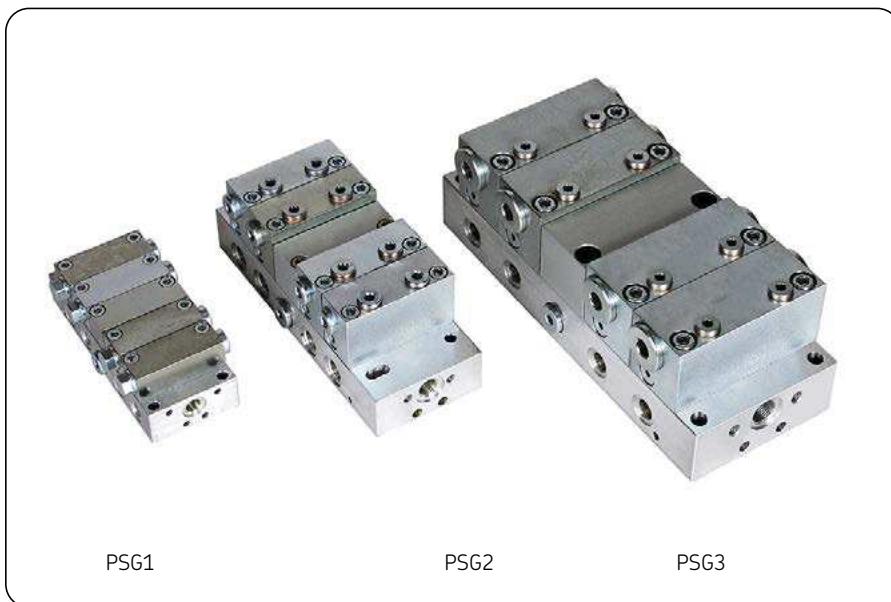


Modular feeder

PSG product series

For oil and grease

For use in SKF ProFlex progressive and SKF CircOil circulating centralized lubrication systems



Fields of application

- Metal-forming machinery (presses)
- Tunnel boring machinery
- Paper machinery
- General mechanical engineering applications

Advantages

- Easy to service thanks to outlets located in the baseplate; tubes do not need to be removed during repair work; between 1 and 20 outlets
- Flexible due to replaceable metering sections
- Expandable by attaching flow limiters, flow controllers, gear-type flow indicators, and directional solenoid valves. Efficient due to low pressure loss
- Can be monitored using piston detectors or visual cycle indicators
- Adjustable by consolidating outlets internally and externally
- 3 sizes for ranges up to 0.8, 2.5, and 6 l/min
- Increased functional reliability due to check valve installed standard (PSG2 and PSG3)
- Increased metering accuracy due to placement of integrated check valves immediately following metering piston (PSG2 and PSG3)
- Increased corrosion resistance due to special design with anodized baseplate and chemically nickel-plated sections (basic design PSG2 and PSG3)

PSG product series

Excerpt from product overview

PSG1

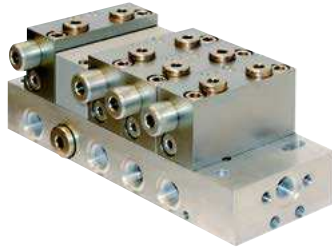
PSG2

PSG3

Basic design



Basic design



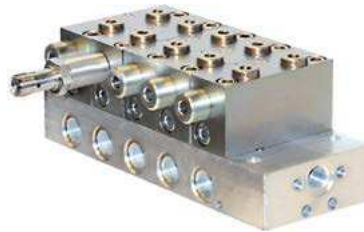
Basic design



Piston detector



Piston detector



Piston detector



Visual cycle indicator



Proximity switch



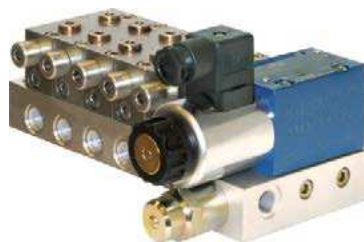
Gear-type flow indicator



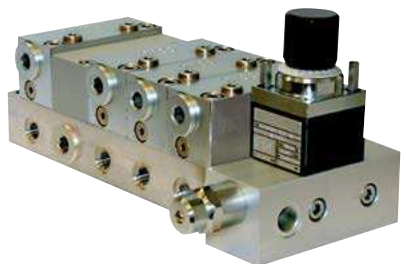
Visual cycle indicator with housing
(for attaching a sensor provided by customer)



Directional solenoid valve



Flow controller



PSG product series

Product overview

Product selection

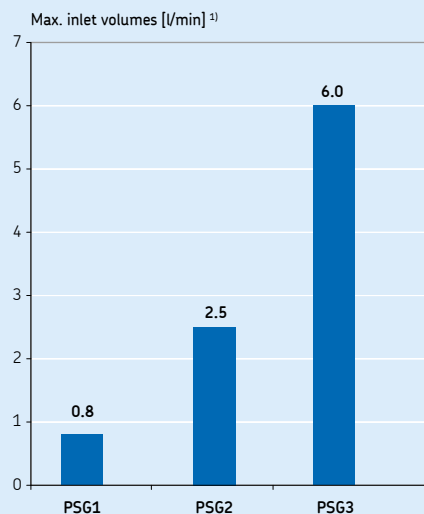
Product series	Lubricant		Max. inlet volume flow ¹⁾²⁾ [l/min]	Monitoring				Supported attachments					Page
	Oil	Grease		Piston detector	Cycle indicator optical	Cycle indicator with housing	Proximity switch	Flow controller	Flow limiter	Gear-type type flow indicator	Directional solenoid valve		
PSG1	•	•	0.8	•	•	•	•	–	–	–	–	–	6-8
PSG2	•	•	2.5	•	•	•	•	•	•	•	•	•	9-15
PSG3	•	•	6.0	•	•	•	•	•	•	•	•	–	16-22
PSG2 ³⁾ (corrosion-resistant)	•	•	2.5	•	–	–	–	–	–	–	–	–	–
PSG3 ³⁾ (corrosion-resistant)	•	•	6.0	•	–	–	–	–	–	–	–	–	–

¹⁾ Depending on the number and size of metering pistons.

²⁾ Other inlet volumes available on request.

³⁾ Corrosion-resistant design available on request.

Overview of inlet volumes

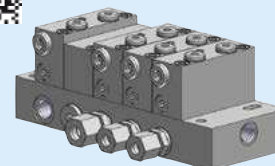


¹⁾ On feeder configuration with largest piston capacity



Important information on product usage

SKF and Lincoln lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1 013 mbar) by more than 0,5 bar at their maximum permissible temperature.



CAD models for the products shown in this brochure can be downloaded at:
skf-lubrication.partcommunity.com

PSG product series

Product description

General

SKF modular feeders of product series PSG (progressive feeders) can be used for an inlet volumetric flow of up to 0.8, 2.5, or 6.0 l/min depending on the design. The inlet and all outlets of the feeder are located in the common baseplate. The metering sections are attached to the baseplate and can be replaced without loosening the tubing.

The volumetric flow fed via **one** tube is forcibly distributed in a predetermined ratio to the outlets, i.e., to the lubrication points or downstream progressive feeders. Pistons aligned in series meter the lubricant for two opposite outlets each and control the function of the neighboring piston. This way, the function of the modular feeder can be checked by monitoring **any** piston (with a cycle indicator or piston detector) or the inlet volumetric flow (with gear-type flow indicator, only for PSG2 or PSG3) can be monitored.

The check valves that are installed standard (only on PSG2 and PSG3) offer high functional reliability at high or differing back pressures. They provide accurate metering and safe blocking behavior even for internal and external combinations.

Operation (→ Figure 1)

Observation of the movements begin the moment that all three pistons (**A, B, C**) on the left end stop show that the lubricant and operating pressures reach from the inlet through the through-duct in the middle to the pistons **C-right, B-right** and **A-left**; that is, while pistons **C** and **B** retain their positions, the **A** piston is pushed right. The lubricant volume specified by the piston diameter and stroke is pressed into a duct on the end (**outlet 4**) the same quantity exits. This stroke movement of piston **A** opens or closes multiple control ducts. Control duct 2, through which the lubricant reaches piston **B-left** and shifts it right, is now open. The corresponding metering volume is pressed into the outlet duct and exits at **outlet 2**. The stroke movement of piston **B** has now closed or opened control ducts. Control duct 3 is now open. The lubricant pressure moves piston **C** to the right, pushing the corresponding metering volume into the duct to **outlet 3**. This movement of piston **C** opens, among others, the reversing duct that re-connects the through-duct with piston **A-**

right. Analogous to the piston movement just described, pistons **A, B** and **C** now move consecutively back to the left.

Consolidation of outlets (→ Figure 2)

The volumetric flow of an outlet can be doubled by internal consolidation of two opposite outlets. To do this, the setscrew **G** in the baseplate (the right outlet as seen from the feeder inlet) must be unscrewed. The outlet in the baseplate that is no longer needed is to be closed using a washer **D** and a screw plug **V**.

Adjacent outlets can be consolidated using external bridges (crossporting). A bridge can consolidate up to three outlets on the PSG1 and up to four outlets on the PSG2 and PSG3. Bridges are available with or without an outlet and with or without a check valve.

For PSG1 modular feeders, we recommend outlet screw unions with a check valve.

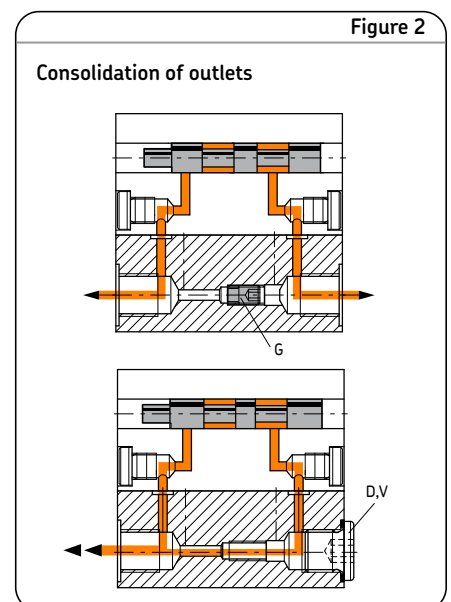
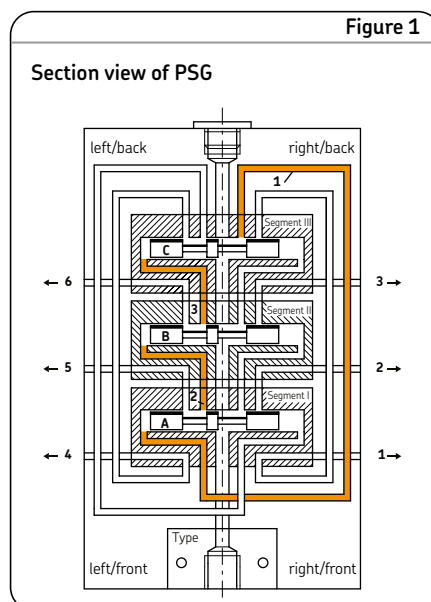
Dummy section

Dummy and functional sections can be varied as desired within the frame size. A minimum of three functional sections are required per feeder. If dummy sections are installed, two lubricant outlets each must be closed in the baseplate (under the dummy section). Increased pressure loss must be expected if two dummy sections are installed side-by-side or if dummy sections are used as the start or end section.

Information on the design

The general criteria for the design of progressive feeders also apply without restrictions to the modular feeders. The stroke rate is the most important criterion. It should be kept as low as possible by selecting high-volume sections (guideline value for feeder stroke rate ≤ 200 rpm). This also reduces pressure losses and noise levels. In case of an installation on moving machine parts or in case of strong vibrations (e.g., on pressing machines), the piston position of the feeder **must not** match the direction of movement of the machine part.

A metering element with a larger stroke than the inlet element should preferably be selected to provide reliable and fast self-venting.



PSG product series

Monitoring and attachments

Monitoring

All standard sections can be monitored directly or retrofitted with a piston detector. However, if the piston movement will be monitored by a cycle indicator (visual stroke monitoring) or a proximity switch, the appropriate sections must be used.

Attachments

The modular structure of the modular feeders is particularly apparent in the range of available attachments. Depending on frame size, it can be equipped with the following upstream equipment:

- Flow limiter
- Flow controller
- 4/2-directional solenoid valve
- 2/2-directional solenoid valve

If the inlet volumetric flow is to be monitored both visually and electrically, an upstream gear-type flow indicator can be employed.



Note

This page shows possible designs of the modular feeder.

See pages 28–29 for the feeder configuration.

The modular feeders can also be configured using Cadenas.

