

MOUNTING AND OPERATING INSTRUCTIONS



EB 3135-2 EN

Translation of original instructions



Type 2489/58xx/2430 and Type 2489/57xx/2430 Pressure-independent Control Valves

Flow regulators with electric actuator and control thermostat

Edition April 2023



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).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at 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 2489 Pressure-independent Control Valve (PICV) with connection for additional electric actuator and control thermostat is intended for the flow and temperature control of liquids up to 150 °C. The combined Type 2489/5824 or 5827/2430 is mainly used in district heating supply networks. The regulators and actuators are designed to operate under exactly defined conditions (e.g. operating pressure, process medium, temperature). Therefore, operators must ensure that the regulators and actuators are only used in operating conditions that meet the specifications used for sizing the devices at the ordering stage. In case operators intend to use the devices in applications or conditions other than those 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 and nameplate for limits and fields of application as well as possible uses.

Reasonably foreseeable misuse

The 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 service and repair work not described
- Modification of parts as well as service or repair work on TÜV-tested Type 2489/5825-x, Type 2489/5827-A and Type 2489/TROVIS 5725-x

Qualifications of operating personnel

The regulator must be mounted, started up, serviced and repaired 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.

Safety instructions and measures

Personal protective equipment

We recommend checking the hazards posed by the process medium being used (e.g.

- ▶ GESTIS (CLP) hazardous substances database).
- ➔ Provide protective equipment (e.g. safety gloves, eye protection) appropriate for the process medium used.
- ➔ Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.
- ➔ 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.

Safety features

The Type 2489 Pressure-independent Control Valve (PICV) with an electric actuator without fail-safe action does not have any special safety features.

The Type 2489 Pressure-independent Control Valve (PICV) with an electric actuator with fail-safe action moves to a certain fail-safe position upon supply voltage failure. The fail-safe action of SAMSON actuators is specified on the actuator nameplate.

When relieved of pressure, the valve with an open restriction without electric actuator and Type 2430 Thermostat is opened by the force of the set point springs.

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 device by the process medium, the operating pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warnings and caution notes in these mounting and operating instructions, especially for installation, start-up and service work.

We also recommend checking the hazards posed by the process medium being used (e.g.

- ▶ GESTIS (CLP) hazardous substances database).
- ➔ Observe safety measures for handling the device as well as fire prevention and explosion protection measures.

Responsibilities of the operator

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

Operators are additionally responsible for ensuring that the limits for the product defined in the technical data are observed. This also applies to the start-up and shutdown procedures. Start-up and shutdown procedures fall within the scope of the operator's duties and, as such, are not part of these mounting and operating instructions. SAMSON is unable to make any statements about these procedures since the operative details (e.g. differential pressures and temperatures) vary in each individual case and are only known to the operator.

Responsibilities of operating personnel

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

Referenced standards, directives and regulations

The regulators comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and the Machinery Directive 2006/42/EC. Regulators with a CE marking have a declaration of conformity which includes information about the applied conformity assessment procedure. The EU declaration of conformity is included in the annex of these instructions (see section 9.2).

Non-electric valve versions whose bodies are not lined with an insulating material coating do not have their own potential ignition source according to the hazard assessment stipulated in Clause 5.2 of ISO 80079-36, even in the rare incident of an operating fault. Therefore, such valve versions do not fall within the scope of Directive 2014/34/EU.

→ For connection to the equipotential bonding system, observe the requirements specified in Clause 6.4 of EN 60079-14 (VDE 0165-1).

Referenced documentation

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

- ► EB 1010 for **Type 1 N and Type 1 NI Strainers**
- ► EB 2430 for **Type 2430 Control Thermostat**
- ► EB 5724 and ► EB 5724-8 for **TROVIS 5724-3/-8 or TROVIS 5725-3/-8 Electric Actuators** for domestic hot water heating or for heating and cooling applications
- ► EB 5824-1 and ► EB 5824-2 for **Type 5824/5825 Electric Actuator** (three-step version or with digital positioner)
- ► EB 5827-1 and ► EB 5827-2 for **Type 5827 Electric Actuator** (three-step version or with digital positioner)
- ► EB 5757 and ► EB 5757-7 for **TROVIS 5757-3/5757-7 Electric Actuators** for domestic hot water heating or for heating and cooling applications
- ► EB 5857 for **Type 5857 Electric Actuator** (three-step version or with digital positioner)

1.1 Notes on possible severe personal injury

DANGER

Risk of fatal injury due to electric shock.

- Before connecting wiring, performing any work on the device or opening the device, disconnect the supply voltage and protect it against unintentional reconnection.
- Only use power interruption devices that are protected against unintentional reconnection of the power supply.
- Do not remove any covers to perform adjustment work on live parts.
- Do not open the back housing cover.
- Avoid jets of water. (IP 54)

The switching output L' may be live after the supply voltage has been connected.

- Do not touch the switching output L'.
- When the switching output is not used, deactivate it in function F16 ('Not active' setting).
- Refer to the mounting and operating instructions of the electric actuator (with process controller) for further information.

Risk of bursting in pressure equipment.

Valves and pipelines are pressure equipment. Improper opening can lead to device components bursting.

- Observe the maximum permissible pressure for regulator and plant.
- Before starting any work on the device, depressurize all plant sections affected as well as the valve.
- Drain the process medium from all the plant sections affected as well as the valve.
- If necessary, install a suitable overpressure protection in the plant section.
- Wear personal protective equipment.

1.2 Notes on possible personal injury

WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual process medium can escape and, depending on its properties, may lead to personal injury, e.g. burns.

- If possible, drain the process medium from all the plant sections affected and the valve.
- Wear protective clothing, safety gloves and eye protection.

Risk of burn injuries due to hot or cold components and pipelines.

Depending on the process medium, valve components and pipelines may get very hot or cold and cause burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

Damage to health relating to the REACH regulation.

If a SAMSON device contains a substance listed as a substance of very high concern on the candidate list of the REACH regulation, this is indicated on the SAMSON delivery note.

- Information on safe use of the part affected
 - ▶ www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/.

1.3 Notes on possible property damage

! NOTICE

Risk of valve damage due to contamination (e.g. solid particles) in the pipeline.

The plant operator is responsible for cleaning the pipelines in the plant.

- Flush the pipelines before start-up.
- Observe the maximum permissible pressure for valve and plant.

Risk of valve damage due to unsuitable medium properties.

The valve is designed for process media with defined properties.

- Only use process media specified for sizing the valve.

Risk of damage to the electric actuator due to the supply voltage exceeding the permissible tolerances.

The Types 5824, 5827 and 5825 Electric Actuators are designed for use according to regulations for low-voltage installations.

- Observe the permissible tolerances of the supply voltage.

Risk of damage to the actuator and control thermostat due to excessively high tightening torques.

Observe the specified torques when tightening the Type 2430 Control Thermostat and the Type 5824, 5827 or 5825 Electric Actuator. Excessive tightening torques lead to parts wearing out more quickly.

- Observe the specified tightening torques (see section 9.2).

Risk of damage to the electric actuator due to incorrect connection of the voltage.

The electric actuator has terminals to retract the stem (eL terminal) and to extend the stem (aL terminal).

- Do not apply a voltage to eL and aL at the same time.

Risk of damage to the electric actuator by moving the actuator stem too far.

The actuator stem of the electric actuator can be adjusted manually.

- Only retract the actuator stem as far as the end position at the maximum.

2 Markings on the device

Several nameplates are affixed to the device. The nameplates shown were up to date at the time of publication of this document. The nameplates on the device may differ from

the ones shown. The nameplates are used to identify the separate regulator components (see section 2.1).

