

Sensor boxes SRBC



## Sensor boxes SRBC

Key features and product range overview

### Function

Sensor 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 hole pattern to

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

### Innovative

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

### Flexible

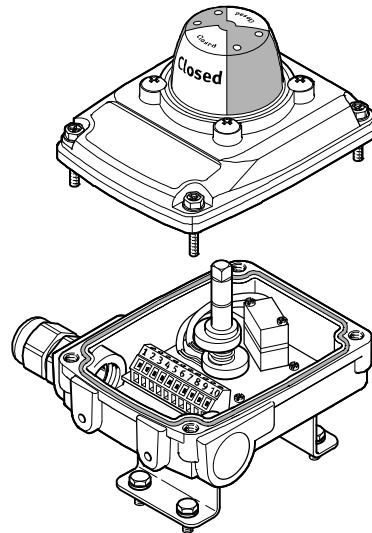
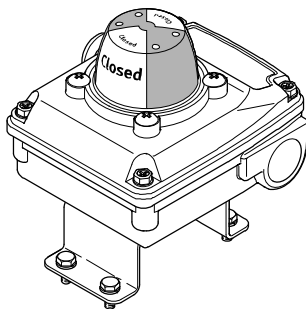
- Weather-tight housing for outdoor applications too
- Mechanical, inductive or magnetic switch variants for virtually all ranges of application
- Intrinsically safe variants for use in potentially explosive areas
- Two cable inputs for common power supply for the sensor box and solenoid valve as standard

### 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 drives as per 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



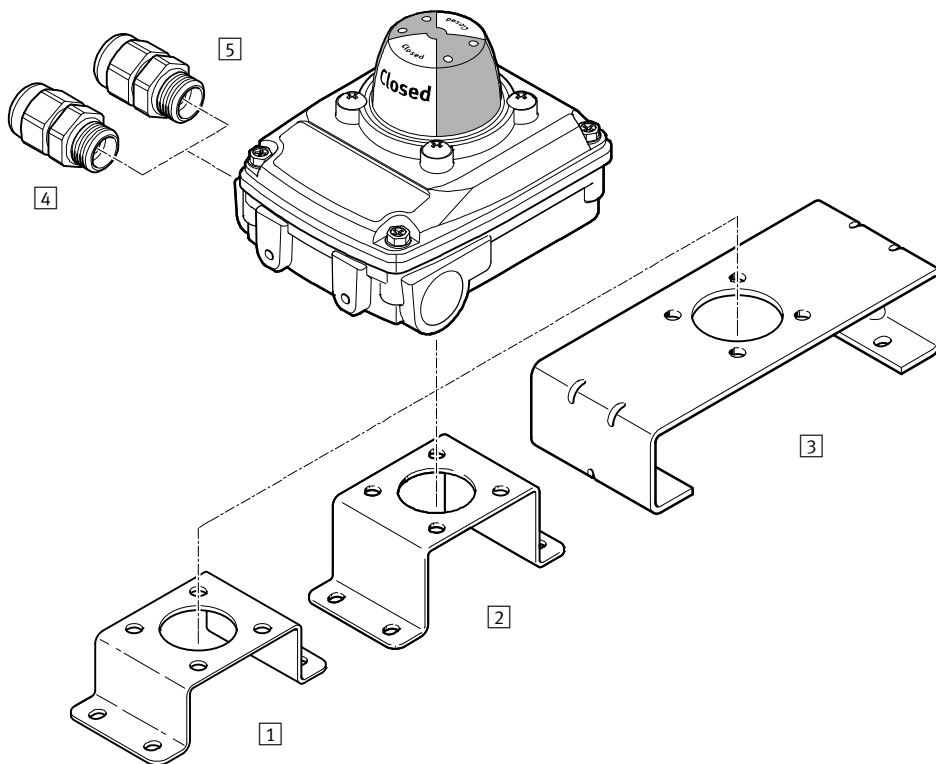
### Product range overview



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 contact
Inductive	SRBC-...-N-20N-ZC-...-EX4	8.2 V DC	NAMUR	N/C contact
Inductive	SRBC-...-N-1-P-	10...30 V DC	PNP	N/O contact
Inductive	SRBC-...-N-1-N-	10...30 V DC	NPN	N/O contact
Inductive	SRBC-...-N-1-ZU-	5...60 V DC	Contactless, 2-wire	N/O contact