PSG Basic Design



4/2-directional solenoid valve



2/2-directional solenoid valve



Flow controller



Monitoring via cycle indicator (visual only)



Monitoring via piston detector



Monitoring via cycle indicator and proximity switch



Monitoring via gear-type flow indicator



Flow limiter



PSG1 Modular Feeder

Basic design for oil and grease



Technical Data

Type Hydraulically controlled
 Mounting position Any¹⁾
 Ambient temperature range -15 to +110°C
 Baseplate with 6, 8, 10, 12, 14, 16, 18, 20 outlets
 Tightening torque feeder section 6 Nm

Material
 Baseplate Aluminum alloy
 Sections Free-cutting steel, galvanized
 Seals FKM (FPM)

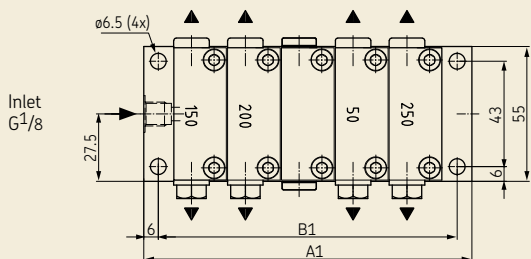
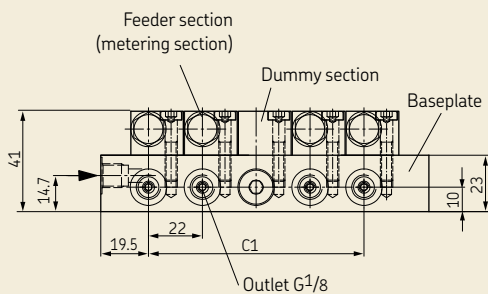
Hydraulic system
 Operating pressure, max. 200 bar²⁾
 Inlet volumetric flow Up to 0.8 l/min ⁶⁾
 Volume per outlet and cycle³⁾ 50, 100, 150, 200, 250 mm³

Division ratio 1:1 to 1:10⁴⁾
 Pressure loss with oil 5 to 15 bar⁵⁾
 Lubricant Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases

Operating viscosity > 12 mm²/s
 Worked penetration ≥ 265 x 0.1 mm (up to NLGI Grade 2)

- ¹⁾ In case of installation on moving machine parts or in case of strong vibrations (e.g., on pressing machines), the piston position of the feeder must not match the direction of movement of the machine part; instead, it must be at a 90° angle to the force of the machine.
- ²⁾ The maximum operating pressure on designs with monitoring or upstream attachments may be lower; see the Technical Data for monitoring and attachments.
- ³⁾ When designing the feeder, also ensure that the max. piston stroke rate of 200/min is not exceeded.
- ⁴⁾ Larger division ratios are possible when outlets are consolidated.
- ⁵⁾ Depending on volume index, viscosity, and volumetric flow.
- ⁶⁾ Grease available on request.

PSG1 modular feeder, basic design



Dimensions

	Number of sections							
	3	4	5	6	7	8	9	10
A1 [mm]	90	112	134	156	178	200	222	244
B1 [mm]	78	100	122	144	166	188	210	232
C1 [mm]	44	66	88	110	132	154	176	198
Complete weight [kg]	0.77	1.00	1.23	1.46	1.69	1.92	2.15	2.39

PSG1 Modular Feeder

Monitoring via piston detector, 3-pin, M12x1 plug and cycle indicator for oil and grease

With piston detector, 3-pin

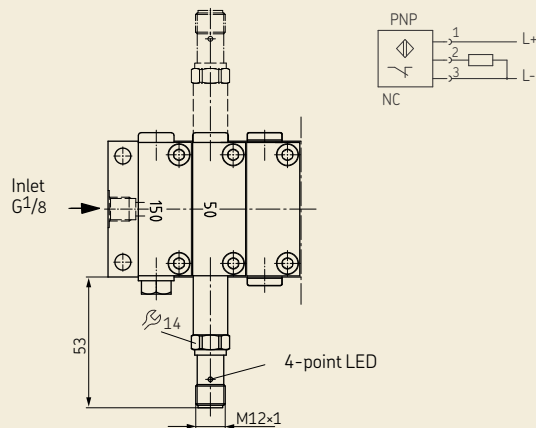


With cycle indicator



PSG1 modular feeder with piston detector

For other dimensions, see "PSG1 Basic Design," page 6



Technical Data

Basic design → see Technical Data, page 6

Piston detector, electrical 1)

Ambient temperature range	-15 to +80°C
Operating pressure, max.	200 bar
Weight	0.12 kg
Design	4-point LED
Rated voltage	10 to 36 V DC
Residual ripple	≤10%
Max. load current	100 mA
Protection class	IP67
Outlet function	PNP contact

Cycle indicator, visual 2)

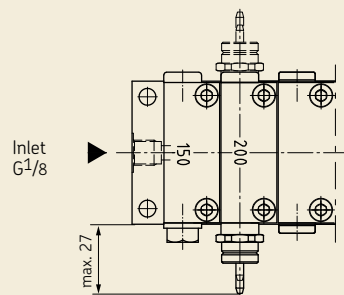
Ambient temperature range	-15 to +75°C
Operating pressure, max.	150 bar
Weight	0.05 kg

- 1) The piston detector is designed for a service life of approx. 10-15 million cycles. This value may be significantly exceeded depending on the application, external environmental influences, medium, pressure, and cycle speed. Please contact the manufacturer if in doubt.
- 2) Attach only to the 200 and 250 mm³ feeder sections (metering sections).

Note Attach either to the left or right side of the feeder sections (metering section). It is factory-mounted **on the right**.

PSG1 modular feeder with visual cycle indicator

For other dimensions, see "PSG1 Basic Design," page 6



Note Electrical plug and socket connections to be ordered separately, → page 29.

PSG1 Modular Feeder

Monitoring via proximity switch and visual cycle indicator with housing for oil and grease

With proximity switch



Visual cycle indicator with housing
(for attaching a sensor provided by customer)



Technical Data

Basic design → Technical Data, page 6

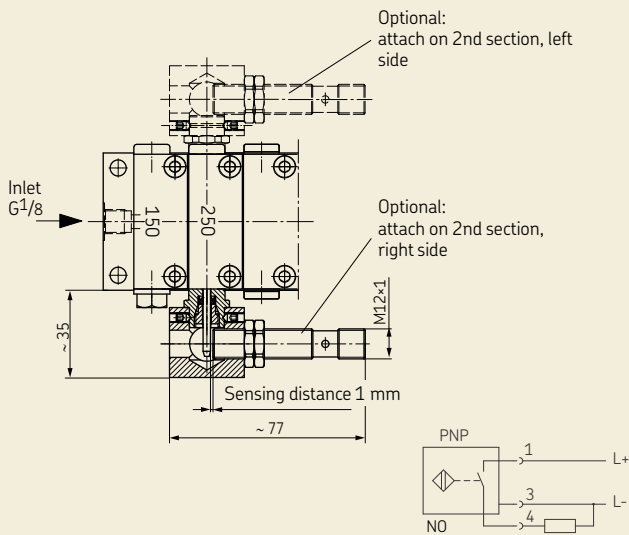
Proximity switch M12x1, electrical	
Ambient temperature range	-15 to +70°C
Operating pressure, max.	150 bar
Weight	0.039 kg
Design	PNP with LED
Rated voltage	10 to 30 V DC
Max. load current	130 mA
Protection class	IP67
Outlet function	NO-contact

Cycle indicator with housing ¹⁾²⁾	
Ambient temperature range	-15 to +75°C
Operating pressure, max.	150 bar ¹⁾
Weight	0.062 kg

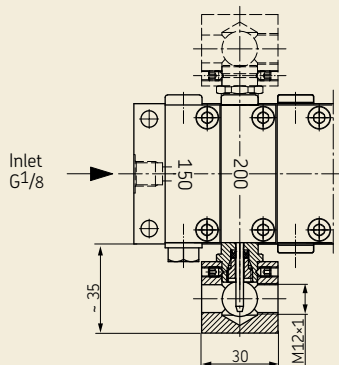
¹⁾ Attach only to the 200 and 250 mm³ feeder sections (metering sections).
²⁾ Observe the temperature range of the sensor used!

Note
 Attach either to the left or right side of the 200 and 250 mm³ feeder sections (metering sections). It is factory-mounted **on the right**.
 Always attach from the second section to the second-to-last section.

PSG1 modular feeder with proximity switch
 For other dimensions, see "PSG1 Basic Design," page 6



PSG1 modular feeder with visual cycle indicator with housing
 For other dimensions, see "PSG1 Basic Design," page 6



Note
 Electrical plug and socket connections to be ordered separately, → page 29.

PSG2 Modular Feeder

Basic design for oil and grease



Technical Data

Type Hydraulically controlled
 Mounting position Any¹⁾
 Ambient temperature range -15 to +110°C
 Baseplate with 6, 8, 10, 12, 14, 16, 18,
 20 outlets
 Tightening torque feeder section 10 Nm

Material

Baseplate Aluminum alloy
 Sections Free-cutting steel,
 galvanized
 Seals FKM (FPM)

Hydraulic system

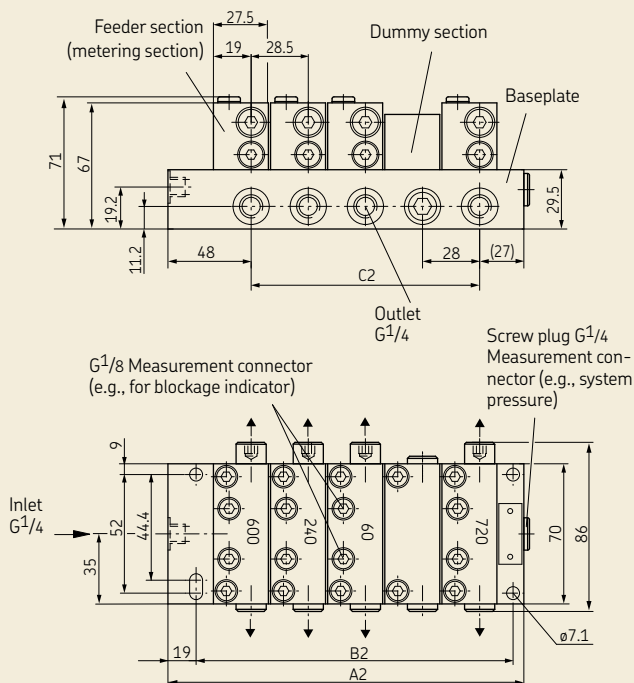
Operating pressure, max. 200 bar²⁾
 Inlet volumetric flow Up to 2.5 l/min ⁶⁾
 Volume per outlet and cycle³⁾ 60, 120, 240, 360, 480,
 600, 720, 840 mm³

Division ratio 1:1 to 1:28⁴⁾
 Pressure loss with oil 5 to 15 bar⁵⁾
 Lubricant Mineral oils, greases based
 on mineral oil,
 environmentally friendly and
 synthetic oils and greases

Operating viscosity > 12 mm²/s
 Worked penetration ≥ 265 x 0.1 mm
 (up to NLGI Grade 2)

- ¹⁾ In case of installation on moving machine parts or in case of strong vibrations (e.g., on pressing machines), the piston position of the feeder must not match the direction of movement of the machine part; instead, it must be at a 90° angle to the force of the machine.
- ²⁾ The maximum operating pressure on designs with monitoring or upstream attachments may be lower; see the Technical Data for monitoring and attachments.
- ³⁾ When designing the feeder, also ensure that the max. piston stroke rate of 200/min is not exceeded.
- ⁴⁾ Larger division ratios are possible when outlets are consolidated.
- ⁵⁾ Depending on volume index, viscosity, and volumetric flow.
- ⁶⁾ Grease available on request.

PSG2 modular feeder, basic design



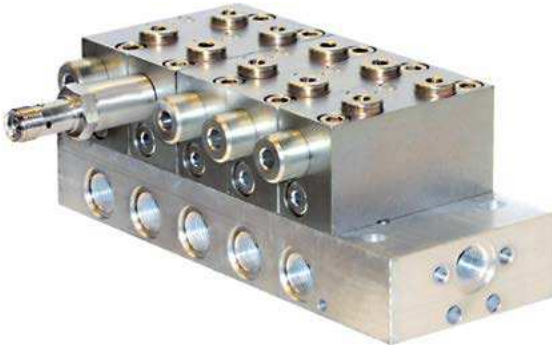
Dimensions

	Number of sections							
	3	4	5	6	7	8	9	10
A2 [mm]	131	159	187	215	243	271	299	327
B2 [mm]	103	131	159	187	215	243	271	299
C2 [mm]	56	84	112	140	168	196	224	252
Complete weight [kg]	2.24	2.85	3.49	4.10	4.78	5.42	6.06	6.73

PSG2 Modular Feeder

Monitoring via piston detector, 3-pin, M12x1 plug and cycle indicator for oil and grease

With piston detector

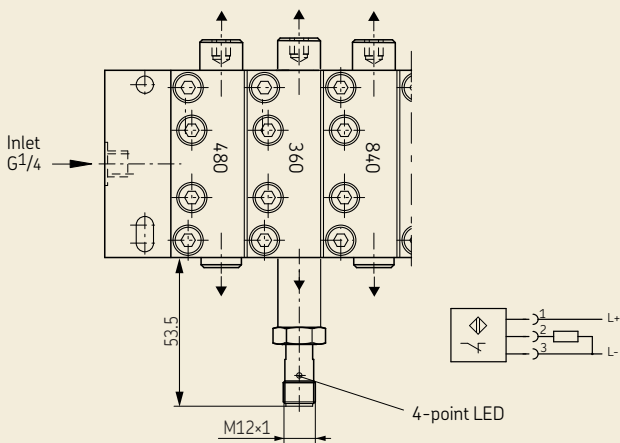


With cycle indicator



PSG2 modular feeder with piston detector

For other dimensions, see "PSG2 Basic Design," page 9



Technical Data

Basic design → Technical Data, page 9

Piston detector, electrical 1)

Ambient temperature range	-15 to +80°C
Operating pressure, max.	200 bar
Weight	0.12 kg
Design	4-point LED
Rated voltage	10 to 36 V DC
Residual ripple	≤10%
Max. load current	100 mA
Protection class	IP67
Outlet function	PNP contact

Cycle indicator, visual 2)

Ambient temperature range	-15 to +90°C
Operating pressure, max.	150 bar
Weight	0.05 kg

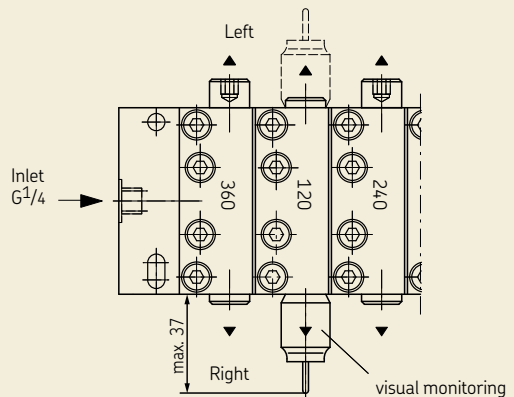
- 1) The piston detector is designed for a service life of approx. 10-15 million cycles. This value may be significantly exceeded depending on the application, external environmental influences, medium, pressure, and cycle speed. Please contact the manufacturer if in doubt.
- 2) The 60 mm³ metering section cannot be equipped with visual monitoring.

