

6 to 14/2 ways/positions bankable flow diverters flangeable

RE 18302-10/07.12
Replaces: 12.09

1/8

L745... (VS281F-VS285F-VS286F-VS287F-VS289F)

Size 10
Series 00
Maximum operating pressure 310 bar [4500 psi]
Maximum flow 90 l/min [23.77 gpm]
Ports G 1/2 - SAE10 - M18x1.5 - JIS B 1/2 - M22x1.5



DVI0085

Summary

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General specifications

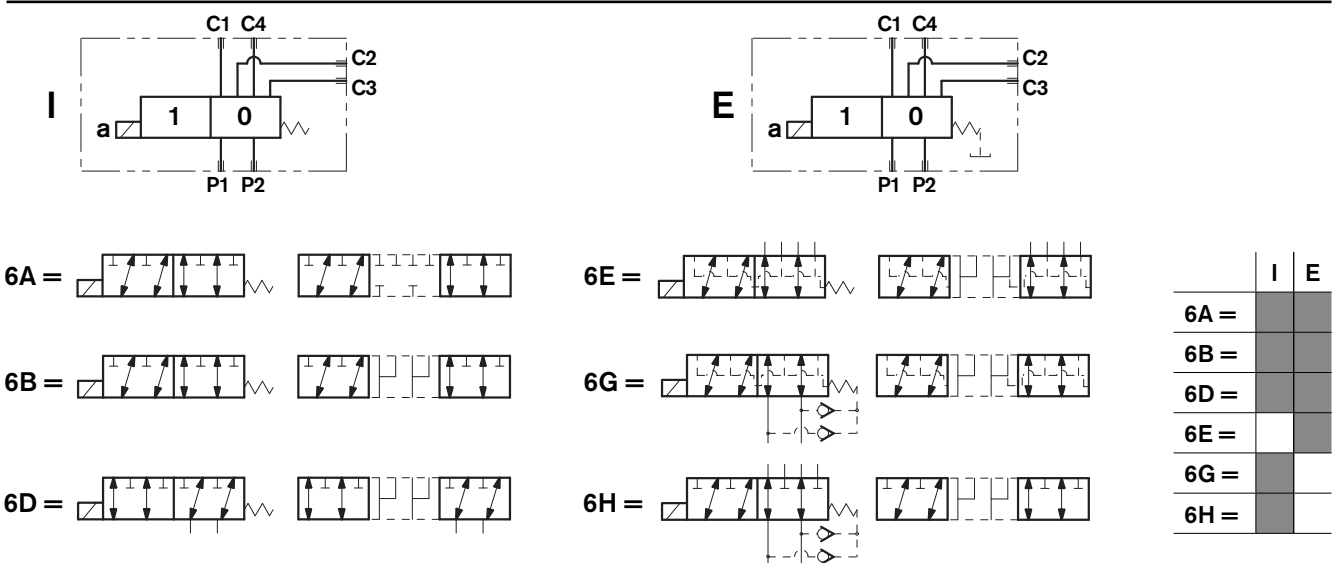
- 6 way 2 position valve.
- Directional spool valve with direct solenoid control.
- Hydraulic / pneumatic pilot , or manual push and twist control available as option.
- Usable as stand-alone, or as multiple stackable units.
- Control spool operated by solenoid.
- Wet pin tube for DC coil, with push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

Ordering details

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Spool variants

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



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 connect two inlet lines P1 – P2 (normally a set of hoses) and divert them to either the outlet ports (C1 – C4) with spool in position "0", when the solenoid is de-energized, or to the outlet ports (C2 – C3) with spool in position "1", when the solenoid is energized.

