


















Safety Engineering at a Glance

Transponder-coded read heads with external evaluation								
Evaluation units		Read heads						
 Evaluation unit CES-AZ-01B/-02B/-04B		 Field evaluation unit CES-FD		 Read head CES-A-LNN/ CES-A-LNA/CES-A-LMN		 Read head CET-AX		 Read head CKS
Approvals								
Features/specific advantages	<ul style="list-style-type: none"> • connection of read heads 	<ul style="list-style-type: none"> • AP interface • connection of read heads CKS and CES-A-LMN 	<ul style="list-style-type: none"> • small designs (rectangular or cylindrical) • with LED indicators (CES-A-LNN) 	<ul style="list-style-type: none"> • CEM-A: guard locking on solenoid (without guard lock monitoring) • CET-AX: guard locking and guard lock monitoring 	<ul style="list-style-type: none"> • safe entry into installations • function as electronic lockout mechanism 			
Safety category/PL acc. to EN ISO 13849-1	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e		
AS-Interface Safety at Work 	–	–				ⓘ		
Variants	Unicode: detects only actuator taught-in	●	●					
	Multicode: detects all actuators	●	●					
	Fixcode: actuator allocation fixed	–	–					
Inputs/outputs	Read heads	4	1					
	Relay safety outputs	2	–					
	Semiconductor safety outputs	–	2					
	Monitoring outputs (semiconductor)	5	–					
	Series connection (Quantity)	any	–					
	Direct connection to ET200pro	–	●					
	Monitoring/connection feedback loop	●	–					
	Monitoring/connection start button	●	–					
	Switching current per safety output	6 A	150 mA					
	Mechanical life min.	10 x 10 ⁶	∞	∞	1 x 10 ⁶	∞		
Integrated short circuit monitoring of the safety outputs	–	●						
Term of pulsed signals at the safety outputs	any	0.3 ms						
Environment	Dimensions min. (W x H x D)	CES-AZ-01B: 114x99 x 22.5 mm CES-AZ-02B/-04B: 114 x 99x 45 mm	95 x 30x 12 mm	CES-A-LNN: 42x25x 12 mm CES-A-LMN: M12 x 1 mm x 38 mm	CEM-A: 80x50x 28 mm CET-AX: 166x42x 41 mm	83x40x 50 mm		
	Ambient temperature	-20 to +55 °C	-20 to +55 °C	-25 to +70 °C	CEM-A: -25 to +55 °C CET-AX: -20 to +55 °C	-20 to +70 °C		
	Degree of protection max.	IP20	IP67	IP67/IP69/IP69K	IP67	IP67		
	Typ. switch-on distance	depending on the used read head	depending on the used read head	CES-A-LNN: 19 mm CES-A-LMN: 5 mm	CEM-A: 2 mm CET-AX: –	–		
	Locking/adhesive force max.	–	–	–	CEM-A: 650 N/1000 N CET-AX: 6500 N	–		
	Connection	plug-in connection terminals	plug connector M8/M12	cable/plug connector M8	plug connector M8/M12	plug connector M8		
	Bolts for safety guards	–	–	ⓘ	ⓘ	–		