Note

Attach either to the left or right side of the feeder sections (metering sections). It is factory-mounted **on the right**.

PSG2 modular feeder with cycle indicator

For other dimensions, see "PSG2 Basic Design," page 9



Note

Electrical plug and socket connections to be ordered separately, → page 29.

PSG2 Modular Feeder

Monitoring via proximity switch and via cycle indicator with housing for oil and grease

With proximity switch



Visual cycle indicator with housing
(for attaching a sensor provided by customer)



Technical Data

Basic design → Technical Data, page 9

Proximity switch M18x1, electrical	
Ambient temperature range	-15 to +70°C
Operating pressure, max.	150 bar
Weight	0.093 kg
Design	PNP with LED
Rated voltage	10 to 30 V DC
Max. load current	130 mA
Protection class	IP67
Outlet function	NO-contact

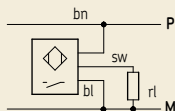
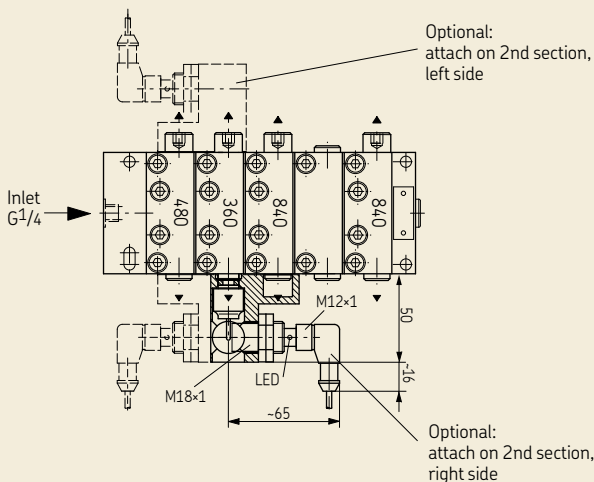
Cycle indicator with housing ¹⁾	
Ambient temperature range	-15 to +90°C
Operating pressure, max.	150 bar ¹⁾
Weight	0.062 kg

¹⁾ Observe the temperature range of the sensor used!

Note
Attach either to the left or right side of the feeder sections (metering sections).
It is factory-mounted **on the right**.
Always attach from the second section to the second-to-last section.

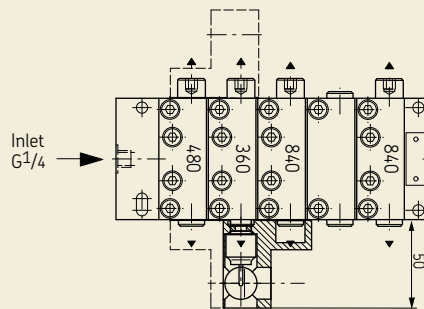
PSG2 modular feeder with proximity switch

For other dimensions, see "PSG2 Basic Design," page 9



PSG2 modular feeder with cycle indicator with housing

For other dimensions, see "PSG2 Basic Design," page 9



Note
Electrical plug and socket connections to be ordered separately, → page 29.

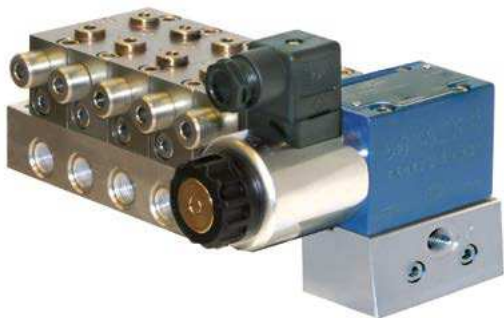
PSG2 Modular Feeder

with solenoid valve for oil (4/2-directional) or oil and grease (2/2-directional)

With 2/2-directional solenoid valve for oil and grease



With 4/2-directional solenoid valve for oil



Technical Data

Basic design → Technical Data, page 9

4/2-directional solenoid valve

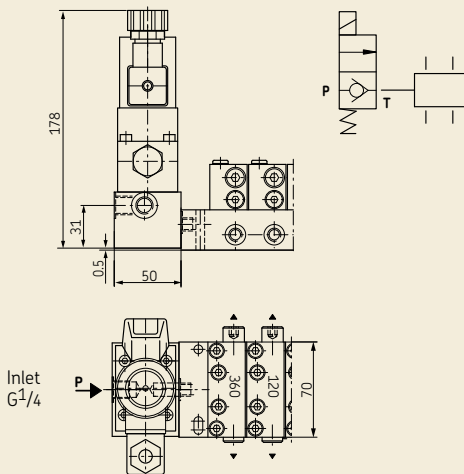
Ambient temperature range	-15 to +75°C
Operating pressure, max.	150 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Weight with housing	1.6 kg
Electrical design	NG6
Connection dimensions	DIN 24340
System voltage	24 V DC
Designs	Continuity to feeder normally closed (NC) or open (NO)

2/2-directional solenoid valve

Ambient temperature range	-15 to +75°C
Operating pressure, max.	200 bar
Lubricant	Greases and oils based on mineral oil as well as environmentally friendly and synthetic oils and greases
Weight with housing	1.94 kg
Electrical design	NG6
Connection dimensions	DIN 24340
System voltage	24 V DC
Designs	Continuity to feeder normally closed

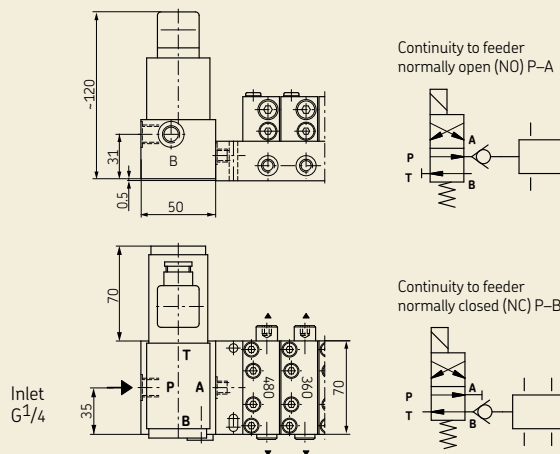
PSG2 modular feeder with 2/2-directional solenoid valve

For other dimensions, see "PSG2 Basic Design," page 9



PSG2 modular feeder with 4/2-directional solenoid valve

For other dimensions, see "PSG2 Basic Design," page 9



PSG2 Modular Feeder

with gear-type flow indicator and interchangeable strainer for oil



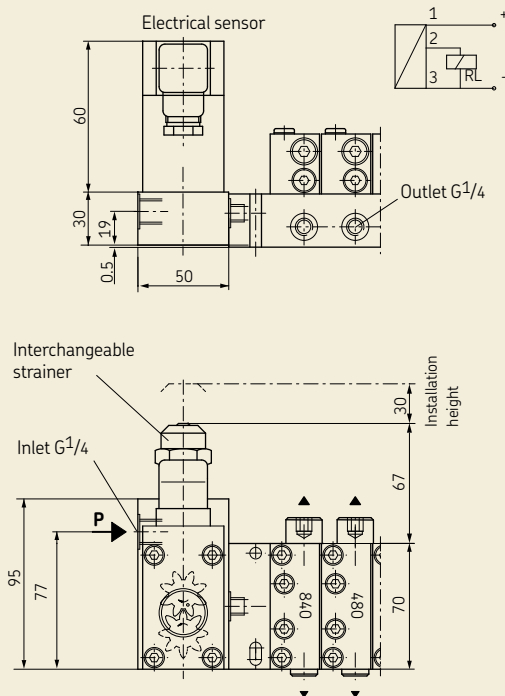
Technical Data

For basic design, see Technical Data, page 9

Gear-type flow indicator	
Ambient temperature range	-15 to +70°C
Operating pressure, max.	85 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Operating viscosity	20 to 1000 mm ² /s
Filter rating / interchangeable strainer	
Weight	0.3 mm
	0.9 kg
Design of electrical sensor	
Rated voltage	Hall sensor (PNP technology)
Residual ripple	24 V DC
Protection class	≤10%
Proportionality factor	IP65
	4.6 cm ³ /pulse

PSG2 modular feeder with gear-type flow indicator

For other dimensions, see "PSG2 Basic Design," page 9



Specific volume 4.6 cm³/R



Note

Electrical plug and socket connections to be ordered separately, → page 29.

PSG2 Modular Feeder

with flow controller for oil



Technical Data

Basic design → Technical Data, page 9

Flow controller

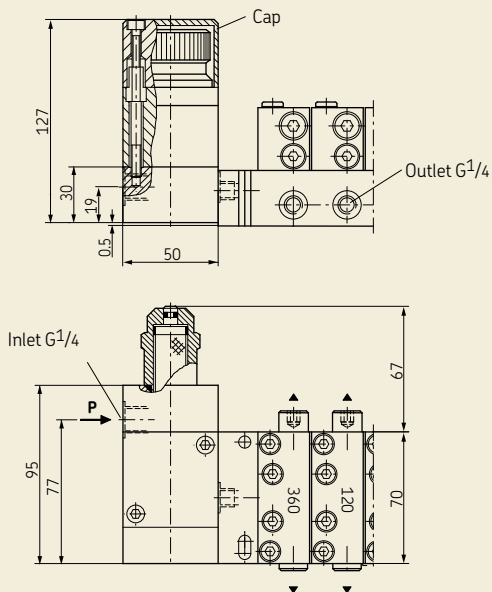
Type	2-directional flow control valve
Ambient temperature range	-15 to +75°C
Adjustment range	0.1 to 2.5 l/min
Weight	1.4 kg
Flow controller designs	Up to 0.6 l/min Up to 1.6 l/min Up to 2.5 l/min

Hydraulic system

Operating pressure, max.	200 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Filter rating / interchangeable strainer	0.3 mm
Operating viscosity	12 to 350 mm ² /s
Filter rating / interchangeable strainer	0.3 mm
Scale graduation	1-10

PSG2 modular feeder with flow controller

For other dimensions, see "PSG2 Basic Design," page 9



PSG2 Modular Feeder

with SP/SMB8 flow limiter for oil



Technical Data

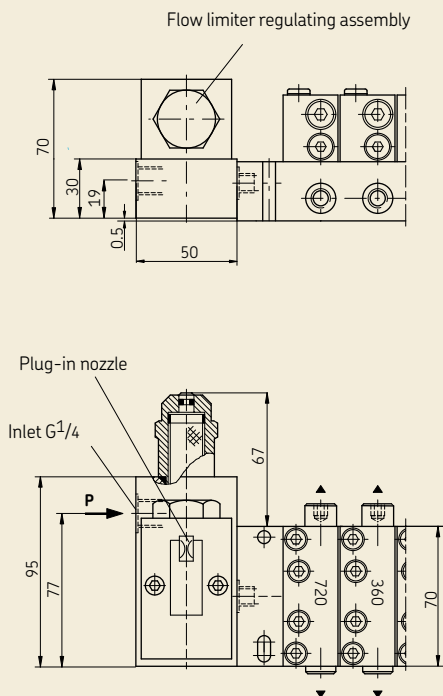
Basic design → Technical Data, page 9

Flow limiter SP/SMB8

Type	2-directional flow control valve
Ambient temperature range	-15 to +100°C
Operating pressure, max.	200 bar
Inlet volumetric flow	0,1 to 2,5 l/min
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Operating viscosity	20 to 600 mm ² /s
Filter rating / interchangeable strainer	0.3 mm
Weight	0.41 kg

