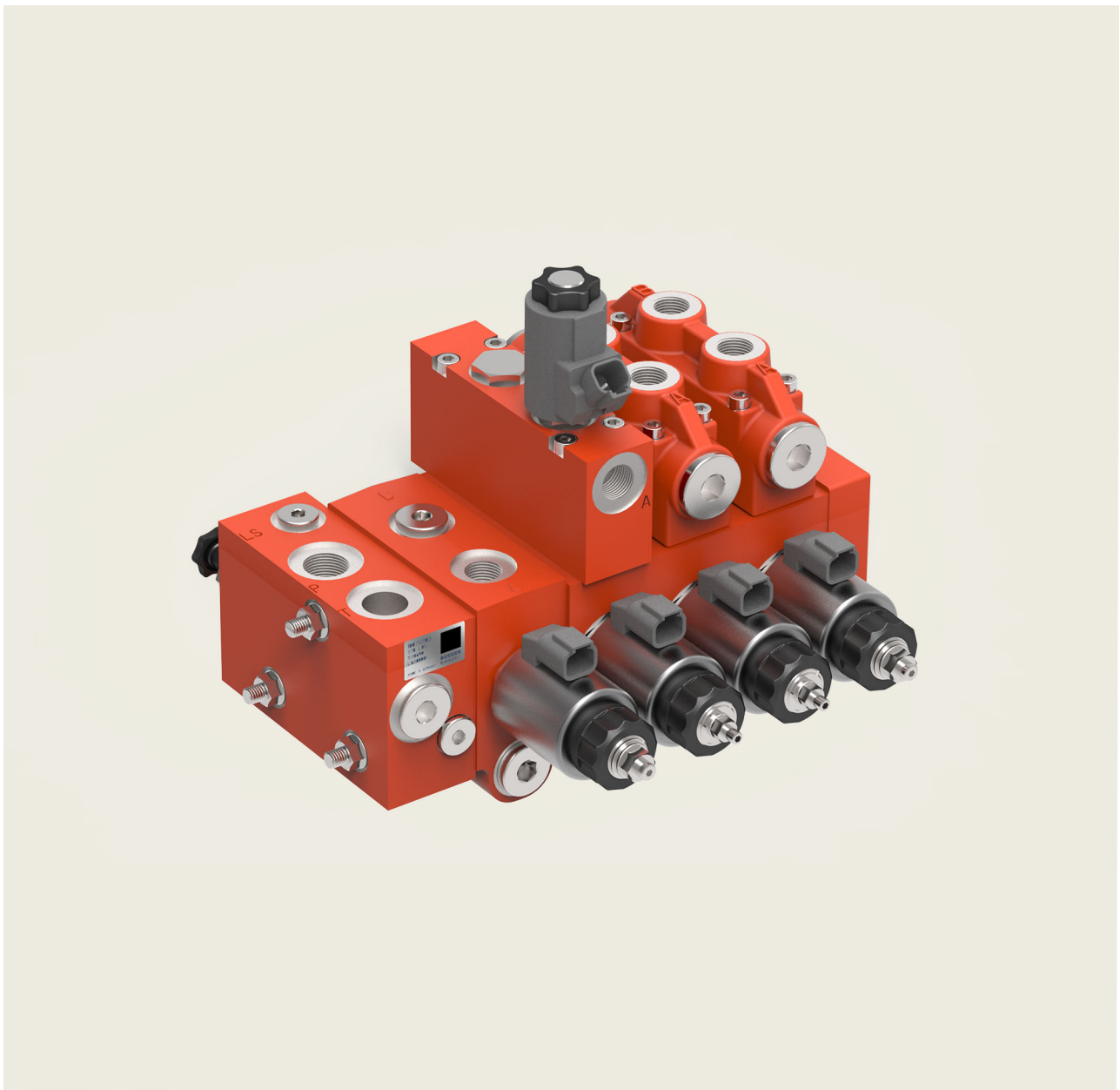


## Proportional Directional Valves

Series L.8S - Preference program





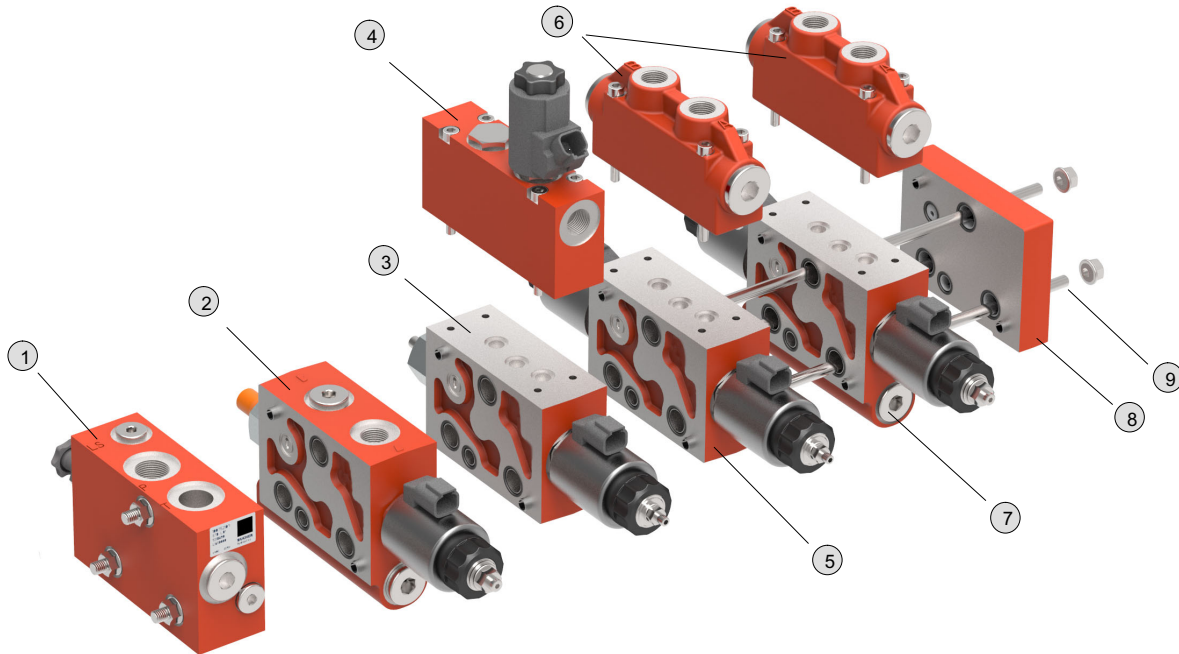
<b>Contents</b>		<b>Page</b>
<b>1</b>	<b>General description</b> .....	<b>5</b>
1.1	Note on the unique identification of the various sections .....	6
<b>2</b>	<b>The main components</b> .....	<b>7</b>
2.1	Inlet- and end sections for valve blocks .....	7
2.2	Inlet and intermediate sections .....	7
2.3	Directional valves .....	7
2.4	Auxiliary valves .....	8
2.5	General technical data .....	8
<b>3</b>	<b>Inlet sections</b> .....	<b>9</b>
3.1	Inlet sections without function .....	9
3.2	Inlet sections with pressure relief .....	10
3.3	Inlet sections with 2-way compensator .....	12
3.4	Inlet sections with 3-way compensator .....	13
<b>4</b>	<b>Intermediate sections</b> .....	<b>17</b>
4.1	Intermediate sections with no control function .....	17
4.2	Intermediate sections with 2-way pressure compensator .....	18
4.3	Intermediate sections with 3-way pressure compensator .....	19
4.4	Intermediate sections with multi-way pressure compensator .....	21
<b>5</b>	<b>Directional valves</b> .....	<b>23</b>
5.1	LD8S-/ LC8S- Directional valves .....	23
<b>6</b>	<b>Auxiliary valves that bolt-on to the top flange face O</b> .....	<b>31</b>
6.1	Anti-shock / make-up valves (secondary pressure relief) .....	31
6.2	Check valves (pilot operated non return valves) .....	33
6.3	Load control valves .....	35
<b>7</b>	<b>End sections</b> .....	<b>37</b>
7.1	End sections with no control function .....	37
7.2	Safety valve for electro-hydraulic steering systems .....	38
<b>8</b>	<b>Control block configuration</b> .....	<b>40</b>
8.1	Ordering example .....	40
8.2	Assembly kit for control block .....	40
<b>9</b>	<b>Liability</b> .....	<b>41</b>
<b>10</b>	<b>Note</b> .....	<b>41</b>



# 1 General description

The L.8S valve series was developed for mobile applications and it features a robust design and small external dimensions.

The L.8S valve range is a very flexible building-block system - its elements can be selected and assembled into a valve block that provides the necessary functions and precisely meets the needs of the application.



Item	Description
1	Inlet section with 3-way compensator (chapter 3)
2	Directional section with port threads, with integral individual pressure compensator / solenoid, direct-acting (chapter 5)
3	Directional section with flange face for auxiliary valve / solenoid, direct-acting (chapter 5)
4	Auxiliary valve that bolt-on to the top flange face O (chapter 6)
5	Directional section with flange face for auxiliary valve / solenoid, direct-acting (chapter 5)
6	Auxiliary valve that bolt-on to the top flange face O (chapter 6)
7	Directional section with flange face for auxiliary valve, and integral individual pressure compensator / solenoid, direct-acting (chapter 5)
8	End section (no control function) (chapter 7)
9	Tie-rod / Seal-lock nuts (chapter 8)

The following components are available within the range:

**Block termination components**

- inlet sections
- end sections

**Intermediate sections**

- 2-way pressure compensators
- 3-way pressure compensators
- multi-way pressure compensators

**Directional valves with auxiliary valves**

- load check valves
- anti-shock valves
- individual pressure compensators (2-way) and many more.

Within the valve block, directional valve sections are connected in parallel to the pressure, tank and control lines. In a system with a fixed-displacement pump, a typical valve block contains a 3-way compensator, several directional valves and the necessary block termination components. The pump is connected to the valve block by a pressure line.

When all directional valves are in the neutral position, the control line unloads the 3-way compensator to tank. The entire flow supplied to the valve therefore passes - with minimal unloaded pressure drop - through the 3-way compensator to the tank port or the carry-over port.

When one of the directional valves is operated, the load pressure is signaled through the control line to the 3-way compensator. The 3-way compensator keeps the pressure difference between the pressure and control galleries inside the block at a constant level (the control pressure). The flow rate to the actuator is therefore always independent of the load and proportional to the open flow area of the metering orifice in the directional valve that has been operated.

In a system with a pressure-controlled, variable-displacement pump, a typical valve block contains (in addition to the directional valves and block termination components) a 2-way compensator that must be positioned between the pump port and the pressure gallery inside the block.

When all directional valves are in the neutral position, the pump is de-stroked. When one of the directional valves is operated then, due to the effect of either the pump control or the 2-way compensator positioned before the directional valve, the necessary control pressure is maintained between the pressure and control galleries inside the block. The flow to the selected actuator is therefore independent

of the load and proportional to the open flow area of the metering orifice in the directional valve.

In all of the system configurations described up to this point, when several directional valves are operated then, thanks to the shuttle valves situated in the control lines, the actuator with the highest load will dictate the control pressure and the flow rate to the actuator will be independent of the load and proportional to the open flow area of the metering orifice in the directional valve. Load-independence for the less highly-loaded actuators can be achieved by using individual pressure compensators, which reduce the excessive pressure difference sufficiently to ensure that the required control pressure exists at the corresponding directional valve.

## 1.1 Note on the unique identification of the various sections

For all adjustable sections (auxiliary-function sections and directional sections), the flow rate specification Q= and pressure specification P= must be stated clearly and within

the limits of the prescribed flow rate and pressure specifications. These can be found in the relevant document section.

### 1.1.1 Example

Example 1:

LU8SSCS-0M22\*00/P=

=> LU8SSCS-0M22\*00/P=210

Example 2 with spool stroke limiter:

LD8SE4A2525-S\*L-1M18T18\*00/P=

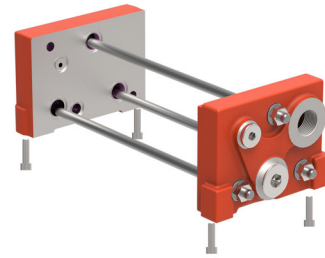
=> LD8SE4A2525-S\*L-1M18T18\*00/P=180QA=18QB=21

The products are assembled in accordance with the specified setting parameters.

## 2 The main components

### 2.1 Inlet- and end sections for valve blocks

Every L.8S series valve block requires two block termination components in the form of one inlet section and one end section. These two components are used for mounting the block, the block tie bolts pass through them, and they are provided with hydraulic ports.



### 2.2 Inlet and intermediate sections

#### 2.2.1 2-way pressure compensator

The 2-way compensator is a valve that controls a pressure differential. It is situated inside the block, before the pressure gallery. In this valve, the inlet pressure is reduced by the amount needed to ensure that the control pressure between the pressure and control galleries inside the block is kept constant. In some models, the valve closes the inlet to the block if the pressure in the control line reaches the setting of an upstream pressure relief valve.

The 2-way compensator can be supplied as an inlet section or an intermediate section.

#### 2.2.2 3-way pressure compensator

The 3-way compensator is a valve that controls a pressure differential. It is situated between the pressure gallery and the tank or carry-over gallery. The valve keeps the pressure difference between the pressure and control galleries inside the block at a constant level and surplus flow passes to the tank or carry-over port. If the pressure in the control line reaches the setting of an upstream pressure relief valve, the 3-way compensator opens the connection to tank, thus limiting the pressure in the pressure gallery inside the block. In one particular model, the function of the 3-way compensator can be customized to suit the requirements of individual applications. The adjustment can be done with a shut-off screw that is accessible from the outside.

### 2.3 Directional valves

The control options (LC,LD) for L.8S series directional valves enable continuous changes to the flow area of the metering orifice, which in turn determines the flow rate that is supplied to the actuator. This is achieved by arranging that in the first group of valves the spool can stop at any desired point along its total stroke, whereas the spools of LD valves travel from one end of the stroke to the other when they are switched, and do not stop at intermediate positions.

The LD and LC directional valves are electrically operated, direct acting. Series LD, LC directional valves can be equipped with an optional hand lever for manual-override operation of the valve spool. Operating two valves in parallel is dependent on the pressure demands of the actuator connected to each valve. However, the LD- and LC- directional valves can optionally be ordered with an integral individual pressure compensator.

### 2.4 Auxiliary valves

The auxiliary valves fit onto the directional valves and can be flange-mounted on the top (connection face O) or bottom (connection face U) of the valve, which is specially designed for this purpose.

