

Limit switch box SRBE

FESTO



Characteristics

At a glance

Limit switch boxes SRBE are used for electrical feedback and monitoring the position of process valves actuated by pneumatic quarter turn actuators. They are suitable for use in potentially explosive environments. They can be quickly and easily mounted on quarter turn actuators with a connection pattern in accordance with VDI/VDE 3845 using mounting flange adapters.

- Overview**
- Pre-assembled mounting flange adapter for ease of installation
 - The trip cams can be easily set without additional tools
 - Sturdy, corrosion-resistant design, ideal for use in harsh operating conditions
 - Clearly visible 3D position indicator enables the current position of the quarter turn actuator to be quickly identified
 - Worldwide certifications (ATEX, IECEx, cCSAus, INMETRO) for use in potentially explosive environments
 - The type of protection of the flameproof enclosure enables installation without safety barriers or NAMUR amplifier in potentially explosive environments
 - Weatherproof housing also for outdoor applications
 - Mechanical, inductive or magnetic switch variants for virtually all areas of application
 - 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
 - Captive stainless steel screws on the housing cover
 - Pre-assembled stainless steel mounting flange adapter 30x80 mm, shaft height 20 mm for easy mounting on standardised drives in accordance with VDI/VDE 3845
 - 3D OPEN/CLOSED position indicator
 - Mechanical, inductive or magnetic switch variants
 - Number of switches: 2
 - IP67, NEMA 4/4x
 - ATEX, IECEx, cCSAus, INMETRO

Sensor principle



[MW]	Floating contact, changeover contact	[N]	Proximity sensor, inductive
[R]	With contacts (reed)		

Certification

[C1]	CSA mark (Canada)	[EX]	EX certification (ATEX)
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Type code

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

007	Nominal operating voltage	
1	24 V DC	
2A	110 V AC/50-60 Hz	
20N	8.2 V DC (Namur)	
22A	230 V AC	
008	Electrical output 1	
1W	1-pin toggle switch	
2W	2-pin toggle switch	
N	NPN	
P	PNP	
ZC	2-wire N/C contact	
ZU	2-wire N/O contact	
009	Electrical connection	
C2	Screw terminal	
010	Connecting thread	
M20	M20	
N12	1/2 NPT	
011	Certification	
C1	CSA mark (Canada)	
EX	EX certification (ATEX)	

Datasheet

General technical data, electromechanical and magnetic reed

Setting range of angular detection	0 ... 90 deg
Based on standard	EN 60947-5-1, EN 60947-5-2, ISO 5211, VDI/VDE 3845
Type of mounting	On flange according to ISO 5211, Via mounting bracket, To VDI/VDE 3845
Design	Angular
Mounting position	optional
Position indicator	Yellow/red
Product weight	1,700 g

General technical data, inductive

Setting range of angular detection	0 ... 90 deg
Based on standard	EN 60947-5-2, EN 60947-5-6, ISO 5211, VDI/VDE 3845
Type of mounting	On flange according to ISO 5211, Via mounting bracket, To VDI/VDE 3845
Design	Angular
Mounting position	optional
Position indicator	Yellow/red
Product weight	1,700 g

Electrical characteristic data, electromechanical and magnetic reed

Measuring principle	Magnetic reed, Mechanical/electrical, Via proximity switch
Switching output	Contacting
Switching element function	Toggle switch, single-pole, Toggle switch, double-pole
Operational voltage range AC	0 ... 240 V
Max. output current AC	0.416 ... 3 A
Operational voltage range DC	0 ... 30 V
Max. output current DC	3 ... 6 A
Max. switching capacity AC	100 W
Max. switching capacity DC	100 W

Electrical characteristic data, inductive

Measuring principle	Inductive
Switching output	NAMUR, NPN, PNP, Non-contacting, 2-wire
Switching element function	N/C contact, N/O contact
Operational voltage range DC	5 ... 60 V
Voltage drop	≤5 V
Max. output current DC	3 ... 100 mA
No-load supply current	≤15 mA
Off-state current	0 ... 1 mA
Min. load current	4 mA
Reverse polarity protection	For all electrical connections
Short circuit current rating	Pulsed

Electromechanics, electromechanical and magnetic reed

Electrical connection	10-pin, 14-pin, Screw terminal
Connectable nominal cross section conductor	0.25 ... 2.5 mm ²
Cable fitting	1/2 NPT, M20x1.5

Electromechanics, inductive

Electrical connection	10-pin, Screw terminal
Connectable nominal cross section conductor	0.25 ... 2.5 mm ²
Cable fitting	1/2 NPT, M20x1.5

