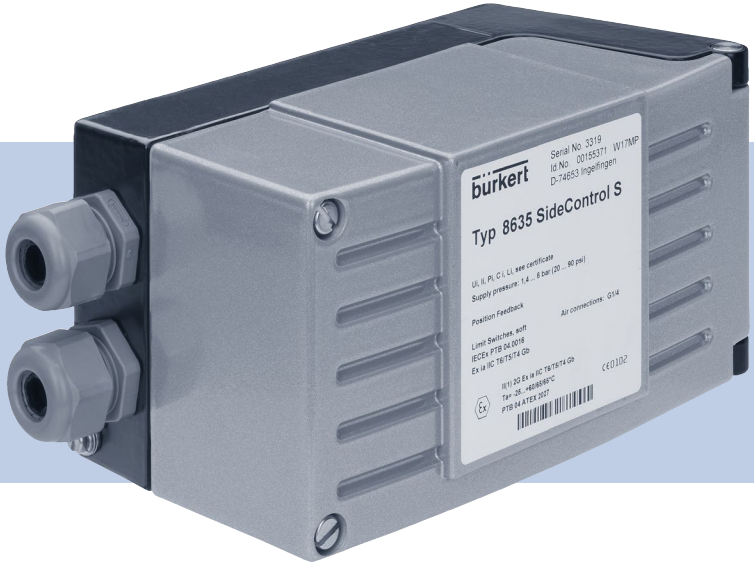
bürkert
FLUID CONTROL SYSTEMS

Type 8635
SideControl

Electropneumatic positioner
Elektropneumatischer Stellungsregler
Positionneur électropneumatique



Quickstart

English Deutsch Français

MAN 1000010094 EN Version: JStatus: RL (released | freigegeben) printed: 18.02.2020

Operating Instructions 2002/08_EU-ML_00804496 / Original DE

MAN 1000010094 EN Version: JStatus: RL (released | freigegeben) printed: 18.02.2020

1 QUICKSTART

The Quickstart contains a short summary of the most important information and instructions for use of the device. The detailed description can be found in the operating instructions for Type 8635.

Keep the Quickstart in an easily accessible location for every user. The Quickstart must be available to each new owner of the device.

Important safety information!

- Carefully read these instructions.
- Observe in particular the safety instructions, intended use and operating conditions.
- Persons, who work on the device, must read and understand these instructions.

Operating instructions and data sheets for the Bürkert devices can be found on the Internet at: www.burkert.com

1.1 Definition of terms

In these instructions, the term “device” always refers to the Positioner SideControl Type 8635.

1.2 Symbols

DANGER

Warns of an immediate danger.

- Failure to observe will result in death or serious injuries.

WARNING

Warns of a potentially hazardous situation.

- Failure to observe may result in serious injuries or death.

CAUTION

Warns of a potential danger.

- Failure to observe may result in moderate or minor injuries.

NOTE

Warns of damage.

Important tips and recommendations.

Refers to information in these operating instructions or in other documentation.

- Designates instructions to avoid a danger.

→ Designates a procedure which you must carry out.

2 INTENDED USE

The SideControl Type 8635 has been designed for the position control of pneumatically actuated control valves with single-acting linear actuators or with single-acting rotary actuators.

- In potentially explosive atmospheres, only use devices that are approved for this purpose. These devices are marked with the ATEX logo on the type label. For use, observe the information on the type label and the additional instructions enclosed with the device and marked with the ATEX logo.
- Do not use devices without the ATEX logo on the type label in potentially explosive atmospheres.
- Do not expose the device to direct sunlight.
- To achieve a degree of protection of IP65, seal the cable entries tightly.
- Use the device only in its original condition and when it is in perfect working order.
- Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- Use the device only as intended. Non-intended use of the device may be dangerous to people, nearby equipment and the environment.
- Prerequisites for safe and trouble-free operation are correct transportation, correct storage, installation, start-up, operation and maintenance.
- To use the device, observe the permitted data, operating conditions and application conditions. These specifications can be found in the contract documents, the operating instructions and on the type label.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any unforeseen circumstances and events which occur during installation, operation and maintenance.

The operator is responsible for observing the location-specific safety regulations, also with reference to the personnel.

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk of injury due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.
- Observe the applicable accident prevention and safety regulations for electrical devices.

General hazardous situations.

To prevent injuries, observe the following:

- Only trained technicians may perform installation and maintenance work.
- Perform installation work and maintenance work using suitable tools only.
- Do not modify the device.
- Do not mechanically load the device.
- Use the device only when it is in perfect working order and in accordance with the operating instructions.

- Secure the device or system to prevent unintentional activation.
- Following interruption of the process, ensure that the process is restarted in a controlled manner.
  Observe the sequence:
  1. Connect the pneumatic and power supply.
  2. Charge with medium.
- Do not feed any aggressive or flammable media or liquids into the pressure port of the device.
- Observe the general rules of technology.
- Install the device according to the regulations applicable in the country of use.
- Observe the intended use.

NOTE

Electrostatically sensitive components and assemblies.

The device contains electronic components that are susceptible to the effects of electrostatic discharging (ESD). Components that come into contact with electrostatically charged persons or objects are at risk. In the worst case scenario, these components are destroyed immediately or fail after start-up.

- Meet the requirements specified by EN 61340-5-1 to minimise or avoid the possibility of damage caused by sudden electrostatic discharge.
- Do not touch electronic components when the supply voltage is connected.