Safety Engineering at a Glance

	Without / with guard locking	Without / with guard locking	Control module
			
	Safety system MGB-L0/L1/L2	Safety system MGB Profinet or EtherNet/IP L0/L1/L2	Control module MGB-C
Approvals			
Features/specific advantages	<ul style="list-style-type: none"> • system consisting of a handle, guard locking and integrated control module 	<ul style="list-style-type: none"> • system consisting of a handle, guard locking and integrated control module 	<ul style="list-style-type: none"> • maximum design flexibility when equipping
Safety category/PL acc. to EN ISO 13849-1	Cat. 4 / PL e	Cat. 4 / PL e	–
Guard locking	without / mechanical / electrical	without / mechanical / electrical	–
Switches (optional)	up to 4 (buttons, indicators, emergency stop, ...)	up to 14 buttons, indicators, key-operated switches, emergency stop, ...)	up to 6 buttons, indicators, key-operated switches, emergency stop, ...)
Inputs/outputs			
Semiconductor safety outputs	2 (semiconductor)	10	1
Monitoring outputs	4 (semiconductor)	up to 72	12
Series connection (Quantity)	10	–	–
Monitoring/connection feedback loop	–	–	–
Monitoring/connection start button	–	–	–
Switching current per safety output	1...200 mA	–	–
Mechanical life min.	1 x 10 ⁶	1 x 10 ⁶	–
Environment			
Dimensions min. (W x H x D)	114 x 289 x 109 mm	345 x 289 x 115 mm	121 x 155 x 45 mm
Ambient temperature	-20 to +55 °C	-20 to +55 °C	-20 to +55 °C
Degree of protection max.	IP65	IP54	IP65
LED displays	●	●	–
Solenoid operating voltage	– / 24 V	– / 24 V	–
Locking force max.	– / 2000 N	– / 2000 N	–
Connection			
Cable entry	4 x M20 x 1.5	–	2 x M20 x 1.5
Plug connector	●	RJ45 / M12	–
Connection cable (pre-assembled)	○	–	–












● available

◐ not available in all versions (see catalog)










○ available on request

– not available

Safety System Multifunctional Gate Box MGB

Without / with guard locking	Bus module	Control module	Without / with guard locking	Submodule	Without / with guard locking
					
Safety system MGB2 I/L1/L2 <i>Modular</i>	Bus module MBM	Extension module MCM <i>Modular</i>	Safety system MGB2 I/L1/L2 <i>Classic</i>	Submodule MSM	MGBS-P-I/L1/L2
					
<ul style="list-style-type: none"> system consisting of handle module and locking module modular design 	<ul style="list-style-type: none"> with integrated PROFINET/PROFIsafe also available for connection to EtherCAT P/FSoE several MGB2 <i>Modular</i> or MCM devices can be connected 	<ul style="list-style-type: none"> function expansion for bus module and locking module compatible with all <i>Modular</i> devices 	<ul style="list-style-type: none"> system consisting of handle module and locking module modular design direct connection to control system 	<ul style="list-style-type: none"> function expansion for modules MGB2 and MCM 	<ul style="list-style-type: none"> MGBS-P-I: system consisting of handle module, interlocking module and integrated control module MGBS-P-L1/L2: system consisting of handle module, locking module and integrated control module
Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	–	Cat. 4 / PL e
without/mechanical/ electrical	–	–	without/mechanical/ electrical	–	MGBS-P-I: without MGBS-P-L1/L2: mechanical/electrical
2 x MSM	–	up to 4 x MSM	1 x MSM	up to 3 (pushbuttons, lamps, key-operated rotary switches, emergency stop ...)	up to 3 (buttons, indicators, emergency stop, ...)
2	–	–	2 (semiconductor) + 2 external + MSM outputs	up to 6	2 (semiconductor)
10	–	–	4 (semiconductor) + MSM outputs	up to 3	to 3 (semiconductor)
			to 10		to 20
–	–	–	–	–	–
–	–	–	1...150 mA	–	1...150 mA
1 x 10 ⁶	–	–	1 x 10 ⁶	–	1 x 10 ⁶
114x314 x 116 mm	94x155x52.5 mm	148x155x52.5 mm	114x314x 116 mm	114x38x75 mm	286x183x116 mm
-25 to +55 °C	-25 to +55 °C	-25 to +55 °C	-25 to +55 °C	-25 to +55 °C	-20 to +55 °C
IP65	IP65	IP65	IP65	IP65 (on front)	IP65
●	●	●	●	–	●
– / 24 V	–	–	– / 24 V	–	– / 24 V
– / 2000 N	–	–	– / 2000 N	–	– / 3900 N
–	–	–	M20	–	–
M12	RJ45 / M12	M12	●	–	M12 / M23
–	–	–	○	–	–

