

## Limit switch boxes SRBC

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## Key features and product range overview

### Function

Limit switch boxes SRBC are used for electrical feedback and control of the position of process valves actuated using pneumatic quarter turn actuators. They can be mounted quickly and easily on quarter turn actuators with a port pattern to

VDI/VDE 3845 using mounting adapters. The sturdy design of the limit switch box SRBC is ideal for the harsh conditions in process automation.

### Innovative

- Pre-assembled mounting adapter for ease of installation
- Trip cams can be set easily without additional tools
- Sturdy, corrosion-resistant design, ideal for use in harsh ambient conditions
- Clearly visible 3D position indicator allows rapid detection of the current position of the quarter turn actuator

### Flexible

- Weather-tight housing also for use in outdoor applications
- Mechanical, inductive or magnetic switch variants for virtually all areas of application
- Intrinsically safe variants for use in potentially explosive areas
- Two cable inputs for common power supply for the limit switch box and solenoid valve as standard

### Design

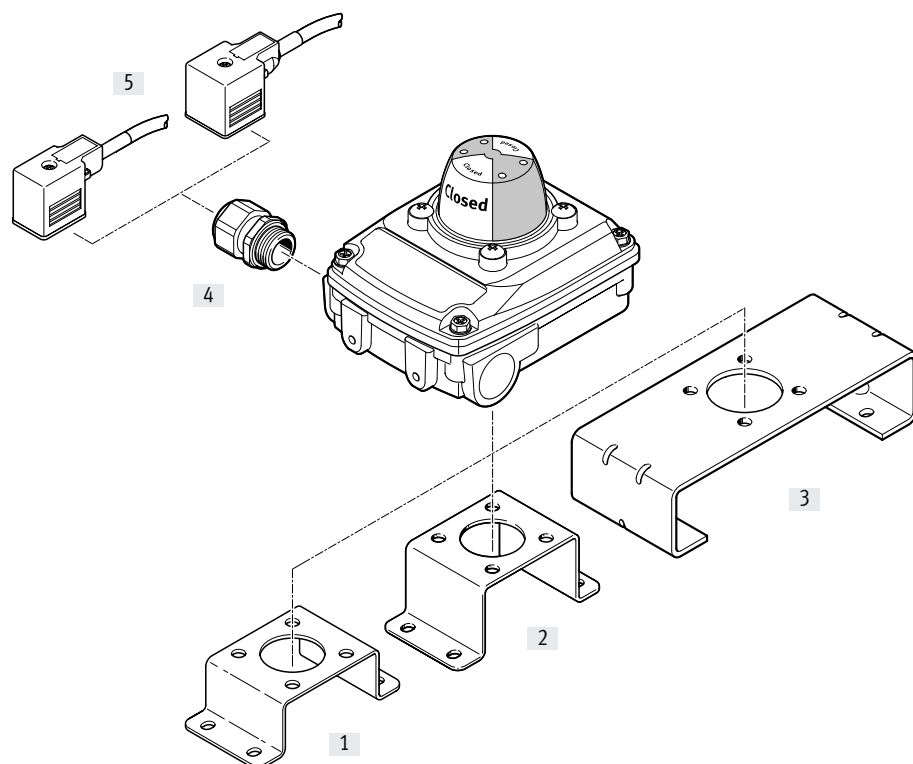
- Sturdy aluminium housing with two cable inputs M20x1.5
- Captive stainless steel screws on the housing cover
- Pre-assembled stainless steel mounting adapter 80x30 H20 for ease of mounting on standard actuators to VDI/VDE 3845
- Cable connector and blanking plug included in the scope of delivery
- 3D OPEN/CLOSED position indicator
- Mechanical, inductive or magnetic switch variants
- Number of switches: 2
- IP67, NEMA 4/4x
- cCSAus Listed, General Purpose
- ATEX ia version
- SIL 2 to IEC 61508

### Product range overview



Measuring principle	Type	Operating voltage range	Switching output	Switching element function
Electromechanical	SRBC-...-MW-22A-1W-	0...250 V AC 0...30 V DC	Contacting	Toggle switch, single-pole (SPDT)
Magnetic reed	SRBC-...-R-2A-1W-	0...120 V AC 0...175 V DC	Contacting	Toggle switch, single-pole (SPDT)
Inductive	SRBC-...-N-20N-ZC-	8.2 V DC	NAMUR	N/C
Inductive	SRBC-...-N-20N-ZC-...-EX6	8.2 V DC	NAMUR	N/C
Inductive	SRBC-...-N-1-P-	10...30 V DC	PNP	N/O
Inductive	SRBC-...-N-1-N-	10...30 V DC	NPN	N/O
Inductive	SRBC-...-N-1-ZU-	5...60 V DC	Contactless, 2-wire	N/O

