

CKS2-K-BR-CC-FLX-F00-USA-167948 (Order no. 167948)

Key adapter CKS2-K-BR with FlexFunction

- ▶ Key adapter with integrated evaluation electronics
- ▶ Communication functions in combination with an IO-Link Gateway GWY-CB or ESM-CB
- ▶ Series connection with additional BR devices possible, max. 20
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Short circuit monitoring
- ▶ Category 4 / PL e according to EN ISO 13849-1
- ▶ Monitoring output OD
- ▶ LED indicator, multi-color RGB
- ▶ M12 plug connector, 8-pin, connecting cable, 15 cm
- ▶ Pushbutton for teach-in operation
- ▶ Mechanical detent mechanism for inserted key



Category according to EN 13849-1

Due to two redundantly designed semiconductor outputs (safety outputs) with internal monitoring suitable for:

- ▶ Category 4/PL e according to EN 13849-1

Important: To achieve the stated category according to EN ISO 13849-1, both safety outputs (FO1A and FO1B) must be evaluated.

Key evaluation

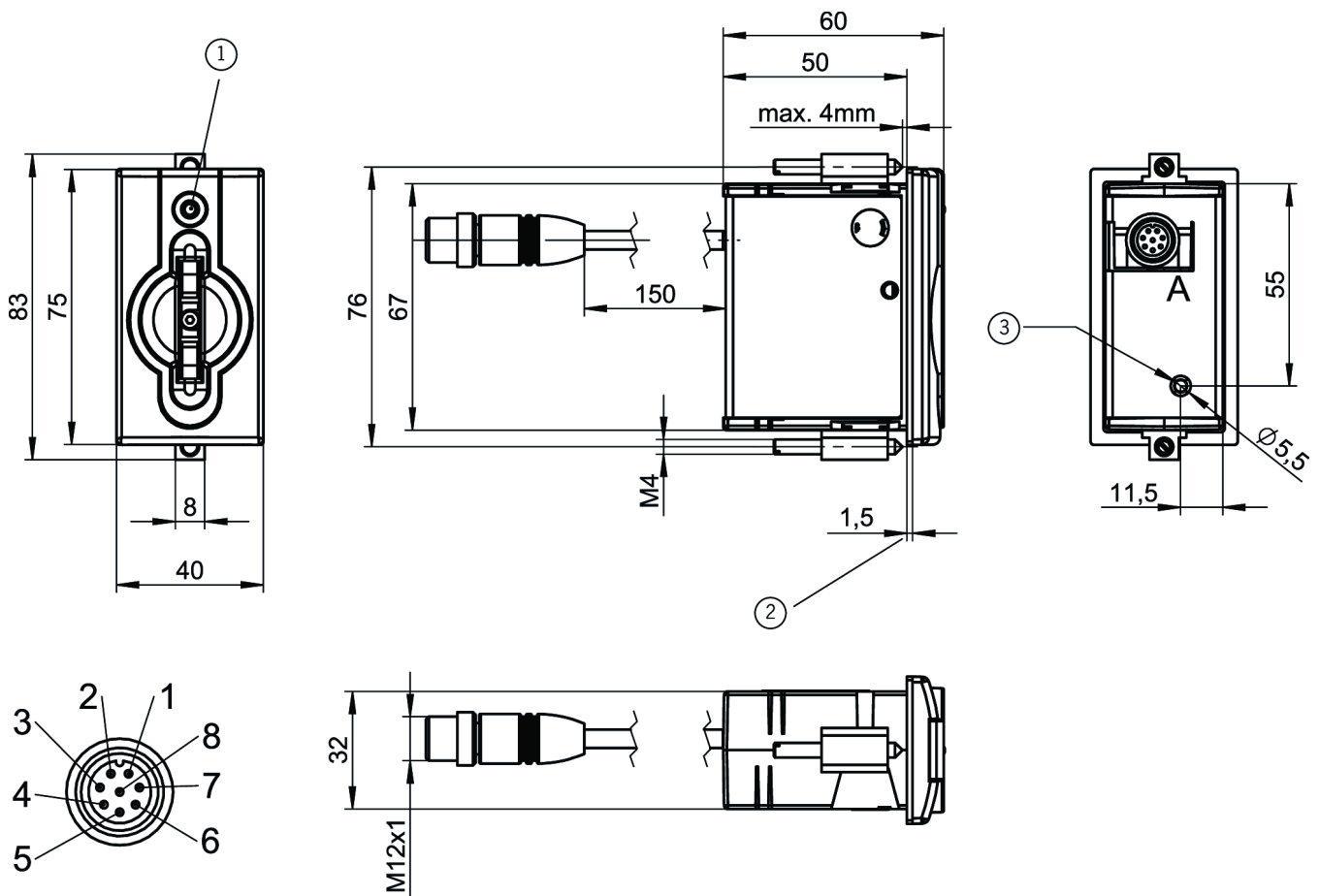
EUCHNER products with FlexFunction require a teach-in operation during setup to configure the device. The device's function depends on the taught-in key type.