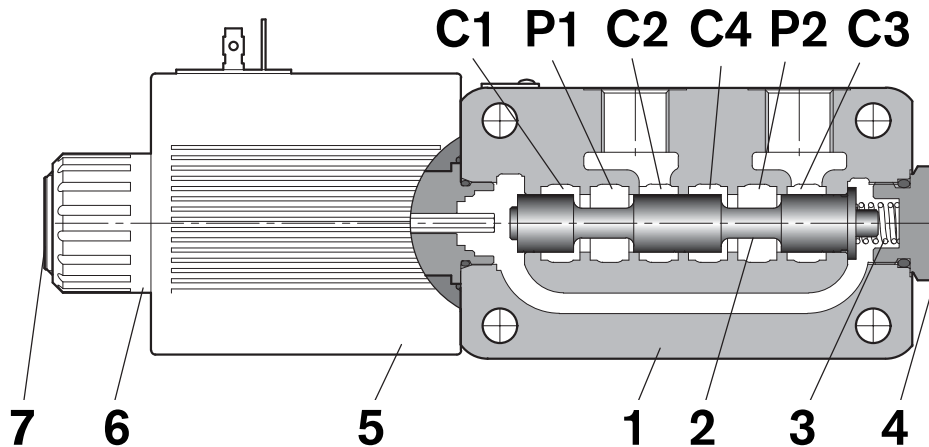
With the coil de-energized, the return spring (3) pushes back the spool (2) and holds it in position "0".

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]	4.15 [9.15]
Mounting position		unrestricted
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 pressure with internal drain and 6F or 6G or 6H scheme	bar [psi]	310 [4500]
Maximum flow	l/min [gpm]	90 [24]
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. 25 [1.52]

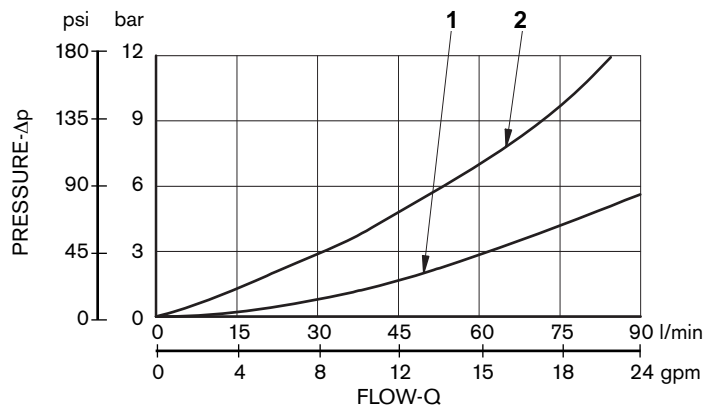
Electrical

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]	1.05 [2.3]									
Voltage	V	12	13	24	27	48					
Voltage type		DC	DC	DC	DC	DC					
Power consumption	W	44	44	44	44	44					
Current (nominal at 20°C [68°F])	A	3.6	3.4	1.8	1.60	0.90					
Resistance (nominal at 20°C [68°F])	Ω	3.2	3.6	12.8	16.9	50.5					

	Voltage (V)	Connector type	Coil description	Marking	Coil Mat no.
=OB 01	12 DC	EN 175301-803 (Ex. DIN 43650)	C6501 12DC	12 DC	R933000100
=OB 03	12 DC	AMP JUNIOR	C6503 12DC	12 DC	R933000119
=OB 07	12 DC	DEUTSCH DT 04-2P	C6507 12DC	12 DC	R933000107
=OB 31	12 DC	Cable 350 mm long	C6531 12DC	12 DC	R933000104
=AD 01	13 DC	EN 175301-803 (Ex. DIN 43650)	C6501 13DC	13 DC	R933000101
=AD 07	13 DC	DEUTSCH DT 04-2P	C6507 13DC	13 DC	R933000112
=OC 01	24 DC	EN 175301-803 (Ex. DIN 43650)	C6501 24DC	24 DC	R933000102
=OC 03	24 DC	AMP JUNIOR	C6503 24DC	24 DC	R933000120
=OC 07	24 DC	DEUTSCH DT 04-2P	C6507 24DC	24 DC	R933000111
=OC 31	24 DC	Cable 350 mm long	C6531 24DC	24 DC	R933000110
=AC 01	27 DC	EN 175301-803 (Ex. DIN 43650)	C6501 27DC	27 DC	R933000103
=AC 03	27 DC	AMP JUNIOR	C6503 27DC	27 DC	R93307055
=AC 07	27 DC	DEUTSCH DT 04-2P	C6507 27DC	27 DC	R933000113
=OD 01	48 DC	EN 175301-803 (Ex. DIN 43650)	C6501 48DC	48 DC	R933000114

