

MOUNTING AND OPERATING INSTRUCTIONS



EB 5857 EN

Translation of original instructions



Type 5857 Electric Actuator

Three-step version · Version with digital positioner

Firmware version 1.04



Edition September 2018

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 5857 Electric Actuator is designed to operate a mounted globe valve used in heating, ventilation and air-conditioning systems. In the version with digital positioner, the positioner ensures a predetermined assignment of the valve position to the input signal.

The actuator is designed to operate under exactly defined conditions (e.g. thrust, travel). Therefore, operators must ensure that the actuator is only used in operating conditions that meet the specifications used for sizing the actuator at the ordering stage. In case operators intend to use the actuator 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 for limits and fields of application as well as possible uses. See the 'Design and principle of operation' section.

Reasonably foreseeable misuse

The actuator is not suitable for the following applications:

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

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

- Use of non-original spare parts
- Performing service and repair work not described

Qualifications of operating personnel

The actuator 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

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

- 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 control valve by the process medium, the operating pressure, the signal 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.

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 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.

Responsibilities of operating personnel

Operating personnel must read and understand these mounting and operating instructions as well as 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

Devices with a CE marking fulfill the requirements of the following Directives:

- 2014/30/EU
- 2014/35/EU
- 2011/65/EU

Devices with an EAC marking fulfill the requirements of the following Regulations:

- TR CU 004/2011
- TR CU 020/2011

The 'Certificates' section contains this declaration of conformity and TR CU certificate.

The Type 5857 Electric Actuator is designed for use in low-voltage installations.

➔ For wiring, maintenance and repair, observe the relevant safety regulations.

Referenced documentation

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

- Mounting and operating instructions of the valve on which the electric actuator is mounted, e.g. for SAMSON valves:
 - ▶ EB 5866 for Type 3222 Globe Valve
 - ▶ EB 5867 for Type 3222 N Globe Valve
 - ▶ EB 3135-1 for Type 2488 Pressure-independent Control Valve (PICV)
 - ▶ EB 3136 for Type 2488 N Pressure-independent Control Valve (PICV)
 - ▶ EB 5861 for Type 3260 Three-way Valve
 - ▶ EB 5863 for Type 3226 Three-way Valve

1.1 Notes on possible severe personal injury

DANGER

Risk of fatal injury due to electric shock.

- Before connecting wiring and performing any work on the device, disconnect the supply voltage and protect it against unintentional reconnection.
- Only use power interruption devices that can be protected against unintentional reconnection of the power supply.
- Do not open the actuator housing.

The electric actuator is protected against dripping water falling at an angle (IP 42).

- Avoid sprays and jets of water.

1.2 Notes on possible personal injury

No personal injury can be caused by moving parts.

WARNING

Risk of personal injury through incorrect operation, use or installation as a result of information on the actuator being illegible.

Over time, markings, labels and nameplates on the actuator may become covered with dirt or become illegible in some other way. As a result, hazards may go unnoticed and the necessary instructions not followed. There is a risk of personal injury.

- Keep all relevant markings and inscriptions on the device in a constantly legible state.
- Immediately renew damaged, missing or incorrect nameplates or labels.

1.3 Notes on possible property damage

! NOTICE

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

The Type 5857 Electric Actuator is designed for use according to regulations for low-voltage installations.

→ Observe the permissible tolerances of the supply voltage.

Risk of actuator damage due to excessively high tightening torques.

The connection of the electric actuator must be tightened with certain torques. Excessive tightening torques lead to parts wearing out more quickly.

→ Observe the specified tightening torques.

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.

→ Move the actuator stem only as far as the bottom or top end position.

Risk of injury due to a power surge.

The serial interface of the electric actuator is not fitted with a surge protector.

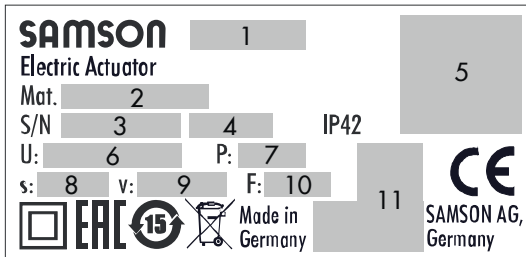
→ Ensure that surge protection is provided upon connecting cables.

2 Markings on the device

2.1 Nameplate

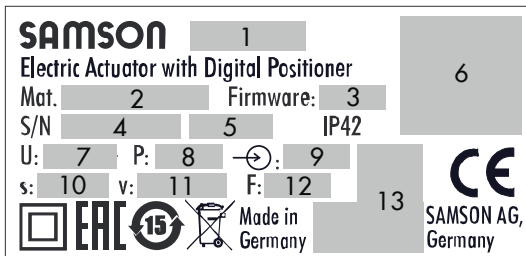
The nameplates shown were up to date at the time of publication of this document. The nameplate on the device may differ from the one shown.

Three-step version



- 1 Type designation
- 2 Material number
- 3 Serial number
- 4 Date of manufacture
- 5 Data Matrix code
- 6 Supply voltage
- 7 Power consumption
- 8 Rated travel
- 9 Stroking speed
- 10 Thrust
- 11 Other mark of conformity

Version with positioner



- 1 Type designation
- 2 Material number
- 3 Firmware version
- 4 Serial number
- 5 Date of manufacture
- 6 Data Matrix code
- 7 Supply voltage
- 8 Power consumption
- 9 Input signal
- 10 Rated travel
- 11 Stroking speed
- 12 Thrust
- 13 Other mark of conformity

2.2 Firmware versions

Firmware revisions ¹⁾	
Old	New
1.00	Up to 1.04
	Internal revisions

¹⁾ Only in the version with digital positioner

3 Design and principle of operation

→ See Fig. 3-1.

The three-step version of the electric actuator consists of a reversible synchronous motor and a maintenance-free gear. In the version with digital positioner, a stepper motor allows for supply by frequency-independent voltages.

The control signal of the controller is connected to the terminals eL and aL of the actuator. Voltage applied to eL causes the actuator motor to retract the actuator stem. Voltage applied to aL causes the actuator motor to extend the actuator stem.

The actuator is connected to the valve by a coupling nut (4) which provides a force-locking connection between the actuator stem and the plug stem of the valve.

The control signal from the input side is transferred over the motor and the connected gear and used as the positioning force to move the actuator stem. When the actuator stem (3) extends, the valve is closed, opposing the force of the valve spring (7). When the actuator stem retracts, the valve is opened as the plug stem (6) follows the motion of the return spring.

The motor is switched off by torque switches when an end position is reached or in case the motor is overloaded. Travel and direction of action can be read off the travel indicator (5) on the side of the actuator housing.

The actuator has a handwheel that is used to manually position the valve when the actuator is de-energized.

The Type 5857 Actuator can be combined preferably with SAMSON Types 3222, 3222 N, 2488 and 2488 N Valves as well as special versions of Type 3260 and Type 3226 Valves.

3.1 Additional equipment (positioner)

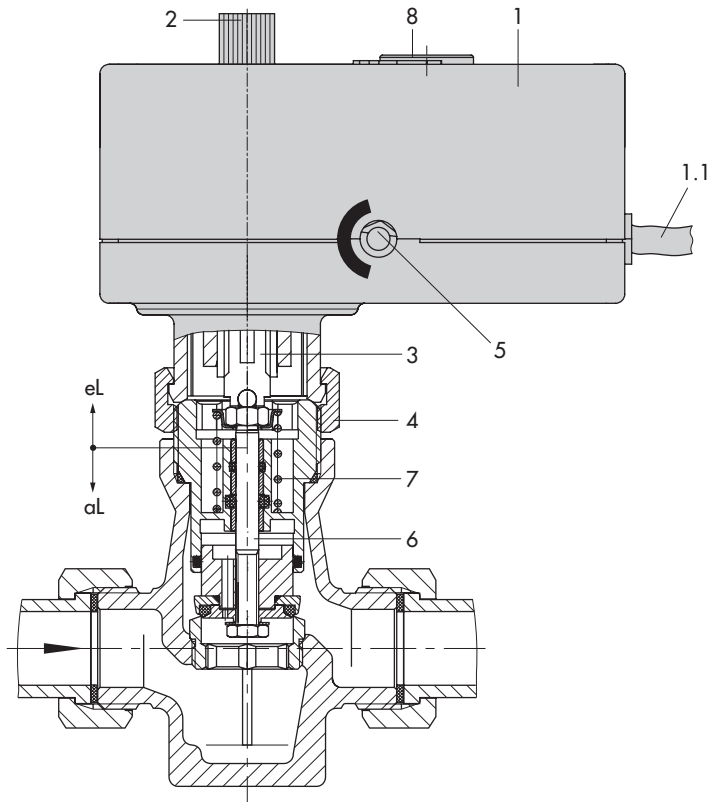
The actuator is available with a digital positioner.

The positioner ensures a predetermined assignment of the valve position to the input signal. A 0 to 10 V signal can be picked up at the brown (**BN**) and green (**GN**) wires for position indication (see the 'Installation' section for connection).

The characteristic and the input and output signal settings can be changed using the TROVIS-VIEW software (► EB 6661).

The version with positioner allows the characteristic to be reversed and is suitable for split-range operation.

Design and principle of operation



- 1 Actuator
- 1.1 Cable
- 2 Handwheel
- 3 Actuator stem
- 4 Coupling nut
- 5 Travel indicator
- 6 Plug stem
- 7 Valve spring
- 8 Cover ¹⁾ (serial interface, direction of action switch, initialization button and LEDs)

¹⁾ Only in the version with digital positioner

Fig. 3-1: Valve with actuator

3.1.1 Communication

Serial interface

The actuator with positioner is fitted with an RS-232 serial interface. This allows communication with TROVIS-VIEW using SSP protocol (see Fig. 3-2).

⚠ WARNING

Risk of injury due to a power surge.

The serial interface of the electric actuator is not fitted with a surge protector.

→ Ensure that surge protection is provided upon connecting cables.

⚠ NOTICE

Risk of damage to the electric actuator due to overvoltage.

→ Ensure that surge protection is provided upon connecting cables.

i Note

The serial interface is exclusively intended for servicing purposes. It must only be used temporarily and not permanently.