Safety Engineering at a Glance

	Transponder-coded safety switches without guard locking			Key system	
	 Safety switch CES-C01/CES-C02/ CES-C04/CES-C14	 Safety switch CES-C07	 Safety switch CES-A-C5/CES-A-W5	 Key adapter CKS2	
Approvals					
Features/specific advantages	<ul style="list-style-type: none"> • safety switch with integrated evaluation electronics • small design • diagnostic function by means of LED • CES-C14: safety switch CES-C04 encapsulated in epoxy resin 	<ul style="list-style-type: none"> • safety switch with integrated evaluation electronics • for diagnostic information readout, connection to BR/IO-Link Gateway 	<ul style="list-style-type: none"> • no own pulsing of the safety outputs • external pulsing possible (with safe PLC, for example) • ATEX version available for zone 2/22 	<ul style="list-style-type: none"> • Function as <ul style="list-style-type: none"> - Lockout system - Authorization system - Trapped key system • FlexFunction*) 	
Safety category/PL acc. to EN ISO 13849-1	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	
AS-Interface Safety at Work 	●	–	–	–	
Variants	Unicode: detects only actuator taught-in	●	●	●	
	Multicode: detects all actuators	●	●	–	
	Fixcode: actuator allocation fixed	○	○	–	
Inputs/outputs	Read heads	integrated	integrated	integrated	integrated
	Relay safety outputs	–	–	–	–
	Semiconductor safety outputs	2	2	2	2
	Monitoring outputs (semiconductor)	1	1 or BR/IO-Link	1	1 or BR/IO-Link
	Series connection (Quantity)	AP: 1 / AR: 20	BP: 1 / BR: 20	3	BP: 1 / BR: 20
	Direct connection to ET200pro	C01-AP; C02-AP; C04-AP	C07-BP	–	CKS-BP
	Monitoring/connection start button	–	–	–	–
	Monitoring/connection feedback loop	–	–	–	–
	Switching current per safety output	C01: 400 mA C02: 150 mA C04/C14: 150 mA	150 mA	400 mA	150 mA
	Mechanical life min.	∞	∞	∞	∞
	Integrated short circuit monitoring of the safety outputs	●	●	–	●
Term of pulsed signals at the safety outputs	C01-AP: 0.40 ms C02-AP: 0.35 ms C04-AP/C14: 0.30 ms C01/C02/C04-AR: 0.80 ms	0.30 ms	external pulsed signals, any	0.30 ms	
Environment	Dimensions min. (W x H x D)	C01: 70x40x40 mm C02: 95x30x12 mm C04: 42x25x18 mm	40x26.5x18 mm	119x40x40 mm	75 x 40 x 73 mm
	Ambient temperature	C01: -20 to +55 °C C02: -40 to +65 °C C04: -20 to +65 °C	-25 to +55 °C	-20 to +55 °C	-25 to +55 °C
	Degree of protection max.	C01: IP67 C02/C04: IP67 / IP69 / IP69K	IP65 / IP67 / IP69 / IP69K	IP67	IP65/IP67
	Typ. switch-on distance	C01: 18 mm C02: 15 mm C04: 15 mm	13 mm	20 mm	–
	Locking/adhesive force max.	–	–	–	–
	Connection	cable/plug connector M8/M12	plug connector M12	plug connector M12	plug connector M12
Bolts for safety guards	○	–	●	–	

AP: Version for use as single device

AR: Version for series connection

*) FlexFunction: The taught-in key defines the device's function

Transponder-coded guard locking devices for process protection

Magnetically coded safety switches



Modular magnetic guard locking
CEM-C60

Safety switch
CEM-C40

Safety switch
CTP-I/11/12

Safety system
CMS (Reed)



- handle module with integrated safety switch
- suitable for mounting on profile

- integrated solenoid (without guard lock monitoring)
- adjustable adhesive force

- with adhesive force
- with integrated control elements (optional)
- CTP-I: without guard locking
- CTP-11/12: mechanical/electrical guard locking (without guard lock monitoring)

- read heads/actuators available in different designs

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 3 / Cat. 4

-

-

-

●

●

●

●

-

●

●

●

●

-

-

-

-

integrated

integrated

integrated

1 to 30

-

-

-

2

2

2

2

-

1

3

to 3

1 (relay)