For mounting on connection face O, these alternative auxiliary valves are available:

- anti-shock valve (secondary pressure relief valve with make-up facility)
- load control valve
- load check valve (hydraulically and electrically pilot-operated check valve)
- various special bolt-on plates

Anti-shock valves are used to prevent over-pressure in the actuator lines and/or cavitation with negative loads.

Load control valves provide controlled, load-independent lowering of over-running (pulling) loads. The anti-shock function is integrated and optimal adjustable.

Load check valves hold the actuator, which may be under load, with virtually zero leakage. The actuator is released by applying pressure to the other actuator port.

An individual compensator is used when the flow rate to the actuator must be independent of load, but the inlet compensator cannot perform the necessary pressure-control function. LC- and LD- directional valves are also available with integrated individual pressure compensator.

Additional function blocks are described in detail in the relevant sections.

### 2.5 General technical data

General characteristics	Unit	Description, value
Recommended mounting attitude		With spool axis horizontal
Nominal flow rate	l/min	max. 150
Actuator flow rate	l/min	max. 60
Inlet pressure P +D	bar	max. 250 <sup>2)</sup>
Actuator pressure A + B	bar	max. 250 <sup>2)</sup>
Intermittent pressure (max. 10 sec/min)	bar	max. 280
Return line pressure	bar	max. 40 <sup>1)</sup>
Hydraulic fluid		Recommendation: high-quality fluids with a mineral-oil base, such as HLP oils to DIN 51524 part 2
Seal material		NBR
Fluid temperature	°C	-25 ... +80
Ambient temperature	°C	-25 ... +50
Viscosity range	mm <sup>2</sup> /s	10 ... 380
Minimum fluid cleanliness level		ISO 446 code 20/18/15
Nominal voltage range of switching solenoids	V DC	12V $\Delta$ 10,8 ... 14 24V $\Delta$ 21,6 ... 28
Servo frequency	Hz	preferably 100
Threaded ports		to DIN 3852 and DIN ISO 228-1
Tie-rod		M8, tensile grade 10.9 (tightening torque 30Nm)
Corrosion protection		Valve blocks primed colour: black RAL 9005 coating thickness 30 to 50 $\mu$ m <sup>3)</sup>
MTTF <sub>D</sub> values		150 years, see datasheet 100-KB-000083

1) 100 bar return line pressure for brief periods, with max. inlet pressure 210 bar. 210 bar for P and T in individual cases. For higher pressures, contact Bucher Hydraulics.

2) The stated pressures are the maximum absolute pressure limits for a tank line pressure of 10 bar.  
Note: Some components have lower individual pressure ratings.

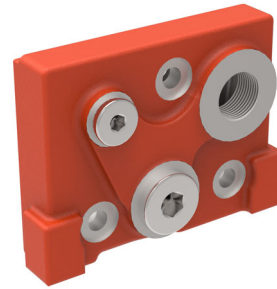


### 3 Inlet sections

#### 3.1 Inlet sections without function

##### 3.1.1 Description

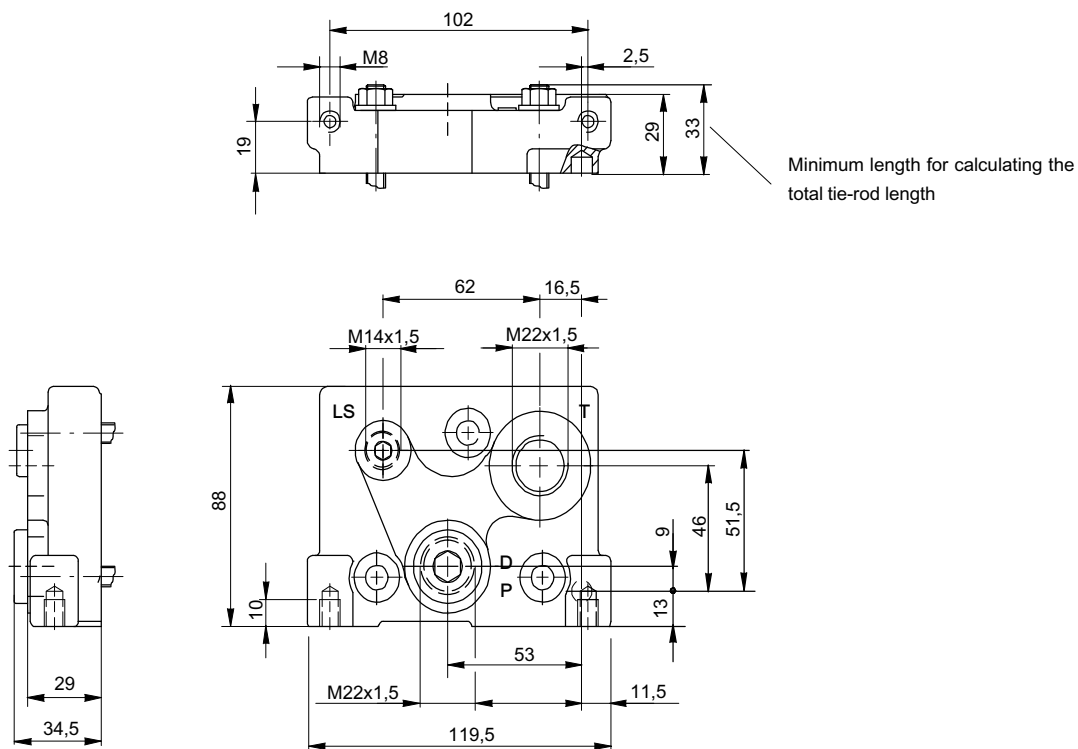
Inlet sections without function are used to begin the block when no control functions are needed (e.g. LS applications). Ports P, T and LS, and tapped holes for securing the valve block are provided.



##### 3.1.2 Overview of sections

Symbol	Description	Part number
	<b>LU8SPOG-0M22*00</b> <ul style="list-style-type: none"> <li>without function</li> <li>port threads to DIN 3852 - M22 x 1,5</li> </ul>	<b>100020638</b>

##### 3.1.3 Dimensions



## 3.2 Inlet sections with pressure relief

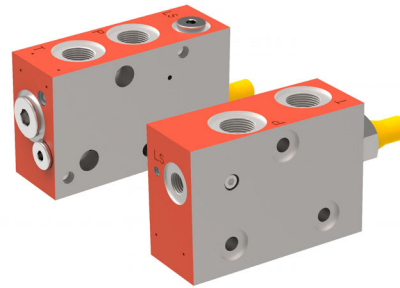
### 3.2.1 Description

#### 3.2.1.1 Inlet pressure relief two-stage LU8SPOD

This is used to begin the block, and has an integral two-stage pressure relief function (e.g. safety pressure relief in an LS system). Ports P, T and LS, and tapped holes for securing the valve block are provided.

#### 3.2.1.2 Inlet pressure relief direct acting LU8SPOS

This is used to begin the block, and has an integral direct-acting pressure relief function (e.g. secondary pressure relief in an LS system). The application limits must not be exceeded. By screwing in damping and bypass orifices, many possibilities for combating oscillation problems in LS systems can be created. Ports P, T and LS, and tapped holes for securing the valve block are provided.

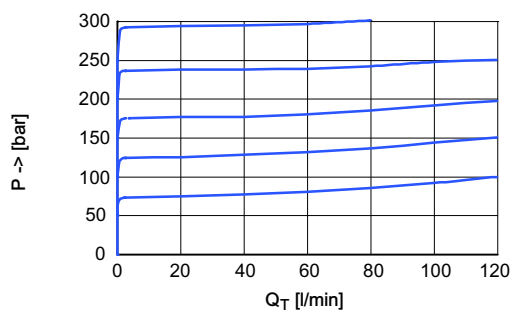


### 3.2.2 Technical data

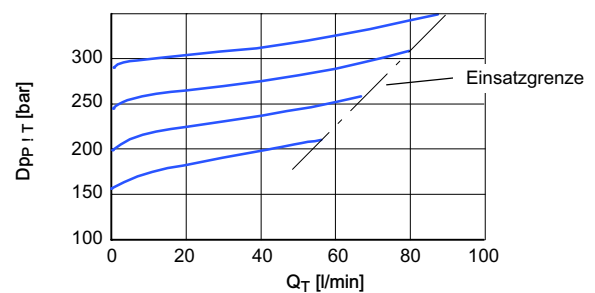
General characteristics	Unit	Description, value
Inlet pressure	bar	max. 300
Nominal flow rate	l/min	see performance graphs 3.2.3
Pressure relief	bar	adjustable

### 3.2.3 Performance graphs

#### 3.2.3.1 Inlet pressure relief two-stage LU8SPOD

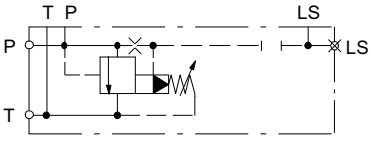


#### 3.2.3.2 Inlet pressure relief direct acting LU8SPOS

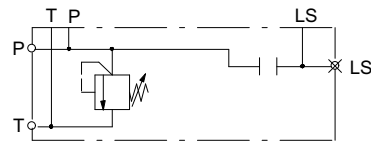


## 3.2.4 Overview of sections

### 3.2.4.1 Inlet pressure relief two-stage

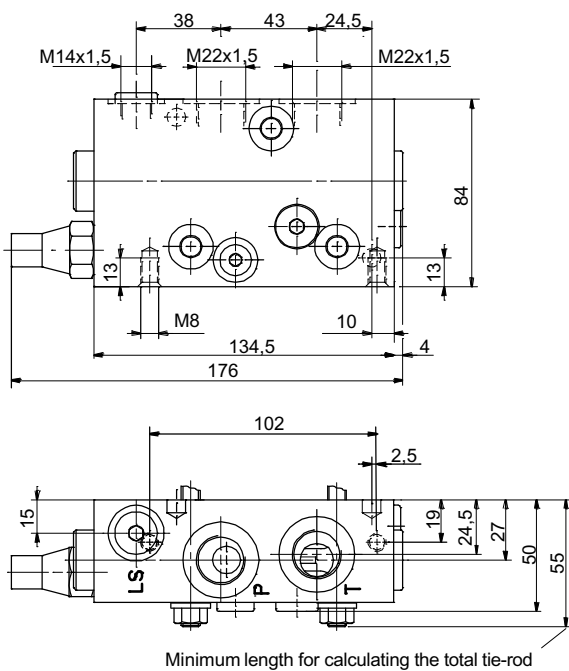
Symbol	Description	Part number
	<b>LU8SPOD-0M22*00/P=</b> <ul style="list-style-type: none"> <li>relief adjustment range 60 ... 300 bar</li> <li>nominal flow rate 120 l/min</li> <li>pressure relief adjustable P =</li> <li>port threads to DIN 3852 - M22 x 1,5 ⇒ Specify the pressure relief setting in bar</li> </ul>	see order details chapter 1.1

### 3.2.4.2 Inlet pressure relief direct acting

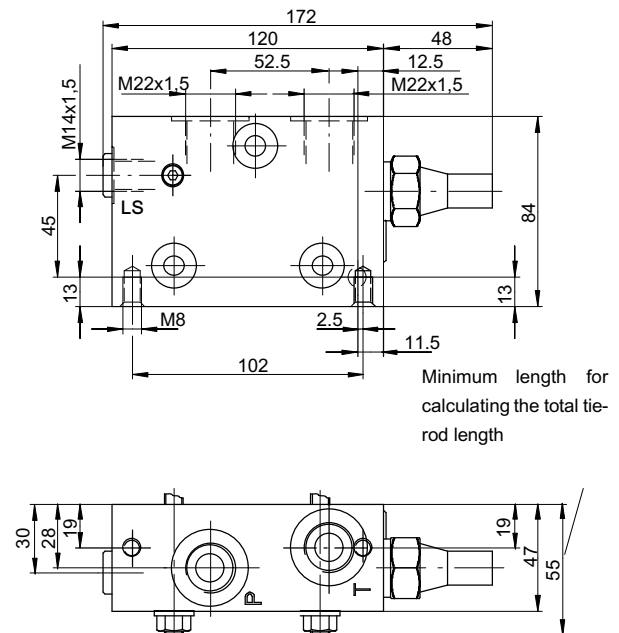
Symbol	Description	Part number
	<b>LU8SPOS3-0M22*00/P=</b> <ul style="list-style-type: none"> <li>application limit see performance graph</li> <li>relief adjustment range 210 ... 300 bar P =</li> <li>port threads to DIN 3852 - M22 x 1,5 ⇒ Specify the pressure relief setting in bar</li> </ul>	see order details chapter 1.1

## 3.2.5 Dimensions

### 3.2.5.1 LU8SPOD-...



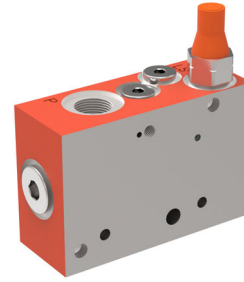
### 3.2.5.2 LU8SPOS-...



## 3.3 Inlet sections with 2-way compensator

### 3.3.1 Description

These are used to begin the block and have an integral 2-way compensator; optionally with flow cut-off from a pre-set pressure. A typical application is the parallel operation of two valve blocks in an LS-system, where only one spool at a time is operated within each block. Ports P and LS, and tapped holes for securing the valve block are provided. The tank connection must be implemented in the intermediate or end section.

