

Application

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

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
- Air filtering with venting option:
 - 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. 4) · Supply pressure regulators with optional set point range from 0.2 to 1.6 bar (3 to 23 psi)
Mounted on rails conforming with DIN EN 50022 or DIN EN 50035 with accessories or mounted using a universal bracket
- **Type 4708-45** (Fig. 5) · Supply pressure regulator with increased air capacity
- **Types 4708-53 to -55** (Fig. 1, Fig. 3) · 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

Further versions

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



Fig. 1: Type 4708-53

Fig. 2: Type 4708-64

Fig. 4: Type 4708-12

Fig. 3: Type 4708-54 attached onto TROVIS SAFE 3730-6 Positioner, mounted on a rotary actuator

Fig. 5: Type 4708-45, body made of aluminum (left) and stainless steel (right)

Principle of operation (Fig. 6)

The Type 4708 Supply Pressure Regulator operates according to the force-balance principle. By turning the set point screw (7), the tension of the 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 3 and page 4).

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 $\frac{1}{4}$ -18 NPT or G $\frac{1}{4}$ threads, depending on the version, or G $\frac{1}{2}$ or $\frac{1}{2}$ -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. 7) 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).

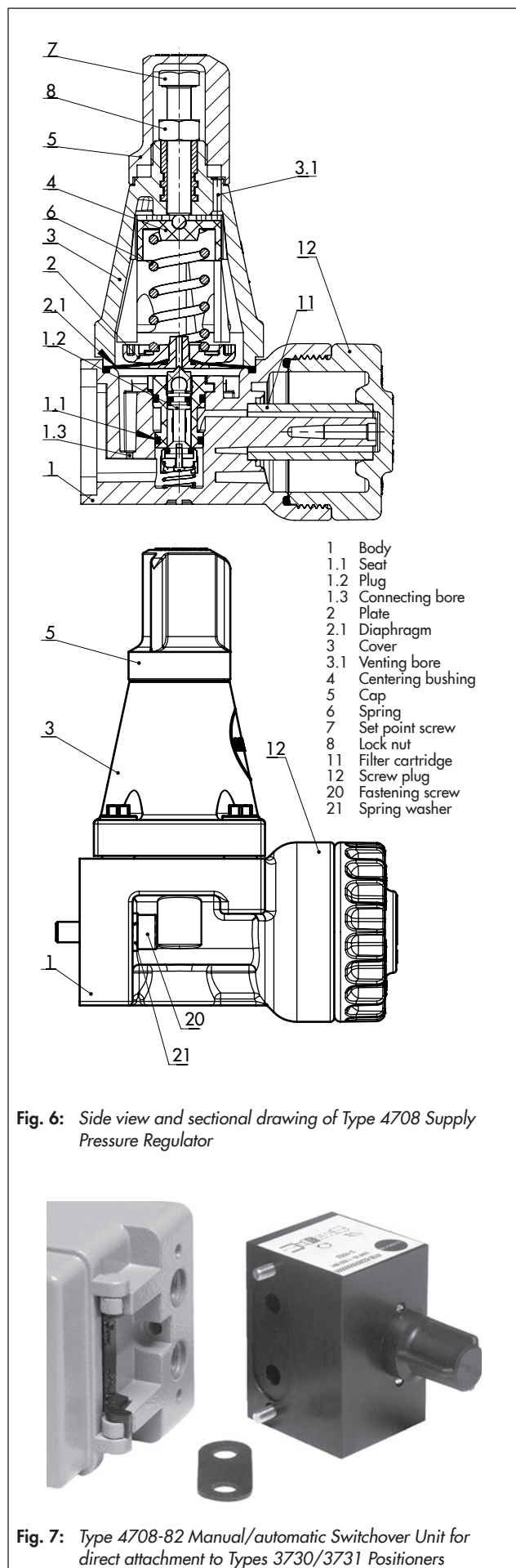
Accessories

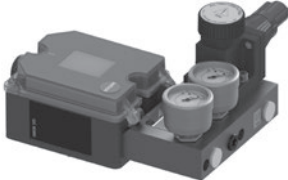







An additional filter (Fig. 18, page 4) can be fitted on Type 4708-53 and Types 4708-55 to -63. The filter housing can be rotated 360° to ensure that the filter and condensate drainage always face downwards.






