

# MOUNTING AND OPERATING INSTRUCTIONS



## EB 8546-1 EN

Translation of original instructions



## Type 4708-45 Supply Pressure Regulator

Edition March 2023

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## Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in these instructions are for illustration purposes only. The actual product may vary.

- For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- If you have any questions about these instructions, contact SAMSON's After-sales Service (aftersaleservice@samsongroup.com).



The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website at [www.samsongroup.com](http://www.samsongroup.com) > **Service & Support** > **Downloads** > **Documentation**.

## Definition of signal words

### **DANGER**

*Hazardous situations which, if not avoided, will result in death or serious injury*

### **WARNING**

*Hazardous situations which, if not avoided, could result in death or serious injury*

### **NOTICE**

*Property damage message or malfunction*

### **Note**

*Additional information*

### **Tip**

*Recommended action*

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# 1 Safety instructions and measures

## Intended use

The Type 4708-45 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. The device is designed to operate under exactly defined conditions (e.g. operating pressure, temperature). Therefore, operators must ensure that the supply pressure regulator is only used in applications where the operating conditions correspond to the technical data. In case operators intend to use the supply pressure regulators in other applications or conditions than specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

➔ Refer to the technical data for limits and fields of application as well as possible uses.

## Reasonably foreseeable misuse

The Type 4708-45 Supply Pressure Regulator is **not** suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data

Furthermore, the following activities do not comply with the intended use:

- Use of non-original spare parts
- Performing maintenance activities not specified by SAMSON

## Qualifications of operating personnel

The supply pressure regulator must be mounted, started up and serviced by fully trained and qualified personnel only; the accepted industry codes and practices must be observed.

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 hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

## Personal protective equipment

No personal protective equipment is required for the direct handling of the supply pressure regulator. Work on the control valve may be necessary when mounting or removing the device.

## Safety instructions and measures

- Observe the requirements for personal protective equipment specified in the valve documentation.
- Check with the plant operator for details on further protective equipment.

### Revisions and other modifications

Revisions, conversions or other modifications of the product are not authorized by SAMSON. They are performed at the user's own risk and may lead to safety hazards, for example. Furthermore, the product may no longer meet the requirements for its intended use.

### Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the pneumatic instrumentation by the signal pressure or by moving parts by taking appropriate precautions. They must observe all hazard statements, warning and caution notes in these mounting and operating instructions, especially for installation, start-up and service work.

### Responsibilities of the operator

The operator is responsible for proper operation and compliance with the safety regulations. Operators are obliged to provide these mounting and operating instructions to the operating personnel and to instruct them in proper operation. Furthermore, the operator must ensure that operating personnel or third parties are not exposed to any danger.

### Responsibilities of operating personnel

Operating personnel must read and understand these mounting and operating instructions as well as the specified hazard statements, warning and caution notes. Furthermore, the operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

### Referenced standards and regulations

Devices with a CE marking fulfill the requirements of the Directives 2011/65/EU (RoHS) and 2015/863/EU. The declaration of conformity is included at the end of these instructions.

### Referenced documentation

The following documents apply in addition to these mounting and operating instructions:

- The mounting and operating instructions of the components on which the supply pressure regulator is mounted (valve, actuator, positioner etc.).

## 1.1 Notes on possible personal injury

### WARNING

#### **Risk of bursting in pressure equipment.**

Control valves, mounting parts and pipelines are pressure equipment. Improper opening can lead to bursting of the valve.

- Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.
- Observe the valve's safety instructions.

## 1.2 Notes on possible property damage

### NOTICE

#### **Risk of damage to the supply pressure regulator due to excessively high tightening torque.**

- Do not exceed the maximum permissible torques specified in these mounting and operating instructions.

#### **Risk of damage to the supply pressure regulator due to foreign particles entering it.**

- Do not remove the protective film until immediately before mounting.

#### **Risk of damage to the supply pressure regulator due to improper storage.**

- Observe the storage instructions. Contact SAMSON, if need be.

## Markings on the device

## 2 Markings on the device

### Article code

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, 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 (1.4409)					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				
Device compatible with paint							0	1				
Special version												
Without										0	0	0

### 3 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 between 0.5 and 6 bar.

The compressed air at the inlet (supply) flows across the filter and leaves the output at 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.