## Peripherals overview



Accessories	Description	→ Page
[1] Mounting adapter DARQ-K-X1-A1-F05-20-R1	<ul style="list-style-type: none"> <li>• Mounting adapter for mounting limit switch boxes on quarter turn actuators with hole pattern 30x80 mm, shaft height 20 mm</li> <li>• Included in the scope of delivery of the limit switch box and pre-assembled</li> </ul>	15
[2] Mounting adapter DARQ-K-X1-A1-F05-30-R1	<ul style="list-style-type: none"> <li>• Mounting adapter for mounting limit switch boxes on quarter turn actuators with hole pattern 30x80 mm, shaft height 30 mm</li> <li>• Can be ordered separately as an accessory</li> </ul>	15
[3] Mounting adapter DARQ-K-X1-A2-F05-30-R1	<ul style="list-style-type: none"> <li>• Mounting adapter for mounting limit switch boxes on quarter turn actuators with hole pattern 30x130 mm, shaft height 30 mm</li> <li>• Can be ordered separately as an accessory</li> </ul>	15
[4] Cable connector NETC-P-M20	<ul style="list-style-type: none"> <li>• Polymer cable connector M20x1.5 included in the scope of delivery of the limit switch box</li> <li>• Other cable connectors can be ordered separately as an accessory</li> </ul>	15
[5] Connecting cables NEBV	<ul style="list-style-type: none"> <li>• For valve connection for limit switch boxes with terminal rail connection</li> <li>• Can be ordered separately as an accessory</li> </ul>	15

Type codes SRBC

<b>001</b>	<b>Series</b>	
<b>SRBC</b>	Limit switch attachment	
<b>002</b>	<b>Design type</b>	
<b>C</b>	Sensor box	
<b>003</b>	<b>Mechanical interface</b>	
<b>A3</b>	Mounting bridge, hole pattern 30 x 80 mm, shaft height 20 mm	
<b>004</b>	<b>Display type</b>	
<b>YR</b>	Position indicator yellow/red	
<b>005</b>	<b>Measuring range</b>	
<b>90</b>	0 ... 90°	
<b>006</b>	<b>Sensor principle</b>	
<b>MW</b>	Floating contact, changeover contact	
<b>N</b>	Proximity sensor, inductive	
<b>R</b>	With contacts (reed)	

<b>007</b>	<b>Nominal operating voltage</b>	
<b>20N</b>	8.2 V DC (Namur)	
<b>1</b>	24 V DC	
<b>2A</b>	110 V AC/50-60 Hz	
<b>22A</b>	250 V AC	
<b>008</b>	<b>Electrical output 1</b>	
<b>N</b>	NPN	
<b>P</b>	PNP	
<b>1W</b>	1-pin toggle switch	
<b>ZC</b>	2-wire N/C contact	
<b>ZU</b>	2-wire N/O contact	
<b>009</b>	<b>Electrical connection</b>	
<b>C2</b>	Screw terminal	
<b>010</b>	<b>Cable connector</b>	
<b>P20</b>	M20x1.5, polymer	
<b>011</b>	<b>EU certification</b>	
	None	
<b>EX4</b>	II 2GD	

## Data sheet

- Measuring principle:  
Electromagnetic or magnetic reed
- Switching element function: Toggle switch, single-pole (SPDT)
- For DC and AC voltage
- Pre-assembled mounting adapter  
80x30 mm, height 20 mm
- Cable connector and blanking plug  
included in the scope of delivery



General technical data		
Type SRBC-...	-MW	-R
Setting range for angular detection	[°]	0 ... 90
Position indicator		Yellow/red
Housing colour		Grey
Connection for positioner and position sensor conforms to standard		VDI/VDE 3845 size AA 1
Mounting position		Any
Type of mounting		On flange to ISO 5211 With mounting bracket

Electrical characteristic data		
Type SRBC-...	-MW	-R
Measuring principle	Mechanical/electrical	Magnetic reed
Switching output		Contacting
Switching element function		Toggle switch, single-pole
Operating voltage range AC	[V]	0 ... 250
Max. output current AC	[A]	3
Operating voltage range DC	[V]	0 ... 30
Max. output current DC	[A]	3

Electromechanics		
Type SRBC-...	-MW	-R
Cable connector		M20x1.5
Permissible cable diameter	[mm]	5 ... 13
Electrical connection		10-pin Screw terminal
Nominal conductor cross section that can be connected	[mm <sup>2</sup> ]	0.25 ... 2.5
Material		
Cable connector		PA
Blanking plug		PA