## Sensor boxes SRBC

Peripherals overview



Accessories	Brief description	→ Page/Internet
1 Mounting adapter DARQ-K-X1-A1-F05-20-R1	<ul style="list-style-type: none"> <li>• Mounting adapter for mounting sensor boxes on quarter turn actuators with hole pattern 30 x 80 mm, shaft height 20 mm</li> <li>• Included in the scope of delivery of the sensor 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 sensor boxes on quarter turn actuators with hole pattern 30 x 80 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 sensor boxes on quarter turn actuators with hole pattern 30 x 130 mm, shaft height 30 mm</li> <li>• Can be ordered separately as an accessory</li> </ul>	15
4 Cable connector NETC-P-M20-P4	<ul style="list-style-type: none"> <li>• Polymer cable connector M20x1.5</li> <li>• Included in the scope of delivery of the sensor box</li> </ul>	15
5 Cable connector NETC-M-M20-P4	<ul style="list-style-type: none"> <li>• Metal cable connector M20x1.5</li> <li>• Can be ordered separately as an accessory</li> </ul>	15

# Sensor boxes SRBC

Type codes SRBC

SRBC - C - A3 - YR - 90 - N - 1 - N - C2 - P20 -

**Type**

SRBC	Limit switch attachment
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**Design**

C	Sensor box
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**Mechanical interface**

A3	Mounting adapter, hole pattern 30 x 80 mm, shaft height 20 mm
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**Display type**

YR	Position indicator yellow/red
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**Measuring range**

90	0 ... 90°
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**Sensor principle**

N	Proximity sensors, inductive
R	Reed with contact
MW	Floating contact, changeover switch

**Nominal operating voltage**

2A	110 V AC, 50-60 Hz
20N	8.2 V DC, NAMUR
22A	250 V AC
1	24 V DC

**Electrical output**

N	NPN
P	PNP
1W	1-pin toggle switch
ZC	2-wire N/C contact
ZU	2-wire N/O contact

**Electrical connection**

C2	Screw terminal
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**Cable connector**

P20	M20x1.5, polymer
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**EU certification**

-	None
EX4	II2GD

# Mounting kits DARQ

Type codes DARQ

DARQ – K – X1 – A1 – F05 – 20 – R1

**Type**

DARQ	Mounting adapter
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**Function**

K	Mounting kit
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**Designation**

X1	Sensor box version with short shaft
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**Drive outlet**

A1	Hole pattern 30 x 80 mm
A2	Hole pattern 30 x 130 mm

**Adapter or reducing outlet**

F05	Hole pattern F05
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**Length**

20	20 mm
30	30 mm

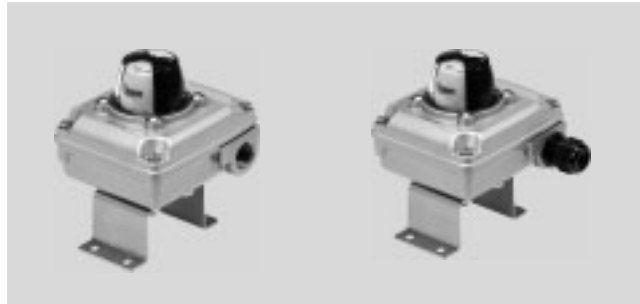
**Corrosion protection**

R1	Stainless steel
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## Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

- Measuring principle: electromagnetic or magnetic reed
- Switching element function: toggle switch, single-pole (SPDT)
- For DC and AC voltage
- Pre-assembled mounting adapter 80 x 30 H20
- Cable connector and blanking plug included in the scope of delivery



General technical data		
Type SRBC-...	-MW	-R
Setting range for angle detection	[°]	0 ... 90
Based on standard	ISO 5211	
	VDI/VDE 3845	EN 60947-5-2
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	Alternating current AC [V]	0 ... 250
Max. output current AC	[mA]	3000 (at 250 V)
Operating voltage range	Direct current DC [V]	0...30
Max. output current DC	[mA]	3000 (at 30 V)

Electromechanical components		
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
Information on materials, cable connection	PA	
Information on materials, blanking plug	PA	

## Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

Operating and environmental conditions		
Ambient temperature	[°C]	-20 ... +80
Storage temperature	[°C]	-20 ... +80
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
CE marking		To EU Low Voltage Directive
Approval certificate		c CSA us (OL)
Safety integrity level (SIL)		SIL 2

Materials	
Housing	Die-cast aluminium
Shaft	High-alloy stainless steel
Screws	High-alloy stainless steel
Seals	NBR
Pointer	PC
Note on materials	RoHS compliant
	Contains paint-wetting impairment substances

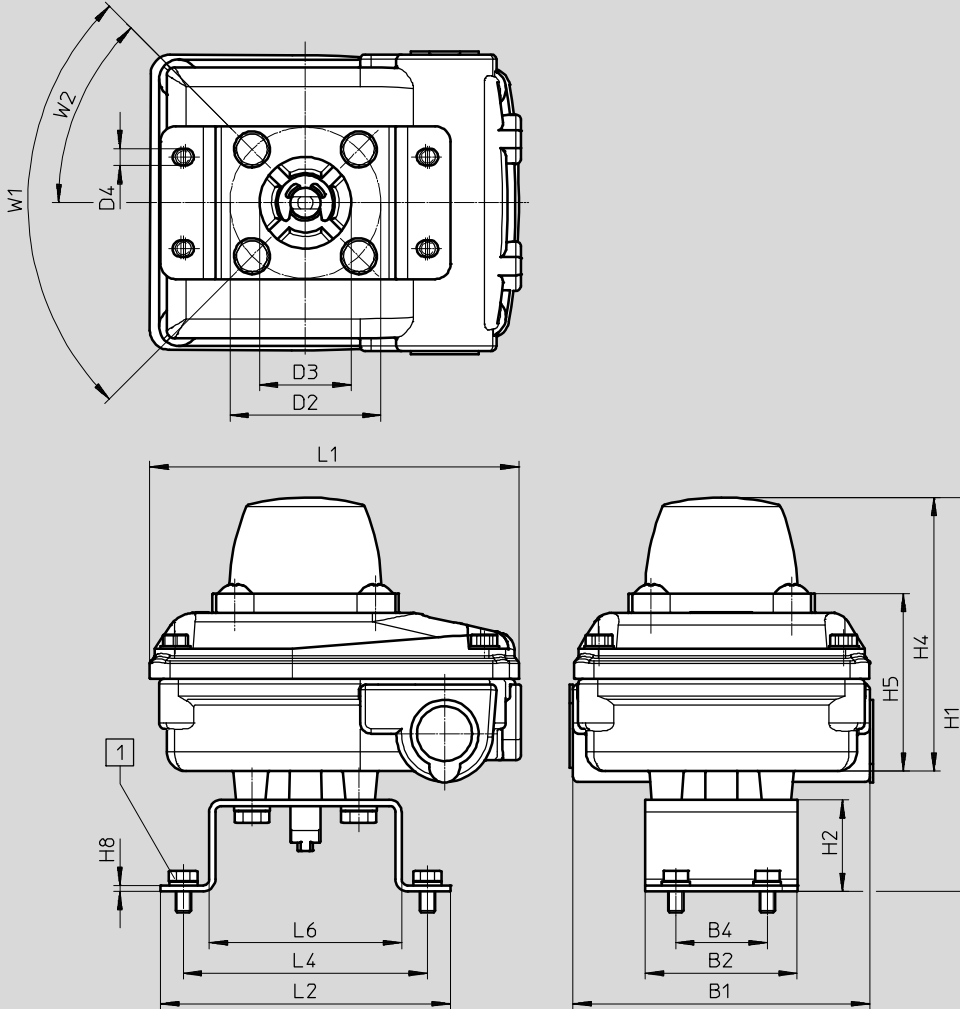
# Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

**Dimensions**

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

SRBC



1 Screw DIN 933 M5x8

Type	B1	B2	B4	D2 Ø	D3 Ø	D4 Ø	H1	H2	H4
DARQ-K-X1-A1-F05-20-R1	98	50	30	50	30	5.5	129	30	90
DARQ-K-X1-A1-F05-30-R1							139	40	

