

# Type 4708-45 Pressure Regulator

for increased air capacity



Fig. 1: *Type 4708-45 Pressure Regulator*

## Mounting and Operating Instructions

**EB 8546-1 EN**

Edition March 2010

## Definition of the signal words used in these mounting and operating instructions



### **DANGER!**

*indicates a hazardous situation which, if not avoided, will result in death or serious injury.*



### **WARNING!**

*indicates a hazardous situation which, if not avoided, could result in death or serious injury.*



### **NOTICE**

*indicates a property damage message.*



### **Note:**

*Supplementary explanations, information and tips*

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**Note:**

*These Mounting and Operating Instructions **EB 8546-1 EN** apply exclusively to Type 4708-45 Supply Pressure Regulator. For details on other Type **4708-xx** Supply Pressure Regulators ► **EB 8546 EN**.*

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## 1 General safety instructions

For your own safety, follow these instructions concerning the mounting, start up and operation of the device:

- The device is to be assembled, started up or operated only by trained and experienced personnel familiar with the product.

According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

To avoid damage to any equipment, the following also applies:

- Proper shipping and storage are assumed.

## 2 Design and principle of operation

The supply pressure regulator is used to supply pneumatic measuring and control equipment with a constant air supply. The maximum 12 bar pressure of the compressed air network in a plant is reduced to an adjustable minimum pressure of 0.5 to 6 bar.

The compressed air at the inlet (supply) flows across the filter and leaves the output with a reduced pressure depending on the set point

adjusted. The plug is balanced to eliminate the forces created by the upstream pressure acting on the plug.

Any water contained in the compressed air is separated and collected as condensate in the filter receptacle, which must be mounted suspended downwards. The collected condensate in the filter receptacle can be drained off by briefly pushing the drain plug.

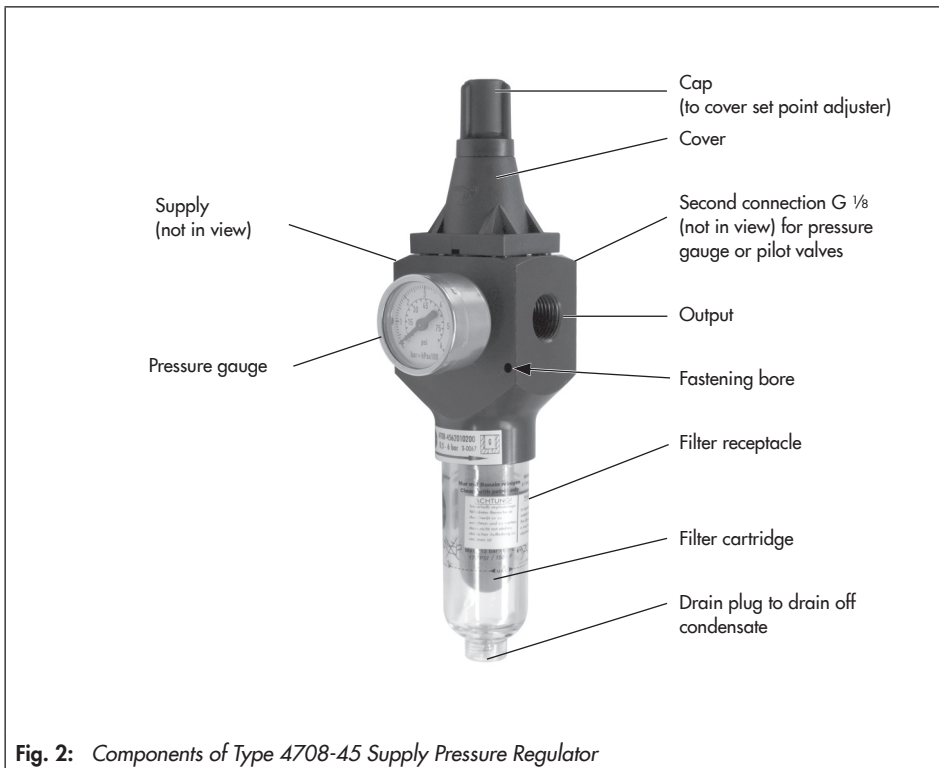


Fig. 2: Components of Type 4708-45 Supply Pressure Regulator

## 2.1 Article code and versions

The supply pressure regulator is available with an aluminum or stainless steel body and a transparent plastic or metal filter receptacle.

The filter cartridge installed has a mesh size of 15 µm.