Configuration

The actuator with positioner is configured with the TROVIS-VIEW software. In this case, the serial interface on the actuator is used to connect the actuator to the computer. The TROVIS-VIEW software enables the user to easily configure the positioner as well as view process parameters online.

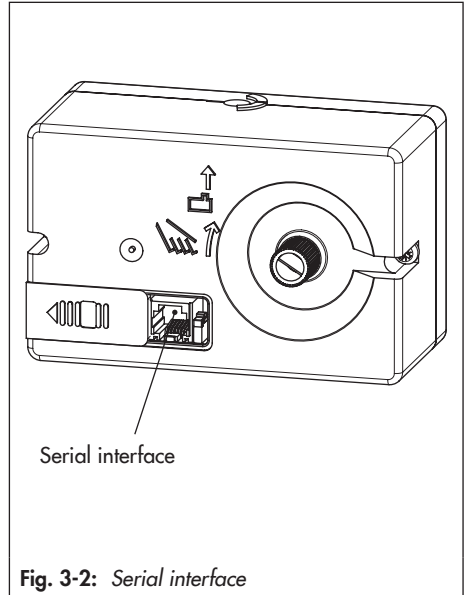


Fig. 3-2: Serial interface

i Note


TROVIS-VIEW can be downloaded free of charge from our website at

▶ www.samsongroup.com > Service & Support > Downloads > TROVIS-VIEW. Further information on TROVIS-VIEW (e.g. system requirements) is available on our website and in the Data Sheet ▶ T 6661 as well as the Operating Instructions ▶ EB 6661.

→ See the 'Start-up and configuration' section.

3.2 Technical data

Table 3-1: *Technical data · Type 5857*

Type 5857 Actuator	Version	Three-step	With digital positioner
Connection to valve		Force-locking	
Rated travel		6 mm	
Transit time for rated travel		20 s	30/20 ¹⁾ /10 s
Stroking speed		0.3 mm/s	0.2/0.3 ¹⁾ /0.55 mm/s
Thrust		300 N	
Supply voltage		230 V (±10 %), 50 Hz 24 V (±10 %), 50 Hz	24 V (±10 %), 50 Hz, 60 Hz and DC ²⁾
Power consumption		Approx. 3 VA	5 VA
Manual override		Yes	
Permissible temperature ranges			
	Ambient	0 to 50 °C	
	Storage	-20 to +70 °C	
	Process medium ³⁾	0 to 120 °C	
Degree of protection		IP 42 according to EN 60529	
Class of protection		II according to EN 61140	
Device safety		According to EN 61010-1	
Noise immunity		According to EN 61000-6-2 and EN 61326-1	
Noise emission		According to EN 61000-6-3 and EN 61326-1	
Conformity			
Weight		Approx. 0.7 kg	
Digital positioner			
Input signal		-	0 to 10 V ¹⁾ , R _i = 20 kΩ
Position feedback (output signal)			0 to 10 V ¹⁾ , R _B = 1 kΩ
Characteristic			Linear ¹⁾ , equal percentage, reverse equal percentage, user-defined

¹⁾ Default setting

²⁾ 10 s applies to 24 V DC (0 %, +10 %) for Transit time for rated travel setting.

³⁾ The permissible medium temperature depends on the valve on which the electric actuator is mounted. The limits in the valve documentation apply.

3.3 Dimensions

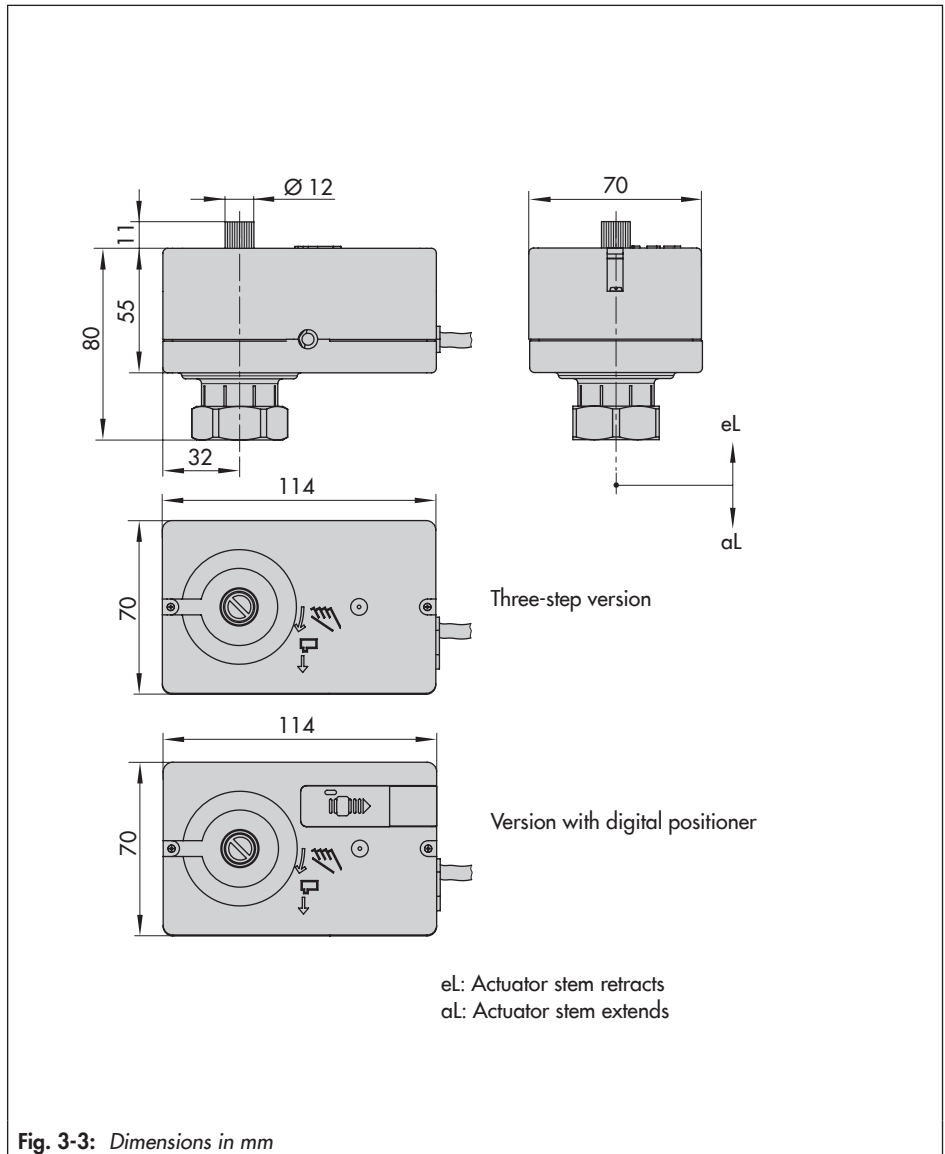


Fig. 3-3: Dimensions in mm

4 Shipment and on-site transport

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. 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).

4.2 Removing the packaging from the actuator

i Note

Do not remove the packaging until immediately before mounting and start-up.

1. Remove the packaging from the electric actuator.
2. Check scope of delivery (see Fig. 4-1).
3. Dispose of the packaging in accordance with the valid regulations.

1x	Type 5857 Electric Actuator
1x	Document IP 5857 (Important Product Information)

Fig. 4-1: Scope of delivery

4.3 Transporting the actuator

- Protect the electric actuator against external influences (e.g. impact).
- Protect the electric actuator against moisture and dirt.
- Observe the permissible transportation temperature of -20 to $+70$ °C.

4.4 Lifting the actuator

Due to the low service weight, lifting equipment is not required to lift the electric actuator.

4.5 Storing the actuator

! NOTICE

Risk of electric actuator 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.

i Note

We recommend regularly checking the electric actuator and the prevailing storage conditions during long storage periods.

Storage instructions

- Protect the electric actuator against external influences (e.g. impact).
- Protect the electric actuator against moisture and dirt.
- Make sure that the ambient air is free of acids or other corrosive media.
- Observe the permissible storage temperature from -20 to $+70$ °C.
- Do not place any objects on the electric actuator.

5 Installation

5.1 Installation conditions

Work position

If not described otherwise in the valve documentation, the work position for the control valve is the front view looking onto the operating controls.

Mounting orientation

The control valve can be installed in the pipeline in any desired position. However, a suspended mounting position of the actuator is not permissible.

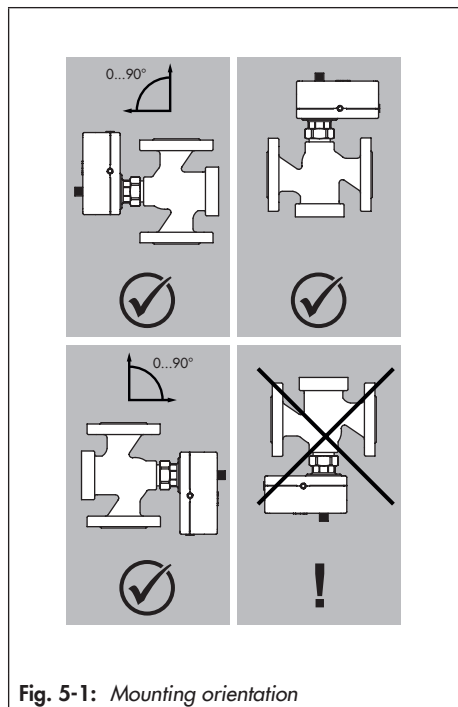


Fig. 5-1: Mounting orientation

5.2 Preparation for installation

Before mounting, make sure the following conditions are met:

- The actuator is not damaged.

Proceed as follows:

Lay out the necessary material and tools to have them ready during mounting.

! NOTICE

The actuator will be destroyed if the actuator housing is opened.

- Do not open the actuator housing.
- Do not remove the dots of varnish on the screws.

5.3 Mounting the actuator

The actuator is connected to the valve with a coupling nut in the de-energized state (see Fig. 5-2).

1. Turn the handwheel (2) counterclockwise to retract the actuator stem.
2. Place the actuator on the valve connection and fasten with the coupling nut (4).

Tightening torque	20 Nm
-------------------	-------

5.4 Installing the control valve into the pipeline

- Install the valve into the pipeline according to the specifications in the mounting and operating instructions of the valve.

