Open center control block in mono block design M8-32

RE 64294
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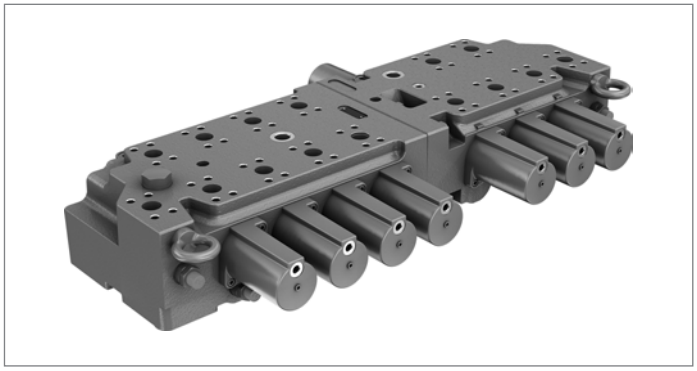
Replaces: 06.2003



- Size 32
- Series 1X
- Maximum working pressure
  - on the pump side 320 bar (350 bar on request)
  - on the consumer side 420 bar
- Maximum flow
  - on the pump side 2 x 450 l/min

Features

- Valve control in accordance with the 6/3-way principle
- Large fine control range for flow control with proportional flow characteristic
- Primary and secondary pressure limitation via pilot-operated cartridge valves with combined feed function
- Simultaneous control of different consumers possible

Design

- Mono blocks with 3 or 4 consumer axes, can be combined with each other
- Integrated equalizer valve for the chassis spool axes
- Connections for reservoir, cooler, boost pressure supply and external summation
- Type of actuation
  - Hydraulic
  - Electrohydraulic on request

Contents

Functional description

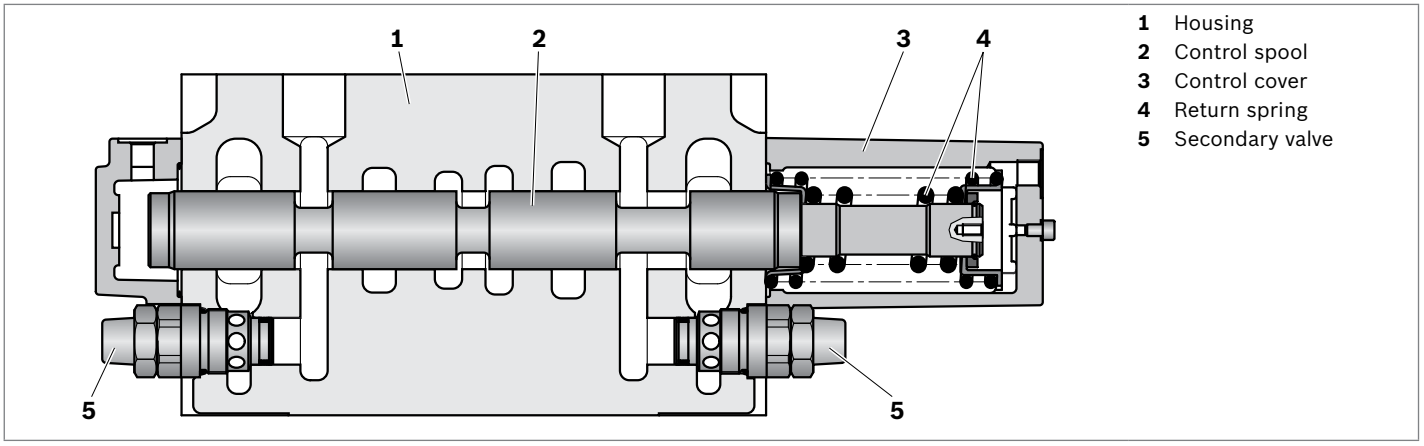
Fields of application
The compact control blocks from the M8-32 series are used mainly for controlling standard functions in crawler or wheeled excavators, such as the boom, arm, bucket and chassis in a dual-circuit or triple-circuit hydraulic system (slewing gear in a closed hydrostatic circuit). They also offer advantages when used in drilling rigs and cranes.

Control block M8-32
(For positions, see circuit diagram page 3 and 4)
The control block consists mainly of the housing (**1**), the control spools (**2**) with return springs (**4**), installed primary (**6**) and secondary valves (**5**) in cartridge design and load holding valves (**7**).