2.1 Nameplates

2.1.1 Nameplate for Type 2489 Valve

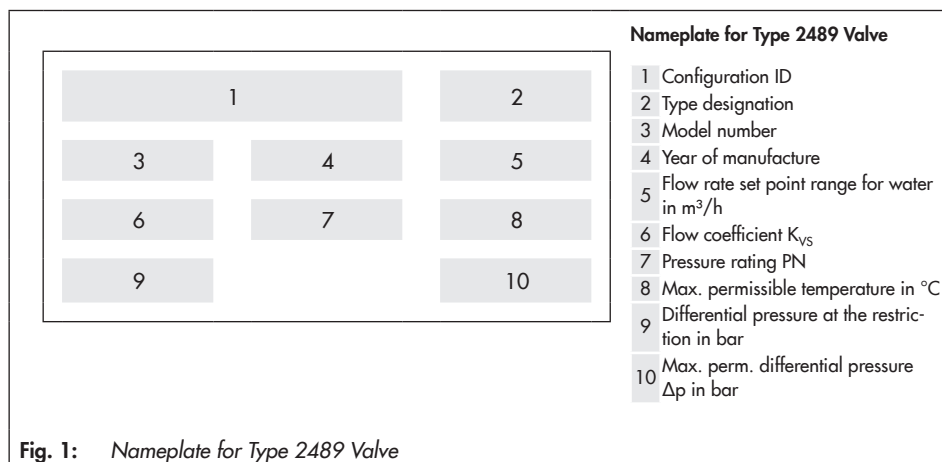


Fig. 1: Nameplate for Type 2489 Valve

2.1.2 Electric actuator nameplate

See associated actuator documentation.

2.2 Location of the nameplates

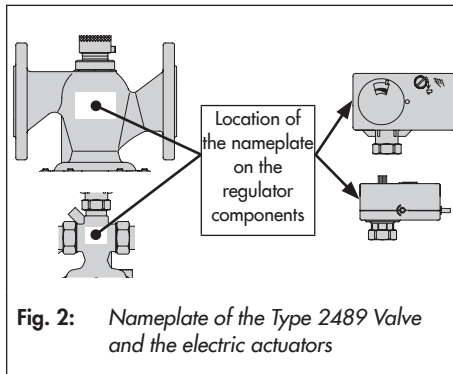


Fig. 2: Nameplate of the Type 2489 Valve and the electric actuators

2.3 Material identification number

2.3.1 Type 2489 Valve

The material designation can be found on the cast body or you can contact us (the configuration ID specification is needed) to find out which material is used. For more details on the nameplate, see section 2.1.

2.3.2 Electric actuator (with process controller)

Specifying the configuration ID, you can contact us to find out which material is used. See associated actuator documentation for more details on the nameplate.

3 Design and principle of operation

→ See Fig. 3

The flow regulator with connection for additional electric actuator and control thermostat consists of the Type 2489 Flow Regulator, the TROVIS 57xx/Type 58xx Electric Actuator and the Type 2430 Control Thermostat. The valve is fitted with a connecting piece (8) for connection of an electric actuator and the control thermostat. As a result, it is possible to transmit the control signal of an electric control device (flow rate) and a control thermostat (temperature). The entire regulator assembly is used to maintain the flow rate and temperature constant at their adjusted set points.

The valve closes as the controlled variables (flow rate and/or temperature) rise.

NOTICE

Types 5824-10, 5827-x1 and 5825-10 Electric Actuators with a 7.5 mm rated travel are used for valves in sizes DN 15 to 25.
Types 5824-20, 5827-x2 and 5825-20 Electric Actuators with 12 mm rated travel are required for valves in valve sizes DN 32 to 50.

Note

For higher temperatures and the resulting thicker insulation of the valve, mount an intermediate insulating piece (order no. 1992-3132) between the connecting piece and actuator.

The medium flows through the valve in the direction indicated by the arrow on the valve body. The flow rate is determined by the area released by the valve plug (3) and the adjustable restriction (8.5 or 8.6).

The installed set point spring (5) determines the differential pressure across the restriction of 0.2 bar. The pressure upstream of the restriction (8.5 or 8.6) is transmitted over the control line (11) to the upstream pressure side of the actuator. The pressure downstream of the restriction acts on the low-pressure side of the operating diaphragm (6.1) through a hole in the valve plug. The differential pressure generated across the restriction is converted into a positioning force by the operating diaphragm. This force is used to move the valve plug depending on the force of the set point spring (5). The flow rate is adjusted at the set point screw (8.3) or set point adjuster (8.2).