Datasheet

Materials, electromechanical and magnetic reed

Material housing	Painted die cast aluminium
Material shaft	High-alloy stainless steel
Material screws	High-alloy stainless steel
Material mounting bracket	High-alloy stainless steel
Material seals	NBR
Material indicator	PC
Note on materials	RoHS-compliant
Material disc	High-alloy stainless steel
LABS (PWIS) conformity	VDMA24364 zone III

Materials, inductive

Material housing	Painted die cast aluminium
Material shaft	High-alloy stainless steel
Material screws	High-alloy stainless steel
Material mounting bracket	High-alloy stainless steel
Material seals	NBR
Material indicator	PC
Note on materials	RoHS-compliant
Material disc	High-alloy stainless steel
LABS (PWIS) conformity	VDMA24364 zone III

Operating and environmental conditions, electromechanical and magnetic reed

Ambient temperature	-20 ... 60°C
Storage temperature	-20 ... 60°C
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 mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX), To EU Low Voltage Directive, In accordance with EU RoHS Directive
Safety Integrity Level (SIL)	Safety Integrity Level 3
Degree of protection	IP67, NEMA 4/4X
ATEX category gas	II 2G
ATEX category dust	II 2D
Explosion ambient temperature	-20°C ≤ Ta ≤ +60°C
Explosion ignition protection type for gas	AEx d IIB T5 Gb, AEx nA IIC T5 Gc, Ex d IIB T5 Gb, Ex db IIC T6 Gb, Ex nA IIC T5 Gc
Explosion ignition protection type for dust	AEx tb IIIC T108°C Db, Ex tb IIIC T...°C Db, Ex tb IIIC T108°C Db
Explosion protection certification outside the EU	Class I, Div. 1 (CA), Class I, Div. 1 (US), Class I, Div. 2 (CA), Class I, Div. 2 (US), Class II, Div. 1 (CA), Class II, Div. 1 (US), Class III (CA), Class III (US), EPL Db (BR), EPL Db (CA), EPL Db (CN), EPL Db (GB), EPL Db (IEC-EX), EPL Db (IN), EPL Db (KR), EPL Db (US), EPL Gb (BR), EPL Gb (CA), EPL Gb (CN), EPL Gb (GB), EPL Gb (IECEx), EPL Gb (IN), EPL Gb (KR), EPL Gb (US), EPL Gc (CA), EPL Gc (US)
Certificate issuing authority	18-GA4BO-0430X, 18-GA4BO-0431X, 18-GA4BO-0518X, 18-GA4BO-0519X, CSA 263311, DNV 16.0067X, Eurocert. SIL202587141, FTZU 15 ATEX 0095X, GYJ16.1497X, GYJ23.1167X, IECEx FTZU 15.0014X, KCC-18-GA4BO
UKCA marking (see declaration of conformity)	To UK EX instructions, To UK RoHS instructions, To UK regulations for electrical equipment
Max. surface temperature	61 ... 75°C
Pollution degree	3