4 GENERAL NOTES

4.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Centre
Christian-Bürkert-Strasse 13–17
D-74653 Ingelfingen
Tel. +49 (0) 7940 - 10 91 111
Fax +49 (0) 7940 - 10 91 448
Email: info@burkert.com

International

The contact addresses can be found on the back pages of the printed Quickstart.

Also on the Internet at: www.burkert.com

4.2 Warranty

A precondition for the warranty is that the device is used as intended in consideration of the specified operating conditions.

4.3 Information on the Internet

Operating instructions and data sheets for the Bürkert products can be found on the Internet at:

www.burkert.com

4.4 Master code

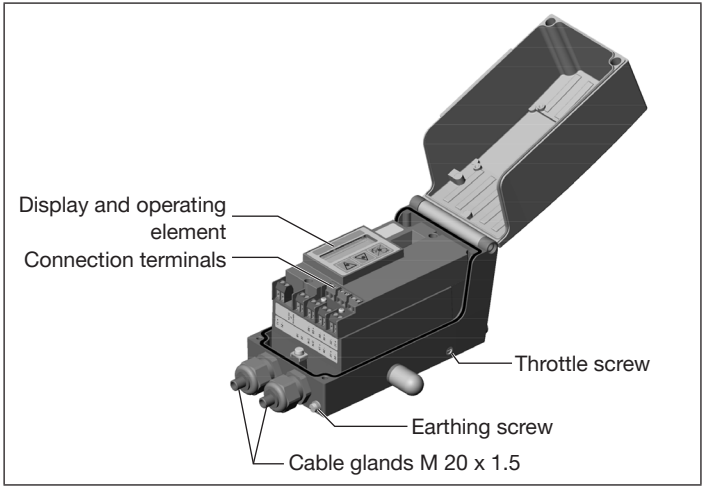
Operation of the device can be locked via a freely selectable 4-digit code. Regardless of this, there is an unchangeable master code with which you can perform all operating actions on the device.

This 4-digit master code can be found on the back pages of the printed Quickstart. The printed Quickstart is included in the scope of delivery of the device.

If necessary, cut out the code and keep it separately from the operating instructions.

5 PRODUCT DESCRIPTION

5.1 Structure



5.2 Functions

Positioner

The position of the actuator (stroke) is controlled according to the set-point position. The set-point position is specified by an external standard signal.

Optional: Process controller

The SideControl is integrated into a control loop. The valve stroke is calculated from the process set-point value and the process actual value using the control parameters (PID controller). The process set-point value can be specified by an external standard signal.

5.3 Variants

The SideControl Type 8635 is available in different variants depending on the actuator type of the control valve to be controlled:

- Direct attachment to Bürkert control valves Type 27xx
- Remote variant for Bürkert control valves Type 23xx
- Direct attachment to rotary actuators or linear actuators

More detailed information on the product can be found in the operating instructions or in the data sheet at: www.burkert.com

6 TECHNICAL DATA

6.1 Conformity

The device conforms to the EU directives as per the EU Declaration of Conformity (if applicable).

6.2 Standards

The applied standards, which are used to demonstrate conformity with the directives, are listed in the EU type examination certificate and/or the EU Declaration of Conformity (if applicable).

6.3 Operating conditions

WARNING

Sunlight or temperature fluctuations may cause malfunctions or leaks.

- ▸ When used outdoors, protect the device against adverse weather conditions.
- ▸ Do not exceed or undercut the permissible ambient temperature.

Permitted ambient temperature

–25...+65 °C (for temperature class T4/T5 or for devices without EEx-ia approval)

–25...+60 °C (for temperature class T6)

At temperatures below 0 °C, the display may show an extended response time and reduced contrast.

Degree of protection

IP65 acc. to EN 60529 (to achieve a degree of protection of IP65, seal the cable entries tightly)

6.3.1 Fluidic data

Control medium
Neutral gases, air (quality classes acc. to DIN ISO 8573-1)

Dust content class 7	Max. particle size 40 µm Max. particle density 10 mg/m^3
Water content class 3	Max. pressure dew point –20 °C or min. 10 °C below the lowest operating temperature
Oil content class X	Max. 25 mg/m^3

Temperature range of the compressed air

–25...+65 °C	(for temperature class T4/T5 or for devices without EEx-ia approval)
–25...+60 °C	(for temperature class T6)

Pressure range 1.4...6 bar

Supply pressure fluctuation
Max. ± 10% during operation

Air flow rate of the pilot valve

at 1.4 bar pressure drop above valve	Approx. 55 l_N/min for pressurising and exhausting
at 6 bar pressure drop above valve	Approx. 170 l_N/min for pressurising and exhausting
Internal air consumption in controlled state	0.0 l_N/min

Throttle screw Setting ratio approx. 1:10

Ports G1/4 internal thread

6.3.2 Electrical data

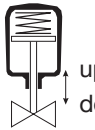
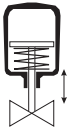
Protection class	III acc. to DIN EN 61140
Power supply	via set-point value input 4...20 mA, 2-wire technology
Load voltage	< 10.2 V ⎓
Load resistance	590 Ω (at 20 mA and 11.8 V ⎓)
Process actual value input (optional)	4...20 mA
Load voltage	200 mV at 20 mA
Load resistance	10 Ω
Digital input	Mechanical normally open/closed contact
Analogue feedback (optional)	4...20 mA (electrically isolated) This is a passive signal that must be supplied externally.
Supply voltage	U_{Supply} = 12...30 V ⎓
Load	$U_{Supply} \geq 12\ V + R_{Load} \times 20\ mA$