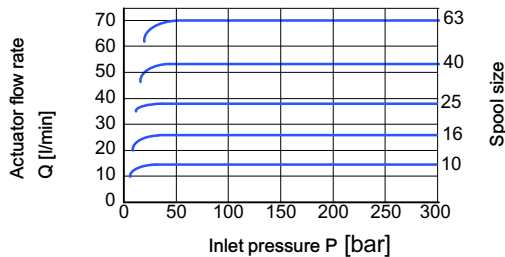


### 3.3.2 Technical data

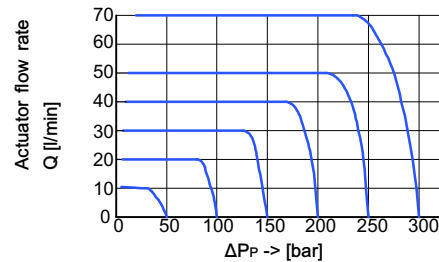
General characteristics	Unit	Description, value
Inlet pressure	bar	max. 300
Nominal flow rate	l/min	100
Pressure relief	bar	adjustable, 50 ... 300
Port threads to DIN 3852	bar	M22x1,5

### 3.3.3 Performance graphs

#### 3.3.3.1 Variation of the actuator flow rate with inlet pressure when using an LU8SSKB inlet section



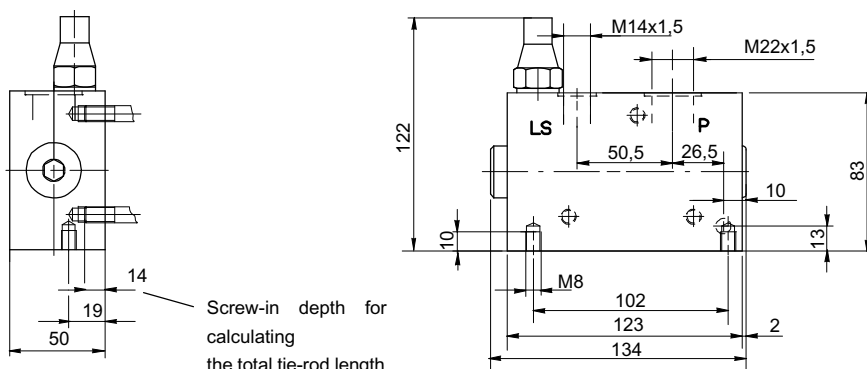
#### 3.3.3.2 Flow cut-off function with an LU8SSKB inlet section



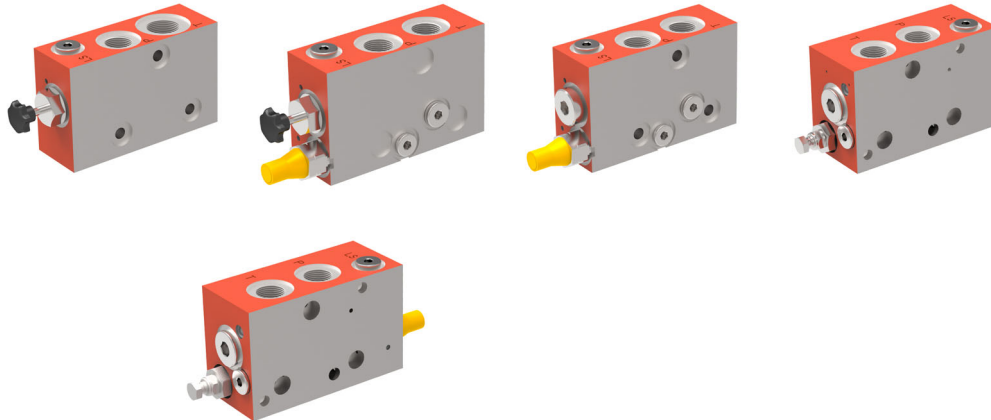
### 3.3.4 Overview of sections

Symbol	Description	Part number
	LU8SSKB-0M22*00/P= • control $\Delta p = 12$ bar / with flow cut-off ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1

### 3.3.5 Dimensions



### 3.4 Inlet sections with 3-way compensator



#### 3.4.1 Description

These are used to begin the block and have an integral 3-way compensator; optionally with the additional functions shown below. In essence, they can be applied in conjunction with a fixed-displacement pump for control of unloading and flow control that is independent of the load.

- **LU8SSCK**  
Provides a 3-way compensator function with the facility to change over to LS- or constant pressure systems. This is typical with towed harvesters.
- **LU8SSCL**  
Provides a 3-way compensator function and two-stage pressure relief that is adjustable from outside the valve, with the ability to change over to LS or constant-pressure systems. This is typical with towed harvesters. The pressure relief is only operative in the open system.
- **LU8SSCS**  
Provides a 3-way compensator function and 2-stage pressure relief that is adjustable from outside the valve.
- **LU8SSCU**  
Provides a 3-way compensator function with an independent system pressure relief function.
- **LU8SSCX**  
Provides a 3-way compensator function and two-stage pressure relief that is adjustable from outside the valve, and an independent system pressure relief function. The surplus flow is available at port D for other applications. The valve block's own functions have priority over port D. The valve block can be protected at a lower pressure setting by the two-stage relief valve, so that excess flow is always available at port D.

#### 3.4.2 General technical data

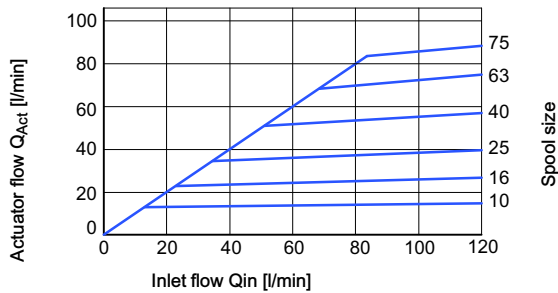
General characteristics	Unit	Description, value
Inlet pressure	bar	max. 300
Nominal flow rate / open-centre systems	l/min	120
Unloaded pressure P -> T (D)	bar	see performance graphs chapter 3.4.3
Pressure relief	bar	adjustable, 50 ... 300 <sup>2)</sup>
Nominal voltage <sup>1)</sup>	V DC	12 or 24
Plug type		AMP Junior Timer, Deutsch DT04-2P-EP04
Power consumption <sup>1)</sup>	Watt	27
Duty cycle <sup>1)</sup>	%	100
Protection class <sup>1)</sup>		AMP: IP65 DT: IP67 (DIN EN 60529)

1) Only with LU8SSCE.

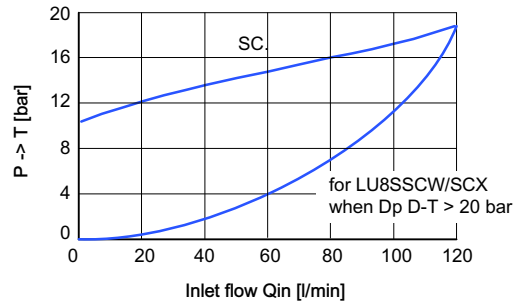
2) Higher pressures on enquiry.

## 3.4.3 Performance graphs

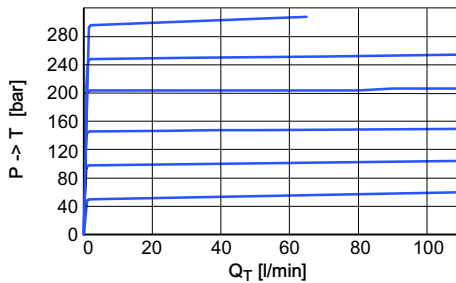
3.4.3.1 Maximum flow rate at directional valve (without individual pressure compensator) when using an LU8SSC inlet section.



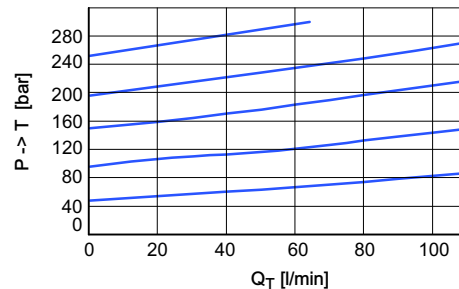
3.4.3.2 Unloaded pressure in neutral position, (for other unloaded pressures consult Bucher Hydraulics).



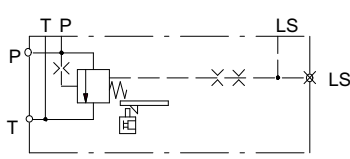
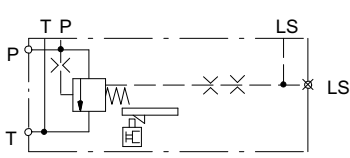
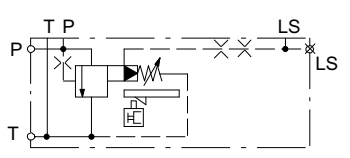
3.4.3.3 Two-stage pressure relief characteristic inlet section LU8SSCS / SCX

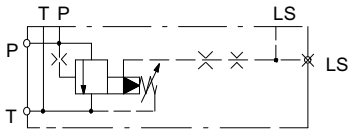
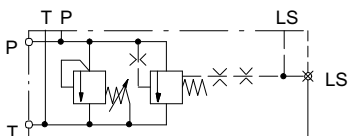
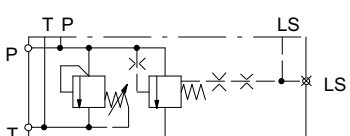
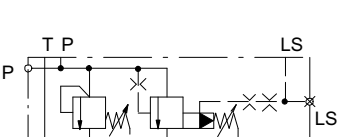


3.4.3.4 System pressure relief characteristic inlet section LU8SSCE / SCU / SCX



## 3.4.4 Overview of sections

Symbol	Description	Part number
	<b>LU8SSCK-0M22*04</b> <ul style="list-style-type: none"> <li>• without pressure relief</li> <li>• compensator can be disabled for LS systems</li> <li>• for using with seat valves SVH04M - straight-through tie bolts</li> <li>• control <math>\Delta p = 12</math> bar with active pressure compensator</li> <li>• port threads to DIN 3852 - M22 x 1.5</li> </ul>	<b>100020641</b>
	<b>LU8SSCK-0M22*12</b> <ul style="list-style-type: none"> <li>• without pressure relief</li> <li>• compensator can be disabled for LS systems</li> <li>• for using with seat valves SVH04M - straight-through tie rods</li> <li>• control <math>\Delta p = 12</math> bar with active pressure compensator</li> <li>• no tank connection for bolt-on functions</li> <li>• port threads to DIN 3852 - M22 x 1.5</li> </ul>	<b>100030622</b>
	<b>LU8SSCL-0M22*04/P=</b> <ul style="list-style-type: none"> <li>• with two-stage pressure relief in fixed-displacement pump system</li> <li>• for using with seat valves SVH04M - straight-through tie bolts</li> <li>• control <math>\Delta p = 12</math> bar</li> <li>• port threads to DIN 3852 - M22 x 1.5</li> </ul> ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1

	<b>LU8SSCS-0M22*04/P=</b>	see order details chapter 1.1
	<b>LU8SSCU-0M22*00/P=</b>	see order details chapter 1.1
	<b>LU8SSCW-0M22*00/P=</b>	see order details chapter 1.1
	<b>LU8SSCX-0M22*00/P=P1=</b>	see order details chapter 1.1

- with two-stage pressure relief
  - for using with seat valves SVH04M - straight-through tie bolts
  - control  $\Delta p = 12$  bar
  - port threads to DIN 3852 - M22 x 1.5
- ⇒ Specify the pressure relief setting in bar

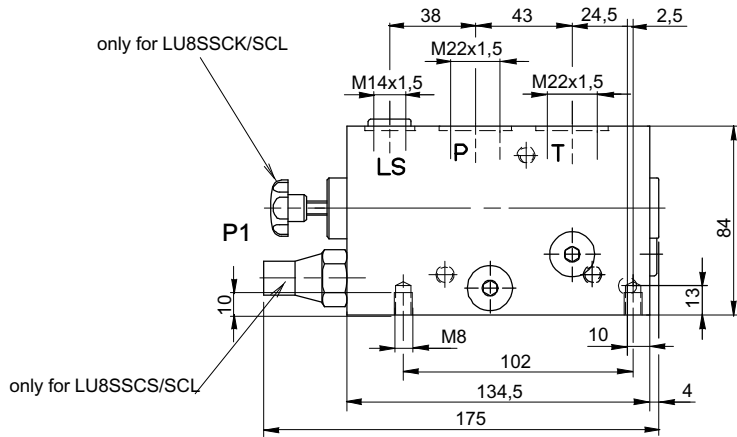
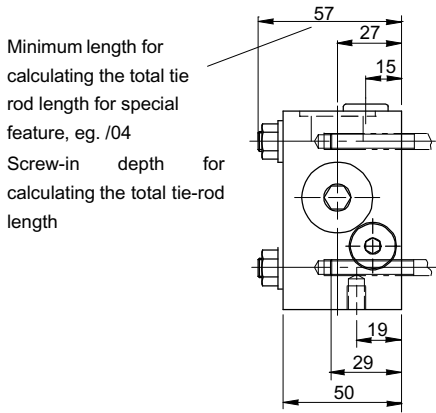
- with system pressure relief, direct acting,
  - control  $\Delta p = 12$  bar
  - port threads to DIN 3852 - M22 x 1.5
- ⇒ Specify the pressure relief setting in bar, (50 ... 315 bar)

- with system pressure relief
  - with surplus-flow port
  - internal valve block has priority over D
  - control  $\Delta p = 12$  bar
  - port threads to DIN 3852 - M22 x 1.5
- ⇒ Specify the pressure relief setting in bar, (50 ... 315 bar)

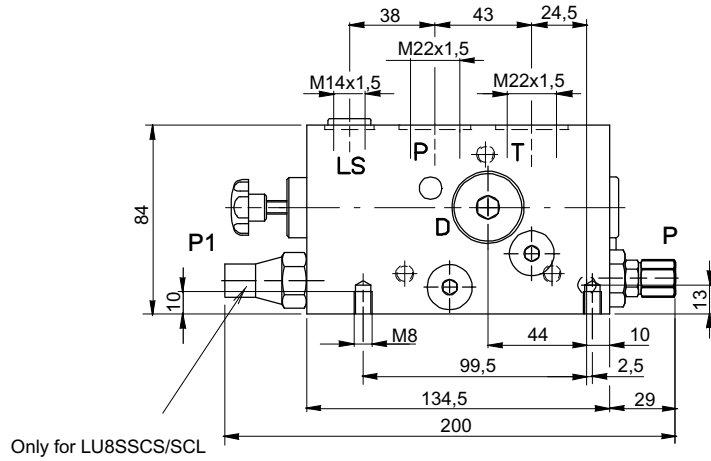
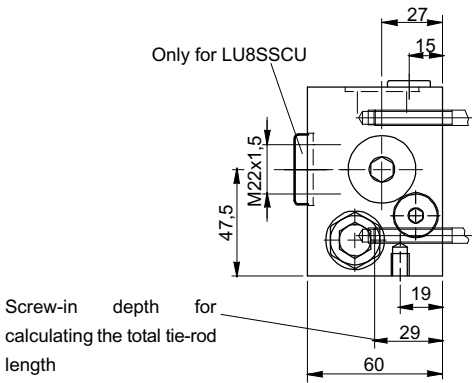
- with system pressure relief
  - with surplus-flow port
  - internal valve block has priority over D
  - with pressure relief for the valve block
  - control  $\Delta p = 12$  bar
  - port threads to DIN 3852 - M22 x 1.5
- ⇒ Specify the pressure relief setting in bar, (50 ... 315 bar)

## 3.4.5 Dimensions

### 3.4.5.1 LU8SSCK / SCS / SCL



### 3.4.5.2 LU8SSCU / SCX / SCW



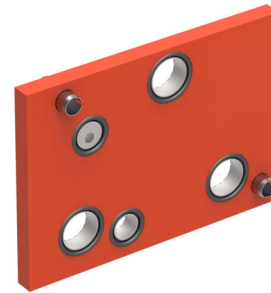


## 4 Intermediate sections

### 4.1 Intermediate sections with no control function

#### 4.1.1 Description

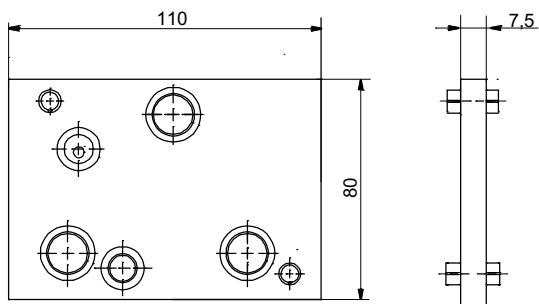
These intermediate sections are used as spacer section (e.g. with large port fittings) or, in the case of the LU8SBTP-0; for hydraulic partitioning of the P and LS lines within the valve block; T is continuous.