Important: Keys must be ordered separately!

Terminal assignment

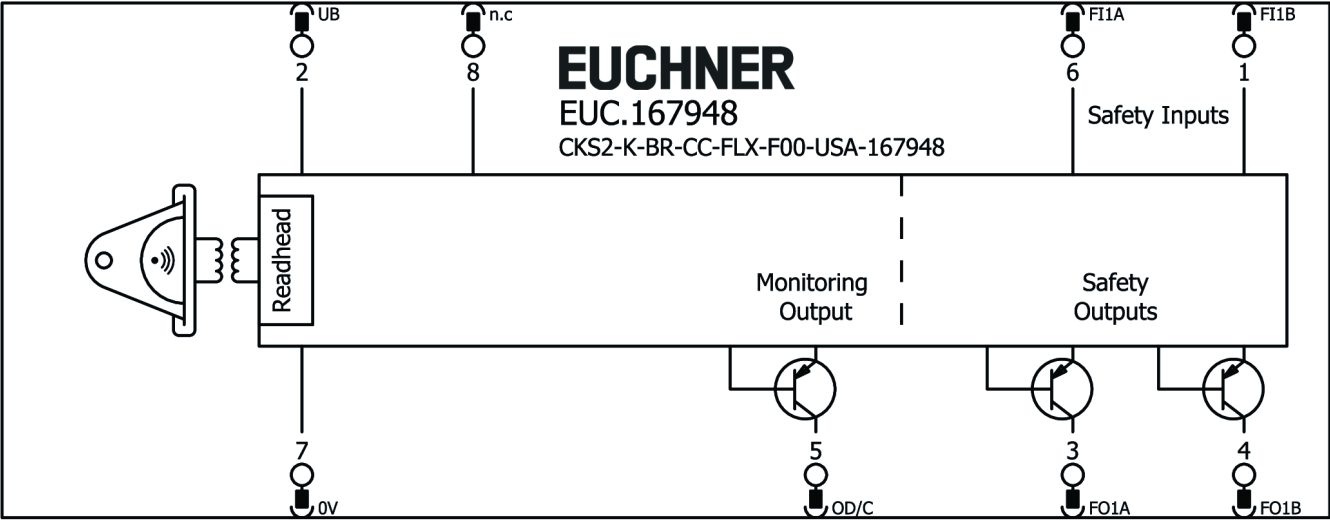
Pin	Designation	Function
1	FI1B	Enable input for channel B
2	UB	Power supply, DC 24 V
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OD/C	Monitoring output/communication
6	FI1A	Enable input for channel A
7	0 V	Ground, DC 0 V
8	–	n.c.

Dimensional drawings



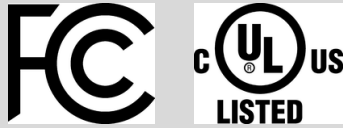
- 1 LED
- 2 Rubber seal
- 3 Pushbutton

Connection examples



Technical data

Approvals



Electrical connection values

Fuse	
external (operating voltage UB)	0.25 ... 8 A
rated conditional short-circuit current	100 A
Rated insulation voltage U_i	300 V
Rated impulse voltage U_{imp}	1.5 kV
Operating voltage DC	
UB	24 V DC –15% ... +20% reverse polarity protected, regulated, residual ripple<5%, PELV
Turn-on time	
Safety outputs	max. 100 ms
EMC protection requirements	Acc. to EN IEC 60947-5-3
Utilization category	
DC-13	24V 150mA (Caution: outputs must be protected with a free-wheeling diode in case of inductive loads.)
Off-state current I_r	max. 0.25 mA
Risk time according to EN 60947-5-3	max. 125 ms
Risk time according to EN 60947-5-3, extension for each additional device	max. 10 ms
Safety class	III
Current consumption	40 mA
Degree of contamination (external, according to EN 60947-1)	2
Monitoring output OD/C	
Output type	p-switching, short circuit-proof

