

T 8546 EN

Type 4708 Supply Pressure Regulator



Application

Supply pressure regulator used to provide pneumatic measuring and control equipment with a constant supply pressure

Set point ranges 0.2 to 1.6 bar (3 to 24 psi) or
0.5 to 6 bar (8 to 90 psi)

The supply pressure regulator reduces and controls the maximum pressure of 12 bar (180 psi) in a compressed air network to the pressure adjusted at the set point adjuster.

Special features:

- Air blow-off and low air consumption
- Almost independent of upstream pressure
- Any mounting position (except version with filter receptacle)
- Suitable for pipe and panel mounting as well as for attachment to various positioners and actuators
- Optionally with pressure gauge with CrNiMo steel housing and brass measuring element or pressure gauge completely made of CrNiMo steel (these regulator versions are completely free of any copper alloy)
- Threaded ends G according to DIN ISO 228-1 or with NPT tapered pipe thread
- Various filter cartridges:
 - Type 4708-45 with 15 µm mesh size, all other filters with 20 µm (5 µm as special version)

Versions

Supply pressure regulators with continuously adjustable set point range from 0.5 to 6 bar (8 to 90 psi)

- **Types 4708-10 to -17** (Fig. 3) · Supply pressure regulators with optional set point range from 0.2 to 1.6 bar (3 to 23 psi)
Mounted on rails conforming with EN 50022 or EN 50035 with accessories or mounted using a universal bracket
- **Type 4708-45** (Fig. 4) · Supply pressure regulator with increased air capacity
- **Types 4708-53 to -55** (Fig. 1) · Supply pressure regulators for direct attachment to various positioners
- **Types 4708-62 and -64** (Fig. 2) · Supply pressure regulators for direct attachment to Type 3277 and Type 3372 Pneumatic Actuators

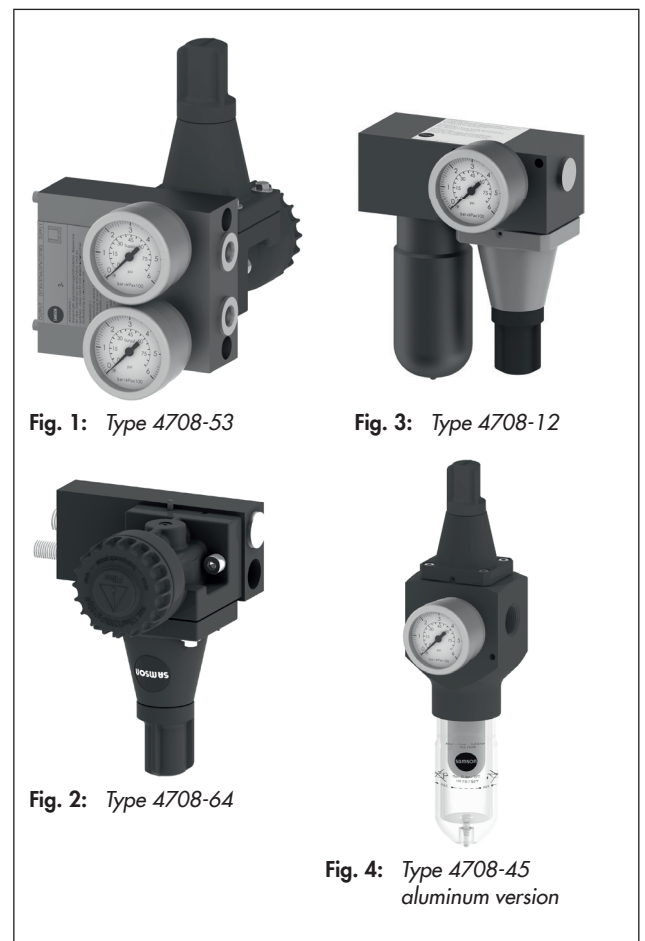


Fig. 1: Type 4708-53

Fig. 3: Type 4708-12

Fig. 2: Type 4708-64

Fig. 4: Type 4708-45
aluminum version

Further versions

- **Type 4708-82** · Manual/automatic switchover functioning as a pneumatic bypass for positioners
- **Types 4708-83 to -87** · Filters for compressed air

Principle of operation (Fig. 5)

The Type 4708 Supply Pressure Regulator operates according to the force-balance principle. By turning the set point screw (7), the tension of the set point spring (6) is changed and the output pressure is adjusted accordingly. The set point ranges from 0.2 to 1.6 bar or from 0.5 to 6 bar are obtained by using two different springs.

The regulator contains a filter cartridge (11). The condensate is drained by opening the screw plug (12) by half a turn. The screw plug must be in the horizontal or suspended position when the regulator is mounted.

For versions with separate filter receptacle and condensate drainage, the regulator must be installed with the receptacle suspended.

Supply pressure regulators in combination with positioners/actuators

Various adapter plates allow the supply pressure regulator to be attached to the various devices (see page 4 and page 5).

Installation

To avoid the formation of excessive condensate, the supply pressure regulator is to be installed as closely as possible to the compressor or the compressed air tank. The regulator is either mounted directly in the pipeline or into the appropriate panel cut-out. In addition, it may be attached directly to the positioner or the pneumatic actuator. The air connections are designed either with G 1/4 or 1/4-18 NPT threads, depending on the version, or G 1/2 or 1/2-14 NPT in Type 4708-45.

Manual/automatic switchover

The positioner output is routed to the actuator over an manual/automatic switchover unit. In automatic mode, the positioner is in closed-loop operation. In manual mode, the output pressure of any supply pressure regulator is directly applied to the actuator. This creates a manual bypass of the positioner.

The manual/automatic switchover unit is mounted directly onto Types 3766/3367 and 3730/3731 (Fig. 6) Positioners or on an adapter plate with hook-up to the actuator. The Type 4708-53 or Type 4708-54 Supply Pressure Regulator can be directly mounted. All other supply pressure regulators can be connected to the manual/automatic switchover unit using piping (hook-up).

Accessories

A supplementary filter (Fig. 17, page 5) can be fitted on Type 4708-53 and Types 4708-55 to -64. The filter housing can be rotated 360° to ensure that the filter and condensate drainage always face downwards.