2 digital outputs (optional)
Behave like a NAMUR sensor acc. to EN 60947-5-6 (electrically isolated)

Supply voltage	5...11 V ⎓
Current in switching status OPEN	< 1.2 mA
Current in switching status CLOSE	> 2.1 mA
Effective direction (parameterisable)	NO (normally open) or NC (normally closed)

Permitted maximum values See Certificate of Conformity

6.4 Safety end positions after failure of the electrical or pneumatic auxiliary power

Actuator type	Designation	Safety end positions after failure of the	
		electrical auxiliary power	pneumatic auxiliary power
 up down	single-acting, control function A (NC)	down	down
 up down	single-acting, control function B (NO)	up	up

Tab. 1: Safety end positions

7 INSTALLATION OF THE REMOTE VARIANT

DANGER

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.

WARNING

Risk of injury due to improper installation.

- Only trained technicians may perform installation work.
- Perform installation work using suitable tools only.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- Secure the system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

CAUTION

Risk of injury due to heavy device.

During transportation or installation work, a heavy device may fall down and cause injuries.

- Transport, install and remove heavy device with the aid of a second person only.
- Use suitable tools.

7.1 Wall mounting with mounting bracket

The SideControl Type 8635 Remote variant is supplied with a pre-assembled mounting bracket. The mounting bracket can be used for mounting the device on a wall.

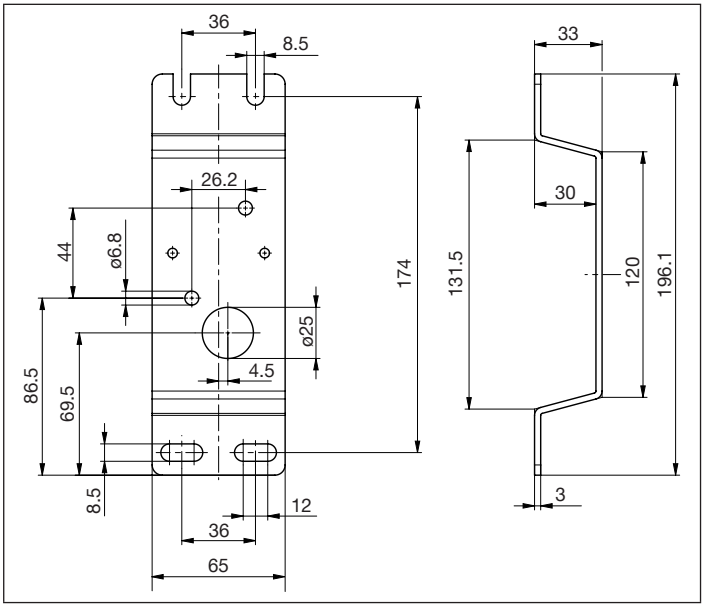


Fig. 1: Dimensions of the pre-assembled mounting bracket

7.2 "Position sensor Remote" attachment kit

The Remote variant does not have a position sensor in the form of a rotary position sensor. The device is connected to an external position sensor. With this variant, the connection cable for connecting the device to the position sensor is pre-assembled.

To be able to mount the position sensor on the actuator of the control valve, the attachment kit, which is available as an accessory, must first be mounted on the actuator.

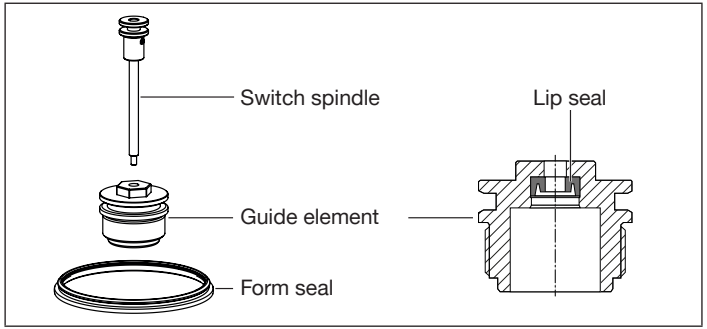


Fig. 2: "Position sensor Remote" attachment kit

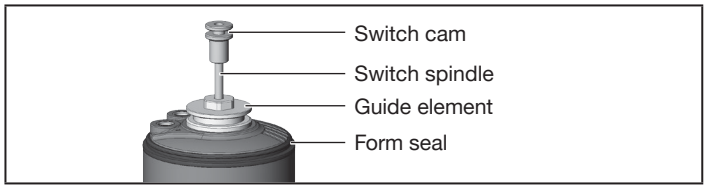


Fig. 3: Actuator with mounted attachment kit

Preparing the control valve:

→ Unscrew the transparent cover on the actuator of the control valve and the position indicator (yellow cap) on the spindle extension of the control valve (if fitted).

→ For control valves with push-in connectors:
Remove the collets from both pilot air ports (if fitted).

Preparing the attachment kit:

→ Push the switch spindle through the guide element.

→ Caution: Do not damage the lip seal! The lip seal is pre-assembled in the guide element and must be “engaged” in the undercut.

→ To secure the switch spindle, apply a small amount of screw locking paint (Loctite 290) to the thread of the switch spindle.

Mounting the attachment kit on the actuator:

→ Screw the guide element into the actuator cover.

→ Make sure that the O-ring is positioned in the actuator cover.

→ Tighten the guide element to a torque of 5 Nm.