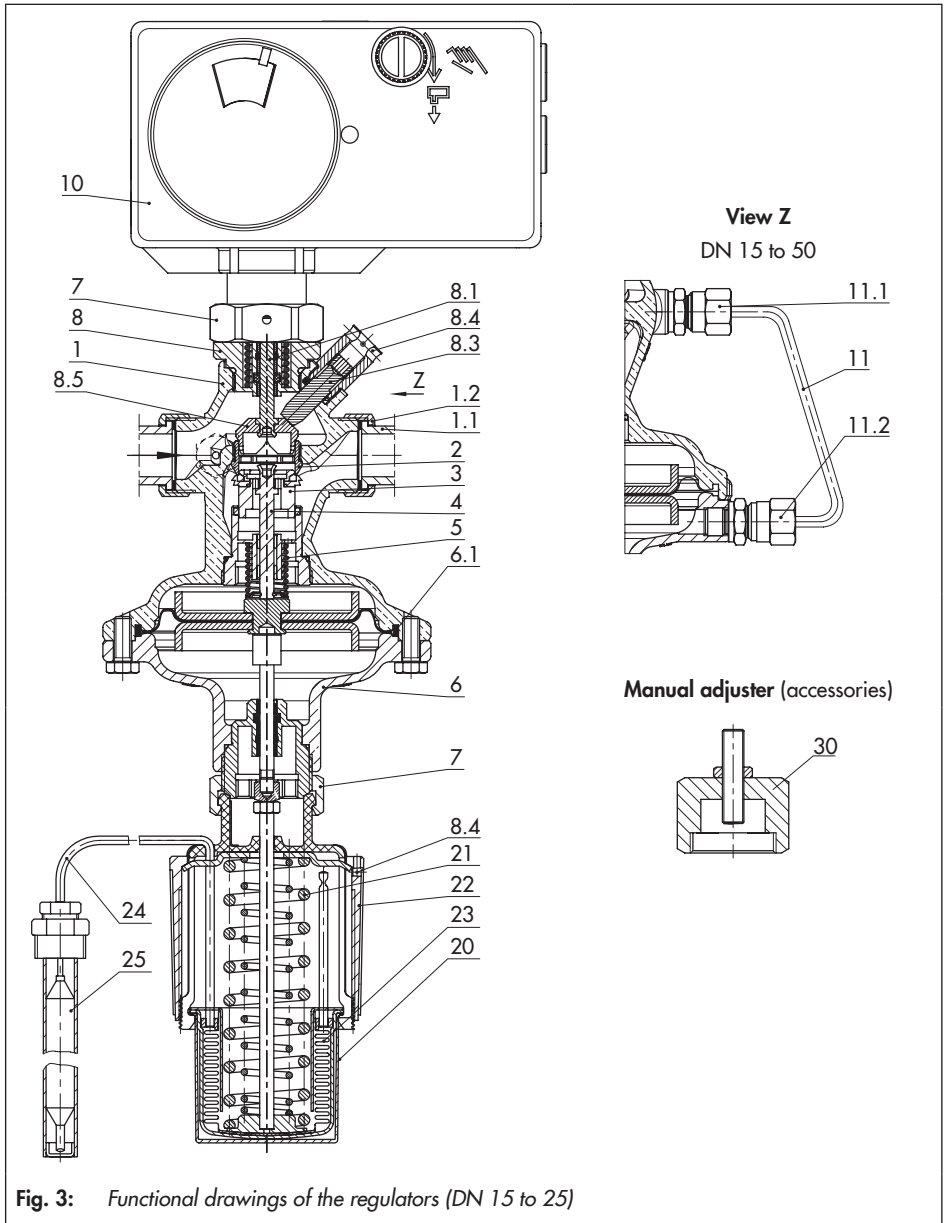
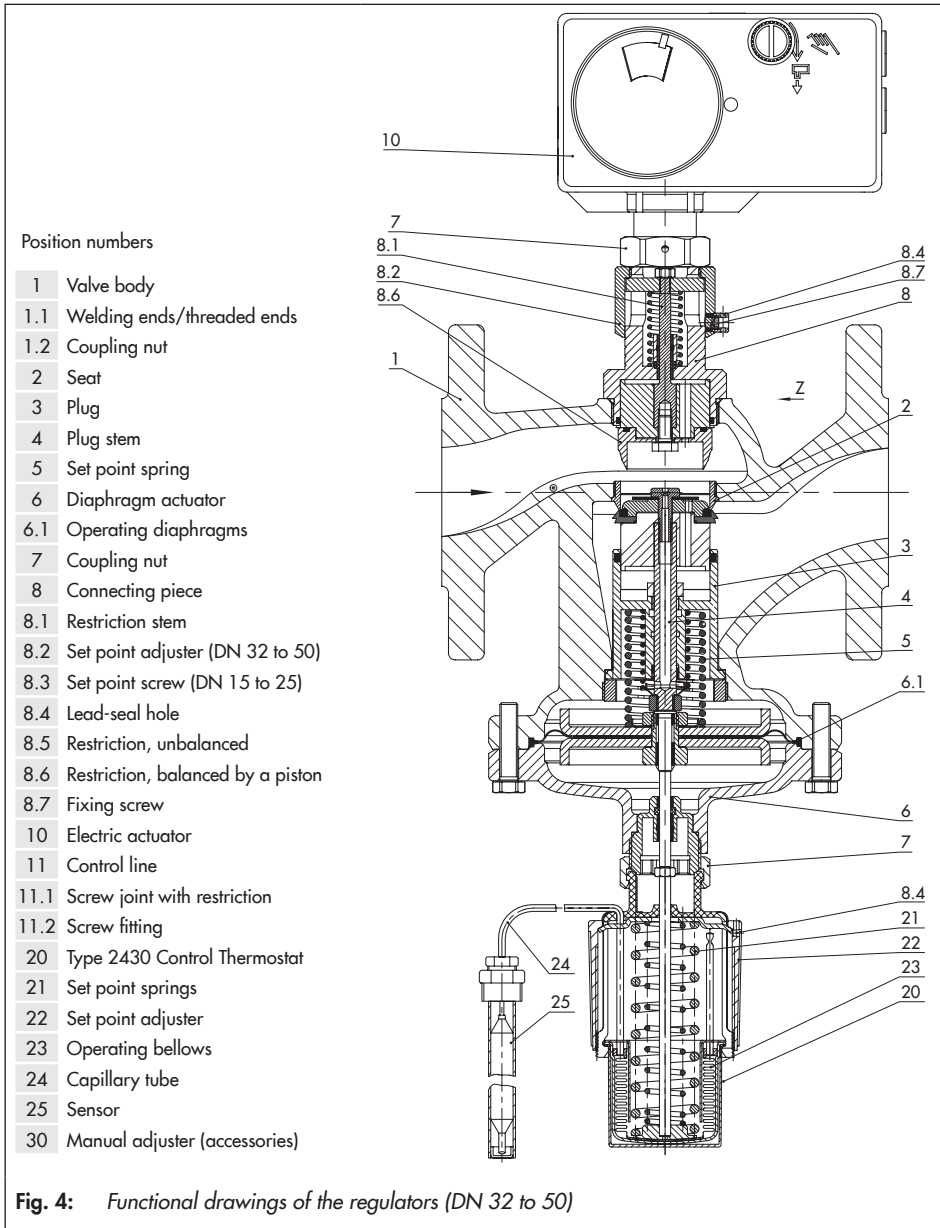


Fig. 3: Functional drawings of the regulators (DN 15 to 25)

Design and principle of operation



3.1 Technical data

The regulator's nameplate contains information on the regulator version (see section 2.1).

Process medium and scope of application

The flow regulator with connection for additional electric actuator and control thermostat (**Type 2489/57xx or Type 58xx/2430**) is suitable for controlling water and non-flammable gases.

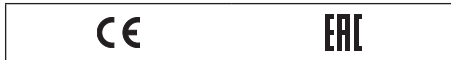
- Non-flammable gases up to **150 °C** ¹⁾
- Liquids up to **150 °C**

The regulator is open when relieved of pressure. It closes when the downstream pressure rises above the adjusted set point.

¹⁾ Operating diaphragm and seals made of FKM

Conformity

The Type 2489/58xx/57xx/2430 Regulator bears both the CE and EAC marks of conformity.



Testing according to DIN EN 14597

Various SAMSON electric actuators with fail-safe action "actuator stem extends" are tested by the German technical surveillance association (TÜV) according to DIN EN 14597 in combination with Type 2489 Valve.

The registration number is available on request.

Temperature range

The Type 2489/57xx/2430 and Type 2489/58xx/2430 Regulators are designed for a temperature range from -10 to $+150$ °C.

Leakage class

The metal-seated regulator has the leakage class **I** according to IEC 60534-4.

The soft-seated regulator has the leakage class **IV** according to IEC 60534-4.

Noise emissions

SAMSON is unable to make general statements about noise emissions. The noise emissions depend on the regulator version, plant facilities, process medium and operating conditions.

⚠ WARNING

Risk of hearing loss or deafness due to loud noise.

- *Wear hearing protection when working near the valve. Follow the instructions given by the plant operator.*

Dimensions and weights

Fig. 5 and Table 3 provide an overview of the dimensions and weights of the Type 2489/5x/2430 Regulator. The lengths and heights in the dimension diagrams are shown on page 21 onwards.

Design and principle of operation

Table 1: Technical data for Type 2489 Valve

Valve size DN		15 to 25 ¹⁾			15	20	25	32 ²⁾	40 ²⁾	50 ²⁾
K _{VS} coef- ficient	Body with screwed ends	0.4	1.0	4.0	2.5	6.3	8	12.5	16	20
	Flanged body	—						12.5	20	25
X _{Fz} value	Body with screwed ends	0.6						0.5		0.45
	Flanged body	—						0.45		0.4
Pressure rating		PN 25								
Max. perm. diff. pressure Δp across the valve		20 bar							16 bar	
Leakage class acc. to IEC 60534-4 (percent of K _{VS})		I ≤0.05 %	IV ≤0.01 %	I ≤0.05 %			IV ≤0.01 %			
Max. permissible temperature		For liquids 150 °C ⁴⁾ · For air and non-flammable gases 150 °C ^{3) 4)}								
Perm. transportation temperature		-20 to +70 °C								
Conformity		CE EAC								
Flow rate set point ranges for water in m³/h										
Flow rate set point range/limitation for water with 0.2 bar differential pressure at the restriction		0.03 to 0.2	0.12 to 0.64	0.2 to 1.2	0.6 to 1.3 ⁵⁾ 0.6 to 2.5	0.8 to 2.3 ⁵⁾ 0.8 to 3.6	0.8 to 3.5 ⁵⁾ 0.8 to 4.2 ⁶⁾	2 to 5,8 ⁵⁾ 2 to 10	3 to 9.1 ⁵⁾ 3 to 12.5	4 to 14.1 ⁵⁾ 4 to 15

¹⁾ Special version

²⁾ Additional version: valve with flanged body made of spheroidal graphite iron (EN-GJS-400-18-LT)

³⁾ Operating diaphragm and seals made of FKM

⁴⁾ Use an intermediate insulating piece (1992-3132).

- For medium temperatures between -10 to +5 °C (electric actuators)
- In networks with a constant medium temperature ≥135 °C (electric actuators)
- For liquids ≥120 °C (electric actuators)

⁵⁾ An increase in noise level can be expected when the specified flow rates are exceeded, even if cavitation does not occur (see AGFW (German District Heating Association) document FW 514).