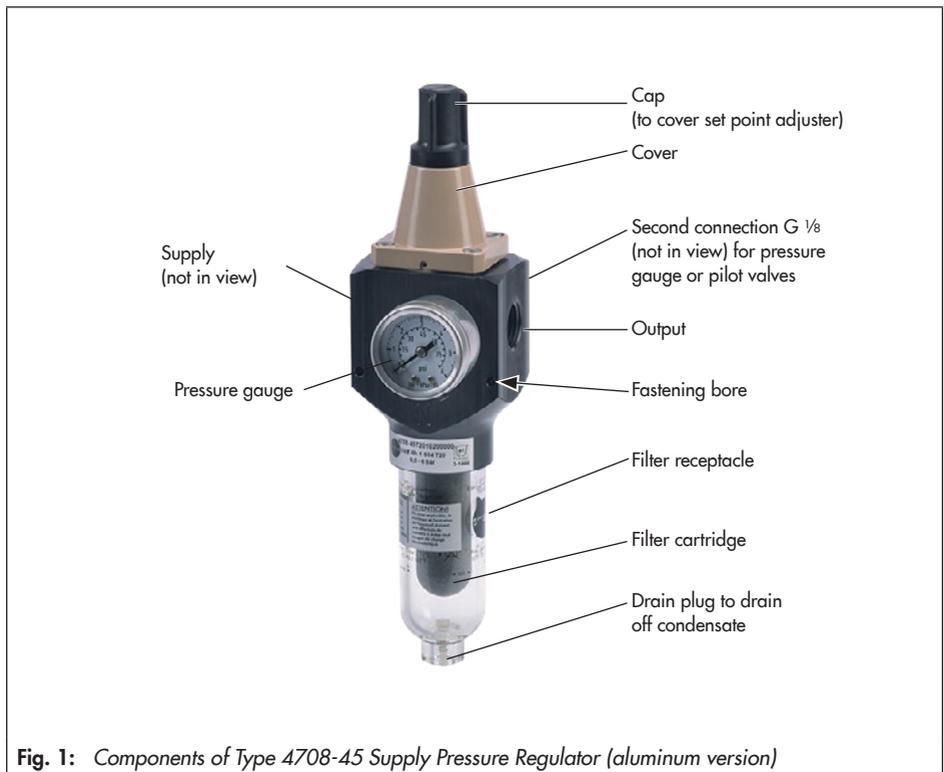


Fig. 1: Components of Type 4708-45 Supply Pressure Regulator (aluminum version)

### 3.1 Technical data

Supply pressure regulator	Type 4708-45
Values measured with 1/2" connection	
Supply pressure	1 to 12 bar <sup>1)</sup> (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	≤0.1 m <sub>n</sub> <sup>3</sup> /h
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 μm · Optionally 5 μm
Perm. ambient temperature	-25 to +70 °C <sup>2)</sup>
Low-temperature version	-50 to +70 °C <sup>2)</sup>
Weight	Approx. 0.74 kg <sup>3)</sup>
Compliance	<b>EAC</b>
<b>Pressure gauge</b>	
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) Recommendation: min. 1.0 bar (15 psi) above the adjusted set point

