

Type 3374 Electric Actuator

Three-step version



Translation of original instructions

Mounting and Operating Instructions

EB 8331-3 EN

Edition December 2012



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.

- 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 Department (aftersaleservice@samson.de).



The mounting and operating instructions for the devices are included in the scope of delivery. The latest documentation is available on our website at www.samson.de > **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

1	Safety instructions and measures	5
1.1	Notes on possible severe personal injury	7
1.2	Notes on possible personal injury	8
1.3	Notes on possible property damage	8
2	Markings on the device	9
2.1	Nameplate	9
3	Design and principle of operation	10
3.1	Versions	10
3.2	Additional equipment	11
3.2.1	Mechanical limit contacts	11
3.2.2	Resistance transmitter	11
3.3	Manual override	11
3.4	Technical data	12
3.5	Dimensions in mm	14
4	Measures for preparation	16
4.1	Unpacking	16
4.2	Transporting and lifting	16
4.2.1	Transporting	16
4.2.2	Lifting	16
4.3	Storage	16
5	Mounting and start-up	17
5.1	Mounting the actuator onto the valve	17
5.1.1	Mounting position	17
5.1.2	Construction with integrated yoke	18
5.1.3	Construction with ring nut	18
5.2	Electrical connections	20
5.2.1	Connecting the power supply	20
6	Additional functions	22
6.1	Mechanical limit contacts	22
6.1.1	Retrofitting limit contacts (without resistance transmitters)	22
6.1.2	Retrofitting (when resistance transmitters are already installed)	26
6.1.3	Adjusting the limit contacts	26
6.2	Resistance transmitters	28
6.2.1	Installing the resistance transmitters	28
6.2.2	Retrofitting (without limit contacts)	28
6.2.3	Installing the resistance transmitters (when limit contacts are already installed) ..	30
6.2.4	Adjusting the resistance transmitters	31

7	Servicing.....	32
7.1	Preparation for return shipment.....	32
8	Malfunctions	33
1.1	Emergency action	33
9	Decommissioning and disassembly	34
9.1	Decommissioning.....	34
9.2	Removing the actuator from the valve	34
9.2.1	Construction with integrated yoke.....	34
9.2.2	Construction with ring nut.....	34
9.3	Disposal.....	35
10	Annex.....	36
10.1	After-sales service	36
10.2	Selecting actuator boards	37

1 Safety instructions and measures

The Type 3374 Electric Actuator is designed to operate a mounted globe valve used in industrial applications as well as in heating, ventilation and air-conditioning systems. 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 applications that meet the specifications used for sizing the actuator at the ordering stage. In case operators intend to use the actuator in other applications or conditions than specified, contact SAMSON.

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

➔ Refer to the technical data for limits and fields of application as well as possible uses. See section 3.4.

Reasonably foreseeable misuse

The actuator 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 in these instructions

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

Personal protective equipment

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

- ➔ 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 to 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

Upon power supply failure, the Type 3374 ¹⁾ Electric Actuator causes the valve to move to a certain fail-safe position. The fail-safe action of SAMSON actuators is specified on the actuator nameplate.

¹⁾ Type 3374-21/-26/-31/-36

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. They must observe all hazard statements, warning and caution notes in these mounting and operating instructions, especially for installation, start-up and service work.

Responsibilities of the operator

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

Responsibilities of operating personnel

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

Referenced standards and regulations

The Type 3374 Electric Actuator fulfills the requirements of the Directives 2014/30/EU and 2014/35/EU. The declaration of conformity includes information about the applied conformity assessment procedure. This declaration of conformity is included in the appendix of these instructions.

The Type 3374 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 5861 for Type 3260 Three-way Valve
 - ▶ EB 5868 for Type 3213 and Type 3214 Globe Valves
 - ▶ EB 8113 for Type 3323 Three-way Valve
 - ▶ EB 8131 for Type 3531 Globe Valve for Heat Transfer Oil
 - ▶ EB 8135 for Type 3535 Three-way Valve for Heat Transfer Oil

1.1 Notes on possible severe personal injury

DANGER

Risk of electric shock.

- Before connecting wiring, performing any work on the device or opening the device, disconnect the power supply 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.

Risk of bursting in pressure equipment.

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

- Before starting any work on the valve, depressurize all plant sections concerned as well as the valve.
- Drain the process medium from all the plant sections concerned and from the valve.
- Wear recommended personal protective equipment. See associated valve documentation.

1.2 Notes on possible personal injury

WARNING

Crush hazard arising from moving parts.

The electric actuator contains moving parts (actuator and plug stems), which can injure hands or fingers if inserted into the actuator.

- Do not insert hands or fingers into the yoke while the valve is in operation.
- Disconnect the power supply before performing any work on the control valve.
- Do not impede the movement of the actuator or plug stem by inserting objects into their path.

1.3 Notes on possible property damage

NOTICE

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

The Type 3374 Electric Actuator is designed for use according to regulations for low-voltage installations.

- Observe the permissible tolerances of the power supply.

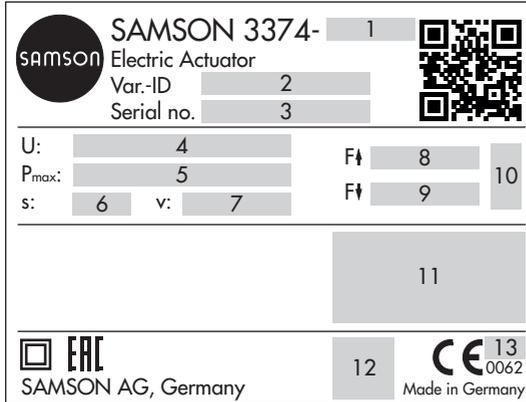
Risk of actuator damage due to excessively high tightening torques.

Observe the specified torques on tightening the mounting parts of Type 3374 Electric Actuators. Excessively tightened torques lead to parts wearing out quicker.

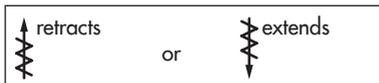
- Observe the specified tightening torques.

