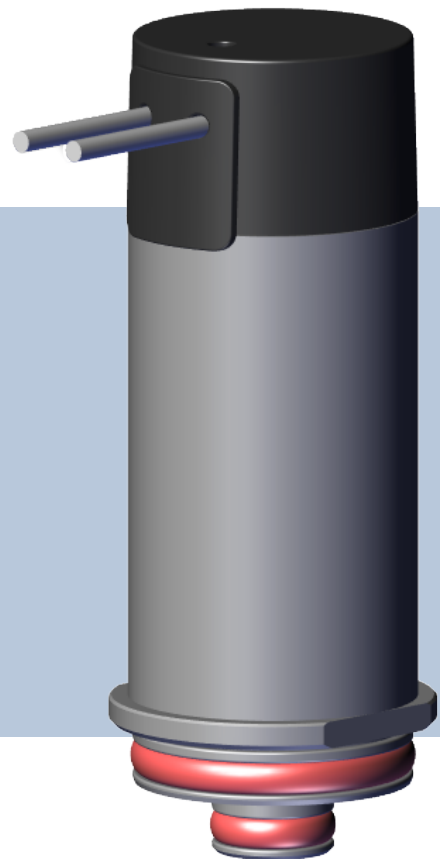


Type 2852

Proportional valve



Operating Instructions

We reserve the right to make technical changes without notice.

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Operating Instructions 2401/01_EUen 00815448 / Original DE

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1 ABOUT THIS DOCUMENT

The document is an important part of the product and guides the user to safe installation and operation. The information and instructions in this document are binding for the use of the product.

- Before using the product for the first time, read and observe the whole safety chapter.
- Before starting any work on the product, read and observe the respective sections of the document.
- Keep the document available for reference and give it to the next user.
- Contact the Bürkert sales office for any questions.



Further information concerning the product at country.burkert.com.

1.1 Manufacturer

Bürkert Fluid Control Systems
Christian-Bürkert-Str. 13–17
D-74653 Ingelfingen



The contact addresses are available at country.burkert.com in the menu "Contact".

1.2 Symbols



DANGER!

Warns of a danger that leads to death or serious injuries.



WARNING!

Warns of a danger that can lead to death or serious injuries.



CAUTION!

Warns of a danger that can lead to minor injuries.

NOTICE!

Warns of property damage that can damage the product or the installation.



Indicates important additional information, tips and recommendations.



Refers to information in this document or in other documents.

➔ Indicates a step to be carried out.

✓ Indicates a result.

Menu Indicates a software user-interface text.

1.3 Terms and abbreviations

The terms and abbreviations are used in this document to refer to following definitions.

bar	Unit for relative pressure
Device	Type 2852 2-way proportional valve

2 SAFETY

2.1 Intended use

The device is designed to control the flow rate of media. The permitted media are listed in [Technical data](#) [▶ 10].

Prerequisites for safe and trouble-free operation are correct proper transportation, storage, installation, start-up, operation and maintenance.

The instructions are part of the device. The device is intended exclusively for use within the scope of these instructions. Uses of the device that are not described in these instructions, the contractual documents or the type label can lead to severe personal injury or death, damage to the device or property and dangers for the surrounding area or the environment.

- Do not mechanically load the device.
- Only trained and qualified personnel may install, operate and maintain the device. See qualification of persons in [Safety instructions](#) [▶ 6]
- Use the device only in conjunction with third-party devices and components recommended and authorized by Bürkert.
- Use the device only when it is in perfect condition.

2.2 Safety instructions

Qualification of personnel working with the device

Improper use of the device can lead to serious personal injury or death. To avoid accidents when working with the device, the following minimum requirements must be met:

- Carry out work on the device within the scope of these instructions in a safety-compliant manner.
- Detect and avoid dangers when working on the device.
- Understand the instructions and implement the information contained therein accordingly.