PSG2 modular feeder with flow limiter

For other dimensions, see "PSG2 Basic Design," page 9



Plug-in nozzles for flow limiter

Nominal volumetric flow up to 1.56 l/min ¹⁾

Nominal volume [l/min]	Nozzle ø [mm]	Code
0.08	0.5	A
0.12	0.55	B
0.15	0.6	C
0.21	0.65	D
0.25	0.7	E
0.29	0.75	F
0.35	0.8	G
0.41	0.85	H
0.47	0.9	J
0.56	0.95	K
0.65	1	L
0.73	1.05	M
0.79	1.1	N
0.88	1.15	P
0.98	1.2	Q
1.09	1.25	R
1.18	1.3	S
1.30	1.35	T
1.43	1.4	U
1.56	1.45	V

Nominal volumetric flow from 1.67 l/min

Nominal volume [l/min]	Nozzle ø [mm]	Code
1.67	1.5	A
1.79	1.55	B
1.92	1.6	C
2.07	1.65	D
2.21	1.7	E
2.36	1.75	F
2.52	1.8	G

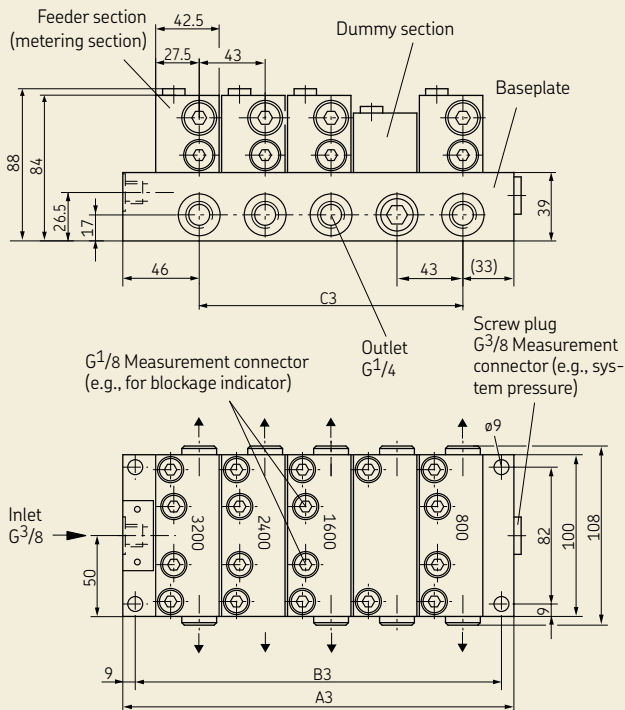
¹⁾ The values in the table are based on a differential pressure of 20 bar and viscosity of 300 mm²/s. Other differential pressures or viscosities result in slightly different delivery rates. These can be determined precisely using the charts for delivery rates and correction factors for the pressure (→ brochure 1-3028-EN).

PSG3 Modular Feeder

Basic design for oil and grease



PSG3 modular feeder, basic design



Technical Data

Type Hydraulically controlled
 Mounting position Any¹⁾
 Ambient temperature range -15 to +110°C
 Baseplate with 6, 8, 10, 12, 14, 16, 18, 20 outlets
 Tightening torque feeder section 23 Nm

Material
 Baseplate Aluminum alloy
 Sections Steel, galvanized
 Seals FKM (FPM)

Hydraulic system
 Operating pressure, max. 200 bar²⁾
 Inlet volumetric flow Up to 6 l/min⁶⁾
 Volume per outlet and cycle³⁾ 800, 1200, 1600, 2400, 3200 mm³

Piston stroke rate max. 200/min
 Division ratio 1:1 to 1:8⁴⁾
 Pressure loss with oil 5 to 15 bar⁵⁾
 Lubricant Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases

Operating viscosity > 12 mm²/s
 Worked penetration ≥ 265 x 0.1 mm (up to NLGI Grade 2)

- ¹⁾ In case of installation on moving machine parts or in case of strong vibrations (e.g., on pressing machines), the piston position of the feeder must not match the direction of movement of the machine part; instead, it must be at a 90° angle to the force of the machine.
- ²⁾ The maximum operating pressure on designs with monitoring or upstream attachments may be lower; see the Technical Data for monitoring and attachments.
- ³⁾ When designing the feeder, also ensure that the max. piston stroke rate of 200/min is not exceeded.
- ⁴⁾ Larger division ratios are possible when outlets are consolidated.
- ⁵⁾ Depending on volume index, viscosity, and volumetric flow.
- ⁶⁾ Grease available on request.

Dimensions

	Number of sections							
	3	4	5	6	7	8	9	10
A3 [mm]	165	208	251	294	337	380	423	466
B3 [mm]	147	190	233	276	319	362	405	448
C3 [mm]	86	129	172	215	258	301	344	387
Complete weight [kg]	6.83	8.55	10.27	11.99	13.71	15.43	17.15	18.87

PSG3 Modular Feeder

Monitoring via piston detector, 3-pin, M12x1 plug and cycle indicator for oil and grease

PSG3 with piston detector

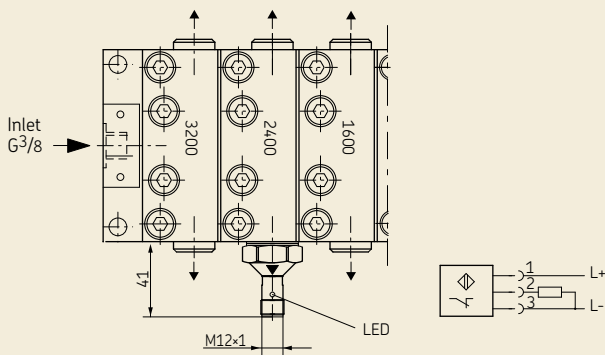


PSG3 with cycle indicator



PSG3 modular feeder with piston detector

For other dimensions, see "PSG3 Basic Design," page 16



Technical Data

Basic design → Technical Data, page 16

Piston detector, electrical 1)

Ambient temperature range	-15 to +80°C
Operating pressure, max.	200 bar ²⁾
Weight	0.12 kg
Design	4-point LED
Rated voltage	10 to 36 V DC
Residual ripple	≤10%
Max. load current	100 mA
Protection class	IP67
Outlet function	PNP contact

Cycle indicator, visual

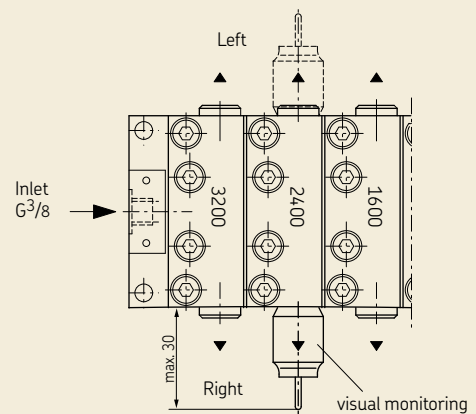
Ambient temperature range	-15 to +90°C
Operating pressure, max.	150 bar
Weight	0.05 kg

¹⁾ The piston detector is designed for a service life of approx. 10-15 million cycles. This value may be significantly exceeded depending on the application, external environmental influences, medium, pressure, and cycle speed. Please contact the manufacturer in case of doubt.

Note Attach either to the left or right side of the feeder sections (metering sections). It is factory-mounted **on the right**.

PSG3 modular feeder with cycle indicator

For other dimensions, see "PSG3 Basic Design," page 16

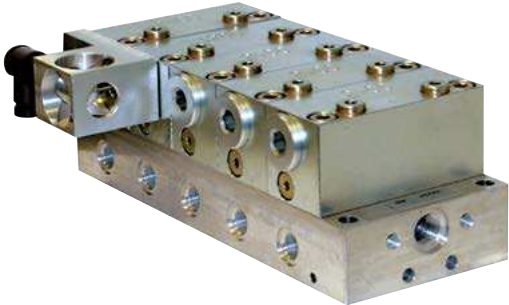


Note Electrical plug and socket connections to be ordered separately, → page 29.

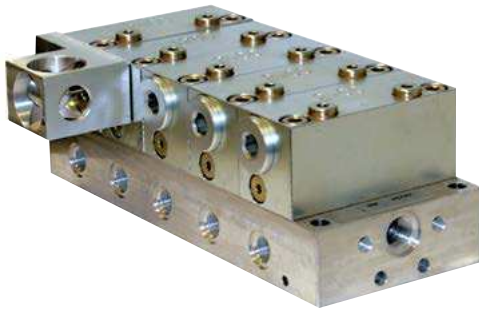
PSG3 Modular Feeder

Monitoring via proximity switch and via cycle indicator with housing for oil and grease

With proximity switch



Visual cycle indicator with housing
(for attaching a sensor provided by customer)



Technical Data

Basic design → Technical Data, page 16

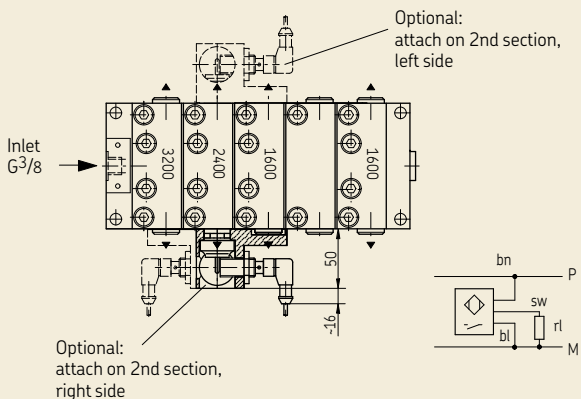
Proximity switch M18×1, electrical	
Ambient temperature range	-15 to +70°C
Operating pressure, max.	150 bar
Weight	0.151 kg
Design	PNP with LED
Rated voltage	10 to 30 V DC
Max. load current	130 mA
Protection class	IP67
Outlet function	NO-contact

Cycle indicator with housing ¹⁾	
Ambient temperature range	-15 to +90°C
Operating pressure, max.	150 bar ¹⁾
Weight	0.062 kg

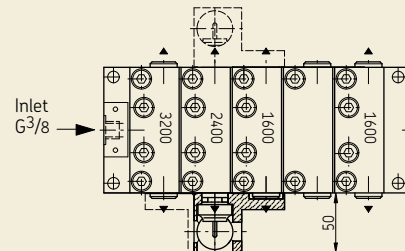
¹⁾ Observe the temperature range of the sensor used!

Note
Attach either to the left or right side of the feeder sections (metering sections).
It is factory-mounted **on the right**.
Always attach from the second to second-to-last section.

PSG3 modular feeder with proximity switch
For other dimensions, see "PSG3 Basic Design," page 16



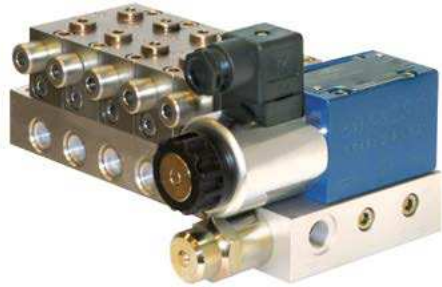
PSG3 modular feeder with cycle indicator with housing
For other dimensions, see "PSG3 Basic Design," page 16



PSG3 Modular Feeder

with solenoid valve for oil (4/2-directional)

With 4/2-directional solenoid valve for oil



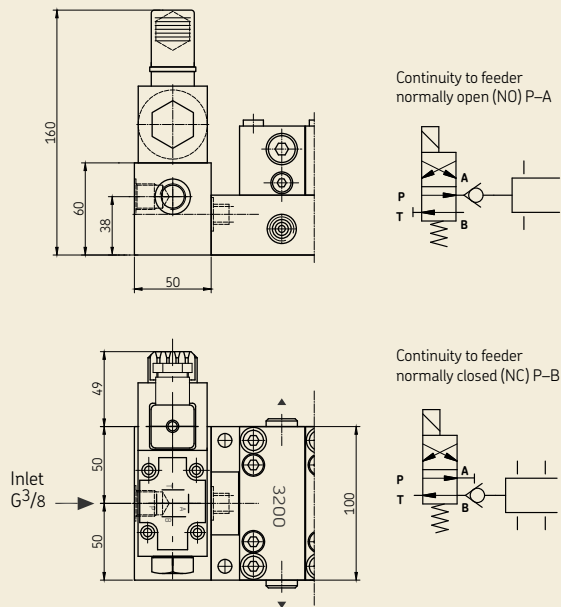
Technical Data

For basic design, see Technical Data, page 16

4/2-directional solenoid valve	
Ambient temperature range	-15 to +75°C
Operating pressure, max.	150 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Weight with housing	1.6 kg
Electrical design	NG6
Connection dimensions	DIN 24340
System voltage	24 V DC
Designs	Continuity to feeder normally closed (NC) or open (NO)

