

ITEM 115534 CES-FD-AP-M-01-USI-115534

Description	Technical data	Accessories	Downloads
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Features

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

Short circuit monitoring

The switch generates its own clock signal on the output lines FO1A/FO1B. 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:

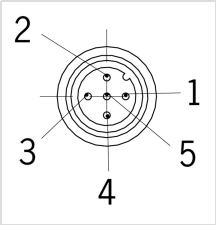
- › Category 4/PL e according to EN ISO 13849-1

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

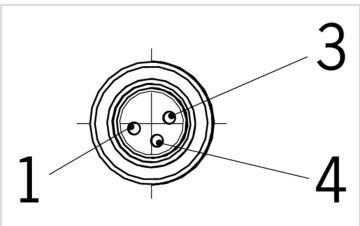
LED indicator

STATE Status LED
DIA Diagnostics LED

Connection for control system

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connection cable
	1	UB	Power supply, DC 24 V	BN
	2	FO1A	Safety output, channel 1	WH
	3	0V	Ground, DC 0 V	BU
	4	FO1B	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 connection cable
	1	H1	Data line	BN
	3	H2	Data line	WH
	4	SH	Shield	-

Approvals



Mechanical values and environment

Housing material	Plastic, PBT
Weight	Net 0,096 kg
Ambient temperature	
Cable static	-20 ... 65 °C
Cable dynamic	-5 ... 65 °C

Degree of protection	IP67
Resilience to vibration	In acc. with EN IEC 60947-5-2
Installation position	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% [1]
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}	max.1,5 kV
EMC protection requirements	In acc. with EN IEC 60947-5-3
Degree of contamination (external, according to EN 60947-1)	3
Switch-on time Safety outputs	max.400 ms
Safety class	III
Risk time according to EN 60947-5-3	max.260 ms
	Safety outputs FO1A / FO1B
Type of output	Semiconductor outputs, p-switching, short circuit-proof
Switching current per safety output	1 ... 150 mA
Output voltage HIGH $U(FO1A) / U(FO1B)$ LOW $U(FO1A) / U(FO1B)$	UB-1,5V ... UB V DC [2] 0 ... 1 V DC
Utilization category according to EN 60947-5-2 DC-13	DC-13 24V 150mA [3]
Off-state current I_r	max.0,25 mA
Discrepancy time	max.10 ms

Operating distance

Repeat accuracy R According to EN 60947-5-2	≤ 10
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Miscellaneous

For the approval according to UL the following applies

Operation only with UL class 2 power supply, or equivalent measures

Reliability values acc. to EN ISO 13849-1

	Monitoring of the safety guard position
Category	4
Performance Level	PL e
PFH _D	4.5×10^{-9}

Mission time	20
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in combination with Read head CES-A-LMN-SC and Actuator CES-A-BMB

Operating distance

Switch-on distance	5 mm [4]
Assured switch-off distance S_{ar}	max.10 mm [5]
Assured operating distance S_{a0}	min.3,4 mm [6]
Switching hysteresis	0,05 ... 0,2 mm [7]

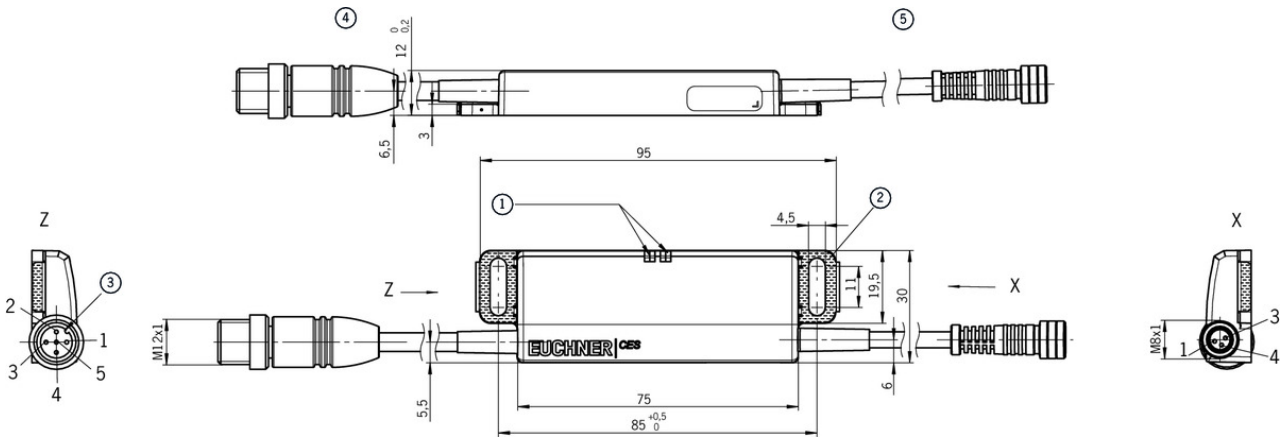
[1] The device tolerates voltage interruptions in the operating voltage, e.g. test pulses, of up to 5 ms. These voltage interruptions are also output on the safety outputs.