NOTICE

Risk of actuator damage or malfunction due to adverse weather conditions.

- Do not install the actuator outdoors.

NOTICE

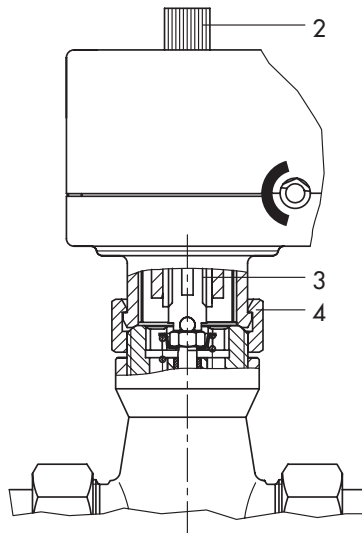
Degree of protection not achieved due to incorrect mounting position.

- Do not install the valve with the actuator suspended downwards (see section 5.1).

NOTICE

Risk of actuator damage due to direct contact with steam.

- During mounting, make sure that the actuator cannot come into contact with a jet of steam during operation.



- 2 Handwheel
- 3 Actuator stem
- 4 Coupling nut

Fig. 5-2: Valve with Type 5857

5.5 Electrical connection

⚠ DANGER

Risk of fatal injury due to electric shock.

- Upon installation of the electric cables, you are required to observe the regulations concerning low-voltage installations according to DIN VDE 0100 as well as the regulations of your local power supplier.
- Use a suitable voltage 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 perform the electrical connection after switching off the supply voltage. Make sure the supply voltage cannot be switched on again unintentionally.

5.5.1 Three-step version

- Connect the wires of the three-wire connecting cable as shown in Fig. 5-3.

ⓘ NOTICE

Risk of malfunction due to the use of the wrong interference suppressors.

The rating of the interference suppression capacitors in the output circuit of the connected controller must not exceed a value of **2.5 nF** to ensure the proper functioning of the actuator.

- Do not use controllers that have interference suppression capacitor with a higher rating.

ⓘ NOTICE

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

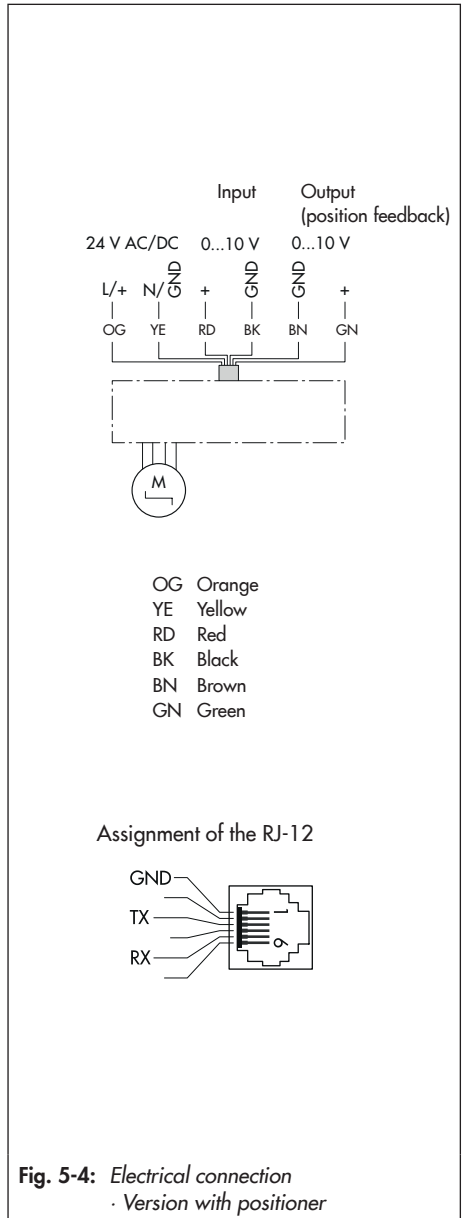
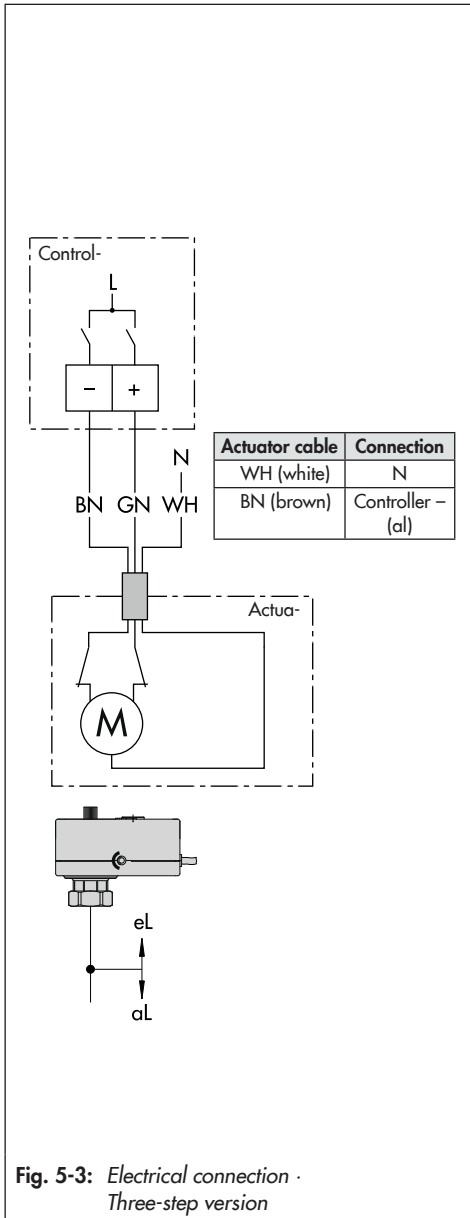
- Do not apply a voltage to eL and aL at the same time (version with three-step signal).

Wiring

- Connect the wiring as shown in Fig. 5-3.
- Connect actuators operated in parallel over separate contacts to prevent the actuators hunting in the end positions due to a shared OPEN and CLOSED contact.

5.5.2 Version with digital positioner

- Connect the wires of the six-wire connecting cable as shown in Fig. 5-4.