Tip:

If the regulator is connected to supply networks carrying air that contains dust, oil or condensate, we recommend using SAMSOMATIC service units for compressed air treatment. See Information Sheet ► T 8350.



Positioners	For actuator	Associated supply pressure regulator
Type 3725	Rotary actuators – Accessories (1400-7806) required – Also with Type 4708-82	Fig. 8: Type 4708-54xx 
	→ Pressure gauge bracket (1402-1515) required Type 3271 (120 cm ²) Type 3277 (120 cm ²) – with hooked-up accessories (solenoid valve, Type 3709-2 Lock-up Valve) – Also with Type 4708-82 Type 3372 (120 cm ²)	Fig. 9: Type 4708-55xx 
	Type 3277 (120 cm ²) – without any hooked-up accessories and without manual/automatic switchover – Type 4708-82 (mounting block and pressure gauge are included in the scope of positioner delivery)	Fig. 10: Type 4708-64xx 
Type 3730 Type 3731 Type 376x	Type 3271 (120 cm ²) Type 3277 (120 cm ²) – with hooked-up accessories (solenoid valve, Type 3709-2 Lock-up Valve) – Also with Type 4708-82 Type 3372 (120 cm ²)	Fig. 11: Type 4708-53xx 
	Rotary actuators – also with Type 4708-82 (not with Type 3709-1)	Fig. 12: Type 4708-54xx 
	Type 3277 – 240 to 700 cm ² – without any hooked-up accessories and without manual/automatic switchover – Type 4708-82 (mounting block and pressure gauge are included in the scope of positioner delivery)	Fig. 13: Type 4708-64xx 
Type 4763 Type 4765	Type 3271 (except with Type 3241 Valve, NPS 6)	Fig. 14: Type 4708-55xx 
Version for integral attachment	Type 3372 -x5x1 – for Series V2001 Valves	Fig. 15: Type 4708-62xx 

Universal supply pressure regulators and filters	Type
Manual/automatic switchover	<p data-bbox="735 192 946 224">Fig. 16: Type 4708-82</p> 
Filter with filter receptacle – for universal attachment with piping	<p data-bbox="735 398 970 474">Fig. 17: Type 4708-8xxx shown here: -83, -87</p> 
Accessories – Rotating supplementary filter for mounting on supply pressure regulators	<p data-bbox="735 658 1066 712">Fig. 18: Filter for Type 4708-53 and Types 4708-55 to 4708-63</p> 