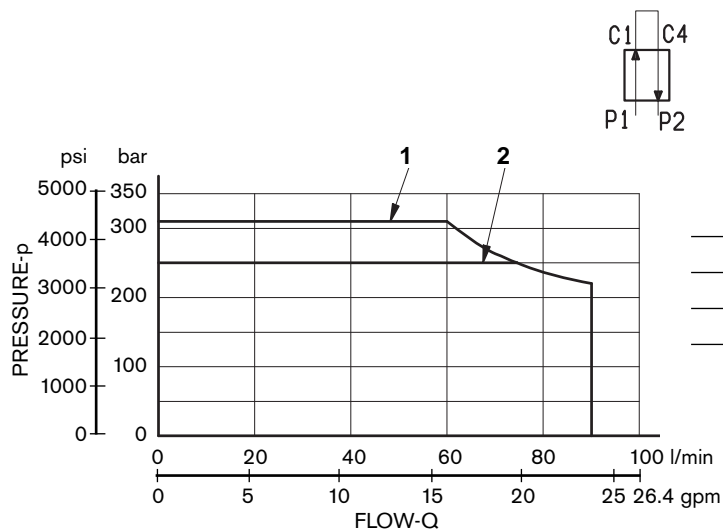
Characteristic curves

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].



Curve n			
P1 > C1	P2 > C4	P1 > C2	P2 > C1
1	1	2	2

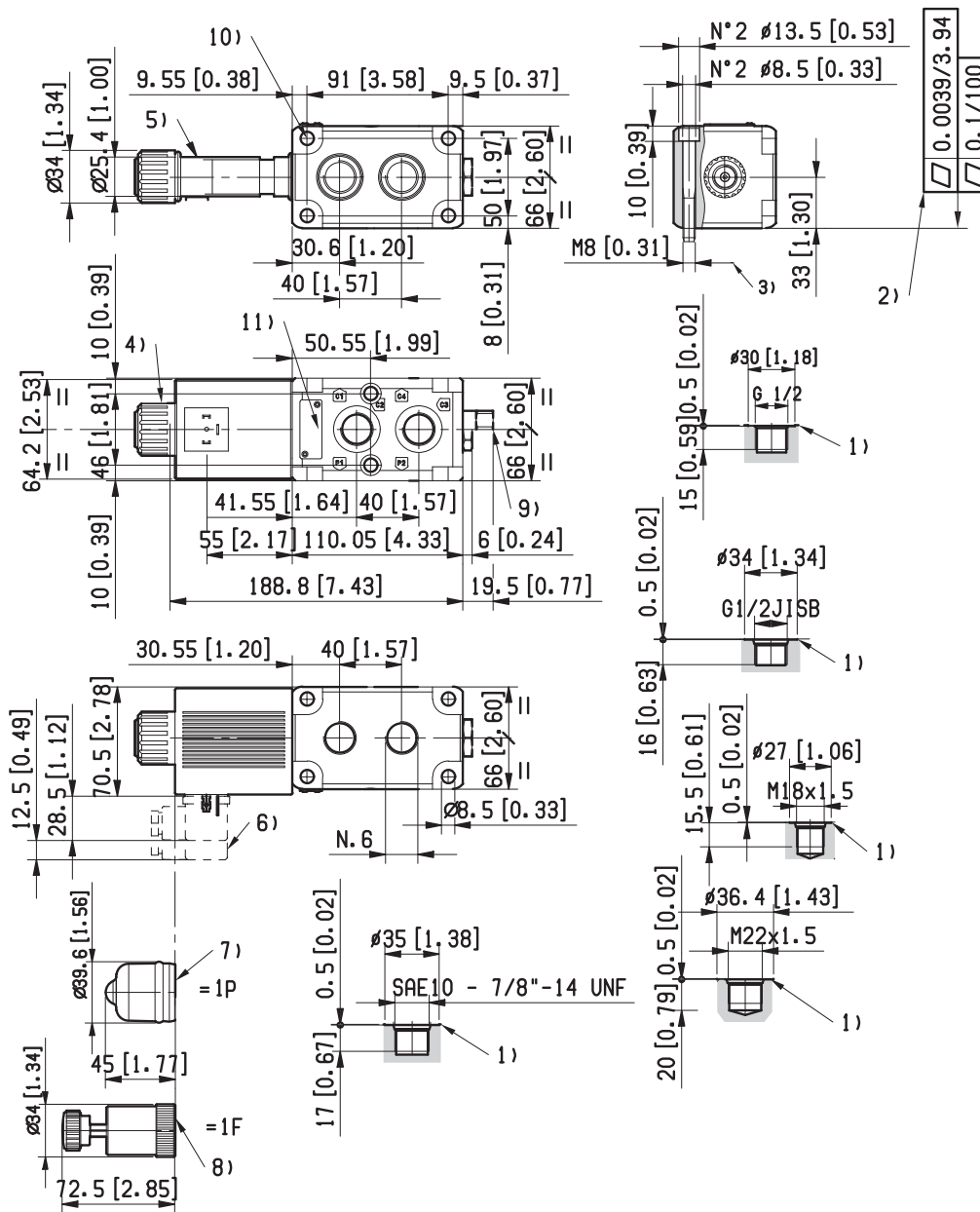
Performances limits



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

Flow across both ways: forward across P1>C1 and reverse across C4>P2

External Dimensions and Fittings



1 Ports P1, P2, C1, C2, C3, C4.

2 The mounting surface flatness must comply with specifications.

3 Two through installation holes recommended screws M8x65 DIN 912 with strength class DIN 8.8.
