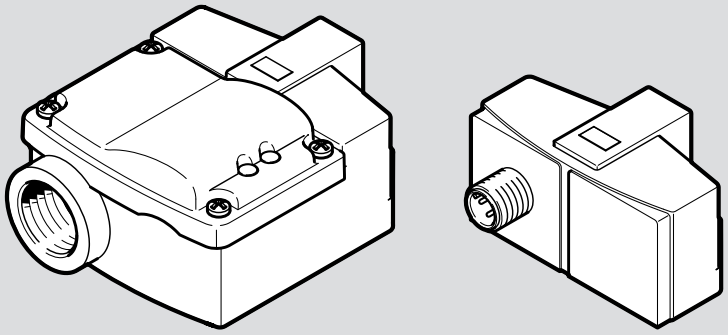
SRBG
Limit switch box



FESTO

Operating instructions

8246403

8246403
2025-10d
[8246405]

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.
- 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.
- 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 product is maintenance-free in intended use.

2.2 Intended use

Dual inductive sensors are intended for recording and displaying the position of process valves.

2.3 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.

2.4 UL/CSA Certification

In combination with the UL inspection mark on the product, the information in this section must also be observed in order to comply with the certification conditions of Underwriters Laboratories Inc. (UL) for USA and Canada.

UL/CSA Certification	
Product category code	NRKH, NRKH7
File number	E232949
Considered standards	UL 60947-1, UL 60947-5-2 CSA-C22.2 No. 60947-1, CSA-C22.2 No. 60947-5-2
UL mark	c UL US LISTED

Tab. 1: UL/CSA Certification

Only for connection to a NEC/CEC Class 2 supply.

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 Product overview

4.1 SRBG-...-C2-C2

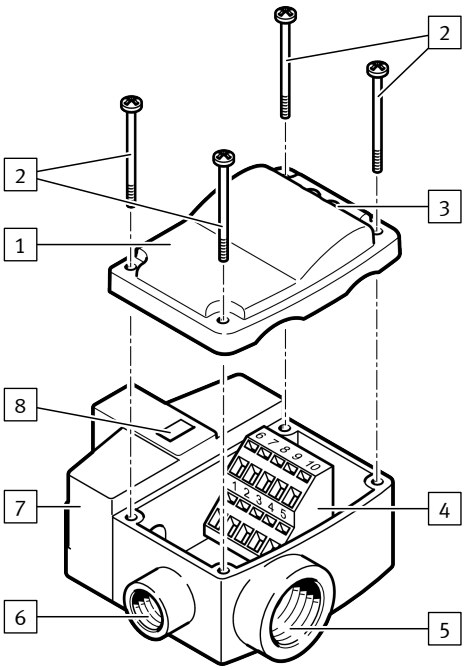

Fig. 1: Product design SRBG-...-C2-C2

1 Housing cover
2 Housing screws
3 Yellow LED: switching status indication for solenoid valve
4 Caged spring terminals
5 Cable entry M20 x 1.5 for system connection
6 Cable entry M12 x 1.5 for solenoid valve connection
7 Inductive dual sensor
8 Green LED: power supply indicator (only for SRBG-C1-N-1-P-C2-C2) yellow LED: switching status indication (target position 1, target position 2)

4.2 SRBG-...-M12

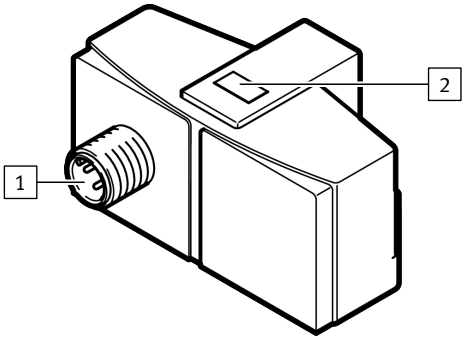

Fig. 2: Product design SRBG-...-M12

1 M12 plug
2 Green LED: operating voltage indicator (only with SRBG-C1-N-1-P-M12) yellow LED: switching status indication (target position 1 target position 2)