Responsibility of the operator

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

- Observe the general rules of technology.
- Install the device according to the regulations applicable in the respective country.
- The operator must make hazards arising from the location of the device avoidable by providing appropriate operating instructions.

Changes and other modifications, spare parts and accessories

Changes to the device, incorrect installation or use of non-approved devices or components create hazards that can lead to accidents and injuries.

- Do not make any changes to the device.
- Do not mechanically load the device.
- Observe the operating instructions of the device or component used.
- Only use the devices in conjunction with approved devices or components.

Spare parts and accessories that do not meet Bürkert's requirements may impair the operational safety of the device and cause accidents.

→ To ensure operational safety, only use original parts from Bürkert.

Operation only after proper transport, storage, installation, start-up or maintenance.

Improper transport, storage, installation, start-up or maintenance endanger the operational safety of the device and can cause accidents. This can lead to serious personal injury or death.

→ Only carry out works which are described in these instructions.

→ Only carry out works using suitable tools.

→ Have all other works carried out by Bürkert only.

Technical limit values and media

Non-compliance with technical limit values or unsuitable media can damage the device and lead to leaks. This can cause accidents and seriously injure or kill people.

→ Comply with limit values. See [Technical data \[▶ 10\]](#) and information on the type label.

→ Only feed media into the media ports that are listed in the chapter [Technical data \[▶ 10\]](#).

→ Observe the safety data sheet for the media used.

Medium under pressure

Medium under pressure can seriously injure people. In the event of overpressure or pressure surges, the device or lines can burst. Pneumatic lines that are defective or not securely fastened can come loose and swing around.

→ Before working on the device or system, switch off the pressure. Vent or empty the lines.

→ Adhere to the permitted pressure ranges of the medium.

→ Comply with the permitted temperature ranges of the medium.

Electric shock due to electrical components

Touching live parts can result in severe electric shock. This can lead to serious personal injury or death.

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

→ Observe any applicable accident prevention and safety regulations for electrical devices.

Hot surfaces and fire hazard

The surface of the device can become hot with fast-switching actuators or with hot media.

→ Wear suitable protective gloves.

→ Keep highly flammable substances and media away from the device.

Working on the device

Working on the device that has not been powered down, unauthorised switching on or uncontrolled start-up of the system can cause accidents. This can lead to serious personal injury or death.

→ Only work on the device when it is not in use.

→ Ensure that the device or system cannot be switched on unintentionally.

→ Only start the process in a controlled manner following disruptions. Observe sequence:

1. Apply supply voltage or pneumatic supply.
2. Charge the device with medium.

3 PRODUCT DESCRIPTION

Type 2852 is a compact, pressure balanced 2/2-way proportional valve with the following properties:

- Proportional valve for flow or pressure control
- Specially suited for analytical and medical devices. Can also be used universally
- Excellent responding behaviour and high setting range
- Available as flange or cartridge variant for quick and flexible system integration
- High flow range and pressure range in combination with a low power consumption
- Degree of protection IP50 (strand) or IP10 (JST plug)