[2] Values at a switching current of 50 mA without taking into account the cable lengths.

[3] Caution: outputs must be protected with a free-wheeling diode in case of inductive loads.

[4, 5, 6, 7] With read head CES-A-LMN-SC and actuator CES-A-BMB

Dimension drawing



Legende

- 1 LED status indication
- 2 Fastening lug with reinforcement plate
- 3 Coding lug
- 4 Cable length 1000mm
- 5 Cable length 200mm

Connection material

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



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

Features

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

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



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

Features

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

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

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



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

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



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

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



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

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

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



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

- ✓ Features
 - › 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 C-M12F05-05X034PV10,0-M12M05-100181

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

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



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

- ✓ Features
 - › 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, 10m



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

▼ Features

- › 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



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

▼ Features

- › 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



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

▼ Features

- › M12 female plug, 5-pin
 - › Straight plug connector
 - › PUR cable
 - › Cable length 30 m
 - › With flying lead
-

Additional system components

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



077790 CES-A-LMN-SC

▼ Features

- › Cylindrical design M12
 - › M8 plug connector
-

- ▼ Key adapter CKS



113130 CKS-A-L1B-SC-113130

▼ Features

- › 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 IP 67
 - › LED indicator
-

Actuator

Actuator CES-A-BMB



077791 CES-A-BMB

Features

- › Cylindrical design M12 x 0.75

Mounting accessories

Safety screws for safety switches M4 x 14, large head

086232 M4X14-NIRO/V100

Features

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

Instructions

Betriebsanleitung Feldauswertegerät CES-FD-AP-... (Uni-/Multicode)

	Doc. no.	Version	Language	Download
Betriebsanleitung Feldauswertegerät CES-FD-AP-... (Uni-/Multicode)	2116267	05-06/17		1.1 MB
Operating Instructions Field Evaluation Unit CES-FD-AP-... (Unicode/Multicode)	2116267	05-06/17		1.2 MB

Catalogs





Transpondercodierte Sicherheitssysteme mit externer Auswertung Transponder-coded safety systems with external evaluation Sistemas de seguridad con codificación por transponder y evaluación externa Systèmes de sécurité à codage par transpondeur avec analyse externe

	Doc. no.	Version	Language	Download
Transpondercodierte Sicherheitssysteme mit externer Auswertung	127596	02-01/18		3.1 MB
Systèmes de sécurité à codage par transpondeur avec analyse externe	137968	02-01/18		3.0 MB
Sistemas de seguridad con codificación por transponder y evaluación externa	139969	02-01/18		3.0 MB
Transponder-coded safety systems with external evaluation	127597	02-01/18		3.0 MB





Application example

Anschluss CES-FD an MURR MVK-MPNIO





Doc. no.	Version	Language	Download
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Anschluss CES-FD an MURR MVK-MPNIO	AP000177	03-03/15		 0.3 MB
Connection of CES-FD to MURR MVK-MPNIO	AP000177	03-03/15		 0.3 MB

 Anschluss CES-FD an Siemens ET 200pro

	Doc. no.	Version	Language	Download
Anschluss CES-FD an Siemens ET 200pro	AP000155	04-03/15		 0.3 MB
Connection of CES-FD to Siemens ET 200pro	AP000155	04-03/15		 0.3 MB

 Anschluss CES-FD-AP an Siemens ET 200S

	Doc. no.	Version	Language	Download
Anschluss CES-FD-AP an Siemens ET 200S	AP000154	03-03/15		 0.3 MB
Connection of CES-FD-AP to Siemens ET 200S	AP000154	03-03/15		 0.3 MB

Declaration of conformity

 EU prohlášení o shodě

	Doc. no.	Version	Language	Download
EU-Konformitätserklärung Declaración UE de conformidad Déclaration UE de conformité Dichiarazione di conformità EU declaration of conformity	2109923	13-01/17	    	 0.4 MB
EU prohlášení o shodě EU-overensstemmelseserklæring Δήλωση συμμόρφωσης της ΕΕ EU-vaatimustenmukaisuusvakuutus EU-típusbizonyítvány EU-conformiteitsverklaring Deklaracja zgodności UE Declarația de conformitate UE EÚ vyhlásenie o zhode	2109923	13-01/17	       	 0.6 MB

CAD data

CAD data for this item on TraceParts