2 Markings on the device

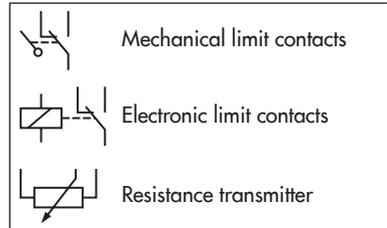
2.1 Nameplate



- 1 Type designation
- 2 Configuration ID
- 3 Serial number
- 4 Power supply; power line frequency
- 5 Power consumption
- 6 Nominal transit time
- 7 Stroking speed
- 8 Thrust (stem retracts)
- 9 Thrust (stem extends)
- 10 Fail-safe action



- 11 Additional electrical equipment



- 12 Testing according to DIN EN 14597
- 13 Year

3 Design and principle of operation

The Type 3374 Electric Actuator is used in industrial plants as well as in heating, ventilation and air-conditioning systems.

The actuator is suitable for form-fit attachment to various SAMSON valve series, depending on the version **with or without fail-safe action**.

The stepper motor is switched off by torque-dependent switches in the end positions or in case of overload. The force of the motor is transmitted to the actuator stem via gearing and ball screw.

The Type 3374 Actuator is optionally available with either integrated yoke (Fig. 1) or using an M30x1.5 ring nut (Fig. 2) including the necessary stem connecting parts.

Testing according to DIN EN 14597

The Types 3374 Electric Actuator with fail-safe action "actuator stem extends" is tested by the German technical surveillance association (TÜV) according to DIN EN 14597 in combination with various SAMSON valves. The register number is available on request.

3.1 Versions

The Type 3374 Electric Actuator is available with or without fail-safe action.

Version with fail-safe action

Type 3374-2x and Type 3374-3x Actuators are able to perform a fail-safe action and contain a spring assembly and an electromagnet. The actuator moves to the fail-safe position when the electromagnet is de-energized.



Fig. 1: Construction with integrated yoke



Fig. 2: Construction for mounting with ring nut

3.2 Additional equipment

The actuator can be equipped with mechanical limit contacts or with resistance transmitters to influence the tasks of control equipment.

3.2.1 Mechanical limit contacts

The two mechanical limit contacts can be adjusted independently from one another. They are operated by mechanical pins. The installation and adjustment of the mechanical limit contacts is described in section 6.1.

3.2.2 Resistance transmitter

Since the resistance transmitter is connected to the gearing, it can feed back the valve position as a resistance value between 0 and 1000 Ω , which is proportional to the travel.

3.3 Manual override

To move the actuator stem manually, place a 4 mm hex wrench on the red actuator shaft located at the side of the housing (see Fig. 3). The hex wrench is included in the scope of delivery. It is attached to the bottom of the housing.

i Note

Manual override is only possible in actuators with fail-safe action when the power supply (terminals L and N) is connected.



Fig. 3: Actuating shaft for manual override

3.4 Technical data

Table 1: *Technical data for Type 3374*

Actuator	Type 3374	-10	-11	-15	-21	-26	-31	-36
Fail-safe action		Without			Extends		Retracts	
Version with	Yoke	•	•		•		•	
	Ring nut			•		•		•
Rated travel	mm	30	15	30	15			
Transit time for rated travel								
Standard	s	240	120	240	120	120	120	120
Fast	s	120	60	120	60	60	60	60
In the event of fail-safe action	s	–	–	–	12	12	12	12
Stroking speed								
Standard	mm/s	0.125			0.125			
Fast	mm/s	0.25			0.25			
In the event of fail-safe action	mm/s	–			1.25			
Thrust		2.5 kN Stem retracts or extends			2 kN Stem extends		0.5 kN Stem retracts	
Power supply		230 V +10/–15 %, 50 Hz 230 V +10/–15 %, 60 Hz 24 V +10/–15 %, 50 Hz 24 V +10/–15 %, 60 Hz 120 V (90 to 132 V), 60 Hz						
Power consumption	VA	7.5/13 ²⁾			10.5/16 ²⁾			
Motor switch-off		Torque-dependent						
Permissible temperatures ³⁾								
Ambient		5 to 60 °C						
Storage		–25 to +70 °C						
Degree of protection		IP 54 according to EN 60529, IP 65 with three cable glands ¹⁾ , Suspended mounting not permitted						

Actuator	Type 3374	-10	-11	-15	-21	-26	-31	-36
Overvoltage category	II according to EN 60664							
Design and testing	EN 61010							
Class of protection	II according to EN 61140							
Noise immunity	EN 61000-6-2, EN 61326							
Noise emission	EN 61000-6-3, EN 61326							
Compliance	CE · EAC							
Manual override	Hex wrench · Adjustment not possible after fail-safe action has been triggered. Manual override only possible when power supply is connected (see section 5).							
Materials	Housing and cover: Plastic (glass-fiber reinforced PPO)							

- 1) Cable glands M20x1.5 with metal nut SW 23/24
- 2) Actuator with faster motor
- 3) The permissible medium temperature depends on the valve on which the electric actuator is mounted. The limits in the valve documentation apply.

Table 2: Weight

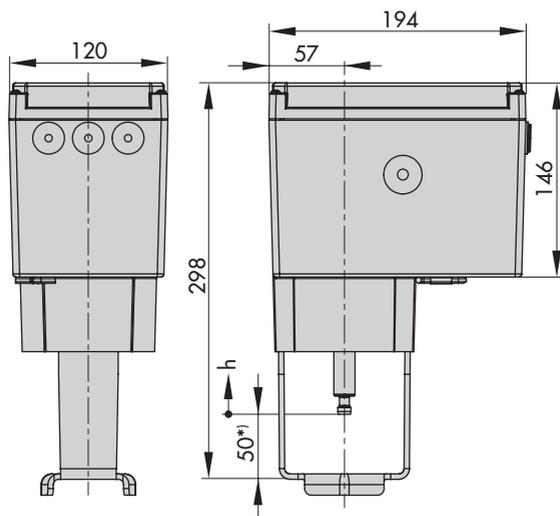
Type 3374	-10	-11	-15	-21	-26	-31	-36
kg (approx.)	3.2	3.2	3.3	3.9	4.0	3.5	3.6

Table 3: Options

Additional electrical equipment	
Limit contacts	Two travel-dependent, adjustable changeover switches, max. 250 V AC, 1 A
Resistance transmitters	0 to 1000 Ω, (0 to 900 Ω at rated travel) max. permissible current 1 mA