3.1 Product structure

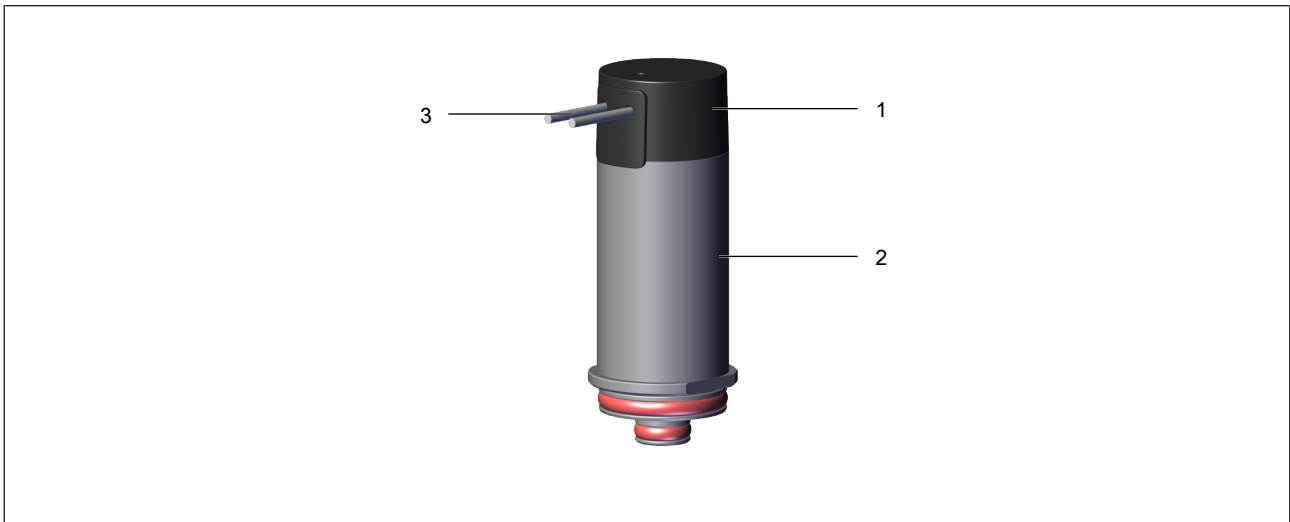


Fig. 1: Type 2852

1	Cover	2	Valve body
3	Strands		

3.2 Product identification

3.2.1 Type label

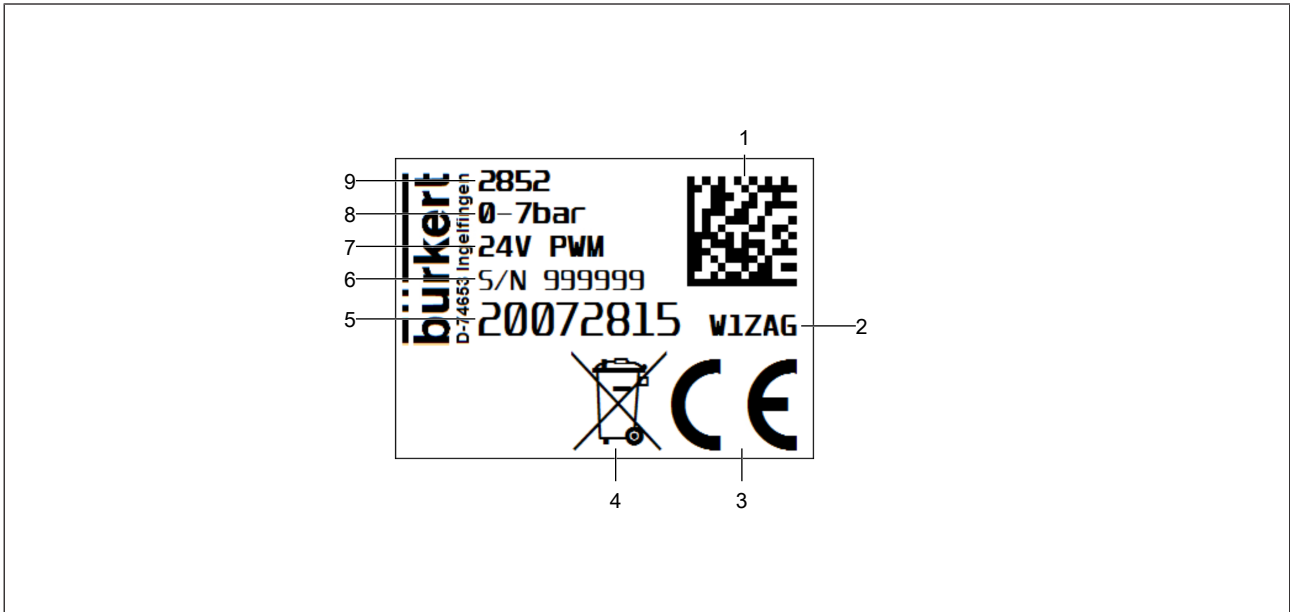


Fig. 2: Type 2852 type label (example)