#### 4.1.2 Overview of sections

Symbol	Description	Part number
	<b>LU8SBDP-0*00</b> <ul style="list-style-type: none"> <li>• block spacer section</li> <li>• P, T and LS continuous</li> </ul>	<b>100020651</b>

#### 4.1.3 Dimensions



## 4.2 Intermediate sections with 2-way pressure compensator

### 4.2.1 Description

These are intermediate sections with an integral 2-way compensator, optionally with flow cut-off from a pre-set pressure. Typical applications: valve block sections that, in general, experience lower pressures are combined with this compensator to ensure load-independent operation. Ports P and LS are provided.

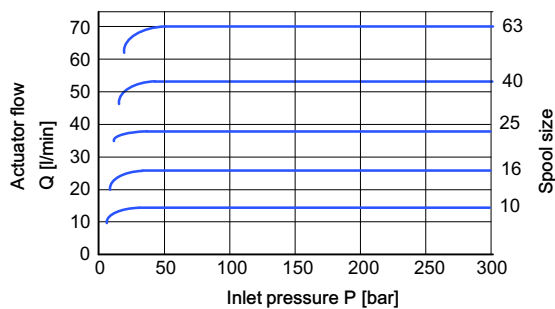


### 4.2.2 Technical data

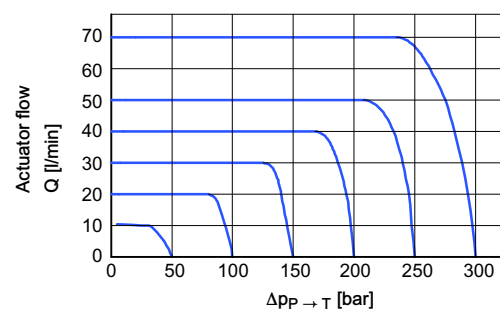
General characteristics	Unit	Description, value
Inlet pressure	bar	max. 300
Nominal flow rate	l/min	see performance graphs 4.2.3
Pressure relief valve	bar	adjustable

### 4.2.3 Performance graphs

#### 4.2.3.1 Variation of the actuator flow rate with inlet pressure when using an LU8SSKD intermediate section



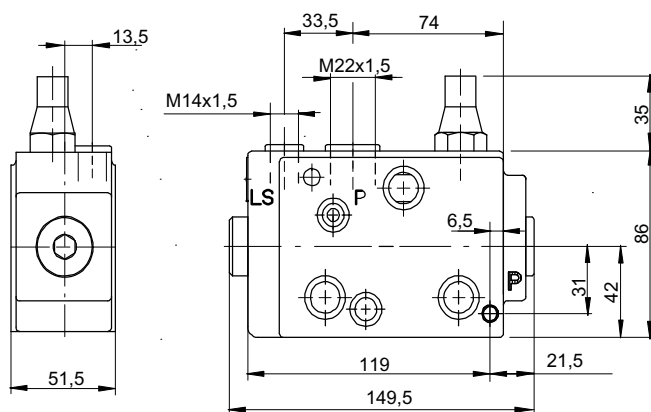
#### 4.2.3.2 Flow cut-off function with an LU8SSKD intermediate section



### 4.2.4 Overview of sections

Symbol	Description	Part number
	<b>LU8SSKD-0M22*00/P=</b> <ul style="list-style-type: none"> <li>nominal flow rate 100 l/min</li> <li>with adjustable pressure relief valve for flow cut-off</li> <li>port threads to DIN 3852 - M22 x 1.5</li> </ul> ⇒ Specify the pressure relief setting in bar. (50 ... 300 bar)	see order details chapter 1.1

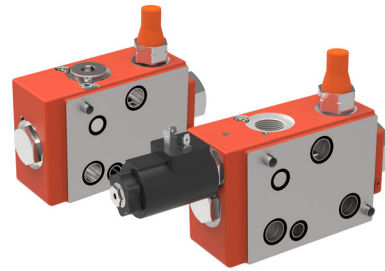
### 4.2.5 Dimensions



## 4.3 Intermediate sections with 3-way pressure compensator

### 4.3.1 Description

These 3-way compensators are intermediate sections with the additional functions shown below. In essence, they can be applied in conjunction with a fixed-displacement pump for control of unloading, and flow control that is independent of the load. Ports P, and D and LS as appropriate, are provided.



### 4.3.2 Function

#### • LU8SSBU

Provides a 3-way compensator function with 2-stage pressure relief, and a reduction in the unloaded pressure from the standard 12 bar to approx. 6 bar.

#### • LU8SSBW

Provides a 3-way compensator function and the surplus flow is available at port D or internally for other applications. Both flows are protected by a two-stage pressure relief valve. On reaching the maximum pressure in the priority side, which can then be loaded up to the maximum pressure setting.

### 4.3.3 Technical data

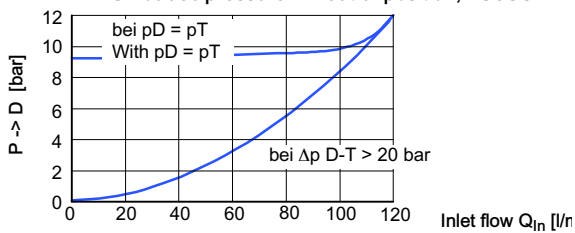
General characteristics	Unit	Description, value
Inlet pressure <sup>1)</sup>	bar	max. 300
Nominal flow rate	l/min	120
Unloaded pressure P -> T (LU8SSBU/SBT/SBL/SBK)	bar	see performance graphs chapter 4.3.4
Pressure relief	bar	adjustable, 50 ... 300 bar
Nominal voltage <sup>2)</sup>	V DC	12 or 24
Plug type		AMP, GDM: IP65 DT: IP67 (DIN EN 60529)
Power consumption <sup>2)</sup>	Watt	27
Duty cycle <sup>2)</sup>	%	100
Protection class <sup>2)</sup>		AMP: IP65 DT: IP67 (DIN EN 60529)

1) Inlet pressure for LU8SSBU-....G.. and LU8SSBW-....G.. max. 250 bar.

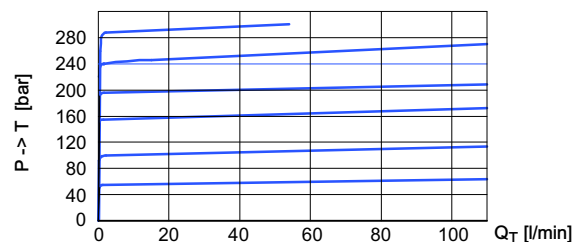
2) Only with electrical unloading.

### 4.3.4 Performance graphs

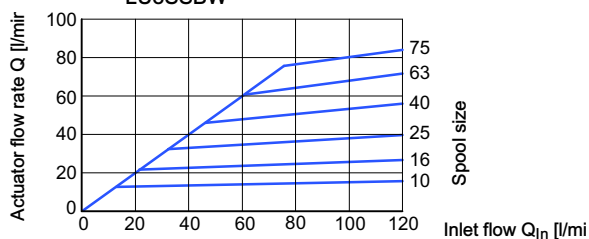
#### 4.3.4.1 Unloaded pressure in neutral position, LU8SSBW



#### 4.3.4.3 Pressure relief characteristic, LU8SSB



#### 4.3.4.2 Maximum flow rate at directional valve (without individual pressure compensator) when using an LU8SSBW



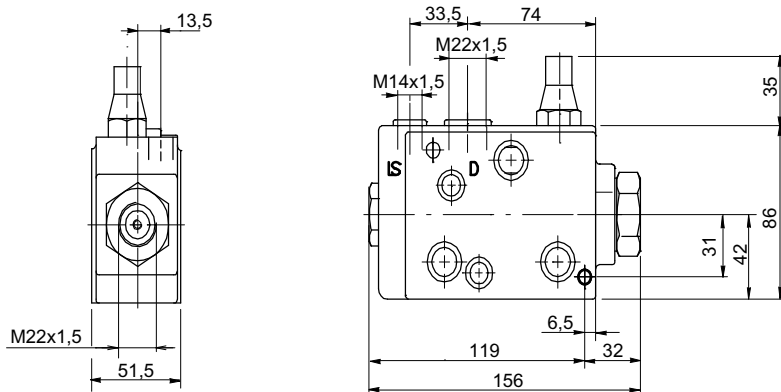
### 4.3.5 Overview of sections

Symbol	Description	Part number
	<b>LU8SSBU-0M22*00/P=</b> <ul style="list-style-type: none"> <li>with two-stage pressure relief / control <math>\Delta p = 12</math> bar</li> <li>reduction in the unloaded pressure to approx. 6 bar</li> <li>port threads to DIN 3852 - M22 x 1,5</li> </ul> ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1
	<b>LU8SSBW-0M22*00/P=</b> <ul style="list-style-type: none"> <li>with two-stage pressure relief / with surplus flow port</li> <li>control <math>\Delta p = 12</math> bar</li> <li>port threads to DIN 3852 - M22 x 1.5</li> </ul> ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1
	<b>LU8SSBW-0M22T24*00/P=</b> <ul style="list-style-type: none"> <li>with two-stage pressure relief / with surplus flow port</li> <li>control <math>\Delta p = 12</math> bar / emergency stop function</li> <li>port threads to DIN 3852 - M22 x 1.5</li> <li>plug type to DIN 43650 (others on enquiry) / nominal voltage 24 V DC</li> </ul> ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1

### 4.3.6 Connector socket

AMP Junior Timer J	Deutsch plug DT04-2P-EP04 T

### 4.3.7 Dimensions



## 4.4 Intermediate sections with multi-way pressure compensator

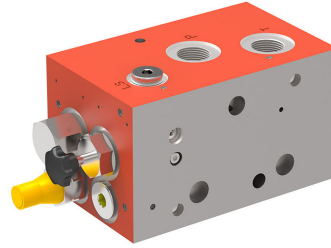
### 4.4.1 Description

The multi-way pressure compensators contain a priority function for the directional valves fitted on the appropriate side. For the surplus-flow side, a 3-way pressure compensator is available for unloading control and load-independent flow control when using a fixed displacement pump.

In the under-supply range (pump flow < total flow needed by the valve block), the surplus flow side will receive only a portion of what it needs, or possibly (pump flow < priority flow setting) no flow whatsoever.

Application preferably in conjunction with a fixed displacement pump, but with the ability to change over to LS or constant-pressure systems.

Ports P, T, and LS are provided.



### 4.4.2 Functions

- LU8SSMF

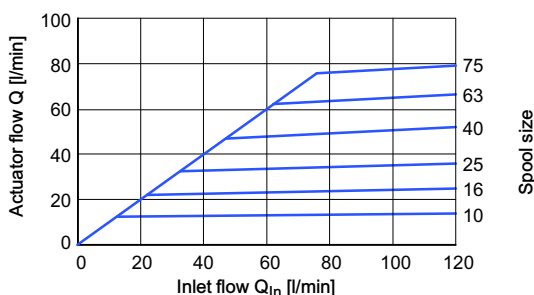
Priority-flow control as 2- and 3-way compensator, with surplus-flow control as 3-way compensator. The priority-flow side is provided with a flow cut-off function. The surplus-flow control can be de-activated, which allows an LS- or constant-pressure system to be connected. This is typical with towed harvesters.

### 4.4.3 Technical data

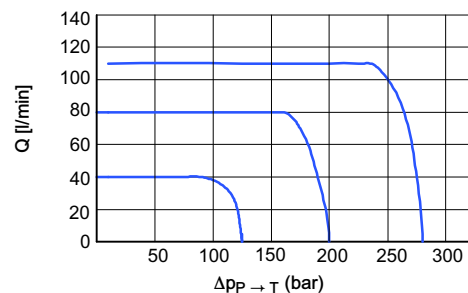
General characteristics	Unit	Description, value
Inlet pressure	bar	max.300
Nominal flow rate	l/min	120
Unloaded pressure	bar	see performance graphs section 4.5.4
Pressure for flow cut-off ( $P_{Priority}$ )	bar	adjustable, 50 ... 300 bar
Pressure for pressure relief ( $P_{Surp}$ )	bar	adjustable, 50 ... 300 bar

### 4.4.4 Performance graphs

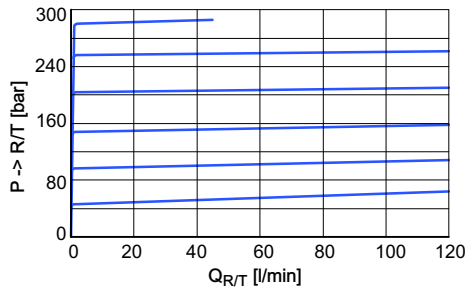
#### 4.4.4.1 Maximum flow rate at directional valve (without individual pressure compensator)



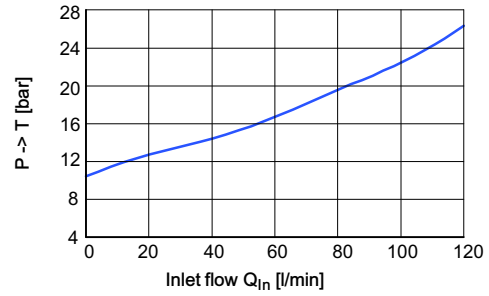
#### 4.4.4.2 Flow cut-off on the priority side