Consumer control
The boom and the bucket, as well as the left chassis, are usually connected to the pump **P1** (**8**). The boom and bucket are supplied parallel or in series, i.e. both functions can be carried out at the same time. If these functions are not actuated, the pump flow is available for controlling the chassis.
The pump **P2** (**9**) usually supplies the arm and the right chassis. The arm function has priority over the chassis. If the flow of pump **P2** is not required for these functions, it can be used for external summation with another consumer by actuating the C-valve (**11**).

Summation
With the driving compensation valve (**12**), the residual oil quantities of the pumps **P1** and **P2** can be interconnected to supply the two spool axes for the chassis. This means the different operating functions can be actuated during travel without impeding the forwards movement of the vehicle. If only the chassis spools are actuated, the driving compensation valve is in rest position where only residual balancing takes place.

▼ **Sectional view M8-32 (example)**

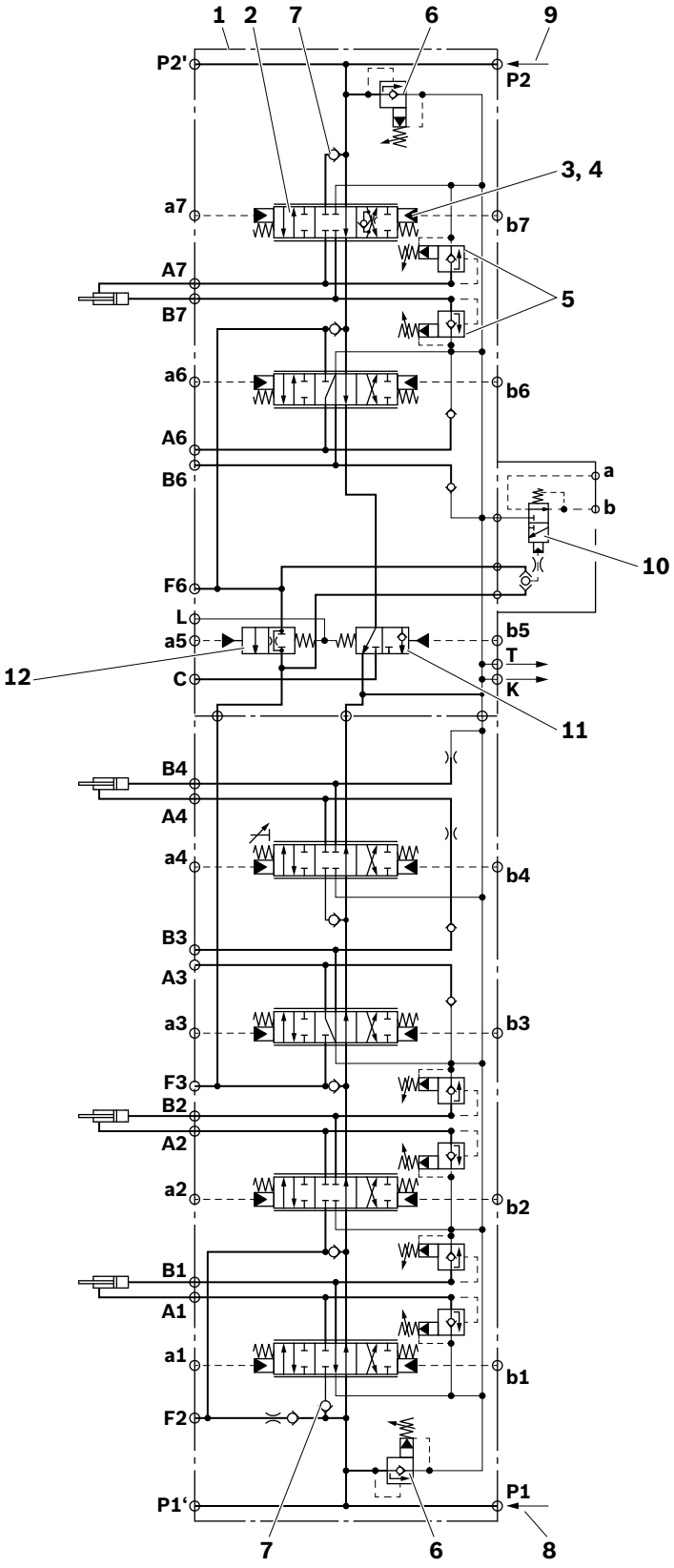


1 Housing
2 Control spool
3 Control cover
4 Return spring
5 Secondary valve

▼ **7M8-32, hydraulically operated (example)**

1 Housing
2 Control spool
3 Control cover
4 Return spring
5 Secondary valve
6 Primary valve
7 Load holding valve
8 Connection pump 1
9 Connection pump 2
10 Travel switching valve
11 Summing valve external, C-valve
12 Driving compensation valve with residual oil in rest position