⁶⁾ 5 m³/h with 0.3 bar differential pressure at the restriction (special version)

NOTICE

- The technical data of the TROVIS 57xx and Type 58xx Electric Actuators are listed in the actuator documentation (Referenced documentation on page 8).
- The technical data of the Type 2430 Control Thermostat are listed in the associated documentation (Referenced documentation on page 8).

Table 2: Materials · Material numbers according to DIN EN

Type 2489 Valve		
Body	Red brass CC499K (Rg 5)	Spheroidal graphite iron EN-GJS-400-18-LT ¹⁾
Seat	Stainless steel 1.4305	
Plug	Brass, resistant to dezincification, with EPDM soft seal ²⁾	
Bonnet	Red brass CC499K (Rg 5)	Spheroidal graphite iron EN-GJS-400-18-LT ¹⁾
Valve spring	Stainless steel 1.4310	
Restriction	Brass, free of dezincification	
Operating diaphragm	EPDM ²⁾ with fabric reinforcement	
Seals	EPDM ²⁾	
Type 5824, Type 5827, Type 5825, Type 5857 and TROVIS 5757-x Electric Actuators		
Housing	Plastic (PPO with glass fiber reinforcement)	
Coupling nut	Brass	
Type 2430 Control Thermostat		
Sensor and capillary tube	Copper	
Thermowell	Copper or stainless steel 1.4571	
Coupling nut	Brass	

¹⁾ Additional version in DN 32, 40 and 50: valve with flanged body made of spheroidal graphite iron EN-GJS-400-18-LT

²⁾ Special version, e.g. for mineral oils: FKM

Design and principle of operation

Table 3: Dimensions and weights in kg

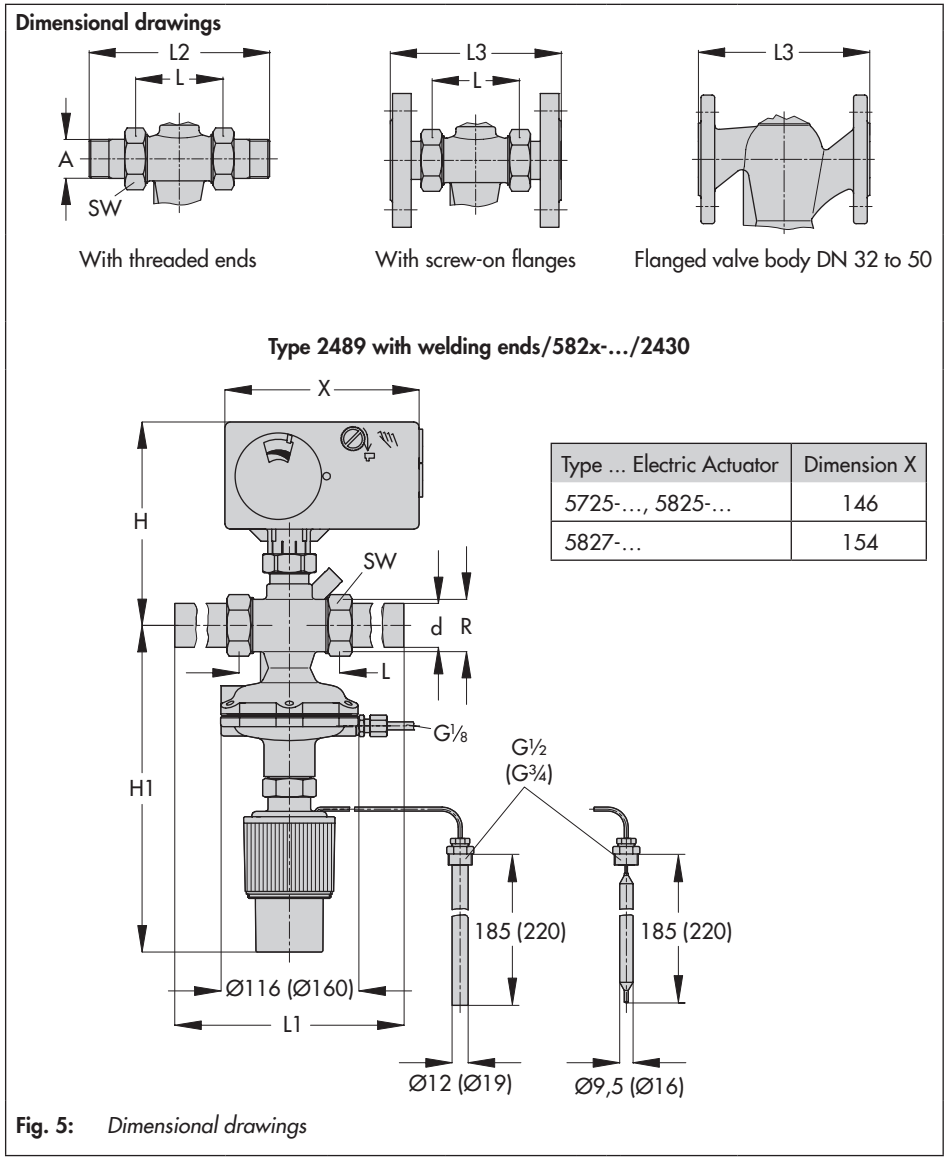
Valve size	DN	15	20	25	32 ¹⁾	40 ¹⁾	50 ¹⁾
Pipe Ø d	mm	21.3	26.9	33.7	42.4	48.3	60.3
Thread size R		G ¾	G 1	G 1¼	G 1¾	G 2	G 2½
Width across flats SW	mm	30	36	46	59	65	82
Valve size	DN	15	20	25	32 ¹⁾	40 ¹⁾	50 ¹⁾
Length L	mm	65	70	75	100	110	130
Height H	mm	155 · 158 ⁴⁾			216 · 219 ⁴⁾		
Height H1	mm	245			265	295	
Height H3	mm	122			—		
Version with welding ends							
Length L1	mm	210	234	244	268	294	330
Weight ³⁾	kg (approx.)	3.9	4.0	4.1	5.2	7.9	8.4
Version with threaded ends							
Length L2	mm	129	144	159	192	206	228
Male thread A		G ½	G ¾	G 1	G 1¼	G 1½	G 2
Weight ³⁾	kg (approx.)	3.9	4.0	4.1	5.2	7.9	8.4
With screwed-on flanges ²⁾ or with flanged body (DN 32 to 50)							
Length L3	mm	130	150	160	180	200	230
Weight ³⁾	kg (approx.)	5.3	6.0	6.6	8.4	11.9	13.4

¹⁾ Additional version: valve with flanged body made of spheroidal graphite iron EN-GJS-400-18-LT

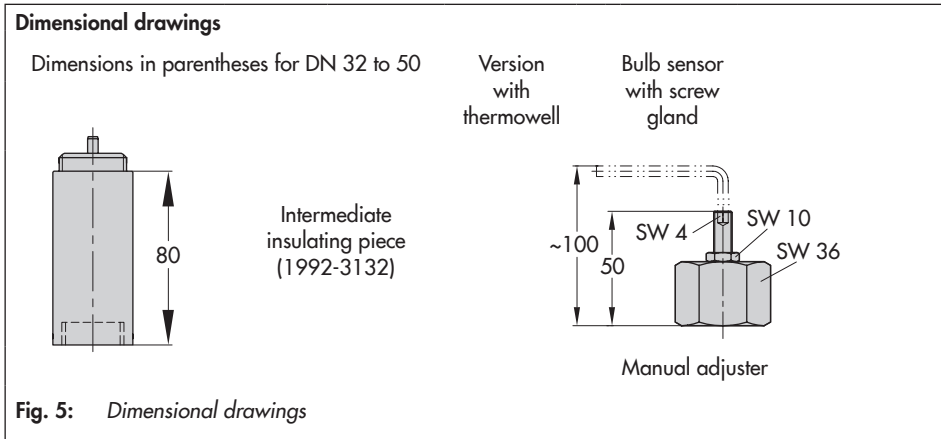
²⁾ Flanges are already mounted on valves in DN 40 and 50

³⁾ Type 582x-.. Actuator: Weights for version with bulb sensor and thermowell. Minus 0.2 kg for version with thermowell

⁴⁾ For Type 5827-... Actuator



Measures for preparation



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 damage to SAMSON and the forwarding agent (refer to delivery note).