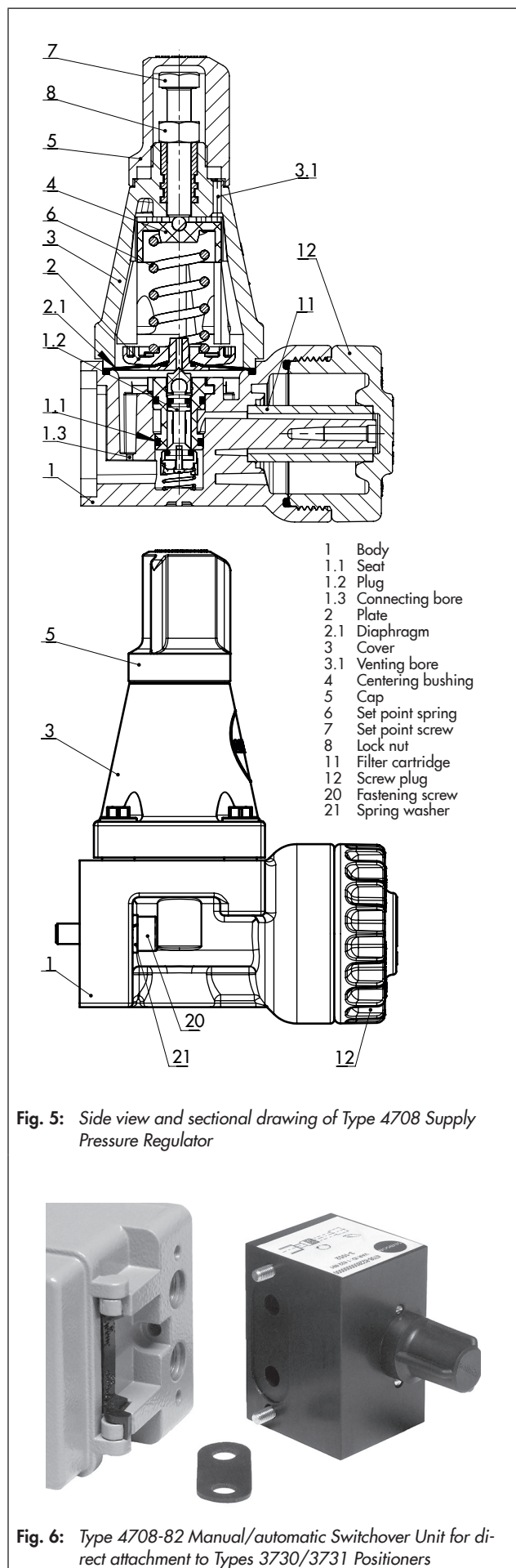


Fig. 5: Side view and sectional drawing of Type 4708 Supply Pressure Regulator

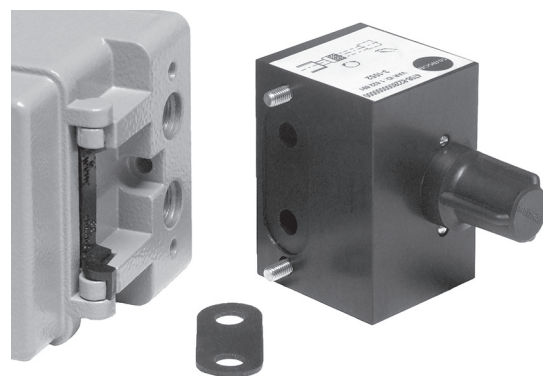


Fig. 6: Type 4708-82 Manual/automatic Switchover Unit for direct attachment to Types 3730/3731 Positioners

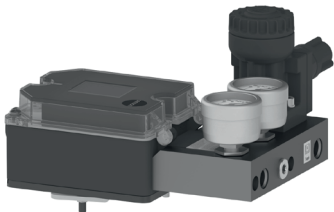




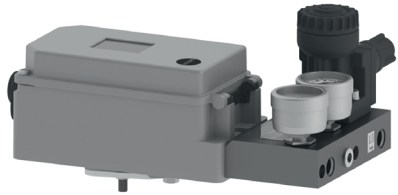
Selecting the supply pressure regulator


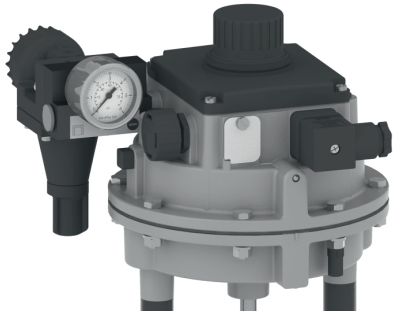
Positioner	Actuator	Mounting situation	Actuator area	Supply pressure regulator	
Type 3725	Type 3271	Attachment with hooked-up accessories (e.g. solenoid valve, pneumatic lock-up valve, Type 4708-82 Manual/automatic Switchover)	120 cm ²	Type 4708-55	
	175 cm ²		Type 4708-55		
	240 cm ²		Type 4708-55		
	350 cm ²		Type 4708-55		
	355 cm ²		Type 4708-55		
	700 cm ²		Types 4708-1x/-45 ¹⁾		
	750 cm ²		Types 4708-1x/-45 ¹⁾		
	Type 3277		Attachment without hooked-up accessories ²⁾ (e.g. solenoid valve, pneumatic lock-up valve, Type 4708-82 Manual/automatic Switchover)	120 cm ²	Type 4708-55
				175 cm ²	Type 4708-64
				240 cm ²	Type 4708-64
		350 cm ²		Type 4708-64	
	Type 3372		355 cm ²	Type 4708-64	
			700 cm ²	Type 4708-64	
	Rotary actuator		750 cm ²	Type 4708-64	
120 cm ²			Type 4708-55		
		350 cm ²	Type 4708-1x ¹⁾		
Type 3730 Type 3731 Type 3766 Type 3767	Type 3271	Attachment with hooked-up accessories (e.g. solenoid valve, pneumatic lock-up valve, Type 4708-82 Manual/automatic Switchover)	120 cm ²	Type 4708-53	
	175 cm ²		Type 4708-53		
	240 cm ²		Type 4708-53		
	350 cm ²		Type 4708-53		
	355 cm ²		Type 4708-53		
	700 cm ²		Type 4708-53		
	750 cm ²		Type 4708-53		
	Type 3277		Attachment without hooked-up accessories ²⁾ (e.g. solenoid valve, pneumatic lock-up valve, Type 4708-82 Manual/automatic Switchover)	120 cm ²	Type 4708-53
				175 cm ²	Type 4708-64
				240 cm ²	Type 4708-64
		350 cm ²		Type 4708-64	
	Type 3372		355 cm ²	Type 4708-64	
			700 cm ²	Type 4708-64	
	Rotary actuator		750 cm ²	Type 4708-64	
120 cm ²			Type 4708-53		
		350 cm ²	Type 4708-53		
Type 4763/65	Type 3271 ³⁾			Type 4708-55	

¹⁾ Supply pressure regulator mounted separately with hook-up

²⁾ Mounting block and pressure gauge are included in the scope of positioner delivery.