Supply pressure regulator	Type 4708-45	x	x	0	x	x	x	x	x	0	0	x
Connecting thread												
ISO-228/1 - G ½	6											
½-14 NPT	7											
Set point range												
0.5 to 6 bar, without pressure gauge	0											
0.5 to 6 bar, with pressure gauge completely of CrNiMo steel (device free of copper)	1											
0.5 to 6 bar, with pressure gauge (nickel-plated brass connection)	2											
No. of pressure gauges												
One pressure gauge				2								
Body material												
Aluminum (3.2315)					0							
Stainless steel (1.4404)					1							
Filter												
in transparent plastic receptacle						2						
in aluminum receptacle						3						
in stainless steel receptacle						4						
Temperature range												
-25 to 70 °C (standard)							0					
-50 to 70 °C, version for low temperatures							2					
Application												
Standard								0				
Version compatible with paint								0	1			
Special version												
Without										0	0	0

## 2.2 Technical data

Supply pressure regulator	Type 4708-45
Supply pressure	At least 1 bar (15 psi) above the adjusted set point
Maximum supply pressure	12 bar (180 psi)
Set point range	0.5 to 6 bar / 8 to 90 psi
Air consumption	$\leq 0.1 \text{ m}_n^3/\text{h}$ (with 7 bar supply air)
Permissible ambient temperature	-25 to 70 °C
Low-temperature version	-50 to 70 °C
Dependency on inlet pressure	Negligible (< 10 mbar/4 bar)
Reversing error	50 mbar with set point range 0.5 to 6 bar (8 to 90 psi)
Hysteresis	50 mbar with set point range 0.5 to 6 bar (8 to 90 psi)
Filter cartridge mesh size	15 $\mu\text{m}$
Pressure gauge	
Reading range	0 to 6 bar/0 to 90 psi
Connection	G 1/8
Weight	
Approx.	0.74 kg for aluminum body and polyamide filter receptacle
Materials	
Body	Aluminum (3.2315) or stainless steel (1.4404)
Plastic parts (cover, cap)	Polyamide, glass fiber reinforced
Plug	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 (Trogamid T5004)
Filter cartridge	Polypropylene and polyethylene
Pressure gauge	
Body	Stainless steel
Connection and measuring element	Nickel-plated brass or stainless steel for copper-free version



### 3 Mounting the supply pressure regulator

To prevent excessive amounts of condensed water from collecting, the distance between the compressor and supply pressure regulator should be kept as short as possible.

Install the regulator directly in the pipe of the air supply. If necessary, the regulator can be attached to a rail or bracket using the two fastening bores (see section 8).

The prescribed direction of flow is indicated by an arrow.

Depending on how the regulator is installed in the pipe, it may be necessary to mount the pressure gauge at the back of the supply pressure regulator (see section 4.1).

### 4 Pneumatic connections

The air connections are designed either with ISO-228/1 - G ½ or ½-14 NPT threads.

As shown in Fig. 2, the supply port is marked SUPPLY and the output port OUTPUT.

The second pressure gauge on the back of the regulator can be used to additionally supply pilot valves with a constant supply pressure. This connection at the back has a G ⅛ thread.

#### 4.1 Pressure gauge

When attaching the pressure gauge, make sure that the gap between the lock nut and pressure gauge's square end is not smaller than 2 to 3 mm.

If the pressure gauge is to be mounted on the back of the regulator, first remove the stopper (hexagon socket head screw G ⅛) and screw

it into the unoccupied pressure gauge connection at the front to seal it.

### 5 Set point adjustment (see Fig. 2)

Unscrew the cap and adjust the set point of the regulator at the set point screw:

Turn the screw clockwise to increase the set point and turn it counterclockwise to reduce the set point.

Use the lock nut to secure the setting.

### 6 Maintenance (see Fig. 2)

We recommend to check the filter as often as possible. The maximum level of the condensate must remain below the filter cartridge. If too much condensate collects, it may enter the filter cartridge.

Push the drain plug to drain off the condensate.



**Note:**

*In case of malfunction, e.g. due to a drop in pressure, unscrew the filter receptacle and replace the filter cartridge with a new one.*

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## 7 Troubleshooting

- Leakage between supply pressure regulator and pneumatic connections
  - ➔ Check the pipe fittings are fitted properly.
  
- Leakage between supply pressure regulator and filter receptacle
  - ➔ Make sure that the filter receptacle is attached properly.
  
- Leakage at the drain plug
  - ➔ Check the drain plug for dirt and clean or replace the filter receptacle, if necessary.
  