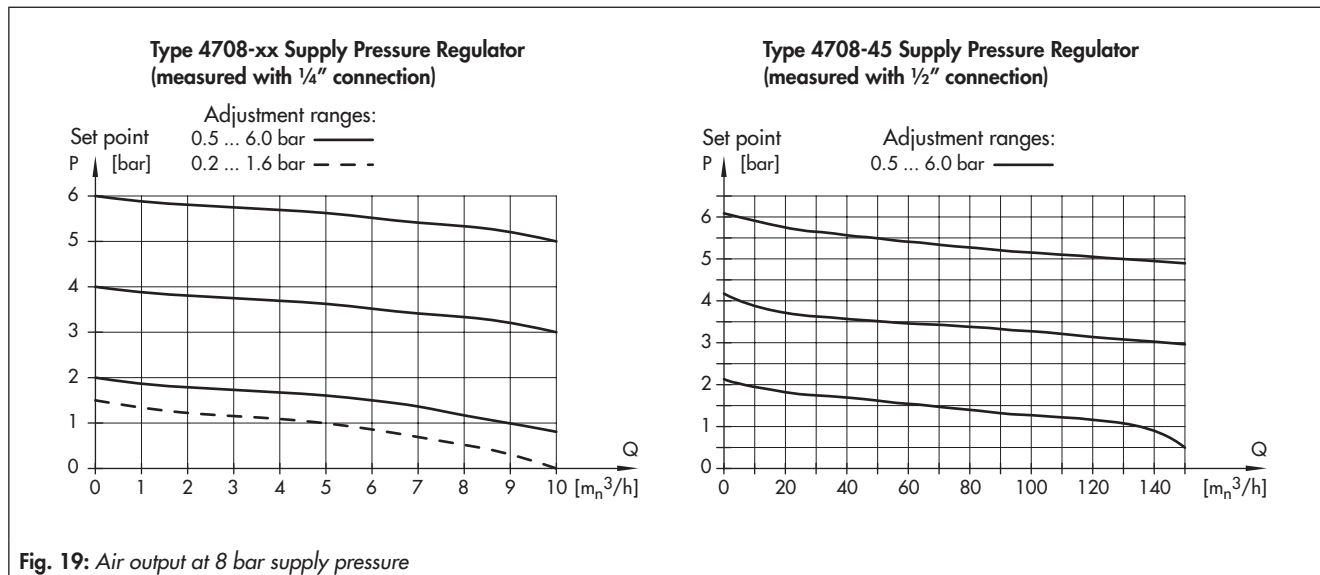


Table 1: Technical data ¹⁾

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
Pressure gauges		
Indicating range	0 to 1.6 bar (0 to 24 psi) or 0 to 6 bar (0 to 90 psi)	
Connection	G 1/8	

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

Ambient temperature ranges																		
Type 4708		-10	-11	-12	-13	-14	-17	-45	-53	-54	-55	-62	-64	-82	-83	-84	-86	-87
Standard	-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	•					•		•	•	•	•		•		•		•

Weights																		
Type 4708		-10	-11	-12	-13	-14	-17	-45 ²⁾	-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⁾ Applies also to rotating supplementary filter

²⁾ With aluminum body and polyamide filter receptacle

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	UV-resistant polyamide (Grilamid TR90UV)		
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

Dimensions in mm · Specifications in parentheses apply to additional compressed air connection (Fig. 34)

Fig. 20: (photo: Fig. 8) Type 4708-54xx Supply Pressure Regulator attached to Type 3725 Positioner

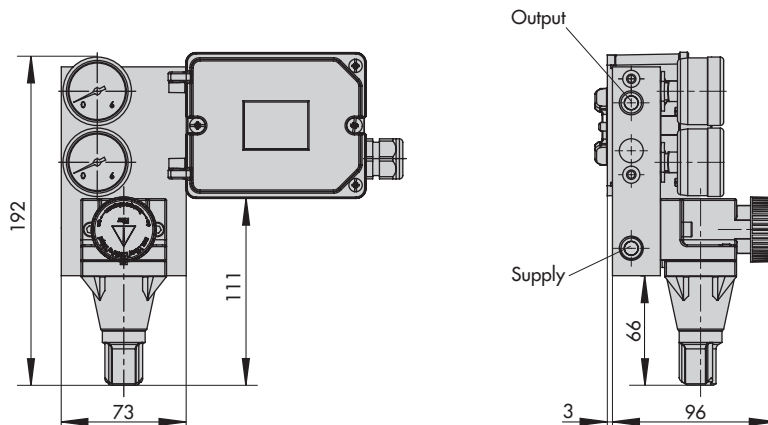


Fig. 21: (photo: Fig. 11) Type 4708-53xx Supply Pressure Regulator attached to Type 376x or 373x Positioner

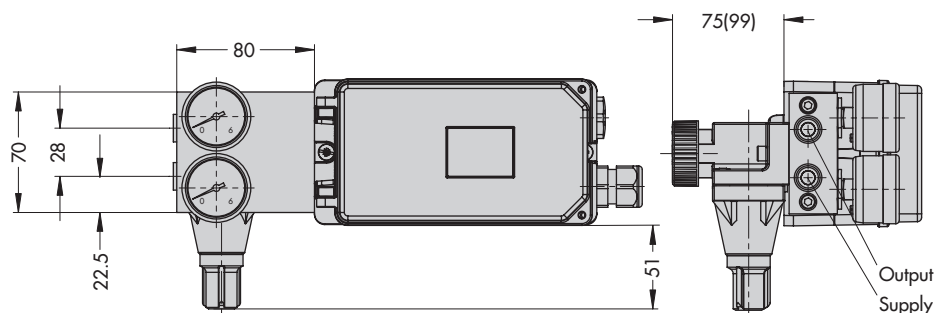


Fig. 22: (photo: Fig. 12) Type 4708-54xx Supply Pressure Regulator attached to Type 376x or 373x Positioner