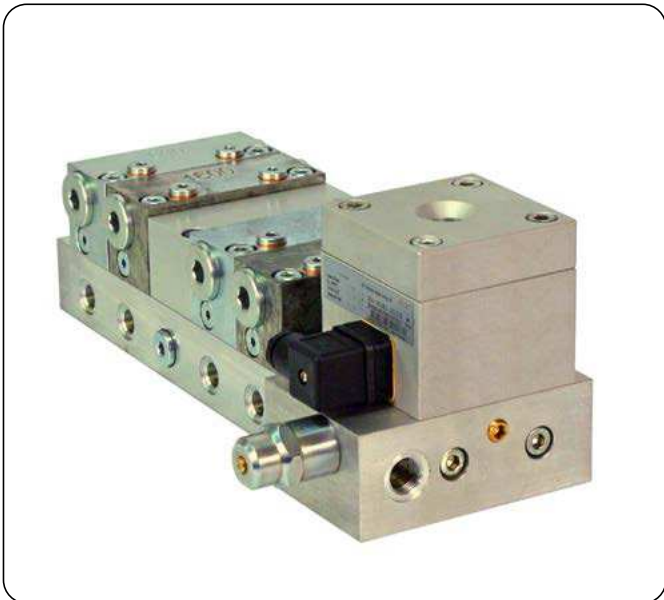
PSG3 modular feeder with 4/2-directional solenoid valve

For other dimensions, see "PSG3 Basic Design," page 16



PSG3 Modular Feeder

with gear-type flow indicator and interchangeable strainer for oil

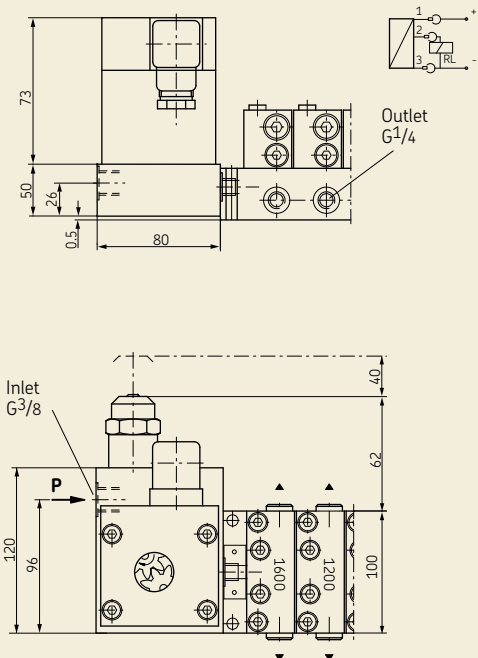


Technical Data

Basic design → Technical Data, page 16

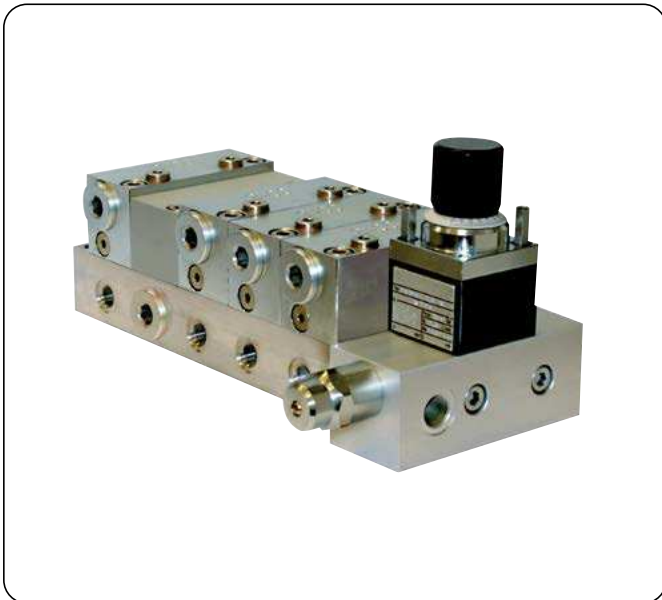
Gear-type flow indicator	
Type	Gear-type flow indicator
Ambient temperature range	-15 to +70°C
Operating pressure, max.	85 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Operating viscosity	20 to 600 mm ² /s
Filter rating / interchangeable strainer	0.3 mm
Weight	0.9 kg
Design of electrical sensor	
Rated voltage	24 V DC
Residual ripple	≤10%
Protection class	IP65
Proportionality factor	4.6 cm ³ /pulse

PSG3 modular feeder with gear-type flow indicator
For other dimensions, see "PSG3 Basic Design," page 16



PSG3 Modular Feeder

with flow controller for oil



Technical Data

Basic design → Technical Data, page 16

Flow controller

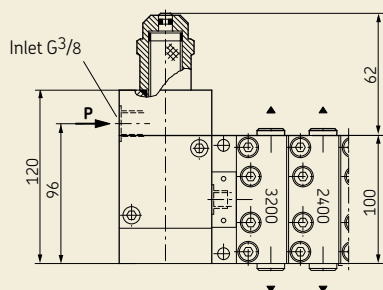
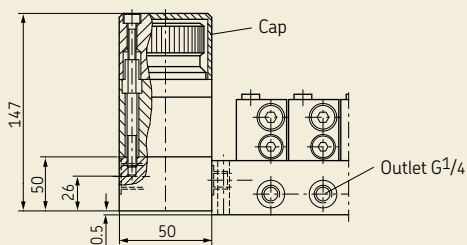
Type	2-directional flow control valve
Ambient temperature range	-15 to +75°C
Adjustment range	0.6 to 6 l/min
Weight	1.4 kg
Flow controller designs	Up to 0.6 l/min
	Up to 1.6 l/min
	Up to 2.5 l/min
	Up to 4 l/min
	Up to 6 l/min

Hydraulic system

Operating pressure, max.	200 bar
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Operating viscosity	12 to 350 mm ² /s
Filter rating / interchangeable strainer	0.3 mm
Scale graduation	1-10

PSG3 modular feeder with flow controller

For other dimensions, see "PSG3 Basic Design," page 16



PSG3 Modular Feeder

with SP/SMB8 flow limiter for oil



Technical Data

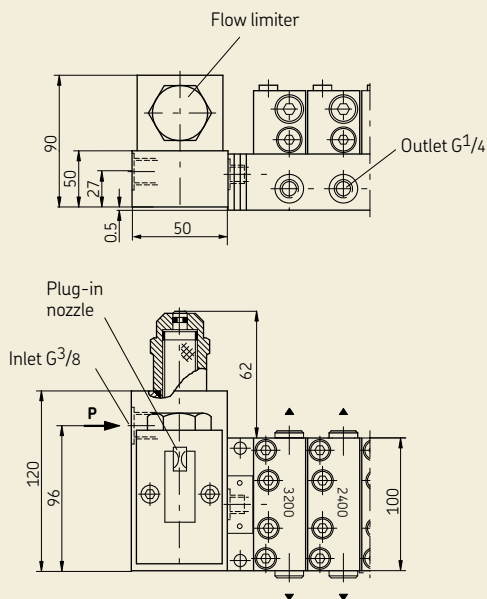
Basic design → Technical Data, page 16

Flow limiter SP/SMB8

Type	2-directional flow control valve
Ambient temperature range	-15 to +90°C
Operating pressure, max.	200 bar
Inlet volumetric flow	1,7 to 6 l/min
Lubricant	Mineral oils, environmentally friendly and synthetic oils
Operating viscosity	20 to 600 mm ² /s
Filter rating / interchangeable strainer	0.3 mm
Weight	0.863 kg

PSG3 modular feeder with flow limiter

For other dimensions, see "PSG3 Basic Design," page 16



Plug-in nozzles for flow limiter

Nominal volumetric flow up to 1.56 l/min¹⁾

Nominal volume [l/min]	Nozzle ø [mm]	Code
0.08	0.5	A
0.12	0.55	B
0.15	0.6	C
0.21	0.65	D
0.25	0.7	E
0.29	0.75	F
0.35	0.8	G
0.41	0.85	H
0.47	0.9	J
0.56	0.95	K
0.65	1	L
0.73	1.05	M
0.79	1.1	N
0.88	1.15	P
0.98	1.2	Q
1.09	1.25	R
1.18	1.3	S
1.30	1.35	T
1.43	1.4	U
1.56	1.45	V

Nominal volumetric flow from 1.67 l/min

Nominal volume [l/min]	Nozzle ø [mm]	Code
1.67	1.5	A
1.79	1.55	B
1.92	1.6	C
2.07	1.65	D
2.21	1.7	E
2.36	1.75	F
2.52	1.8	G
2.67	1.85	H
2.8	1.9	J
2.98	1.95	K
3.16	2	L
3.3	2.05	M
3.43	2.1	N
3.58	2.15	P
3.79	2.2	Q
3.98	2.25	R
4.18	2.3	S
4.37	2.35	T
4.57	2.4	U
4.8	2.45	V
5.77	2.7	W
5.99	2.75	Y
6.22	2.8	Z

¹⁾ The values in the table are based on a differential pressure of 20 bar and viscosity of 300 mm²/s. Other differential pressures or viscosities result in slightly different delivery rates. These can be determined precisely using the charts for delivery rates and correction factors for the pressure (-> brochure 1-3028-EN).

PSG Modular Feeder

Retrofitting instructions for cycle indicator

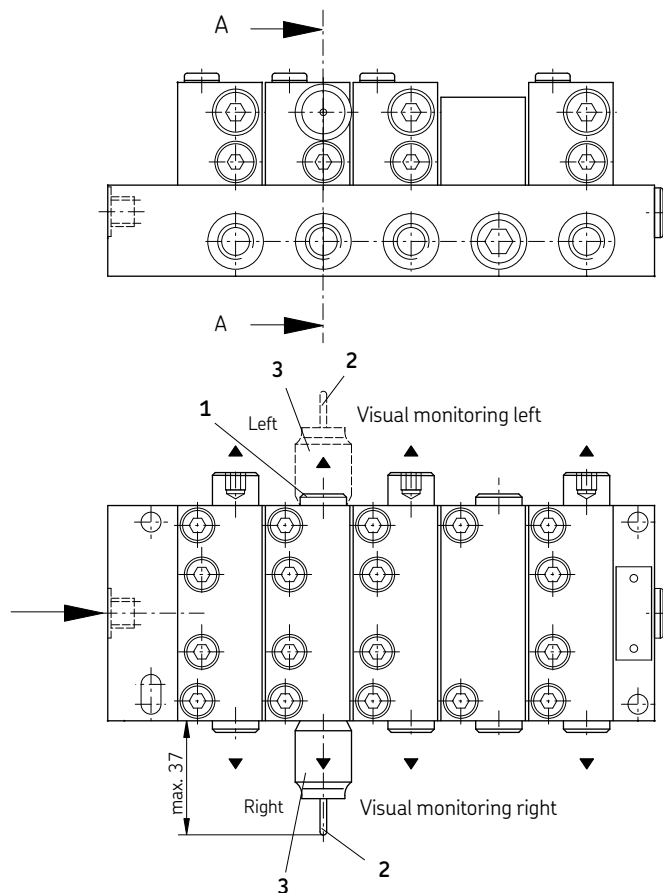
- Loosen and remove the screw plug (1) on the left
- Push the plunger rod (2) of visual stroke monitor (right) into plunger rod housing (3) using your finger.
- Carefully remove the piston (4) with plunger rod (2) from the left side of the section housing (5).
- Loosen and remove the plunger rod housing (hexagon socket screw WAF 4) (3) and install in left side.
- Do not bend during the subsequent installation of the piston (4) and plunger rod (2); do not shear O-rings!
- Turn the piston (4) with plunger rod (2) 180° and carefully install on the right side of section housing (5).
- Carefully insert the plunger rod (2) into the plunger rod housing (3).
- Install the screw plug (1) on the right side.



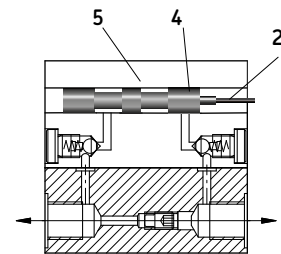
Note

Pressure must not be applied to the feeder section (metering section) during the retrofitting described here. The feeder section should therefore be retrofitted from a right plunger rod design to a left plunger rod design before mounting the feeder section on the baseplate.

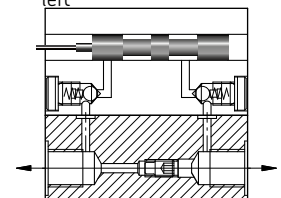
Cycle indicator retrofitting



View A-A
plunger rod attached right



View A-A
Plunger rod attachment left



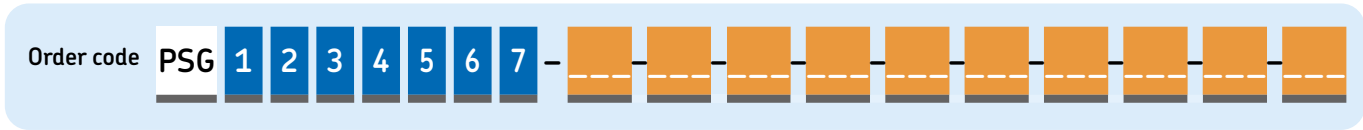
Piston position (4)
plunger rod (2) right



Piston position (4)
plunger rod (2) left

Order Code

Modular Feeders of Product Series PSG¹⁾



Feeder information

Choice 8/9/10: information on sections 1 to 10 as seen from inlet

Order example: PSG23HFQDX-KCC-KSC-JHC-MMC-KDS (→ page 28)

1 Selection of frame size (please mark)

PSG1 Inlet volumetric flow max. 0.8 l/min	1
PSG2 Inlet volumetric flow max. 2.5 l/min	2
PSG3 Inlet volumetric flow max. 6 l/min	3

2 Selection of monitoring

	PSG1	PSG2	PSG3
none	X	X	X
Piston detector 3-pin, M12x1 plug	3	3	3
Cycle indicator, visual (plunger rod) ²⁾³⁾⁴⁾	Y	Y	Y
Cycle indicator with bracket and proximity switch ²⁾³⁾⁴⁾	S	S	S
Cycle indicator with bracket for proximity switch (without proximity switch) ²⁾³⁾⁴⁾	G	G	G

²⁾ On frame size 1, only on 200 and 250 mm³ section sizes.
³⁾ Not for frame size 2 with 60 mm³ section size.
⁴⁾ Installation on first or last section is not recommended.