1	Data-Matrix-Code: Article number, serial number	2	Manufacture code
3	CE marking	4	Indication for disposal
5	Article number	6	Serial number
7	Operating voltage	8	Operating pressure
9	Type		

3.3 Circuit function

Icon	Description
	Circuit function A (WW A), NC 2/2-way solenoid proportional valve, direct-acting Normally closed

Tab. 1: Circuit function

4 TECHNICAL DATA

4.1 Standards and Directives

The device complies with the relevant EU harmonisation legislation. In addition, the device also complies with the requirements of the laws of the United Kingdom.

The harmonised standards that have been applied for the conformity assessment procedure are listed in the current version of the EU Declaration of Conformity/UK Declaration of Conformity.

4.2 Operating conditions

Operating mode	see data sheet
Materials	see data sheet
Installation position	Any, preferably actuator face up
Ambient temperature	+5...+50 °C
Medium temperature	+5...+50 °C
Storage temperature	-10...+65 °C
Degree of protection (EN 60529 / IEC 60529)	IP10 (if connected using a JST plug)
	IP50 (if connected with strands)
Protection class (according to VDE 0580)	III
Medium	Gases Further information on testing the chemical resistance of wetted materials can be found in the Bürkert resistApp

5 INSTALLATION



Risk of injury or material damage when working on the device or system.

→ Read and observe the chapter [Safety \[▶ 6\]](#) before working on the device or system.

5.1 Preparatory work



DANGER!

Risk of injury from high pressure and discharge of medium.

→ Before working on the device or system, switch off the pressure. Vent or drain lines.

→ Clear pipes of any dirt.

→ Fit a dirt trap on a dirty medium before the valve inlet (maximum mesh size 50 µm).

5.2 Cartridge variant installation

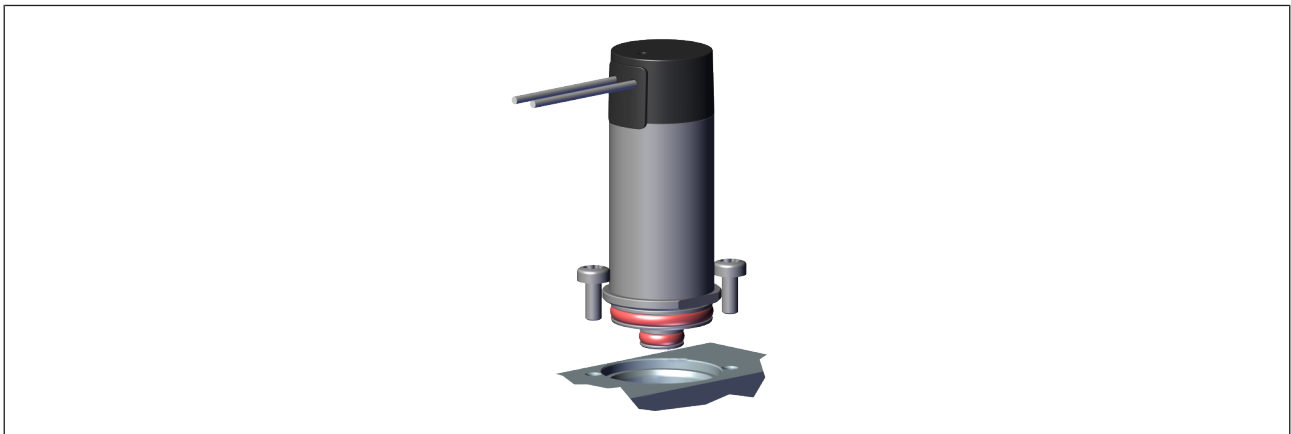


Fig. 3: Cartridge variant installation, example FC18

→ Ensure that the O-rings on the valve body and the seal surfaces of the connection housing are free of any dirt and damage.