6 Operation

6.1 Device overview and operating controls

6.1.1 Three-step version

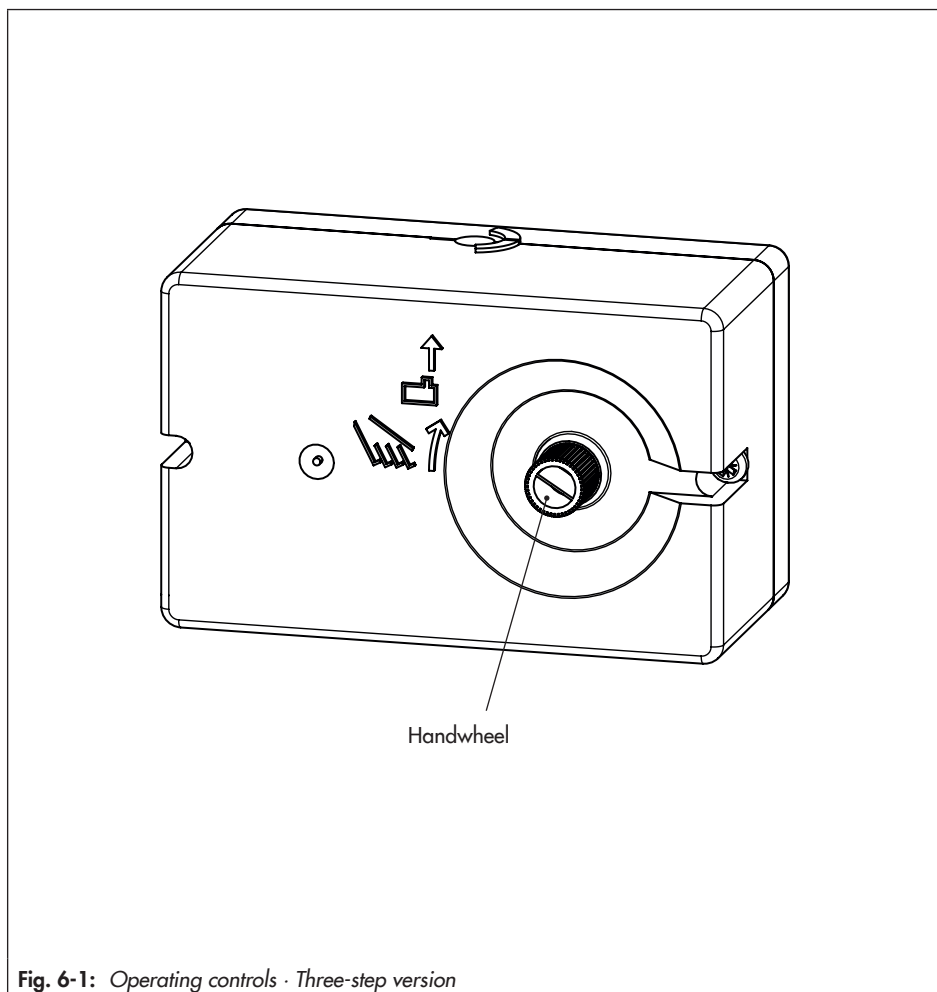


Fig. 6-1: *Operating controls · Three-step version*

6.1.2 Version with positioner

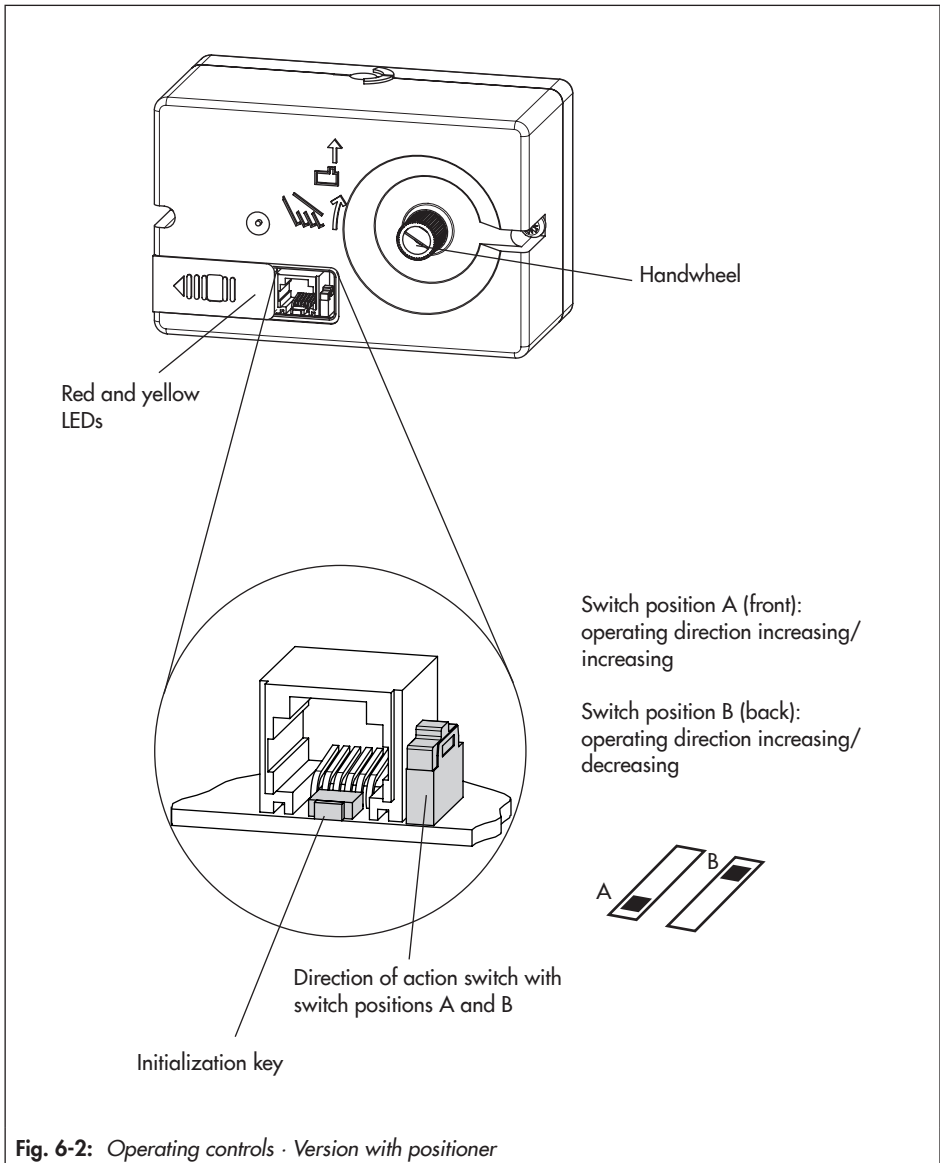


Fig. 6-2: Operating controls · Version with positioner

6.1.2.1 Indication with LEDs

The actuator with positioner has a red and a yellow LED which indicate the operating state of the actuator through a blinking pattern. The LEDs are located underneath the cover on top of the actuator (see Fig. 6-2).

6.1.2.2 Direction of action switch

The position of the direction of action switch determines the actuator's direction of action.

→ See Fig. 6-2.

- **Switch position A:** Direction of action increasing/increasing (>>)
The actuator stem retracts as the input signal increases.
- **Switch position B:** Direction of action increasing/decreasing (<<)
The actuator stem extends as the input signal increases.

Actuator stem extended

- For globe valves: Valve closed
- For three-way mixing valves: Port A → AB open, B → AB closed
- For three-way diverting valves: Port AB → A closed, AB → B open

Actuator stem retracted

- For globe valves: Valve open
- For three-way mixing valves: Port A → AB closed, B → AB open
- For three-way diverting valves: Port AB → A open, AB → B closed

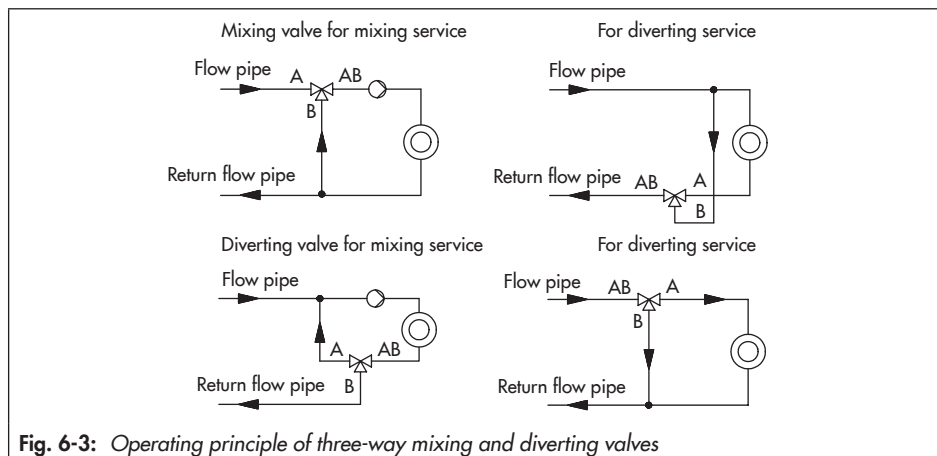


Fig. 6-3: Operating principle of three-way mixing and diverting valves

6.1.2.3 Initialization key

To achieve correct position feedback, the actuator must be initialized. This is also necessary after changing any settings at the actuator.

Initialization is started manually by pressing the initialization button (see the 'Start-up and configuration' section).

7 Start-up and configuration

7.1 Putting the actuator with three-step signal into operation

Once the actuator has been mounted correctly and the wiring has been performed as described in the 'Installation' section, the electric actuator is ready for use and can be controlled by a three-step signal (see specifications in technical data).

7.2 Putting the actuator with positioner into operation

7.2.1 Initializing the actuator

To achieve correct position feedback, the actuator must be initialized. This is also necessary after changing the configuration at the actuator.

The actuator can be initialized at the actuator itself or over the TROVIS-VIEW software.

NOTICE

The process is disturbed by the movement of the actuator stem.

→ Do not perform the initialization while the process is running. First isolate the plant by closing the shut-off valves.

Start initialization

1. Press the initialization button for about one second until the red LED is illuminated.
2. Release initialization button. Initialization starts.

The **red LED** indicates that initialization is in progress (see page 7-2).

i Note

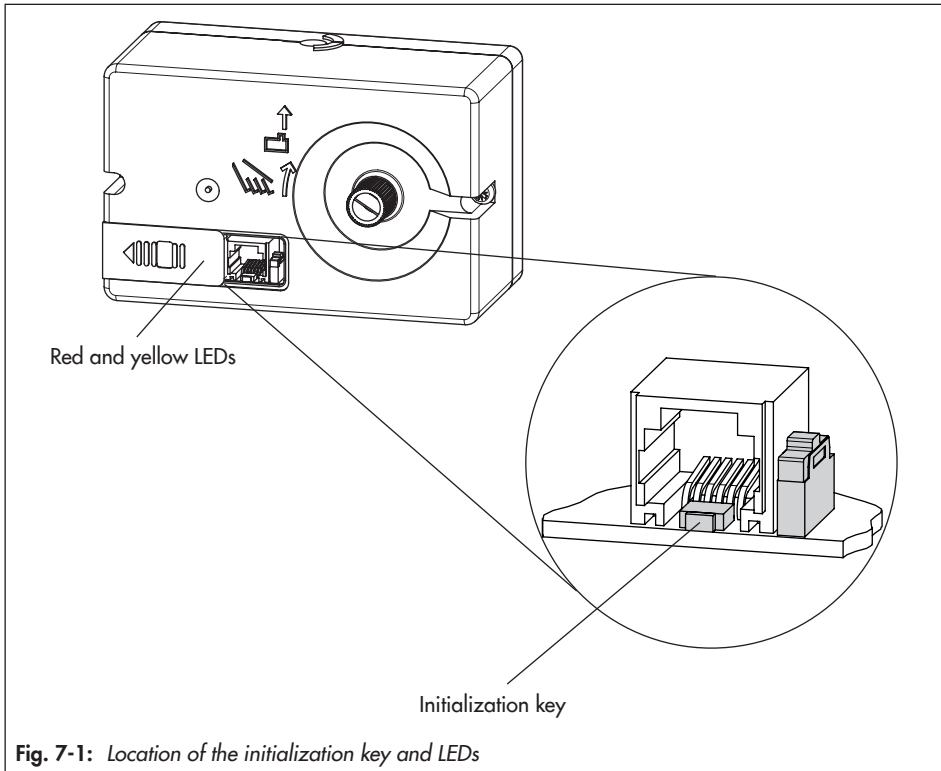
The actuator automatically performs a zero calibration as soon as the supply voltage is applied to the L and N terminals. This is indicated by the red LED blinking (see the 'Operation' section). This function does not replace the initialization procedure.

! NOTICE

Risk of malfunction due to incomplete or incorrect start-up.

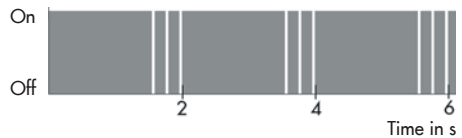
- Start initialization
- Complete the entire initialization procedure until the red LED is no longer illuminated.

The actuator is not ready to use until the initialization is completed.



Blinking pattern of the red LED

- Initialization



7.3 Configuring the actuator with positioner

The actuator is configured with the TROVIS-VIEW software (see Annex A). In this case, the serial interface on the actuator is used to connect the actuator to the computer (see the 'Design and principle of operation' section).

➔ Refer to ► EB 6661 for more details on configuration and operation using TROVIS-VIEW.

8 Operation

After connecting the supply voltage, the actuator is ready for use.

8.1 Three-step version

In three-step mode, the actuator stem is moved in the corresponding direction by applying a signal to the terminal eL or aL (see Fig. 8-1).