3.5 Dimensions in mm

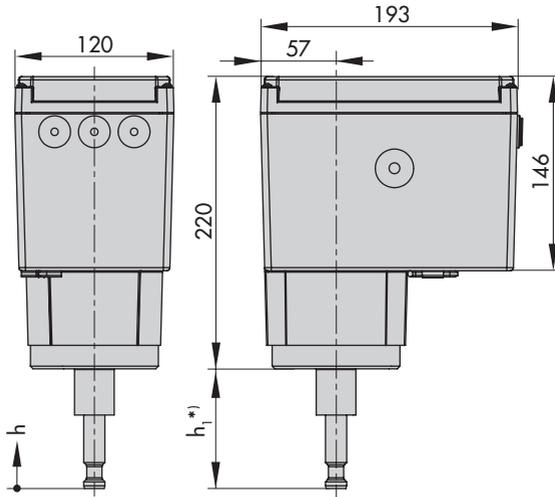
Type 3374-10/-11/-21/-31



*₁) When actuator stem is fully extended

Type 3374	Dimension h
-10	30
-11	15
-21	15
-31	15
-15	30
-26	15
-36	15

Types 3374-15/-26/-36



*1) When actuator stem is fully extended

Type 3374	Dimension h	Dimension h ₁
-10	30	–
-11	15	–
-21	15	–
-31	15	–
-15	30	90
-26	15	75
-36	15	75

4 Measures for preparation

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Compare the shipment received against 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 Note

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

1. Remove the packaging from the electric actuator.
2. Dispose of the packaging in accordance with the valid regulations.

4.2 Transporting and lifting

4.2.1 Transporting

- Protect the electric actuator against external influences (e.g. impact).
- Protect the electric actuator against moisture and dirt.
- Observe the permissible transportation temperature of -25 to $+70$ °C.

4.2.2 Lifting

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

4.3 Storage

i NOTICE

Risk of electric actuator damage due to improper storage.

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

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 -25 to $+70$ °C.
- Do not place any objects on the electric actuator.

5 Mounting and start-up

NOTICE

*Risk of malfunction due to incorrectly performed start-up.
Perform start-up following the described sequence.*

1. Mount the actuator onto the valve.
→ See section 5.1.
2. Connect power supply.
→ See section 5.2.

5.1 Mounting the actuator onto the valve

5.1.1 Mounting position

The control valve can be installed in the pipeline in any desired position. However, a suspended mounting position of the actuator is not permissible (see Fig. 4).

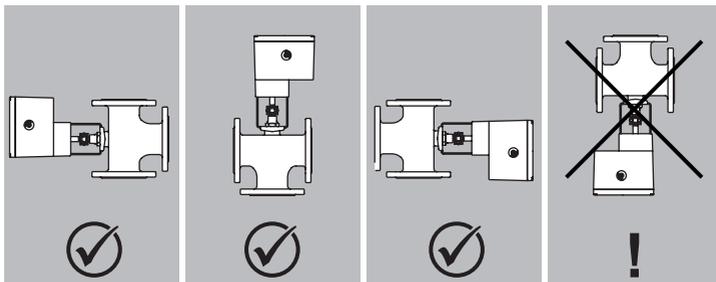


Fig. 4: Mounting position

5.1.2 Construction with integrated yoke

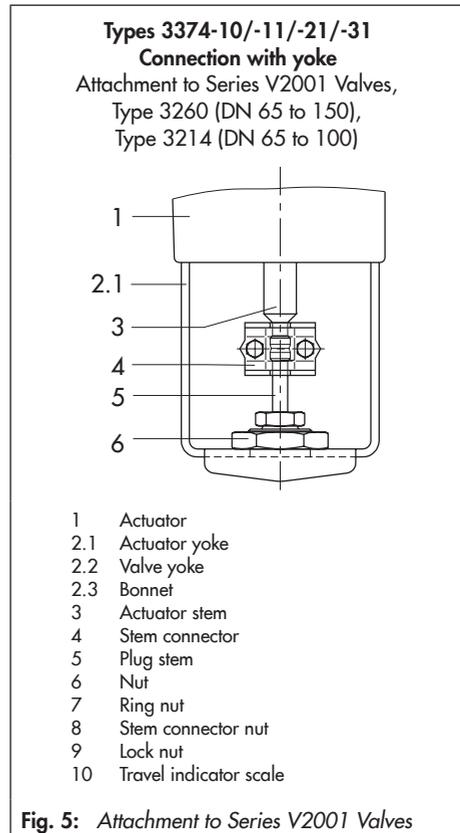
Attachment

- Series V2001 Valves (DN 15 to 80)
 - Type 3260 (DN 65 to 150)
 - Type 3214 (DN 65 to 100)
- Refer to Fig. 5
1. Remove protective covers and unscrew nut (6) from the valve.
 2. Retract actuator stem (3) as described in section 3.3.
 3. Place actuator with yoke onto the valve and fasten tight using nut (6, width across flats 36) with a minimum tightening torque of 150 Nm.
 4. When the plug stem (5) fits closely onto the actuator stem (3), attach both stem connector clamps (4) and fasten with screws.

5.1.3 Construction with ring nut

Attachment to Series 240 Valves

- See Fig. 6 on page 19.
1. Slide plug stem down to close the valve.
 2. Turn the stem connector nut (8) until the measurement $x = 75$ mm (DN 100 and larger: $x = 90$ mm) from the top of the yoke to the head of the stem connector nut (8) is achieved. Lock this position with the lock nut (9).

