4/3 Directional valve elements with manual lever operated control with flow sharing control (LUDV concept)

L85L1...(EDC-LV)

RE 18301-17
Edition: 02.2016

Size 6
Series 00
Maximum operating pressure on "P" 350 bar (5076 psi)
Maximum peak pressure "A-B" 380 bar (5511 psi)
Maximum flow at 14 bar (203 psi) 70l/min(18.49gpm)
Maximum flow at 18 bar (261 psi) 78l/min(20.6gpm)
Ports connections planned G 3/8 - G 1/2 - SAE8 and Modular

General specifications

Valve element with direct proportional flow sharing control.
It can achieve the simultaneous activation of different actuators by distributing the available flow proportionally to the speeds selected by the operator.
All simultaneous movements go on at the same reciprocal speed also in case of flow shortage.
No shuttle valve fitted.
Control spools manual operated by hand lever.
Control spool with return for all three positions.

Contents

Ordering details

01	02	03	04	05	06	07	08	09	
L	**8**	**5**	**L1**						**00**

Family

01	Directional Valve elements ED	**L**

Type

02	Size 6	**8**

Configuration

03	Flow Sharing	**5**

Operation type

04	Manual lever	**L1**

Spool variants

05	4/3 operated on both sides a and b; P,A,B,T colsed in neutral	**B2**
	4/3 operated on both sides a and b; P closed; A and B and T in neutral	**E2**

Flow pattern & Nominal Flow [1)]

06	Both meter in and out, A 25 l/min (6,6gpm) - B 25 l/min (6,6gpm)	**S4**
	Both meter in and out, A 70 l/min (18,49gpm) - B 70 l/min (18,49gpm)	**SZ**

Side with the control lever

07	a side with handle aiming high (A and B direction)	**A0**
	a side with handle aiming low (opposite to A and B)	**A2**
	b side with handle aiming high (A and B direction)	**B0**
	b side with handle aiming low (opposite to A and B)	**B2**

Manual lever control

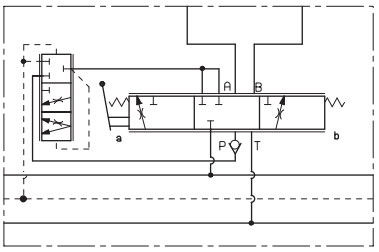
08	With return spring	**M1**

Ports

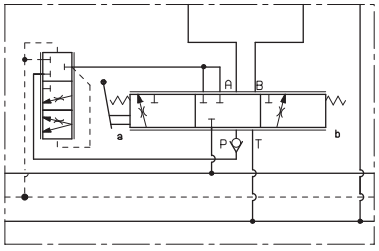
09	G 3/8 DIN 3852	**0**
	G 1/2 DIN 3852	**2**
	3/4-16 UNF 2-B (SAE8)	**3**
	Machined for interfacing to modular elements	**M** [2)]