4.1 Unpacking

i Information

Do not remove the packaging until immediately before installation.

- Dispose of the packaging in accordance with the valid regulations.

4.2 Transporting and lifting

Due to the low service weight, lifting equipment is not required to lift and transport the regulator (e.g. to install it into the pipeline).

Transport instructions

- Protect the device against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the device against moisture and dirt.
- Observe permissible temperatures (see section 3.1).
- See Referenced documentation on page 8.

4.3 Storage

NOTICE

Risk of regulator damage due to improper storage.

- Observe the storage instructions.
- Avoid long storage times.
- Contact SAMSON in case of different storage conditions or longer storage times.

Note

We recommend to regularly check the device and the prevailing storage conditions during long storage periods.

Storage instructions

- Protect the device against external influences (e.g. impact).
- Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.
- Protect the device against moisture and dirt. Store it at a relative humidity of less than 75 %. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Make sure that the ambient air is free of acids or other corrosive media.
- Observe permissible temperatures (see section 3.1).
- See Referenced documentation on page 8.
- Do not place any objects on the device.

Special storage instructions for elastomers

Elastomer, e.g. operating diaphragm

- To keep elastomers in shape and to prevent cracking, do not bend them or hang them up.
- We recommend a storage temperature of 15 °C for elastomers.
- Store elastomers away from lubricants, chemicals, solutions and fuels.

Tip

SAMSON's After-sales Service can provide more detailed storage instructions on request.

4.4 Preparation for installation

Proceed as follows:

- ➔ Flush the pipelines.

Information

The plant operator is responsible for cleaning the pipelines in the plant.

- ➔ Check the valve to make sure that it is clean.
- ➔ Check the valve and actuator to make sure they are not damaged.
- ➔ Check to make sure that the type designation, valve size, material, pressure rating and temperature range of the valve and the actuator match the plant conditions (size and pressure rating of the pipeline, medium temperature etc.).

Mounting and start-up

- Check any mounted pressure gauges to make sure they function.

5 Mounting and start-up

5.1 Mounting orientation

Standard mounting position

- Install the regulator in a horizontal pipeline with the diaphragm actuator (6) with the control thermostat connection facing downward (see Fig. 3).

Installation conditions

- Make sure that the regulator remains freely accessible after the plant has been completed.
- The electric actuator must be mounted above the valve body.
- Install a strainer upstream of the regulator (see section 5.2).
- Make sure the direction of flow matches the direction indicated by the arrow on the body.
- Install the regulator free of stress.
- On insulating the valve, do not insulate the actuator and the coupling nut as well. If necessary, an intermediate insulating piece (order no. 1992-3132) must be used. The insulating limit is in this case approx. 25 mm above the top of the valve body.

! NOTICE

Possible malfunction and damage due to adverse weather conditions (temperature, humidity).

- Do not install the device outdoors or in rooms prone to frost.
 - Protect the regulator against frost if it is used to control freezing media.
 - Either heat the regulator or remove it from the plant and completely drain the residual medium.
-

5.2 Additional fittings

Strainer

A strainer installed upstream in the flow pipe holds back any dirt or other foreign particles carried along by the medium. For example, the SAMSON Type 1 NI Strainer is suitable (▶ T 1010).

- Install the strainer upstream of the regulator.
- Make sure the direction of flow matches the direction indicated by the arrow on the body.
- Install the strainer with the filter element facing downward.
- Allow sufficient space to remove the filter.

i Information

Check the strainer at regular intervals and clean it, if necessary.

Shut-off valve

Install a hand-operated shut-off valve both upstream of the strainer and at the outlet of the return flow pipe (see Fig. 6). This allows the plant to be shut down for cleaning and maintenance, and when the plant is not used for longer periods of time.

Pressure gauge

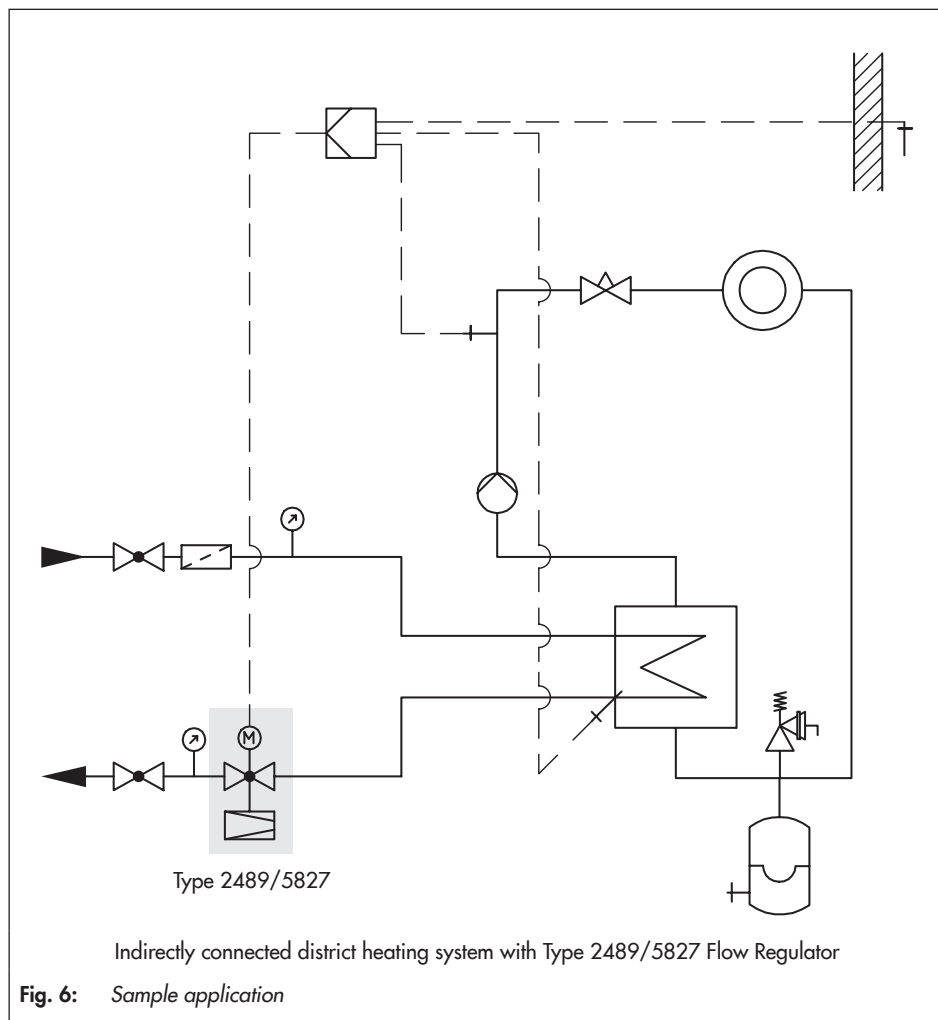
Install a pressure gauge at a suitable point to monitor the pressures prevailing in the plant (see Fig. 6).

5.3 Mounting the control thermostat

- See Fig. 3
- Place the control thermostat (20) on the valve connection and hand-tighten the coupling nut (7).

5.4 Mounting the electric actuator

- See Fig. 3
- Place the electric actuator (10) on the valve connection and hand-tighten the coupling nut (7).