Output voltage		
	LOW	0 ... 1 V DC (Values at a switching current of 50mA without taking into account the cable lengths)
	HIGH	UB-1.5 ... UB V DC (Values at a switching current of 50mA without taking into account the cable lengths)

Switching current 1 ... 50 mA

Safety outputs FO1A/ FO1B

Output type Semiconductor outputs, p-switching, short circuit-proof

Output voltage		
	LOW U(FO1A) / U(FO1B)	0 ... 1 V DC
	HIGH U(FO1A) / U(FO1B)	UB-4V ... UB V DC

Discrepancy time max. 10 ms

Switching current		
	per safety output	1 ... 150 mA

Test pulse duration 0.3 ms

Test pulse interval 97 ... 105 ms

Mechanical values and environment

Ready delay		5 s
Installation orientation		on the front
Storage temperature		-30 ... 70 °C
Mounting cut-out		33 x 68 mm
Shock and vibration resistance		Acc. to EN IEC 60947-5-3
Degree of protection		
	in mounted condition (only access side)	IP65/IP67 (in the installed state)

Ambient temperature		
	for U _B = 24 V DC	-30 ... +55 °C

Material

Connecting cable PUR

Housing Plastic PA6-GF30 black

Connection X1

Connection type Connecting cable with plug connector M12

Static bending radius 5x cable diameter

Cable outlet straight

Cable length 0.15 m

Number of pins 8

Characteristic values according to EN ISO 13849-1 and EN IEC 62061

	PL	Maximum SIL	PFH _D	Category	Mission time
Safe key detection	PL e	3	4.11×10^{-9}	4	20 y

Downloads

All documentation for this material can be found on our website:

<https://www.euchner.de/en-us/a/167948/?#downloads-tab>

Ordering data

Ordernumber	167948
Item designation	CKS2-K-BR-CC-FLX-F00-USA-167948
Gross weight	0,19kg
Customs tariff number	85389099990
ECLASS	27-27-24-03 Safety-related transponder switch

Accessories

Actuator

Key A-FLX-K-0A FlexFunction, 1 key per packaging unit



168921

A-FLX-K-0A-RD-168921

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0A: 1 key per packaging unit
- ▶ Key color red



171455

A-FLX-K-0A-BK-171455

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0A: 1 key per packaging unit
- ▶ Key color black



171456

A-FLX-K-0A-BU-171456

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0A: 1 key per packaging unit
- ▶ Key color blue



171458

A-FLX-K-0A-YE-171458

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0A: 1 key per packaging unit
- ▶ Key color yellow

Key A-FLX-K-0B FlexFunction, 10 keys per packaging unit



173405

A-FLX-K-0B-RD-V10-173405

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0B: 10 identically coded keys per packaging unit
- ▶ Key color red

Key A-FLX-K-0B FlexFunction, 2 keys per packaging unit



168962

A-FLX-K-0B-RD-V02-168962

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0B: 2 identically coded keys per packaging unit
- ▶ Key color red

Key A-FLX-K-0B FlexFunction, 3 keys per packaging unit



168963

A-FLX-K-0B-RD-V03-168963

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0B: 3 identically coded keys per packaging unit
- ▶ Key color red

Key A-FLX-K-0B FlexFunction, customer-specific packaging unit



173902

A-FLX-K-0B-173902

- ▶ Transponder coding
- ▶ Hohe Codierungsstufe entsprechend EN 14119
- ▶ Key type 0B: identically coded keys per packaging unit
- ▶ Number of keys per packaging unit can be chosen as required
- ▶ Key colors red, black, blue, yellow can be chosen as required

