

SRBK
Limit switch box

Operating instruction
8234428
2025-03b
[8234430]
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Original instructions
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1 Applicable documents

All available documents for the product -> www.festo.com/sp.

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Observe the identifications on the product.
- Take into account the ambient conditions at the location of use.
- The product may generate high frequency interference, which may require interference suppression measures in residential areas.
- The protective caps fitted on delivery are for transport purposes only and must be replaced with cable connectors or blanking plugs that are suitable for the application.
- Tightly close every cable entry with a cable fitting or blanking plug to ensure the IP66 and IP67 degree of protection.

2.2 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. The qualified personnel have skills and experience in dealing with electrical (open-loop) control technology.

3 Additional information

- Contact the regional Festo contact if you have technical problems -> www.festo.com.
- Accessories and spare parts -> www.festo.com/catalogue.

4 Design
4.1 Product design

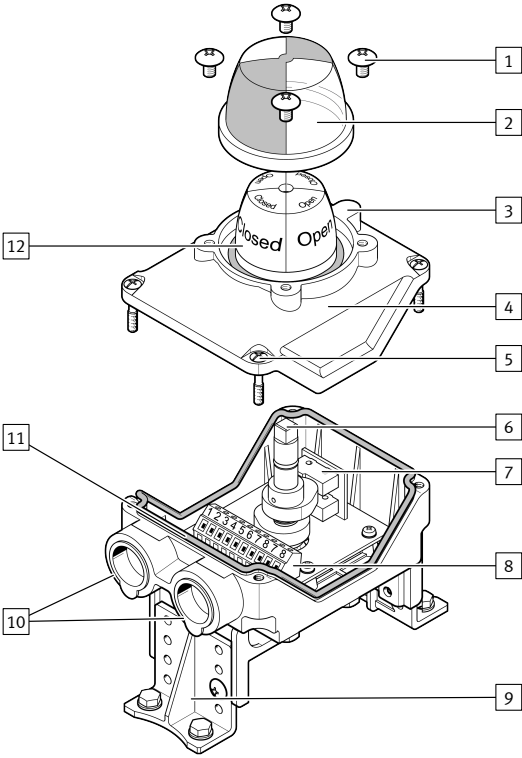


Fig. 1: Product design

- 1 Screw M5x8
2 Protective cap
3 External earth terminal
4 Housing cover
5 Housing screws
6 Shaft with cam
7 Proximity switch
8 Screw terminal strip
9 Mounting adapter
10 Cable entries for cable fitting
11 Earth terminal inside housing wall
12 Position indicator

5 Mounting

5.1 Mounting adapter DARQ-K-X1-A3-F05-R14

WARNING
Electric voltage
Injury due to electric shock.
Switch off the power supply before opening the device.
During assembly note the position indicator and ensure that it matches the process fitting.

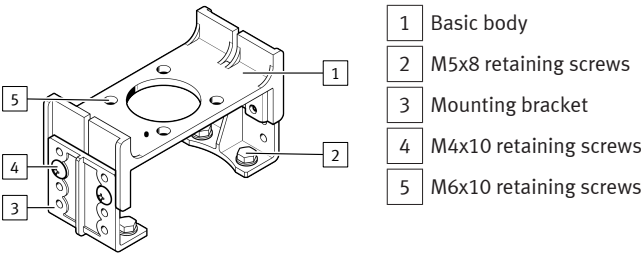


Fig. 2: Variable mounting adapter

- 1. Mount the basic body on the limit switch box with the M6x10 retaining screws. Tightening torque: 8 Nm ± 10%.
2. Adjust the mounting brackets to the required distance and attach them to the basic body with the M4x10 retaining screws. Tightening torque: 2 Nm ± 10%.
3. Attach the limit switch box to the mounting adapter and align it. Avoid axial load of the drive shaft.
4. Fasten the mounting adapter to the process fitting with the M5x8 retaining screws. The tightening torque depends on the process fitting used.
5.2 Replacing position indicator
1. Unscrew the M5x8 screws on the protective cap and remove the protective cap. Replace the protective cap if necessary.
2. Remove the position indicator and replace if necessary.
3. Place the position indicator and the protective cap. Tighten the M5x8 screws. Tightening torque: 1.5 Nm ± 10%.