ESL-AR: 20

CEM-AY: 1 / CEM-AR: 20

AP: 1 / AR: 20

any

-

-

AP

-

-

-

-

●

-

-

-

●

200 mA

150 mA

150 mA

4 A

1 x 10⁶

1 x 10⁶

1 x 10⁶

10 x 10⁶

●

●

●

-

0.8 ms

CEM-AY: 0.8 ms
CEM-AR: 0.8 ms

CTP-AP: 0.3 ms
CTP-AR: 0.8 ms

-

107x100x46 mm

90x50 x39 mm

190x42x40 mm
190x56x40 mm
(CTP with controls)

114 x99 x22.5 mm
114 x 99x45 mm

-20 to +55 °C

-20 to +55 °C

-20 to +55 °C

0 to +50 °C

IP67

IP65 / IP67

IP67 / IP69 / IP69K / IP65
(CTP with controls)

IP20

-

10 mm

-

depending on the
used read head

detent mechanism

650 N

- / 3900 N

-

plug connector M12

plug connector M12

plug connector M12/M23

screw terminals

-

-

●

-

Safety Engineering at a Glance

Transponder-coded read heads with external evaluation



Safety switch
CET



Safety switch
CTA and CTP-L1/L2



Safety switch
CTS



Safety switch
CTM

	UL US UQS	UL US UQS	UL US UQS	UL US UQS	
Approvals	UL US UQS	UL US UQS	UL US UQS	UL US UQS	
Features/specific advantages	<ul style="list-style-type: none"> • high locking force • very robust design • actuator with large freedom of movement 	<ul style="list-style-type: none"> • small and narrow design • compatible mounting with existing safety switches TP/STP • CTP: with integrated control elements (optional) • CTP: with bistable guard locking (optional) • CTP: ATEX version for zone 2/22 available 	<ul style="list-style-type: none"> • high locking force in a compact design • actuator supported on floating bearing • escape release can be retrofitted 	<ul style="list-style-type: none"> • compact design • suitable for even the smallest door radii • hygienic version available 	
Safety category/PL acc. to EN ISO 13849-1	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	Cat. 4 / PL e	
AS-Interface Safety at Work	●	● (CTP)/– (CTA)	–	●	
Variants	Unicode: detects only actuator taught-in	●	●	●	
	Multicode: detects all actuators	●	●	●	
	Fixcode: actuator allocation fixed	–	–	–	–
Inputs/outputs	Read heads	integrated	integrated	integrated	integrated
	Relay safety outputs	–	–	–	–
	Semiconductor safety outputs	2	2	2	2
	Monitoring outputs (semiconductor)	2	up to 3	2	up to 3
	Series connection (Quantity)	CET-AP: 1 / CET-AR: 20	CTP-AP/BP: 1 / CTP-AR/BR: 20 CTA-BP: 1 / CTA-BR: 20	CTS-BP: 1 / CTS-BR: 20	CTM-BP: 1 / CTM-BR: 20
	Direct connection to ET200pro	CET-AP	CTP-AP	–	–
	Monitoring/connection start button	●	–	–	–
	Monitoring/connection feedback loop	●	–	–	–
	Switching current per safety output	200 mA	150 mA	150 mA	150 mA
	Mechanical life min.	1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶
Integrated short circuit monitoring of the safety outputs	●	●	●	●	
Term of pulsed signals at the safety outputs	CET-AP: 0.3 ms CET-AR: 0.8 ms	CTP-AP: 0.3 ms CTP-AR: 0.8 ms CTP/CTA-BP: 0.3 ms CTP/CTA-BR: 0.3 ms	0.3 ms	0.3 ms	
Environment	Dimensions min. (W x H x D)	166 x 42 x 41 mm	190 x 42 x 40 mm 190 x 56 x 40 mm (CTP with controls)	135 x 31 x 31 mm	131.5 x 36 x 25 mm
	Ambient temperature	-20 to +55 °C	-20 to +55 °C	-20 to +55 °C	-20 to +60 °C
	Degree of protection max.	IP65 / IP67	IP67 / IP69 / IP69K / IP65 (CTP with controls)	IP65 / IP67 / IP69 / IP69K	IP65 / IP67 / IP69 / IP69K
	Typ. switch-on distance	–	–	–	–
	Locking/adhesive force max.	6500 N	CTP: 3900 N / CTA: 8000 N	3900 N	1300 N
Connection	plug connector M12/M23	plug connector M12/M23	Pigtail with plug connector M12/flying lead	plug connector M12	
Bolts for safety guards	●	●	–	–	