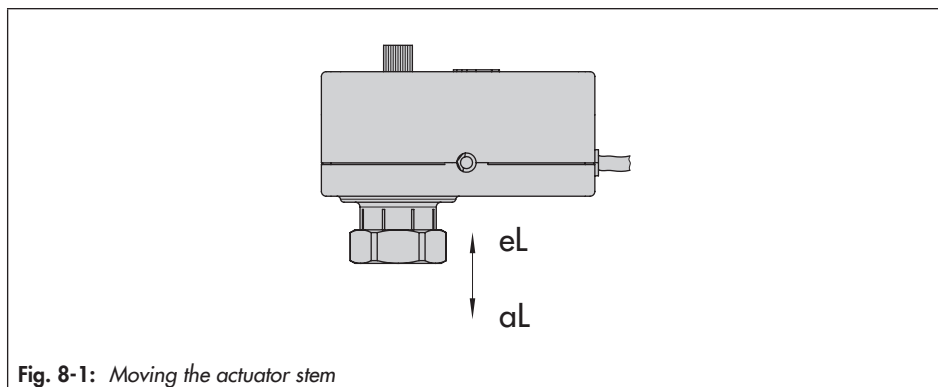


Fig. 8-1: Moving the actuator stem

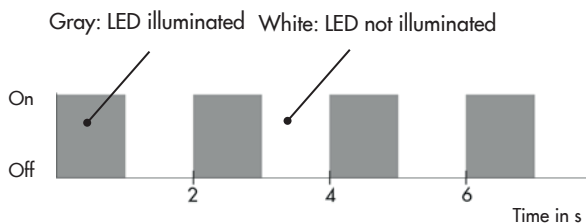
8.2 Version with positioner

The actuator stem's position directly follows the input signal.

8.2.1 LED blinking pattern

Explanations to the blinking pattern of the LEDs

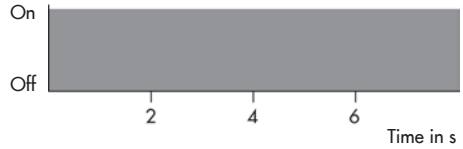
The state of the corresponding LED (on/off) is shown over time.



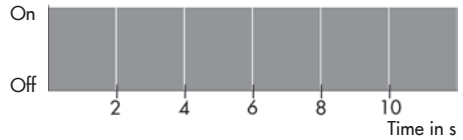
Operation

Blinking pattern of the yellow LED

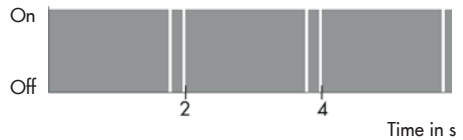
- Device ON or communication in progress



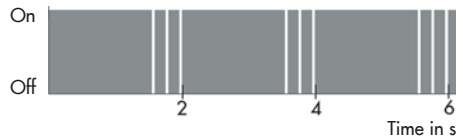
- Stem position is relative



- Protecting against blockage

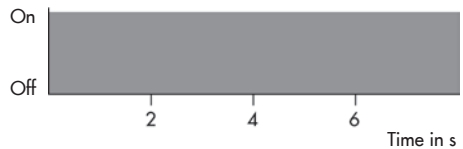


- Removing blockage

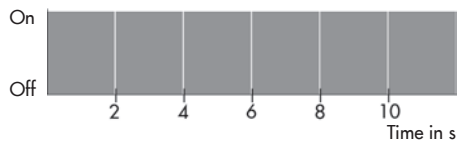


Blinking pattern of the red LED

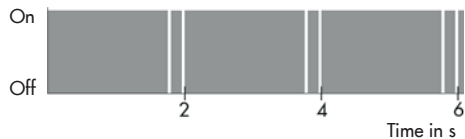
- Restarting device after reset or button pressed



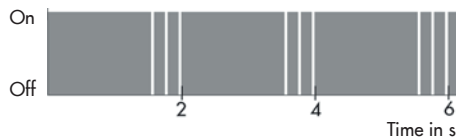
- Zero calibration in progress



- Transit time measurement in progress



- Initialization in progress



i Note

The LED blinking patterns apply when the memory pen is inserted into the actuator (see section 8.4).

The LED blinking patterns for error indication are shown in the 'Malfunctions' section.

8.3 Manual mode

The actuator stem can be moved mechanically or electrically. Travel and direction of action can be read off the scale of the travel indicator.

8.3.1 Mechanical override

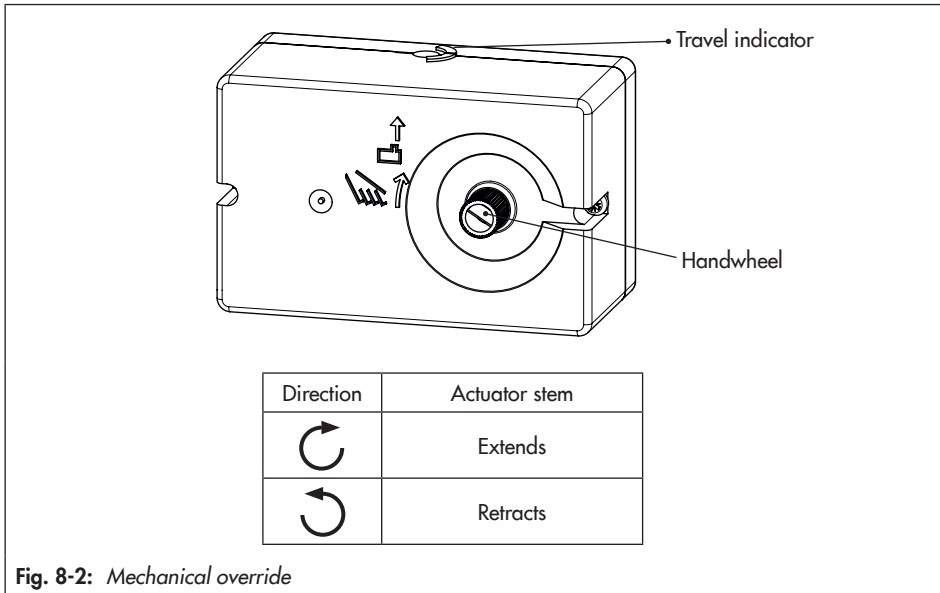


Fig. 8-2: Mechanical override

Direction of rotation

- Turn clockwise: the actuator stem extends (see Fig. 8-2).
- Turn counterclockwise: the actuator stem retracts (see Fig. 8-2).

i Note

The positioning of the valve is affected when the handwheel (version with positioner) is operated while the process is running. As a result, zero point and the position feedback do not match the calibrated values. Zero calibration, initialization or a transit time measurement must be performed again.

! NOTICE

Risk of damage to the actuator by turning it too far.

→ *Move the actuator stem only as far as the bottom or top end position.*

8.4 Operation using memory pen

See ► EB 6661.

The memory pen can be loaded with data configured in TROVIS-VIEW and the configuration data transferred to one or several devices of the same type and version.

Additionally, the data from the device can be written to the memory pen. This allows the configuration data to be simply copied from one device and loaded onto other devices of the same type and version.

The data logging function also allows operating data to be recorded.

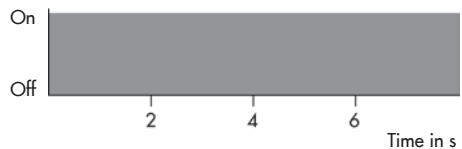
i Note

On inserting a memory pen that is empty or that contains data from another type of device or another version of the same device into the serial interface port of the actuator, the data from the actuator are uploaded to the memory pen regardless of the status of the memory pen and any other data on the memory pen will be overwritten.

LED blinking pattern for the memory pen

Memory pen actions and errors are indicated at the **yellow LED** on the actuator.

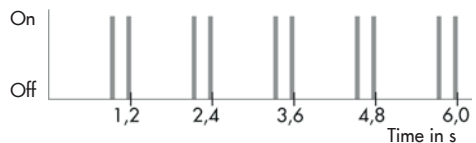
- Memory pen action completed



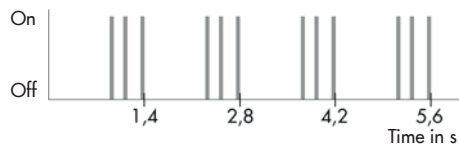
- Preparing to read data from memory pen



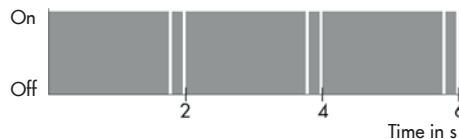
- Preparing to write data to memory pen



- Preparing data logging



- Data logging in progress



Data transmission between the actuator and memory pen

The memory pen is connected to the actuator as shown in Fig. 8-3. Refer to the TROVIS-VIEW Operating Instructions ► EB 6661 on how to transfer data.

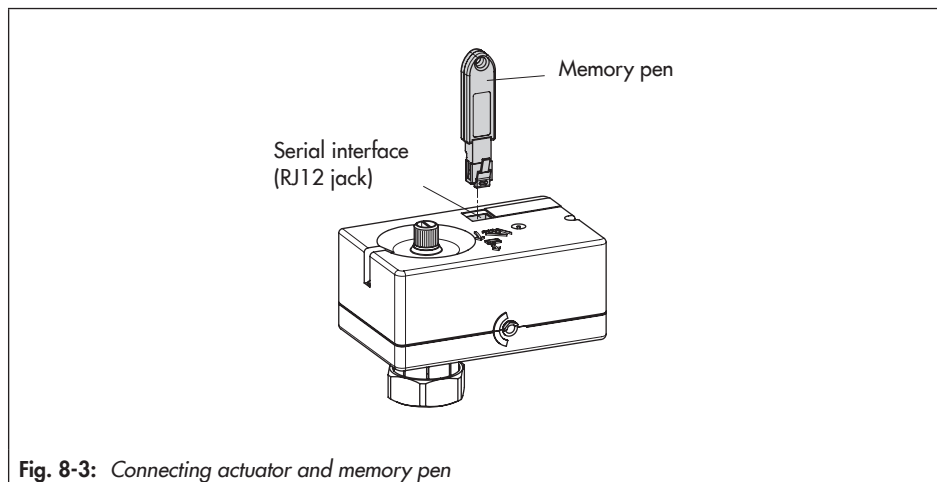


Fig. 8-3: Connecting actuator and memory pen

The **yellow LED** on the actuator indicates that the data logging is being prepared. Data transmission is completed when the **yellow LED** is illuminated continuously (see the 'Operation' section).