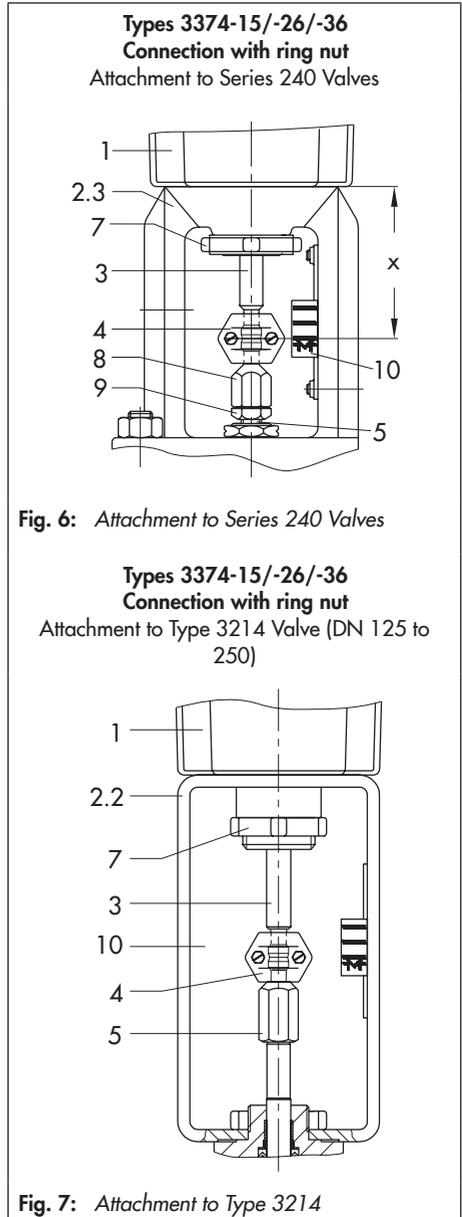


3. Retract actuator stem (3) as described in section 3.3.
4. Place actuator onto the valve bonnet (2.3) and secure using the ring nut (7).
5. When the stem connector nut (8) rests on the actuator stem, attach both stem connector clamps (4) and fasten with screws.
6. Move actuator stem (3) to the end position (valve closed) as described in section 3.3.
7. Align travel indicator scale (10) with the middle of the stem connector (4) and screw tight.

Attachment to Type 3214 Valve (DN 125 to 250)

➔ Refer to Fig. 7

1. Retract actuator stem (3) as described in section 3.3.
2. Place actuator onto the valve and secure using the ring nut (7). If necessary, retract the actuator stem slightly beforehand.
3. When the plug stem fits closely onto the actuator stem (3), attach both stem connector clamps (4) and fasten with screws.
4. Move actuator stem (3) to the end position (valve closed) as described in section 3.3.
5. Align travel indicator scale (10) with the middle of the stem connector (4) and screw tight.



5.2 Electrical connections

⚠ DANGER

Risk of 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 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.
 - Connect the actuator to the electrical network only after the power supply is first switched off. Make sure the power cannot be switched on unintentionally.
-

5.2.1 Connecting the power supply

- Connect the wiring as shown in Fig. 8.
- Guide the cables to the spring-cage terminals from the top.
- After applying the power supply, the actuator is ready for operation.

i Note

A maximum of three cable glands can be attached to the housing for cable entry.

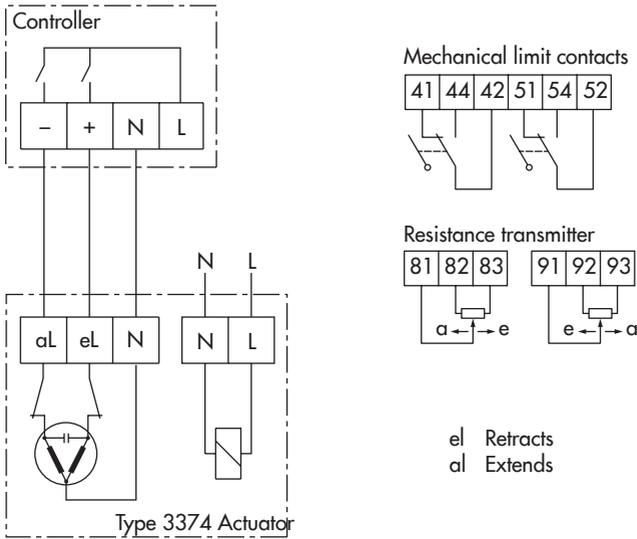


Table 4: Cables and stranded wires that can be used

Cable	Cross section
Single-wire H05(07) V-U ¹⁾	0.2 to 1.5 mm ²
Fine-wire H05(07) V-K ¹⁾	0.2 to 1.5 mm ²
With wire ferrule acc. to DIN 46228-1	0.25 to 1.5 mm ²
With wire ferrule and sleeve acc. to DIN 46228-4	0.25 to 0.75 mm ²

¹⁾ 8 mm stripped insulation at cable end

Fig. 8: Electrical connection

6 Additional functions

6.1 Mechanical limit contacts

To install the limit contacts, the following retrofit kits are required:

- Basic unit: order no. 1400-8829 (see Fig. 9)
- Retrofit kit: order no. 1402-0898 (see Fig. 10)

➔ When ordering the limit contacts, state the configuration ID and the type designation of the actuator. Both specifications are written on the nameplate (see section 2.1).

6.1.1 Retrofitting limit contacts (without resistance transmitters)

DANGER

Risk of electric shock.

Before installing electrical accessories, switch off the power supply and disconnect the signal input.

Tip

We recommend applying a small amount of lubricant (e.g. Vaseline) to the spindles on the gear faces and to the sides of the cogs.

Note

To undo the screws on the housing cover, use a Pozidriv PZ2 screwdriver to get enough hold on the screw heads.