5.5 Electrical connection

⚠ DANGER

Risk of fatal injury due to electric shock.

- Do not remove any covers to perform adjustment work on live parts.
- Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.
- Only use power interruption devices that are protected against unintentional reconnection of the power supply.
- The electric actuators are protected against spray water (IP 54). Avoid jets of water.

⚠ WARNING

Upon installation of the electric cables, you are required to observe the regulations concerning power installations according to DIN VDE 0100 as well as the regulations of your local power supplier.

Use a suitable power supply which guarantees that no dangerous voltages reach the device in normal operation or in the event of a fault in the system or any other system parts.

Only connect the actuator to the power supply after switching off the supply voltage. Make sure the supply voltage cannot be switched on again unintentionally.

ⓘ NOTICE

The TROVIS 57xx and Type 58xx Electric Actuators are connected as described in the actuator documentation (Referenced documentation on page 8).

5.6 Start-up

- Do not start up the regulator until all parts have been mounted.
- Make sure that the restriction (8.5 or 8.6) is open while filling the plant. To do so, use the electric actuator (10) to open it. An electric actuator with "Actuator stem extends" fail-safe action must be removed first. Turn the set point screw (8.3) or set point adjuster (8.2) for the flow control clockwise (↻) as far as it will go (see Fig. 3).
- Open the shut-off valves slowly over a time period of several minutes starting from the upstream pressure side. Afterwards, open all the valves on the consumer side (downstream of the regulator).

ⓘ NOTICE

- The TROVIS 57xx and Type 58xx Electric Actuators are started up and operated as described in the actuator documentation (Referenced documentation on page 8).
- The Type 2430 Control Thermostat is started up and operated as described in the associated documentation (Referenced documentation on page 8).

! NOTICE

Risk of valve damage due to a sudden pressure increase and resulting high flow velocities.

Slowly open the shut-off valve in the pipeline during start-up.

Pressure testing the plant

All plant components must be designed for the test pressure. If necessary, remove the regulator (use an adapter) from the pipeline or remove the control line (11) of the pressure actuator at the valve and seal the open connection with a blanking plug (see Table 4).

! NOTICE

Risk of damage to the diaphragm actuator due to impermissible excess pressure.

The test pressure must not exceed the nominal pressure at the actuator by 1.5 times on testing the pressure of the plant when the regulator is already installed.

Rinsing the plant

1. After filling the plant, first completely open the consumer
2. Adjust the maximum flow rate at the regulator (see section 6.1).
3. Rinse out the pipeline at full flow rate for several minutes.
4. Check the strainer (e.g. measure the pressure drop) and clean it, if necessary.

Table 4: Accessories

Accessories	Item no.
Blanking plug	8323-0030
Seal	8412-0771

6 Operation

6.1 Adjusting the set points

! NOTICE

- The TROVIS 57xx and Type 58xx Electric Actuators are configured as described in the actuator documentation (Referenced documentation on page 8).
- The Type 2430 Control Thermostat is adjusted as described in the associated documentation (Referenced documentation on page 8).

The flow rate can be adjusted either when the electric actuator is mounted on the valve or without a mounted electric actuator.

- ➔ Completely open the control and shut-off valves or the bypass valve in the plant.

To adjust or change the flow rate set point, proceed as follows:

Always adjust the set point based on a closed restriction.

! NOTICE

Risk of damage to the restriction stem through one-side loading (DN 15 to 25) while turning the set point screw (8.3) clockwise.

First turn the handwheel of the electric actuator to completely close the restriction.

6.2 Adjusting the control thermostat

Turn the black plastic adjuster (22) to adjust the temperature set point while watching the reference thermometer.

Turn clockwise (↻):

- The temperature (set point) is reduced.

Turn counterclockwise (↺):

- The temperature (set point) is raised.

The adjusted set point can be lead-sealed at the hole (8.4).

! NOTICE

The Type 2430 Control Thermostat is started up and operated as described in the associated documentation (Referenced documentation on page 8).

! NOTICE

Risk of regulator damage due to excessively high or low tightening torques.

Observe the specified torques when tightening regulator components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are too loose may cause leakage.

Observe the tightening torques specified in section 9.2.

6.3 Adjustment without electric actuator

1. DN 15 to 25:

Turn the manual adjuster (30) clockwise (↻) as far as it will go to close the restriction.

Use a suitable tool (Allen key, SW 4) to turn the set point screw (8.3) clockwise (↻) as far as it will go.

DN 32 to 50:

To close the restriction, loosen the fixing screw (8.7) and turn the set point adjuster (8.2) clockwise (↻) as far as it will go.

2. Refer to Fig. 7 to find out how many turns or which valve travel is required to set the required flow rate. For valve size DN 15, the adjustment curve that corresponds with the flow coefficient K_{VS} indicated on the nameplate must be selected.
3. Turn the set point screw (8.3) or set point adjuster (8.2) by the required number of turns. Turn it counterclockwise (↺) to open the restriction. The flow rate rises.

Operation

4. To fix the flow rate setting in **DN 32 to 50**, tighten the fixing screw (8.7). The setting must not be fixed in **DN 15 to 25**.
5. Pull the wire through the lead-seal hole (8.4) and lead-seal it.
6. Reconnect the power supply to the electric actuator (16).



Tip

For exact adjustment, verify adjusted value with a heat or flow meter.

6.4 Adjustment with electric actuator



WARNING

Observe the relevant safety regulations on mounting or removing the electric actuator.



NOTICE

Electric actuators are designed for use in electrical power systems. For wiring and maintenance, you are required to observe the relevant safety regulations. Only use power interruption devices that are protected against unintentional reconnection of the power supply.

Be careful while performing adjustment work on live parts. Never remove any covers!



Note

The flow rate indicated in the diagram (Fig. 7) is reduced by approximately 20 % for valves in sizes DN 32 to 50 which are combined with Types 5821 and 5822 Electric Actuators (discontinued).



NOTICE

The TROVIS 57xx and Type 58xx Electric Actuators are configured as described in the actuator documentation (Referenced documentation on page 8).

6.4.1 Adjustment with electric actuator without fail-safe action

1. Retract the actuator stem by turning the handwheel at the electric actuator counterclockwise or by applying a corresponding control signal from the control device.
2. To continue, proceed as described in section 6.1.

6.4.2 Adjustment with electric actuator with fail-safe action

1. Switch the control device to manual mode and change the control signal to retract the actuator stem all the way and compress the spring mechanism.

A de-energized actuator can be moved using the manual override. Remove the front case cover. Place a 4 mm hex wrench on the red actuating shaft and turn it.

Turn it only counterclockwise and only up to the point at which the torque switch in the actuator is activated.

Once the magnet has been released, the spring mechanism pushes the actuator stem back to the fail-safe position.

2. To continue, proceed as described in section 6.1.



Testing according to DIN EN 14597

Various SAMSON electric actuators with fail-safe action "actuator stem extends" are tested by the German technical surveillance association (TÜV) according to DIN EN 14597 in combination with Type 2489 Valve.

The registration number is available on request.

