

SRBC
Limit switch box

Operating instructions
8141244
2021-10e
[8141246]
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Translation of the 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.
- Tightly seal every cable entry with cable connector, blanking plug or M12 plug to ensure the IP66 and IP67 degree of protection.

2.2 Intended use

The limit switch box is intended for recording, electrical feedback and visual display of the end position of suitable drives.

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.

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 Function

The shaft transmits the rotation of the drive to the visual position indicator. Depending on the design, the cams actuate mechanical, inductive or magnetic proximity switches to generate the signals at the electrical output.

5 Product design

- Default on delivery:
- Position indicator closed.
  - Switching point for open 90° anti-clockwise.

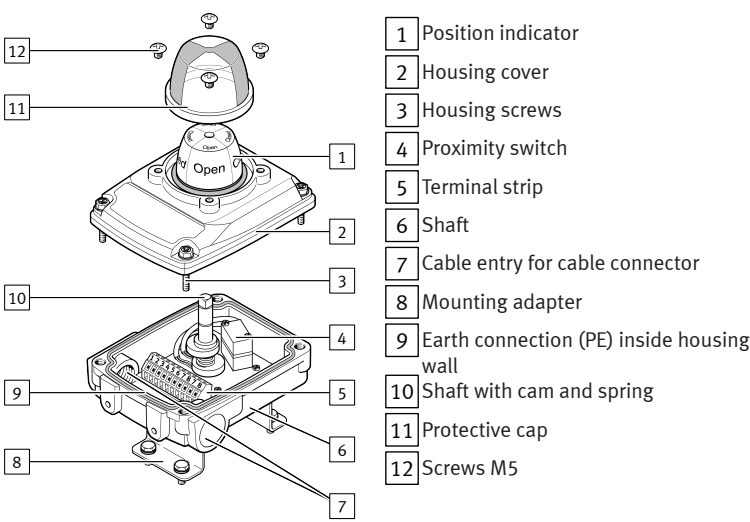


Fig. 1: Product design

6 Assembly

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.

Mounting adapter and variable mounting adapter

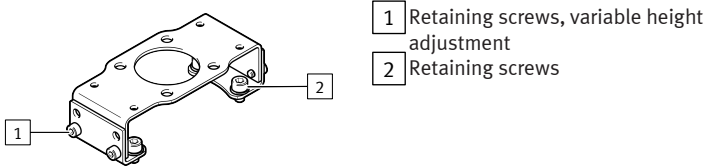


Fig. 2: Variable mounting adapter

1. Variable mounting adapter: Install the variable mounting adapter with the variable height adjustment retaining screws [1].
  - Tightening torque: 2 Nm ± 10%
2. Attach the limit switch box to the mounting adapter and align it. Avoid axial load of the drive shaft.
3. Fasten the mounting adapter to the process fitting.
  - Tightening torque of retaining screws [2]: 5 Nm ± 10%

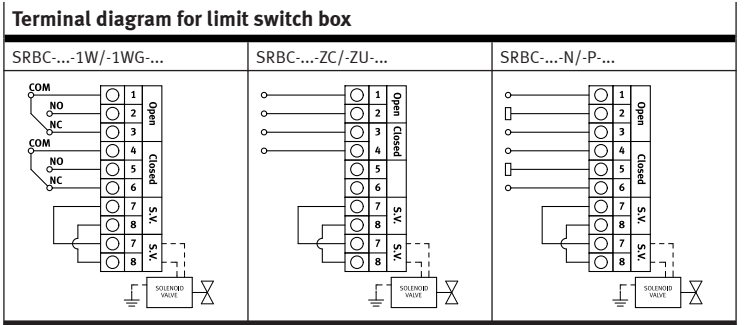
Tightening torque between mounting adapter and limit switch box: 8 Nm ± 10%

Protective cap and position indicator

1. Loosen the M5 screws [12] on the housing cover [2] and remove the protective cap [11]. Replace the protective cap if necessary.
2. Remove the position indicator [1] and replace if necessary.
3. Place the position indicator and the protective cap. Tighten the M5 screw.
  - Tightening torque: 2 Nm

7 Electrical installation

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



Tab. 1: Terminal diagram for limit switch box

1. Loosen the housing screws [3] on the housing cover [2] and remove the housing cover.

2. Screw the cable connector into the cable entry [7]. Guide the electrical connecting cable through the cable connector to the terminal strip [5].

3. Seal unused openings with blanking plugs.

4. Wire the connections.

5. Connect the earth terminal with low impedance to the earth potential.

Tightening torque: 1.3 Nm

6. Tighten the union nut on the cable connector.

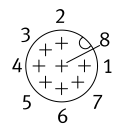
7. Make sure that the seals are seated correctly. Replace the housing cover [2] and tighten the housing screws [3].

Tightening torque: 2 Nm

Tightening torques		
Type	Cable connector	Blanking plug
SRBC-...	3.5 Nm	3.5 Nm
SRBC-...-EX6	4.5 Nm	5 Nm

Tab. 2: Tightening torques for supplied cable connector and blanking plug

SRBC-...-M12

Plug	Pin	Colour code <sup>1)</sup>	Pin	Colour code <sup>1)</sup>
	1	WH	5	GY
	2	BN	6	PK
	3	GN	7	BU
	4	YE	8	RD

1) Colour code in accordance with IEC 60757:1983-01

Tab. 3: PIN allocation for M12 plug, 8-pin

8 Setting switching points

The switching points are preset → 5 Product design.