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



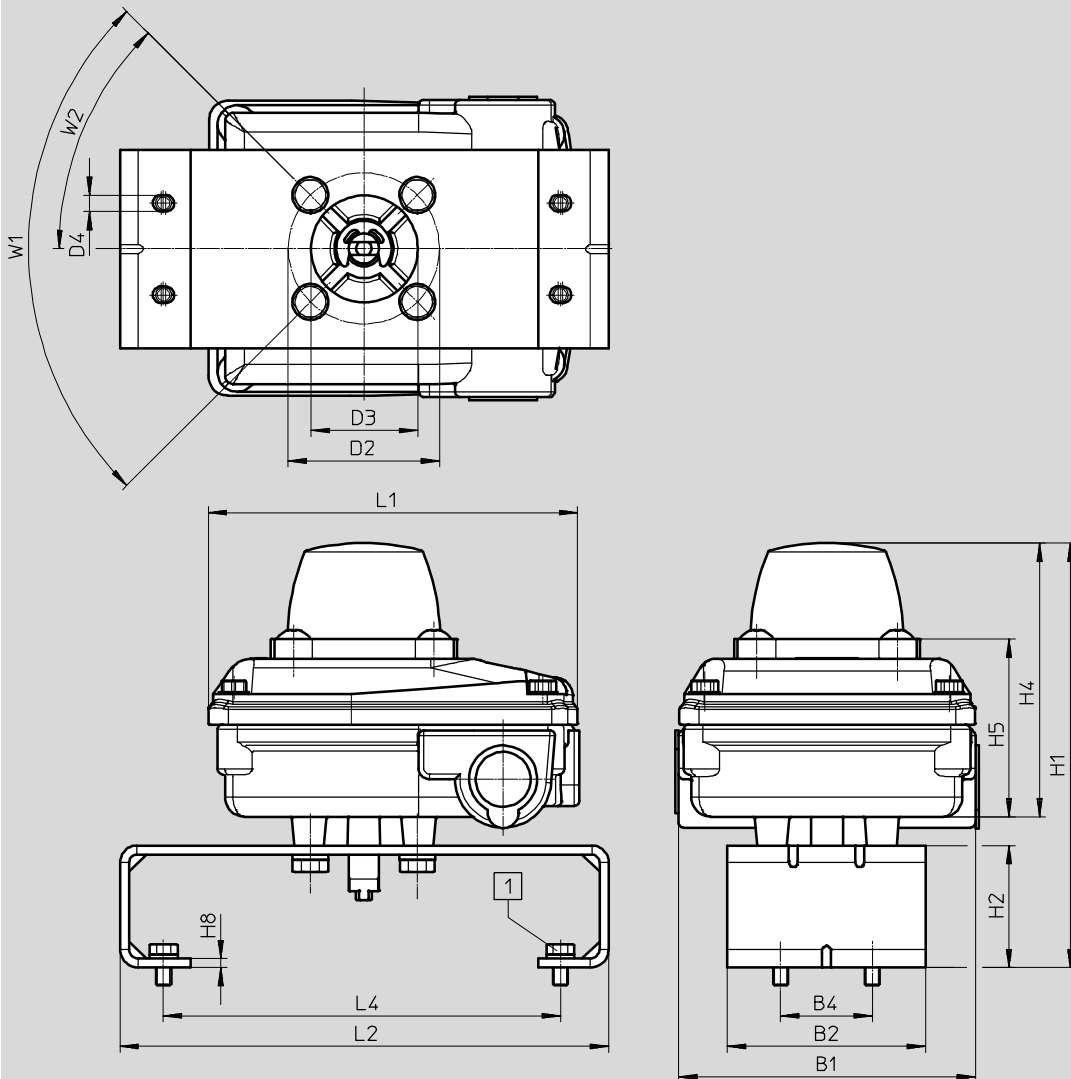
# Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