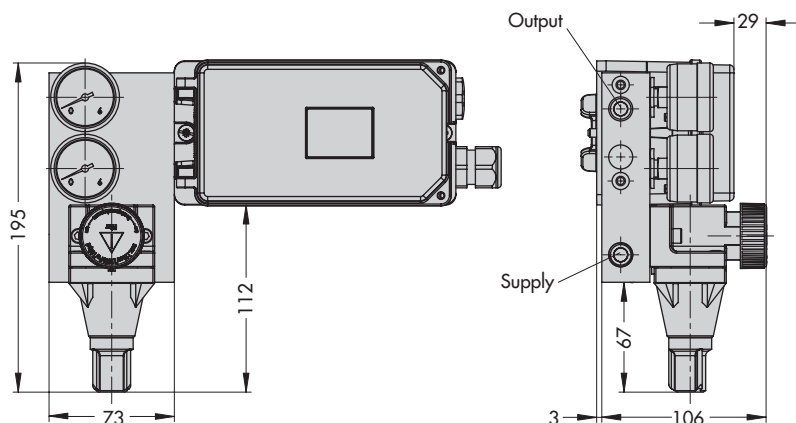


Fig. 23: (photo: Fig. 14) Type 4708-55xx Supply Pressure Regulator attached to Type 4763 or 4765 Positioner

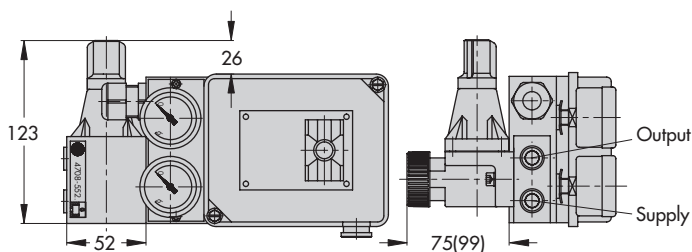


Fig. 24: (photo: Fig. 13) Type 4708-64xx Supply Pressure Regulator for Type 3277 Pneumatic Actuator and Type 376x or 373x Positioner

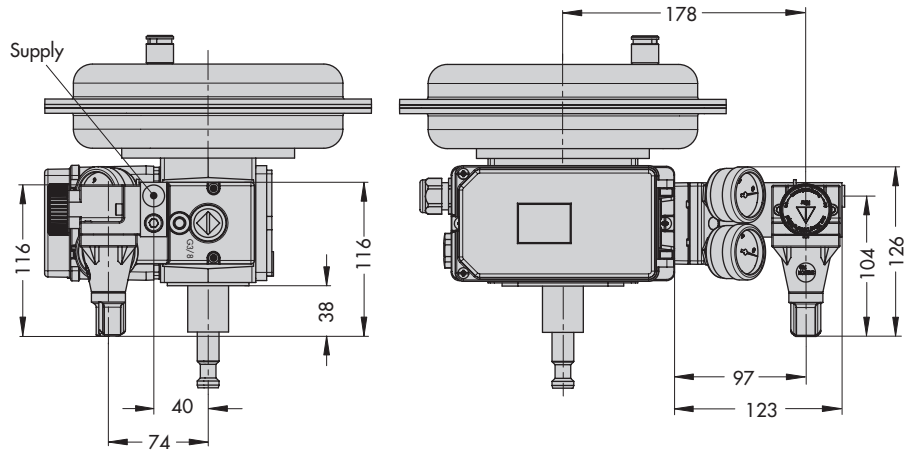


Fig. 25: (photo: Fig. 10) Type 4708-64xx Supply Pressure Regulator for Type 3277 Pneumatic Actuator and Type 3725 Positioner