Unsuitable cables or incorrect installation will change the degree of protection of the limit switch box.

6.1 Electrical connection SRBK-...-M12

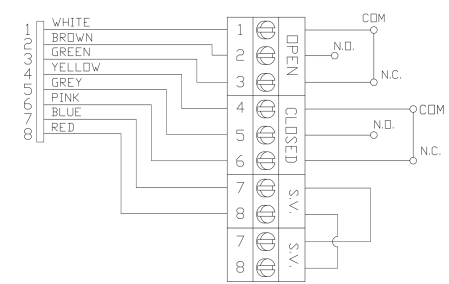


Fig. 3: SRBK-...-1W/-1WG: micro-switch, electromechanical SPDT

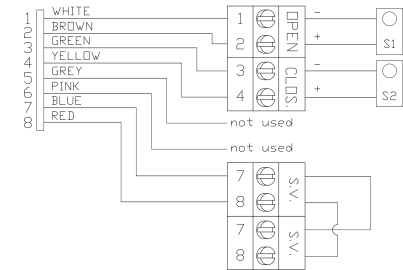


Fig. 4: SRBK-...-ZU: two-wire proximity switch, inductive

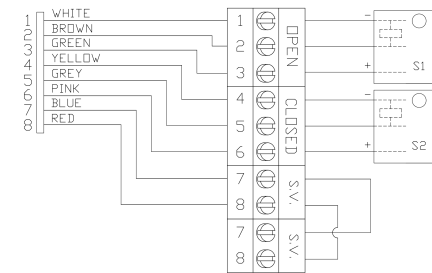


Fig. 5: SRBK-...-P: three-wire proximity switch, inductive

6.2 Electrical connection SRBK-...-C2

Wiring diagram for limit switch box		
SRBK-...-1W/-1WG	SRBK-...-TO	SRBK-...-P

Tab. 1: Wiring diagram for limit switch box



Seal cable fittings and blanking plugs only with flat seals or O-rings with 2 mm cord thickness.

- Unscrew the housing screws on the housing cover and remove the housing cover.
- Screw the cable fitting with seal into the cable entry and tighten to the tightening torque specified by the manufacturer. Run the electrical connecting cable through the cable fitting to the screw terminal strip.
- Close unused openings with blanking plugs to the tightening torque specified by the manufacturer.
- Wire the connections. Tightening torque: 0.4 Nm.
- Include the limit switch box in the equipotential bonding of the system. Use the earth terminal on the inside of the housing wall for this purpose [11].
- Tighten the union nut of the cable fitting to the tightening torque specified by the manufacturer.
- Make sure the seals are correctly positioned and place the housing cover.

- Place the housing screws and screw them manually into the first two threads of the housing bottom part. Tighten the housing screws. Tightening torque: 1.5 Nm ± 10%.
- Include the housing in the equipotential bonding of the system. This uses the external earth terminal on the outside of the housing [3].

7 Setting switching points



Danger of crushing

The movement of the shaft may crush fingers between the cams and the housing.

- Do not operate the cams unless the process valve is fully open or fully closed.

- The switching points are preset:
- The green cam is set to "open".
 - The red cam is set to "closed".

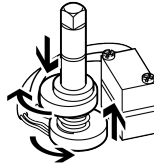


Fig. 6: Setting switching points

- Close the process valve.
 - Position indicator: "closed".
- Unscrew the housing screws on the housing cover and remove the housing cover.
- Lift the red cam against the spring and turn until the lower proximity switch switches.
- Release the red cam.
 - The spring presses the red cam into the annular gear.
 - The switching point for "closed" is set.
- Open the process valve.
- Press down the green cam against the spring and turn until the upper proximity switch switches.
- Release the green cam.
 - The spring presses the green cam into the annular gear.
 - The switching point for "open" is set.
- Make sure that the seals are seated correctly. Place the housing cover and make sure that the position indicator is set to "open".
- Tighten the housing screws. Tightening torque: 1.5 Nm ± 10%.