## Data sheet

Operating and environmental conditions		
Ambient temperature	[°C]	-20 ... +80
Storage temperature	[°C]	-20 ... +50
Degree of protection		IP67
		NEMA 4/4X
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6
Pollution degree		3
CE marking (see declaration of conformity) <sup>1)</sup>		To EU Low Voltage Directive
		To EU RoHS Directive
KC mark		KC EMC
Certification		c CSA us (OL)
Safety Integrity Level (SIL)		SIL 2

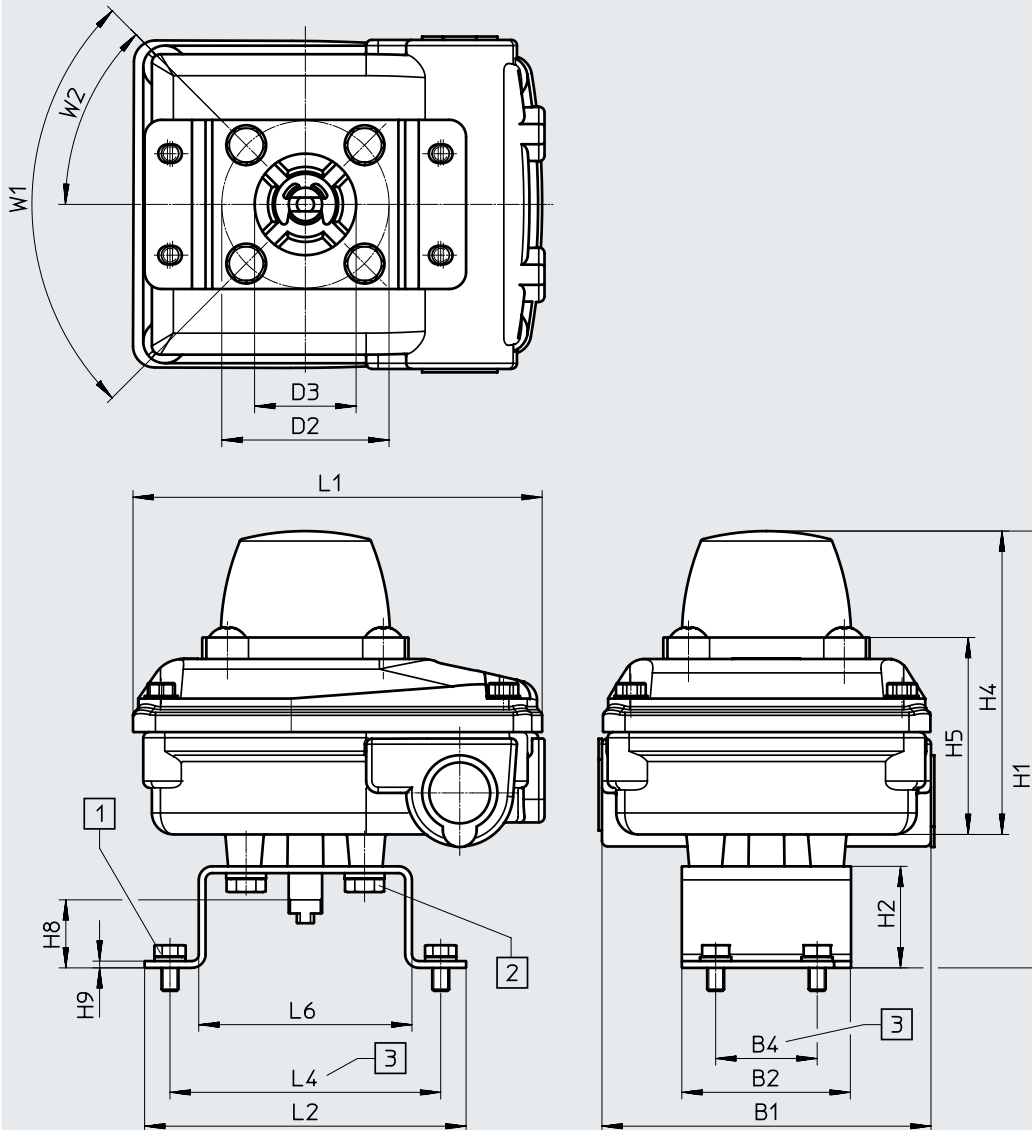
1) Additional information: [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...) → Support/Downloads.