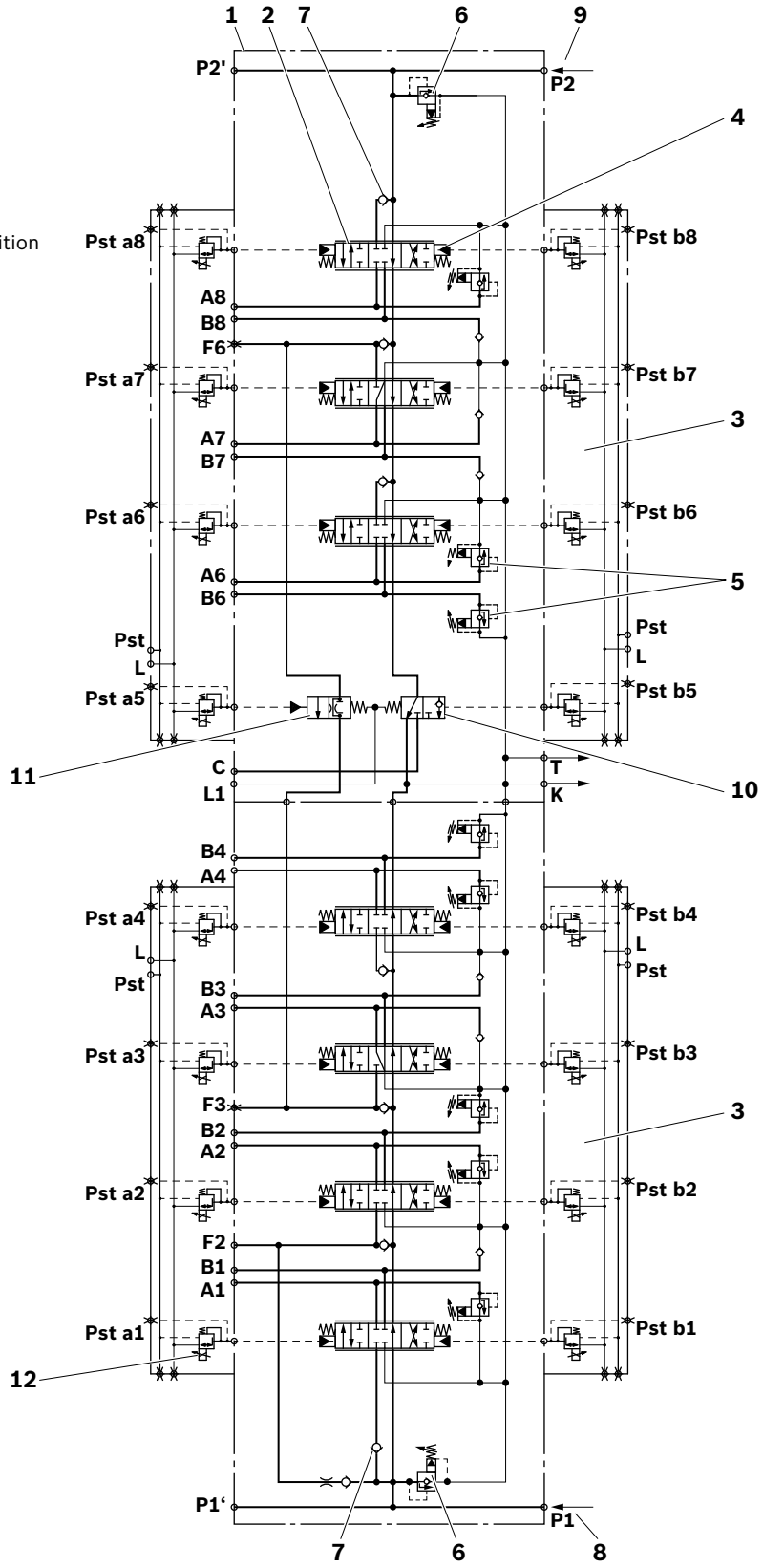
Ports	
P1, P2	Pump port
T	Tank port
K	Cooler port
A, B	Consumer port
L	Drain port (depressurized to the reservoir)
a, b	Pilot oil port
C	Ports for external summation
F	External parallel port