Datasheet

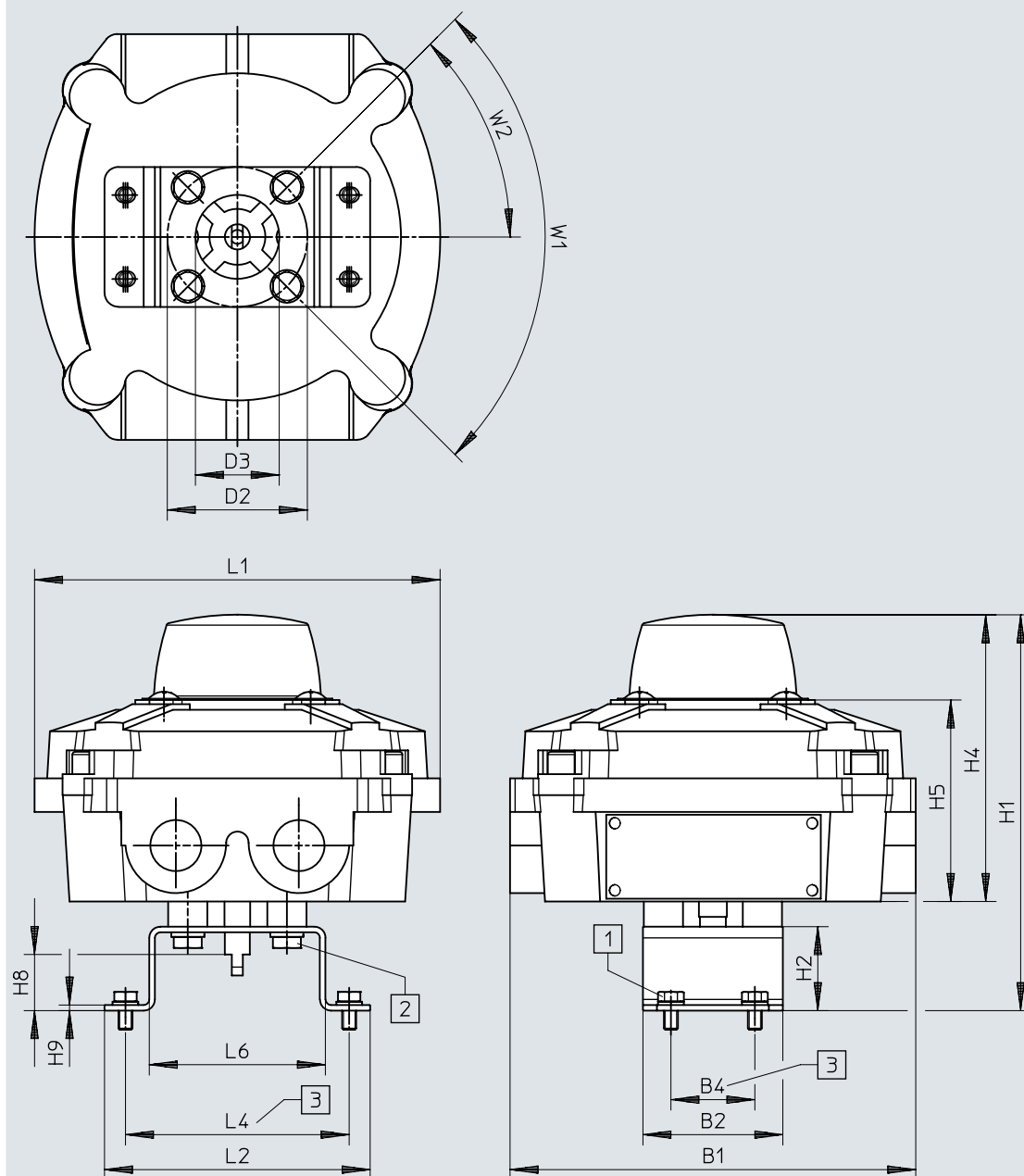
Operating and environmental conditions, inductive

Ambient temperature	-20 ... 60°C
Storage temperature	-20 ... 60°C
CE mark (see declaration of conformity)	To EU EMC Directive, To EU Explosion Protection Directive (ATEX), In accordance with EU RoHS Directive
Approval	RCM trademark
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
Safety Integrity Level (SIL)	Safety Integrity Level 3
Degree of protection	IP67, NEMA 4/4X
ATEX category gas	II 2G
ATEX category dust	II 2D
Explosion ambient temperature	-20°C ≤ Ta ≤ +60°C
Explosion ignition protection type for gas	AEx nA IIC T5 Gc, Ex db IIC T6 Gb, Ex nA IIC T5 Gc
Explosion ignition protection type for dust	AEx tb IIIC T108°C Db, Ex tb IIIC T...°C Db, Ex tb IIIC T108°C Db
Explosion protection certification outside the EU	Class I, Div. 1 (CA), Class I, Div. 1 (US), Class I, Div. 2 (CA), Class I, Div. 2 (US), Class II, Div. 1 (CA), Class II, Div. 1 (US), Class III (CA), Class III (US), EPL Db (BR), EPL Db (CA), EPL Db (CN), EPL Db (GB), EPL Db (IEC-EX), EPL Db (IN), EPL Db (KR), EPL Db (US), EPL Gb (BR), EPL Gb (CA), EPL Gb (CN), EPL Gb (GB), EPL Gb (IECEx), EPL Gb (IN), EPL Gb (KR), EPL Gb (US), EPL Gc (CA), EPL Gc (US)
Certificate issuing authority	18-GA4BO-0516X, 18-GA4BO-0517X, CSA 263311, DNV 16.0067X, Eurocert. SIL202587141, FTZU 15 ATEX 0095X, GYJ16.1497X, GYJ23.1167X, IECEx FTZU 15.0014X, KCC-18-GA4BO
UKCA marking (see declaration of conformity)	To UK instructions for EMC, To UK EX instructions, To UK RoHS instructions
Max. surface temperature	61 ... 75°C
Pollution degree	3