4.3 SRBG-...-M12-M12

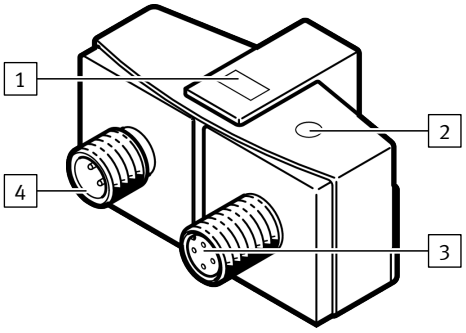

Fig. 3: Product design SRBG-...-M12-M12

1 Green LED: operating voltage indicator yellow LED: switching status indication (target position 1, target position 2)
2 Yellow LED: valve status indication red LED: line break/short circuit
3 Solenoid valve connection
4 AS-i connection

5 Function

Limit switch box SRBG

The limit switch box SRBG is an inductive dual sensor that in combination with the position indicator SASF can detect the end position of the actuator without contact. Each of the two sensors has a separate coil. When the metallic actuating element of the position indicator SASF is within the detection range of the sensor, the magnetic field of the internal coil is actuated and an electrical switching signal is generated.

Position indicator SASF

- The actuating elements are mounted offset by 90° in the position indicator SASF-...-F-.... The position indicator is suitable for left- and right-rotating actuators with a rotation angle of 90° or 180°.
- The position indicator SASF-...-V-... has 2 actuating elements on the housing, each with a rotation range of 180°. The actuating elements are rotating offset and can be infinitely adjusted. The range with the actuating element generates the normally open function. The range without actuating element generates the normally closed function.

6 Mounting

6.1 SRBG with SASF-...-F

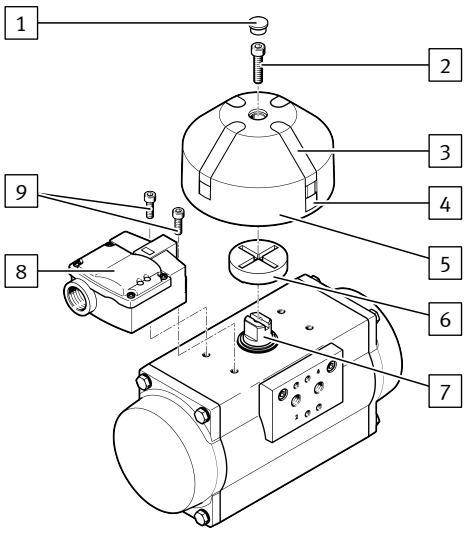

Fig. 4: Mounting SRBG and SASF-...-F on the drive

1	Sealing plug	6	Spacer disc
2	M6 screw	7	Drive shaft
3	Identification stopper	8	Limit switch box SRBG
4	Actuating elements	9	M5 screws
5	Position indicator SASF-S2-...-F-...		

1. Place the limit switch box [8] on the mounting interface of the semi-rotary drive and mount it with the M5 screws [9].
   – Tightening torque: 1 Nm ± 10%
   The limit switch box does not require adjustment after mounting.
2. Fasten the position indicator SASF-S2-...-F-... [5] on the drive shaft [7] and mount it with the M6 screw [2]. Use the spacer disc [6] to compensate for the height of the drive.
   – Tightening torque: 1.5 Nm ± 10%

3. After mounting, place the sealing plug [1] and the identification plug [3] on the position indicator SASF-S2-...-F-....