→ Tighten the switch spindle to a torque of 1 Nm.

→ Fit the form seal (part of the attachment kit) on the actuator cover, ensuring the smaller diameter points upwards.

→ Check the correct position of the O-rings in the pilot air ports.

7.3 Mounting the position sensor on the actuator:

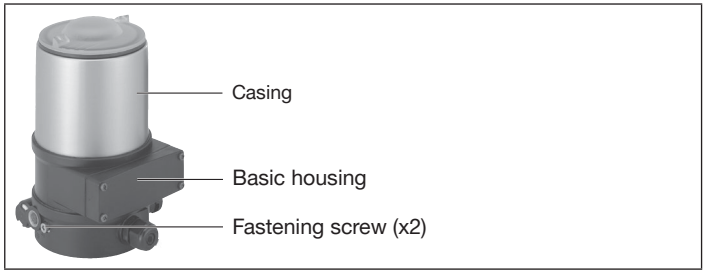


Fig. 4: Position sensor Remote

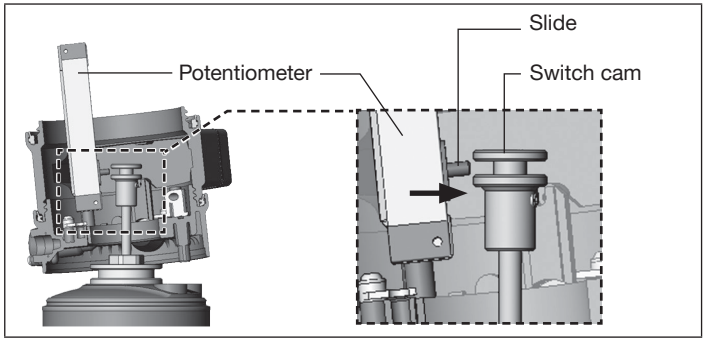


Fig. 5: Detailed mounting of the position sensor on the actuator

→ Unscrew the casing of the position sensor counterclockwise and remove it.

→ In the basic housing of the position sensor, push the slide of the potentiometer downwards.

→ Ease the basic housing over the switch cam of the valve actuator, while inserting the slide of the potentiometer laterally into the switch cam.

→ Align the connection piece of the basic housing with the pilot air ports of the valve actuator (see “Fig. 6”).

NOTE

→ Check:
Is the slide of the potentiometer hooked into the switch cam?
Are the position sensor connection pieces aligned with the pilot air ports?

→ Push the position sensor onto the actuator without rotating it until no gap is visible at the form seal.

→ Attach the position sensor to the actuator using the two lateral fastening screws.
Maximum tightening torque 1.5 Nm!

To ensure a degree of protection of IP65/67, do not exceed the maximum tightening torque.

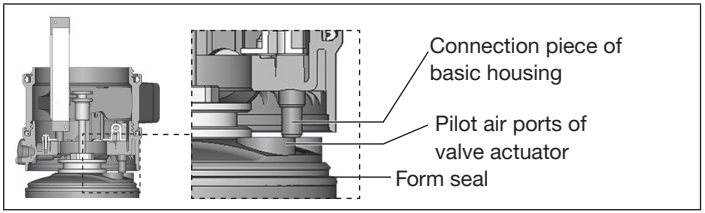


Fig. 6: Aligning the position sensor with the actuator

7.4 Connecting the position sensor electrically

DANGER

Risk due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.

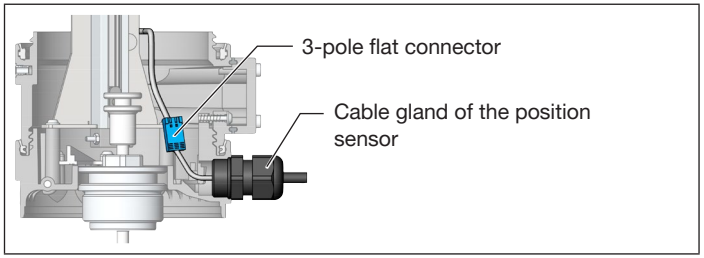


Fig. 7: Electrical connection

→ Feed the cable pre-assembled on the SideControl Type 8635 with the mounted flat connector through the cable gland of the position sensor.

→ Connect the flat connector to its counterpart in the position sensor.

→ When tightening the cable gland, pay attention to the position of the plug connection (see marked area in “Fig. 8”).

The cable in the housing should have the minimum required length but must not be under tension.

→ Push on the casing and screw it in clockwise up to the stop.

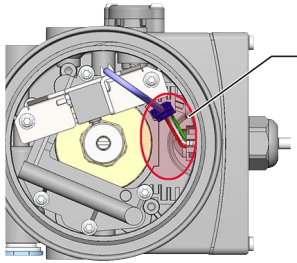


Fig. 8: Position of the electrical plug connection in the position sensor

7.5 Connecting the position sensor pneumatically

DANGER

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Adjust the length of the pilot air line to the actuator size.

The dead space volume created by the pilot air line can have a negative impact on the control characteristics.

Basically, the smaller the actuator, the more sensitive the control system reacts to the length of the pilot air line.