Dimensions

Dimensions – SRBE with mounting flange adapter DARQ with hole pattern
30x80 mm

Download CAD data www.festo.com



- [1] Screw, M5x8 (4x)
- [2] Screw, M6x10 (4x)
- [3] Flange hole pattern F05 according to ISO 5211



Dimensions

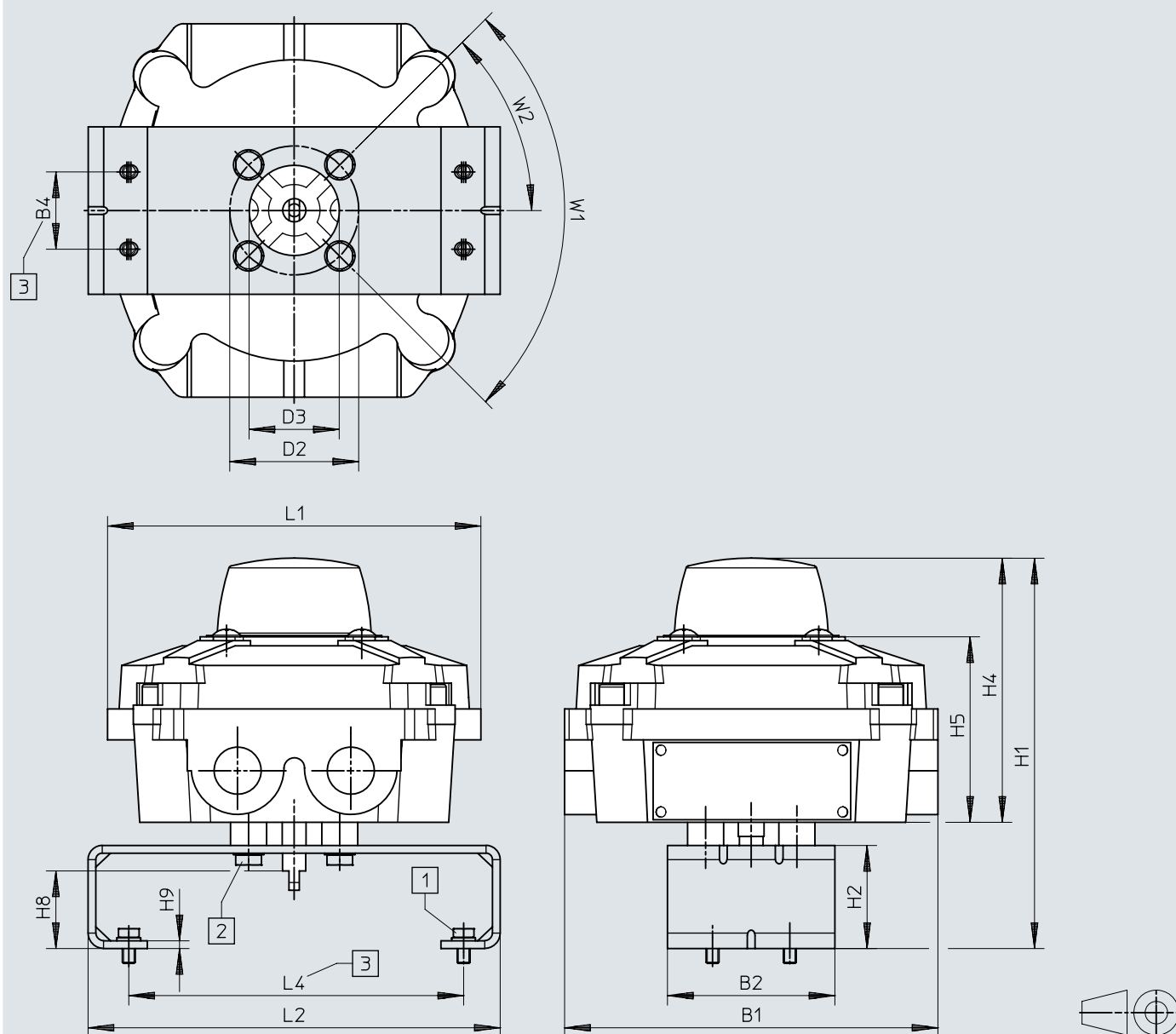
		B1	B2	B4	D2 Ø	D3 Ø	H1	H2 +0,5	H4
SRBE-...	DARQ-K-X1-A1-F05-20-R1	145	50	30	50	30	141,5	30	102,5
	DARQ-K-X1-A1-F05-30-R1						151,5	40	