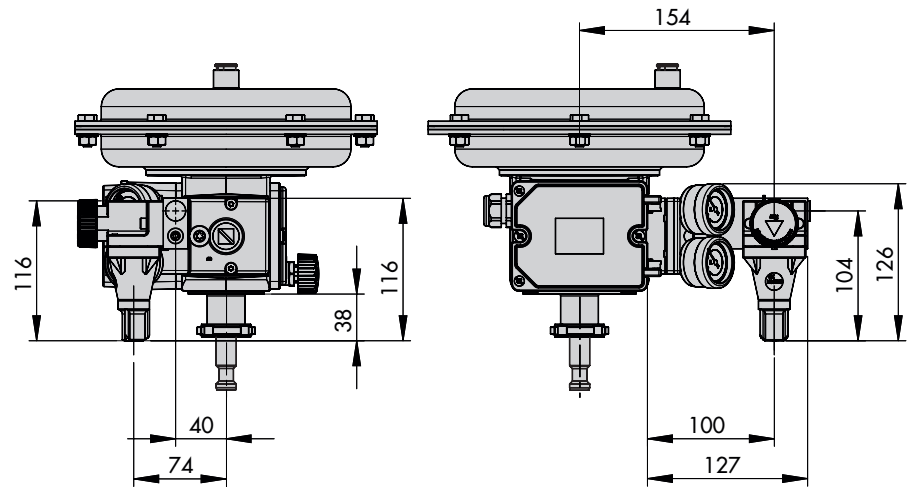
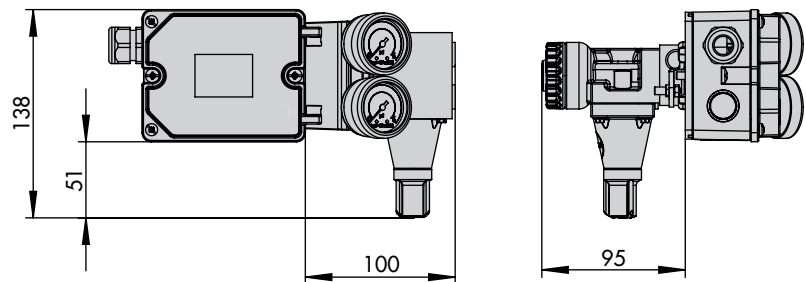


Fig. 26: (photo: Fig. 9) Type 4708-55xx Supply Pressure Regulator attached to Type 3725 Positioner