Symbols

Configuration

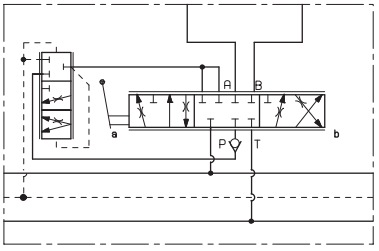


= 0
= 2
= 3

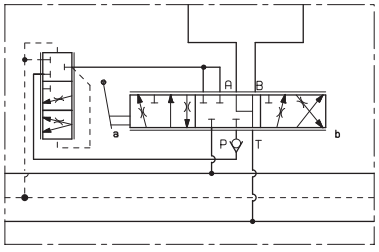


= M

Spool variants - Both meter in and out

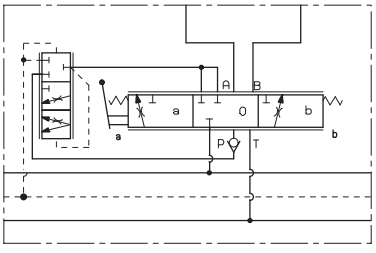


= B2

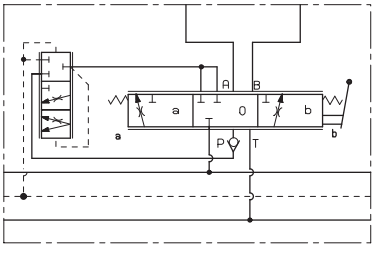


= E2

Side with the control lever



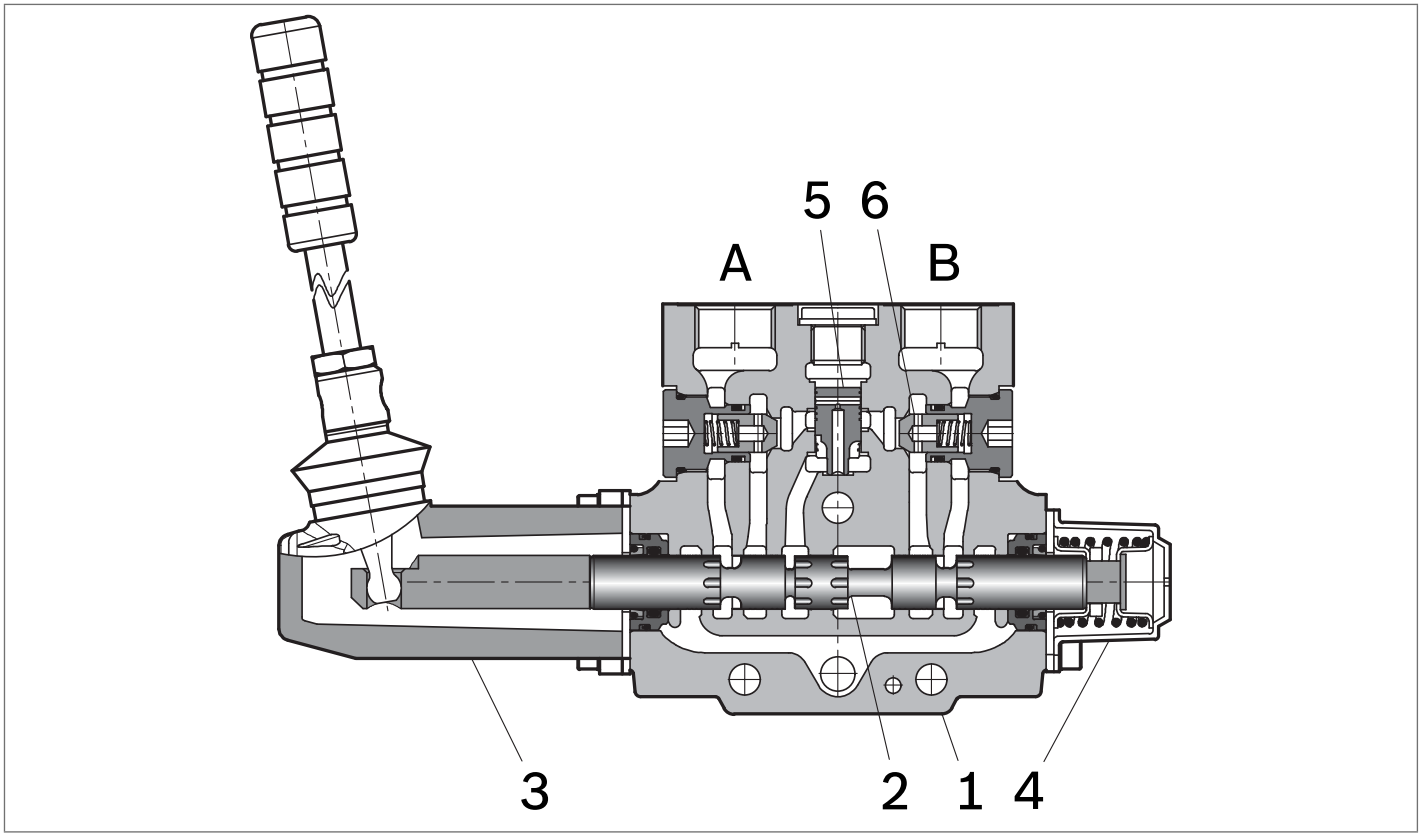
= A_M1



= B_M1

1) With Δp (P>A or P>B) 14 bar (203bar).
2) See RE18301-45, RE18301-46, RE18301-47, for flangeable elements.