### 4.4.4.3 Pressure relief characteristic (priority and surplus flow)



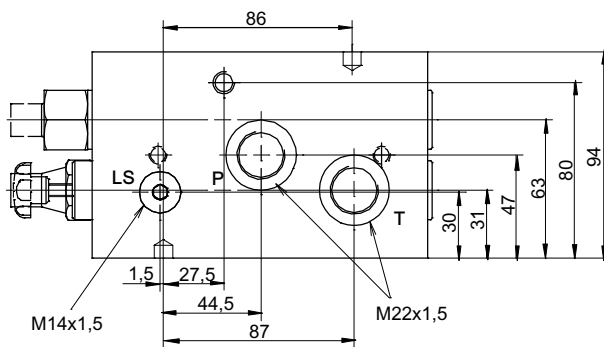
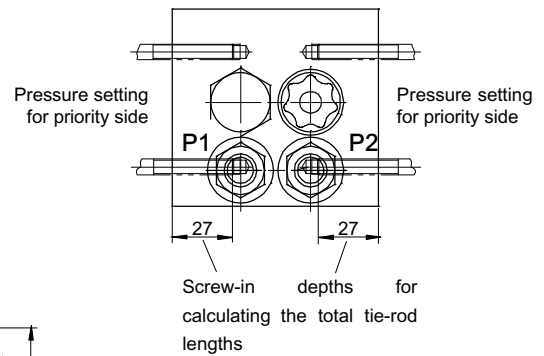
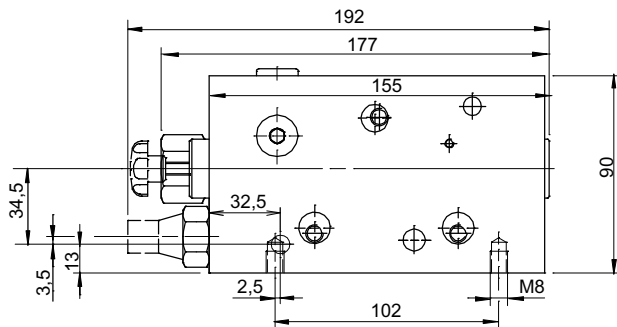
### 4.4.4.4 Unloaded pressure in neutral position



### 4.4.5 Overview of sections

Symbol	Description	Part number
	<b>LU8SSMF-0M22*00/P=</b> <ul style="list-style-type: none"> <li>• P<sub>Prior</sub> with pressure relief</li> <li>• compensator can be disabled on surplus-flow side for LS systems</li> <li>• control <math>\Delta p = 12</math> bar for P<sub>Prior</sub></li> <li>• control <math>\Delta p = 12</math> bar for P<sub>Surp</sub> with active pressure compensator</li> <li>• port threads to DIN 3852 - M22 x 1,5</li> </ul> ⇒ Specify the pressure relief setting in bar	see order details chapter 1.1

### 4.4.6 Dimensions



## 5 Directional valves

### 5.1 LD8S-/ LC8S- Directional valves

#### 5.1.1 Description

These directional valve sections with direct-acting ON/OFF solenoid or proportional solenoid are distinguished by their adaptability. Auxiliary functions can be bolted on above or below the valve. To enable this, the appropriate interfaces must be chosen (see following illustrations).

It is possible to set either the opening point of the control spool, or any predetermined point on the characteristic.

In the version with an additional manual operator, the flow rate can be increased.

The setting of the additional manual operator has no effect on the electrical operation. During electrical operation, the additional manual operator is not carried along with the solenoid mechanism. The lever remains in its neutral position, and thus has no influence on the spool characteristic.



#### 5.1.1.1 Integral auxiliary functions

- **Individual pressure compensator**

The integral 2-way pressure compensator maintains a constant pressure differential over the metering orifice in the directional valve spool. This means that the corresponding actuator flow remains constant and load-independent even if another actuator that needs a higher pressure is operated at the same time.

- **Flow cut-off**

Thanks to the adjustable maximum pressure, the actuator flow rate is reduced to zero when the level is exceeded. The corresponding function therefore stops until the actuator pressure has fallen to the permissible pressure range.

The pressure adjustment is manual, or optionally electro-proportional.

- **3-way pressure control**

Both a 3-way pressure control (P constant) and a flow control (Q constant) are incorporated in this valve section. The integral pressure control function can be switched to actuator port A or B, depending on the switching position of the valve section.

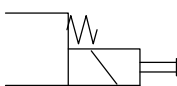
Below the pressure setting, the pressure-control assembly works as an individual pressure compensator and maintains a constant pressure differential over the metering orifice in the directional valve spool.

This means that the actuator flow rate is load-independent. For optimum 3-way pressure control, the corresponding directional function must be activated to its maximum extent.

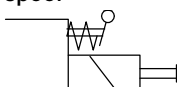
Typical applications are actuating functions that are specifically speed-controlled, with the possibility of a holding or press function. This function can be controlled to any required pressure and can act optionally on either actuator A or B.

#### 5.1.2 Function

##### 5.1.2.1 LD8S with direct-acting ON/OFF solenoid



##### 5.1.2.2 LD8S with direct-acting ON/OFF solenoid, optional manual override for the valve spool



The flow rates to the A and B actuator ports are graded by spool size as per sections 5.2.4. Using the stop-screw on the non-active solenoid, each flow rate can be reduced from its maximum by a maximum of 50%.

##### 5.1.2.3 LC8S with direct-acting proportional solenoid



##### 5.1.2.4 LC8S with direct-acting proportional solenoid, optional manual override for the valve spool



The flow rates to the A and B actuator ports are graded by spool size as per sections 5.2.4.

## 5.1.3 Technical data

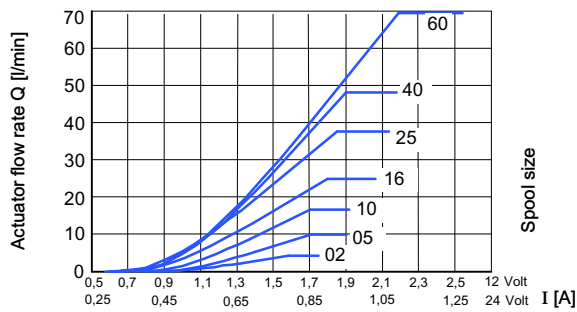
General characteristics	Unit	Description, value	
		LD8S	LC8S
Type of operation		ON/OFF	Proportional
Inlet pressure	bar	250	
Actuator pressure (duty cycle 10 sec/min)	bar	max. 280	
Spool size	l/min	02, 05, 10, 16, 25, 40, 60	
Solenoid design		ON/OFF solenoid with mechanical manual override	Proportional solenoid with mechanical manual override
Nominal voltage	V DC	12 (10,8 ...14) 24 (21,6 ...28)	12 or 24
Power consumption at R <sub>20</sub>	Watt	22 (U <sub>N</sub> 12 V) 22 (U <sub>N</sub> 24 V)	max. 24 at 2,5 A (U <sub>N</sub> 12 V) max. 24 at 1,3 A (U <sub>N</sub> 24 V)
Duty cycle	%		100 at I <sub>max</sub> 2,5 A (U <sub>N</sub> 12 V) 1,3 A (U <sub>N</sub> 24 V)
Plug type		AMP Junior Timer with protective diode P6KE33CA, DT04-2P-EP04	
Enclosure protection		AMP: IP65	DT: IP67 (DIN EN 60529)
Switch frequency	Hz	> 2 (please contact the factory)	
Accessories			For electronic controls see overview brochure P70003

**IMPORTANT:** Maximum reduction is to 50% of the respective nominal spool size.

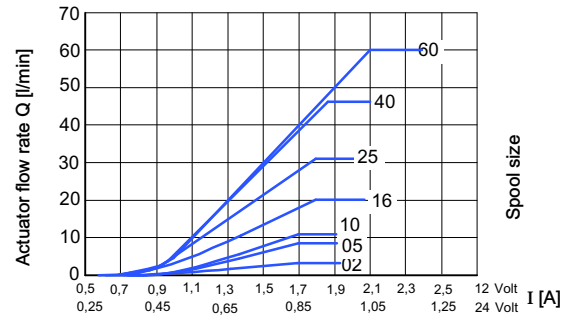
## 5.1.4 Performance graphs

### 5.1.4.1 Typical flow characteristic curve without compensator function (spool 4D)

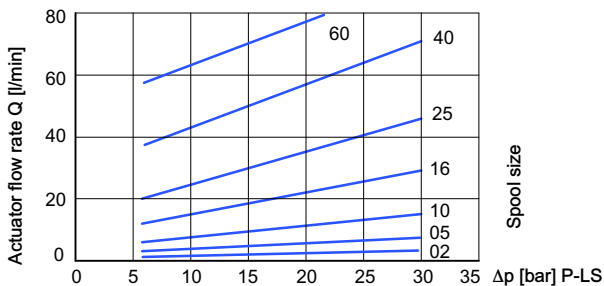
(Inlet section with 3-way press. compensator for  $\Delta p$  12 bar)



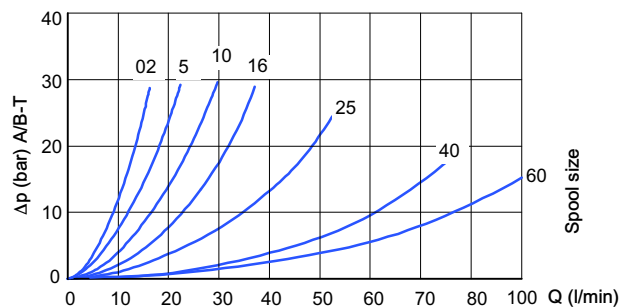
### 5.1.4.2 Typical flow characteristic curve with compensator function (spool 4D)



### 5.1.4.3 LD / LC Maximum flow rate at the directional valve without compensator function, LS-function

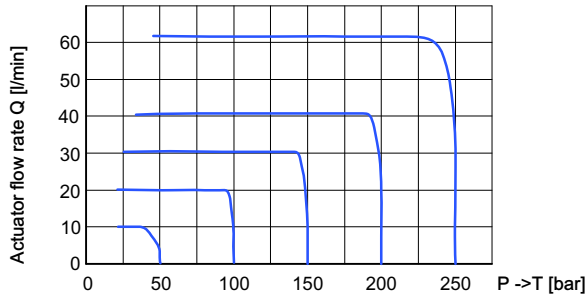


### 5.1.4.4 LC Pressure drop A/B -> T in the LC8S.4A directional stage

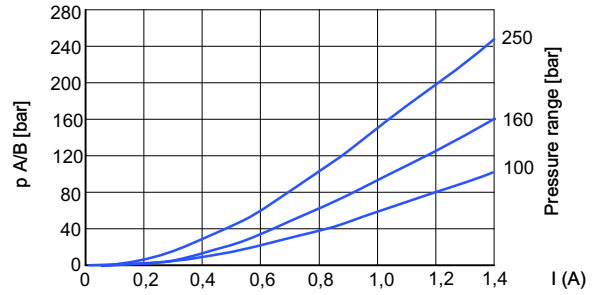




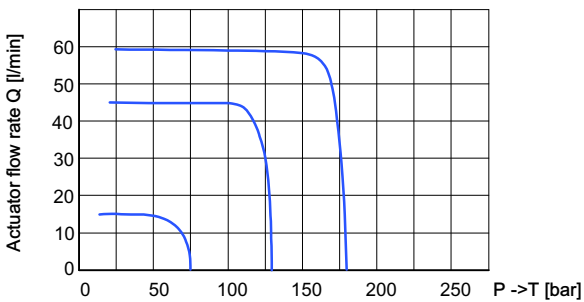
5.1.4.5 Typical flow characteristic curve with flow cut-off function, pressure relief adjustable (manual)



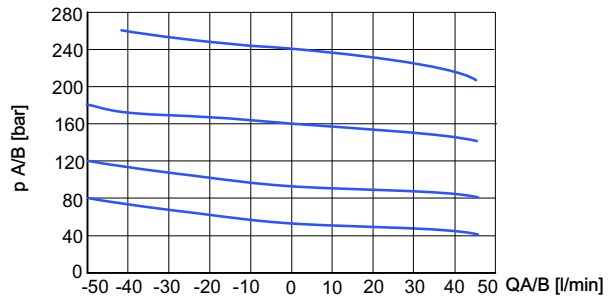
5.1.4.8 Typical pressure profile 3-way pressure control electroproportional



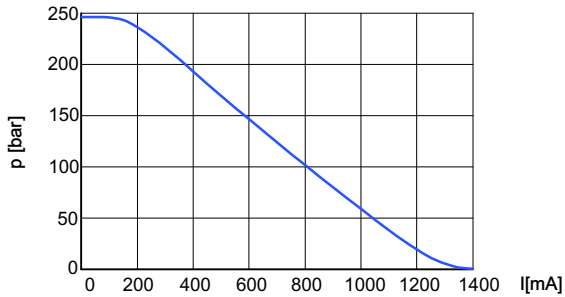
5.1.4.6 Typical flow characteristic curve with flow cut-off function, pressure relief adjustable electroproportional



5.1.4.9 Typical pressure profile 3-way pressure control overall function



5.1.4.7 Flow cut-off function pressure setting p - I electroproportional



## 5.1.5 Overview of sections

### 5.1.5.1 LD8S / LC8S-directional valves with port threads

Symbol	Description	Part number
	<p>L.8SE.....-*O-.....</p> <ul style="list-style-type: none"> <li>port threads for actuator A and B</li> </ul>	see ordering code
	<p>L.8SM.....-*I-.....</p> <ul style="list-style-type: none"> <li>port threads for actuator A and B</li> <li>integrated individual pressure compensator</li> </ul>	see ordering code

	<b>L.8SM.....-L-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• port threads for actuator A and B</li> <li>• flow cut-off</li> </ul>		
	<b>L.8SM.....-P-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• port threads for actuator A and B</li> <li>• individual pressure compensator</li> <li>• flow cut-off, electroproportional</li> </ul>		
	<b>L.8SM.....-4-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• port threads for actuator A and B</li> <li>• pressure compensator</li> <li>• 3-way pressure control</li> </ul>		

### 5.1.5.2 LD8S / LC8S-directional valves for bolt-on auxiliary valves

Symbol	Description	Part number
	<b>L.8SE.....-MO-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• for bolt-on auxiliary valves on flange face O</li> </ul>		
	<b>L.8SM.....-MI-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• for bolt-on auxiliary valves on flange face O</li> <li>• Integrated individual pressure compensator</li> </ul>		
	<b>L.8SM.....-ML-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• for bolt-on auxiliary valves on flange face O</li> <li>• integrated individual pressure compensator</li> <li>• flow cut-off, electroproportional</li> </ul>		
	<b>L.8SM.....-MP-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• for bolt-on auxiliary valves on flange face O</li> <li>• integrated individual pressure compensator</li> <li>• flow cut-off, electroproportional</li> </ul>		
	<b>L.8SM.....-M4-....</b>	<b>see ordering code</b>
<ul style="list-style-type: none"> <li>• for bolt-on auxiliary valves on flange face O</li> <li>• integrated individual pressure compensator</li> <li>• 3-way pressure control</li> </ul>		

## 5.1.6 Option menu for ordering code (ordering code see section. 5.2.9)

**Spool type (way function, spool function, spool size in l/min)**

<b>3A</b>  10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	<b>3I</b>  05 l/min 10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	<b>4A</b>  02 l/min 05 l/min 10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	<b>4E</b>  16 l/min 25 l/min 40 l/min 60 l/min
<b>3J</b>  10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	<b>4D</b>  10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	<b>4F</b>  10 l/min 16 l/min 25 l/min 40 l/min 60 l/min	