		H5	H8	H9	L1	L2	L4	L6	W1	W2
SRBE-...	DARQ-K-X1-A1-F05-20-R1	72	20	2	145	95	80	63	90°	45°
	DARQ-K-X1-A1-F05-30-R1		30							

Dimensions

Dimensions – SRBE with mounting flange adapter DARQ with hole pattern
30x130 mm

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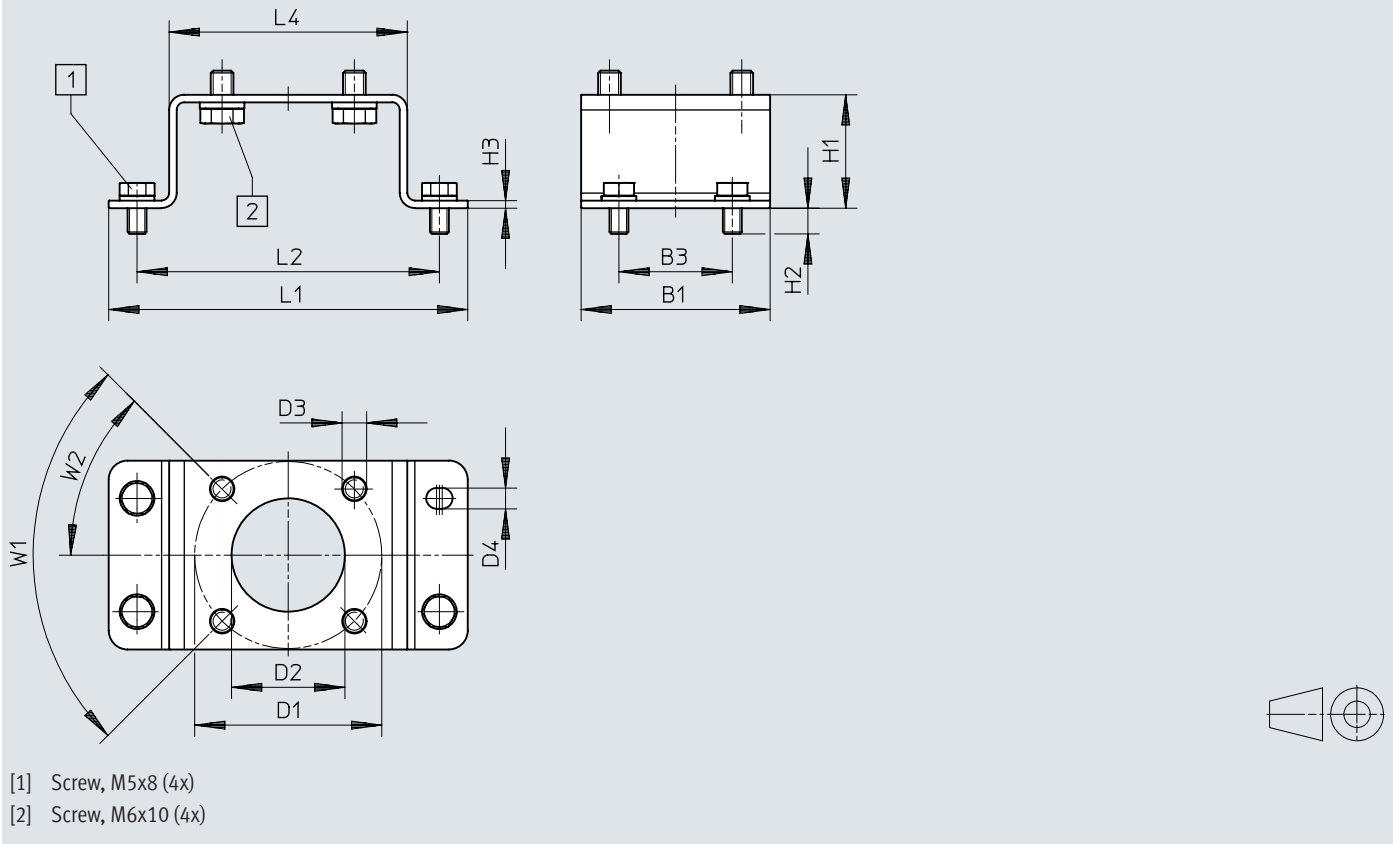


- [1] Screw, M5x8 (4x)
[2] Screw, M6x10 (4x)
[3] Flange hole pattern F05 according to ISO 5211