Materials	
Housing	Die-cast aluminium
Cover cap	PC
Mounting bracket	High-alloy stainless steel
Shaft	
Circlip	
Disc	
Screws	
Seals	
Pointer	PC
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



[1] Screw DIN 933 M5x8

[2] Screw DIN 933 M6x10

[3] Flange hole pattern F05 to ISO 5211

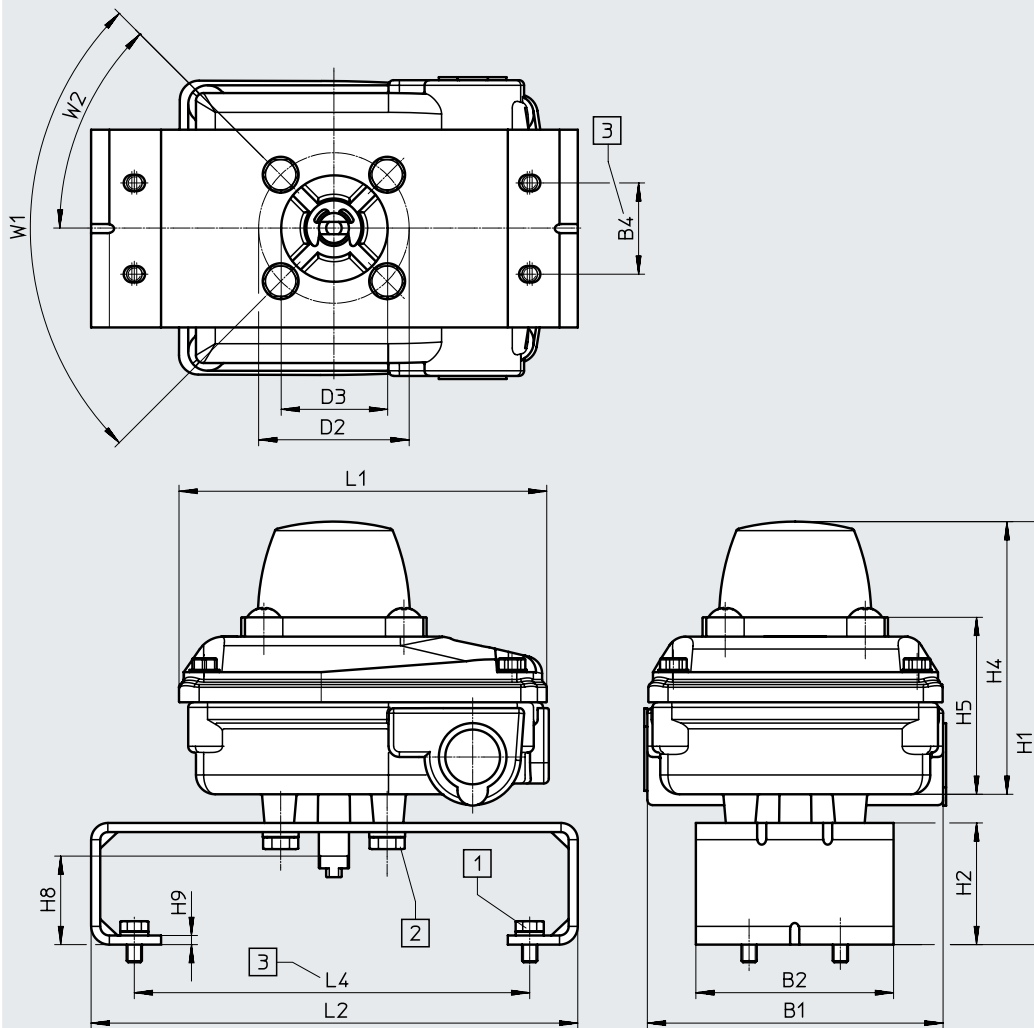
SRBC	B1	B2	B4	D2 ∅	D3 ∅	H1	H2 +0.5	H4
With DARQ-KX1-A1-F05-20-R1	98	50	30	50	30	129	30	90
With DARQ-KX1-A1-F05-30-R1						139	40	

SRBC	H5	H8	H9	L1	L2	L4	L6	W1	W2
With DARQ-KX1-A1-F05-20-R1	58.2	20	2	120	95	80	63	90°	45°
With DARQ-KX1-A1-F05-30-R1		30							

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



[1] Screw DIN 933 M5x8

[2] Screw DIN 933 M6x10

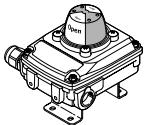
[3] Flange hole pattern F05 to ISO 5211

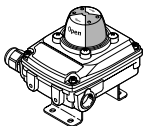
SRBC	B1	B2	B4	D2 ∅	D3 ∅	H1	H2 +0.5	H4
With DARQ-K-X1-A2-F05-30-R1	98	65	30	50	35	139	40	90
SRBC	H5	H8	H9	L1	L2	L4	W1	W2
With DARQ-K-X1-A2-F05-30-R1	58.2	30	3	120	160	130	90°	45°