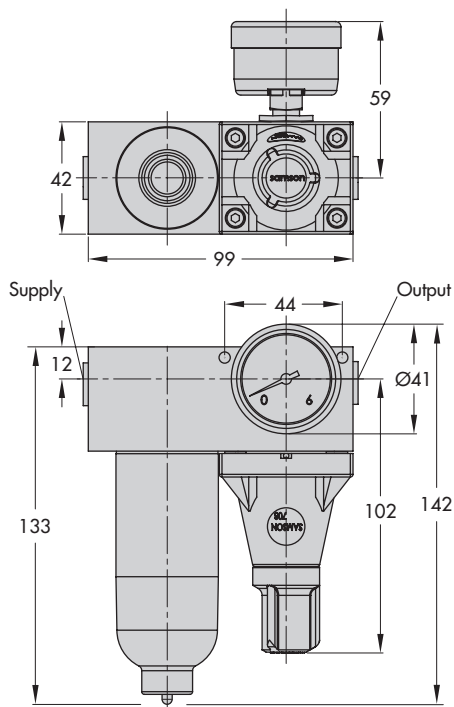


Fig. 27: (photo: Fig. 4) Types 4708-12xx/-13xx Supply Pressure Regulator

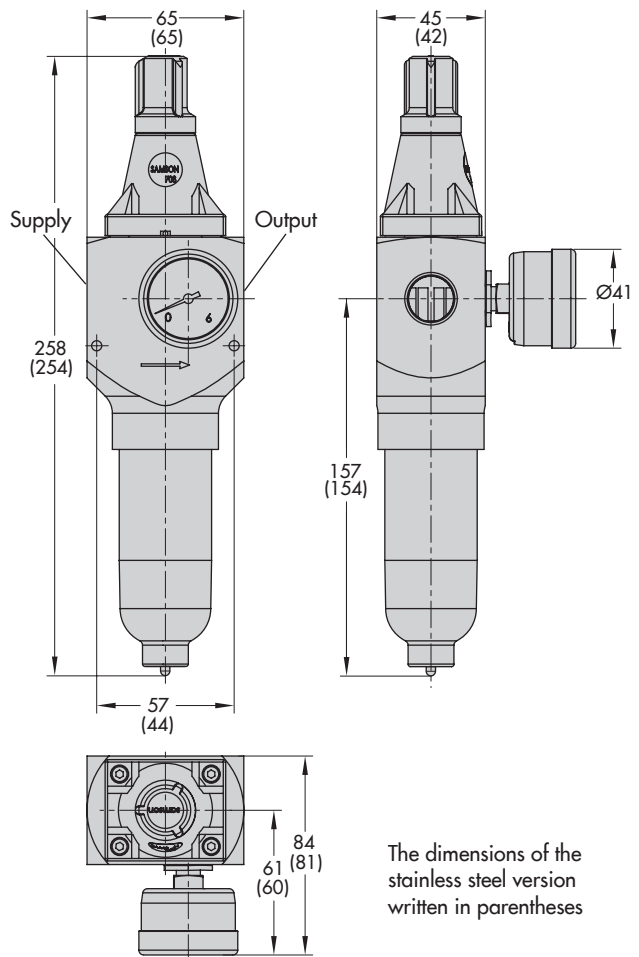


Fig. 28: (photo: Fig. 5) Type 4708-45 Supply Pressure Regulator

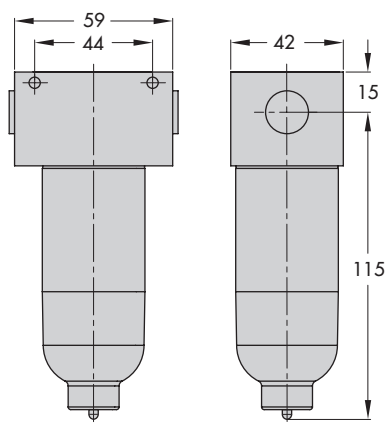


Fig. 29: (photo: Fig. 17) Types 4708-83xx/-84xx/-86xx/-87xx Filter

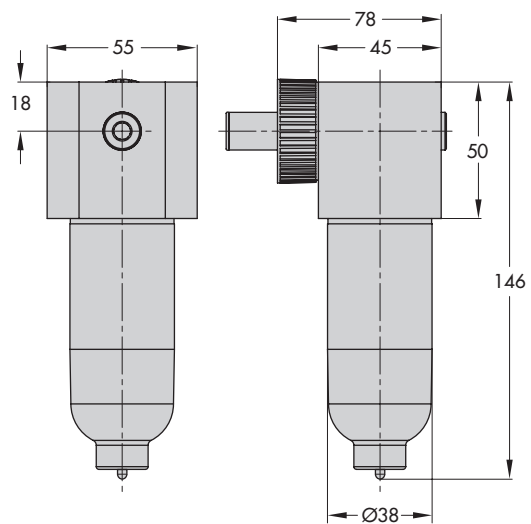


Fig. 30: (photo: Fig. 18) rotatable filter receptacle

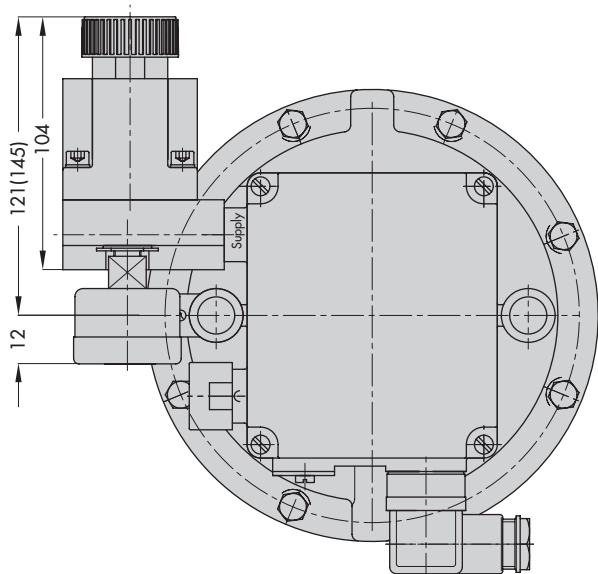
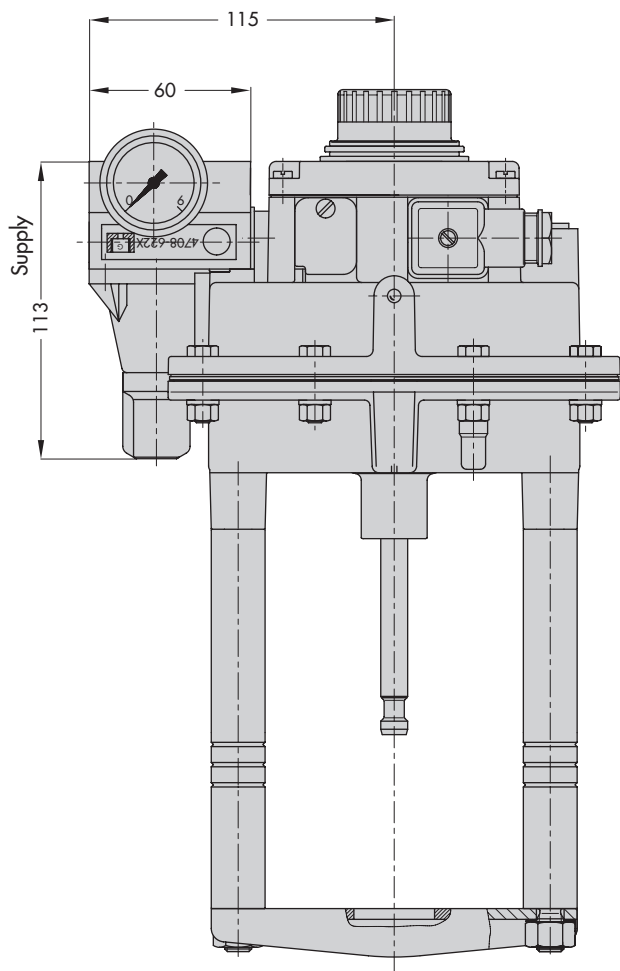