**Dimensions**

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

SRBC

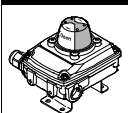


1 Screw DIN 933 M5x8

Type	B1	B2	B4	D2	D3	D4	H1	H2
DARQ-K-X1-A2-F05-30-R1	98	65	30	50 Ø	35 Ø	5.4 Ø	139	40

Type	H4	H5	H8	L1	L2	L4	W1	W2
DARQ-K-X1-A2-F05-30-R1	90	58.2	3	120	160	130	90°	45°

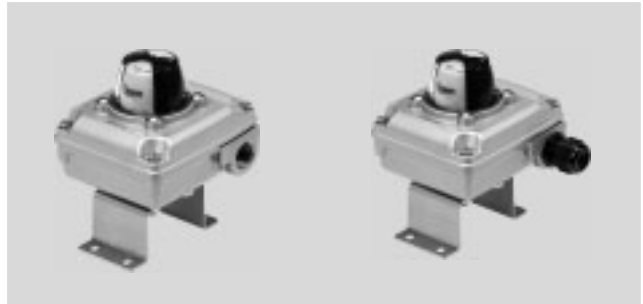
**Ordering data**

	Brief description	Dimensions Mounting adapter [mm]	Weight [g]	Part No.	Type
	Sensor box including pre-assembled mounting adapter; cable connector and blanking plug included in the scope of delivery	30 x 80, H: 20	800	3482805	SRBC-CA3-YR90-MW-22A-1W-C2P20
				3482811	SRBC-CA3-YR90-R-2A-1W-C2P20

## Sensor boxes SRBC, inductive

Technical data

- Inductive measuring principle
- Switching outputs PNP, NPN, 2-wire DC, NAMUR
- Pre-assembled mounting adapter 80 x 30 H20
- Cable connector and blanking plug included in the scope of delivery



General technical data					
Type SRBC-...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX4
Setting range for angle acquisition [°]	0 ... 90				
Based on standard	ISO 5211				
	VDI/VDE 3845				
	EN 60947-5-2			EN 60947-5-6	
Type of mounting	On flange to ISO 5211				
	With mounting bracket				

Electrical characteristic data					
Type SRBC-...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX4
Measuring principle	Inductive				
Switching output	PNP	NPN	Non-contacting, 2-wire	NAMUR	
Switching element function	N/O contact			N/C contact	
Operating voltage range [V DC]	10 ... 30		5 ... 60	8.2	
Max. output current DC [mA]	100			3	
Voltage drop [V]	≤ 3		≤ 5	-	
Idle current [mA]	≤ 15		-	-	
Residual current [mA]	≤ 0.5		0...1	-	
Minimum load current [mA]	-		4	-	
Reverse polarity protection	For all electrical connections				-
Protection against short circuit	Pulsed		-		

Electromechanical components					
Type SRBC-...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX4
Cable connector	M20x1.5				
Permissible cable diameter [mm]	5 ... 13				5.5 ... 13
Electrical connection	10-pin				
	Screw terminal				
Nominal conductor cross section that can be connected [mm <sup>2</sup> ]	0.25 ... 2.5				
Information on materials, cable connection	PA				
Information on materials, blanking plug	PA				

## Sensor boxes SRBC, inductive

Technical data

Operating and environmental conditions					
Type SRBC-...	-1-P	-1-N	-1-ZU	-20N	-20N-...-EX4
Ambient temperature [°C]	-20 ... +70		-20 ... +80		-20 ... +70
Storage temperature [°C]	-20 ... +70		-20 ... +80		-20 ... +70
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				
CE marking	To EU EMC Directive <sup>1)</sup>				To EU Explosion Protection Directive (ATEX)
Approval certificate	c CSA us (OL) RCM mark				-
ATEX category for gas	-				II 2G
ATEX category for dust	-				II 2D
Type of ignition protection for gas	-				c X
Type of ignition protection for dust	-				c X
Explosion ambient temperature [°C]	-				-20 ... +70
Safety integrity level (SIL)	SIL 2				

- 1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Materials	
Housing	Die-cast aluminium
Shaft	High-alloy stainless steel
Screws	High-alloy stainless steel
Seals	NBR
Pointer	PC
Note on materials	RoHS compliant Contains paint-wetting impairment substances