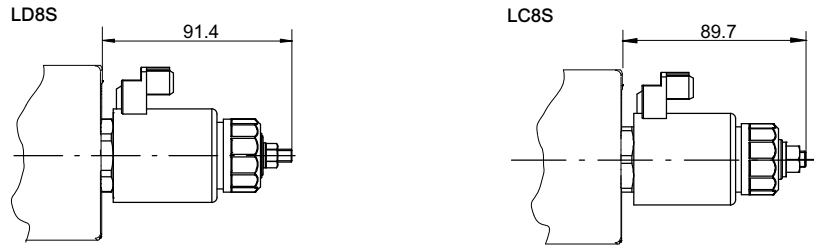
<b>Control type</b>	
ON/OFF solenoid	= LD8S
proportional solenoid	= LC8S
<b>Operation</b>	
load-independent individual operation	= E
load-independent parallel operation	= M
<b>Additional operator</b>	
spool stroke limiter (only LD8S)	= S
manual override	= N
<b>Attachment to flange face O</b>	
port threads for line connections	= *
flange face for auxiliary valve	= M
<b>Compensator function</b>	
without pressure compensator	= O
with pressure compensator	= I
with pressure compensator and flow cut-off	= L
with pressure compensator, electroproportional flow cut-off	= P
with pressure compensator and 3-way pressure control	= 1
1 = up to 40 bar / 2 = up to 100 bar / 3 = up to 160 bar / 4 = up to 250 bar	
<b>Type of connection at face O</b>	
flange face to factory standard	= ***
Line connection at ports A and B: DIN 3852- M18 x 1,5	= M18
<b>Nominal voltage</b>	
12 V DC	= 12
24 V DC	= 24
<b>Connector socket</b>	
AMP Junior Timer	= J
Deutsch plug DT04-2P-EP04	= T

## 5.1.7 Connector socket

AMP Junior Timer with protective diode P6KE33CA J	DT04-2P-EP04 T

### 5.1.8 Dimensions

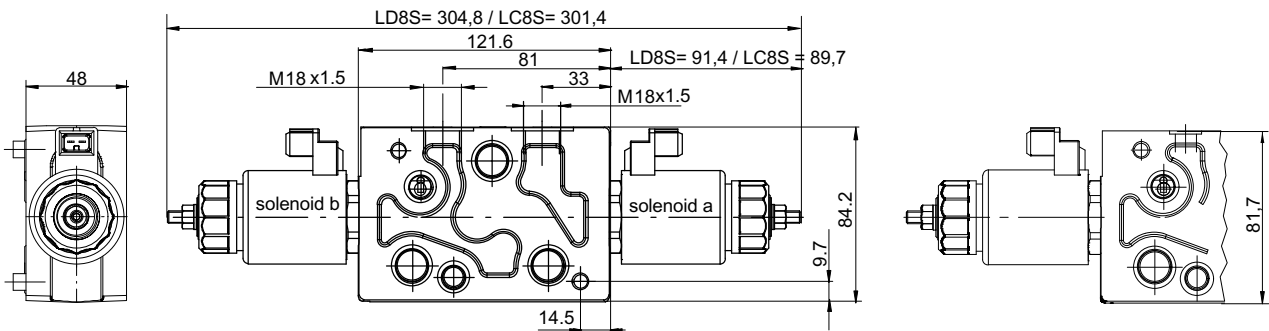
#### 5.1.8.1 LD8S / LC8S core tube



#### 5.1.8.2 LD8S / LC8S-directional valve

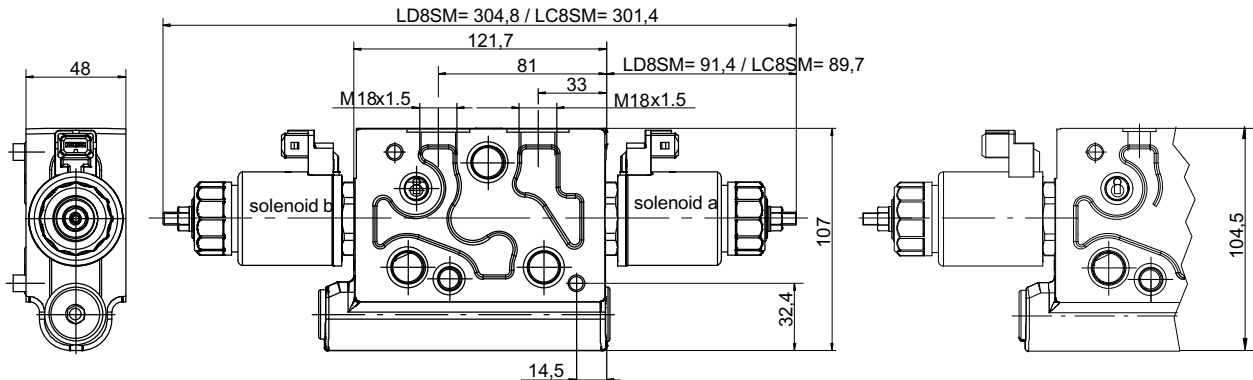
with port threads

with flange face for auxiliary valve



#### 5.1.8.3 LD8SM / LC8SM-directional valve with integrated pressure compensator

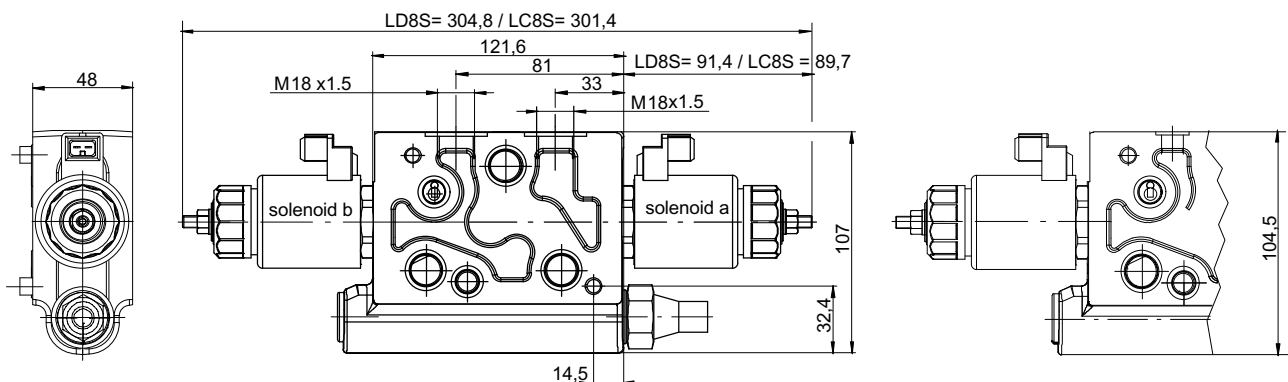
with port threads



#### 5.1.8.4 LD8S / LC8S-directional valve with integrated pressure compensator and flow cut-off

with port threads

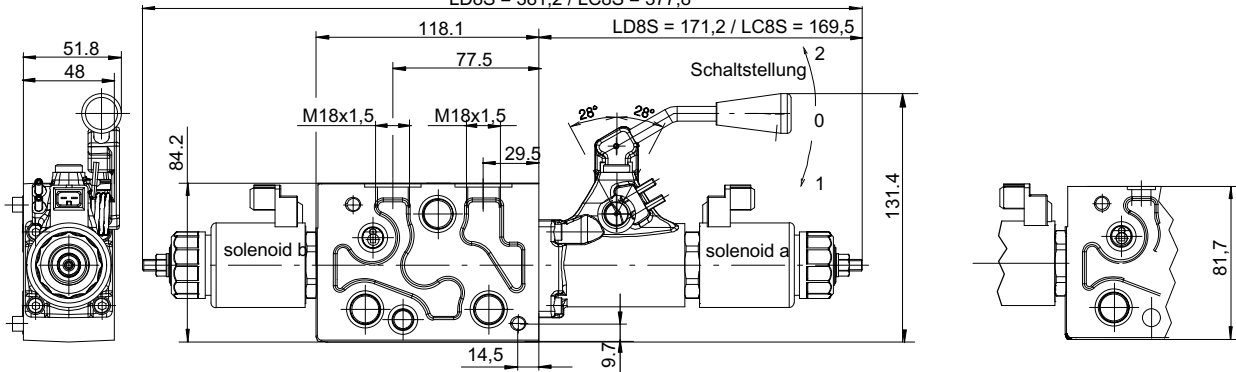
with flange face for auxiliary valve



**5.1.8.5 LD8S / LC8S-directional valve with manual override**  
with port threads

LD8S = 381,2 / LC8S = 377,8

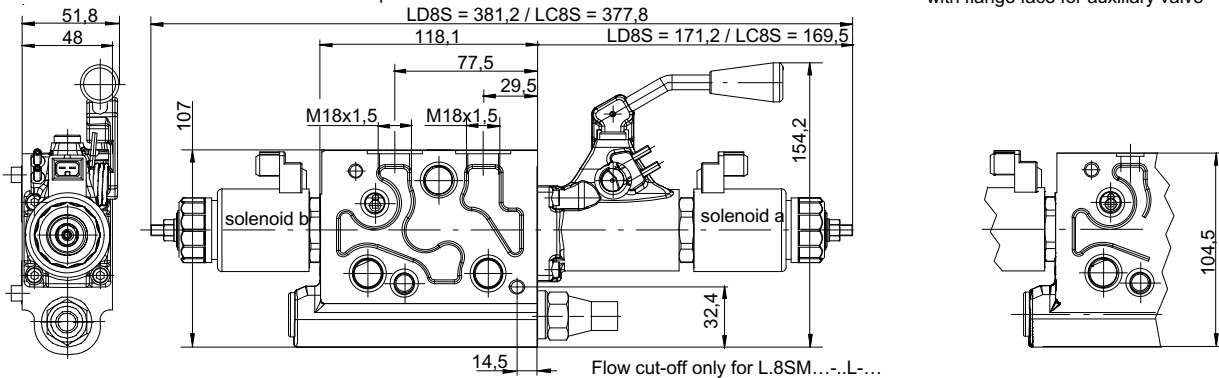
with flange face for auxiliary valve



**5.1.8.6 LD8S / LC8S-directional valve with manual override, pressure compensator and flow cut-off**  
with port threads

LD8S = 381,2 / LC8S = 377,8

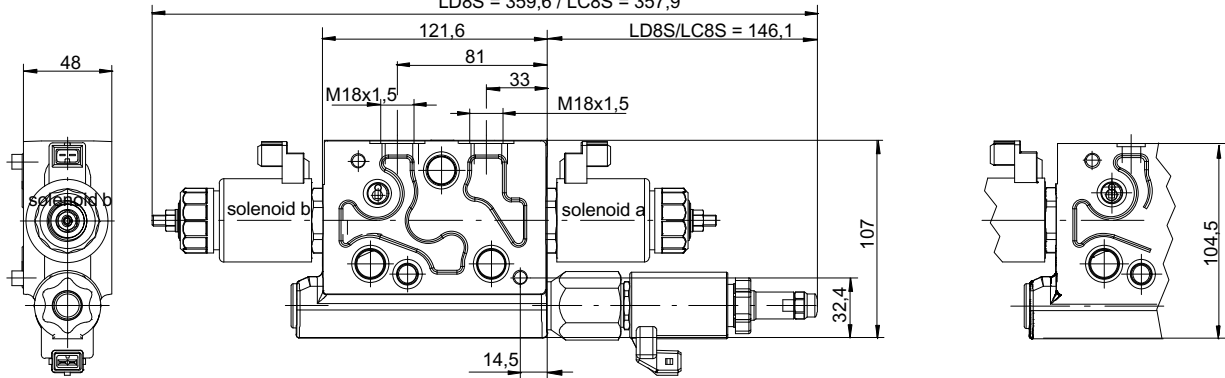
with flange face for auxiliary valve



**5.1.8.7 LD8S / LC8S-directional valve with pressure compensator, electrically-proportionally flow cut-off**  
with port threads

LD8S = 359,6 / LC8S = 357,9

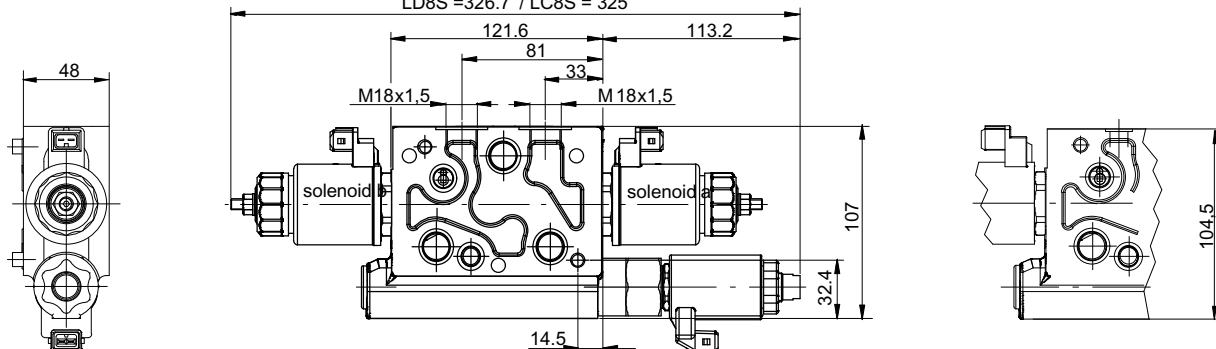
with flange face for auxiliary valve



**5.1.8.8 LD8S / LC8S-directional valve with pressure compensator and 3-way pressure control**  
with port threads

LD8S = 326,7 / LC8S = 325

with flange face for auxiliary valve



### 5.1.9 Ordering code

- White fields = data specified by Bucher Hydraulics
- Grey fields = fill out the fields according the option menu 5.1.6

L
D
8
S
E
3
A
1
0
\*
\*
-
S
\*
O
-
1
M
1
8
J
1
2
\*
 

ON/OFF solenoid = LD8S  
 Proportional solenoid = LC8S

Load-independent individual operation = E  
 Load-independent parallel operation = M

3-way function = 3  
 4-way function = 4

Spool function = A, D, E, F, I, J,

Port A spool code  
 02, 05, 10, 16, 25, 40, 60 = e.g. 10

Port B spool code  
 for 3-way function = \*\*  
 for 4-way function 02, 05, 10, 16, 25, 40, 60 = e.g. 10

Additional operator: without add. manual override (only for LC8S) = \*  
 with spool stroke limiter (only for LD8S) = S  
 with additional manual override = N

Attachment to flange face O: port threads for line connection = \*  
 flange face for auxiliary valve = M

Compensator function: without pressure compensator = O  
 with integrated pressure compensator = I  
 with pressure compensator and flow cut-off = L  
 with pressure compensator, electrically-proportionally flow cut-off = P  
 with pressure compensator, 3-way press. control (only up to 40 l/min) = e.g. 2  
 Information for pressure setting:  
 1 = up to 40 bar / 2 = up to 100 bar / 3 = up to 160 bar / 4 = up to 250 bar

Design stage (will be inserted by Bucher Hydraulics)

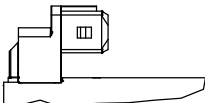
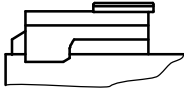
Type of connection at face O  
 flange face to factory standard = \*\*\*  
 line connection to port A and B: DIN 3852: M18 x 1,5 = M18

Connector socket: AMP Junior Timer = J  
 Deutsch plug DT04-2P-EP04 = T

Nominal voltage: 12 V DC = 12  
 24 V DC = 24

Option: HPCO/Pressure Beyond for compatibility with 2/2 double-seat valve SVH04 (see chapter 10) = 02

### 5.1.10 Connector socket

AMP Junior Timer with protective diode P6KE33CA J	Deutsch plug DT04-2P-EP04 T
	

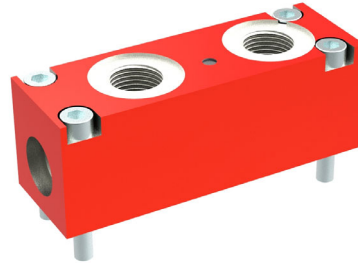
## 6 Auxiliary valves that bolt-on to the top flange face O

### 6.1 Anti-shock / make-up valves (secondary pressure relief)

#### 6.1.1 Description

These bolt-on anti-shock/make-up valves are mounted on flange face O. They protect the actuator from unacceptably-high pressure peaks.