- Air capacity drops and the output pressure drops
  - ➔ Check the filter cartridge for dirt and clean or replace it, if necessary.
  - ➔ Check the set point adjustment.

## 8 Accessories/spare parts

Article	Order no.
Filter cartridge 15 µm	8504-0068
Filter cartridge 5 µm	8504-9040
Filter receptacle, plastic	1199-0423
Filter receptacle, aluminum	1199-0424
Filter receptacle, stainless steel	1199-0425
Filter receptacle compatible with paint on request	
Filter receptacle seal (in the body)	8421-0101
Stopper (hex socket G 1/8)	0079-0100
Pressure gauge Stainless steel	0089-0009
Brass/stainless steel	0089-0018
Pressure gauge seal	1099-4305
Mounting bracket for Type 3271/3277 Actuator	1400-7343

## 9 Dimensions in mm

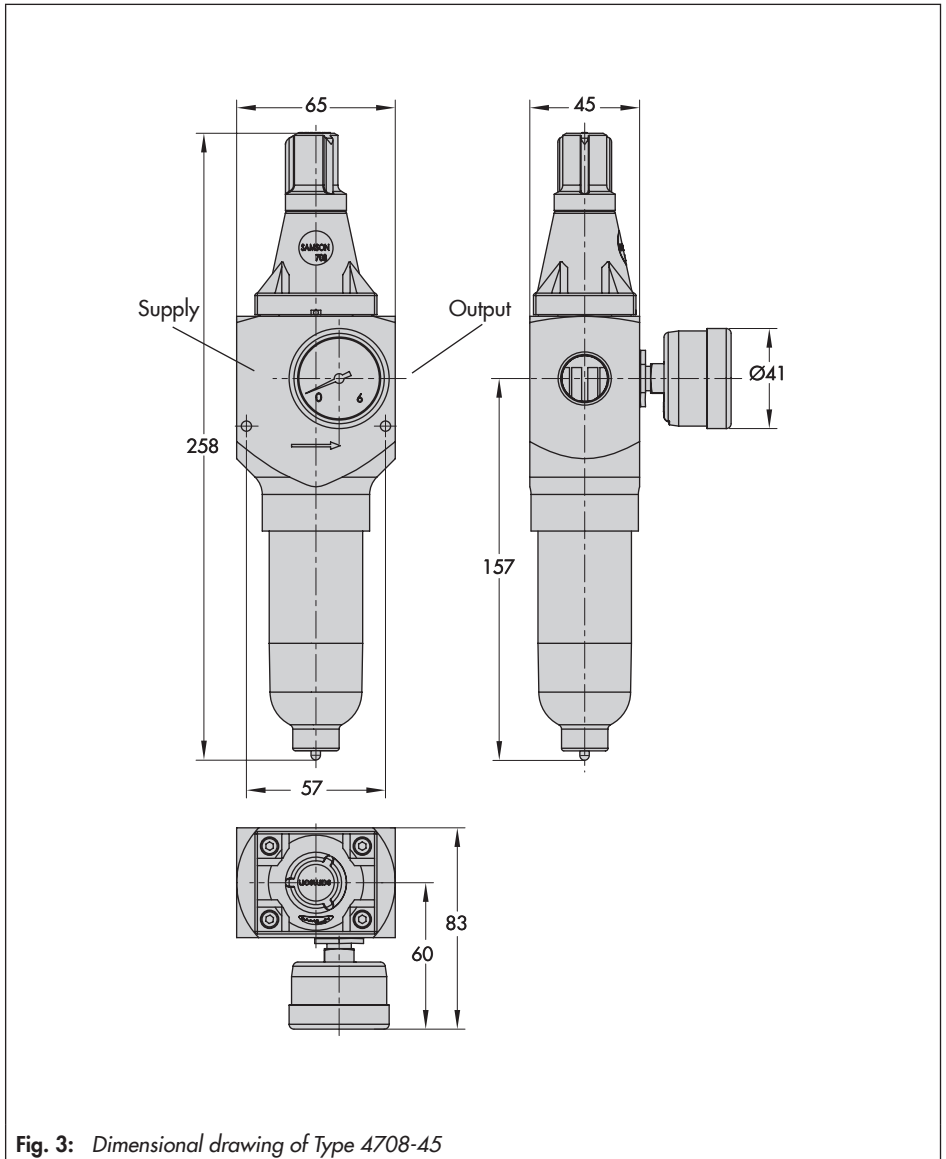


Fig. 3: Dimensional drawing of Type 4708-45



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