→ Recommendation: coat O-rings on the body in a suitable lubricant to prevent damage.

→ Press the valve into the connection housing.

→ Tightly screw in the valve body, observing the tightening torque indicated in the following table.

NOTICE!

Overly high axial force when installing the valve may cause functional impairment.

→ Observe maximum axial force of 150 N and do not exceed it.

NOTICE!

→ Ensure that the O-rings on the valve body and the seal surfaces of the connection housing are not damaged during installation.

Variant	Tightening torque [Nm]	Screw
FC18	0.7	M2.5 x 6 A2 - ISO 14583

5.3 Flange variant installation

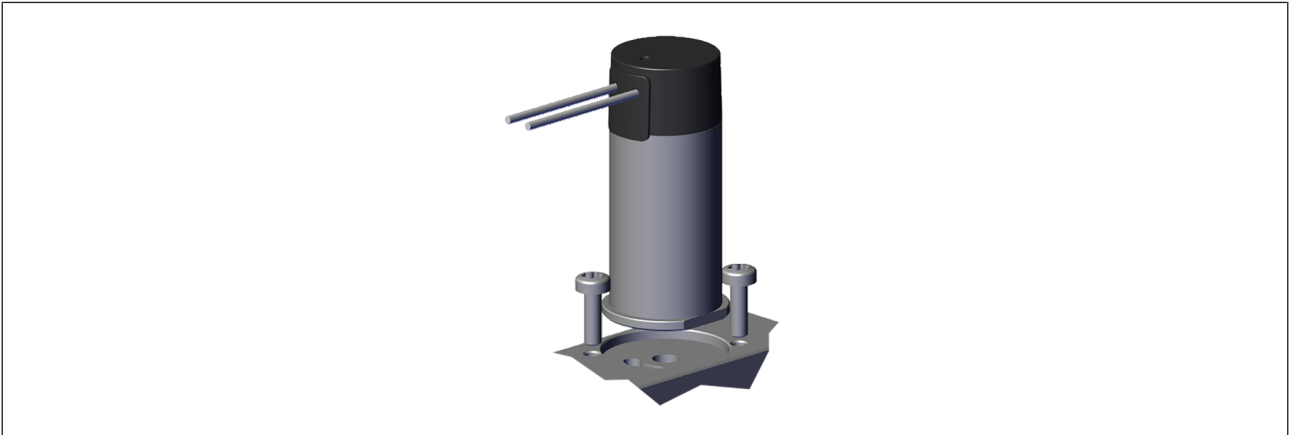


Fig. 5: Flange variant installation

- Ensure that the O-rings on the valve body and the seal surfaces of the connection housing are free of any damage.
- Place the valve on the connection housing.
- Tightly screw in the valve body, observing the tightening torque indicated in the following table.

NOTICE!

- Ensure that the O-rings on the valve body and the seal surfaces of the connection housing are not damaged during installation.