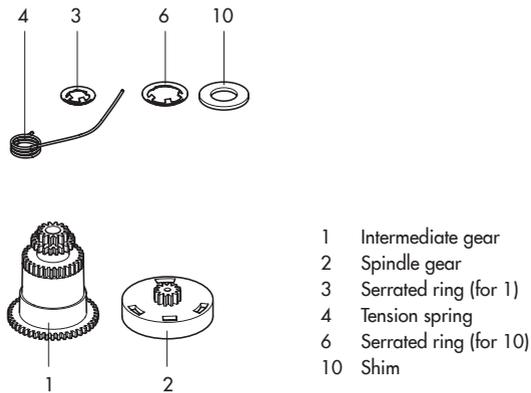


Fig. 9: Basic unit: order no. 1400-8829

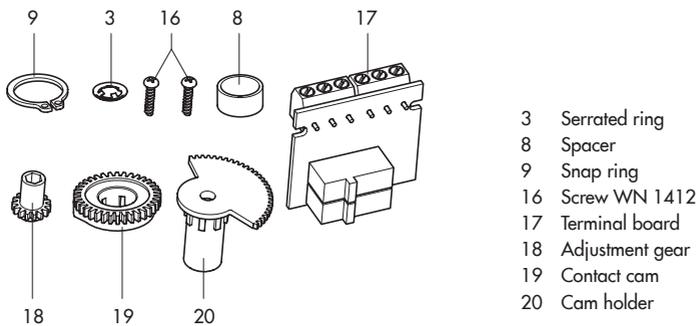


Fig. 10: Retrofit kit: order no. 1402-0898

➔ Refer to Fig. 11

1. Unscrew screws on housing cover and take the cover off the actuator.
2. Move the actuator stem to the end position depending on the fail-safe action "actuator stem extends" or "actuator stem retracts" (see section 3.3).
3. Unscrew fastening screws. Slide the actuator board (12) from its guiding to the right. Slightly lift the board and continue pushing it further towards the cable entry.
4. Clip the spindle gear (2) onto the sleeve (13). Make sure the side latch is properly engaged in the groove of the sleeve.
5. Slide the intermediate gear (1) onto the spindle 1 (11.1), mount the serrated ring (3) and push it down as far as it will go.
6. Slide the spacer (8) onto the spindle (11.2).
7. Place the tension spring (4) on to the corresponding spindle, ensuring that the long wire of the tension spring rests on the spacer (8) and on the intermediate gear (1).
8. Place both ready-assembled contact cams (19) with the cog first onto the cam holder (20).
9. Slide adjustment gears (18) onto their spindles and fasten with one screw each. Check whether the adjustment gears can be turned easily. If not, slightly loosen its screw again.
10. Turn both contact cams (19) on the cam holder (20) as illustrated in Fig. 13 corresponding with the position of the actuator stem.
11. Slide the cam holder with both contact cams onto the spindle 2 (11.2) corresponding with the position of the actuator stem as illustrated in Fig. 14. Make sure that the outermost cog of the cam support (20) engages in the gearwheel of the intermediate gear (1). In addition, the adjustment gears (18) must engage properly in the corresponding gears of the contact cams (19).
12. Secure the cam holder (20) and intermediate gear (1) with the serrated ring (3); push down the serrated ring as far as it will go.
13. Position the terminal board (17) at the base of the support at a 45° angle (approx.) with the switches pointing towards the gears. Swivel the upper end of the terminal board towards the gears until the board is in a vertical position and properly engaged in the support.
14. Slide the actuator board (12) back into its guiding. Make sure that the gears are properly engaged. Fasten the board using screws.
15. Adjust limit contacts as described in section 6.1.3.
16. Replace cover. Briefly turn the fastening screws counterclockwise with a screwdriver to center them. Then fasten down the cover by tightening the screws.

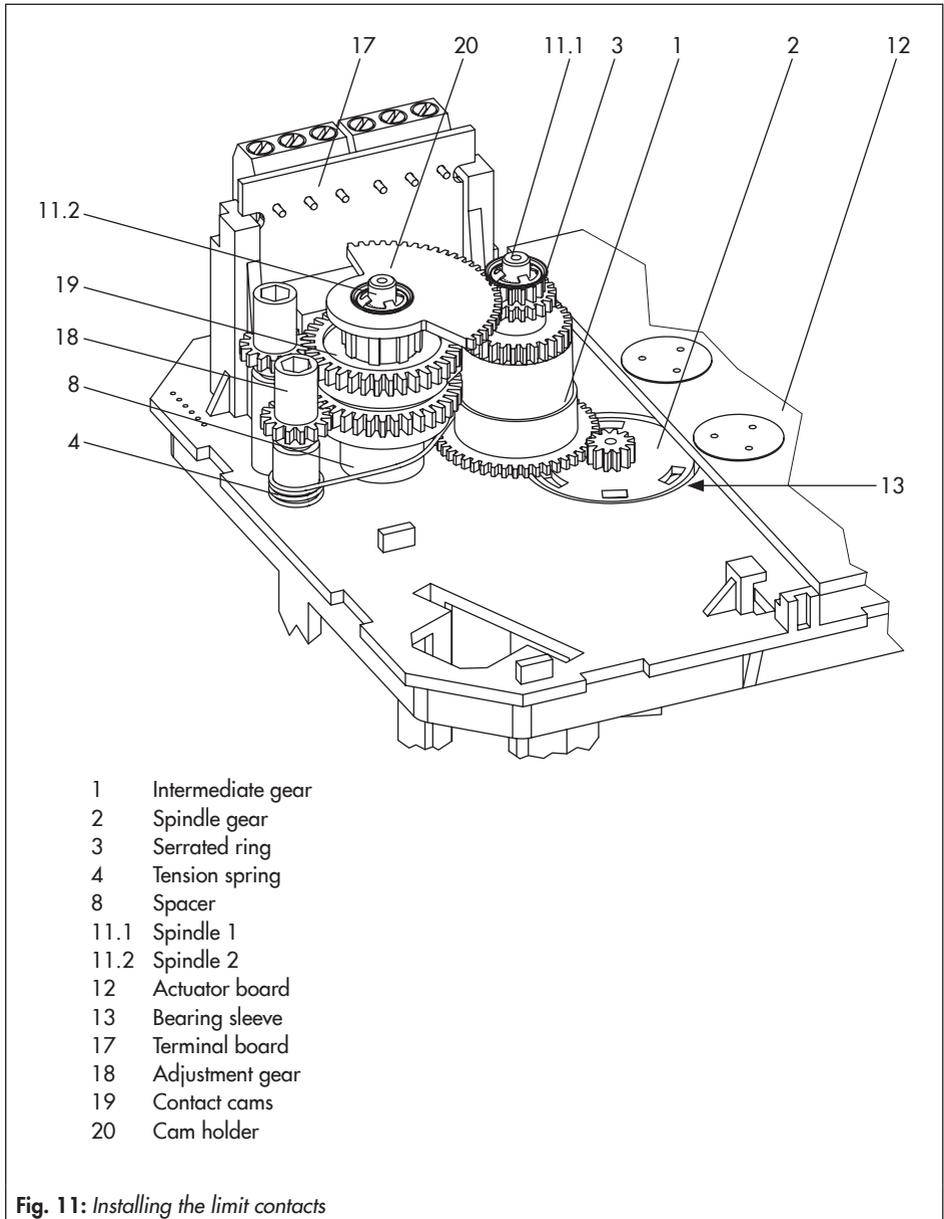


Fig. 11: Installing the limit contacts

6.1.2 Retrofitting (when resistance transmitters are already installed)

1. Unscrew screws on housing cover and take the cover off the actuator.
2. Move the actuator stem to the end position depending on the fail-safe action "Actuator stem extends" or "Actuator stem retracts". Refer to section 3.3.
3. Remove serrated ring (6) and shim (10) from spindle 2 (11.2).
4. Continue as described in item 8 on page 24.