8.4.1 Copying function

The memory pen can be used to copy setting data to other Types 5857 Actuators after the data from the actuator have been transferred to the memory pen.

i Note

'Automatically write to memory pen' is automatically reset to the read status after data are transferred from the actuator for the first time.

8.4.2 Data logging

The memory pen-64 allows the following data to be saved:

- Input in %
- Actuator travel in %
- Position feedback in %
- Temperature inside device in °C
- Torque switch: Actuator stem retracted
- Torque switch: Actuator stem extended
- Position feedback is relative
- Malfunctions
- Input signal failure
- Direction of action switch
- Initialization key

The data are logged until the memory capacity of the memory pen is full.

Data in the memory pen can be saved to a data logging file using the TROVIS-VIEW software.

Data logging

→ See section 8.4 for the blinking pattern.

1. Plug the memory pen into the serial interface of the actuator (Fig. 8-3).

The **yellow LED** on the actuator indicates that the data logging is being prepared.

A change in the blinking pattern of the **yellow LED** indicates that data are being saved to the memory pen.

2. Data logging is completed when you remove the memory pen from the serial interface of the actuator.

i Note

You can load a data logging file into the Trend-Viewer by selecting Load diagram ... from the context-sensitive menu.

Transferring data onto a computer

1. Insert the memory pen together with modular adapter into the serial interface (COM port) of the computer (see Annex for accessories).
2. Select 'Read Logged Data' from the 'Memory Pen' menu.
3. Select the desired target directory. If the target directory is not changed, data will be saved in the SAMSON folder > Type 5857.
4. Enter the file name.
5. Click Save to start data transmission.

8.4.3 Command mode

In closed-loop operation, the actuator stem can be moved to the top or bottom end position using the command pen regardless of the input signal.

Possible settings:

- No command
- Retract actuator stem
- Extend actuator stem

8.5 Readings in TROVIS-VIEW

8.5.1 Operating values

i Note

The values in the *Operating values* folder cannot be changed.

In **online mode**, the current operating values are listed in the 'Operating values' folder. Depending on the basic setting, a graph is shown under the *Operating values* window.

8.5.2 Operating states

Error messages can be read in the *Service* folder (*Operating states*).

i Note

Operating states and errors are also indicated by the LEDs (see section 8.2.1).

8.5.3 Status messages

In the *Service* folder (*Status messages*), device and operation parameters are shown.

Device	Firmware version	
	Serial number	
	Device information	
	Manufacturing parameters	
Operation	Operating hours	in h
	Operating hours at excess temperature	in h
	Temperature inside device	in °C
	Highest temperature inside device	in °C
	Lowest temperature inside device	in °C
Actuator strokes	Motor running time	in h
	Attempts	
	Changes in direction	

Valve strokes	Travel cycles
LEDs	Yellow
	Red

8.5.4 Statistics

In the *Service* folder (*Statistics*), various readings of counters are shown.

Device failures counters	Supply voltage activated
	Program interruptions
	Limit contact error
	EPROM error
Alarms counters	Input signal failures
	Valve blockages
Counter: switch	Direction of action switch
	Initialization key
Counter: manual overrides	Manual overrides
Memory pen counters	Command retract stem
	Command extend stem
	Data read
	Data written
	Data logged
Functions counter	Basic settings changed
	Settings changed
	Manual level activated
	Zero calibration started
	Initialization started
	Reset triggered
	Default settings loaded
	Transit time measurement started

9 Malfunctions

→ Troubleshooting (see Table 9-1).

i Note

Contact SAMSON's After-sales Service for malfunctions not listed in the table.

Table 9-1: Troubleshooting

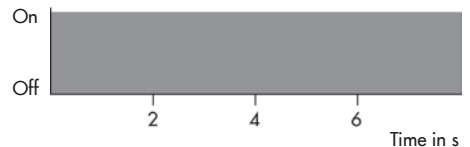
Error	Possible reasons	Recommended action
Actuator stem does not move.	Actuator is blocked.	→ Check attachment. → Remove the blockage.
	No or incorrect supply voltage connected.	→ Check the supply voltage and connections.
Actuator stem does not move through the whole range.	No or incorrect supply voltage connected.	→ Check the supply voltage and connections.
The actuator does not control the valve position ¹⁾ .	The actuator was not initialized during start-up.	→ Check the switch position of the direction of action switch. → Initializing the actuator
	The mounting has been changed.	

¹⁾ Version with positioner only

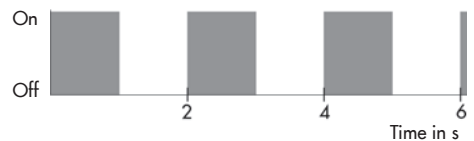
9.1 Error indication by LEDs (version with positioner)

Blinking pattern of the red LED

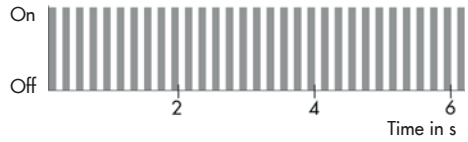
– Limit contact error



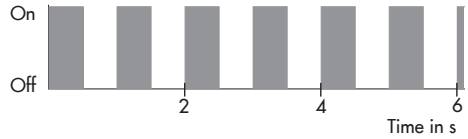
– Input signal failure detected



- EEPROM error

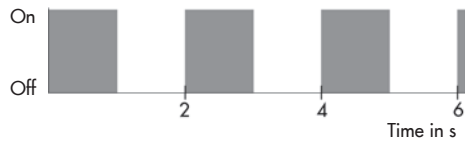


- Blockage

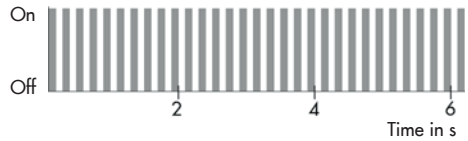


Blinking pattern of the yellow LED

- Plausibility error in memory pen



- EEPROM error in memory pen



9.2 Emergency action

Plant operators are responsible for emergency action to be taken in the plant.



Emergency action in the event of valve failure is described in the associated valve documentation.

10 Servicing

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

i Note

The electric actuator 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.*

The actuator requires no maintenance.

We recommend inspection and testing according to Table 10-1.

Table 10-1: *Recommended inspection and testing*

Inspection and testing	Action to be taken in the event of a negative result
Check the markings, labels and nameplates on the electric actuator for their readability and completeness.	➔ Immediately renew damaged, missing or incorrect nameplates or labels.
	➔ Clean any inscriptions that are covered with dirt and are illegible.
Check the electric wiring.	➔ Tighten any loose terminal screws (see the 'Installation' section).
	➔ Replace the actuator.

11 Decommissioning

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

DANGER

Risk of fatal injury due to electric shock.

- Before disconnecting live wires, switch off the supply voltage at the actuator and protect it against unintentional reconnection.

WARNING

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

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

- Wear protective clothing, safety gloves and eye protection.

WARNING

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

Valve 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.

To decommission the electric actuator for maintenance work or disassembly, proceed as follows:

- Put the control valve out of operation. See associated valve documentation.
- Disconnect the supply voltage and protect it against unintentional reconnection.
- Make sure that a signal from the controller cannot act upon the actuator.

12 Removal

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ DANGER

Risk of fatal injury due to electric shock.

→ *Before disconnecting the wires at the actuator, switch off the supply voltage and protect it against unintentional reconnection.*

⚠ WARNING

Risk of personal injury due to hot components.

→ *If necessary, allow the pipeline and valve components to cool down.*

⚠ WARNING

Risk of personal injury due to residual process medium.

While working on the valve, residual medium can flow out of the valve and, depending on its properties, cause personal injury, e.g. (chemical) burns.

→ *Wear protective clothing, safety gloves and eye protection.*

1. Disconnect the wires of the connecting lines.
 2. Retract the actuator stem using the hand-wheel (see the 'Operation' section).
 3. Undo the coupling nut and remove the actuator from the valve connection.
-

13 Repairs

If the actuator does not function properly according to how it was originally configured or does not function at all, it is defective and must be exchanged.

! NOTICE

Risk of actuator damage due to incorrect service or repair work.

- Do not perform any repair work on your own.
 - Contact SAMSON's After-sales Service.
-

13.1 Returning the actuator to SAMSON

Defective actuators can be returned to SAMSON for examination.

Proceed as follows to return devices:

1. Remove the electric actuator from the valve (see the 'Removal' section).
2. Continue as described on our website at
 - ▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods.

14 Disposal



SAMSON is a producer registered at the following European institution
▶ <https://www.ewrn.org/national-registers/national-registers>.
WEEE reg. no.:
DE 621 94439 / 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 Note

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.

15 Certificates

The following certificates are included on the next pages:

- EU declaration of conformity
- Declaration of incorporation
- TR CU certificate

The certificates shown were up to date at the time of publishing. The latest certificates can be found on the corresponding product page on our website:

▶ www.samsongroup.com > Products & Applications > Product selector > Actuators > 5857

EU declaration of conformity

SMART IN FLOW CONTROL



SAMSON

**EU Konformitätserklärung / EU Declaration of Conformity /
Déclaration UE de conformité**

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller/
This declaration of conformity is issued under the sole responsibility of the manufacturer/
La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
Für das folgende Produkt / For the following product / Nous certifions que le produit

**Elektrischer Stellantrieb / Electric Actuator / Servomoteur électrique
Typ/Type/Type 5857**

wird die Konformität mit den einschlägigen Harmonisierungsrechtsvorschriften der Union bestätigt/
the conformity with the relevant Union harmonisation legislation is declared with/
est conforme à la législation d'harmonisation de l'Union applicable selon les normes:

EMC 2014/30/EU	EN 61000-6-2:2005, EN 61000-6-3:2010 +A1:2011
LVD 2014/35/EU	EN 60335-1:2012
RoHS 2011/65/EU	EN 50581:2012

Hersteller / Manufacturer / Fabricant:

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3
D-60314 Frankfurt am Main
Deutschland/Germany/Allemagne

Frankfurt / Francfort, 2017-07-29

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

es_2507-01_de_en_fr_0007.pdf

Gert Nahler
Zentralabteilungsleiter/Head of Department/Chef de département
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E-Mail: samson@samson.de

Revision 07

Declaration of incorporation

DECLARATION OF INCORPORATION TRANSLATION



Declaration of Incorporation in Compliance with Machinery Directive 2006/42/EC

For the following product:

Type 5857 Actuator

We certify that the Type 5857 Electric Actuator is partly completed machinery as defined in the Machinery Directive 2006/42/EC and that the safety requirements stipulated in Annex I, 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.5, 1.2.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.9, 1.4.1, 1.5.1, 1.5.3, 1.5.4 and 1.5.8 are observed. The relevant technical documentation described in Annex VII, part B has been compiled.