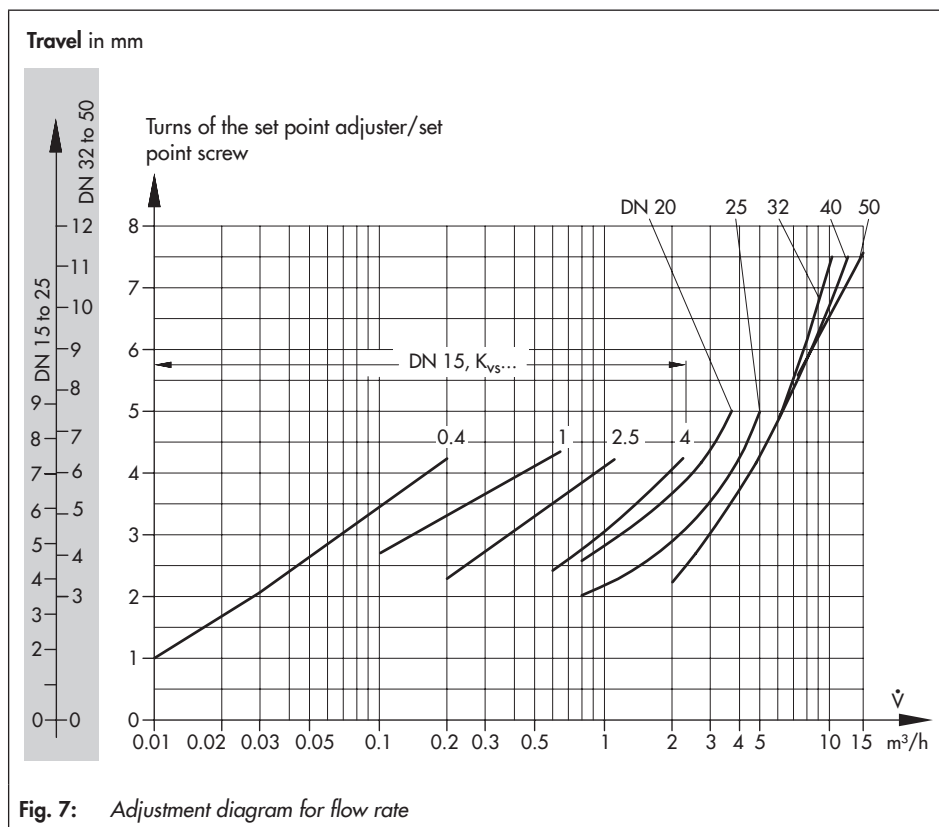


Fig. 7: Adjustment diagram for flow rate

7 Servicing

The regulator does not require much maintenance. Nevertheless, it is subject to natural wear, particularly at the seat, plug and operating diaphragm. Depending on the operating conditions, check the regulator at regular intervals to avoid possible malfunctions.

DANGER

Risk of bursting in pressure equipment.

Valves and pipelines are pressure equipment. Improper opening can lead to device components bursting.

- Before starting any work on the device, depressurize all plant sections affected as well as the valve.
- Drain the process medium from all the plant sections affected as well as the valve.
- If necessary, install a suitable overpressure protection in the plant section.
- Wear personal protective equipment.

WARNING

Risk of personal injury due to residual process medium in the valve.

While working on the valve, residual process medium can escape and, depending on its properties, may lead to personal injury, e.g. burns.

- If possible, drain the process medium from all the plant sections affected and the valve.
- Wear protective clothing, safety gloves and eye protection.

WARNING

Risk of burn injuries due to hot or cold components and pipelines.

Depending on the process medium, valve components and pipelines may get very hot or cold and cause burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

NOTICE

Risk of regulator damage due to incorrect servicing or repair.

Only allow trained staff to perform service and repair work.

NOTICE

Risk of regulator damage due to excessively high or low tightening torques.

Observe the specified torques when tightening regulator components. Excessive tightening torques lead to parts wearing out more quickly. Parts that are too loose may cause leakage.

Observe the tightening torques specified in section 9.2.

Tip

SAMSON's After-sales Service can support you in drawing up an inspection and test plan for your plant.

i Note

The regulator was checked by SAMSON before delivery.

- 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.

7.1 Preparation for return shipment

Defective devices can be returned to SAMSON for repair. Proceed as follows to return devices to SAMSON:

1. Put the regulator out of operation (see section 8.1).
2. If necessary, decontaminate the valve. Remove any residual process medium.
3. Fill in the Declaration on Contamination. The declaration form can be downloaded from our website at
 - ▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods.
4. Continue as described on our website at
 - ▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods.

7.2 Ordering spare parts and operating supplies

Contact your nearest SAMSON subsidiary or SAMSON's After-sales Service for information on spare parts, lubricants and tools.

8 Malfunctions

The malfunctions listed in Table 5 are caused by mechanical faults and incorrect regulator sizing. In the simplest case, the functioning can be restored following the recommended action. Special tools may be required for repair work.

Exceptional operating and installation conditions may lead to changed situations that may affect the control response and lead to malfunctions. For troubleshooting, the conditions, such as installation, process medium, temperature and pressure conditions, must be taken into account.

SAMSON's After-sales Service can help during troubleshooting. Further information is available in section 9.1.

Malfunctions

Table 5: Troubleshooting

Malfunction	Possible reasons	Recommended action
Flow rate exceeds adjusted set point	Leak between seat and plug	Remove regulator from the pipeline and clean the valve seat and plug. Contact SAMSON for further action.
	Defective operating diaphragm	Contact SAMSON's After-sales Service.
	Control line with needle valve blocked.	Remove control line and needle valve. Clean them.
	Valve too large for control task (flow rate) or too small (differential pressure)	Recalculate K_{VS} and contact SAMSON for further action.
Flow set point not reached.	Leak between seat and plug	Remove regulator from the pipeline and clean the valve seat and plug. Contact SAMSON for further action.
	Incorrect set point range selected.	Check set point range and contact SAMSON for further action.
	Safety device, e.g. pressure limiter, has been triggered.	Check plant. Unlock safety device.
	Plant differential pressure too low.	Compare differential pressure in the plant with the plant's drag.
	Strainer blocked	Drain and clean filter of the strainer.
	Incorrectly installed valve (direction of flow).	Install the regulator in such a way that the flow of direction corresponds with the direction indicated by the arrow on the valve body.
Control loop hunts.	Valve too large for control task	Recalculate K_{VS} and contact SAMSON for further action.

i Note

Contact SAMSON's After-sales Service for malfunctions not listed in the table and when the malfunction cannot be remedied as described.

8.1 Decommissioning and removal

⚠ DANGER

Risk of bursting in pressure equipment.

Regulators and pipelines are pressure equipment. Improper opening can lead to bursting of the regulator.

- Before starting any work on the regulator, depressurize all plant sections affected as well as the regulator.
- Drain the process medium from all the plant sections affected as well as the regulator.
- Wear personal protective equipment.

⚠ DANGER

Risk of fatal injury due to electric shock.

- ➔ Before performing any work on the device and before opening the device, disconnect the supply voltage and protect it against unintentional reconnection.
- ➔ Only use power interruption devices that are protected against unintentional reconnection of the power supply.

⚠ WARNING

Risk of burn injuries due to hot or cold components and pipeline.

Regulator components and the pipeline may become very hot or cold. Risk of burn injuries.

- Allow components and pipelines to cool down or warm up to the ambient temperature.
- Wear protective clothing and safety gloves.

⚠ WARNING

Risk of personal injury due to residual process medium in the regulator.

While working on the regulator, residual process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

Wear protective clothing, safety gloves and eye protection.

8.1.1 Decommissioning

⚠ WARNING

Observe the relevant safety regulations on mounting or removing the electric actuator.

To decommission the regulator for service and repair work or disassembly, proceed as follows:

1. Close the shut-off valve on the upstream side of the valve.
2. Close the shut-off valve on the downstream side of the valve.
3. Completely drain the pipelines and valve.
4. Depressurize the plant. Shut off or disconnect the control line.
5. If necessary, allow the pipeline and device to cool down or warm up to the ambient temperature.
6. Remove the valve from the pipeline.

8.2 Disposal



SAMSON is a producer registered at the following European institution ► <https://www.ewrn.org/national-registers/national-registers>.
WEEE reg. no.:
DE 62194439/FR 025665

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

i Information

We can provide you with a recycling passport according to PAS 1049 on request. Simply e-mail us at aftersaleservice@samsongroup.com giving details of your company address.

💡 Tip

On request, we can appoint a service provider to dismantle and recycle the product as part of a distributor take-back scheme.

9 Annex

9.1 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 aftersalesservice@samsongroup.com.