6.1.3 Adjusting the limit contacts

1. Unscrew screws on housing cover and take the cover off the actuator.
2. Connect power supply.
3. Use the motor or manual override to move the actuator stem to the point at which the contact should react.
4. Use the 4 mm hex wrench to turn spindle of the adjustment gears (18) for the upper limit contact or for the lower limit contact until the associated contact cam on the cam holder (20) triggers the switch contact of the upper or lower microswitch on the terminal board (17).
5. Replace cover. Briefly turn the fastening screws counterclockwise with a screwdriver to center them. Then fasten down the cover by tightening the screws.

Legend for Fig. 12 to Fig. 14:

1	Intermediate gear
6	Serrated ring
11.2	Spindle 2
10	Shim
12	Actuator board
18	Adjustment gears
19	Contact cam
20	Cam holder
21	Contact cam unit

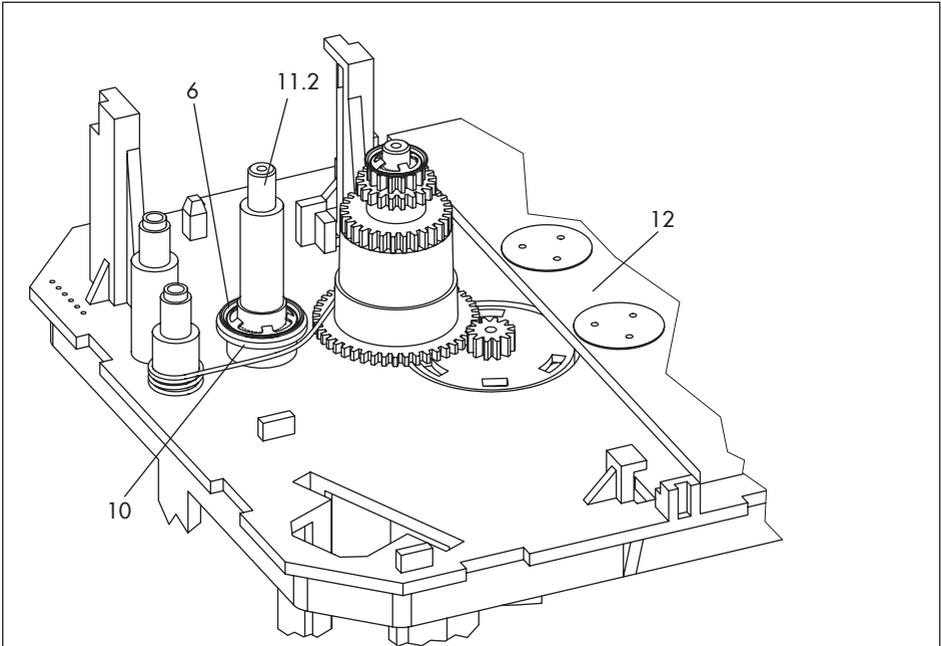


Fig. 12: Retrofitting limit contacts (when resistance transmitters are already installed)

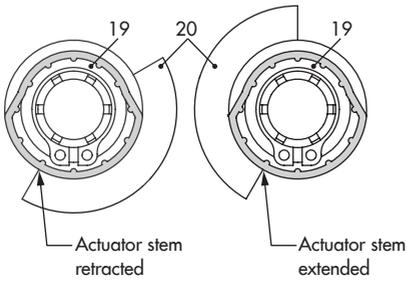


Fig. 13: Alignment of contact cam and cam holder

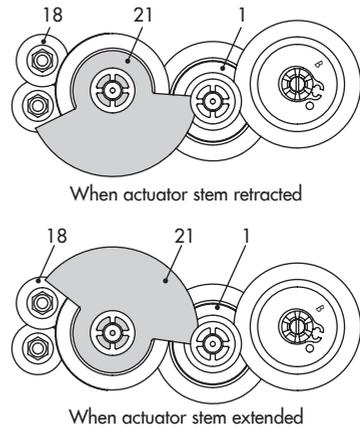


Fig. 14: Alignment of the contact cam unit

6.2 Resistance transmitters

6.2.1 Installing the resistance transmitters

An actuator board with the corresponding resistance transmitters and gear wheels is required for a resistance transmitter retrofit. Which actuator board is to be used depends on the actuator type designation as well as the power supply and transit time specifications (see Table 6 on page 37).

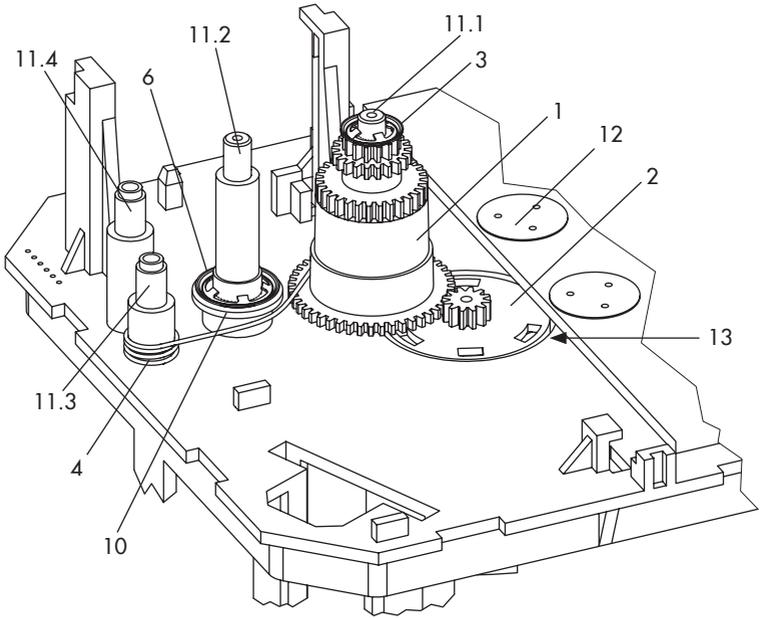
If the actuator does not have limit contacts, an additional retrofit kit (see Fig. 9 on page 23) is required.