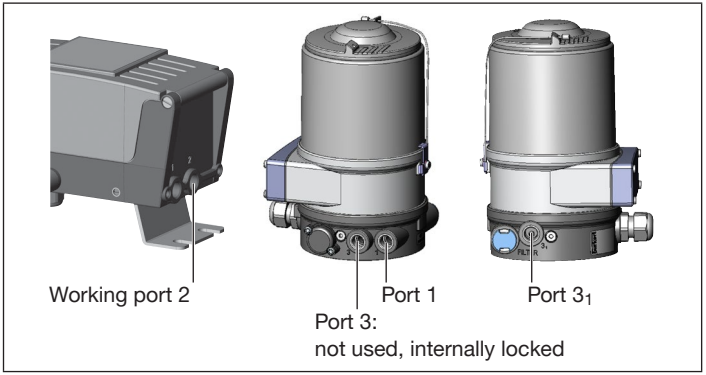


Fig. 9: Pneumatic connection

→ Connect working port 2 of the SideControl to port 1 of the position sensor using a hose.

→ Mount the exhaust air line or the silencer at port 3$_1$ of the position sensor.

8 DIRECT ATTACHMENT OF THE LINEAR ACTUATOR

DANGER

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.

WARNING

Risk of injury due to improper installation.

- Only trained technicians may perform installation work.
- Perform installation work using suitable tools only.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- Secure the system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

CAUTION

Risk of injury due to heavy device.

During transportation or installation work, a heavy device may fall down and cause injuries.

- Transport, install and remove heavy device with the aid of a second person only.
- Use suitable tools.

8.1 Attachment kit for linear actuators

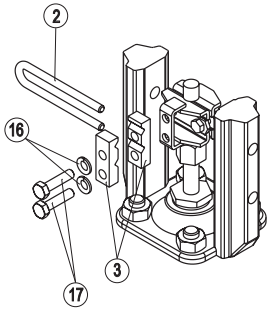
An attachment kit (available as an accessory) is required to mount the SideControl on linear actuators according to NAMUR.

No.	Qty.	Designation
1	1	NAMUR mounting bracket IEC 534
2	1	Hoop
3	2	Clamping piece
4	1	Driver pin
5	1	Conical roller
6a	1	NAMUR lever for stroke range 3...35 mm
6b	1	NAMUR lever for stroke range 35...130 mm
7	2	U-bolt
8	4	Hexagon bolt DIN 933 M8 x 20
9	2	Hexagon bolt DIN 933 M8 x 16
10	6	Spring lock washer DIN 127 A8
11	6	Washer DIN 125 B8.4
12	2	Washer DIN 125 B6.4
13	1	Spring VD-115E 0.70 x 11.3 x 32.7 x 3.5
14	1	Spring washer DIN 137 A6
15	1	Locking washer DIN 6799 - 3.2
16	3	Spring lock washer DIN 127 A6
17	3	Hexagon bolt DIN 933 M6 x 25
18	1	Hexagon nut DIN 934 M6
19	1	Square nut DIN 557 M6
21	4	Hexagon nut DIN 934 M8
22	1	Guide washer 6.2 x 9.9 x 15 x 3.5

Tab. 2: Attachment kit for linear actuators

8.2 Mounting the hoop and lever

The valve position is transmitted to the position sensor installed in the SideControl Type 8635 via a lever (according to NAMUR).



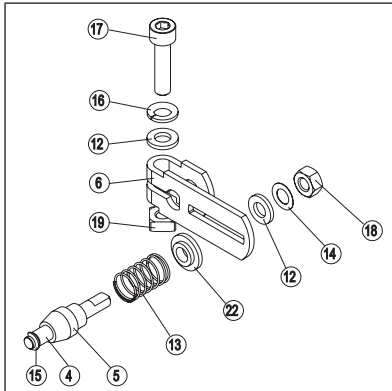
No.	Designation
2	Hoop
3	Clamping piece
16	Spring lock washer
17	Hexagon bolt

Fig. 10: Mounting the hoop

Mount the hoop ② on the actuator spindle using the clamping pieces ③, the hexagon bolts ⑰ and the spring lock washers ⑯.

Select the short lever (6a) or the long lever (6b) according to the stroke of the actuator.

Assemble the lever, if not pre-assembled (see “Fig. 11”).



No.	Designation
4	Driver pin
5	Conical roller
6	Lever
12	Washer
13	Spring
14	Spring washer
15	Locking washer
16	Spring lock washer
17	Hexagon bolt
18	Hexagon nut
19	Square nut
22	Guide washer

Fig. 11: Mounting the lever

The gap between the driver pin and the shaft should be the same as the actuator stroke. As a result, the lever has an ideal rotational range of 60°. This ensures that the position sensor operates at a good resolution.

Angular range of the position sensor:
The maximum angular range of the position sensor is 120°.

Rotational range of the lever:
Minimum 30°
Ideal 60°
Maximum 120° (within the angular range of the position sensor)
The scale printed on the lever is not relevant.

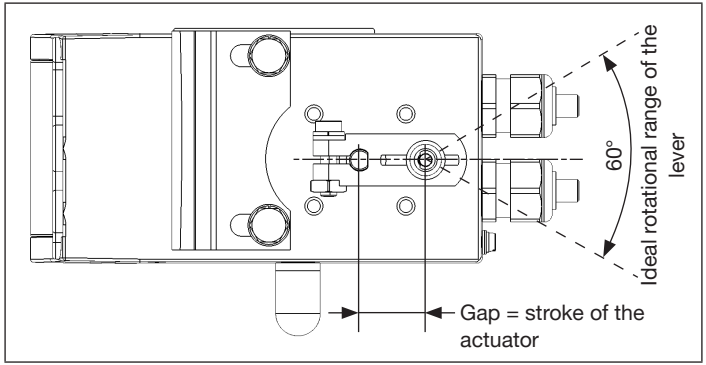


Fig. 12: Rotational range of the lever

→ Push the lever onto the shaft of the SideControl Type 8635 and screw it tight.