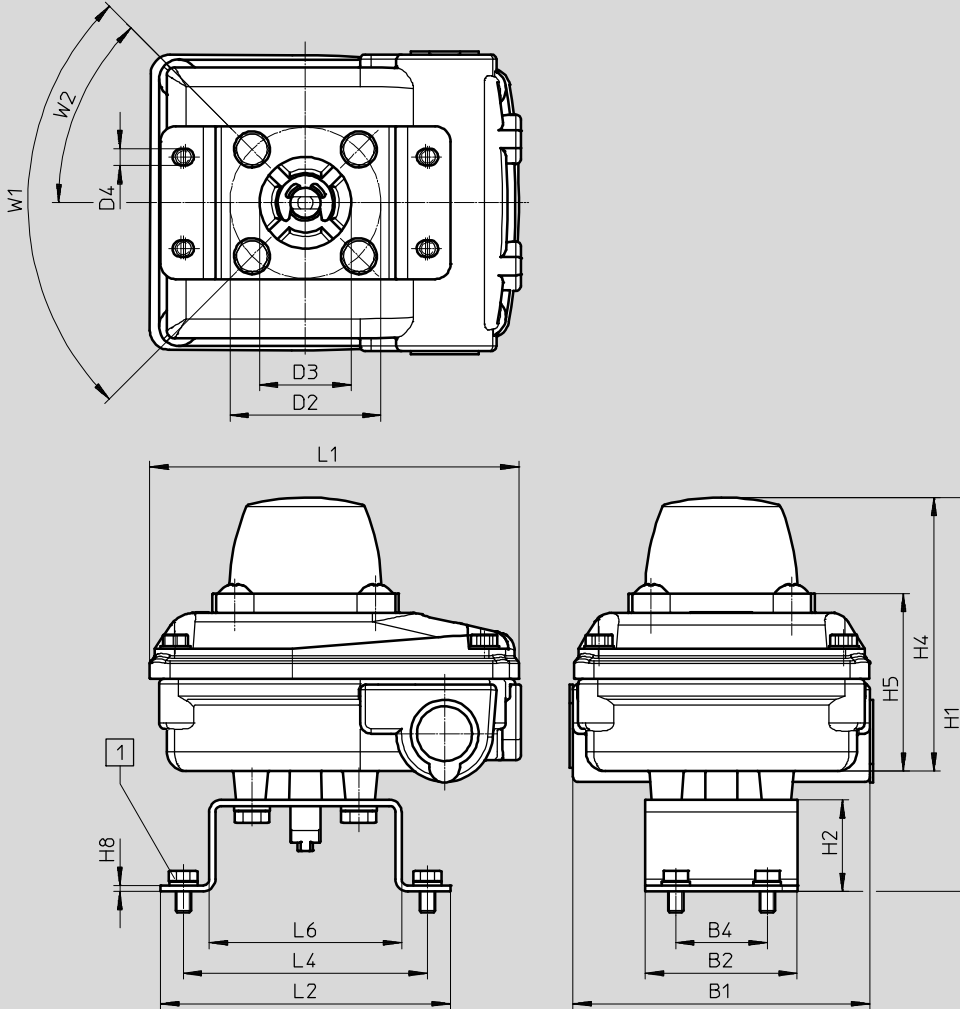
# Sensor boxes SRBC, inductive

Technical data

Dimensions

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

SRBC



1 Screw DIN 933 M5x8

Type	B1	B2	B4	D2 Ø	D3 Ø	D4 Ø	H1	H2	H4
DARQ-K-X1-A1-F05-20-R1	98	50	30	50	30	5.5	129	30	90
DARQ-K-X1-A1-F05-30-R1							139	40	