▼ **8M8-32, electro-hydraulically actuated (example)**

1 Housing
2 Control spool
3 Control cover
4 Return spring
5 Secondary valve
6 Primary valve
7 Load holding valve
8 Connection pump 1
9 Connection pump 2
10 Summing valve external, C-valve
11 Driving compensation valve with residual oil in rest position
12 Pilot valve FTDRE 4

Ports	
P1, P2	Pump port
T	Tank port
K	Cooler port
A, B	Consumer port
L	Drain port (depressurized to the reservoir)
Pst_a, Pst_b	Pilot oil port
C	Ports for external summation
F	External parallel port



Technical data

General				
Weight				See “Dimensions” on page 9 to 10. The exact weight depends on the equipment, however.
Installation position				Any
Consumer connection type				SAE flange port according to ISO 6162-2
Ambient temperature range		θ	°C	–20 to +80
Priming (standard)				One-coat paint RAL 5010

Hydraulic				
Maximum working pressure on the port	P	p	bar	320 (higher pressures on request)
	A, B	p	bar	420
	T	p	bar	30
	L	p	bar	< 1 bar
Maximum pilot pressure on the port	a, b	p	bar	30
Control pressure range (recommended)	Hydraulic	p	bar	0 to 19 with control curve 06 8 to 25 with control curve 70 Suitable pilot control devices, see data sheet 64552, 64555 and 64558. Other control curves on request.
Maximum flow on the port	P	q_{Vmax}	l/min	2 × 450
Hydraulic fluid				Mineral oil (HL, HLP) according to DIN 51524, other hydraulic fluids, e.g. HEES (Synthetic ester) according to ISO 15380 and hydraulic fluids as specified in data sheet 90221, on request
Hydraulic fluid temperature range		θ	°C	–20 to +80
Viscosity range		ν	mm²/s	10 to 380
Maximum admissible degree of contamination of the hydraulic fluid Cleanliness level as per ISO 4406 (c)				Class 20/18/15, we recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$
Recommended hydraulic pilot control devices				2TH6 see data sheet 64552 4TH5/6 see data sheet 64555 TH7 see data sheet 64558 } Control curve no. 06

Electric				
Supply voltage			V	**12** **24**
Solenoid coil resistance at 20 °C			Ω	2.4 12
Duty cycle			%	100 100
Max. control current			mA	1.8 0.8
Recommended chopper frequency			Hz	200 200
Connector version	C			Junior Timer (AMP)
	K			DT04-2P (Deutsch)
Type of protection according to VDE 0470-1 (DIN EN 60529), DIN 40050-9	Connector version C (“C4”)			IP65 (with installed and locked plug-in connector)[1)]
				IP67 and IP69K (with Rexroth plug-in connector, material no. R901022127)[1)]
	Connector version K (“K40”)			IP 67 and IP 69K (with installed and locked plug-in connector)[1)]
Control electronics, e.g. BODAS				Control unit RA, see data sheet 95230 Control unit RC, see data sheet 95200

Notice
Please contact us if the unit is to be used outside the specified range of values.

1) Plug-in connectors are not included in the scope of delivery and must be ordered separately, see accessories on page 11

Ordering details

Short type | Spool axis | Additional information

01	02	03	04	05	06	07	08	09	10
	M8	**–**	**32**	**–**	**1X**	**/**					

Spool axis 1

Spool axis 2 to 8

11	12	13	14
/			*****

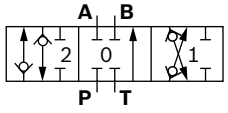
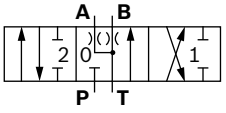
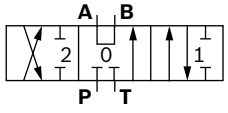
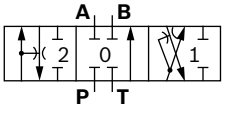
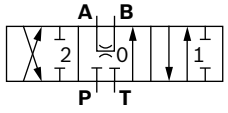
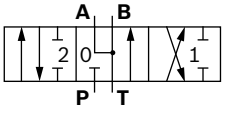
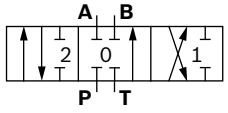
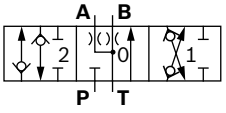
Short type