4 Selection of attachments

	PSG1	PSG2	PSG3
none	X	X	X
Flow controller, 0.6 l/min	-	A	A
Flow controller, 1.6 l/min	-	B	B
Flow controller, 2.5 l/min	-	C	C
Flow controller, 4 l/min	-	-	D
Flow controller, 6 l/min	-	-	E
SP/SMB8 flow limiter with nominal volume up to 1.56 l/min	-	F	F
SP/SMB8 flow limiter with nominal volume from 1.67 l/min	-	G	G
⁴ /2-directional solenoid valve, continuity to feeder normally open P-A	-	H	H
⁴ /2-directional solenoid valve, continuity to feeder normally closed P-B	-	J	J
Gear-type flow indicator	-	K	K
² /2-directional solenoid valve, normally closed	-	L	-

3 Selection of installation position for monitor ⁵⁾

without

left-hand side		right-hand side
U	10	V
S	9	T
Q	8	R
N	7	P
L	6	M
J	5	K
G	4	H
E	3	F
C	2	D
A	1	B

↑ Inlet

⁵⁾ Installation on first or last section is not recommended.

5 Selection of plug-in nozzle for flow limiter

(Please enter the key for the corresponding nozzle; PSG2 → page 15, PSG3 → page 22.)

without X		<input type="checkbox"/>
PSG2	Nozzle ø 0.5 to 1.45 mm at nominal volumetric flow up to 1.56 l/min	<input type="checkbox"/>
	Nozzle ø 1.5 to 1.8 mm at nominal volumetric flow from 1.67 l/min	<input type="checkbox"/>
PSG3	Nozzle ø 0.5 to 1.45 mm at nominal volumetric flow up to 1.56 l/min	<input type="checkbox"/>
	Nozzle ø 1.5 to 2.8 mm at nominal volumetric flow from 1.67 l/min	<input type="checkbox"/>

¹⁾ See also the note on Cadenas on page 3.

6 Selection of baseplate inlet screw union ¹⁾

	PSG1	PSG2	PSG3
none	X	X	X
Tube ø6 mm	A	A	-
Tube ø8 mm	B	B	B
Tube ø10 mm	C	C	C
Tube ø12 mm	-	D	D
Tube ø15 mm	-	-	E
Tube ø16 mm	-	-	F

¹⁾ Solderless pipe union with cutting sleeve per DIN 2353

7 Options

	PSG1	PSG2	PSG3
none	X	X	X
Feeder design with surface finishing (chem. nickel)	-	B	B
Blockage indicator only for design with gas thread			
Open at 50 bar	-	R	R
Open at 100 bar	-	S	S
Open at 150 bar	-	T	T
Open at 200 bar	-	U	U

8 Selection of section sizes

Volume per outlet and cycle [mm³]

Dummy section	PSG1	PSG2	PSG3	
50 ³⁾	A	-	-	Enter selected key here ²⁾ <input type="text"/> 10 <input type="text"/> 9 <input type="text"/> 8 <input type="text"/> 7 <input type="text"/> 6 <input type="text"/> 5 <input type="text"/> 4 <input type="text"/> 3 <input type="text"/> 2 <input type="text"/> 1
100	B	-	-	
150	C	-	-	
200	D	-	-	
250	E	-	-	
60 ³⁾	-	F	-	
120	-	G	-	
240	-	H	-	
360	-	J	-	
480	-	K	-	
600	-	L	-	
720	-	M	-	
840	-	N	-	
800 ³⁾	-	-	P	
1200	-	-	Q	
1600	-	-	R	
2400	-	-	S	
3200	-	-	T	

Note that at least 3 active metering sections must be selected!

²⁾ The volume per section is equal on both sides.

³⁾ If possible, do not place in first position when designing feeder.

9 10 Selection of outlet screw union for all outlet ports, check valves (CV)

	PSG1	PSG2	PSG3
No outlet port, screw plug (i.e., grub screw is removed)	S	S	S
Outlet port without screw unions	X	X	X
Outlet port with 6 mm outlet screw union ⁴⁾ , without CV	-	B	B
Outlet port with 8 mm outlet screw union ⁴⁾ , without CV	-	C	C
Outlet port with 10 mm outlet screw union ⁴⁾ , without CV	-	D	D
Outlet port with 12 mm outlet screw union ⁴⁾ , without CV	-	E	E
Outlet port with 4 mm outlet screw union ⁴⁾ , with CV	F	-	-
Outlet port with 6 mm outlet screw union ⁴⁾ , with CV	G	G	G
Outlet port with 8 mm outlet screw union ⁴⁾ , with CV	-	J	J
Outlet port with 10 mm outlet screw union ⁴⁾ , with CV	-	K	K
Outlet port with 12 mm outlet screw union ⁴⁾ , with CV	-	L	L
ø4 mm plug connector with CV	N	-	-
ø6 mm plug connector with CV	P	-	-

Attachment of crossporting, → note on pages 26–27

Crossporting forwards, without CV			V	V	V
Crossporting backwards, without CV			H	H	H
Crossporting forwards, with CV			R	R	R
Crossporting backwards, with CV			Q	Q	Q
Middle crossporting			M	M	M
Crossporting end without outlet port	•	•	Z	Z	Z

⁴⁾ Solderless pipe union with cutting sleeve per DIN 2353

Selection of outlet ports (indicate selections 9 and 10!)

left-hand → 9

10 → right-hand

<input type="checkbox"/>	10	<input type="checkbox"/>
<input type="checkbox"/>	9	<input type="checkbox"/>
<input type="checkbox"/>	8	<input type="checkbox"/>
<input type="checkbox"/>	7	<input type="checkbox"/>
<input type="checkbox"/>	6	<input type="checkbox"/>
<input type="checkbox"/>	5	<input type="checkbox"/>
<input type="checkbox"/>	4	<input type="checkbox"/>
<input type="checkbox"/>	3	<input type="checkbox"/>
<input type="checkbox"/>	2	<input type="checkbox"/>
<input type="checkbox"/>	1	<input type="checkbox"/>

↑ Inlet

Note!

Note permissible crossporting configurations:
 2-bridge, 3-bridge, with and without outlet port, with and without check valve on PSG1, PSG2, and PSG3,
 4-bridge, with outlet port, with check valves only on PSG2 and PSG3

Special designs are available on request.