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

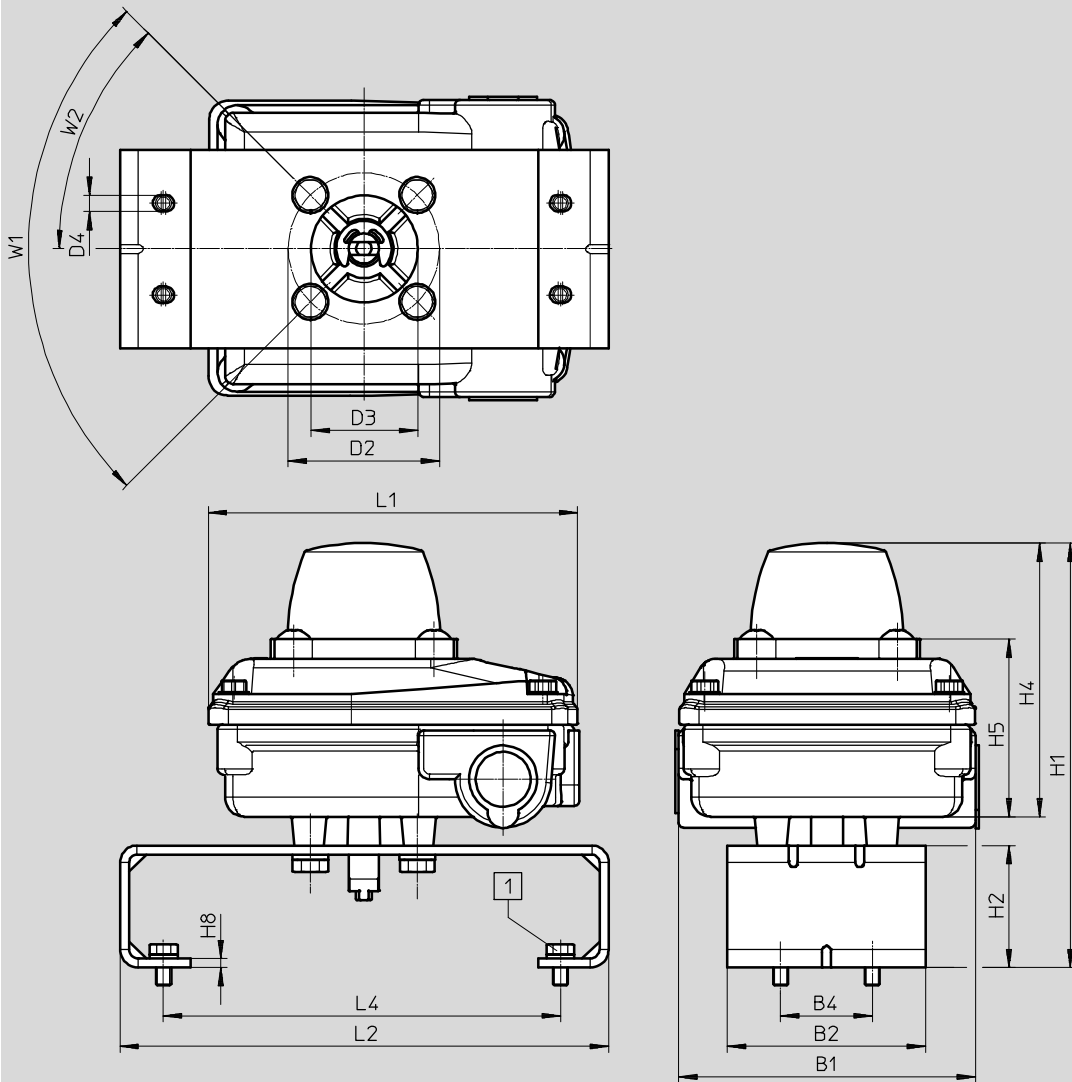
# Sensor boxes SRBC, inductive

Technical data

## Dimensions

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

SRBC



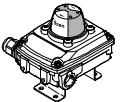
1 Screw DIN 933 M5x8

Type	B1	B2	B4	D2	D3	D4	H1	H2
DARQ-K-X1-A2-F05-30-R1	98	65	30	50 Ø	35 Ø	5.4 Ø	139	40

Type	H4	H5	H8	L1	L2	L4	W1	W2
DARQ-K-X1-A2-F05-30-R1	90	58.2	3	120	160	130	90°	45°

## Sensor boxes SRBC, inductive

Technical data

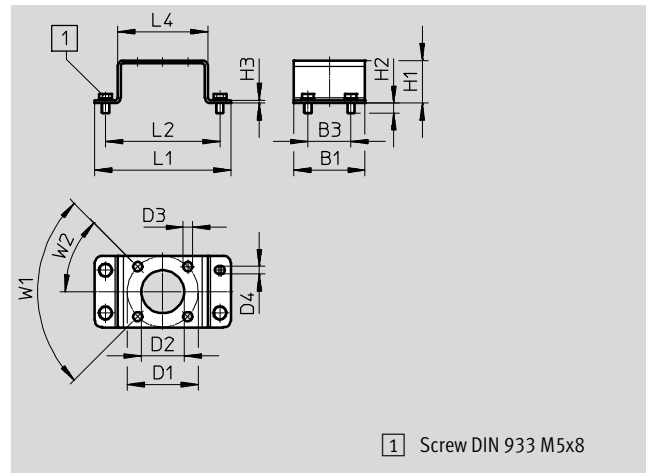
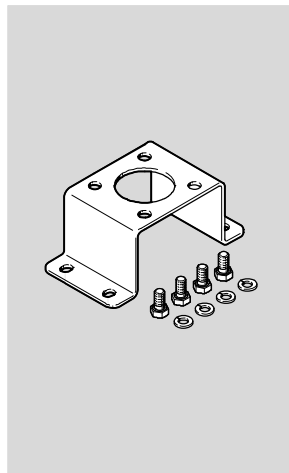
Ordering data					
	Brief description	Dimensions Mounting adapter [mm]	Weight [g]	Part No.	Type
	Sensor box including pre-assembled mounting adapter; cable connector and blanking plug included in the scope of delivery	30 x 80, H: 20	800	<b>3482806</b>	<b>SRBC-CA3-YR90-N-20N-ZC-C2P20</b>
				<b>3482807</b>	<b>SRBC-CA3-YR90-N-20N-ZC-C2P20-EX4</b>
				<b>3482808</b>	<b>SRBC-CA3-YR90-N-1-P-C2P20</b>
				<b>3482809</b>	<b>SRBC-CA3-YR90-N-1-N-C2P20</b>
				<b>3482810</b>	<b>SRBC-CA3-YR90-N-1-ZU-C2P20</b>

## Sensor boxes SRBC

Accessories