01	Number of spool axes **3, 4, 6, 7** or **8**	
02	Series control block M8	**M8**
03	Size 32	**32**
04	Series 10 to 19 (unchanged installation and connection dimensions)	**1X**

Primary pressure limitation [1)]

05	Without primary pressure limitation	**Q 000–000**
	With pressure relief / feed valve, pilot operated	**V ...–000**
	With pressure relief / feed valve with pressure sequencing stage	**B ...–...**
	With pressure relief / feed valve with pressure cut-off stage	**L ...–...**

Spool type

06		**001**		**006**
		**002**		**007**
		**003**		**009**
		**005**		**026**

Type of actuation

07	Hydraulic	**H**
	Electrohydraulically proportional[2)]	**W2**
	Electrohydraulically switchable[2)]	**W4**

Connector version with actuation type W2 or W4

08	Device connector “C4” (AMP Junior-Timer 2-pin)	**C**
	Device connector “K40” (Deutsch connector)	**K**

1) Specified pressure for pressure limitation and pressure sequencing/cut-off stage in bar, 3-digit
2) The standard version is pilot valves with manual override

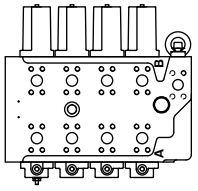
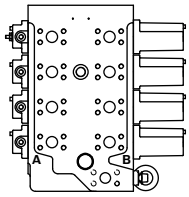
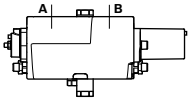
Secondary valves for A- and B-side[1)]

09, 10	Without secondary valve	**Q 000–000**
	With pressure relief / feed valve, pilot operated	**V ...–000**
	With pressure relief / feed valve with pressure sequencing stage	**B ...–...**
	With pressure relief / feed valve with pressure cut-off stage	**L ...–...**
	With feed valve	**E**

Line connections

11	SAE flange port according to ISO 6162[3)]	**11**

Installation position (standard)

12	Designation of installation position from horizontal. This parameter fixes the position of the air bleed.					
		**1**		**2**		**3**

Sealing material

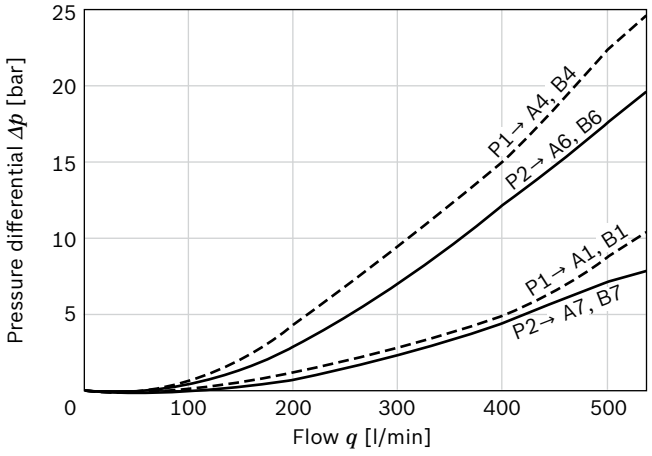
13	FKM (fluoroelastomer)	**V**
	NBR (nitrile rubber)	**M**

14	Further specifications in plain text	*

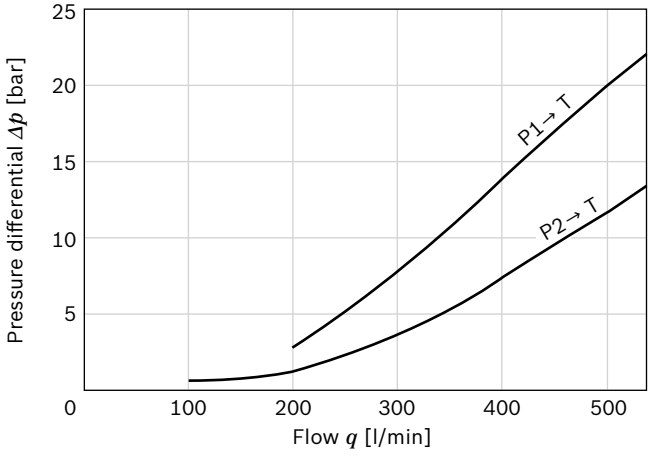
3) See “Line connections” on page 9 and 10