Addresses of SAMSON AG and its subsidiaries

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

To assist diagnosis and in case of an unclear mounting situation, specify the following details (so far as possible). See section 2:

- Device type and valve size
- Model number and configuration ID
- Upstream and downstream pressure
- Temperature
- Min. and max. flow rate
- Is a strainer installed?
- Installation drawing showing the exact location of the regulator and all the additionally installed components (shut-off valves, pressure gauge etc.)

9.2 Tightening torques

Part	Valve size	Tightening torque in Nm
Coupling nut (1.2)	DN 15	200
	DN 20	250
	DN 25	300
	DN 32	400
	DN 40	600
	DN 50	800
Coupling nut (7)	All	20
Screw joint with restriction (11.1)	All	22
Screw fitting (11.2)	All	22

10 Certificates

The EU declarations of conformity are included on the next pages:

- EU declaration of conformity in compliance with Pressure Equipment Directive 2014/68/EU on page 39.
- EU declaration of conformity in compliance with Machinery Directive 2006/42/EC for Type 2489 Regulator on page 40.

EU DECLARATION OF CONFORMITY
TRANSLATION



Module D / N° CE-0062-PED-D-SAM 001-22-DEU

For the following products, SAMSON hereby declares under its sole responsibility:

Devices	Series	Type	Version
Control valve for hot water and steam with fail-safe action in heating systems	Actuator 3374-21/-26 (Force 2000 N)		with Type 3241, 2811, 2814, 2823, 3321 EU-Type examination (production type), Module B, Certificate no.: 01 202 931/B-15-0030-01, type-tested according to standard DIN EN 14597:2015
Control valve for water and water-steam with fail-safe action in heating systems	Actuator 5725-310/-313/-320/-323 5725-810/-820 5825-10/-13/-20/-23 (Force 500 N) (Product number 2770)		with Type 3214 (2814), 2423 (2823), 3213 (2710), 3222 (2710), 2458 (2730), 2459 (2730) EU-Type examination (production type), Module B, Certificate no.: 01 202 641/B-19-0017-01 type-tested according to standard DIN EN 14597:2015, appendix DX

that the products mentioned above comply with the requirements of the following standards:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15 May 2014
Applied conformity assessment procedure for fluids according to Article 4(1)	Module D	Certificate-No.: N°CE-0062-PED-D-SAM 001-22-DEU by Bureau Veritas 0062

The manufacturer's quality management system is monitored by the following notified body:
Bureau Veritas Services SAS, 8 Cours du Triangle, 92800 PUTEAUX – LA DEFENSE

Applied harmonised standards and technical specifications: EN 12516-2, EN 12516-3, EN 12266-1, ASME B16.34

Manufacturer: SAMSON AKTIENGESELLSCHAFT, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 15th November 2022

Dr. Andreas Widi
Chief Executive Officer (CEO)

Dr. Thomas Steckenreiter
Chief Technology Officer (CTO)

Revision 09

Classification: Public - SAMSON AKTIENGESELLSCHAFT - Weismüllerstrasse 3 - 60314 Frankfurt am Main, Germany

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Module A

For the following products, SAMSON hereby declares under its sole responsibility:

Devices	Series	Type	Version
Self-operated Regulators	43	2432	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
	43	2436	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
	43	2437	DIN EN, body, CC499K and EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
Self-operated Regulators	---	2111	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
			DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 300, fluids G2, L2, L1 ¹⁾
Three-way valve	---	2119	DIN EN, body, EN-GJL-250 and 1.0619, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, 1.0619, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
			DIN EN, body, 1.0619 and 1.4408, DN 40-50, PN 40, fluids G2, L2, L1 ¹⁾
Control valve	---	3222	ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 300, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
			DIN EN, body, CC499K, DN 32-40, PN 25, all fluids
Three-way valve	---	3226	DIN EN, body, CC499K, DN 50, PN 25, fluids G2, L2 ²⁾
Three-way valve	---	3260	DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2 ²⁾
Globe valve Three-way valve	V2001	3531	DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
		3535	DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids
Control valve	---	3214	ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
Self-operated Regulators	42	2423	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
			DIN EN, body, EN-GJL-250 and EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
Self-operated Regulators	42	2422	DIN EN, body, EN-GJS-418-LT, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
			DIN EN, body, 1.0619 and 1.4408, DN 32-50, PN 16, all fluids
			DIN EN, body, 1.0619 and 1.4408, DN 32-40, PN 25, all fluids
Strainers	1N/1NI	2601	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M and A352 LCC, NPS 1½-2, Class 150, all fluids
			DIN EN, body, CB752S, G 2 (DN50), PN25, fluids G2, L2 ²⁾
Strainers	2N/2NI	2602	DIN EN, body, EN-GJL-250, DN 200-250, PN 10, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 100-125, PN 16, fluids G2, L2, L1 ¹⁾
Self-operated Regulators	---	2373/2375	DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
			DIN EN, body, 1.4408, DN 32-50, PN 16, all fluids
			ANSI, body, A995 4A and A995 5A, NPS 1½-2, Class 150, all fluids
Self-operated Regulators	44	2440 (44-0B) 2441 (44-1B) 2446 (44-6B)	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
		2442 (44-2) 2443 (44-3) 2444 (44-4) 2447 (44-7) 2448 (44-8) 2449 (44-9)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 ¹⁾

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Devices	Series	Type	Version
Self-operated Regulators	45	2451 (45-1)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
		2452 (45-2)	
		2453 (45-3)	
		2454 (45-4)	
		2456 (45-6)	
	46	2465 (46-5)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
		2466 (46-6)	
		2467 (46-7)	
	47	2471 (47-1)	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
		2474 (47-4)	
		2475 (47-5)	
	48	2488	DIN EN, body, EN-GJS-400-18-LT and CC499K, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
		2489	
	40	2405	DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
		2406	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 50, PN 25, fluids G2, L2, L1 ¹⁾
	41	2412	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
		2417	DIN EN, body, EN-GJL-250, DN 65-100, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 50-80, PN 25, fluids G2, L2, L1 ¹⁾
	42	2421 RS	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC and A351 CF8M, NPS 1½-2, Class 150, all fluids
	---	2331	DIN EN, body, EN-GJL-250, DN 65-200, PN 16, fluids G2, L2 ²⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 65-150, PN 16, fluids G2, L2 ²⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 25, fluids G2, L2 ²⁾
			DIN EN, body, 1.0619, DN 65-200, PN 16, fluids G2, L2 ²⁾
			DIN EN, body, 1.0619, DN 65-100, PN 40, fluids G2, L2 ²⁾
	---	2333	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 65-80, PN 25, fluids G2, L2, L1 ¹⁾
	---	2334	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			DIN EN, body, EN-GJS-400-18-LT, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
	---	2404-1	ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾
			ANSI, body, A216 WCC und A351 CF8M, NPS 1½-2, Class 150, all fluids
	---	2404-2	DIN EN, body, EN-GJL-250, DN 65-125, PN 16, fluids G2, L2, L1 ¹⁾
			ANSI, body, A126 B, NPS 3-4, Class 125, fluids G2, L2, L1 ¹⁾

¹⁾ Gases according to Article 4(1)(c.i), second indent
Liquids according to Article 4(1)(c.ii)

²⁾ Gases according to Article 4(1)(c.i), second indent
Liquids according to Article 4(1)(c.ii), second indent

EU DECLARATION OF CONFORMITY
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That the products mentioned above comply with the requirements of the following standards:

Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment	2014/68/EU	of 15. May 2014
Applied conformity assessment procedure for fluids according to Article 4(1)	Module A	

Technical standards applied: DIN EN 12516-2, DIN EN 12516-3, ASME B16.34

Manufacturer: SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

Frankfurt am Main, 26. August 2022

ppa. Norbert Tollas
Senior Vice President
Global Operations

i.V. Peter Scheermesser
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Product Maintenance & Engineered Products

Revision 00

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