³⁾ Except with Type 3241 Valve, NPS 6

Positioner	For actuator/combination	Associated supply pressure regulator
Type 3725	Rotary actuators – Accessories (1400-7806) required – Also with Type 4708-82	Fig. 7: Type 4708-54xx 
	Type 3271: without any restrictions	Fig. 8: Type 4708-55xx  Pressure gauge bracket (1402-1515) required
	Type 3277 120 cm ² : without any restrictions	
	175 to 355 cm ² : with hooked-up accessories (solenoid valve, Type 3709-2 Lock-up Valve, Type 4708-82)	
	700 cm² and larger: Types 4708-1x/-45 Supply Pressure Regulators separately with hook-up	
Type 3372 120 cm ² : without any restrictions	Fig. 9: Type 4708-64xx 	
350 cm²: Types 4708-1x Supply Pressure Regulators separately with hook-up		
Type 3277 175 to 750 cm ² : without hooked-up accessories and without Type 4708-82 (mounting block and pressure gauge are included in the scope of positioner delivery)	Fig. 10: Type 4708-53xx 	
Type 3271: without any restrictions		
Type 3277 120 cm ² : without any restrictions		
175 to 750 cm ² : with hooked-up accessories (solenoid valve, Type 3709-2 Lock-up Valve, Type 4708-82)		
Type 3372: without any restrictions		
Type 3730 Type 3731 Type 376x	Type 3277 175 to 750 cm ² : without hooked-up accessories and without Type 4708-82 (mounting block and pressure gauge are included in the scope of positioner delivery)	Fig. 11: Type 4708-64xx 
	Rotary actuators – also with Type 4708-82 (not with Type 3709-1)	Fig. 12: Type 4708-54xx 
	Type 3730 – Version with external position sensor and fastening bracket for wall mounting	

Positioner	For actuator/combination	Associated supply pressure regulator
Type 4763 Type 4765	Type 3271 (except with Type 3241 Valve, NPS 6)	Fig. 13: Type 4708-55xx 
Integrated version	Type 3372-x5x1 (120 cm ²) – For Series V2001 Valves	Fig. 14: Type 4708-62xx 

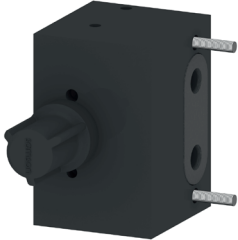


Universal supply pressure regulators and filters		
Manual/automatic switchover  Fig. 15: Type 4708-82	Filter with filter receptacle (for universal attachment with hook-up)  Fig. 16: Type 4708-8xxx, shown here: -83	Accessories: rotating supplementary filter for mounting onto supply pressure regulators  Fig. 17: Filter for Type 4708-53 and Types 4708-55 to 4708-64

Table 1: Technical data ¹⁾

Supply pressure regulator	Type 4708-xx	Type 4708-45
Supply pressure	1.6 to 12 bar (24 to 180 psi)	1 to 12 bar ²⁾ (15 to 180 psi)
Set point range	0.2 to 1.6 bar (3 to 24 psi) or 0.5 to 6 bar (8 to 90 psi)	
Air consumption at 7 bar supply pressure	≤0.05 m _n ³ /h	≤0.1 m _n ³ /h
Dependency on inlet pressure	< 0.01 bar/Δp = 1 bar	Negligible (< 10 mbar/4 bar)
Reversing error	0.1 to 0.4 bar (depending on set point)	50 mbar with set point range 0.5 to 6 bar (8 to 90 psi)
Hysteresis	< 0.1 bar	50 mbar with set point range 0.5 to 6 bar (8 to 90 psi)
Filter cartridge mesh size	20 μm · Optionally 5 μm	15 μm · Optionally 5 μm
Compliance	CE · EAC	
Pressure gauge		
Indicating range	0 to 1.6 bar (0 to 24 psi) or 0 to 6 bar (0 to 90 psi)	
Connection	G 1/8	
Degree of protection	IP 65	

¹⁾ Values measured for Type 4708-xx with 1/4" connection and for Type 4708-45 with 1/2" connection

²⁾ Recommendation: min. 1.0 bar (15 psi) above the adjusted set point

Table 2: Materials

Supply pressure regulator	Type 4708-xx	Type 4708-45
Body	Metal parts	Aluminum ¹⁾ (3.3547) or stainless steel (1.4404)
	Plastic parts	Polyamide, glass fiber reinforced
Cover	Polyamide, glass fiber reinforced	
Cap	Polyamide, glass fiber reinforced	
Plug	Polyamide, glass fiber reinforced and polyoxymethylene	1.4305 and polyoxymethylene
Diaphragm	NBR · FVMQ for low-temperature version	
Diaphragm plate	Polyamide, glass fiber reinforced or aluminum	
Set point spring	1.4310	
Filter receptacle ²⁾	UV-resistant polyamide (Grilamid TR90UV), aluminum (3.3547) or stainless steel (1.4404)	UV-resistant polyamide (Grilamid TR90UV), aluminum (3.3547) or stainless steel (1.4409)
Filter cartridge	20 μm: polypropylene · 5 μm: stainless steel	15 μm: polypropylene and polyethylene
Pressure gauge		
Body	Stainless steel	
Connection and measuring element	Nickel-plated brass or stainless steel for copper-free version	