Characteristic curves

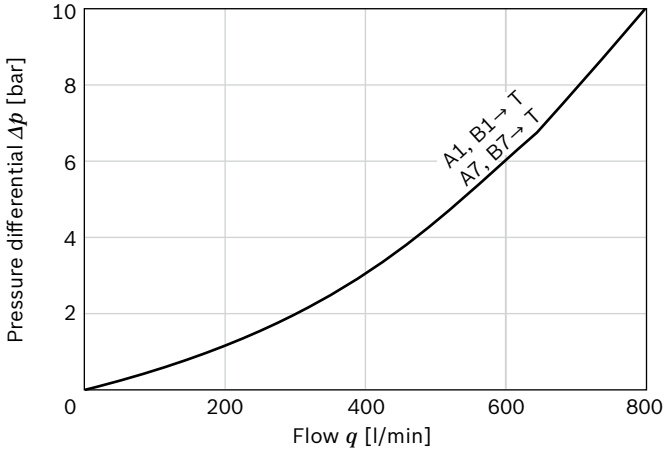
▼ **Flow resistance Pump → Consumer**



▼ **Rotation resistance Pump → Reservoir**



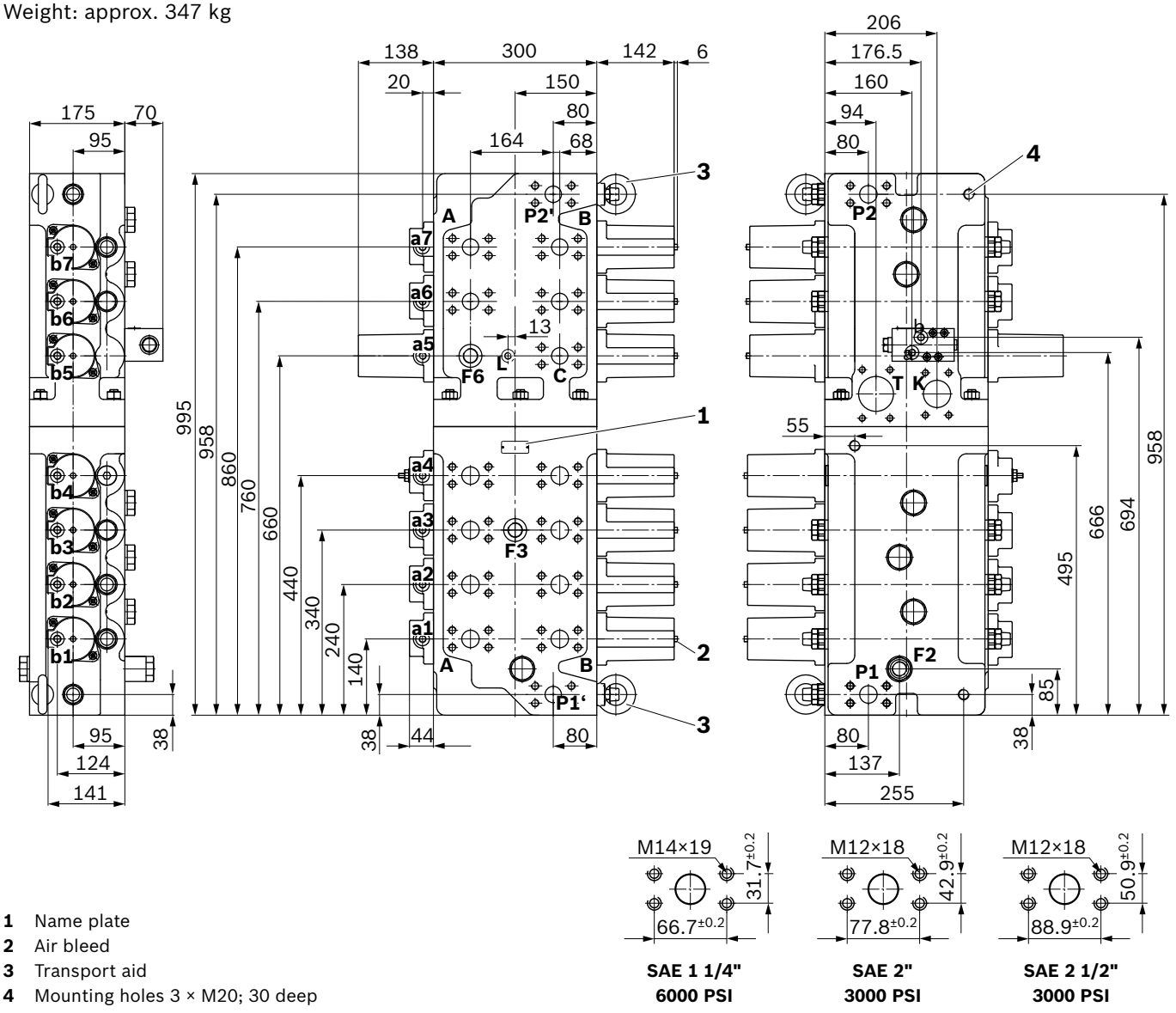
▼ **Flow resistance Consumer → Reservoir**