Functional description



The sandwich plate design directional valve elements L85L1... are compact direct operated pressure compensated manual operated valves which control the start, the stop, the direction and the quantity of the flow, with a FLOW SHARING principle.
These elements basically consist of a stackable housing (**1**) with the control spool (**2**), a block with the control lever (**3**), and a spring housing (**4**) with a return spring.
When the hand operated lever moves the control spool (**2**) from its neutral-central position "0" and the metering notches are open; flow is delivered to the 3 way pressure compensator (**5**) followed by a check valve (**6**) for each port A or B.

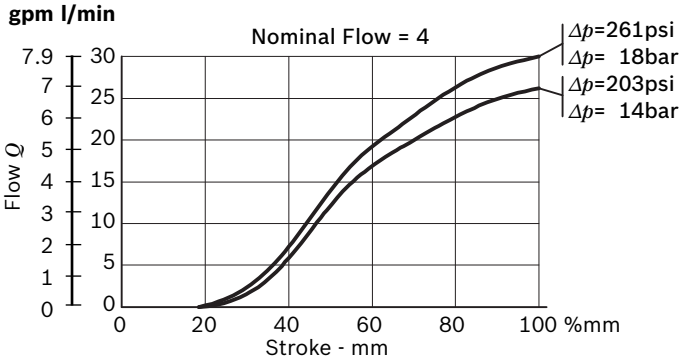
The compensator, balanced by the LS pressure at the opposite and, lifts up and unloads a pressure compensated flow which is sent to the A (or B) port through the relevant check valve; at the same time the opposite port allows oil return to tank.
LS pressure reaches the compensator "dead end" directly from the A or B port, while the check valves lock eventual pressure oscillations which could affect the compensator function.
Type L85L1_2___M1_000 is the valve version in which the spring return brings the spool back to neutral-central position "0"when the manual lever is not operated.

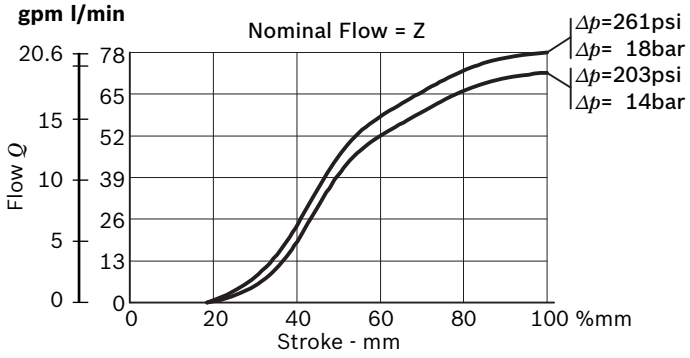
Technical data

General		
Valve element weight	kg (lbs)	3.5 (7.72)
Mounting position	kg (lbs)	Unrestricted
Ambient Temperature	°C (°F)	-30....+80 (-22...176) (NBR seals)
Hydraulic		
Maximum pressure at P, A and B ports	bar (psi)	350 (5076)
Maximum pressure at T	bar (psi)	20 (290)
Maximum flow at 14 l/min (203psi)	l/min (gpm)	70 (18.49)
Maximum flow at 18 l/min (261psi)	l/min (gpm)	78 (20.6)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		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)	-30....+100 (-22...212) (NBR seals)
Permissible degree of fluid contamination		ISO 4572: $\beta_x \geq 75$ X=12...15 ISO 4406: class 20/15/15 NAS 1638: class 9
Viscosity range	mm^2/s	5....420