Safety Engineering at a Glance

	Safety control systems and safety relays				
	Small safe control system MSC (Basic modul)	Safety relays ESM	Evaluation unit ESM-CB	Safety monitors GMOx	
Approvals					
Applications	<ul style="list-style-type: none"> Cat. 4 / PL e stop category 0 and 1 	<ul style="list-style-type: none"> Cat. 4 / PL e stop category 0 and 1 requirement level IIC according to EN 574 for two-hand device 	<ul style="list-style-type: none"> Cat. 4 / PL e Stop-Kategorie 0 	<ul style="list-style-type: none"> Cat. 4 / PL e stop category 0 and 1 requirement level IIC according to EN 574 for two-hand device 	
Base module	<ul style="list-style-type: none"> 8 inputs 1 or 2-channel control feedback loop start button 4 OSSD outputs (suitable for 1-channel applications) up to 4 monitoring outputs programmable using MSC Safety Designer software up to 14 expansion modules 	<ul style="list-style-type: none"> 1 or 2-channel control up to 7 outputs (time-delay or non-time-delay) version for two-hand circuits LED status indicators feedback loop start button (monitoring possible) short circuit monitoring earth fault and ground fault monitoring 	<ul style="list-style-type: none"> 1- or 2-channel monitoring of the sensor circuit connection of BP/BR devices 2 relay outputs start button (monitored) and feedback loop can be connected 	<ul style="list-style-type: none"> programmable up to 62 subscribers 4 outputs, expandable up to 16 comprehensive LED status indications and diagnostic functions feedback loop start button (monitoring possible) short circuit monitoring earth fault and ground fault monitoring formation of safety groups 	
Contact expansions/ output modules	<ul style="list-style-type: none"> up to 32 safe 1- or 2-channel outputs LED status indicators up to 48 monitoring outputs OSSD or Relays outputs 	<ul style="list-style-type: none"> up to 4 outputs (time-delay or non-time-delay) LED status indicators 	<ul style="list-style-type: none"> from the ESM product range 	<ul style="list-style-type: none"> via AS-Interface 	
Input modules	<ul style="list-style-type: none"> up to 128 inputs LED status indicators 	-	-	<ul style="list-style-type: none"> via AS-Interface 	
Connection data	Switching current AC, max.	400 mA DC / 6 A	6 A / 8 A	6 A	3 A
	Switching voltage AC, max.	250 V AC	250 V	250 V	30 V
	Operating voltage	24 V DC	24 V AC/DC, 114/230 V AC	24 V DC	AS-Interface (30 V DC) or 24 V DC
	Mechanical life, max.	2 x 10 ⁷ operating cycles	1 x 10 ⁷ operating cycles	1 x 10 ⁷ operating cycles	1 x 10 ⁷ operating cycles
	Connection type	plug-in screw terminals	plug-in screw terminals	plug-in screw terminals	plug-in screw terminals
Environment	Housing material	plastic	plastic	plastic	stainless steel
	Installation	DIN rail	DIN rail	DIN rail	DIN rail
	Dimensions (HxWxD)	108x22.5x114.5 mm	114x99x22.5 mm	116.6 x 17.5 x 114.5 mm	120x96x100 mm
	Ambient temperature (at U _B = 24 V)	-10 to +55 °C	-15 to +60 °C	-25 to +60 °C	0 to +55 °C
	Degree of protection max.	IP20	IP20	IP20	IP20
LED indicators	●	●	●	●	

EUCHNER GmbH + Co. KG
 Kohlhammerstraße 16
 70771 Leinfelden-Echterdingen
 Germany

Tel. +49 711 7597-0
 Fax +49 711 753316
 info@euchner.de
 www.euchner.com

EUCHNER
 More than safety.