Dimensions

▼ **7M8-32, hydraulically operated**

Weight: approx. 347 kg



1 Name plate
2 Air bleed
3 Transport aid
4 Mounting holes 3 × M20; 30 deep

SAE 1 1/4"
6000 PSI

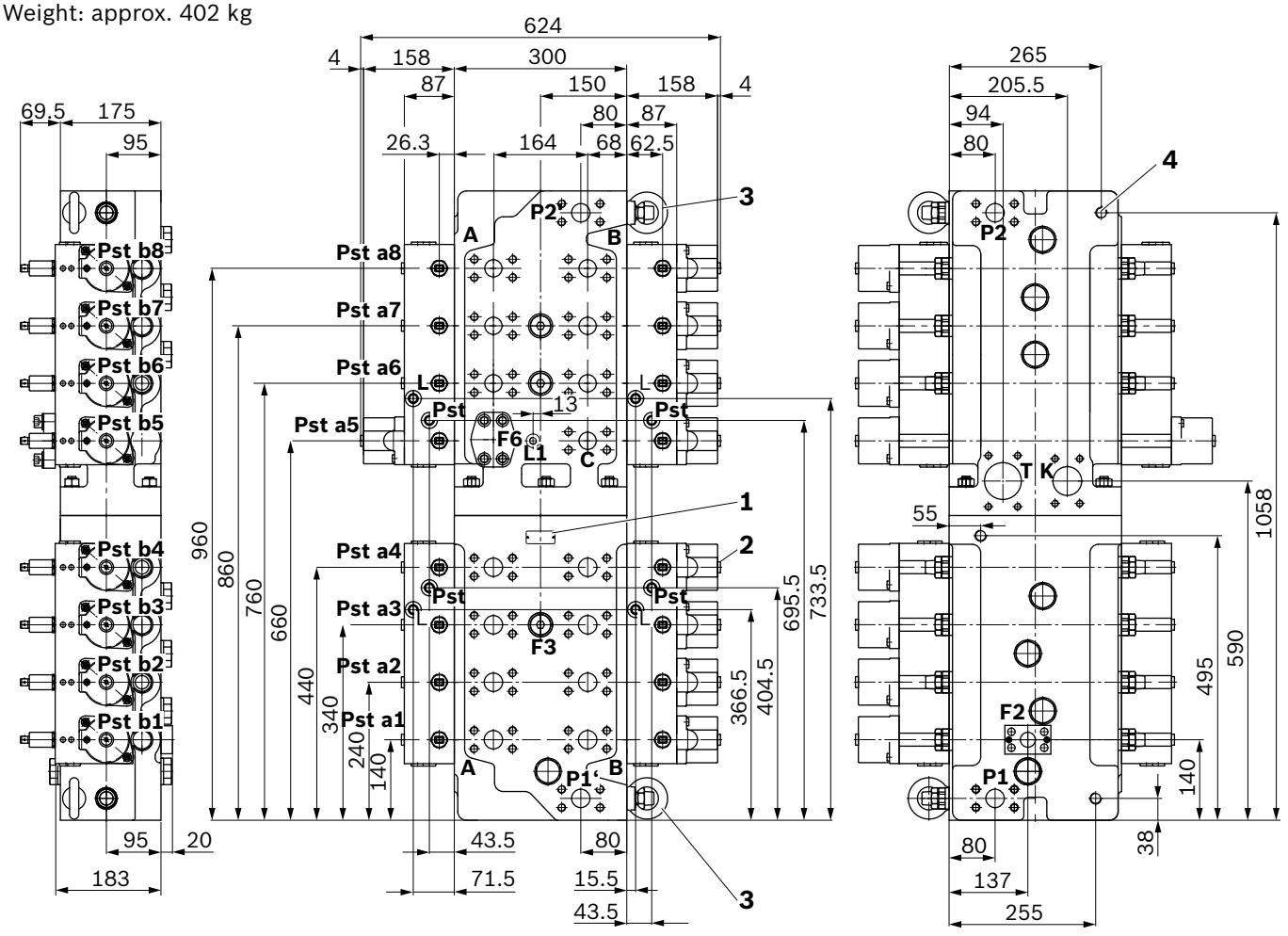
SAE 2"
3000 PSI

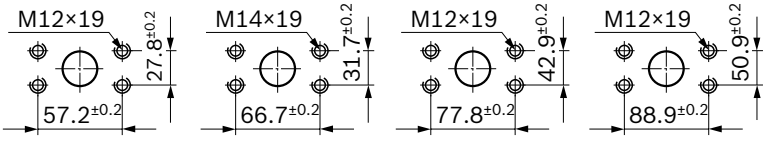
SAE 2 1/2"
3000 PSI

Port		
A, B, P1, P2, P1‘, P2‘, C	SAE 1 1/4 in	6000 PSI
K	SAE 2 in	3000 PSI
T	SAE 2 1/2 in	3000 PSI
a, b, L	G 1/4	
F2, F3, F6	M27 x 2	

▼ **8M8-32, electro-hydraulically actuated**

Weight: approx. 402 kg





SAE 1 in 6000 PSI | **SAE 1 1/4 in 6000 PSI** | **SAE 2 in 3000 PSI** | **SAE 2 1/2 in 3000 PSI**

1 Name plate
2 Air bleed
3 Transport aid
4 Mounting holes 3 × M20; 30 deep

Port		
A, B, P1, P2, P1‘, P2‘, C, F6	SAE 1 1/4 in	6000 PSI
K	SAE 2 in	3000 PSI
T	SAE 2 1/2 in	3000 PSI
F2	SAE 1 in	6000 PSI
Pst a, Pst b, L1	G 1/4	
F3	M27 x 2	
Pst, L	G 3/8	

Accessories

Plug-in connector for FTDRE... and FTWE...

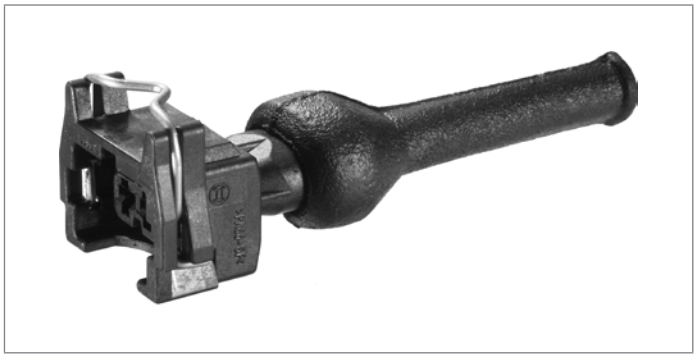
Recommended plug-in connector for device connector “C4” (AMP Junior Timer)