¹⁾ Anodized

²⁾ See article code for material version

Table 3: Ambient temperature ranges

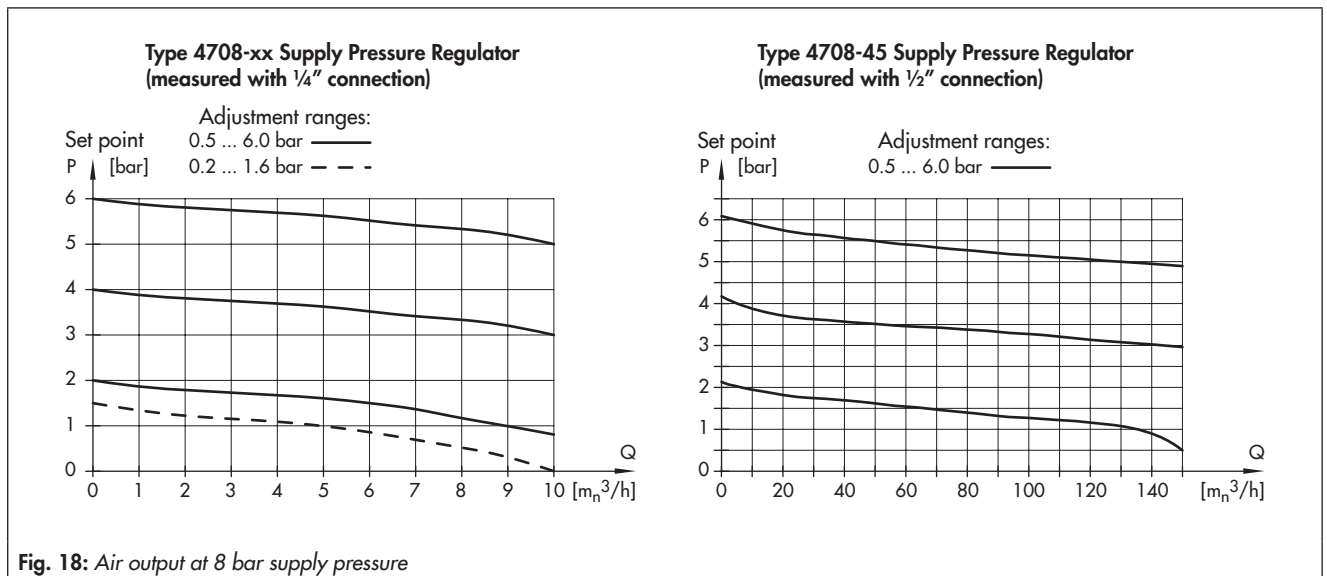
Type 4708-	10	11	12	13	14	17	45	53	54	55	62	64	82	83	84	86	87
Version for standard temperatures																	
-25 to +70 °C ¹⁾		•	•	•	•		•							•		•	
-25 to +80 °C	•					•		•	•	•	•	•	•		•		•
Low-temperature version																	
-40 to +80 °C												•					
-50 to +70 °C ¹⁾		•	•	•	•		•							•		•	
-50 to +80 °C	•					•		•	•	•	•		•		•		•

¹⁾ Applies also to rotating supplementary filter

Table 4: Weights

Type 4708-	10	11	12	13	14	17	45¹⁾	53	54	55	62	64	82	83	84	86	87
kg (approx.)	0.48	0.58	0.66	1.65	1.2	1.0	0.74	0.68	0.95	0.37	0.4	0.5	0.4	0.24	0.32	0.59	0.95

¹⁾ With aluminum body and polyamide filter receptacle



Article code

Supply pressure regulators	Type 4708-													
	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Standard version														
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle	1	0								0				
Aluminum mounted parts, plastic body, with transparent filter receptacle	1	1								0				
Completely of aluminum, no plastic parts	1	2								2				
Stainless steel version														
Completely of stainless steel, no plastic parts	1	3								3				
Stainless steel mounted parts, plastic body, with transparent filter receptacle	1	4								1				
Stainless steel mounted parts, plastic body, with filter, without separate filter receptacle	1	7								1				
Version for increased air capacity														
Aluminum or stainless steel body, plastic cover, transparent plastic or metal filter receptacle	4	5								2/3				
Version with adapter plate for positioners														
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle, for mounting onto Type 3730/3766/3767 Positioners	5	3								0				
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle, for mounting onto Type 3730/3766/3767 Positioners	5	4								0				
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle, for mounting onto Type 4763/4765 Positioners	5	5								0				
Version with adapter plate for pneumatic actuators														
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle, for mounting onto Type 3277 Actuators (240 to 700 cm ²) with Type 3730/3766/3767 Positioners	6	2								0				
Aluminum mounted parts, plastic body, with filter, without separate filter receptacle, for mounting onto Type 3277 Actuators (175 to 750 cm ²) with connection block	6	4								0				
Further versions														
Manual/automatic switchover	8	2								0/1				
Filter for compressed air, aluminum body, transparent plastic filter receptacle	8	3								0				
Filter for compressed air, aluminum body and filter receptacle	8	4								0				
Filter for compressed air, stainless steel body, transparent plastic filter receptacle	8	6								1				
Filter for compressed air, stainless steel body and filter receptacle	8	7								1				
Connecting thread														
ISO-228/1-G 1/4										2				
1/4-18 NPT										5				
ISO-228/1-G 1/2										6				
1/2-14 NPT										7				

Supply pressure regulators		Type 4708- x x x x x x x x x x x x x x															
Set point range																	
0.5 to 6.0 bar, without pressure gauge		0	0														
0.5 to 6.0 bar, with pressure gauge completely of stainless steel (device free of copper)		1	0														
0.5 to 6.0 bar, with pressure gauge (nickel-plated brass connection)		2	0														
0.2 to 1.6 bar, without pressure gauge		3	0														
0.2 to 1.6 bar, with pressure gauge completely of stainless steel (device free of copper)		4	0														
0.2 to 1.6 bar, with pressure gauge (nickel-plated brass connection)		5	0														
0.5 to 6.0 bar, with pressure gauge (nickel-plated brass connection, dial in MPa and kg/cm ³)		6	0														
Without		8	0														
No. of pressure gauges																	
Without								0									
One pressure gauge								1									
Two pressure gauges								2									
Material																	
Aluminum mounted parts (plastic cover)								0									
Stainless steel mounted parts (plastic cover)								1									
Aluminum mounted parts and cover								2									
Stainless steel mounted parts and cover								3									
Filter																	
Without									0								
In black plastic regulator body									1								
in transparent plastic receptacle (cannot be aligned)									2								
in aluminum receptacle (cannot be aligned)									3								
in stainless steel receptacle (cannot be aligned)									4								
Temperature range																	
-25 to +70 °C (standard)										0							
-40 to +70 °C										1							
-50 to +70 °C										2							
Application																	
Standard											0						
Device compatible with paint												1					
Exhaust port with thread													2				
Special version																	
Without														0	0	0	
Filter cartridge 5 µm															0	0	1
Pressure gauge connection 1/8 NPT																0	2
Special paint coating RAL 1019																	2