6.2 SRBG with SASF-...-V

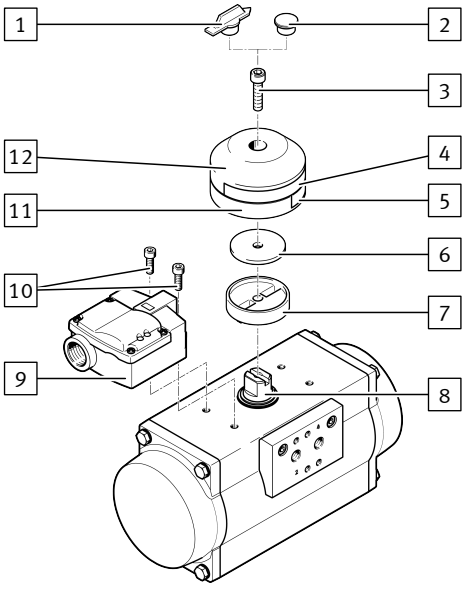

Fig. 5: Mounting SRBG and SASF-...-V on the drive

1 Identification stopper
2 Sealing plug
3 M6 screw
4 Adjustable metal band (variable) actuation point 1
5 Adjustable metal band (variable) actuation point 2
6 Rubber washer
7 Spacer disc
8 Drive shaft
9 Limit switch box SRBG
10 M5 screws
11 Position indicator SASF-S2-...-V-... lower part
12 Position indicator SASF-S2-...-V-... upper part

1. Place the limit switch box [9] on the mounting interface of the semi-rotary drive and mount it with the M5 screws [10].
   – Tightening torque: 1 Nm ± 10%
   The limit switch box does not require adjustment after mounting.
2. Insert the rubber washer [6] into the recess provided on the back of the spacer disc [7].
3. Place the spacer disc with the inserted rubber washer on the drive shaft [8] of the semi-rotary drive.
4. Place the lower part of the position indicator SASF-S2-...-V [11] on the spacer disc.
5. Place the upper part of the position indicator SASF-S2-...-V [12] on the lower part of the position indicator SASF-S2-...-V.
6. Mount the position indicator SASF-S2-...-V on the drive shaft [8] with the M6 screw [3]. Hand-tighten the M6 screw.
7. Adjust the upper and lower part of the position indicator SASF-S2-...-V-... to the required switching position and mount with the M6 screw [3].
   – Tightening torque: 1.5 Nm ± 10%
8. On completion of the mounting, position the sealing plug [2] and the identification plug [1] on the position indicator SASF-S2-...-V.

7 Installation

7.1 SRBG-...-C2-C2

1. Loosen the housing screws on the housing cover. Remove the housing cover.
2. Screw the cable fitting into the cable entry for the system connection. Guide the electrical connecting cable through the cable fitting to the terminal spring block and wire the connections.
   – Flexible connectable conductor cross-section flexible: 0.2 mm² ... 1.5 mm²
   – Rigid connectable conductor cross-section: 0.2 mm² ... 2.5 mm²
3. Place the housing cover in position and tighten the 4 housing screws.
   – Tightening torque: 1 Nm

7.2 SRBG-...-M12

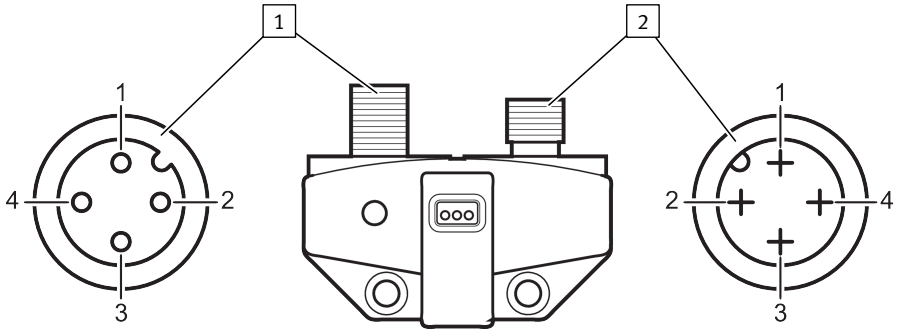

Fig. 6: Electrical connection

[1] SRBG-...-M12-M12: solenoid valve connection

[2] SRBG-...-M12-M12: AS-i connection SRBG-...-M12: sensor connection

8 Parameterisation SRBG-...-AS

Product identification	
Address	00 preset, can be changed via bus master or programming unit
IO code	D
ID code	A
ID1 code	7
ID2 code	E