- Material number: R900313533
  - Core cross-section from 0.5 to 1 mm²
  - Insulated diameter of the individual seals from 1.2 to 2.1 mm
- Material number: R901022127
  - Core cross-section from 0.5 to 1 mm²
  - Insulated diameter of the individual seals from 2.2 to 3 mm

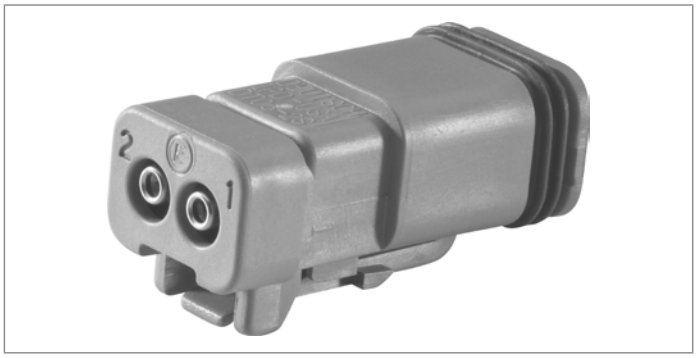
Recommended plug-in connector for device connector “K40” (Deutsch connector)

- Material number: R900733451
  - Core cross-section from 1.3 to 2.08 mm²
  - Insulated diameter of the individual seals from 1.35 to 3.05 mm
- Material number: R901017847
  - Core cross-section from 0.83 to 1.3 mm²
  - Insulated diameter of the individual seals from 1.35 to 3.05 mm

▼ **Recommended plug-in connector for device connector “C4”**



▼ **Recommended plug-in connector for device connector “K40”**



Related documentation

Further information on installation, commissioning, and operation can be found in the instruction manual 64025-B: “Control blocks for mobile applications”.

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