Products we supply must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC.

Operators are obliged to install the products observing the accepted industry codes and practices (good engineering practice) as well as the mounting and operating instructions. Operators must take appropriate precautions to prevent hazards that could be caused by the process medium and operating pressure in the valve as well as by the signal pressure and moving parts.

The permissible limits of application and mounting instructions for the products are specified in the associated mounting and operating instructions; the documents are available in electronic form on the Internet at www.samsongroup.com.

For product descriptions refer to:

- Type 5857 Electric Actuator: Mounting and Operating Instructions EB 5857

Referenced technical standards and/or specifications:

- VCI, VDMA, VGB: "Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen, Mai 2018" [German only]
- VCI, VDMA, VGB: "Zusatzdokument zum Leitfaden Maschinenrichtlinie (2006/42/EG) – Bedeutung für Armaturen vom Mai 2018" [German only], based on DIN EN ISO 12100:2011-03

Comments:

- See mounting and operating instructions for residual hazards.
- Also observe the referenced documents listed in the mounting and operating instructions.

Persons authorized to compile the technical file:

SAMSON AG, Weismüllerstraße 3, 60314 Frankfurt am Main, Germany
Frankfurt am Main, 10 Februar 2022

Stephan Giesen
Director
Product Management


Sebastian Krause
Director
Strategic R&D, Valves and Actuators

Revision no. 01

Classification: Public · SAMSON AKTIENGESELLSCHAFT · Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany

Page 1 of 1

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ



СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ЕАЭС RU C-DE.9A11.B.00049/19

Серия **RU** № **0197358**

ОРГАН ПО СЕРТИФИКАЦИИ Общества с ограниченной ответственностью «ТМС РУС». Место нахождения (адрес юридического лица): Российская Федерация, 127083 город Москва, улица Верхняя Масловка, дом 20, строение 2; адрес места осуществления деятельности: Российская Федерация, 127083, город Москва, улица Верхняя Масловка, дом 20, строение 2, помещения № 18, 28. Аттестат аккредитации № РОСС RU.0001.119A11 от 02.07.2015. Номер телефона: +7 (495) 221-18-04; адрес электронной почты: info@tms-cs.ru.

ЗАЯВИТЕЛЬ Общество с ограниченной ответственностью «Самсон Контролс». Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: Российская Федерация, 109544, город Москва, бульвар Энтузиастов, дом 2, этаж 5, комната 11. ОГРН 1037700041026. Номер телефона: +7 (495) 777-45-45; адрес электронной почты: samson@samson.ru.

ИЗГОТОВИТЕЛЬ «SAMSON AG Mess- und Regeltechnik». Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Weismullerstrasse 3, D-60314 Frankfurt am Main, Германия.

ПРОДУКЦИЯ Приводы электрические типы 3274, 3374, 3375, 5724, 5725, 5757, 5824, 5825, 5857. Изготовление в соответствии со стандартами, указанными в приложении к сертификату соответствия на бланке № 0676634. Серийный выпуск.

КОД ТН ВЭД ЕАЭС 8501 10 930 0



СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ технических регламентов Таможенного союза «О безопасности низковольтного оборудования» (ТР ТС 004/2011); «Электромагнитная совместимость технических средств» (ТР ТС 020/2011)


СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ протоколов сертификационных испытаний № ГБ06-5418, ГБ06-5419, ГБ06-5420 от 18.09.2019, выданных Испытательной лабораторией Ассоциации экспертов по сертификации и испытаниям продукции «Сертификационный центр НАСТХОЛ», аттестат аккредитации РОСС RU.0001.21ГБ06; № 190919-004-006-02/ИР от 24.10.2019, выданных испытательной лабораторией Общества с ограниченной ответственностью «Инновационные решения», аттестат аккредитации РОСС RU.0001.21AB90; акта о результатах анализа состояния производства № 00062-A от 04.07.2019 органа по сертификации Общества с ограниченной ответственностью «ТМС РУС»; руководств по эксплуатации 3428-3П-2019 РЭ, 3428-5720-5750-2018 РЭ. Схема сертификации – 1с.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Стандарты, в результате применения которых на добровольной основе обеспечивается соблюдение требований технических регламентов: ГОСТ 12.2.007.0-75 «Система стандартов безопасности труда. Изделия электротехнические. Общие требования безопасности»; раздел 8 ГОСТ 33604.8.2-2013 «Совместимость технических средств электромагнитная. Устойчивость к электромагнитным помехам технических средств, применяемых в промышленных зонах»; раздел 7 ГОСТ 33604.6.4-2013 «Совместимость технических средств электромагнитная. Электромагнитная помехи от технических средств, применяемых в промышленных зонах». Назначенный срок службы – 12 лет. Назначенный срок хранения – 2 года. Условия хранения указаны в руководстве по эксплуатации 3428-3П-2019 РЭ, 3428-5720-5750-2018 РЭ.

СРОК ДЕЙСТВИЯ с 05.12.2019 по 04.12.2024

ВКЛЮЧИТЕЛЬНО

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.ЭА11.В.00049/19

Серия **RU** № **0676634** Лист 1 из 1

Стандарты, в соответствии с которыми изготавливается продукция

Обозначение стандарта	Наименование стандарта
IEC 60730-1:2013 / Cor. 1:2014	Automatic electrical controls for household and similar use. Part 1. General requirements. Corrigendum 1
EN 61000-6-1:2007	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
IEC 61000-6-2:2016	Electromagnetic compatibility (EMC). Part 6-2. Generic standards. Immunity for industrial environments
EN 61000-6-3:2007 + A1:2011	Electromagnetic compatibility (EMC). Part 6-3: Generic standards. Emission standard for residential, commercial and light-industrial environments
IEC 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use. Part 1: General requirements
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use. EMC requirements. Part 1: General requirements

Руководитель (уполномоченное лицо) органа по сертификации

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

(Подпись)
(Подпись)
(Подпись)



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16 Annex A (configuration instructions)

i Note

The actuator is configured with the TROVIS-VIEW software ► EB 6661).

16.1 Input signal

The input signal determines the actuator stem position. The default lower and upper range values of the input signal are 0 to 10 V.

i Note

At least 2.5 V must separate the upper and lower range values.

→ Click 'Settings' folder ('Inputs and outputs').

The settings for the input and output signal are shown:

Settings\Inputs and outputs\Input signal

Input signal	WE	Adjustment range
Lower range value	0.0 V	0.0 to 7.5 V
Upper range value	10.0 V	2.5 to 10.0 V

16.1.1 Split-range operation

The input signal range can be adapted, e.g. to achieve a plant operation characteristic by connecting two or more actuators in parallel (split-range operation).

Example: Two valves regulate the process medium in one common pipeline to achieve a large rangeability. One valve opens with a 0 to 5 V input signal, while the second valve also opens when the input signal increases further (5 to 10 V) and the first valve remains open. The two valves close in the reverse order.

16.2 Position feedback signal

The position feedback indicates the position of the actuator stem.

The span of the **position feedback signal** is adjusted over the lower and upper range value parameters.

Settings \Inputs and outputs \Position feedback signal

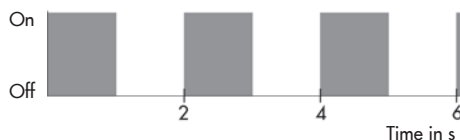
Position feedback signal	WE	Adjustment range
Lower range value	0.0 V	0.0 V to 10.0 V
Upper range value	10.0 V	0.0 V to 10.0 V

16.3 Functions

16.3.1 Detect input signal failure

The positioner detects a failure of the input signal as soon as the value falls below the lower range value by 0.3 V. An input signal failure is indicated in the 'Service' folder ('Statistics') as well as by the **red LED**:

- Input signal failure detected



i Note

The input signal failure can only be detected when at least 0.5 V is set as the lower range value.

If the **Input signal failure** function is active, the reaction of the actuator upon failure of the input signal is determined by the Positioning value upon input signal failure parameter.

- 'Positioning value upon input signal failure' = **Internal**

The actuator stem moves to the position specified in the Internal positioning value parameter upon failure of the input signal.

- 'Positioning value upon input signal failure' = **Last position**

The actuator stem remains in the last position that the valve moved to before failure of the input signal.

The error message is reset and the actuator returns to closed-loop operation if the input signal moves within 0.2 V of the lower range value.

Settings\Actuator\Functions

Functions	WE	Adjustment range
Detect input signal failure	No	Yes/No
Positioning value upon input signal failure	Internal	Internal, last position
Internal positioning value	0.0 %	0.0 to 100.0 %

16.3.2 End position guiding

The actuator stem moves to the end positions earlier if the **end position guiding** function is active:

- 'End position guiding when the value falls below the limit'
The actuator stem moves to the 0 % position when the input signal falls below 'Value below limit (end position guiding)'.
- 'End position guiding when the value exceeds the limit'
The actuator stem moves to the 100 % position when the input signal exceeds 'Value above limit (end position guiding)'.

i Note

When 'End position guiding (stem extends)' = 0 % and 'End position guiding (stem retracts)' = 100 %, the end positioning guiding function is deactivated.

Settings\Actuator\Functions

Functions	WE	Adjustment range
End position guiding (stem extends)	1.0 %	0.0 to 49.9 %
End position guiding (stem retracts)	97.0 %	50.0 to 100.0 %

16.4 Blockage

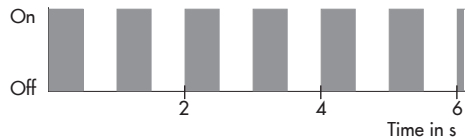
16.4.1 Blockage detection

i Note

The positioner can only detect a valve blockage after either an initialization ('Start-up and configuration' section) or a transit time measurement ('Service' folder in 'Start-up' or 'Functions') has been performed after the actuator is started up for the first time.