8.3 Attaching the mounting bracket

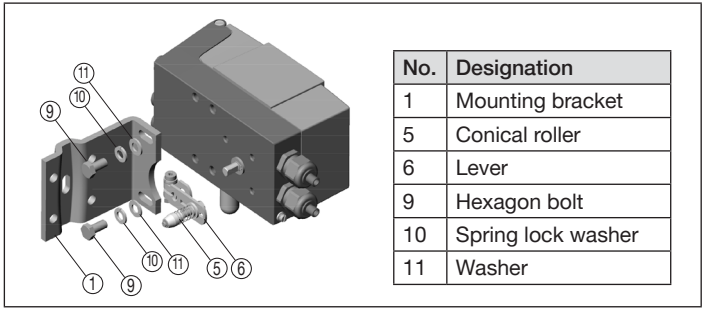
→ Attach the mounting bracket ① to the rear of the SideControl Type 8635 using the hexagon bolts ⑨, the spring lock washers ⑩ and the washers ⑪ (see “Fig. 13”).

Selection of the M8 thread used on the SideControl Type 8635 depends on the actuator size.

→ To determine the correct position, hold the SideControl Type 8635 with the mounting bracket on the actuator.

The conical roller on the lever of the position sensor must be able to move freely in the hoop along the entire stroke range of the actuator.

At 50% stroke, the lever position should be approximately horizontal (observe section “8.4” Page 18!).

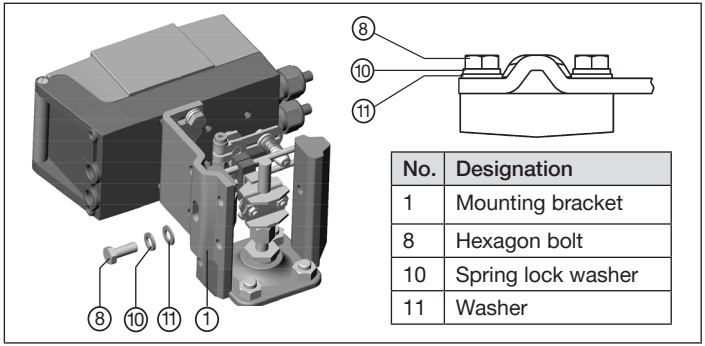


No.	Designation
1	Mounting bracket
5	Conical roller
6	Lever
9	Hexagon bolt
10	Spring lock washer
11	Washer

Fig. 13: Attaching the mounting bracket

For actuators with a cast frame:

Attach the mounting bracket to the cast frame using one or more hexagon bolts ⑧, the washers ⑪ and the spring lock washers ⑩ (see“Fig. 14”).

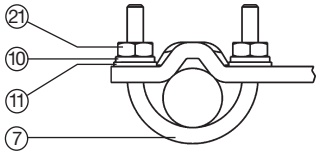


No.	Designation
1	Mounting bracket
8	Hexagon bolt
10	Spring lock washer
11	Washer

Fig. 14: Attaching the mounting bracket to the cast frame

For actuators with a columnar yoke:

→ Attach the mounting bracket to the columnar yoke using the U-bolt ⑦, the washers ⑪, the spring lock washers ⑩ and the hexagon nuts ㉑ (see “Fig. 15”).



No.	Designation
7	U-bolt
10	Spring lock washer
11	Washer
21	Hexagon nut

Fig. 15: Attaching the mounting bracket to the columnar yoke

8.4 Aligning the lever mechanism

Selection of the M8 thread used on the SideControl Type 8635 depends on the actuator size.

→ Move the actuator in MANUAL operating state to half stroke (according to the scale on the actuator).

→ Adjust the height of the SideControl Type 8635 until the lever is horizontal.

→ Fix the SideControl Type 8635 in this position on the actuator.

9 DIRECT ATTACHMENT TO THE ROTARY ACTUATOR

DANGER

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.

WARNING

Risk of injury due to improper installation.

- Only trained technicians may perform installation work.
- Perform installation work using suitable tools only.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- Secure the system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

CAUTION

Risk of injury due to heavy device.

During transportation or installation work, a heavy device may fall down and cause injuries.

- Transport, install and remove heavy device with the aid of a second person only.
- Use suitable tools.

9.1 Attachment kit for rotary actuators

The following accessories are required for mounting the SideControl on rotary actuators according to NAMUR:

- Attachment kit (order no. 787338)
- Assembly bridge (order no. 770294)

Both are available as accessories from Bürkert.

Attachment kit for rotary actuators

No.	Qty.	Designation
1	1	Adapter
2	2	Setscrew DIN 913 M4x10
3	4	Hexagon bolt DIN 933 M6x12
4	4	Spring lock washer B6
5	2	Hexagon nut M4

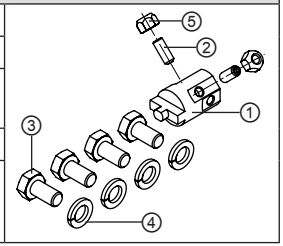


Fig. 16: Attachment kit for rotary actuators

9.2 Mounting the SideControl on the rotary actuator

The shaft of the position sensor integrated in the SideControl Type 8635 is connected to the shaft of the rotary actuator using the adapter.