Fig. 19: Type 4708-54xx mounted onto Type 3725 Positioner

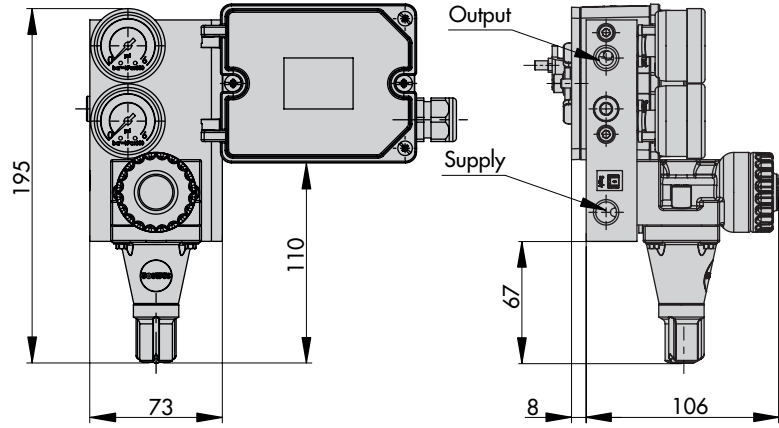


Fig. 20: Type 4708-53xx mounted onto Types 376x and 373x Positioners

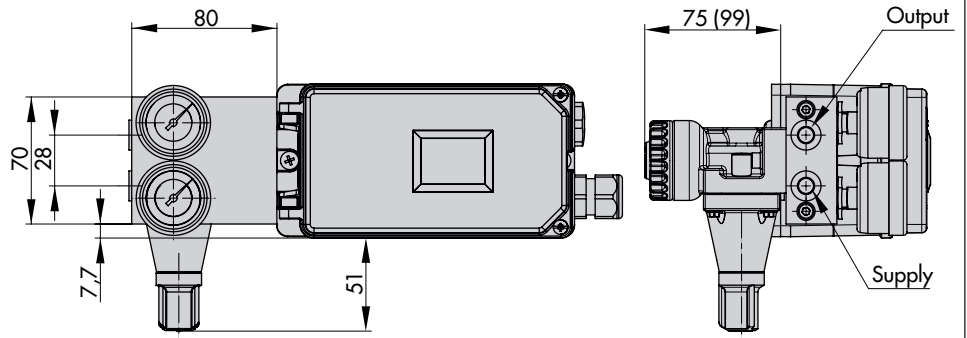


Fig. 21: Type 4708-54xx mounted onto Types 376x and 373x Positioners

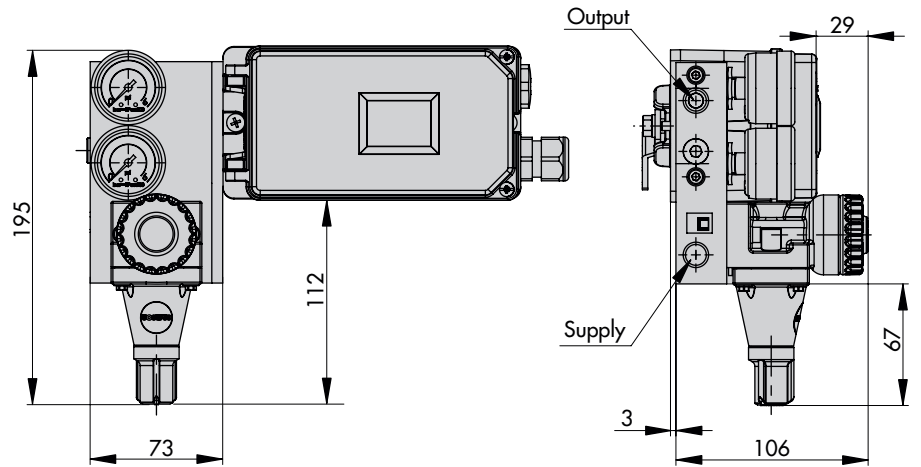


Fig. 22: Type 4708-55xx mounted onto Type 4763 or 4765 Positioner

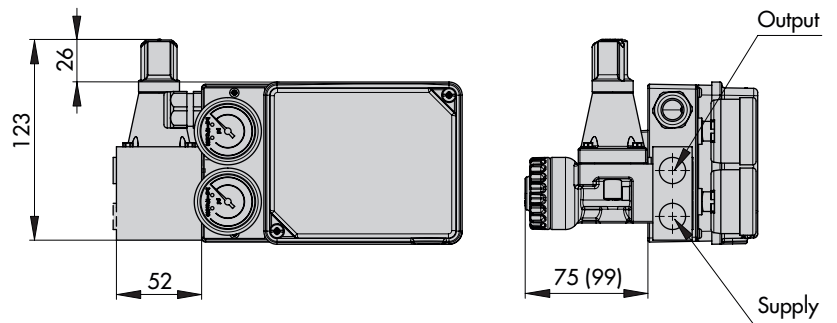


Fig. 23: Type 4708-64xx for Type 3277 Pneumatic Actuator and Type 376x or 373x Positioner