## Data sheet

## ★ Core Range

Ordering data	Brief description	Dimensions of mounting adapter [mm]	Weight [g]	Part no.	Type
	Limit switch box including pre-assembled mounting adapter, cable connector and blanking plug included in the scope of delivery	30x80, H: 20	800	★ 3482805	SRBC-CA3-YR90-MW-22A-1W-C2P20

Ordering data	Brief description	Dimensions of mounting adapter [mm]	Weight [g]	Part no.	Type
	Limit switch box including pre-assembled mounting adapter, cable connector and blanking plug included in the scope of delivery	30x80, H: 20	800	3482811	SRBC-CA3-YR90-R-2A-1W-C2P20

## Data sheet

- Inductive measuring principle
- Switching outputs PNP, NPN, 2-wire DC, NAMUR
- Pre-assembled mounting adapter 80x30 mm height 20 mm
- Cable connector and blanking plug included in the scope of delivery



### General technical data

Type SRBC...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX6
Setting range for angular detection [°]	0 ... 90				
Position indicator	Yellow/red				
Housing colour	Grey				
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 size AA 1				
Mounting position	Any				
Type of mounting	On flange to ISO 5211 With mounting bracket				

### Electrical characteristic data

Type SRBC...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX6
Measuring principle	Inductive				
Switching output	PNP	NPN	Contactless, 2-wire	NAMUR	
Switching element function	N/O			N/C	
Max. switching frequency [Hz]	1000		2000		
Operating voltage range [V DC]	10 ... 30		5 ... 60		8.2
Max. input voltage $U_i$ [V]	-				16
Max. output current DC [mA]	100			3	
Voltage drop [V]	$\leq 3$		$\leq 4$		-
No-load supply current [mA]	$\leq 15$		-		
Residual current [mA]	0 ... 0.5		0 ... 1		-
Minimum load current [mA]	-		4		-
Effective internal inductance $L_i$ [ $\mu$ H]	-				100
Effective inner capacitance $C_i$ [nF]	-				100
Max. input parameters for intrinsically safe circuit <sup>1)</sup>	-				See IECEx certificate
	-				See ATEX certificate
Certificate issuing authority	-				FTZU 17 ATEX 0105X
	-				GYJ20.1409X
	-				IECEx FTZU 17.0017X
Reverse polarity protection	For all electrical connections			-	
Short circuit current rating	Pulsed		-		

1) Additional information: [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...) → Support/Downloads.

### Electromechanics

Type SRBC...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX6
Cable connector	M20x1.5				
Permissible cable diameter [mm]	5 ... 13				6 ... 12
Electrical connection	10-pin				
	Screw terminal				
Nominal conductor cross section that can be connected [mm <sup>2</sup> ]	0.25 ... 2.5				
Material					
Cable connector	PA				
Blanking plug	PA				

## Data sheet

Operating and environmental conditions		-1-P	-1-N	-1-ZU	-20N	-20N-...-EX6
Type SRBC-...						
Ambient temperature	[°C]	-20 ... +70		-20 ... +80		
Storage temperature	[°C]	-20 ... +50				
Degree of protection		IP67 NEMA 4/4X				
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27				
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6				
Pollution degree		3				
CE marking (see declaration of conformity) <sup>1)</sup>		To EU EMC Directive <sup>2)</sup>				
		To EU RoHS Directive				To EU Explosion Protection Directive (ATEX)
Certification		c CSA us (OL)				-
		RCM				
KC mark		KC EMC				
ATEX category for gas		-				II 1G
ATEX category for dust		-				II 1D
Type of ignition protection for gas		-				Ex ia IIC T6/T5 Ga
Type of ignition protection for dust		-				Ex ia IIIC Txx°C Da
Explosion-proof ambient temperature		-				See IECEx certificate
		-				See ATEX certificate
Explosion protection certification outside EU		-				EPL Da (CN)
		-				EPL Da (IEC-Ex)
		-				EPL Ga (CN)
		-				EPL Ga (IEC Ex)
Safety Integrity Level (SIL)		SIL 2				

1) Additional information: [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...) → Support/Downloads.

2) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...) → Support/Downloads.