Prior to mounting

→ Specify the attachment position of the SideControl Type 8635:
- parallel to the actuator or
- rotated by 90° to the actuator

→ Determine the home position and the direction of rotation of the actuator.

→ Align the flat side of the shaft to the rotational range (see "Fig. 17").

The maximum rotational range is 120°.

Installation

Connect the adapter ① to the shaft of the SideControl and attach it using the two setscrews ② and the hexagon nuts ⑤.

Anti-twist safeguard: One of the setscrews must be situated on the flat side of the shaft.

→ Assemble the assembly bridge suitable for the actuator. The assembly bridge consists of 4 parts, which can be adjusted to the actuator by varying the arrangement.

→ Attach the assembly bridge to the SideControl using the 4 hexagon bolts ③ and the spring lock washers ④ (see "Fig. 18").

→ Place the SideControl with the assembly bridge on the rotary actuator and attach it using 4 hexagon bolts ⑥ (see "Fig. 18").

If the message X.ERR 5 appears on the LC display after starting the X.TUNE function, the alignment of the SideControl shaft with the actuator shaft is incorrect.
- ▸ Check the alignment.
- ▸ Repeat the X.TUNE function.

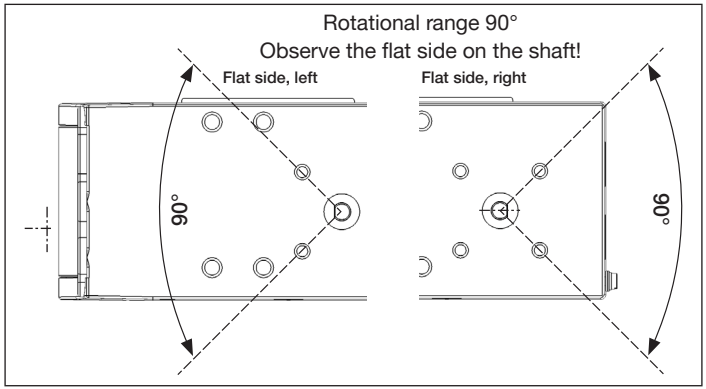


Fig. 17: Rotational range

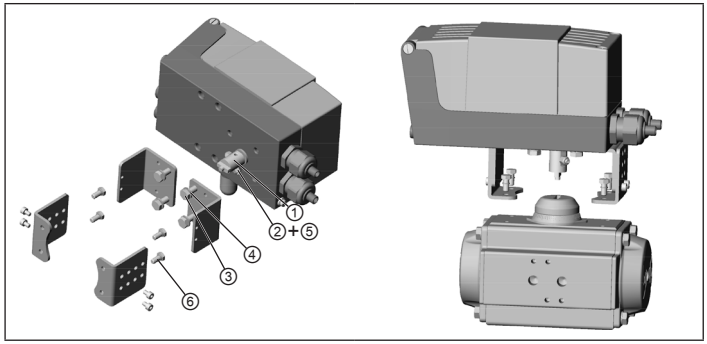


Fig. 18: Attaching the assembly bridge, mounting the SideControl on the rotary actuator

10 PNEUMATIC CONNECTION

DANGER

Risk of injury due to high pressure and escaping medium.

- Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

WARNING

Risk of injury due to improper installation.

- Installation may be carried out by authorised technicians only and with the appropriate tools.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- Secure the system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

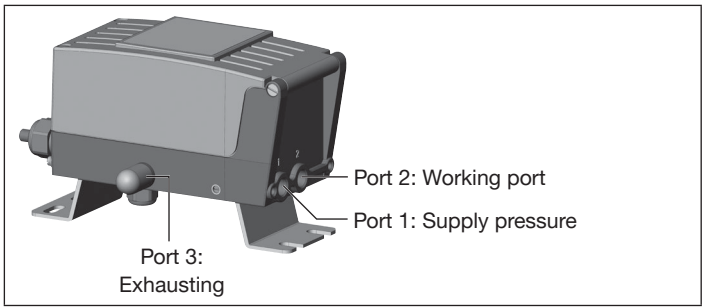


Fig. 19: Position of the pneumatic ports

→ Apply supply pressure (1.4...6 bar) to port 1.

→ Connect port 2 to the single-acting actuator chamber.

→ If possible, connect a silencer or similar to port 3. If the port is left open, there is a risk of splash water entering the device.

Important information for perfect control behaviour.

The applied supply pressure must be 0.5...1 bar higher than the minimum control pressure specified on the control valve. This prevents an excessively low pressure difference from having a strong negative impact on the control behaviour in the upper stroke range.

Keep supply pressure fluctuations low during operation (max. ±10%). The control parameters calibrated with the X.TUNE function are not ideal for stronger fluctuations.

11 ELECTRICAL CONNECTION

DANGER

Risk due to electric shock.

- Before working on the device or system, switch off the power supply. Secure against reactivation.
- Observe the applicable accident prevention and safety regulations for electrical devices.

WARNING

Risk of injury due to improper installation.

- Installation may be carried out by authorised technicians only and with the appropriate tools.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- Secure the system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

Using the 4...20 mA set-point value input

If several devices are connected in series and the power supply to a device in this series connection fails, the input of the failed device becomes highly resistive. As a result, the 4...20 mA standard signal fails. In this case, please contact Bürkert Service directly.

The connection terminals are located under the housing lid of the SideControl.

→ To open the housing lid, loosen the 2 screws and open the housing lid.