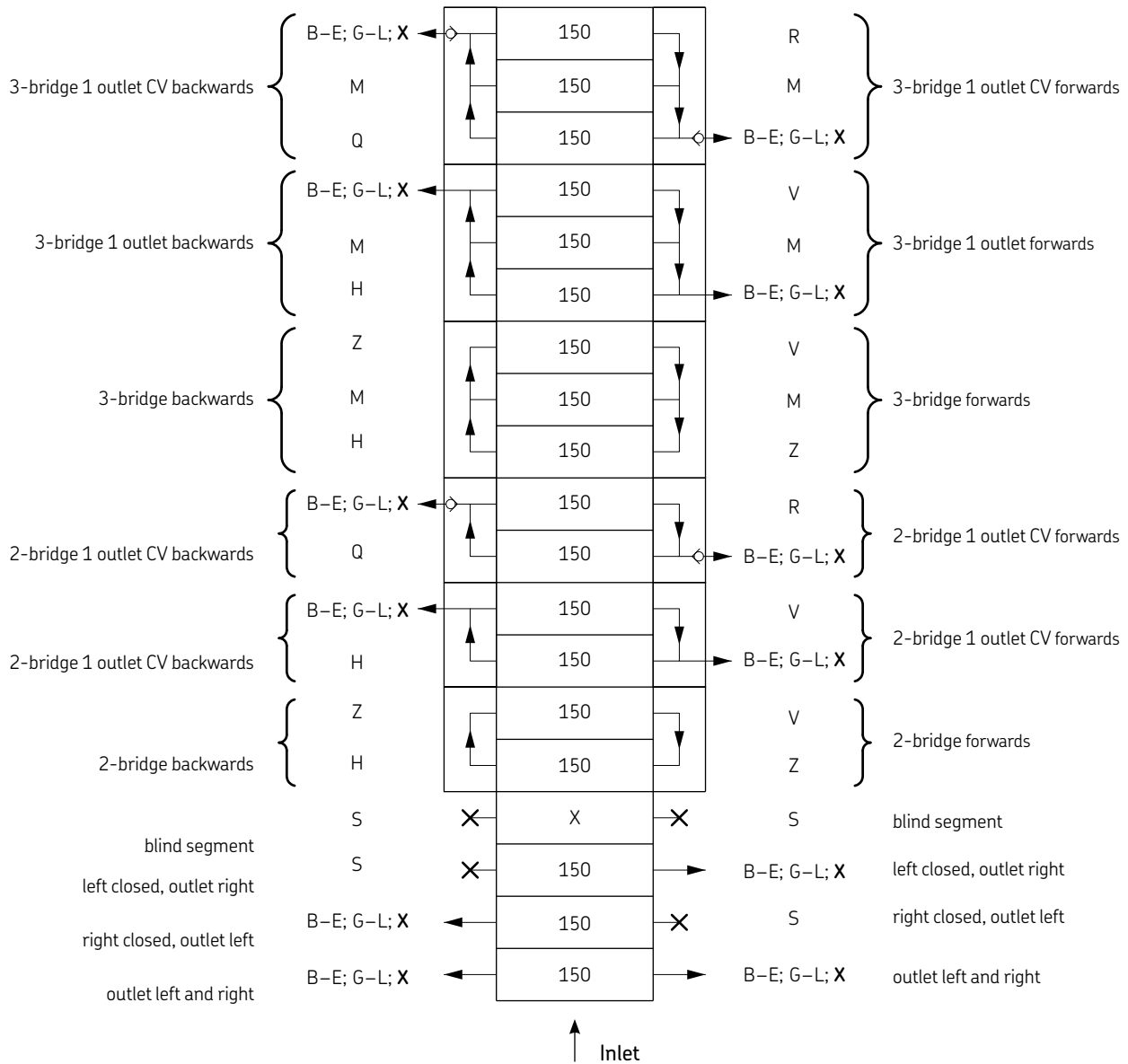
Crossporting

for modular feeders of product series PSG1

Selection of Crossporting

9 → left-hand

10 → right-hand

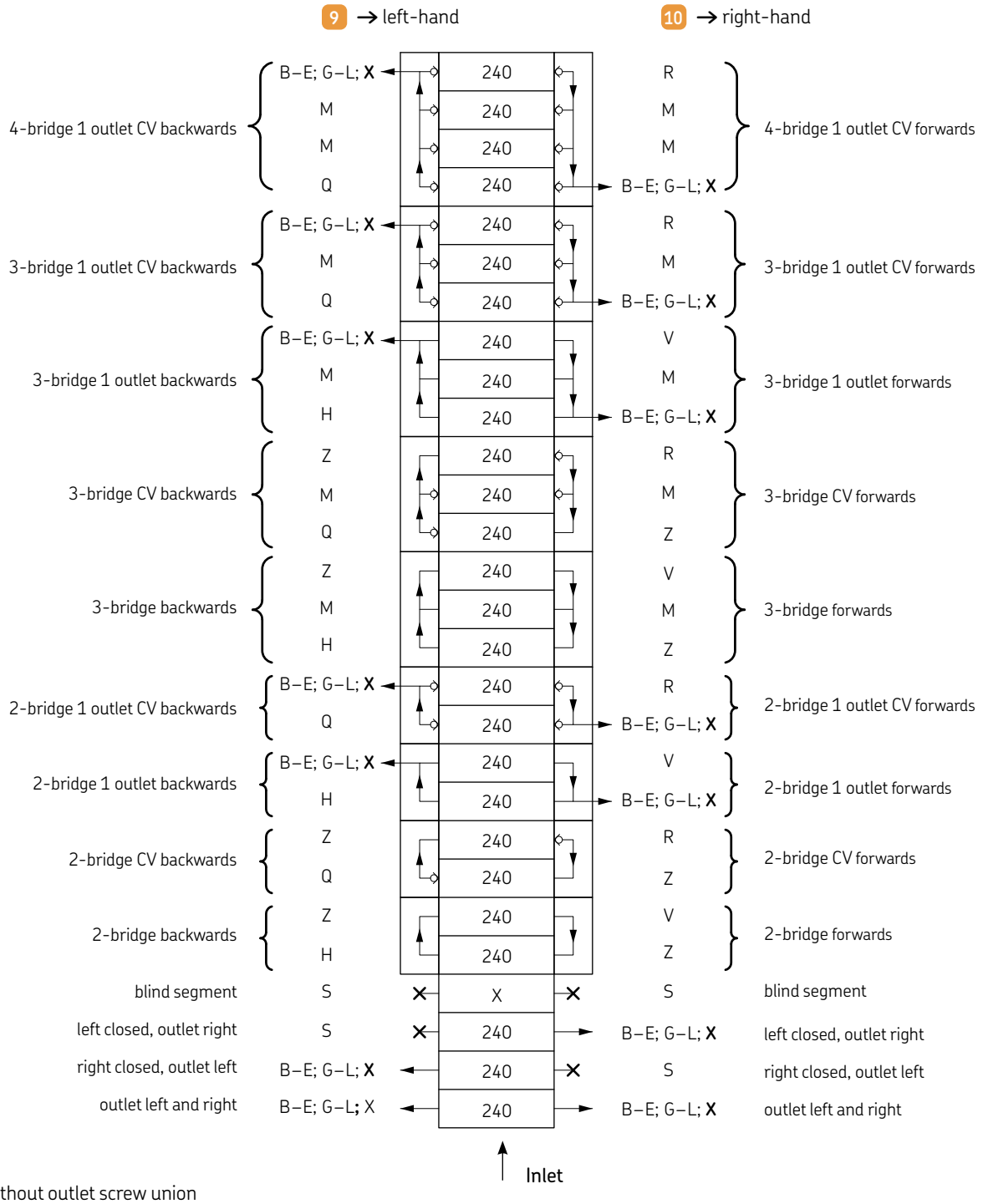


x without outlet screw union

Crossporting

for modular feeders of product series PSG2 and PSG3

Selection of Crossporting

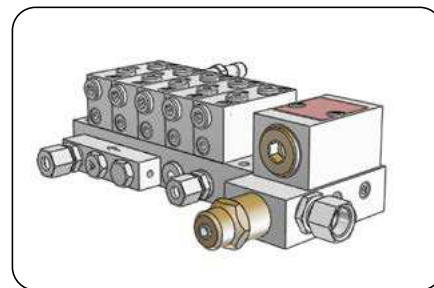


Order example

Modular feeders of product series PSG2

We recommend that you enter your desired modular feeder in Cadenas at skf-lubrication.partcommunity.com so that you can configure it quickly.

- You will receive:
- A 3D drawing
 - A 2D drawing
 - A dimensioned drawing
 - A complete order code
 - A legend

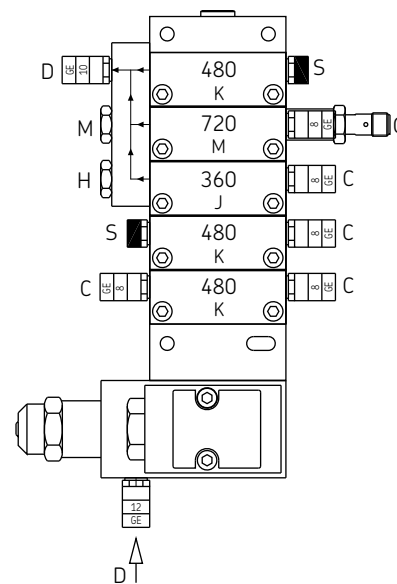


Order code: PSG23HFQDX-KCC-KSC-JHC-MMC-KDS

Designation

Description	Clarification
Progressive modular feeder	PSG
1 Frame size	2 (max. 2.5 l/min)
Size of baseplate	5 sections
2 Monitoring type	3 (P3 piston detector 3-pin, M12x1 plug)
3 Installation position of the monitoring system	H (right side, on 4th section)
4 Attachments for frame sizes	F (with SP/SMB8 flow limiter with nominal volume up to 1.56 l/min)
5 Plug-in nozzles for flow limiter attachment	Q (0.98 l/min; nozzle \varnothing 1.2 mm)
6 Inlet thread (baseplate inlet)	D (G1/4 for tube \varnothing 12)
7 Option	X (without)
1. Section	
8 Section size	K (480 mm ³)
9 left side of section	C (outlet port with 8 mm outlet screw union, without CV)
10 right side of section	C (outlet port with 8 mm outlet screw union, without CV)
2. Section	
8 Section size	K (480 mm ³)
9 left side of section	S (no outlet port, screw plug)
10 right side of section	C (outlet port with 8 mm outlet screw union, without CV)
3. Section	
8 Section size	J (360 mm ³)
9 left side of section	H (crossporting backwards, without CV)
10 right side of section	C (outlet port with 8 mm outlet screw union, without CV)
4. Section	
8 Section size	M (720 mm ³)
9 left side of section	M (middle crossporting)
10 right side of section	C (outlet port with 8 mm outlet screw union, without CV)
5. Section	
8 Section size	K (480 mm ³)
9 left side of section	D (outlet port with 10 mm outlet screw union, without CV)
10 right side of section	S (no outlet port, screw plug)

Order example diagram



Accessories

Electrical plug-in connections

Square connector

Order No.	Designation
179-990-033	Square connector per DIN EN 175301-803A, cable diameter 6–10 mm, 3-pin +PE, max. 1.5 mm ²

Circular connector M12x1

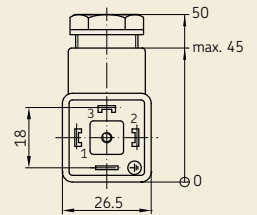
179-990-371	Straight circular connector (A), cable diameter –6 mm, 4-pin, max. 0.75 mm ²
179-990-600	Straight circular connector (B), 4-pin with integrally extruded cable, 5 m, 4x0,25 mm ²
179-990-372	Angled circular connector (C), cable diameter 4–6 mm, 4-pin, max. 0.75 mm ²
179-990-601	Angled circular connector (D), with integrally extruded cable, 5m, 4x0,25 mm ²

See also leaflet 1-1730-EN

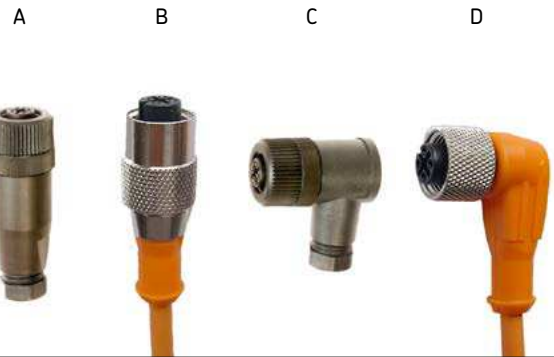
Square connector 179-990-033



179-990-033



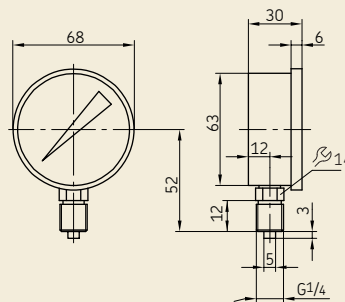
Circular connector M12x1



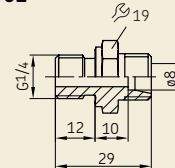
Pressure gauge and screw union for PSG2/PSG3

Order No.	Designation
24-1207-2158	Pressure gauge 160 bar
screw union	
95-5080-3901	Straight screw-in gland
96-0308-0060	Pressure gauge screw connection
96-3120-0058	Reduction fitting for PSG3

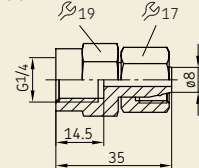
24-1207-2158



95-5080-3901



96-0308-0060



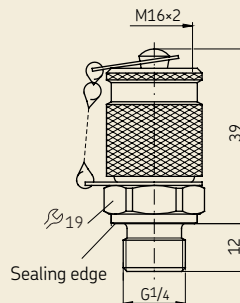
Measurement connector and screw union PSG2/PSG3

Order number	Designation
24-2105-2405	Measurement connector

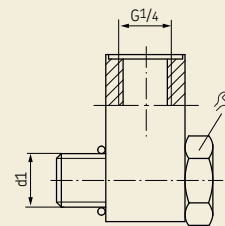
Measurement connector screw union

Order number	d1	⌀	
24-2151-4115	G1/4	19	for PSG2
24-2151-4116	G3/8	22	for PSG3

24-2105-2405

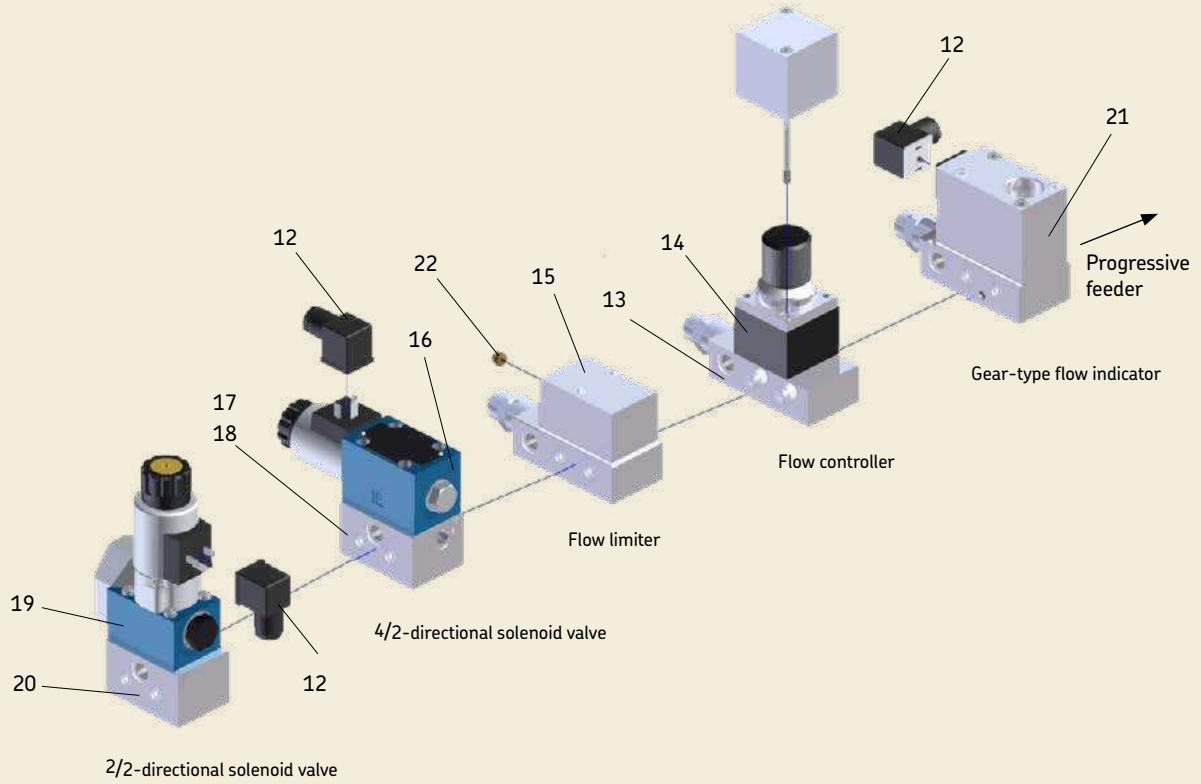


24-2151-4115, 24-2151-4116



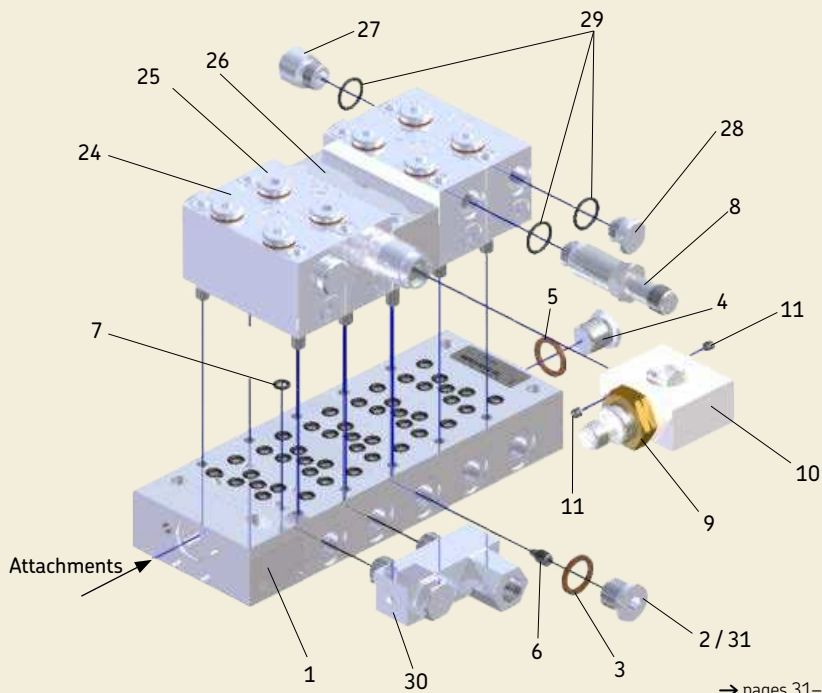
Exploded view

Attachments



→ page 28 for associated spare parts table 3.

Progressive feeder



→ pages 31–34 for associated spare parts tables.

Spare parts

→ page 30 for associated exploded view.