		B1	B2	B4	D2 Ø	D3 Ø	H1	H2 +0,5	H4
SRBE-...	DARQ-K-X1-A2-F05-30-R1	145	65	30	50	35	151,5	40	102,5
		H5	H8	H9	L1	L2	L4	W1	W2
SRBE-...	DARQ-K-X1-A2-F05-30-R1	72	30	3	145	160	130	90°	45°

Dimensions

Dimensions – Mounting flange adapter DARQ-K-X1-A1-... [Download CAD data](#) www.festo.com

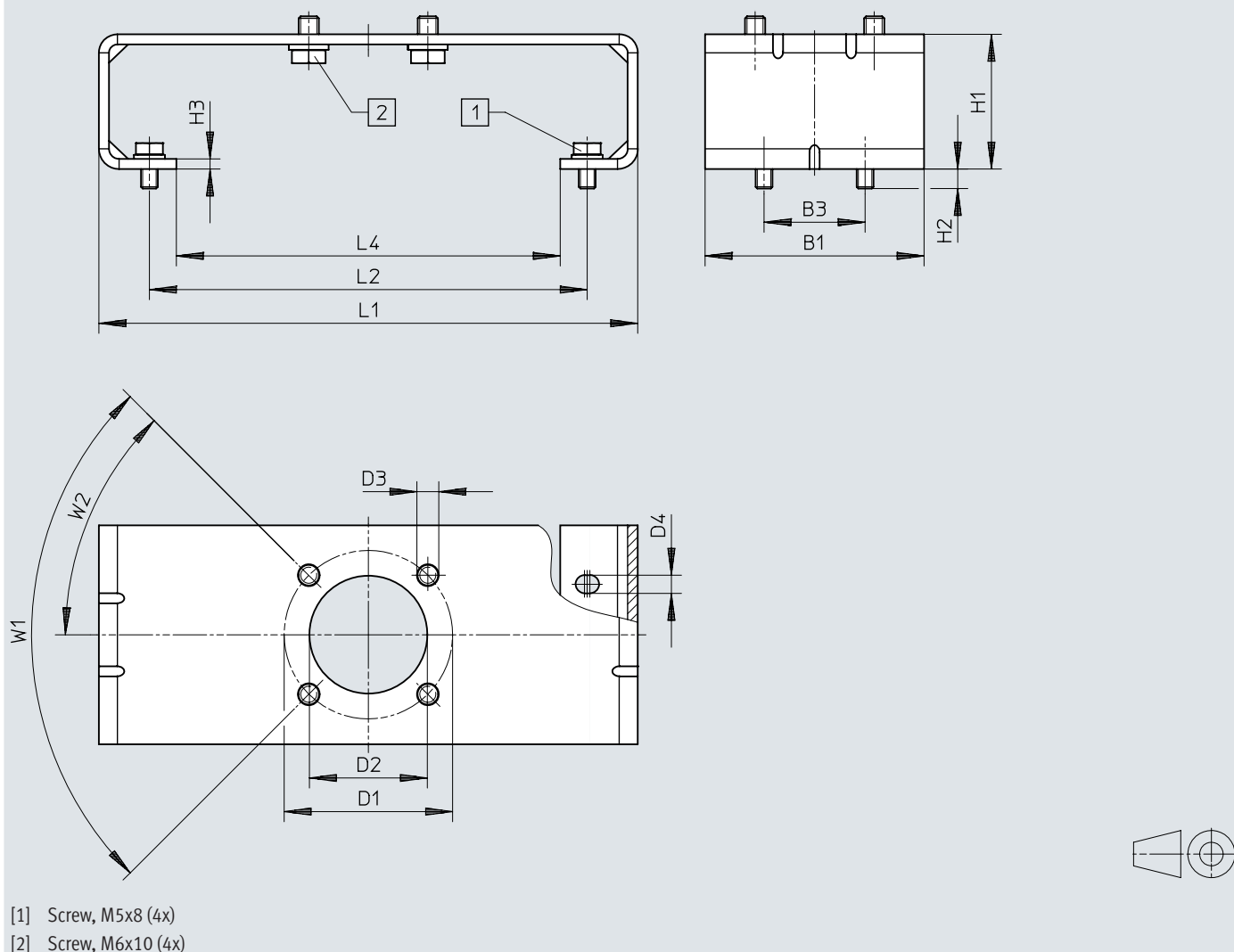


	B1	B3	D1 ø	D2 ø	D3 ø	D4 ø	H1 +0,5	H2	H3	L1	L2	L4	W1	W2
DARQ-K-X1-A1-F05-20-R1	50	30	50	30	6,5	5,5	30	6,8	2	95	80	63	90°	45°
DARQ-K-X1-A1-F05-30-R1							40							

Dimensions

Dimensions – Mounting flange adapter DARQ-K-X1-A2-...