Variant	Tightening torque [Nm]	Screw
FK16	0.7	M2.5 x 6 A2 - ISO 14583

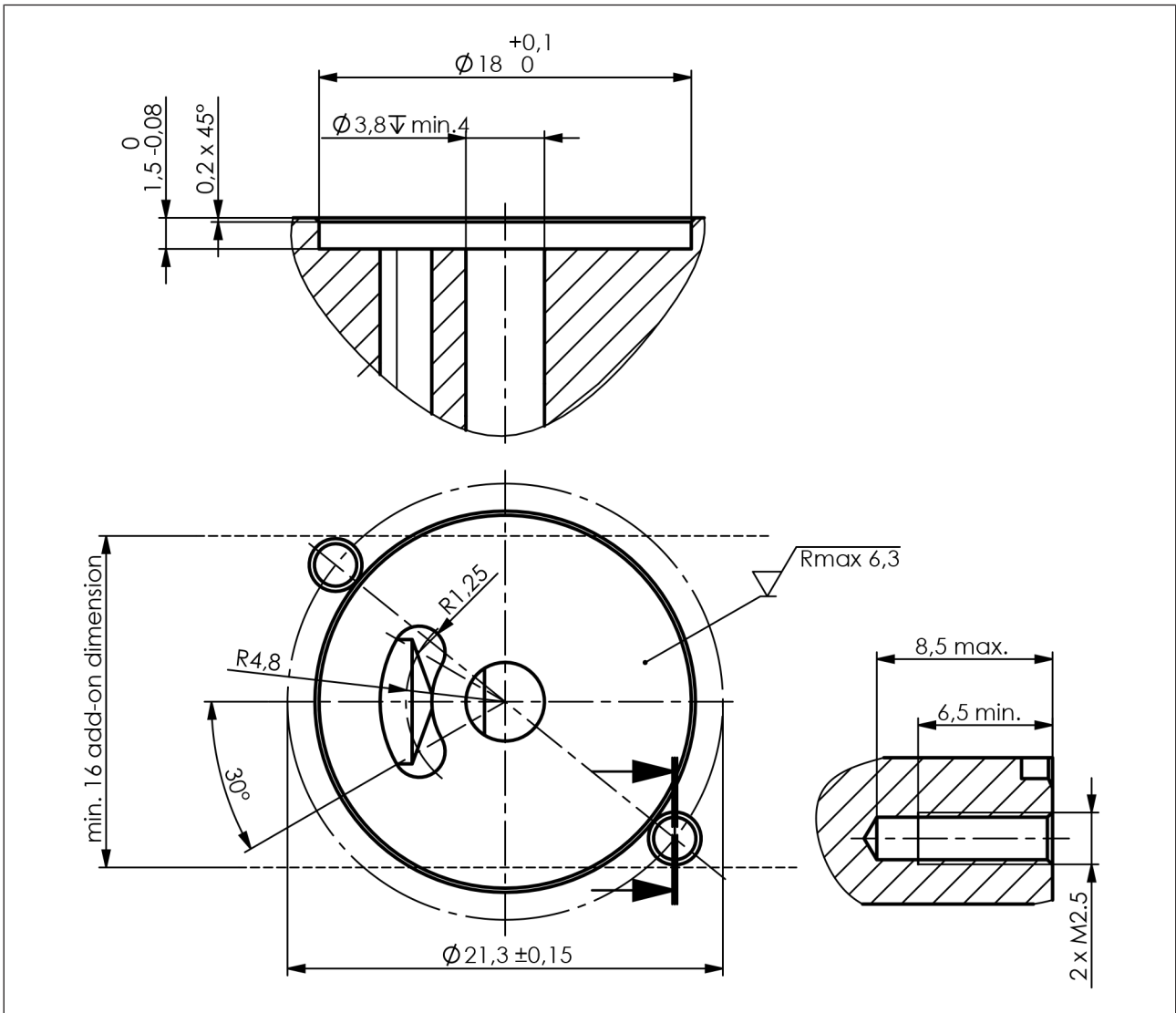


Fig. 6: Connection diagram for flange variant FK16

6 ELECTRICAL CONNECTION

WARNING!

Risk of injury from electric shock.