Tab. 2: Product identification

Data bit	
Bit	Function
D0	Valve state (0 = valve off, 1 = valve on)
D1	Valve error[1)] (0 = line break/short circuit, 1 = no error)
D2	Switching output sensor 1[2)] (0 = attenuated, 1 = uncushioned)
D3	Switching output sensor 2[2)] (0 = attenuated, 1 = uncushioned)

1) Test only with actuated valve (D0 = 1)

2) Applies to N/C function (P2/P3 = 1, preset), with N/O function (P2/P3 = 0) reversed response

Tab. 3: Data bit

Parameter bit	
Bit	Function
P0	Watchdog (0 = inactive, 1 = active)[1]
P1	Switching element function sensor 2[2] (0 = N/O contact, 1 = N/C contact)
P2	Sensor 1 switching element function[2] (0 = N/O contact, 1 = N/C contact)
P3	Not used

1) Watchdog active: valve voltage drops in the event of AS-Interface communication error
2) Default: N/C contact

Tab. 4: Parameter bit

9 Technical data

9.1 SRBG

SRBG-...		-P	-ZU	-ZC	-AS
Certificates, declaration of conformity		➔ www.festo.com/sp			
Mounting position		any			
Electrical data					
Measurement principle		Inductive			
Switching output		PNP	non-contact, 2-wire	NAMUR	AS-Interface
Switching element function		N/O contact		N/C contact	N/C contact or N/O contact, switchable
Max. switching frequency	[Hz]	500		3000	100
Max. switching output voltage	[V]	–			26.4
Operating voltage range	[V DC]	10 ... 30	6 ... 60	8.2	26.5 ... 31.6
Max. output current DC	[mA]	100		3	100
Max. switching capacity DC	[W]	–			2.5
Voltage drop	[V]	≤ 3	≤ 6	–	
No-load current	[mA]	≤ 25	–		≤ 35
Residual current	[mA]	0 ... 0.5	0 ... 1	–	
Min. load current	[mA]	–	4	–	
Load voltage range	[V]	–		–	21.6 ... 26.4
Current consumption with load voltage from AS-Interface and load voltage connection	[mA]	–		–	≤ 100
Reverse polarity protection		for all electrical connections			–
Short circuit current rating		Clocked	–	yes	–
AS-i protocol version		–			AS-Interface V3.0
Addressing range		–			1A ... 31A (0)
					1B ... 31B
Electromechanics					
Sensor connection SRBG-...-M12		M12x1, plug 4-pin			
Cable entry SRBG-...-C2		M20x1.5, sensor connection			–
		M12 x 1.5, solenoid valve connection			–
Electrical connection SRBG-...-C2		Spring-loaded terminal			–

SRBG-...		-P	-ZU	-ZC	-AS
Operating and environmental conditions					
Ambient temperature	[°C]	–25 ... +70	–25 ... +70	–25 ... +100	–25 ... +70
Storage temperature	[°C]	–25 ... +70	–25 ... +70	–40 ... +100	–25 ... +70
Degree of protection		IP67			
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27			
Vibration resistant		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6			
Materials					
Housing		PBT			
Screws		high-alloy stainless steel			

Tab. 5: Technical data

9.2 SASF-...-S2

SASF-...-S2-...		-F-A34	-F-A56	-V-A20
Ambient temperature	[°C]	–25 ... +80		–25 ... +70
Materials				
Housing, spacer disc		PA		
Retaining screw Actuating lug		high-alloy stainless steel		
Identification plugs, sealing plugs		PE		
M6 screw		1.4305/AISI 303 (V2A)		
Rubber washer		–		Rubber Disc/NBR 70
Yellow stickers		–		Silicone cardboard coated on one side

Tab. 6: Technical data SASF-...-S2

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