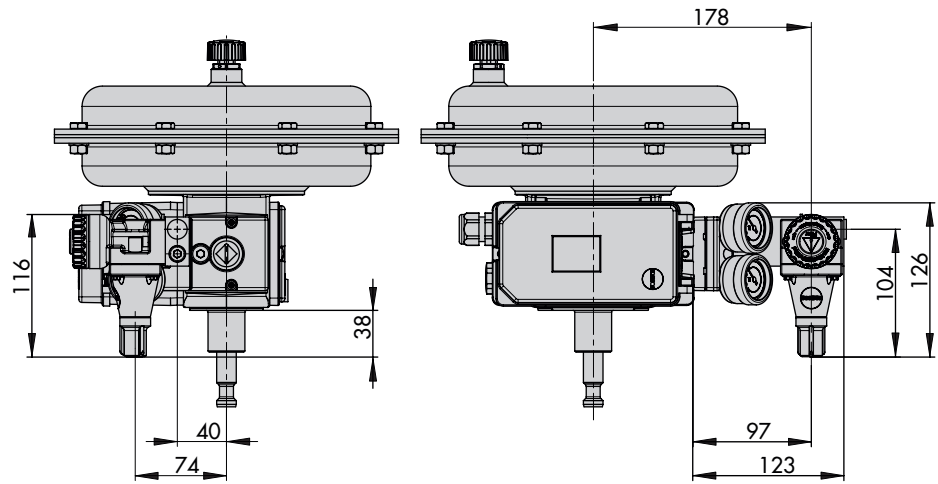


Fig. 24: Type 4708-64xx for Type 3277 Pneumatic Actuator and Type 3725 Positioner

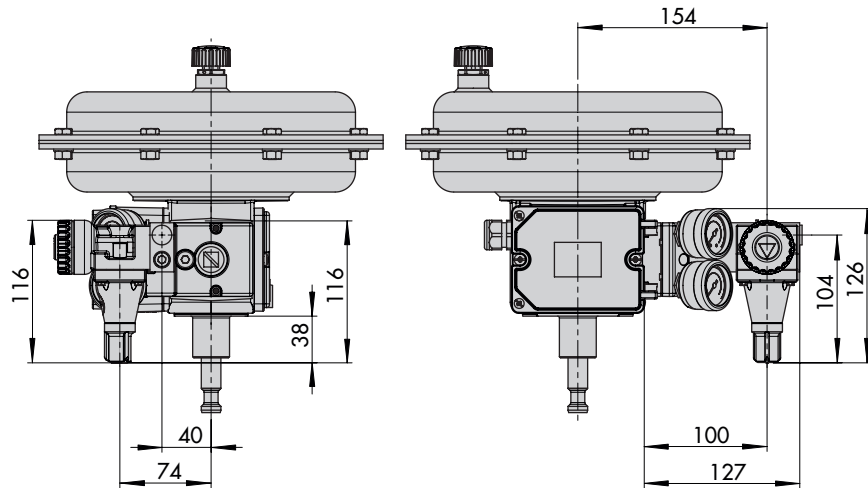
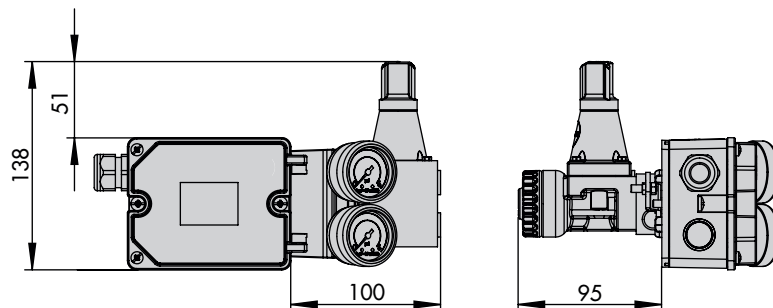


