

## CES-FD-AP-U-01-USI-119865 (ORDER NO. 119865)

### Field evaluation unit CES-FD-AP-...

- ▶ Evaluation of signals in the field
- ▶ Connection of CES read heads
- ▶ Connection to the ET200s and ET200pro
- ▶ Familiar EUCHNER AP interface
- ▶ Unicode



### Description

#### Short circuit monitoring

The switch generates its own clock signal on the output lines F01A/F01B. Pay attention to this aspect when connecting to control systems and relays.

#### Category according to EN ISO 13849-1

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

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

**Important:** To achieve the stated category according to EN ISO 13849-1, both safety outputs (F01A and F01B) must always be evaluated.

#### LED indicator

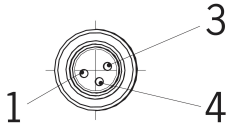
STATE Status LED

DIA Diagnostic LED

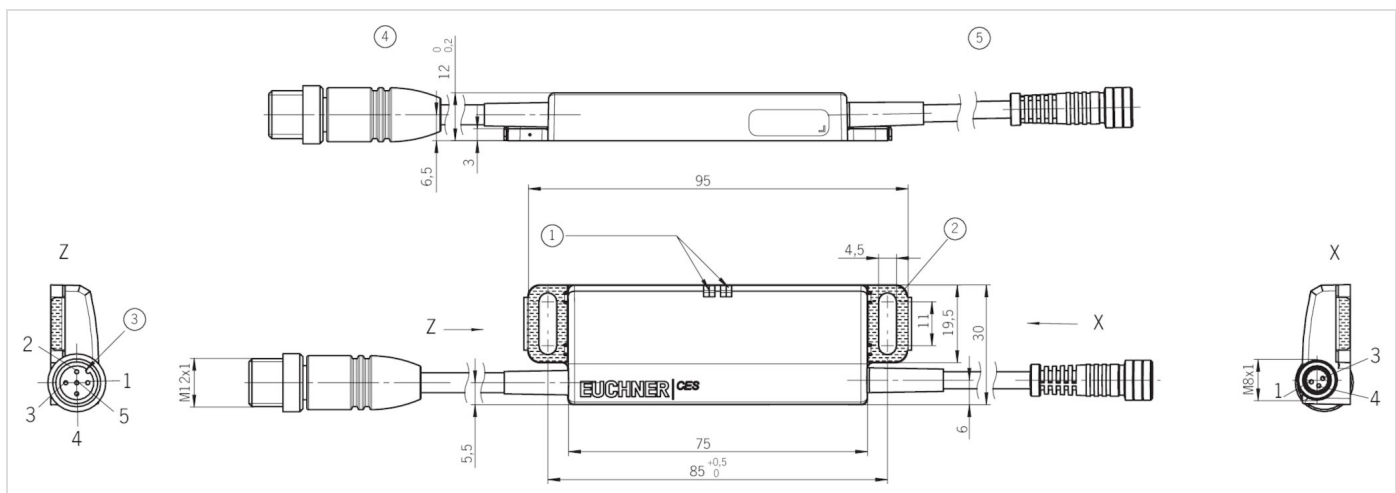
#### Connection for control system

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	1	UB	Power supply, DC 24 V	BN
	2	F01A	Safety output, channel 1	WH
	3	0V	Ground, DC 0 V	BU
	4	F01B	Safety output, channel 2	BK
	5	-	n.c.	GY

## Connection for read head

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	1	H1	Data line	BN
	3	H2	Data line	WH
	4	SH	Shield	-

## Dimension drawing



- 1 LED status indication
- 2 Fastening lug with reinforcement plate
- 3 Coding lug
- 4 Cable length 1,000 mm
- 5 Cable length 200mm

## Technical data

### Approvals



### Mechanical values and environment

Cable ambient temperature (dynamic)	-5 ... 65 °C
Cable ambient temperature (static)	-20 ... 65 °C
Shock and vibration resistance	In acc. with EN 60947-5-3
Housing material	
	Housing Plastic, PBT
Weight	
	Net 0,096 kg
Degree of protection	IP67
Installation orientation	Any
Tightening torque	max.1 Nm
Ready delay	1 s
Switching frequency	max.1 Hz
Connection	Connection cable PUR with plug connector M12 5-pin, pin 5 not used