6.2.2 Retrofitting (without limit contacts)

1. Unscrew fastening screws. Slide the actuator board (12) from its guiding to the right. Slightly lift the board and continue pushing it further towards the cable entry.
2. Clip the spindle gear (2) onto the sleeve (13). Make sure the latch is properly engaged in the groove of the sleeve. Slide the intermediate gear (1) onto the spindle 1 (11.1), mount the serrated ring (3) and push it down as far as it will go.
3. Place the tension spring (4) onto the spindle 3 (11.3), ensuring that the long wire of the tension spring rests on the intermediate gear (1) and that the short wire of the spring is located between spindle 3 (11.3) and spindle 4 (11.4). Mount the shim (10) on spindle 2 (11.2).

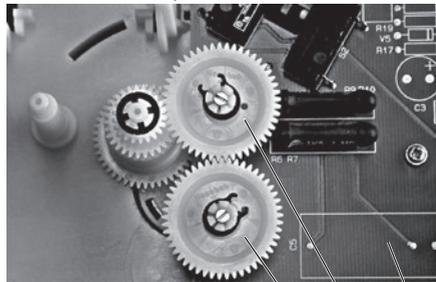
Place the serrated ring (6) and push it down as far as it will go.

4. The resistance transmitter gears (22 and 23) fitted with serrated rings must be put onto their shafts to correspond with the rated travel of the valve. The rated travel inscription 'A' 30 mm for rated travel or 'B' for 15 mm rated travel must be legible (see Fig. 17 on page 31).
5. Slide the actuator board (12) into its guiding. Make sure that the gears are properly engaged. Fasten the board using screws.



- 1 Intermediate gear
- 2 Spindle gear
- 3 Serrated ring
- 4 Tension spring
- 6 Serrated ring
- 10 Shim
- 11.1 Spindle 1
- 11.2 Spindle 2
- 11.3 Spindle 3
- 11.4 Spindle 4
- 12 Actuator board
- 13 Bearing sleeve
- 22 Gear for potentiometer 1
- 23 Gear for potentiometer 2

Actuator board (top view):



- 23
- 22
- 12

Fig. 15: Installing the resistance transmitters

6.2.3 Installing the resistance transmitters (when limit contacts are already installed)

1. Unscrew screws on housing cover and take the cover off the actuator.
2. Move the actuator stem to the end position depending on the fail-safe action "Actuator stem extends" or "Actuator stem retracts". Refer to section 3.3.
3. Unscrew fastening screws. Slide the actuator board (12) from its guiding to the right. Slightly lift the board and continue pushing it further towards the cable entry.
4. Slide new actuator board into its guiding. Make sure that the gears are properly engaged. Fasten the board using screws.

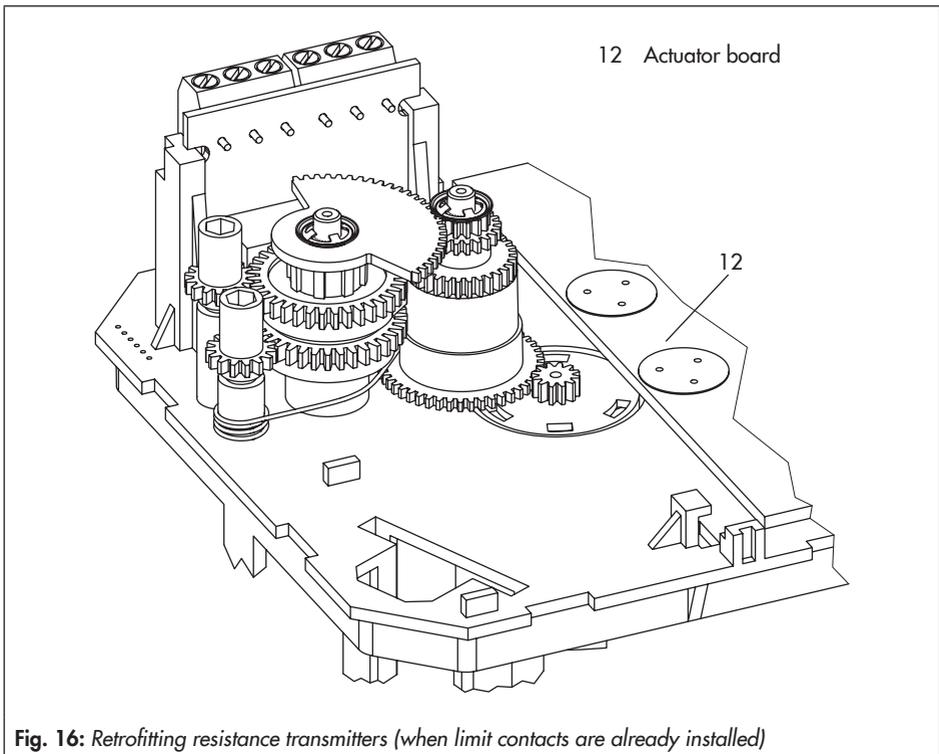


Fig. 16: Retrofitting resistance transmitters (when limit contacts are already installed)

6.2.4 Adjusting the resistance transmitters

The gears of the resistance transmitters (22) and (23) must be put onto their shafts to correspond with the rated travel of the valve. The rated travel inscription 'A' 30 mm for rated travel or 'B' for 15 mm rated travel must be legible.

If this is not the case, pull both potentiometer gears off their shafts and put them back on again with the reverse side of the wheel facing upwards, ensuring they are aligned fairly flush with the potentiometer shaft.

Zero point adjustment

1. Use the motor or manual override to move the valve to the desired end position.
2. Use a screwdriver to adjust the potentiometer shafts (22.1) and (23.1).
3. Calibrate resistance transmitters with an ohmmeter correspondingly.

Actuator stem extended:

$81/82 = 0 \Omega$; $91/93 = 0 \Omega$;

Actuator stem retracted:

$81/83 = 0 \Omega$; $91/92 = 0 \Omega$.