Fig. 25: Type 4708-55xx mounted onto Type 3725 Positioner



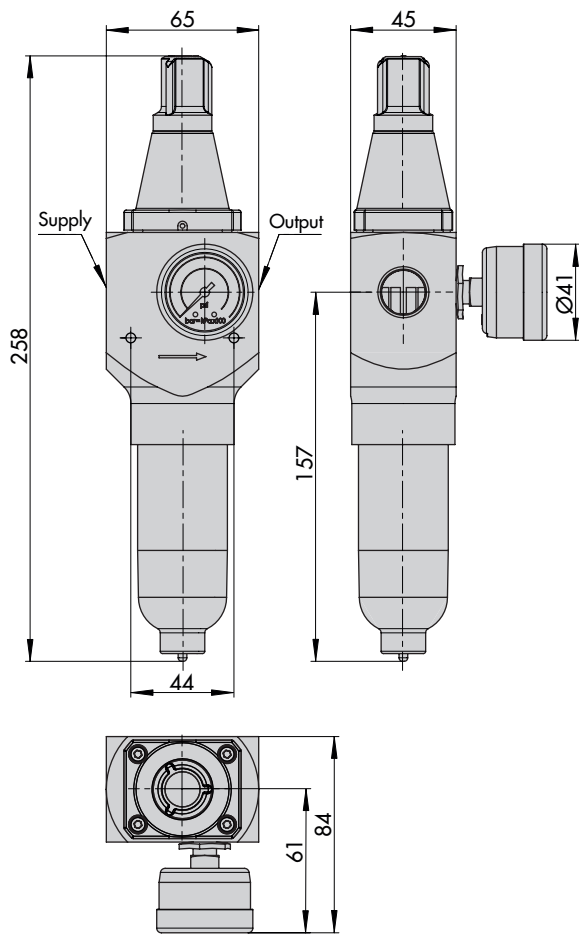


Fig. 26: Type 4708-45 Supply Pressure Regulator aluminum version

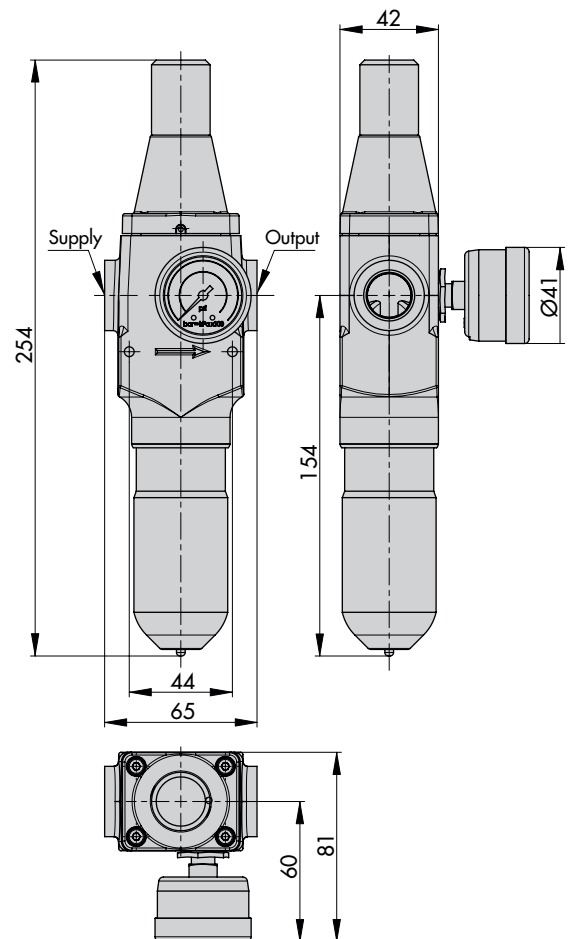


Fig. 27: Type 4708-45 Supply Pressure Regulator, stainless steel version

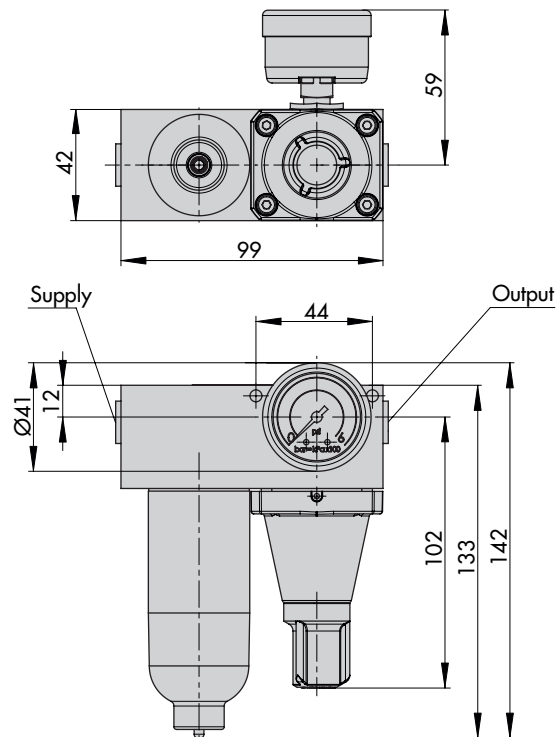


Fig. 28: Types 4708-12xx/-13xx Supply Pressure Regulators

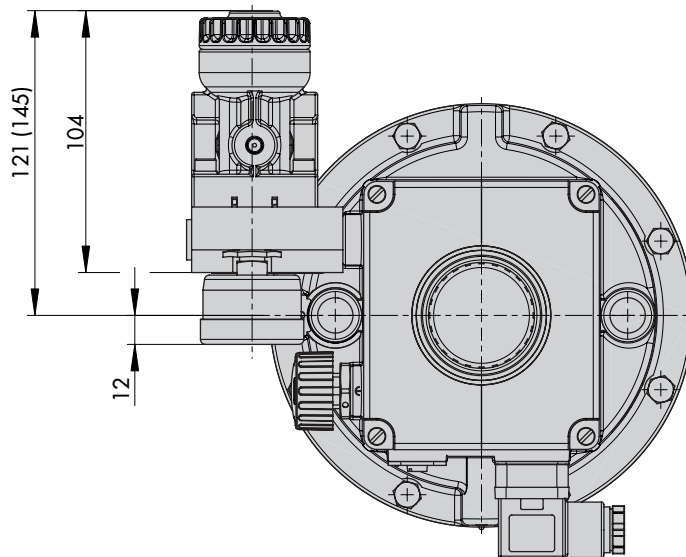
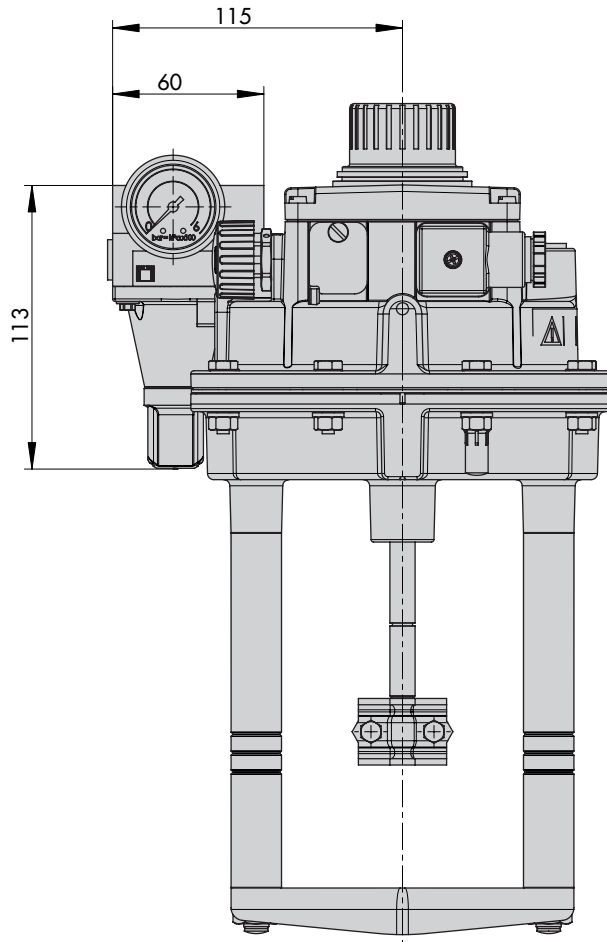


Fig. 29: Type 4708-62xx Supply Pressure Regulator for Type 3372 Pneumatic Actuator

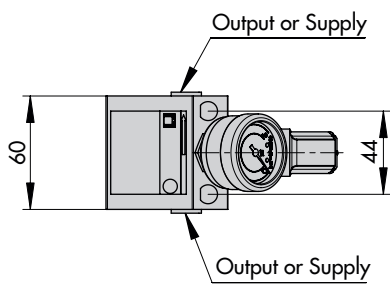
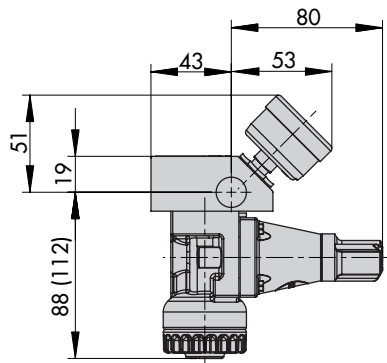


