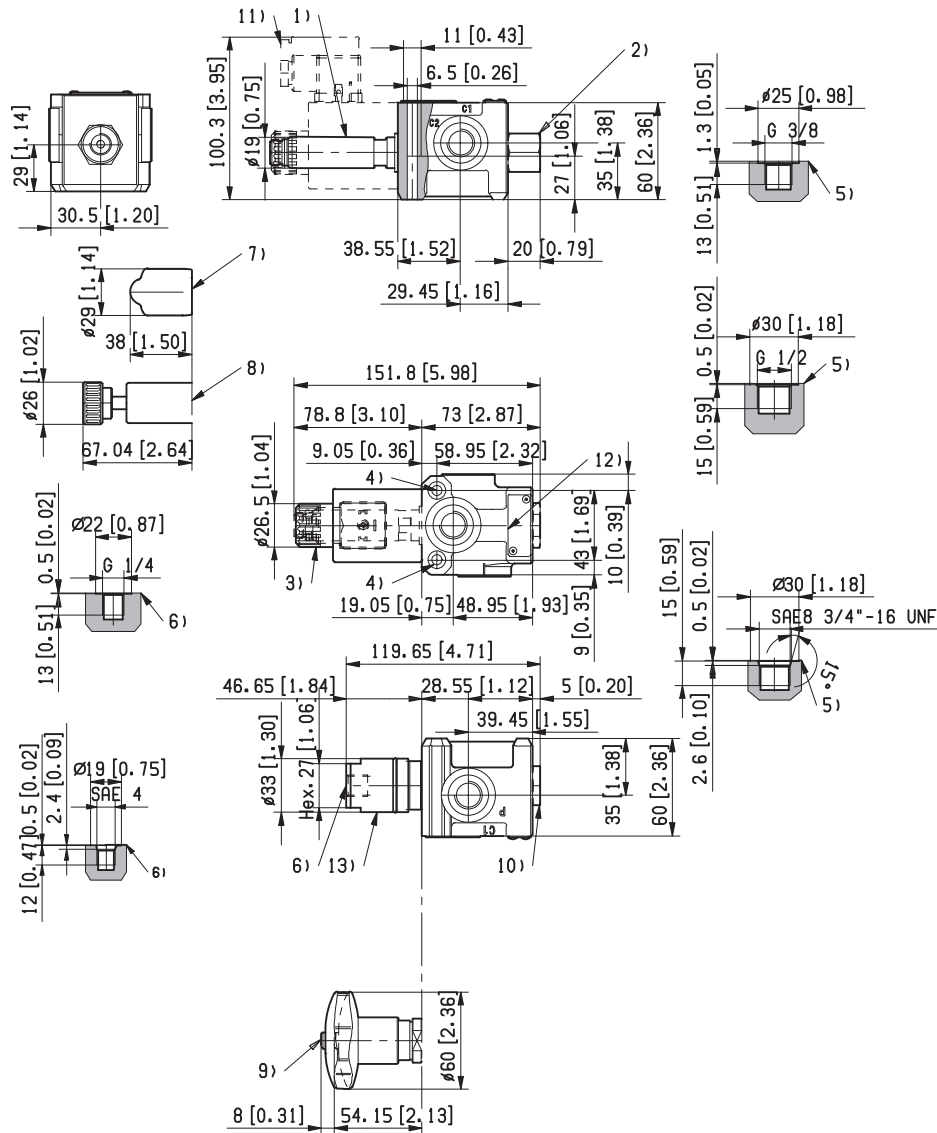
Modello	N° Curva
VS81	1
VS82/85	2

Performances limits



Curve n.	Drain type
1	External (-E-)
2	Internal (-I-)

External Dimensions and Fittings



1 Solenoid tube \varnothing 19 mm [0.75 inch].

2 Plug for version with external drain.

3 Ring nut for coil locking \varnothing 26.5 mm [1.04 inch].
Torque 5-6Nm [3.6-4.4 ft-lb].

4 Two through holes for installation.
Recommended screws M6 with strength class DIN 8.8.
Torque 9-10 Nm [6.6-7.4 ft-lb].

5 Ports P, C1, C2: G 3/8, G 1/2, SAE 8.

6 External drain and hydraulic, or pneumatic pilot port G 1/4, SAE 4.

7 Optional push-button type manual override for spool opening: it is pressure stuck to the ring nut for coil locking. Mat no. R933000043.

8 Optional screw type manual override for spool opening: it is screwed (torque 6-7Nm [4.4-5.2 ft-lb]) to the tube as replacement of the coil ring nut. Mat no. R933007215.

9 Dimensions of optional manual version, push and twist type.

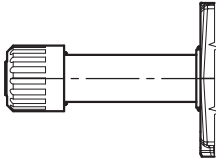
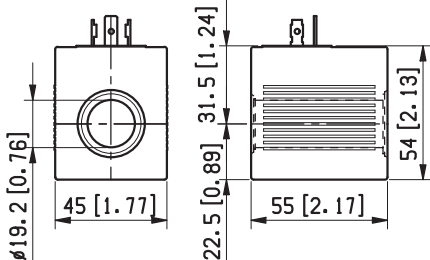
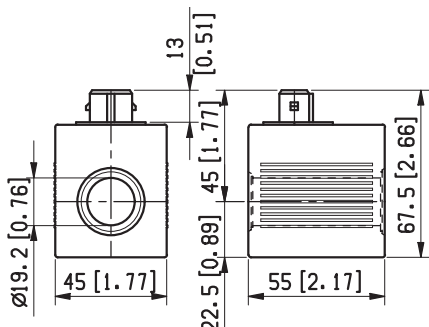
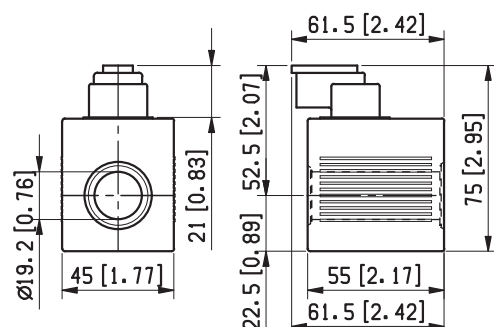
10 Plug for version with internal drain.

11 Minimum clearance needed for connector removal.

12 Identification label.

13 Hydraulic, or pneumatic pilot connector.

Electric connections

<p>=00</p>		<p>=01</p>	
<p>=03</p>	<p>Protection class: IP 65 with female connector properly fitted (see drawing).</p> 	<p>=07</p>	<p>Protection class: IP 69 K with female connector properly fitted (see drawing).</p> 
<p>=31</p>	