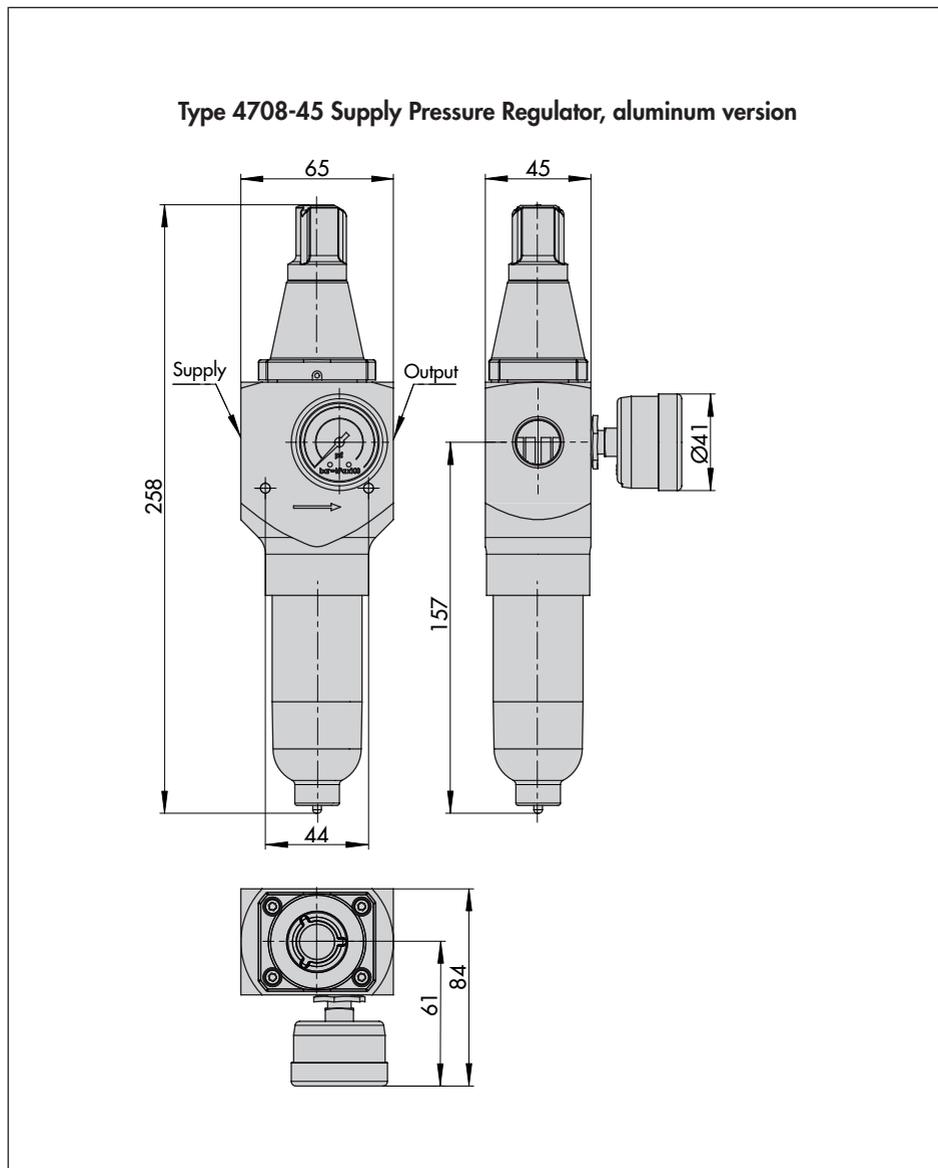
2) Applies also to rotating supplementary filter