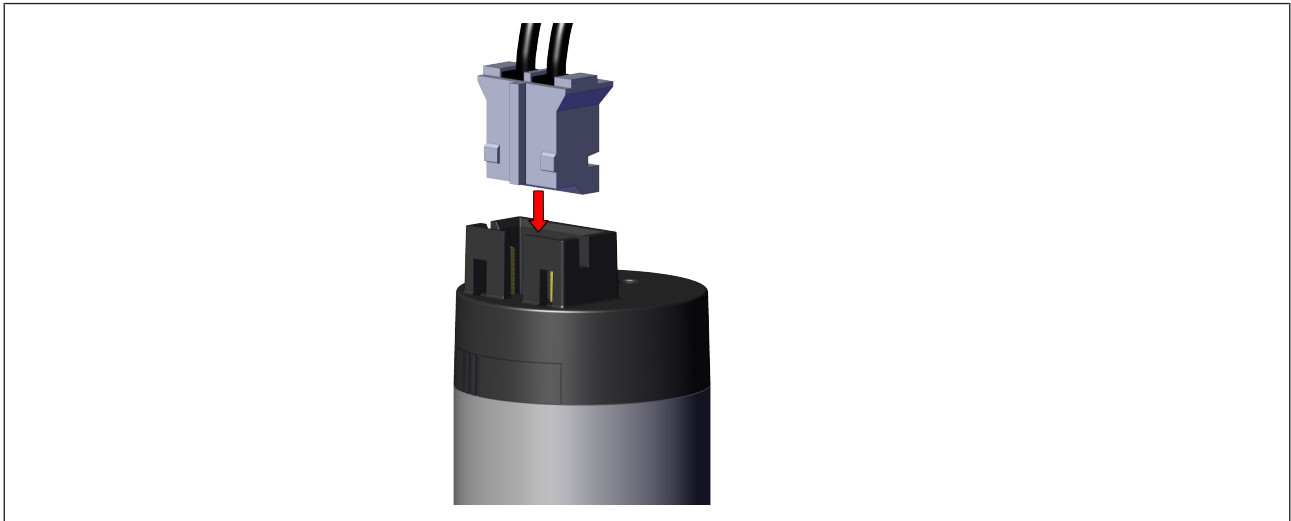
- Switch off the power supply before working on the device or system. Secure it against reactivation.
- Observe the applicable accident prevention and safety regulations for electrical devices.

6.1 Install JST plug

Damage to JST plug or cable wear

When loosening the JST plug, do not pull on the cable, always pull on the JST plug.

- Insert the JST plug straight into the socket on the valve and let it lock in.



7 FAULTS

DANGER!

Risk of injury from high pressure and discharge of medium.

→ Before working on the device or system, switch off the pressure. Vent or drain lines.

WARNING!

Risk of injury from electric shock.

→ Switch off the power supply before working on the device or system. Secure it against reactivation.

→ Observe the applicable accident prevention and safety regulations for electrical devices.

Error	Possible cause	Remedy
No flow	No supply pressure	Check supply pressure
	Valve connections switched	Check if pressure applied to valve is correct (see installation chapter)
	Electrical connection faulty	Check if electrical contacts and supply voltage are correct
	Filter clogged	Check filter and clean if necessary
Flow value not reached	Input pressure level too low	Check if sufficient input pressure level is present for desired flow
	Other pressure drop in system	Check filter for soiling. Check armatures and lines in system for sufficient dimensioning
	Supply voltage is too low	Adjust supply voltage (see operating conditions)
	Ambient temperature too high and/or average modulation too high	Reduce ambient temperature Adjust valve layout
	Valve layout not correct	Contact Bürkert contact person
Increased noise development	PWM frequency not coordinated to valve	Set recommended PWM frequency
	Vibration stimulation present in system	If possible, reduce pressure level If possible, increase cable cross-section Otherwise, contact Bürkert contact person

8 LOGISTICS

8.1 Transport and storage

- Protect the device against moisture and dirt in the original packaging during transportation and storage.
- Avoid UV radiation and direct sunlight.
- Protect connections from damage with protective caps.
- Observe permitted storage temperature.

8.2 Disposal

Environmentally friendly disposal



- Follow national regulations regarding disposal and the environment.
- Collect electrical and electronic devices separately and dispose of them as special waste.

Further information at country.burkert.com