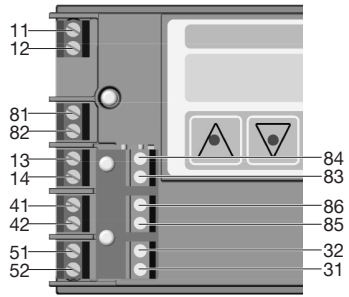


Fig. 20: SideControl Type 8635 connection terminals

Terminal	Assignment	External circuit
11 +	Set-point value +	4...20 mA standard signal
12 –	Set-point value –	GND
13 +	Process actual value + (option)	4...20 mA standard signal
14 –	Process actual value – (option)	GND
31	Actual value output + (option)	31 + RB 12...30 V
32	Actual value output – (option)	32 –

Terminal	Assignment	External circuit
41 +	Proximity switch 1 + (option)	41 + Switching amplifier acc. to EN 60947-5-6
42 –	Proximity switch 1 – (option)	42 –
51 +	Proximity switch 2 + (option)	51 + Switching amplifier acc. to EN 60947-5-6
52 –	Proximity switch 2 – (option)	52 –
81 +	Digital input +	81 or Switch (normally open contact or normally closed contact)
82 –	Digital input –	82
83 +	Digital output 1 + (option)	83 + 5...11 V
84 –	Digital output 1 – (option)	84 A –
85 +	Digital output 2 + (option)	85 + 5...11 V
86 –	Digital output 2 – (option)	86 A –

Fig. 21: SideControl Type 8635 connection terminal assignment

Terminals 31+32 and 83–86:
Passive outputs that must be supplied externally.
The digital outputs behave like a NAMUR sensor acc. to EN 60947-5-6.

12 START-UP

DANGER

Risk of injury due to improper operation.

- Only authorised technicians may start up the device or system.

Establish the pneumatic and electrical connections before start-up.

More detailed information on start-up can be found in the operating instructions on the Internet at: www.burkert.com

→ Carrying out base settings at setting level

→ Automatic adjustment of the position controller (*X.TUNE*)

→ For process controllers, additionally: Enable the *P.CONTRL* auxiliary function

→ Carry out the base settings of the process controller

→ Linearisation of the process characteristic (*P.Q'LIN*)

→ Carry out self-optimisation of the process controller (*P.CO TUNE*)

13 OPERATION

13.1 Operating levels

The software of the device is divided into 2 operating levels:

1. Process level

The process level is active after switching on the device. At this level, it is toggled between the MANUAL and AUTOMATIC operating states.

MANUAL operating state:
manual opening and closing of the control valve

AUTOMATIC operating state:
executing and monitoring the automatic position control

2. Setting level

This level contains the main menu with the basic functions. Auxiliary functions can be enabled via the *ADDFUNCT* basic function. If auxiliary functions are enabled, they appear in the main menu and can be configured there.

A firmly established basic function is the X.TUNE function. When executing this basic function, the SideControl Type 8635 automatically determines the optimum settings for the valve used and the current operating conditions (supply pressure).

13.2 Operating elements

The MANUAL/AUTOMATIC key and the two arrow keys are used to operate the device.

	MANUAL/ AUTOMATIC key	**At process level:** Toggling between the MANUAL and AUTOMATIC operating states **At setting level:** Toggling between the main menu and the additional menu
	Arrow keys	Toggling between equal menu options

Tab. 3: Function of the keys

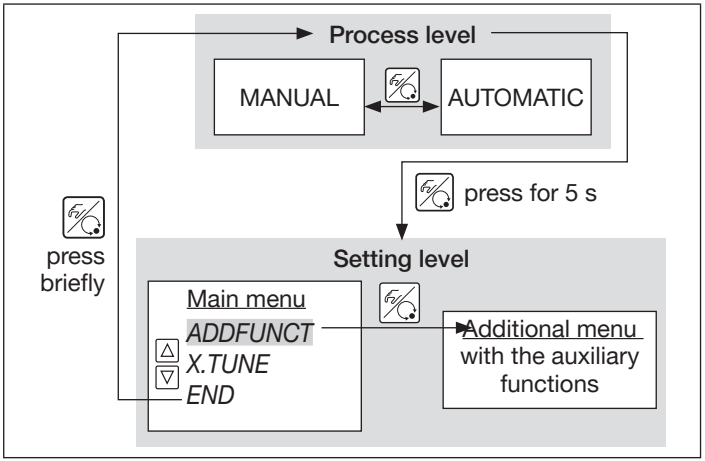


Fig. 22: Operating principle of the device

More information on device operation can be found in the operating instructions at: www.burkert.com

14 BASIC FUNCTIONS AND AUXILIARY FUNCTIONS

The operating concept for the SideControl Type 8635 is based on a strict separation between basic functions and auxiliary functions. Only the basic functions are enabled when the device is delivered. They are sufficient for normal operation.

Auxiliary functions can be enabled for more demanding control tasks. If auxiliary functions are enabled, they become part of the main menu and can be parameterised there.

More information on the basic functions and the auxiliary functions can be found in the operating instructions at: www.burkert.com

15 TRANSPORTATION, STORAGE, DISPOSAL

NOTE

Damage in transit due to inadequately protected devices.

- Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- Observe permitted storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location.
- Storage temperature –10…+60 °C.

Damage to the environment caused by device parts contaminated with media.

- Dispose of the device and packaging in an environmentally friendly manner.
- Observe applicable disposal and environmental regulations.

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