Fig. 30: Types 4708-10xx/-17xx Supply Pressure Regulators

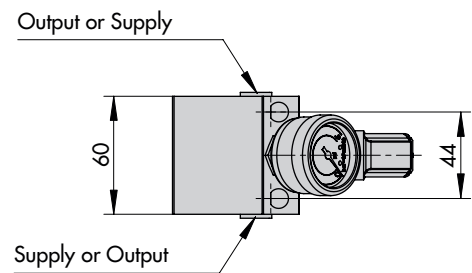
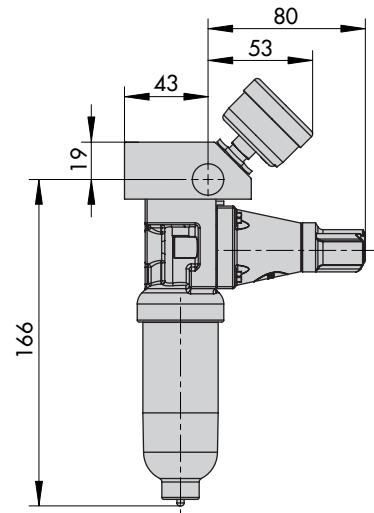


Fig. 31: Types 4708-11xx/14xx Supply Pressure Regulators

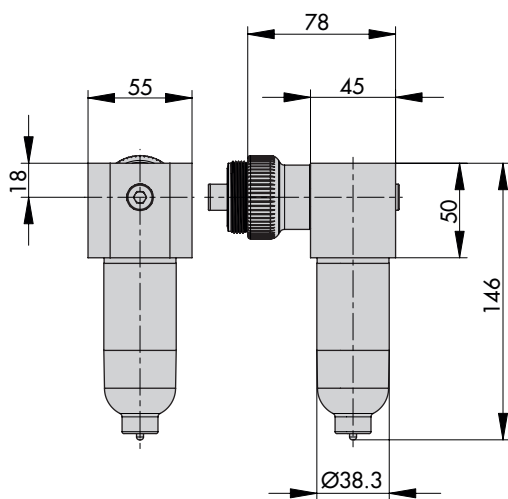


Fig. 32: Rotating filter receptacle

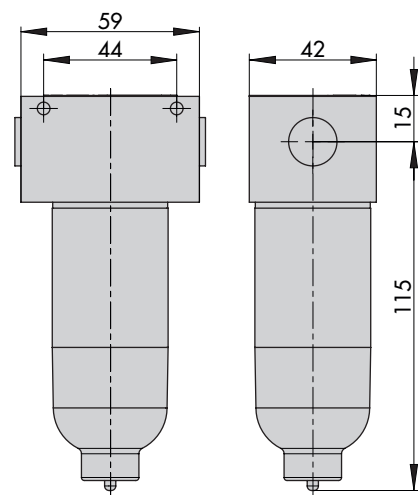


Fig. 33: Types 4708-83xx/-84xx/-86xx/-87xx Air Filter

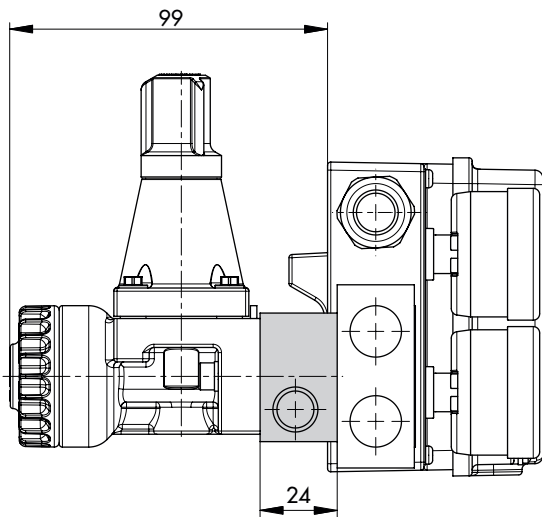


Fig. 34: Intermediate plate for additional compressed air shown here: Type 4708-55xx

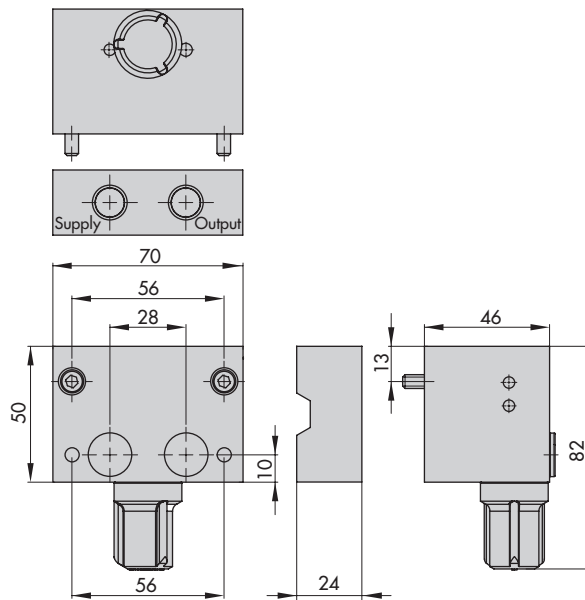


Fig. 35: Type 4708-82 Manual/automatic Switchover with adapter plate

Ordering text

- Supply pressure regulator according to article code

Accessories

For Types 4708-10 to -45 and Types 4708-81 to -87:

- Mounting parts for valve attachment or DIN rails according to EN 50022 or DIN rails according to DIN EN 50035

For Types 4708-10, -11, -14, -17, -53, -55:

- Intermediate plate for additional compressed air (G ¼ or ¼ NPT)

For Type 4708-53 and Types 4708-55 to -64:

- Rotating filter receptacle (see mounting and operating instructions for accessories)

For Type 4708-82:

- Adapter plate for freely configurable hook-up or NAMUR attachment (G ¼ or ¼ NPT)

Further information:

- ▶ EB 8546 for Type 4708-xx
- ▶ EB 8546-1 for Type 4708-45