Fig. 32: (photo: Fig. 15) Type 4708-62xx Supply Pressure Regulator for Type 3372 Pneumatic Actuator

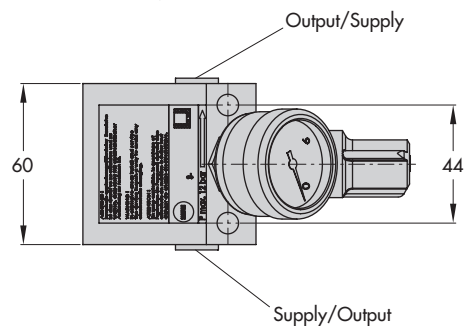
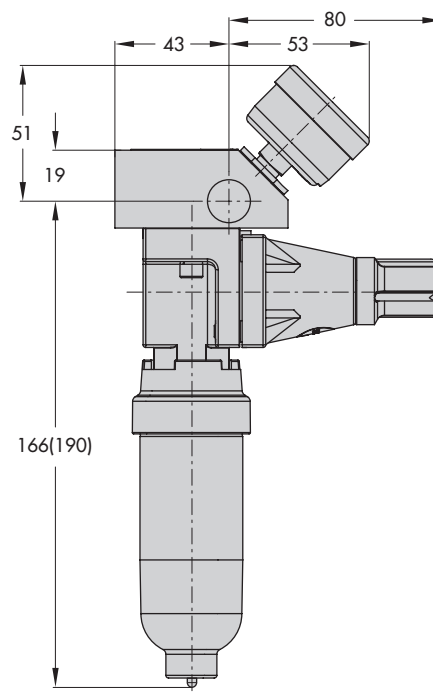


Fig. 31: Types 4708-11xx/14xx Supply Pressure Regulators

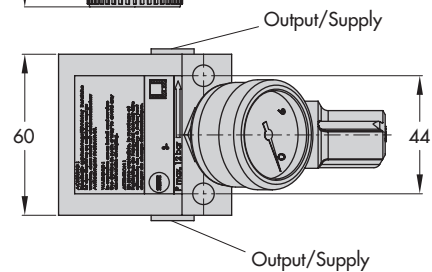
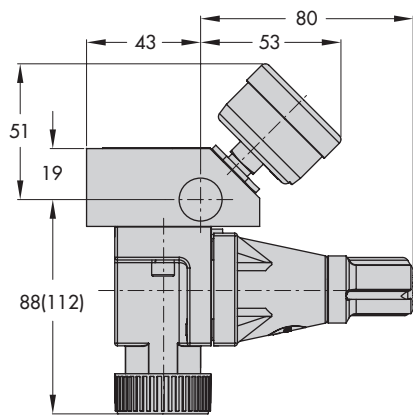


Fig. 33: Types 4708-10xx/-17xx Supply Pressure Regulators

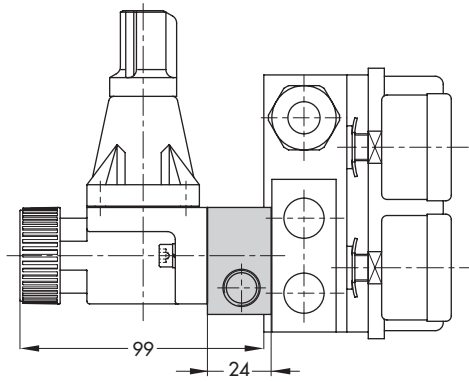


Fig. 34: Intermediate plate for additional compressed air shown here: Type 4708-55xx