The excess pressure is discharged to tank. The integral make-up function protects against cavitation. The following combinations are available in the pressure ranges listed.

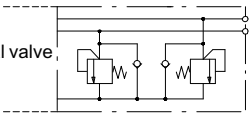
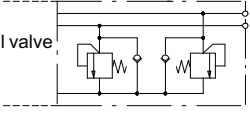
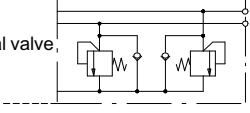
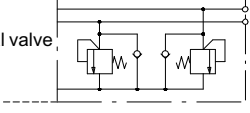


#### 6.1.2 Technical data

General characteristics	Unit	Description, value
Pressure settings available (measured at 4 l/min test flow)	bar	80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300
Pressure drop through make-up valve	bar	4 at 30 l/min
Port threads to DIN 3852		M18 x 1,5, G½" (B12)

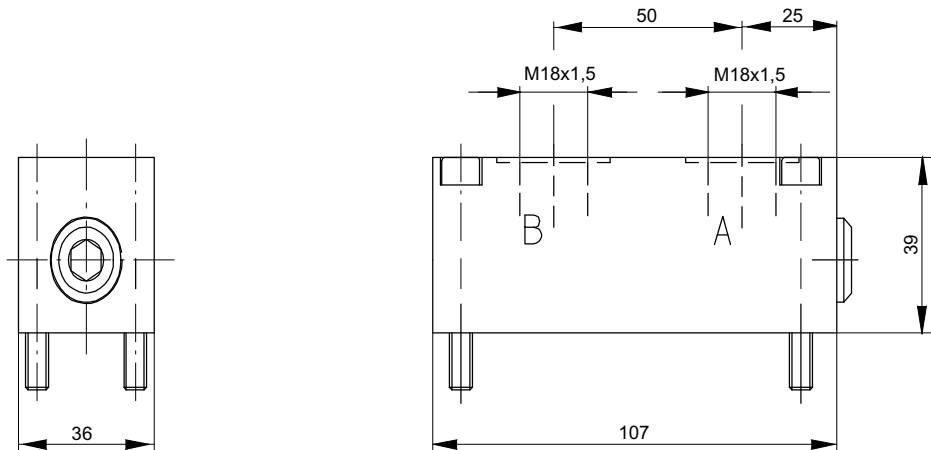
#### 6.1.3 Overview of sections

Symbol	Description	Part number
Directional valve 	LU8SPET-NVONVO-1M18*00 • actuator port A and B: without pressure relief, with make-up valve	100015777
Directional valve 	LU8SPET-080080-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100015727
Directional valve 	LU8SPET-100100-0M18*00 • actuator port A and: with pressure relief with make-up valve	100015655
Directional valve 	LU8SPET-125125-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100015664
Directional valve 	LU8SPET-140140-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100015280
Directional valve 	LU8SPET-160160-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100015656
Directional valve 	LU8SPET-175175-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100018657
Directional valve 	LU8SPET-190190-0M18*00 • actuator port A and B: with pressure relief with make-up valve	100015665

 <p>Directional valve</p>	<b>LU8SPET-210210-0M18*00</b>	<b>100015615</b>
<ul style="list-style-type: none"> <li>actuator port A and B: with pressure relief with make-up valve</li> </ul>	$p = 210 \text{ bar}$	
 <p>Directional valve</p>	<b>LU8SPET-230230-0M18*00</b>	<b>100015666</b>
<ul style="list-style-type: none"> <li>actuator port A and B: with pressure relief with make-up valve</li> </ul>	$p = 230 \text{ bar}$	
 <p>Directional valve</p>	<b>LU8SPET-250250-0M18*00</b>	<b>100015657</b>
<ul style="list-style-type: none"> <li>actuator port A and B: with pressure relief with make-up valve</li> </ul>	$p = 250 \text{ bar}$	
 <p>Directional valve</p>	<b>LU8SPET-280280-0M18*00</b>	<b>100015658</b>
<ul style="list-style-type: none"> <li>actuator port A and B: with pressure relief with make-up valve</li> </ul>	$p = 280 \text{ bar}$	

Others on enquiry.

## 6.1.4 Dimensions



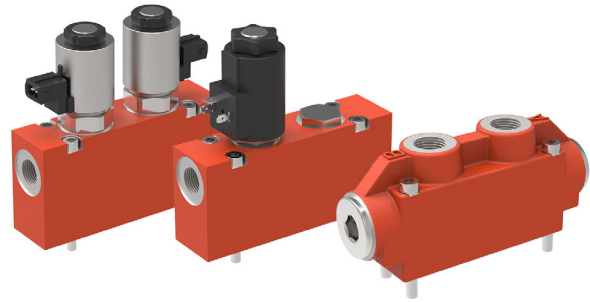


## 6.2 Check valves (pilot operated non return valves)

### 6.2.1 Description

These bolt-on load check valves with hydraulic or solenoid operation shut off the actuator lines with zero leakage.

The valves must be mounted on flange face O of the directional valve. The following variants are available.



### 6.2.2 Technical data

General characteristics	Unit	Description, value		
		LU8SPRH...	LU8SPR1-...	LU8SPR2-...
Function		Hydraulic operated	Solenoid operated	Electrohydraulic operated
Nominal flow rate	l/min	63	30	70
Operating pressure	bar	max. 250	max. 210	max. 280
Actuator pressure	bar	max. 280	max. 250	max. 300
Port thread		DIN 3852 - M18 x 1,5		
Ratio of opening pressure to opposing pressure for double-acting cylinders		1 : 6,25 <sup>1)</sup>		
Pressure drop	bar	7 at 63 l/min	10 at 30 l/min	10 at 63 l/min
Nominal voltage	V DC		12 or 24	
Power consumption	Watt		27	22
Duty cycle	%		100	
Enclosure protection			AMP Junior Timer, GDM plug: IP65 Deutsch plug DT04: IP67 (DIN EN 60529)	
Connector socket			Deutsch plug DT04-2P-EP04, AMP Junior Timer	

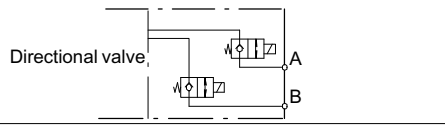
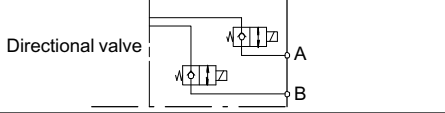
1) Others on enquiry.

### 6.2.3 Overview of sections

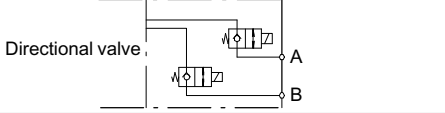
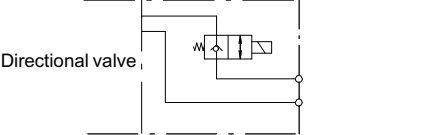
#### 6.2.3.1 LU8SPRH-... (hydraulic operated, $Q_{max} = 63$ l/min)

Symbol	Description	Part number
	<b>LU8SPRH-DVADV-0M18*00</b> • actuator port A and B: with check valve	<b>100015612</b>
	<b>LU8SPRH-DVA***-0M18*00</b> • actuator port A: with check valve • actuator port B: without valve	<b>100015613</b>
	<b>LU8SPRH-***DVB-0M18*00</b> • actuator port A: without valve • actuator port B: with check valve	<b>100015614</b>

## 6.2.3.2 LU8SPR1-... (solenoid operation, $Q_{max}$ 30 l/min)

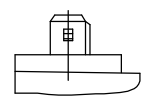

Symbol	Description	Part number
	<b>LU8SPR1-DVADVB-0M18T12*00</b>	<b>100035157</b>
	<ul style="list-style-type: none"> <li>actuator port A and B: with check valve</li> <li>connector socket DIN 43650 / nominal voltage 12 V DC</li> </ul>	
	<b>LU8SPR1-DVADVB-0M18T24*00</b>	<b>100024626</b>
	<ul style="list-style-type: none"> <li>actuator port A and B: with check valve</li> <li>connector socket DIN 43650 / nominal voltage 24 V DC</li> </ul>	

## 6.2.3.3 LU8SPR2-... (solenoid operation, $Q_{max}$ 70 l/min)

Symbol	Description	Part number
	<b>LU8SPR2-DVADVB-2M18T24*00</b>	<b>100040171</b>
	<ul style="list-style-type: none"> <li>actuator port A and B: with check valve</li> <li>connector socket DT04-2P-EP04 / nominal voltage 24 V DC</li> </ul>	
	<b>LU8SPR2-DVA***-2M18T24*00</b>	<b>100040168</b>
	<ul style="list-style-type: none"> <li>actuator port A: with check valve</li> <li>actuator port B: without valve</li> <li>connector socket DT04-2P-EP04 / nominal voltage 24 V DC</li> </ul>	

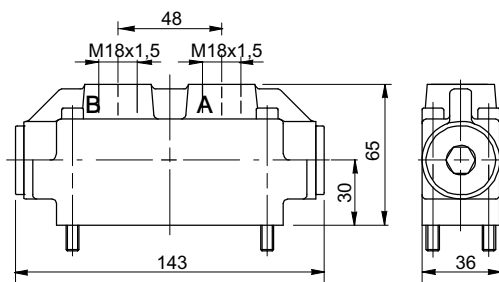
Others on enquiry.

## 6.2.4 Connector socket

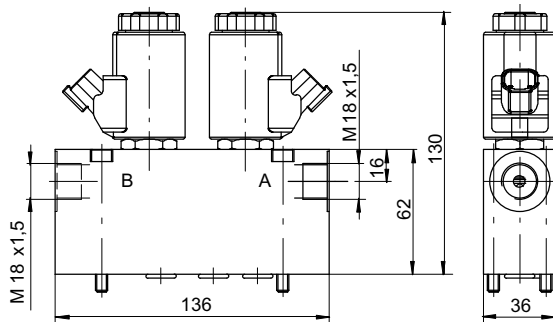
AMP Junior Timer J	Deutsch plug DT04-2P-EP04 T
	

## 6.2.5 Dimensions

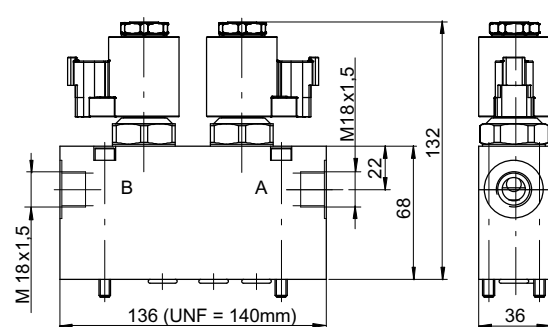
### 6.2.5.1 LU8SPRH-...



### 6.2.5.2 LU8SPR1-...



### 6.2.5.3 LU8SPR2-...

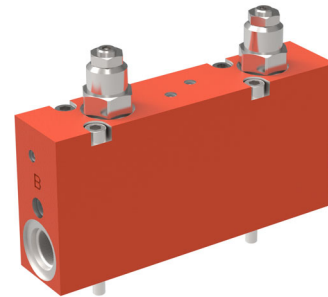


## 6.3 Load control valves

### 6.3.1 Description

These bolt-on load control valves with integral anti-shock function ensure load-independent lowering motion at speeds determined by the inlet flow. The load-control valves close without leakage when the directional valve is in its neutral position. The anti-shock valve setting should preferably be 120% of the highest load pressure. Turning the adjusting screw in the clockwise direction reduces the setting, and this can also be used for emergency lowering of the load.

The valves must be mounted on flange face O.  
The following variants are available.



### 6.3.2 Function

#### 6.3.2.1 LU8SPBH-\*\*\*E. . .-...

Load-holding valve at port B, orifice damping facility in the control line. Directional valve spool type 4F preferred.

#### 6.3.2.2 LU8SPBH-E. . E. .-...

Load-holding valves at port A and B. Directional valve spool type 4D preferred.

### 6.3.3 Technical data

General characteristics	Unit	Description, value
Port threads to DIN3852		M18 x 1,5
Pressure drop	bar	25 at 63 l/min
Anti-shock valve adjustable	bar	70 ... 280
Standard pilot ratios		3:1 <sup>1)</sup>

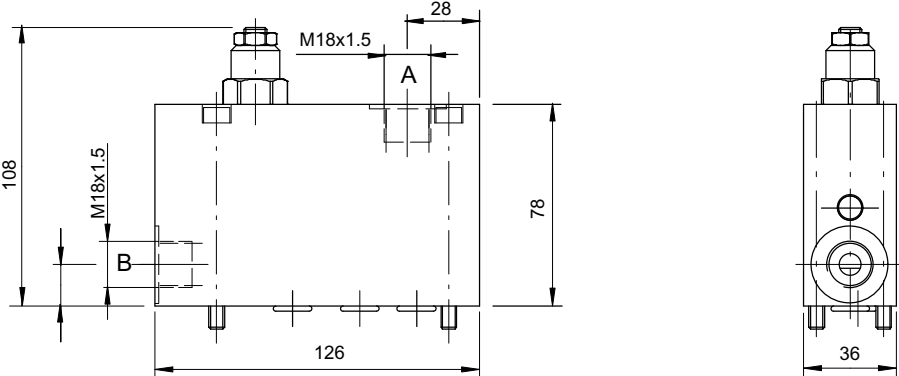
1) For other pilot ratios, please enquire.