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	B1	B3	D1 ø	D2 ø	D3 ø	D4 ø	H1 +0,5	H2	H3	L1	L2	L4	W1	W2
DARQ-K-X1-A2-F05-30-R1	65	30	50	35	6,5	5,4	40	5,8	3	160	130	114	90°	45°

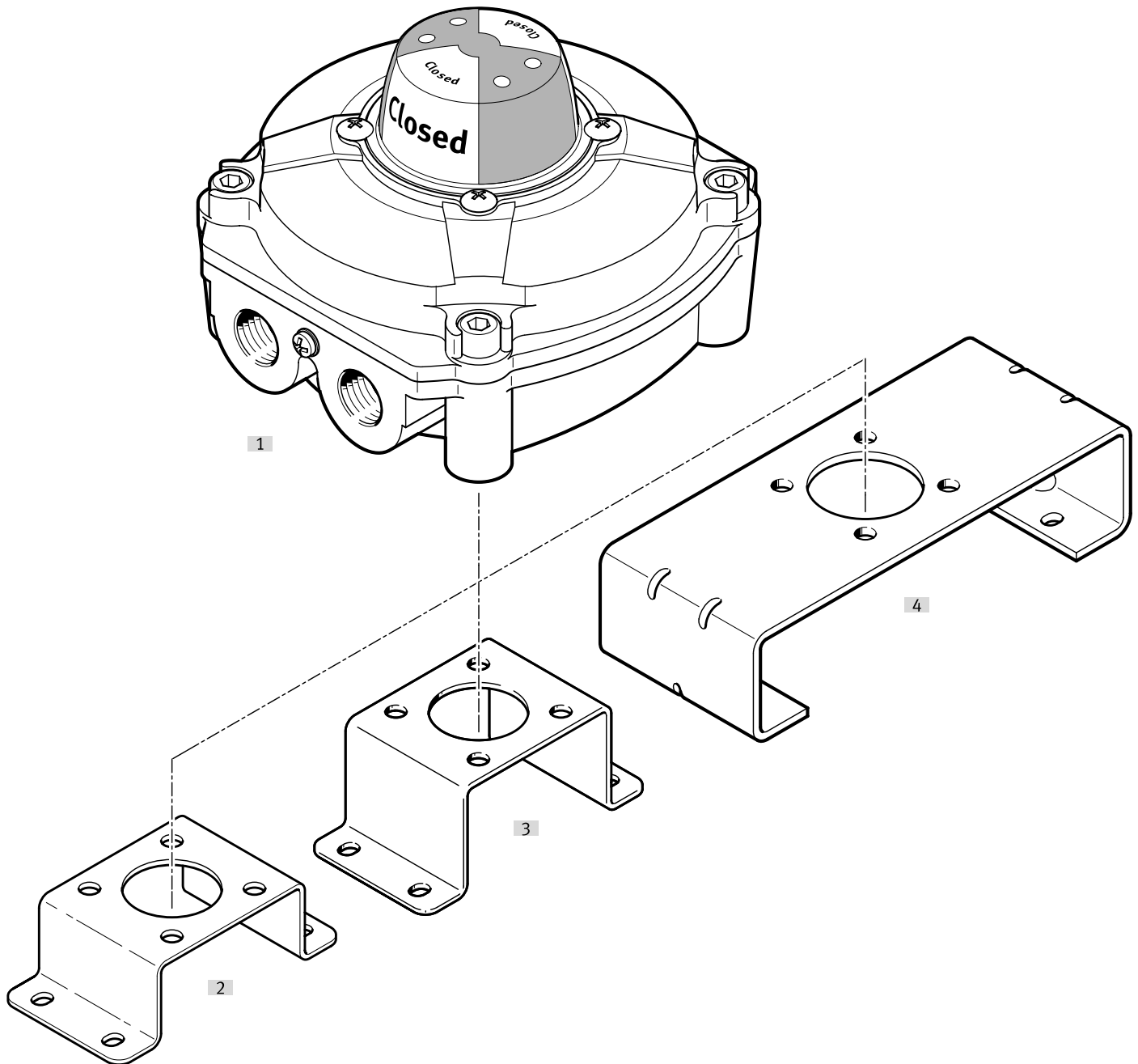
Ordering data

Electromechanical and magnetic reed					
	Electrical output 1	Nominal operating voltage	Certification	Part no.	Type
	1-pin toggle switch	110 V AC/50-60 Hz	CSA mark (Canada)	3998923	SRBE-CA3-YR90-R-2A-1W-C2N12-C1
			EX certification (ATEX)	3471020	SRBE-CA3-YR90-R-2A-1W-C2N12-EX
				3471021	SRBE-CA3-YR90-R-2A-1W-C2M20-EX
		230 V AC	CSA mark (Canada)	★ 3998917	SRBE-CA3-YR90-MW-22A-1W-C2N12-C1
			EX certification (ATEX)	★ 3471009	SRBE-CA3-YR90-MW-22A-1W-C2M20-EX
				★ 3471008	SRBE-CA3-YR90-MW-22A-1W-C2N12-EX
	2-pin toggle switch		CSA mark (Canada)	3998918	SRBE-CA3-YR90-MW-22A-2W-C2N12-C1
			EX certification (ATEX)	3471011	SRBE-CA3-YR90-MW-22A-2W-C2M20-EX
			3471010	SRBE-CA3-YR90-MW-22A-2W-C2N12-EX	

Inductive						
	Electrical output 1	Nominal operating voltage	Certification	Part no.	Type	
	NPN	24 V DC	CSA mark (Canada)	3998921	SRBE-CA3-YR90-N-1-N-C2N12-C1	
			EX certification (ATEX)	3471017	SRBE-CA3-YR90-N-1-N-C2M20-EX	
				3471016	SRBE-CA3-YR90-N-1-N-C2N12-EX	
	PNP		24 V DC	CSA mark (Canada)	3998920	SRBE-CA3-YR90-N-1-P-C2N12-C1
				EX certification (ATEX)	3471014	SRBE-CA3-YR90-N-1-P-C2N12-EX
					3471015	SRBE-CA3-YR90-N-1-P-C2M20-EX
	2-wire N/C contact	8.2 V DC (Namur)	CSA mark (Canada)	3998919	SRBE-CA3-YR90-N-20N-ZC-C2N12-C1	
			EX certification (ATEX)	3471012	SRBE-CA3-YR90-N-20N-ZC-C2N12-EX	
				3471013	SRBE-CA3-YR90-N-20N-ZC-C2M20-EX	
	2-wire N/O contact	24 V DC	CSA mark (Canada)	3998922	SRBE-CA3-YR90-N-1-ZU-C2N12-C1	