Connection material

Connecting cable with 2 plug connectors M12, 5-pin, 1.5m, AIDA standard



159363

C-M12F05-05X034PU01,5-M12M05-159363

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 1.5 m

Connecting cable with 2 plug connectors M12, 5-pin, 10 m



100181

C-M12F05-05X034PV10,0-M12M05-100181

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 10 m

Connecting cable with 2 plug connectors M12, 5-pin, 10m, AIDA standard



159920

C-M12F05-05X034PU10,0-M12M05-159920

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 10 m

Connecting cable with 2 plug connectors M12, 5-pin, 15m, AIDA standard



159921

C-M12F05-05X034PU15,0-M12M05-159921

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 15 m

Connecting cable with 2 plug connectors M12, 5-pin, 1m, AIDA standard



159362

C-M12F05-05X034PU01,0-M12M05-159362

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 1 m

Connecting cable with 2 plug connectors M12, 5-pin, 20 m



100182

C-M12F05-05X034PV20,0-M12M05-100182

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 20 m

Connecting cable with 2 plug connectors M12, 5-pin, 3m, AIDA standard



159364

C-M12F05-05X034PU03,0-M12M05-159364

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 3 m

Connecting cable with 2 plug connectors M12, 5-pin, 5 m



100180

C-M12F05-05X034PV05,0-M12M05-100180

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 5 m

Connecting cable with 2 plug connectors M12, 5-pin, 5m, AIDA standard



159365

C-M12F05-05X034PU05,0-M12M05-159365

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 5 m

Connecting cable with 2 plug connectors M12, 5-pin, 8m, AIDA standard



159919

C-M12F05-05X034PU08,0-M12M05-159919

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 8 m

Connecting cable with 2 plug connectors M12, 8-pin, 1 m



123430

C-M12M08-08X025PV01,0-M12F08-123430

- ▶ 8-pin M12 male plug, straight
- ▶ 8-pin M12 female plug, straight
- ▶ PVC cable
- ▶ Cable length 1 m

Connecting cable with 2 plug connectors M12, 8-pin, 10 m



123433

C-M12M08-08X025PV10,0-M12F08-123433

- ▶ 8-pin M12 male plug, straight
- ▶ 8-pin M12 female plug, straight
- ▶ PVC cable
- ▶ Cable length 10 m

Connecting cable with 2 plug connectors M12, 8-pin, 2 m



123431

C-M12M08-08X025PV02,0-M12F08-123431

- ▶ 8-pin M12 male plug, straight
- ▶ 8-pin M12 female plug, straight
- ▶ PVC cable
- ▶ Cable length 2 m

Connecting cable with 2 plug connectors M12, 8-pin, 5 m



123432

C-M12M08-08X025PV05,0-M12F08-123432

- ▶ 8-pin M12 male plug, straight
- ▶ 8-pin M12 female plug, straight
- ▶ PVC cable
- ▶ Cable length 5 m