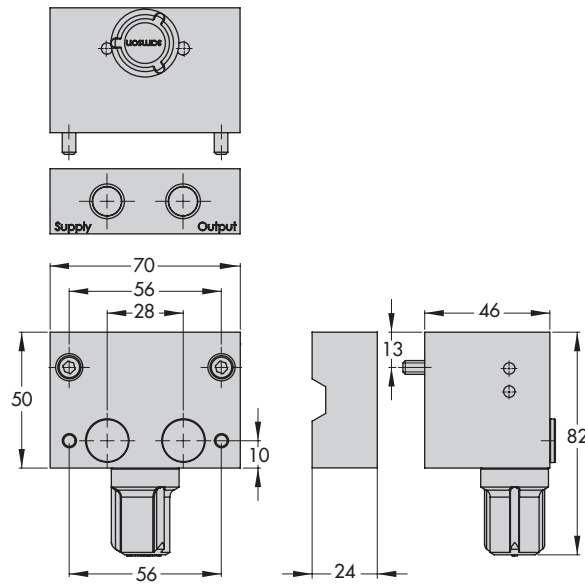


Fig. 35: (photo: Fig. 16) Type 4708-82 Manual/automatic Switchover with adapter plate

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 1/4 or 1/4 NPT)

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

- Rotatable filter receptacle

For Type 4708-82:

- Adapter plate for freely configurable hook-up or NAMUR attachment (G 1/4 or 1/4 NPT)

Further information:

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

Article code

Supply pressure regulator	Type 4708-	x	x	x	x	0	x	x	x	x	x	0	0	x
Standard version														
Aluminum filter without filter receptacle		1	0	2	5		0	1	0	1				
with plastic filter receptacle		1	1	2	5		0	1	0	2				
with aluminum filter receptacle		1	2	2	5		0	1	0	3				
Stainless steel version														
Stainless steel filter with stainless steel filter receptacle		1	3	2	5		0	1	1	4				
with plastic filter receptacle		1	4	2	5		0	1	1	2				
without filter receptacle		1	7	2	5		0	1	1	1				
Version with increased air capacity														
Aluminum or stainless steel body, transparent plastic filter receptacle, aluminum or stainless steel		4	5	6	7	0	1	0	1	2				
Supply pressure regulator with adapter plate for positioner														
Types 3730, 3766, 3767		5	3	2	5	1	2	0	1					
Types 3730, 3766, 3767		5	4	2	5	1	2	0	1					
Type 4763/4765		5	5	2	5	0	0	0	1					
Supply pressure regulator with adapter plate for pneumatic actuator														
Type 3277 (240 to 700 cm ²) with Type 3730, 3766, or 3767 Positioner, Type 3372 Actuator		6	2	2	5	1	1	0	1					
Type 3277 Actuator with connection block		6	4	2	5	0	0	0	1					
Manual/automatic switchover														
Bypass for positioner		8	2	2	5	8	0	0	0		0			0
Filter without pressure gauge														
Aluminum body and plastic filter receptacle		8	3	2	5	8	0	0	2					
Aluminum body and aluminum filter receptacle		8	4	2	5	8	0	0	3					
Stainless steel body and plastic filter receptacle		8	6	2	5	8	0	1	2					
Stainless steel body and stainless steel filter receptacle		8	7	2	5	8	0	1	4					

Supply pressure regulator	Type 4708-														
	x	x	x	x	0	x	x	x	x	x	0	0	x		
Connecting thread															
ISO-228/1 - G ¼			2												
¼-18 NPT			5												
ISO-228/1 - G ½			6												
½-14 NPT			7												
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 CrNiMo 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 CrNiMo 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 ²)				6	0										
Without				8	0										
No. of pressure gauges															
Without						0									
One pressure gauge						1									
Two pressure gauges						2									
Body material															
Aluminum							0								
Stainless steel							1								
Filter															
Without								0							
in black plastic regulator housing								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	6	4							1						
-50 to +70 °C									2						
Application															
Standard										0					
Free of substances that impair paint adhesion										1					
Exhaust port with thread	1	2													
	1	3								2					
	4	5													
Special version															
Without											0	0	0		
Filter cartridge, 5 µm mesh width											0	0	1		

Specifications subject to change without notice



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