3) With aluminum body and polyamide filter receptacle

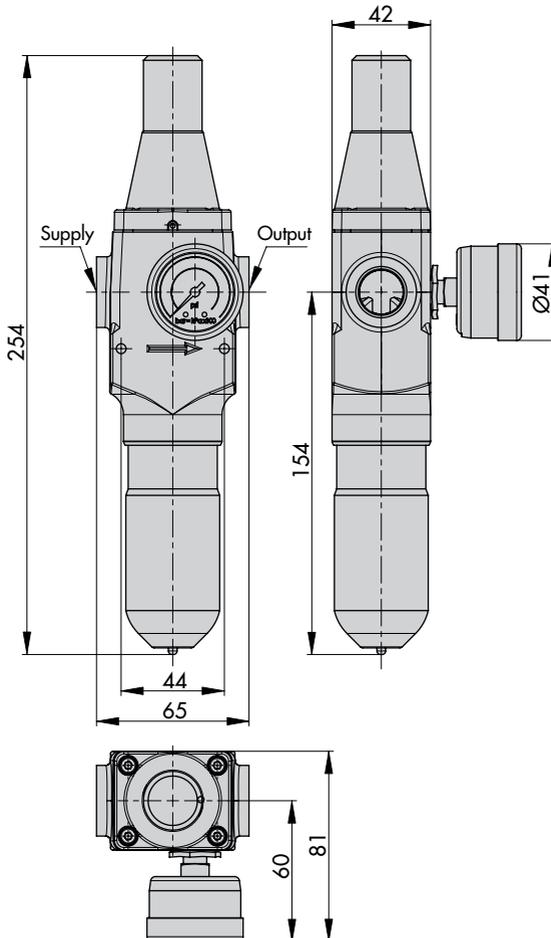
## Materials

Supply pressure regulator		Type 4708-45
Body	Metal parts	Aluminum <sup>1)</sup> (3.3547) or stainless steel (1.4409)
	Plastic parts	Polyamide, glass fiber reinforced
Cover		Polyamide, glass fiber reinforced
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 (Grilamid TR90UV)
Filter cartridge		15 µm: polypropylene and polyethylene
Pressure gauge		
Housing		Stainless steel
Connection and measuring element		Nickel-plated brass or stainless steel for copper-free version

### 3.2 Dimensions in mm



Type 4708-45 Supply Pressure Regulator, stainless steel version



### 3.3 Accessories/spare parts

Articles	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	
Seal for filter receptacle	
PVMQ	8421-0101
NBR (free of silicone)	8421-0102
Stopper (hex socket G 1/8)	0079-0100
Pressure gauge <sup>1)</sup>	
Stainless steel, incl. PCE	100071411
Brass/stainless steel, incl. PCE	100071415
Pressure gauge seal	1099-4305
Lock nut	0250-1949
Mounting bracket for Type 3271/3277 Actuator	1400-7343

<sup>1)</sup> With pressure compensation element (PCE)

## 4 Measures for preparation

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Compare the shipment received with the delivery note.
2. Check the shipment for transportation damage. Report any transportation damage.

### 4.1 Unpacking

#### **i** Note

*Do not remove the packaging if the supply pressure regulator is to be transported to another location or kept in storage.*

Before mounting the supply pressure regulator, proceed as follows:

1. Remove the packaging from the supply pressure regulator.
2. Dispose of the packaging in accordance with the valid regulations.

#### **!** NOTICE

*Risk of damage to the supply pressure regulator due to foreign particles entering it. Do not remove the protective film until immediately before mounting.*

## 4.2 Storage

#### **!** NOTICE

*Risk of damage to the supply pressure regulator due to improper storage. Observe the storage instructions. Contact SAMSON, if need be.*

#### Storage instructions

- Protect the supply pressure regulator against external influences (e.g. impact, shocks, vibration).
- Do not damage the corrosion protection (coating).
- Protect the supply pressure regulator against moisture and dirt. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Pack the supply pressure regulator in airtight packaging.

### 5 Mounting the supply pressure regulator

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

The supply pressure regulator can either be mounted directly in the pipeline of the air supply or on rails or brackets using the corresponding mounting parts (see accessories in section 3.3).

- Observe the flow direction of the supply air. An arrow on the nameplate indicates the direction.

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 5.1.1).

### 5.1 Pneumatic connections

The air connections (supply and output, see Fig. 1 on page 9) are designed either with ISO-228/1 - G ½ or ½-14 NPT threads.

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.

#### 5.1.1 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.

#### Mounting the pressure gauge on the back:

- Remove the stopper (hex socket head screw G ⅛) and screw it into the unoccupied pressure gauge connection at the front to seal it.

## 5.2 Adjusting the set point

- See Fig. 1 on page 9.
  - Unscrew the cap on the set point screw and adjust the set point of the supply pressure regulator.
  - Turning the screw clockwise increases the output pressure and turning it counter-clockwise reduces the output pressure.
  - Lock the setting with the lock nut.
- 

### **!** NOTICE

*Risk of damage to the supply pressure regulator due to excessively high tightening torque applied to the lock nut.  
Do not exceed the maximum torque of 7 Nm.*

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## 6 Servicing

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### Note

*The supply pressure regulator was checked by SAMSON before it left the factory.*

- The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by SAMSON's after-sales service.*
  - Only use original spare parts by SAMSON, which comply with the original specifications.*
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### 6.1 Maintenance

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#### WARNING

*Risk of injury due to high pressure.  
Shut off the air line before performing work on the supply pressure regulator.*

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#### **Drain condensed water that has collected:**

- Activate the manual drainage.
  - Replace the seal (order no. 0439-0061), if necessary.
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#### Tip

*We recommend to check the filter as often as possible.*

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### 6.2 Preparation for return shipment

Defective supply pressure regulators can be returned to SAMSON for repair.