To avoid destroying the plastic thread in the housing, only tighten the housing screws by hand with a screwdriver.

8 Maintenance

Due to their design, screw connections in plastic parts may loosen depending on the actual thermal and mechanical ambient conditions.

- Check the tightening torques at regular intervals.

9 Fault clearance

Malfunction	Cause	Remedy
Incorrect or unexpected signal	Wire break between the limit switch box and the controller.	– Replace the cable.
	The position of the switching points is incorrectly defined.	– Adjust the switching points.
	The limit switch box is defective.	– Replace the limit switch box.
Condensate in the product	The sealing plug is not replaced by a blanking plug.	– Replace the sealing plug with a blanking plug.
	The blanking plug is mounted with an incorrect tightening torque.	– Correct the tightening torque.
	Incorrect cable fittings or blanking plugs are used.	– Use specified cable fittings and blanking plugs.
	The seals, the housing cover or the cable fitting is incorrectly installed.	– Mount all components as specified and in accordance with the documentation.
	Housing components are damaged.	– Replace the limit switch box.

Tab. 2: Fault clearance

10 Technical data

SRBK	
Certificates, declaration of conformity	➔ www.festo.com/sp
Setting range of sensors	[°] 0 ... 360
Optical sensing range of visual display	[°] 0 ... 90
Sensing range of position indicator	[°] 0 ... 90

SRBK		
Cable fitting		M20x1.5
Blanking plug		
Nominal cross section of conductor that can be connected	[mm²]	0.25 ... 2.5
Mounting position		Any
Ambient temperature	[°C]	−20 ... +70
Storage temperature	[°C]	−20 ... +50
Degree of protection		IP66, IP67
Continuous shock resistance in accordance with DIN IEC 60068 Teil 2-29		± 15 g at 6 ms duration; 1000 shocks per direction
Vibration resistance in accordance with DIN IEC 60068 Teil 2-6		3.5 mm path at 2 ... 9 Hz 1 g acceleration at 9 ... 200 Hz
Electrical connection		
SRBK-...-M12		M12 plug, 8-pin, A-coded in accordance with EN 61076-2-101
SRBK-...-C2		Screw terminal strip, 10-pin
Interface		
Mechanical interface for semi-rotary drives		VDI/VDE Directive 3845
NAMUR interface		DIN EN ISO 5211:2017-08
Operating voltage range AC		
SRBK-...-2A	[V]	0 ... 120
SRBK-...-22A	[V]	0 ... 230
Max. output current AC		
SRBK-...-2A	[mA]	180
SRBK-...-22A	[mA]	3000 (at 230 V)
Max. switching capacity SRBK-...-2A	[W]	5
Operating voltage range DC		
SRBK-...-22A SRBK-...-1W-M12 SRBK-...-1WG	[V]	0 ... 30
SRBK-...-P	[V]	10 ... 30
SRBK-...-TO	[V]	5 ... 60
SRBK-...-2A	[V]	0 ... 175
Max. output current DC		
SRBK-...-P SRBK-...-TO SRBK-...-1WG	[mA]	100
SRBK-...-2A	[mA]	250
SRBK-...-22A SRBK-...-1W-M12	[mA]	1000
Max. switching capacity SRBK-...-2A	[W]	5
Voltage drop		
SRBK-...-P	[V]	≤ 3
SRBK-...-TO	[V]	≤ 4
Residual current		
SRBK-...-P	[mA]	0 ... 0.5
SRBK-...-TO	[mA]	0.4 ... 0.55
No-load current		
SRBK-...-P	[mA]	0 ≤ 15
SRBK		–
Reverse polarity protection		
SRBK-...-P		For all electrical connections
SRBK-...-TO		
Short circuit current rating		
SRBK-...-P		Clocked
SRBK		–
Materials		
Housing, shaft		PA
Screws		Stainless steel
seals		NBR
Circlip		High-alloy stainless steel
Protective cap		PC

Tab. 3: Technical data