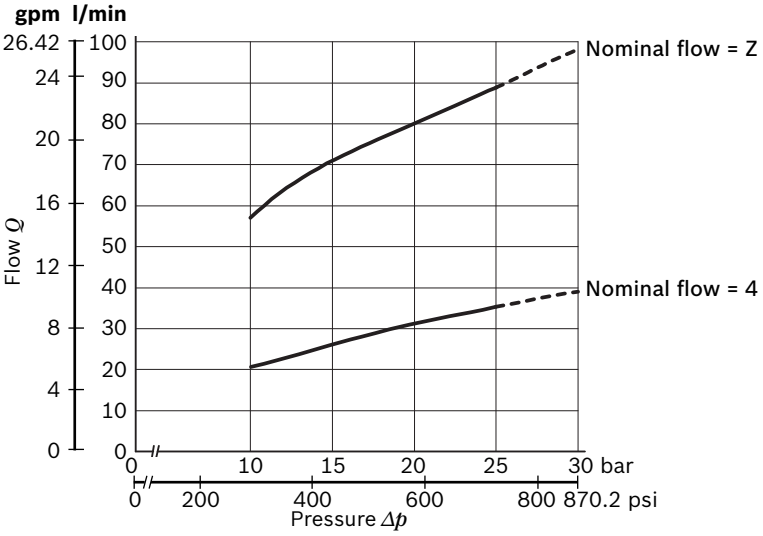
Note
For applications with different specifications consult us

Characteristic curves



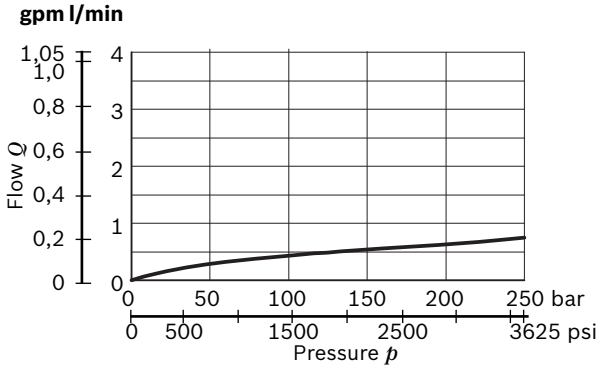


Nominal flow Qnom=Qnom (ΔP ls)

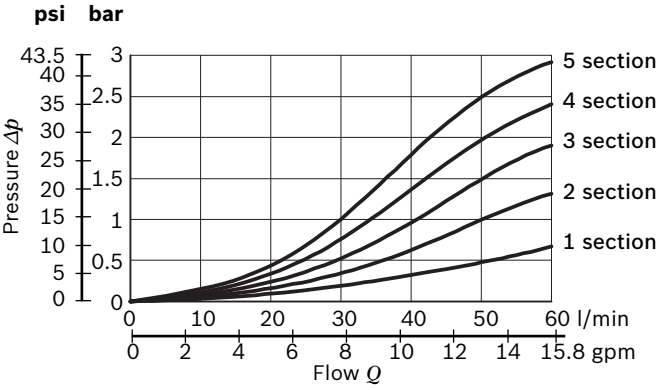


Pressure differential across the spool (ΔPls)