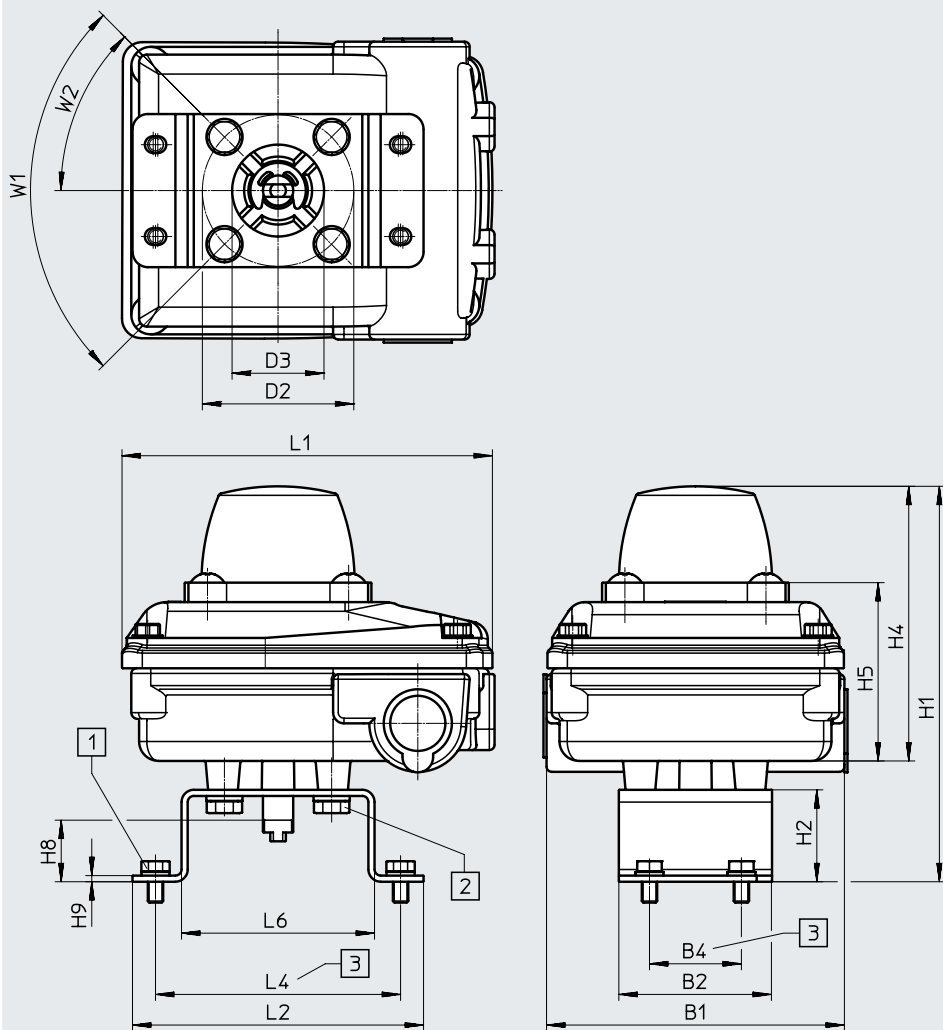
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials	
Housing	Die-cast aluminium
Cover cap	PC
Mounting bracket	High-alloy stainless steel
Shaft	
Circlip	
Disc	
Screws	
Seals	
Pointer	PC
Note on materials	RoHS-compliant
	Contains paint-wetting impairment substances

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



- [1] Screw DIN 933 M5x8      [2] Screw DIN 933 M6x10      [3] Flange hole pattern F05 to ISO 5211