Spare parts table 1

Baseplate		PSG1			PSG2		PSG3			
Item Description	Number of sections	Inlet Outlet	Order No.	Inlet Outlet	Order No.	Corrosion-resistant ¹⁾ Order No.	Inlet Outlet	Order No.	Corrosion-resistant ¹⁾ Order No.	
1 Baseplate complete	3		24-0714-3400		24-0714-3300	24-0714-3320		24-0714-3310	24-0714-3330	
	4		24-0714-3401		24-0714-3301	24-0714-3321		24-0714-3311	24-0714-3331	
	5		24-0714-3402		24-0714-3302	24-0714-3322		24-0714-3312	24-0714-3332	
	6	G ^{1/8}	24-0714-3403	G ^{1/4}	24-0714-3303	24-0714-3323	G ^{3/8}	24-0714-3313	24-0714-3333	
	7	G ^{1/8}	24-0714-3404	G ^{1/4}	24-0714-3304	24-0714-3324	G ^{1/4}	24-0714-3314	24-0714-3334	
	8		24-0714-3405		24-0714-3305	24-0714-3325		24-0714-3315	24-0714-3335	
	9		24-0714-3406		24-0714-3306	24-0714-3326		24-0714-3316	24-0714-3336	
	10		24-0714-3407		24-0714-3307	24-0714-3327		24-0714-3317	24-0714-3337	
	2 Screw plug for baseplate outlet			466-419-001 (incl. washer)		DIN908-R1-4-5.8	99-0014-0908		DIN908-R1-4-5.8	99-0014-0908
	3 Washer for screw plug, item 2			–		508-108	99-1423-7603		508-108	99-1423-7603
4 Screw plug for measurement connector			–		DIN908-R1-4-5.8	99-0014-0908		DIN908-G3-8A-5.8	44-1821-2917	
5 Washer for screw plug, item 4			–		508-108	99-1423-7603		DIN7603-A17x21-CU	99-1823-7603	
6 Setscrew for feeder baseplate			DIN915-AM5x8-45H		95-0610-0915	95-0610-0915		95-0812-0915	95-0812-0915	
7 O-ring on baseplate			WVN532-3.5x1.5 (7 pieces/section)		WVN532-3.5x1.5 (9 pieces/section)			96-9026-0062 (9 pieces/section)		

¹⁾ Baseplate anodized aluminum, metering sections chemically nickel-plated.

Spare parts table 2

Monitoring		PSG1 Order No.	PSG2 Order No.	PSG3 Order No.
8	Piston detector (associated washer, item 29)	177-300-095	177-300-094	24-1884-2469
9	Proximity switch	24-1884-2597	24-1884-2316	24-1884-2316
10	Proximity switch housing	VPKM.13	44-0711-2592	44-0711-2593
11	Setscrew for housing	DIN914-M4x6-45H (2 pieces/bracket)	–	–

Spare parts table 3

Attachments		PSG2 Order No.	PSG3 Order No.
12	Cable socket for solenoid valves	179-990-033	179-990-033
13	Baseplate	24-1883-2228	24-1883-2238
14	Flow controller up to 0.6 l/min	24-1883-2211	24-1883-2211
14	Flow controller up to 1.6 l/min	24-1883-2201	24-1883-2201
14	Flow controller up to 2.5 l/min	24-1883-2024	24-1883-2024
14	Flow controller up to 4.0 l/min	–	24-1883-2025
14	Flow controller up to 6.0 l/min	–	24-1883-2083
15	Flow limiter with baseplate G ^{1/4}	24-1883-2220	–
15	Flow limiter with baseplate G ^{3/8}	–	24-1883-2230
16	4/2-directional solenoid valve, normally open P–A, 24 V DC (NO)	24-1254-2396	24-1883-2233
17	assoc. housing	24-1883-2223	24-1883-2223
16	4/2-directional solenoid valve, normally closed P–B, 24 V DC (NC)	24-1254-2396	24-1254-2396
18	assoc. housing	24-1883-2222	24-1883-2222
19	2/2-directional solenoid valve	24-1254-2500	–
20	assoc. housing	24-1883-2241	–
21	Gear-type flow indicator with baseplate	24-1883-2224	24-1883-2232

Spare Parts

Spare parts table 4

Plug-in nozzles for flow limiter

Item	Nominal volumetric flow ¹⁾ [l/min]	Nozzle index	Nozzle ø [mm]	PSG2/PSG3 Plug-in nozzle Order No.	Nominal volumetric current [l/min]	Nozzle index	Nozzle ø [mm]	PSG2/PSG3 Plug-in nozzle Order No.
22	0.08	050	0.50	24-0455-2574	1.67	150	1.50	24-0455-2594
	0.12	055	0.55	24-0455-2575	1.79	155	1.55	24-0455-2595
	0.15	060	0.60	24-0455-2576	1.92	160	1.60	24-0455-2596
	0.21	065	0.65	24-0455-2577	2.07	165	1.65	24-0455-2597
	0.25	070	0.70	24-0455-2578	2.21	170	1.70	24-0455-2598
	0.29	075	0.75	24-0455-2579	2.36	175	1.75	24-0455-2599
	0.35	080	0.80	24-0455-2580	2.52	180	1.80	24-0455-2600
	0.41	085	0.85	24-0455-2581	2.67	185	1.85	24-0455-2601
	0.47	090	0.90	24-0455-2582	2.80	190	1.90	24-0455-2602
	0.56	095	0.95	24-0455-2583	2.98	195	1.95	24-0455-2603
	0.65	100	1.00	24-0455-2584	3.16	200	2.00	24-0455-2604
	0.73	105	1.05	24-0455-2585	3.30	205	2.05	24-0455-2605
	0.79	110	1.10	24-0455-2586	3.43	210	2.10	24-0455-2606
	0.88	115	1.15	24-0455-2587	3.58	215	2.15	24-0455-2607
	0.98	120	1.20	24-0455-2588	3.79	220	2.20	24-0455-2608
	1.09	125	1.25	24-0455-2589	3.98	225	2.25	24-0455-2609
	1.18	130	1.30	24-0455-2590	4.18	230	2.30	24-0455-2610
	1.30	135	1.35	24-0455-2591	4.37	235	2.35	24-0455-2611
	1.43	140	1.40	24-0455-2592	4.57	240	2.40	24-0455-2612
	1.56	145	1.45	24-0455-2593	4.80	245	2.45	24-0455-2613
					5.00	250	2.50	24-0455-2614
					5.19	255	2.55	24-0455-2615
					5.37	260	2.60	24-0455-2616
					5.55	265	2.65	24-0455-2617
					5.77	270	2.70	24-0455-2618
					5.99	275	2.75	24-0455-2619
					6.22	280	2.80	24-0455-2620

¹⁾At an operating viscosity of 300 mm²/s and 20 bar differential pressure

Spare parts table 5

Inlet screw union

Item	Description	PSG1		PSG2		PSG3	
		Inlet	Order No.	Inlet	Order No.	Inlet	Order No.
23	Tube ø6 mm	G ¹ / ₈	406-403W	G ¹ / ₄	96-0204-0058-EO	G ³ / ₈	–
	Tube ø8 mm	G ¹ / ₈	408-423W	G ¹ / ₄	96-0208-0058-EO	G ³ / ₈	96-0209-0058-EO
	Tube ø10 mm	G ¹ / ₈	410-443W	G ¹ / ₄	96-0210-0058-EO	G ³ / ₈	96-0211-0058-EO
	Tube ø12 mm	G ¹ / ₈	–	G ¹ / ₄	96-0213-0058-EO	G ³ / ₈	96-0212-0058-EO
	Tube ø15 mm	G ¹ / ₈	–	G ¹ / ₄	–	G ³ / ₈	96-0217-0058-EO
	Tube ø16 mm	G ¹ / ₈	–	G ¹ / ₄	–	G ³ / ₈	96-1117-0058-EO

→ page 30 for associated exploded view.

Spare Parts

Spare parts table 6

Metering section		PSG1			PSG2			PSG3		
Item	Description	Volumetric flow per outlet and cycle	Order No.	Volumetric flow per outlet and cycle	Order No.	Corrosion- resistant ¹⁾ Order No.	Volumetric flow per outlet and cycle	Order No.	Corrosion- resistant ¹⁾ Order No.	
		[mm ³]		[mm ³]			[mm ³]			
24	Feeder section (metering section) complete for piston detector mounting	50	24-2151-4590	60	24-2151-4500	24-2151-4260	800	24-2151-4240	24-2151-4274	
		100	24-2151-4591	120	24-2151-4501	24-2151-4261	1200	24-2151-4244	24-2151-4278	
		150	24-2151-4592	240	24-2151-4502	24-2151-4262	1600	24-2151-4241	24-2151-4275	
		200	24-2151-4593	360	24-2151-4503	24-2151-4263	2400	24-2151-4242	24-2151-4276	
		250	24-2151-4594	480	24-2151-4504	24-2151-4264	3200	24-2151-4243	24-2151-4277	
				600	24-2151-4505	24-2151-4265				
		720	24-2151-4506	24-2151-4310						
		840	24-2151-4507	24-2151-4311						
25	Feeder section (metering section) complete with plunger rod right ²⁾ (attach from the 2nd to second-to-last section)	200	24-2151-4664	120	24-2151-4230	-	800	24-2151-4250	-	
		250	24-2151-4665	240	24-2151-4231	-	1200	24-2151-4258	-	
				360	24-2151-4232	-	1600	24-2151-4251	-	
				480	24-2151-4233	-	2400	24-2151-4252	-	
				600	24-2151-4234	-	3200	24-2151-4253	-	
				720	24-2151-4300	-				
		840	24-2151-4301	-						
26	Complete dummy section without screw plug for baseplate		24-2151-4595		24-2151-4210	24-2151-4266		24-2151-4211	24-2151-4212	
27	Piston stop screw, pin side		VPKM.18		44-1855-2144	44-1855-2155		44-1855-2106	44-1855-2108	
28	Piston stop screw, opposite pin side		VPJ.14		44-1855-2143	44-1821-2913		44-1855-2106	44-1855-2108	
29	Washer for items 27, 28, 8		96-9120-0062		WVN532-12×1.5	WVN532-12×1.5		44-0411-2046 (only for item 8)	44-0411-2046 (only for item 8)	

¹⁾ Baseplate anodized aluminum, metering sections chemically nickel-plated.

²⁾ Feeder section (metering section) with cycle indicator is supplied in the "plunger rod right" design.

Spare parts table 7

Bridges (crossporting) ³⁾		PSG1		PSG2		PSG3		
Item	Description	Outlet	Order No.	Outlet	Order No.	Outlet	Order No.	
30	Without outlet port and without check valve	G ¹ / ₈	2-bridge	24-2151-3760	G ¹ / ₄	24-2151-3730	G ¹ / ₄	24-2151-3734
			3-bridge	24-2151-3761		24-2151-3731		24-2151-3735
	With outlet port and without check valve	G ¹ / ₈	2-bridge	24-2151-3762	G ¹ / ₄	24-2151-3732	G ¹ / ₄	24-2151-3736
			3-bridge	24-2151-3763		24-2151-3733		24-2151-3737
	With outlet port and with check valve	G ¹ / ₈	2-bridge	24-2151-3764	G ¹ / ₄	24-2151-3394	G ¹ / ₄	24-2151-3396
			3-bridge	24-2151-3765		24-2151-3395		24-2151-3738
			4-bridge	-		24-2151-3739		On request
	Without outlet port and with check valve	G ¹ / ₈	3-bridge	-	G ¹ / ₄	24-2151-3397	G ¹ / ₄	24-2151-3393
			2-bridge	-		24-2151-3390		24-2151-3392

³⁾ The bridges listed are approved for a maximum operating pressure of 100 bar.

Spare parts

Spare parts table 8

Outlet screw union							
Item	Description	Outlet	PSG1 Order No.	Outlet	PSG2 Order No.	Outlet	PSG3 Order No.
31	Tube ø6 mm, without check valve		-	G ^{1/4}	96-1106-0058-E0	G ^{1/4}	96-1106-0058-E0
	Tube ø8 mm, without check valve		-	G ^{1/4}	96-0208-0058-E0	G ^{1/4}	96-0208-0058-E0
	Tube ø10 mm, without check valve		-	G ^{1/4}	96-0210-0058-E0	G ^{1/4}	96-0210-0058-E0
	Tube ø12 mm, without check valve		-	G ^{1/4}	96-0213-0058-E0	G ^{1/4}	96-0213-0058-E0
	Tube ø4 mm, with check valve	G ^{1/8}	24-2103-2933		-		-
	Tube ø6 mm, with check valve	G ^{1/8}	24-2103-2927	G ^{1/4}	96-9606-0058-E0	G ^{1/4}	96-9606-0058-E0
	Tube ø8 mm, with check valve		-	G ^{1/4}	96-9008-0058-E0	G ^{1/4}	96-9008-0058-E0
	Tube ø10 mm, with check valve		-	G ^{1/4}	96-9010-0058-E0	G ^{1/4}	96-9010-0058-E0

→ page 30 for associated exploded view.

Further brochures:

1-0103-EN *Fittings and Accessories*
1-0116-EN *Filters*
1-1700-5-EN *Pulse Monitors*
1-1730-EN *Electric Plug and Socket Connectors*
1-3028-EN *Flow Limiter SP/SMB8*

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