Proceed as follows to return devices to SAMSON:

1. Put the control valve out of operation.  
See associated valve documentation.
2. Remove the supply pressure regulator (see section 8).
3. Proceed as described on our website at  
▶ [www.samsongroup.com](http://www.samsongroup.com) > Service & Support > After-sales Service > Returning goods.

## 7 Malfunctions

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### **⚠ WARNING**

*Risk of injury due to high pressure.  
Shut off the air line before performing work  
on the supply pressure regulator.*

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#### **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 make sure the set point is correctly adjusted.

#### **Pressure drop**

- Unscrew the filter receptacle and renew the filter cartridge.

### 8 Decommissioning and removal

#### **⚠ WARNING**

*Risk of bursting in pressure equipment. Control valves, mounting parts and pipelines are pressure equipment. Improper opening can lead to bursting of the valve.*

- *Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.*
- *Observe the valve's safety instructions.*

#### 8.1 Decommissioning

To decommission the supply pressure regulator for maintenance work or disassembly, proceed as follows:

1. Disconnect the supply pressure of the pneumatic actuator.
2. Disconnect the supply air.
3. If necessary, allow valve components to cool down or heat up.

#### 8.2 Removing the supply pressure regulator

1. Put the supply pressure regulator out of operation. See section 8.1.
2. Undo the threaded connections.
3. Remove the supply pressure regulator from the pipeline.

### 8.3 Disposal



We are registered with the German national register for waste electric equipment (stiftung ear) as a producer of electrical and electronic equipment, WEEE reg. no.: DE 62194439

- Observe local, national and international refuse regulations.
- Do not dispose of components, lubricants and hazardous substances together with your other household waste.

#### **💡 Tip**

*On request, we can appoint a service provider to dismantle and recycle the product.*

## 9 After-sales service

Contact SAMSON's After-sales Service for support concerning service or repair work or when malfunctions or defects arise.

### **E-mail address**

You can reach our after-sales service at the following e-mail address.

[aftersaleservice@samsongroup.com](mailto:aftersaleservice@samsongroup.com)

### **Addresses of SAMSON AG and its subsidiaries**

The addresses of SAMSON AG, its subsidiaries, representatives and service facilities worldwide can be found on our website ([www.samsongroup.com](http://www.samsongroup.com)) or in all SAMSON product catalogs.

### **Required specifications**

Please submit the following details:

- Order number and position number in the order
- Type, serial number, device version



1/1

**DC008**  
**2019-07**

**DECLARATION UE DE CONFORMITE**  
**EU DECLARATION OF CONFORMITY**  
EU KONFORMITÄTSEKTLÄRUNG

La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.  
This declaration of conformity is issued under the sole responsibility of the manufacturer.  
Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.

Nous certifions pour les produits suivants en exécution standard :  
For the following products in standard execution:  
Für die folgenden Produkte in Standard-Ausführung:

Type / type / Typ : 2371, 3249, 3252, 3310, 3331, 3345, 3347, 3349, 3351, 3710, 3711, 3776, 3777,  
3812, 3963, 3964, 3967, 4708, 4746, 5090, Samstation

sont conformes à la législation applicable harmonisée de l'Union :  
the conformity with the relevant Union harmonization legislation is declared with:  
wird die Konformität mit den einschlägigen Harmonisierungsrechtsvorschriften der Union bestätigt:

**RoHS 2011/65/EU, 2015/863/EU**

**EN50581:2012-09**

Fabricant : SAMSON REGULATION S.A.S.  
Manufacturer: 1, rue Jean Corona  
Hersteller: 69511 Vaulx-en-Velin  
France

Vaulx-en-Velin, le 09/07/19

Au nom du fabricant,  
On behalf of the Manufacturer,  
Im Namen des Herstellers,

SAMSON REGULATION S.A.S.

Joséphine SIGNOLES-FONTAINE  
Responsable QSE



**EB 8546-1 EN**



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