The positioner detects a valve blockage **when the actuator stem extends** and with **absolute travel adjustment** by comparing the travel after the limit switch has been triggered with the travel measured on initialization. If the comparison shows that the limit switch was triggered too early, this indicates that there is a valve blockage. The **red LED** blinks:

- Blockage



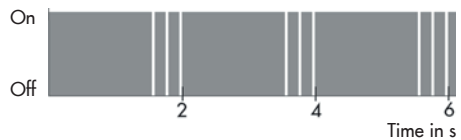
Settings \ Actuator \ Blockage

Function	WE	Adjustment range
Blockage detection	No	No, Yes

16.4.2 Blockage removal

When the **Blockage removal** function is active, the actuator stem extends and retracts 1 mm at the adjusted stroking speed three times in sequence. The action is indicated by the **yellow LED** (only when the **Blockage removal** function is active).

- Removing blockage



Settings\Actuator\Blockage

Function	WE	Adjustment range
Blockage removal	No	No, Yes

16.4.3 Indicate blockage

The positioner indicates a blockage when the **Indicate blockage** function is active (only when the 'Blockage detection' is activated).

- 12 V is issued at the output as **position feedback signal**.

Settings\Actuator\Blockage

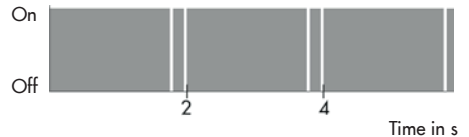
Function	WE	Adjustment range
Indicate blockage	No	No, Yes

16.4.4 Blocking protection

The **Blocking protection** prevents the valve from seizing up. If the actuator stem is in the 0 % position, it is extended slightly and then moved back to the closed position 24 hours after it last moved.

Movement of the actuator stem caused by the activated blocking protection is indicated by the **yellow LED**:

- Protecting against blockage



Settings\Actuator\Blockage

Function	WE	Adjustment range
Blocking protection	No	No, Yes

16.5 Travel

16.5.1 Limited travel range

The **Limited travel range** parameter determines in % how far the actuator stem can move at the maximum. The travel determined during initialization acts as the reference.

Settings\Actuator\Travel

Function	WE	Adjustment range
Limited travel range	100.0 %	30.0 to 100.0 %

16.5.2 Travel adjustment

Travel adjustment can be made to be absolute or relative. The way the travel adjustment is made affects the control behavior.

– **Absolute travel adjustment:**

The absolute travel adjustment causes the actuator stem to move to the travel position determined by the input signal. To achieve this, an automatic zero calibration is performed after every start-up to obtain a reference value for the zero point. The position feedback indicates the position of the actuator stem.

– **Relative travel adjustment**

The relative travel adjustment causes the change in input signal to be reproduced by the position of the actuator stem. The actuator stem extends or retracts from the current actuator stem position corresponding to the change in signal. After starting up the actuator, a zero calibration is not performed. The stem position is unknown on reconnection after power failure. The input signal is assigned in this case as the start value. 12 V is issued as the position feedback signal. When, during operation, the actuator stem reaches the travel stop for "stem extends" and, at the same time, the input signal is 0 %, the stem position is recognized as a result.

Settings\Actuator\Travel

Function	WE	Adjustment range
Limited travel range	100.0 %	30.0 to 130.0 %



Tip

In closed-loop operation, the positioner must be operated with absolute travel adjustment (default setting).

16.5.3 Idle time during end position guiding

In closed-loop operation, the actuator's positioner must be operated with absolute travel adjustment (default setting).

Change the travel adjustment in the 'Settings' folder (Actuator\Travel).

Settings\Actuator\Functions

Function	WE	Adjustment range
Idle time during end position guiding	0 s	0 to 99 s

i Note

The further description refers to the operation with absolute travel adjustment, unless specified otherwise.

16.5.4 Velocity

The actuator stem moves to the position determined by the input signal at the selected stroking speed. There are three speed levels:

- Slow = 0.2 mm/s
- Standard = 0.3 mm/s
- Fast = 0.55 mm/s

Settings\Actuator\Travel

Function	WE	Adjustment range
Velocity	Standard	Slow, Standard, Fast

i Note

The transit time is calculated from the travel and the stroking speed. The transit time is the time that the actuator stem needs to move through the adjusted travel.

$$\text{The following applies: } \text{Transit time in s} = \frac{\text{Travel in mm}}{\text{Stroking speed in mm/s}}$$

16.5.5 Dead band (switching range)

The dead band determines how sensitive the actuator reacts. A change in the input signal by the hysteresis first causes a minimally small change in the valve position.

Settings\Actuator\Travel

Function	WE	Adjustment range
Dead band (switching range)	2.0 %	0.5 to 5.0 %

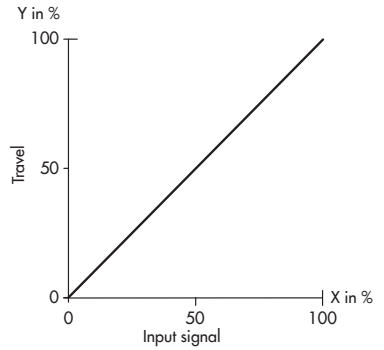
16.5.6 Characteristic

The characteristic expresses the relation between the input signal and the actuator stem position.

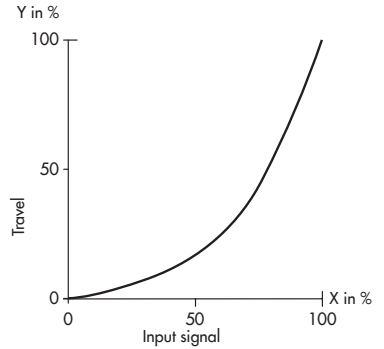
Perform the characteristic settings in the *Settings* folder (*Actuator\Characteristic*):

Characteristic types

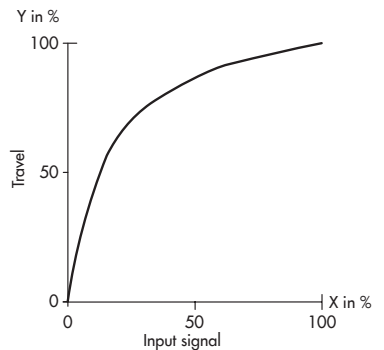
- **Linear**
The travel is proportional to the input signal.



- **Equal percentage**
The travel is exponential to the input signal.



- **Reverse equal percentage**
The travel is reverse exponential to the input signal.



- **User-defined**
A new characteristic based on the characteristic set can be defined over eleven points.

16.5.7 Start-up

Initialization can be started in the 'Service' folder ('Start-up').

16.5.8 Functions ('Service' folder)

The following functions can be performed in the 'Service' folder ('Functions'):

16.5.8.1 Manual level

The actuator can be switched to the manual mode using the TROVIS-VIEW software if the manual level is enabled in online mode. The actuator leaves the manual mode as soon as you exit the manual level or the online mode in TROVIS-VIEW.

The following actions can be activated in the manual level:

- Retract actuator stem
- Extend actuator stem
- Move stem to standardized value
- ➔ First enter the required positioning value in relation to the input signal range (standardized positioning value).
- Issue standardized position feedback
- ➔ First enter the required position feedback in relation to the span of the position feedback signal (standardized position feedback).
- Issue error message
- Activate the yellow LED
- Activate the red LED

16.5.8.2 Functions

Perform reset

The actuator is restarted.

Load default settings in actuator

The configuration is reset to the default setting.

Start zero calibration


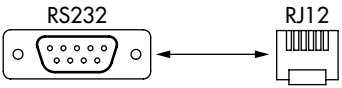

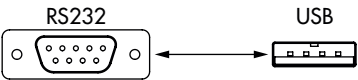
The actuator moves to the lower end position (stem extended). After the zero calibration is completed, the transit time is adopted and the actuator is ready for operation. The actuator stem is moved to the position determined by the input signal.

Start transit time measurement

Measures the time required to move from one end position to the other.

17 Annex B

17.1 Accessories

For version with positioner	
Hardware package consisting of: <ul style="list-style-type: none"> - Memory pen-64 - Connecting cable - Modular adapter 	Order no. 1400-9998
Memory pen-64	Order no. 1400-9753 
Connecting cable	Order no. 1400-7699 
Modular adapter	Order no. 1400-7698 
USB to RS232 adapter	Order no. 8812-2001 
Software	
TROVIS-VIEW (free of charge)	▶ www.samsunggroup.com > Service & Support > Downloads > TROVIS-VIEW

17.2 After-sales service

Contact our after-sales service for support concerning service or repair work or when malfunctions or defects arise.

E-mail contact

You can reach our after-sales service at

▶ aftersaleservice@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.

Required specifications

Please submit the following details:

- Type
- Configuration ID
- Serial number
- Firmware version (only version with positioner)

17.3 Configuration list and customer-specific data

Configuration	Default setting	Adjustment range	Setting
Input signal			
Lower range value	0.0 V	0.0 to 7.5 V	
Upper range value	10.0 V	2.5 to 10.0 V	
Position feedback signal			
Lower range value	0.0 V	0.0 to 10.0 V	
Upper range value	10.0 V	0.0 to 10.0 V	
Functions			
Detect input signal failure	No	Yes/No	
Positioning value upon input signal failure	Internal	Internal/last position	
Internal positioning value	0.0 %	0.0 to 100.0 %	
End position guiding when the value falls below the limit	1.0 %	0.0 to 49.9 %	
Value below limit (end position guiding)	97.0 %	50.0 to 100.0 %	
Blockage detection	No	Yes/No	
Blockage removal	No	Yes/No	
Indicate blockage	No	Yes/No	
Blocking protection	No	Yes/No	
Limited travel range	100.0 %	30.0 to 130.0 %	
Travel adjustment	Absolute	Absolute/Relative	
Velocity	Standard	Slow/Standard/Fast	
Dead band (switching range)	2.0 %	0.5 to 5.0 %	
Characteristic type	Linear	Linear Equal percentage Reverse equal percentage User-defined	

EB 5857 EN



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