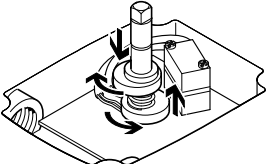


Fig. 3: Switching point for limit switch box SRBC

1. Close the process valve.

The position indicator [1] is in the switching point closed.

2. Loosen the housing screws [3] on the housing cover [2] and remove the housing cover.

3. Lift the red cam against the spring and turn until the lower proximity switch switches.

4. Release the load on the red cam with the spring.

The spring presses the red cam into the ring gear.

The switching point for closed is set.

5. Open the process valve.

The position indicator [1] is in the switching point open.

6. Press down the green cam against the spring and turn until the upper proximity switch switches.

7. Release the load on the green cam with the spring.

The spring presses the green cam into the ring gear.

The switching point for open is set.

8. Make sure that the seals are seated correctly. Position the housing cover [2] and tighten the housing screws [3].

Tightening torque: 2 Nm

9 Maintenance and Care

If used as intended, the product is maintenance-free.

10 Fault clearance

Fault description	Cause	Remedy
Incorrect or unexpected signal	Wire break	Replace the cable Replace the 8-pin M12 plug
	The position of the switching points is incorrectly defined.	Set the switching points
	The proximity switch is faulty	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

Tab. 4

11 Technical data

SRBC-...		
Setting range of sensors	[°]	0 ... 360
Optical sensing range visual display	[°]	0 ... 360
Sensing range of position indicator	[°]	0 ... 90

SRBC-...

Cable connector	M20x1.5	
Blanking plug		
Approved cable diameter	[mm]	5 ... 13
Electrical connection SRBC-...-M12	M12 plug, 8-pin	
Nominal cross section of conductor that can be connected	[mm²]	0.25 ... 2.5
Mounting position	any	
Degree of protection in accordance with IEC 60529	IP66 (only with SRBC-...-1WG) IP67 (all. Exception: SRBC-...-1WG)	
Degree of protection in accordance with NEMA 250	Type 4/4x	
Continuous shock resistance in accord- ance with IEC 60068 Teil 2-27	± 15 g at 6 ms duration; 1000 shocks per direction (except SRBC-...-CA4-...)	
Vibration resistance in accordance with IEC 60068 Teil 2-6	0.35 mm path at 0 ... 60 Hz 5 g acceleration at 0 ... 150 Hz (except SRBC-...-CA4-...)	
Standards		
Mechanical interface for semi-rotary drives	in accordance with VDI/VDE Directive 3845	
NAMUR interface	DIN EN ISO 5211:2017-08	
Operating voltage range AC		
SRBC-...-2A	[V]	0 ... 120
SRBC-...-22A	[V]	0 ... 250
Max. output current AC		
SRBC-...-2A	[mA]	180 (at 120 V)
SRBC-...-22A	[mA]	3000 (at 250 V)
Operating voltage range DC		
SRBC-...-2A-1W	[V]	0 ... 175
SRBC-...-MW-...	[V]	0 ... 30
SRBC-...-20N-...	[V]	8.2
SRBC-...-1-P/SRBC-...-1-N	[V]	10 ... 30
SRBC-...-1-ZU	[V]	5 ... 60
Max. output current DC		
SRBC-...-2A-...	[mA]	250 (at 175 V)
SRBC-...-22A-...	[mA]	3000 (at 30 V)
SRBC-...-MW-1-1W-...	[mA]	2000 (at 30 V)
SRBC-...-20N-...	[mA]	3 (at 8.2 V)
SRBC-...-N-1-... /SRBC-...1WG-...	[mA]	100
Voltage drop		
SRBC-...-1-P/SRBC-...-1-N	[V]	≤ 3
SRBC-...-1-ZU	[V]	≤ 4
Residual current		
SRBC-...1-P-... /SRBC-...1-N-...	[mA]	≤ 15
No-load supply current		
SRBC-...1-P-... /SRBC-...1-N-...	[mA]	0 ... 0.5
SRBC-...-1-ZU	[mA]	0 ... 1
Reverse polarity protection		
SRBC-...1-P-... /SRBC-...1-N-... / SRBC-...1-ZU-...	for all electrical connections	
Short circuit current rating		
SRBC-...1-P-... /SRBC-...1-N-...	pulsed	
Ambient temperature		
SRBC-...- (without SRBC-...-1WG)	[°C]	−20 ... +80
SRBC-...-1WG	[°C]	−40 ... +80
Storage temperature		
SRBC-...	[°C]	−20 ... +50, humidity 50%
Materials		
Housing	painted die-cast aluminium	
Shaft, screws, mounting adapter	high-alloy stainless steel	
Seal	Silicone (only with SRBC-...-1WG) NBR (all. Exception: SRBC-...-1WG)	
Optical position indicator	PC	

Tab. 5