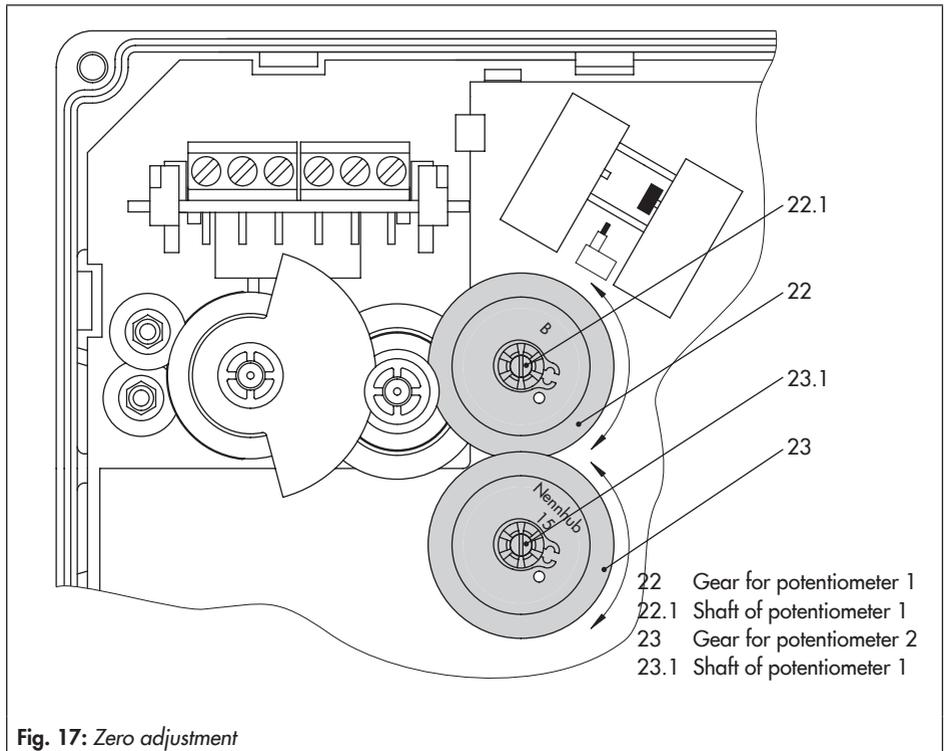


Fig. 17: Zero adjustment

7 Servicing

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 department.*
 - Only use original spare parts by SAMSON, which comply with the original specifications.*
-

7.1 Preparation for return shipment

Defective actuators can be returned to SAMSON for repair.

Proceed as follows to return devices to SAMSON:

1. Put the control valve out of operation and remove it from the pipeline. See associated valve documentation.
2. Remove the electric actuator from the valve (see section 9.2).
3. Send the electric actuator to your nearest SAMSON subsidiary. SAMSON subsidiaries are listed on our website at
▶ www.samson.de > Contact.

8 Malfunctions

→ Troubleshooting (see Table 5).

i Note

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

Table 5: Troubleshooting

Error	Possible reasons	Recommended action
Actuator stem does not move.	Actuator is blocked.	→ Check attachment. → Unblock the actuator.
	No or incorrect power supply connected.	→ Check the power supply and connections.
Actuator stem does not move through the whole range.	No or incorrect power supply connected.	→ Check the power supply and connections.

1.1 Emergency action

The valve, on which the electric actuator with fail-safe action is mounted, is moved to its fail-safe position upon power supply failure (see section 3.1).

The plant operator is responsible for emergency action to be taken in the plant.

Tip

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

9 Decommissioning and disassembly

DANGER

Risk of electric shock.

Before disconnecting live wires, switch off the power supply 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 process medium can escape and, depending on its properties, may lead to personal injury, e.g. (chemical) burns.

Wear protective clothing, safety gloves, and eyewear.

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 heat up.

– Wear protective clothing and safety gloves.

9.1 Decommissioning

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

1. Put the control valve out of operation.
See associated valve documentation.
2. Switch off the power supply.

9.2 Removing the actuator from the valve

9.2.1 Construction with integrated yoke

1. Retract actuator stem as described in section 3.3.
2. Undo the stem connector parts between the plug and actuator stems.
3. Loosen the nut at the yoke.
4. Lift the actuator off the valve.
5. Disconnect the supply and signal lines.

9.2.2 Construction with ring nut

1. Retract actuator stem as described in section 3.3.
2. Undo the stem connector parts between the plug and actuator stems.
3. Unscrew the ring nut on the valve bonnet.
4. Lift the actuator off the valve.
5. Disconnect the supply and signal lines.

9.3 Disposal

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

10 Annex

10.1 After-sales service

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

E-mail

You can reach the After-sales Service Department at aftersaleservice@samson.

Addresses of SAMSON AG and its subsidiaries

The addresses of SAMSON AG, its subsidiaries, representatives and service facilities worldwide can be found on the SAMSON website or in all SAMSON product catalogs.

Required specifications

Please submit the following details:

- Type designation
- Configuration ID
- Serial number
- Firmware version

10.2 Selecting actuator boards

Table 6: Actuator boards (order number 1180-96xx) available for retrofitting resistance transmitters

		Type 3374	-10	-11	-15	-21	-26	-31	-36
Power supply	230 V/50 Hz	0.125 mm/s	1180-9601			1180-9607			
		0.25 mm/s	1180-9604			1180-9610			
	230 V/60 Hz	0.125 mm/s	1180-9637			1180-9643			
		0.25 mm/s	1180-9603			1180-9609			
	24 V/50 Hz	0.25 mm/s	1180-9606			1180-9612			
		0.125 mm/s	1180-9639			1180-9645			
	24 V/60 Hz	0.125 mm/s	1180-9638			1180-9644			
	120 V/60 Hz								



**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 3374**

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 61000-6-3:2007
+A1:2011, EN 61326-1:2013

LVD 2014/35/EU

EN 60730-1:2016, EN 61010-1:2010

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.

Gert Nahler

Zentralabteilungsleiter/Head of Department/Chef du département
Entwicklung Automation und Integrationstechnologien/
Development Automation and Integration Technologies

Hanno Zager

Leiter Qualitätssicherung/Head of Quality Management/
Responsable de l'assurance de la qualité



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