### 6.3.4 Overview of sections

Symbol	Description	Part number
<p>Directional valve</p>	<p>LU8SPBH-E30E30-0M18*00/PA=PB=</p> <ul style="list-style-type: none"> <li>actuator port A and B: with load-control, pilot-ratio 3:1</li> </ul> <p>⇒ Specify the pressure relief setting in bar</p>	see order details chapter 1.1
<p>Directional valve</p>	<p>LU8SPBH-***E30-0M18*00/PB=</p> <ul style="list-style-type: none"> <li>actuator port A: without load-control</li> <li>actuator port B: with load-control, pilot-ratio 3:1</li> </ul> <p>⇒ Specify the pressure relief setting in bar</p>	see order details chapter 1.1

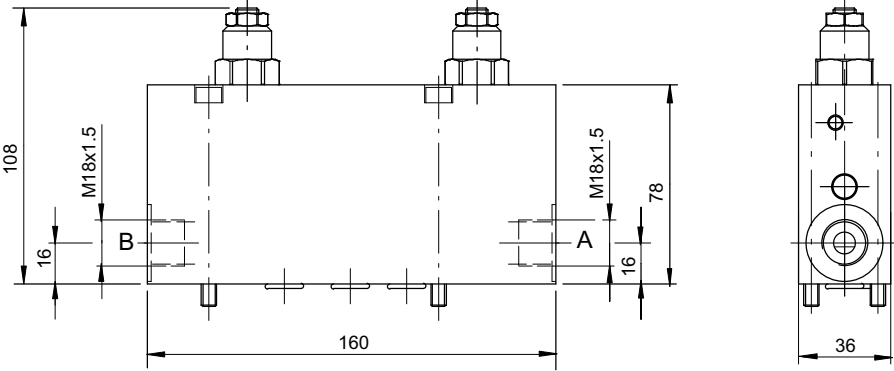
6.3.5 Dimensions

6.3.5.1 LU8SSPBH-\*\*\*E.. / LU8SSPBH-...E..



6.3.5.2 LU8SSPBH-E..E..

Cannot be combined with manual override on LC8S / LD8S.



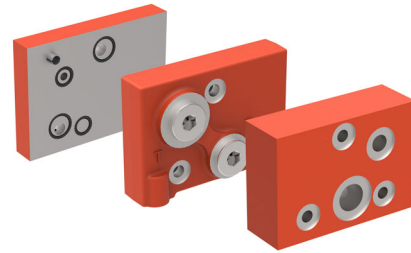
## 7 End sections

### 7.1 End sections with no control function

#### 7.1.1 Description

End sections with no control function are intended for the end of a valve block when no other control functions are needed. The LS signal is unloaded to tank.

The ports needed for the particular model are provided, as are tapped holes for securing the valve block.

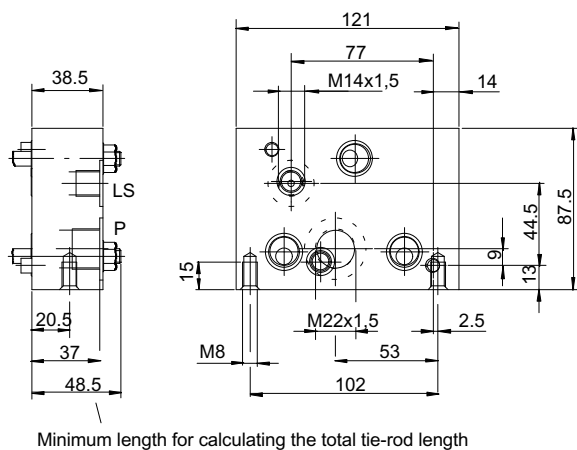
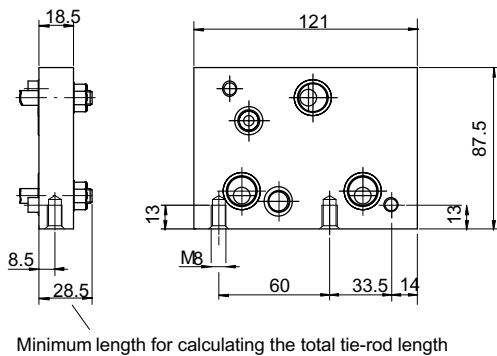


#### 7.1.2 Overview of sections

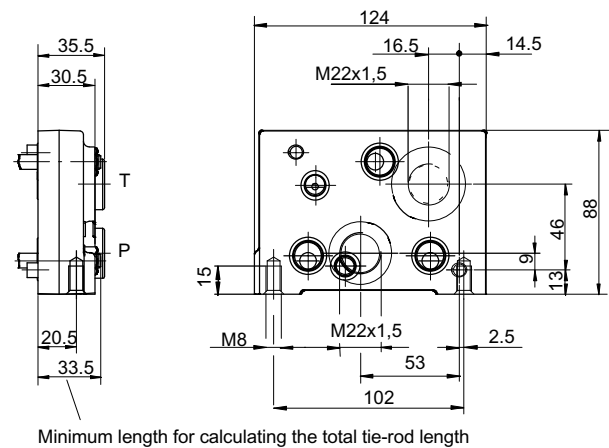
Symbol	Description	Part number
	<b>LU8SPUB-1*00</b> • end section without port • LS to T	<b>100040275</b>
	<b>LU8SPUT-1M22*00</b> • tank port T and pressure port P = M22 x 1,5 • LS to T	<b>100038056</b>
	<b>LU8SPWS-1M22*00</b> • pressure port P = M22 x 1,5 / LS port = M14 x 1,5 • LS carry-over (if unloading, remember the LS signal)	<b>100041051</b>

#### 7.1.3 Dimensions

##### 7.1.3.1 LU8SPUB



##### 7.1.3.2 LU8SPUT

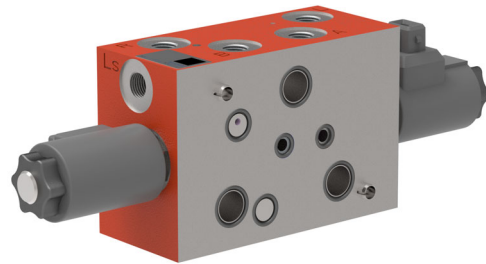


### 7.2 Safety valve for electro-hydraulic steering systems

#### 7.2.1 Description

Block end section as safety valve for electro-hydraulic steering systems. When the electro-hydraulic steering is activated by energising the attached proportional valve (e.g. LC8S), the two 3/2 directional valves are also energised at the same time. As a result, the steering Orbitrol is disconnected. In automatic mode, if manual (i.e. emergency) steering corrections have to be made without first switching off automatic mode, a pressure develops in R or L, depending on the direction the Orbitrol is turned.

This pressure passes through the shuttle valve to a pressure switch. The signal from the pressure switch cancels the automatic function and all solenoids are de-energised. Thus, the Orbitrol is directly connected to the steering cylinder and the normal manual steering function is active.



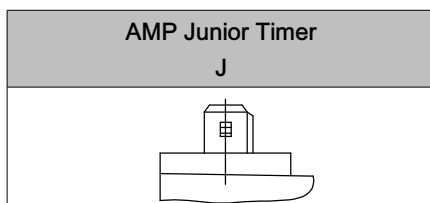
#### 7.2.2 Technical data

General characteristics	Unit	Description, value
Inlet pressure	bar	max. 210
Nominal flow rate	l/min	25
Nominal voltage	V DC	12
Power consumption	Watt	27
Duty cycle	%	100
Connector socket		DIN 43650
Enclosure protection		AMP: IP65 DT: IP67 (DIN EN 60529)

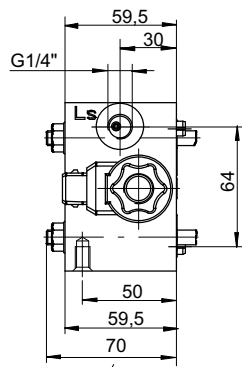
#### 7.2.3 Overview of sections

Symbol	Description	Part number
	<b>LU8SPUL-0B14J24*00</b> <ul style="list-style-type: none"> <li>• End section</li> <li>• connector socket: AMP Junior Timer</li> <li>• nominal voltage 24 V DC</li> </ul>	<b>100039804</b>

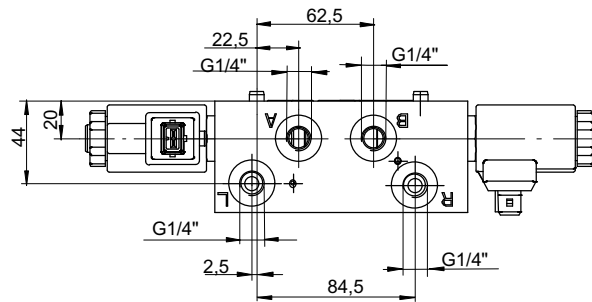
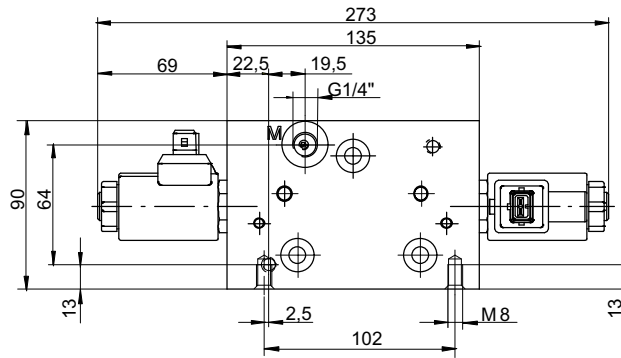
#### 7.2.4 Connector socket



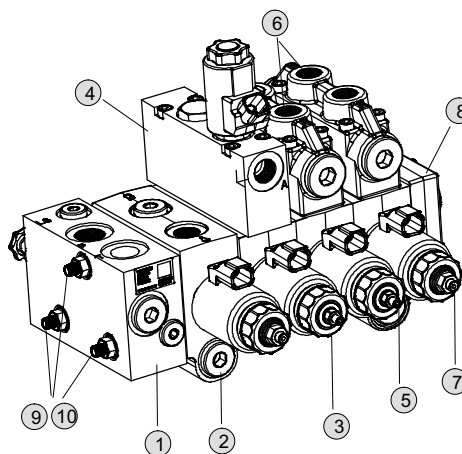
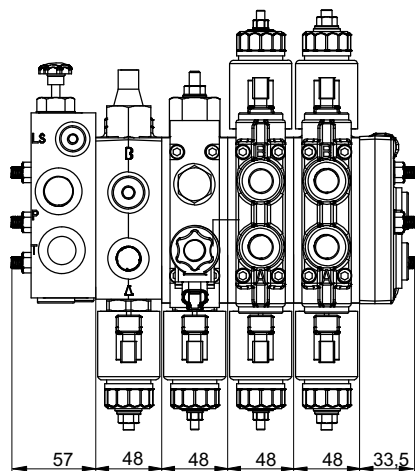
7.2.5 Dimensions



Minimum length for calculating the total tie bolt length



## 8 Control block configuration



### 8.1 Ordering example

Pos	Criteria	Ordering code	Part number
1	Inlet section	LU8SSCK-0M22*12	100030622
2	Directional valve section	LC8SM3...	Defined by factory
3	Directional valve section	LD8SE3...	Defined by factory
4	Auxiliary valves that bolt-on to the top flange face O	LU8SPR1-DVADVB-0M18T24*00	100024626
5	Directional valve section	LD8SE4...	Defined by factory
6	Auxiliary valves that bolt-on to the top flange face O	LU8SPRH.....	Defined by customer
7	Directional valve section	LC8SM4...	Defined by factory
8	End section	LU8SPUT-1M22*00	100038056
9	Tie rod	M8x290	Defined by factory
10	Seal Lock nut	M8	Defined by factory

### 8.2 Assembly kit for control block

#### 8.2.1 Description

To assemble the individual valve sections with assured functional reliability, 3 tie-rods and hex. nuts are necessary. Maximum tightening torque = 30 Nm. Tighten in 3 steps of 6, 16 and 30 Nm.

#### 8.2.2 Calculating the tie-rod length

Required screw length of the inlet section (see drawing) + (48 mm x number of directional valves) + required length of tie-rod of the end section (see drawing).

Example:

$$57 + (48 \times 4) + 33,5 = 282,5 \text{ mm}$$

For ordering purposes, always round up to the calculated tie-rod length to the next 10 mm. In our example, we therefore need to order 3 pcs. Tie-rods á M8 x 290 mm.

#### 8.2.3 Ordering code

3 pcs. tie-rods M8 x ..... (required length in mm)  
3 or 6 pcs. Seal-Lock sealing nut M8,

#### 8.2.4 Blockmontage

Im vorliegenden Beispiel handelt es sich um einen 9-Fach Steuerblock. Es werden alle Artikel zusammengezählt (Eingangssegment, Wegeventile, Abschlusssegment und anflanschbare Zusatzventile). Somit ist zur Preiskalkulation ZUB L.8S 9-Fach in der Preisliste auszuwählen.

**IMPORTANT:** Maximum 10 directional sections in 1 valve block.



## 9 Liability

In the design and operation of hydraulic systems, all aspects of the potential failure modes and all planned operational conditions and uses of the equipment must be taken into consideration.

Concerning risk assessment, please refer to the relevant Standards. The use of components that are not Original Bucher Replacement Parts and Accessories nullifies all warranty.

## 10 Note

This catalogue is intended for users with specialist knowledge. To ensure that all of the conditions necessary for the function and safety of the system are fulfilled, users must satisfy themselves as to the suitability of the units described here in. If there are any areas of doubt, please consult Bucher Hydraulics.

[info.kl@bucherhydraulics.com](mailto:info.kl@bucherhydraulics.com)

[www.bucherhydraulics.com](http://www.bucherhydraulics.com)

© 2023 by Bucher Hydraulics GmbH, D-79771 Klettgau

All rights reserved.

Data is provided for the purpose of product description only, and must not be construed as warranted characteristics in the legal sense. The information does not relieve users from the duty of conducting their own evaluations and tests. Because the products are subject to continual improvement, we reserve the right to amend the product specifications contained in this catalogue.

Classification: 430.300.330.