Torque 15-16 Nm [11.1 - 11.8 ft-lb].

4 Ring nut for coil locking OD 34 mm [1.34 inch].
Torque 7-8 Nm [5,25,9 ft-lb].

5 Solenoid tube $\varnothing 25,4$ mm [1 inch].

6 Minimum clearance needed for connector removal.

7 Optional push-button, 1P type, manual override for spool

opening: it is pressure stuck to the ring nut for coil locking.
Mat no. R933003424.

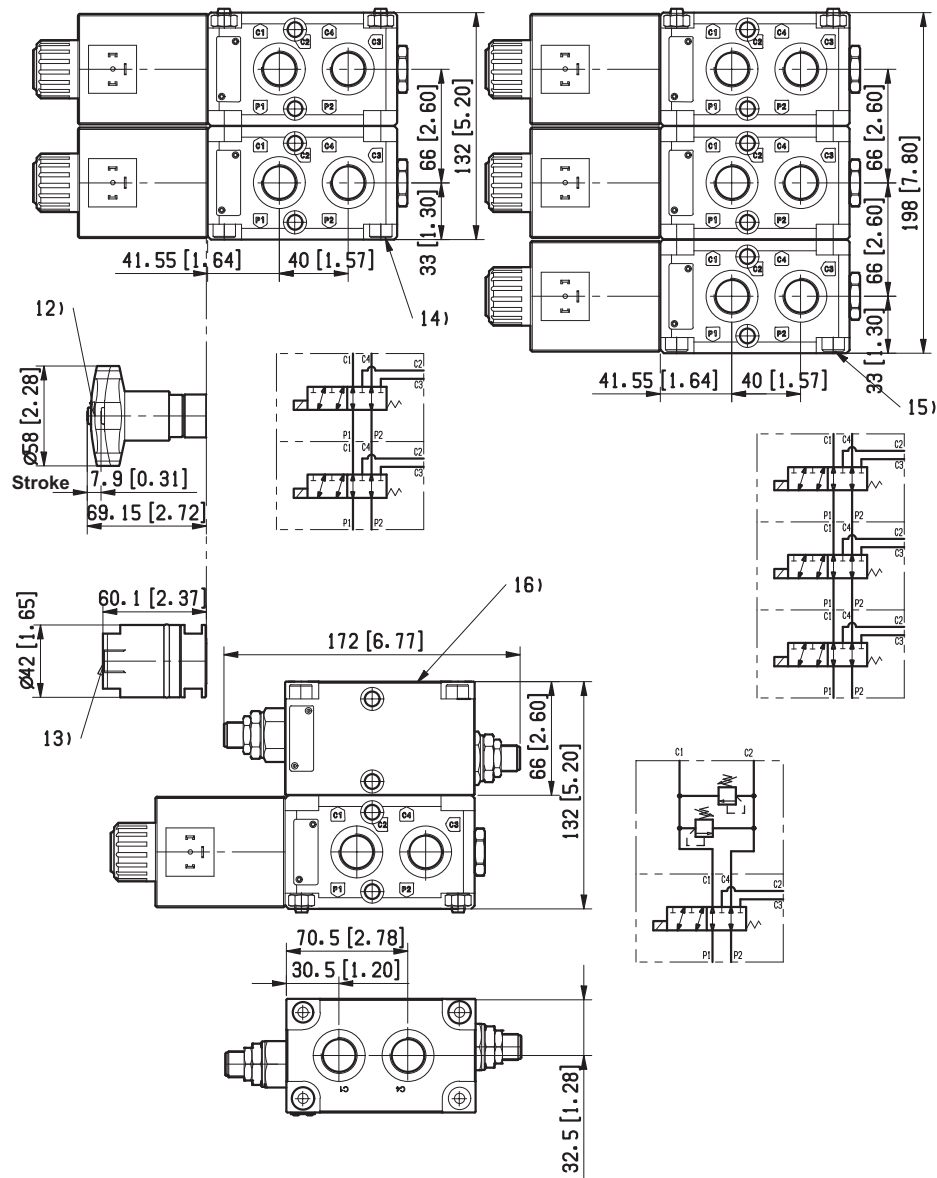
8 Optional screw, 1F type, manual override for spool opening: it is screwed (torque 8-9 Nm [5.9-6.6 ft-lb]) to the tube as replacement of the coil ring nut.
Mat no. R933003713.