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

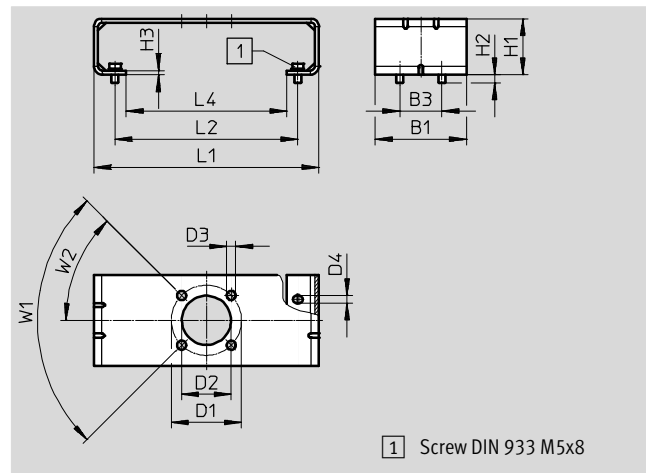
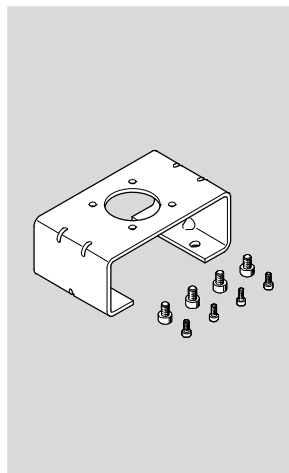
- Mounting adapter for mounting on standard drives as per VDI/VDE 3845
- Mounting screws included in the scope of delivery
- Size 30 x 80
- Material:  
High-alloy stainless steel
- Contains paint-wetting impairment substances, RoHS compliant




Dimensions and ordering data																
B1	B3	D1 ∅	D2 ∅	D3 ∅	D4 ∅	H1	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
														380	3636270	DARQ-K-X1-A1-F05-30-R1

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

- Mounting adapter for mounting on standard drives as per VDI/VDE 3845
- Mounting screws included in the scope of delivery
- Size 30 x 130
- Material:  
High-alloy stainless steel
- Contains paint-wetting impairment substances, RoHS compliant



Dimensions and ordering data																
B1	B3	D1 ∅	D2 ∅	D3 ∅	D4 ∅	H1	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	Part No.	Type
Cable connector NETC			
	M20x1.5 made from polymer	568278	NETC-P-M20-P4
	M20x1.5 made from metal	568279	NETC-M-M20-P4