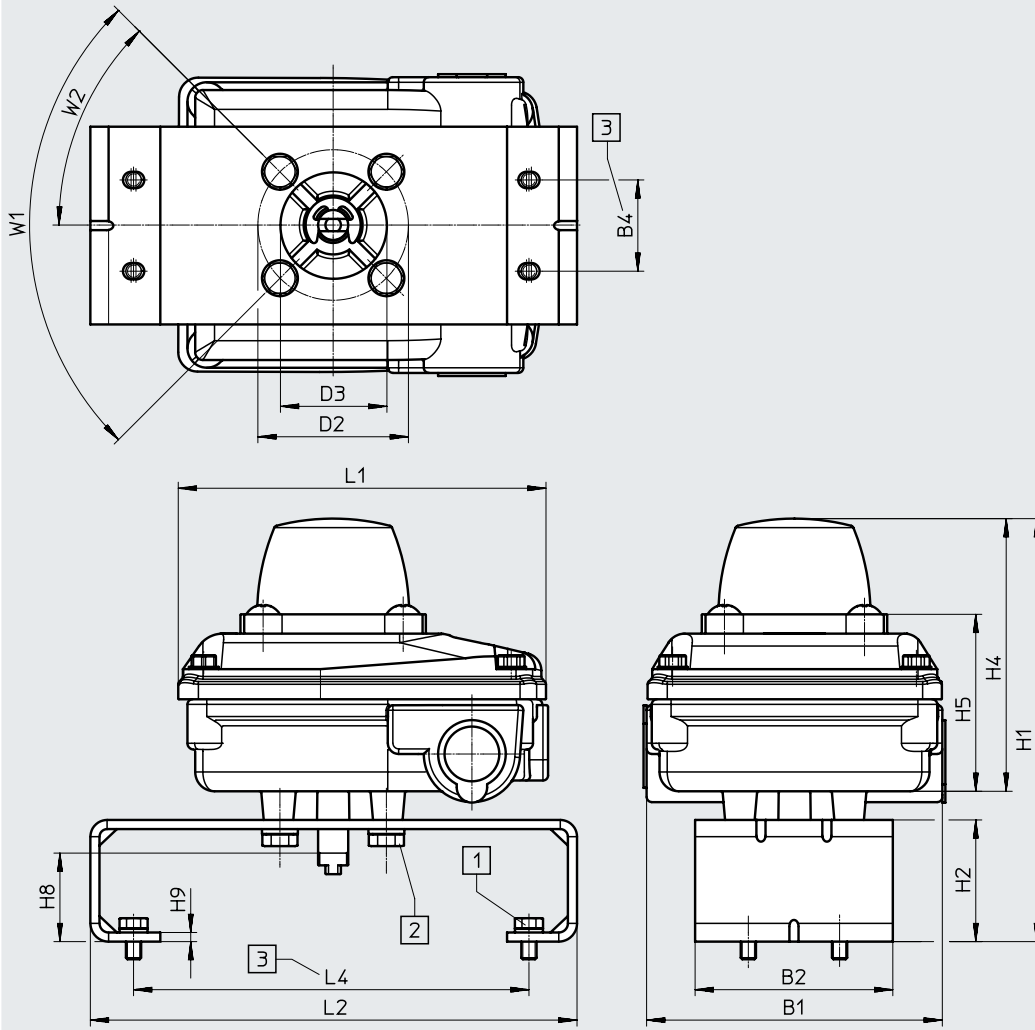
SRBC	B1	B2	B4	D2 ∅	D3 ∅	H1	H2 +0.5	H4
With DARQ-K-X1-A1-F05-20-R1	98	50	30	50	30	129	30	90
With DARQ-K-X1-A1-F05-30-R1						139	40	

SRBC	H5	H8	H9	L1	L2	L4	L6	W1	W2
With DARQ-K-X1-A1-F05-20-R1	58.2	20	2	120	95	80	63	90°	45°
With DARQ-K-X1-A1-F05-30-R1		30							

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



[1] Screw DIN 933 M5x8

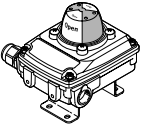
[2] Screw DIN 933 M6x10

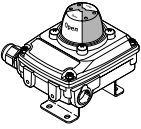
[3] Flange hole pattern F05 to ISO 5211

SRBC	B1	B2	B4	D2 ∅	D3 ∅	H1	H2 +0.5	H4
With DARQ-K-X1-A2-F05-30-R1	98	65	30	50	35	139	40	90
SRBC	H5	H8	H9	L1	L2	L4	W1	W2
With DARQ-K-X1-A2-F05-30-R1	58.2	30	3	120	160	130	90°	45°

Data sheet

★ Core Range

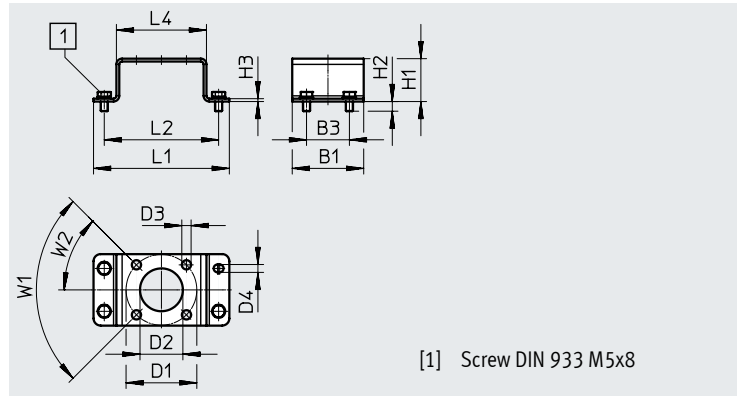
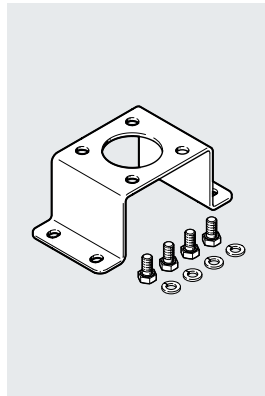
Ordering data	Brief description	Dimensions of mounting adapter [mm]	Weight [g]	Part no.	Type
	Limit switch box including pre-assembled mounting adapter, cable connector and blanking plug included in the scope of delivery	30x80, H: 20	800	★ 3482807	SRBC-CA3-YR90-N-20N-ZC-C2P20-EX6
				★ 3482808	SRBC-CA3-YR90-N-1-P-C2P20