## Electrical connection ratings

Operating voltage DC	
UB(PELV, see operating instructions) (reverse polarity protected, regulated, residual ripple < 5%)	24 V DC 15% ... 15% (The device tolerates voltage interruptions in the operating voltage, e.g. test pulses, of up to 5 ms. These voltage interruptions are also output on the safety outputs.)
Current consumption	max.45 mA
Fusing	
External (operating voltage)	0,25 ... 8 A
Rated insulation voltage $U_i$	75 V
Rated impulse withstand voltage $U_{imp}$	1,5 kV
EMC protection requirements	In acc. with EN IEC 60947-5-3
Degree of contamination (external, according to EN 60947-1)	3
Turn-on time	
Safety outputs	max.400 ms
Safety class	III
Risk time according to EN 60947-5-3	max.260 ms
<b>Safety outputs FO1A / FO1B</b>	
Type of output	Semiconductor outputs, p-switching, short circuit-proof
Switching current	
per safety output	1 ... 150 mA
Output voltage	
HIGH $U(FO1A)$ / $U(FO1B)$	UB-1,5V ... UB V DC (Values at a switching current of 50 mA without taking into account the cable lengths.)
LOW $U(FO1A)$ / $U(FO1B)$	0 ... 1 V DC
Utilization category acc. to EN 60947-5-2	
DC-13	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
Discrepancy time	max.10 ms

## Work area

Repeat accuracy R

According to EN 60947-5-2  $\leq 10$

## Other

For the approval acc. to UL the following applies      Operation only with UL class 2 power supply, or equivalent measures

## Reliability values according to EN ISO 13849-1

	Monitoring of the safety guard position
Category	4
Performance Level	PL e
PFH <sub>D</sub>	$4.5 \times 10^{-9}$
Mission time	20

## In combination with Read head CES-A-LMN-SC and Actuator CES-A-BMB

### Actuating range

Operating distance	5 mm (With read head CES-A-LMN-SC and actuator CES-A-BMB)
Assured release distance $S_{ar}$	max.10 mm (With read head CES-A-LMN-SC and actuator CES-A-BMB)
Assured operating distance $S_{ao}$	min.3,4 mm (With read head CES-A-LMN-SC and actuator CES-A-BMB)
Switching hysteresis	min.0,05 mm (With read head CES-A-LMN-SC and actuator CES-A-BMB)

## Accessories

### Actuator

#### Actuator CES-A-BMB



077791  
CES-A-BMB

▶ Cylindrical design M12 x 0.75

### Connection material

#### Connection cable with 2 plug connectors M12, 5-pin, 5m



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

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



100181

- ▶ M12 female plug to M12 plug connector,



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

5-pin

- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 10 m

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

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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

### Connection cable with straight plug connector M12, 5-pin, 5m

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

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



113620  
C-M12F05-05X034PU05,0-MA-113620

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

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

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

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



113640  
C-M12F05-05X034PU10,0-MA-113640

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

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

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

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



113682  
C-M12F05-05X034PU20,0-MA-113682

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

### Connection cable with straight plug connector M12, 5-pin, 30 m

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122784  
C-M12F05-05X034PU30,0-MA-122784

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector



- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead

## Extension for read head, with plug connector M8, 3-pin, 0.4m

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**115464**  
C-M08M03-02X025PU0,4-M08F03-  
115464

- ▶ Extension cable with M8 plug connector, 3-core
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 0.4 m

## Mounting accessories

### Safety screws M4 x 14, large head

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**086232**  
M4X14-NIRO/V100

- ▶ Safety screws M4 x 14 (large head)
- ▶ Packaging unit 100 pieces

## Read head

### Key adapter CKS

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**113130**  
CKS-A-L1B-SC-113130

- ▶ Key adapter with integrated CES read head
- ▶ Suitable for connection to a CES-AZ evaluation unit or CES-FD field unit
- ▶ Simple connection via plug connector M8
- ▶ Front cover: red
- ▶ High degree of protection IP67
- ▶ LED indicator

### Read head CES-A-LMN-SC, M8 plug connector

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**077790**  
CES-A-LMN-SC

- ▶ Cylindrical design M12
- ▶ M8 plug connector

## Contacts

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