			EX certification (ATEX)	3471019	SRBE-CA3-YR90-N-1-ZU-C2M20-EX	
				3471018	SRBE-CA3-YR90-N-1-ZU-C2N12-EX	

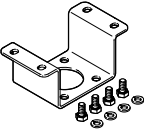
Peripherals

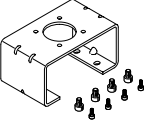
Peripherals overview



Accessories			→ Link
Type/order code	Description		
[1] Limit switch box SRBE	Measuring principle electromechanical and magnetic reed or inductive		srbe
[2] Mounting flange adapter DARQ-K-X1-A1-F05-20-R1	- Mounting flange adapter for mounting limit switch attachments on quarter turn actuators with hole pattern 30x80 mm, shaft height 20 mm - Included in the scope of delivery of the limit switch attachment and pre-assembled		14
[3] Mounting flange adapter DARQ-K-X1-A1-F05-30-R1	- Mounting flange adapter for attaching limit switch attachments to quarter turn actuators with hole pattern 30x80 mm, shaft height 30 mm - Can be ordered separately as accessories		14
[4] Mounting flange adapter DARQ-K-X1-A2-F05-30-R1	- Mounting flange adapter for mounting limit switch attachments on quarter turn actuators with hole pattern 30x130 mm, shaft height 30 mm - Can be ordered separately as accessories		14

Accessories

Mounting flange adapter DARQ-K-X1-A1-...				
	Connection point for positioner and position sensor conforms to stand-ard	Product weight	Part no.	Type
	VDI/VDE 3845 size AA 1	113 g	★ 3636269	DARQ-K-X1-A1-F05-20-R1
	VDI/VDE 3845 size AA 2	129 g	★ 3636270	DARQ-K-X1-A1-F05-30-R1

Mounting flange adapter DARQ-K-X1-A2-...				
	Connection point for positioner and position sensor conforms to stand-ard	Product weight	Part no.	Type
	VDI/VDE 3845 size AA 3	397 g	3886114	DARQ-K-X1-A2-F05-30-R1