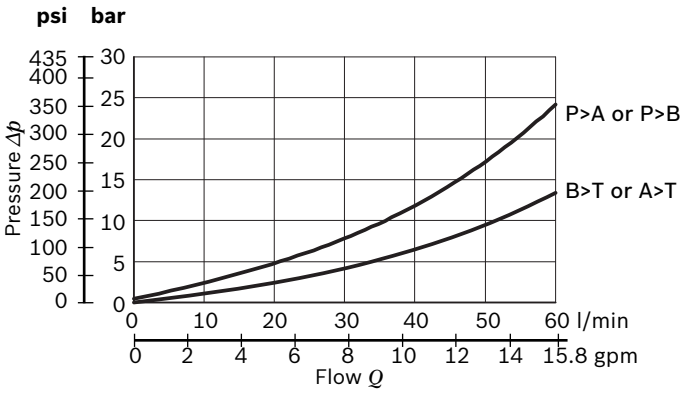
LS drain



Pressure drop Δp = Δp(Q) (P_{IN}- P_{OUT}) to the next section

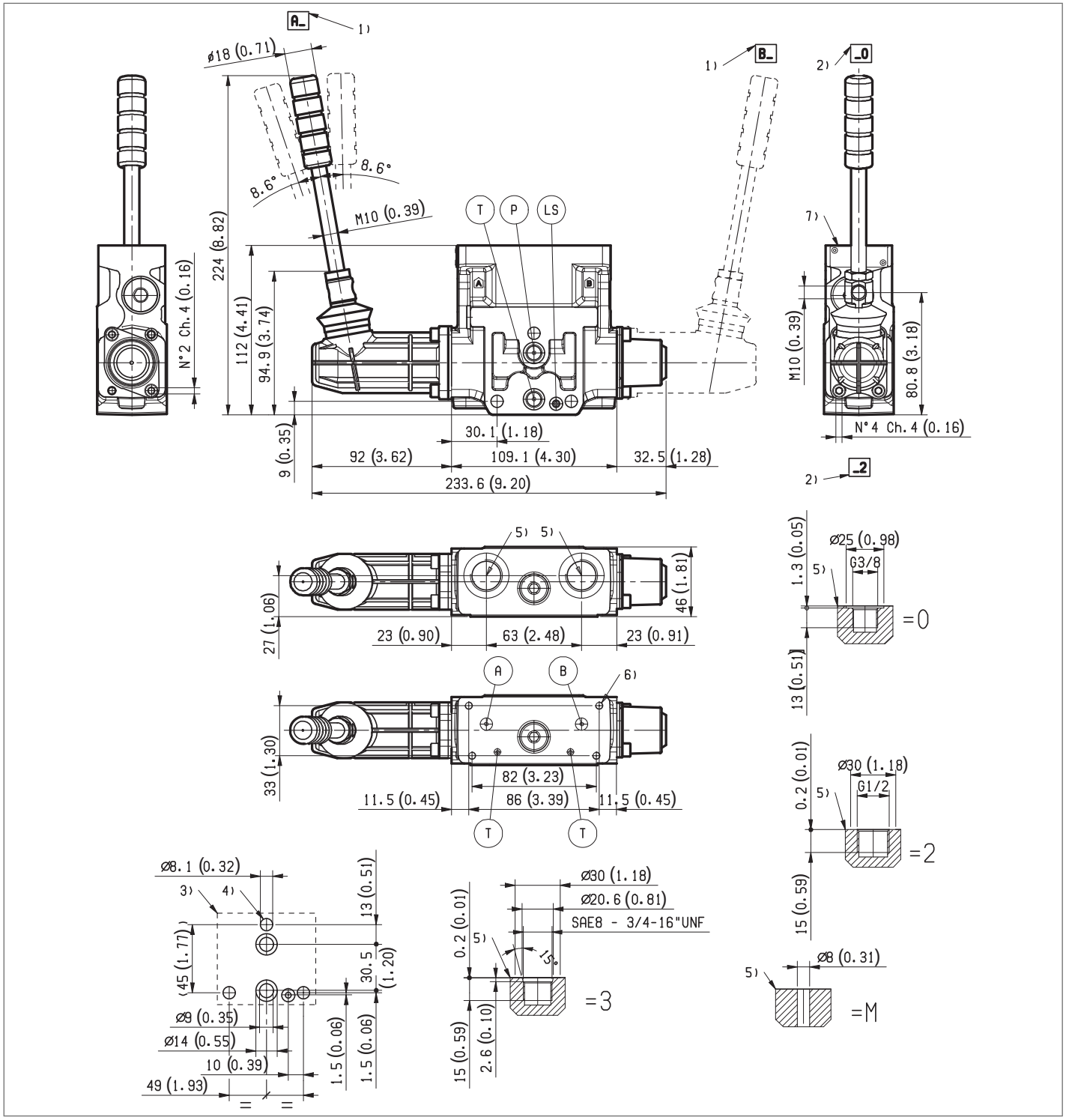


Pressure drop Δp = Δp(Q) with spool B2SZ



The curves refer to the spool fully open.
Measured with hydraulic fluid ISO-VG32 at 45° ±5 °C (113° ±9 °F); ambient temperature 20 °C (68 °F).
The curves refer to the spool fully open.

External dimensions and fittings



1 Side with the control lever (standard is side A).
2 Hand lever orientation.
3 Flange specifications for coupling to ED intermediate elements.
4 For tie rod and tightening torque information see data sheet RE18301-90
5 A and B ports.
6 Four threaded holes M5 deepth 12mm(0.47inch) for fitting a secondary flangeable element. Bolts M5 with reccomended strenght class DIN8.8: toque 5-6Nm(3.6-4.4ft-lb)(only for version with modular secondary valves).
7 Identification label.

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