9 External drain plug with G 1/4 and SAE 4 port.

10 Four through holes, 8.5 mm dia., for coupling of other similar diverter valve.

11 Identification label.

External Dimensions and Fittings



Total stacked units	Total ports	Total length mm	Bolts (v) or Tie Rods (t)	Torque Nm / ft-lb
2	8	132	M8x125 (v)	16-18 / [11.8-13.2]
3	10	198	M8x190 (v)	16-18 / [11.8-13.2]
4	12	264	M8x270 (t)	16-18 / [11.8-13.2]
5	14	330	M8x330 (t)	16-18 / [11.8-13.2]

12 Manual version, push and twist type.

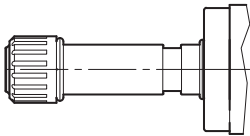
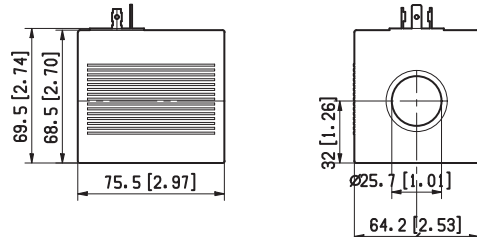
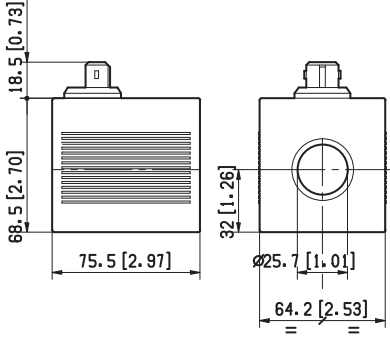
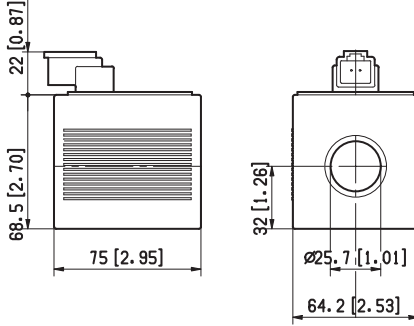
13 Hydraulic / pneumatic piloted version. Pilot port plug available with G 1/4 and SAE4.

14 Four screws M8x125 DIN 912 for assembly of 2 units; strength class DIN 8.8. Torque 15-16 Nm [11.1 – 11.8 ft-lb].

15 Four screws M8x190 DIN 912 for assembly of 3 units; strength class DIN 8.8. Torque 15-16 Nm [11.1 – 11.8 ft-lb].

16 Modular relief valves (cartridges VMD1070SV): with G 1/2 ports, code L7404610214SV00 with SAE 10 ports, code L740D610214SV00. Max pressure 250 bar [3625psi].

Electric connection

=00		<p data-bbox="758 398 805 427">=01</p> 
=03	<p data-bbox="207 577 678 627">Protection class: IP 65 with female connector properly fitted (see drawing).</p> 	<p data-bbox="853 577 1364 627">Protection class: IP 69 K with female connector properly fitted (see drawing).</p> 
=31	