Ordering data	Brief description	Dimensions of mounting adapter [mm]	Weight [g]	Part no.	Type
	Limit switch box including pre-assembled mounting adapter, cable connector and blanking plug included in the scope of delivery	30x80, H: 20	800	3482806	SRBC-CA3-YR90-N-20N-ZC-C2P20
				3482809	SRBC-CA3-YR90-N-1-N-C2P20
				3482810	SRBC-CA3-YR90-N-1-ZU-C2P20

## Accessories

### Mounting adapter DARQ-K-X1-A1-...

- Mounting adapter for mounting on standard actuators to VDI/VDE 3845
- Size 30x80, height 20 or 30x80, height 30
- Retaining screws included in the scope of delivery
- Material: High-alloy stainless steel
- Contains paint-wetting impairment substances, RoHS-compliant



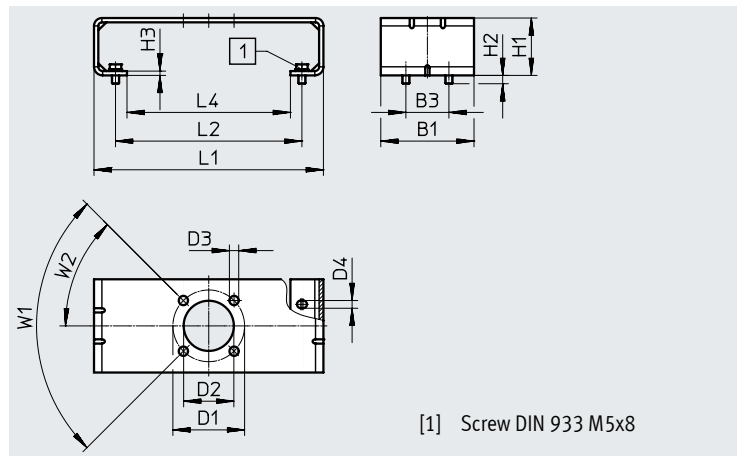
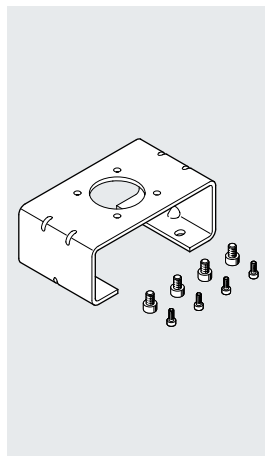
[1] Screw DIN 933 M5x8

#### Dimensions and ordering data

B1	B3	D1 ∅	D2 ∅	D3 ∅	D4 ∅	H1 +0.5	H2	H3	L1	L2	L4	W1	W2	Weight [g]	Part no.	Type
50	30	50	30	6.5	5.5	30	6.8	2	95	80	63	90°	45°	350	3636269	DARQ-K-X1-A1-F05-20-R1
						40								380	3636270	DARQ-K-X1-A1-F05-30-R1

### Mounting adapter DARQ-K-X1-A2-...

- Mounting adapter for mounting on standard actuators to VDI/VDE 3845
- Size 30x130, height 30
- Retaining screws included in the scope of delivery
- Material: High-alloy stainless steel
- Contains paint-wetting impairment substances, RoHS-compliant



[1] Screw DIN 933 M5x8

#### Dimensions and ordering data

B1	B3	D1 ∅	D2 ∅	D3 ∅	D4 ∅	H1 +0.5	H2	H3	L1	L2	L4	W1	W2	Weight [g]	Part no.	Type
65	30	50	35	6.5	5.4	40	5.8	3	160	130	114	90°	45°	460	3886114	DARQ-K-X1-A2-F05-30-R1

#### Ordering data

	Description	Material	Colour	Part no.	Type
Cable connector NETC					
	M20x1.5	Metal	Metal	568279	NETC-M-M20-KA
	M20x1.5	Polymer	Black	4464895	NETC-P-M20
	M20x1.5	Polymer	Blue	4197362	NETC-P-M20-EX4

#### Ordering data

	Electrical connection	Cable length [m]	Protective circuit	Part no.	Type
Connecting cables NEBV for valve connection for limit switch box with terminal rail connection					
	Angled socket, plug pattern type A, EN 175301-803	0.6	Yes	3679776	NEBV-A1W3F-P-K-0.6-N-LE3
			No	3579466	NEBV-A1W3-K-0.6-N-LE3
	Angled socket, plug pattern type B, to industry standard 11 mm	0.6	Yes	3679778	NEBV-B2W3F-P-K-0.6-N-LE3
			No	3579468	NEBV-B2W3-K-0.6-N-LE3