Connecting cable with plug connector M12, 8-pin, 10 m



100178

C-M12F08-08X025PV10,0-MA-100178

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 10 m
- ▶ With flying lead



115113

C-M12F08-08X025PU10,0-MA-115113

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead

Connecting cable with plug connector M12, 8-pin, 20 m



100179

C-M12F08-08X025PV20,0-MA-100179

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 20 m
- ▶ With flying lead



115114

C-M12F08-08X025PU20,0-MA-115114

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead

Connecting cable with plug connector M12, 8-pin, 30 m



115116

C-M12F08-08X025PV30,0-MA-115116

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 30 m
- ▶ With flying lead



115257

C-M12F08-08X025PU30,0-MA-115257

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead

Connecting cable with plug connector M12, 8-pin, 40 m



156065

C-M12F08-08X025PV40,0-MA-156065

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 40 m
- ▶ With flying lead

Connecting cable with plug connector M12, 8-pin, 5 m



100177

C-M12F08-08X025PV05,0-MA-100177

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 5 m
- ▶ With flying lead



115112

C-M12F08-08X025PU05,0-MA-115112

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 5 m
- ▶ With flying lead

Connecting cable with straight plug connector M12, 5-pin, 10 m



100184

C-M12F05-05X034PV10,0-MA-100184

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 10 m
- ▶ With flying lead

Connecting cable with straight plug connector M12, 5-pin, 20 m



100185

C-M12F05-05X034PV20,0-MA-100185

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 20 m
- ▶ With flying lead

Connecting cable with straight plug connector M12, 5-pin, 5 m



100183

C-M12F05-05X034PV05,0-MA-100183

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 5 m
- ▶ With flying lead

Connecting cable with straight plug connector M12, 5-pin, 50 m



156064

C-M12F05-05X034PV50,0-MA-156064

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 50 m
- ▶ With flying lead

Passive distribution module



120861

AC-DP-04-SA-120861

- ▶ Connection of up to 4 CES-AR, CET-AR, CTP-AR, MGBS-AR and ESL-AR
- ▶ LEDs for the indication of the door position on each port
- ▶ Can be connected in series

Strapping plug M12



097645

AC-SP-A0-SJ-097645

- ▶ Strapping plug
- ▶ M12 male plug, 4-pin

Y-distributor M12 for IO-Link evaluation



157913

AC-YD-SBB-157913

- ▶ For series connection of AR/BR safety switches in switch chains with ESM-CB for IO-Link evaluation
- ▶ Y-distributor with M12 female plug, 8-pin
- ▶ Male plug straight, 5-pin
- ▶ Female plug straight, 5-pin
- ▶ TPU housing, black

Y-distributor M12 with connecting cable, for IO-Link evaluation



158192

AC-YD-V0,2-SBB-158192

- ▶ For series connection of BR safety switches in switch chains with IO-Link evaluation
- ▶ Y-distributor with M12 female plug, 8-pin
- ▶ Male plug straight, 5-pin
- ▶ Female plug straight, 5-pin
- ▶ TPU housing, black
- ▶ Cable length 0.2 m / PVC



158193

AC-YD-V1,0-SBB-158193

- ▶ For series connection of AR/BR safety switches in switch chains with ESM-CB for IO-Link evaluation
- ▶ Y-distributor with M12 female plug, 8-pin
- ▶ Male plug straight, 5-pin
- ▶ Female plug straight, 5-pin
- ▶ TPU housing, black
- ▶ Cable length 1.0 m

Y-distributor M12 with connecting cable, without IO-Link evaluation



111696

AC-YD-V0,2-SBB-111696

- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12 with connecting cable, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 0.2 m



112395

AC-YD-V1,0-SBB-112395

- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12 with connecting cable, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 1 m

Y-distributor M12 without IO-Link evaluation



097627

AC-YD-SBB-097627

- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector

IO-Link gateway

IO-Link Gateway for BP/BR switches



165049

GWY-CB-1-BR-IO-165049

- ▶ IO-Link device for reading process and device data of BP/BR safety switches and transferring them to a higher-level control system
- ▶ Control of guard locking of BP/BR switches, depending on the switch used
- ▶ Compact version measuring only 12.5 mm in width
- ▶ Rail mounting
- ▶ LED status indicators

IO-Link Gateway with relay outputs for BP/BR switches



158875

ESM-CB-AZ-FI2-BR-IO-158875

- ▶ IO-Link device for reading process and device data of BP/BR safety switches and transferring them to a higher-level control system
- ▶ Control of guard locking of BP/BR switches, depending on the switch used
- ▶ Compact version measuring only 18 mm in width
- ▶ Rail mounting
- ▶ LED status indicators
- ▶ Sensor circuit 1: connection of single- or dual-channel safety switches with floating contacts; short circuit, earth fault and ground fault detection
- ▶ Sensor circuit 2: connection of 2 safety outputs for BP/BR switches
- ▶ Use as safety relay with two safe outputs
- ▶ Start button and feedback loop can be connected
- ▶ Safety relay: use up to category 4 according to EN ISO 13849-1

Miscellaneous

Color cover set for CKS key adapter (black, blue, yellow)



165413

AY-SET-CVR-165413

- ▶ Color covers for CKS key adapter
- ▶ Packaging unit with black, blue and yellow covers
- ▶ Color covers can be replaced on the CKS on location