

Product Overview







Safety Engineering electronic










EUCHNER

More than safety.

Safety Engineering at a Glance

| Safety System Multifunctional Gate Box MGB | | | | | | |
|--|---|--|--|--|---|-------------------|
| | Without guard locking | With guard locking | With/Without guard locking | With/Without guard locking | Control module | |
| |  |  |  |  |  | |
| | Safety system MGB-L0 | Safety system MGB-L1/L2 | Safety system MGB Profinet L0/L1/L2 | Safety system MGB EtherNet/IP L0/L1/L2 | Control module MGB-C | |
| Approvals |  |  |  |  |  | |
| Features/specific advantages | <ul style="list-style-type: none"> system consisting of a handle, interlocking 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"> 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 | Cat. 4 / PL e | Cat. 4 / PL e | - | |
| Guard locking | without | mechanical / electrical | without / mechanical / electrical | without / mechanical / electrical | - | |
| Switches (optional) | up to 4 (buttons, indicators, emergency stop, ...) | up to 4 (buttons, indicators, emergency stop, ...) | up to 14 (buttons, indicators, emergency stop, ...) | up to 8 (buttons, indicators, emergency stop, ...) | up to 6 buttons, indicators, key-operated switches, emergency stop, ...) | |
| Inputs/outputs | Semiconductor safety outputs | 2 (semiconductor) | 2 (semiconductor) | 10 | 7 | - |
| | Monitoring outputs | 4 (semiconductor) | 4 (semiconductor) | 72 | 24 | - |
| | Series connection (Quantity) | 10 | 10 | - | - | - |
| | Monitoring/connection feedback loop | - | - | - | - | - |
| | Monitoring/connection start button | - | - | - | - | - |
| | Switching current per safety output | 200mA | 200mA | - | - | - |
| | Mechanical life min. | 1 x 10 ⁶ | 1 x 10 ⁶ | 1 x 10 ⁶ | 1 x 10 ⁶ | - |
| Environment | Dimensions min. (W x H x D) | 114 x 289 x 109 mm | 114 x 289 x 109 mm | 345 x 289 x 115 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 | -20 to +55 °C | -20 to +55 °C |
| | Degree of protection max. acc. to EN 60529 | IP65 | IP65 | IP54 | IP54 | IP65 |
| | LED displays | ● | ● | ● | ● | - |
| | Solenoid operating voltage | - | 24 V DC | - / 24 V | - / 24 V | - |
| Locking force max. | - | 2000 N | 2000 N | 2000 N | - | |
| Connection | Cable entry | 4xM20 x 1.5 | 4xM20 x 1.5 | - | - | 2xM20 x 1.5 |
| | Plug connector | ● | ● | RJ45 / M12 | M12 | - |
| | Connection cable (pre-assembled) | ○ | ○ | - | - | - |

Safety Engineering at a Glance

| | Evaluation Units | | |
|--|--|--|---|
| |  |  |  |
| | Evaluation unit CES-AZ-01B/-02B/-04B | Field evaluation unit CES-FD | Read head CES-A-LNN/ CES-A-LNA/CES-A-LCA |
| 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 design • with LED indicators (CES-A-LNN) |
| Safety category/PL acc. to EN ISO 13849-1 | Cat. 4 / PL e | Cat. 4 / PL e | Cat. 4 / PL e |
| AS-Interface <i>Safety at Work</i>  | – | – | |
| 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 | ∞ |
| | 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 114 x 99 x 22.5 mm CES-AZ-02B/-04B 114 x 99 x 45 mm | 95 x 30 x 12 mm 42 x 25 x 12 mm |
| | Ambient temperature | -20 to +55 °C | -20 to +55 °C |
| | Degree of protection max. | IP20 | IP67 |
| | Typ. switch-on distance | depending on the used read head | depending on the used read head |
| | Locking/adhesive force max. | – | – |
| | Connection | plug-in connection terminals | plug connector M8/M12 |
| Bolts for safety guards | – | – | |
| | | | ● |

● available

● not available in all versions (see catalog)

○ available on request

– not available

Transponder-coded read heads with external evaluation

Read Heads



Read head CES-A-LQA



Read head CES-A-LMN



Read head CES-A-LSP



Read head CEM-A-LE05



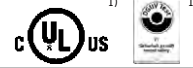
Read head CEM-A-LH10



Read head CET-AX



Read head CKS



- large center offset
- large operating distance

- very small design in M12 housing

- direct routing in profile slots
- very flat design
- diagnostic function by means of LED

- guard locking on solenoid (without guard lock monitoring)
- adjustable adhesive force (optional)

- guard locking and guard lock monitoring

- safe entry into installations
- function as electrical lockout mechanism

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 4 / PL e

Cat. 4 / PL e



∞

∞

∞

∞

1 x 10⁶

∞

50 x 50 x 20.2 mm

M12 x 1 mm
Length: 38 mm

97.1 x 18.1 x 13.3 mm

CEM-A-LE05
80 x 50 x 28 mm
CEM-A-LH10
95 x 65 x 38 mm

166 x 42 x 41 mm

83 x 40 x 50 mm

-25 to +70 °C

-25 to +85 °C

-25 to +70 °C

-25 to +50 °C

-20 to +55 °C

-20 to +70 °C

IP67

IP67

IP67

IP67

IP67

IP67

28 mm

5 mm

20 mm

2 mm

-

-

-

-

-

650 N/1000 N

6500 N

-

plug connector M8

plug connector M8

cable/plug connector M5

plug connector M8

plug connector M8/M12

plug connector M8

-

-

●

●

●

-

1) only CET1-AX

Safety Engineering at a Glance

Transponder-coded Safety Switches without guard locking



Safety switch
CES-C01/CES-C02/
CES-C04



Safety system
ESL



Safety switch
CES-A-C5/CES-A-W5

Approvals



Features/specific advantages

- safety switch with integrated evaluation electronics
- small design
- diagnostic function by means of LED

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

- no internal pulsed signals at the safety outputs
- external pulsed signals possible (e.g. by a Safety PLC)
- ATEX version available for zone 2/22

Safety category/PL acc. to EN ISO 13849-1

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

Relay safety outputs

–

–

–

Semiconductor safety outputs

2

2

2

Monitoring outputs (semiconductor)

1

1

1

Series connection (Quantity)

AP:1/AR:20

ESL-AR:20

3

Direct connection to ET200pro

C01-AP; C02-AP; C04-AP

–

–

Monitoring/connection start button

–

–

–

Monitoring/connection feedback loop

–

–

–

Switching current per safety output

C01: 400 mA
C02: 150 mA
C04: 150 mA

200 mA

400 mA

Mechanical life min.

∞

1 x 10⁶

∞

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: 0.30 ms
C01/C02/C04-AR: 0.80 ms

0.8 ms

external pulsed signals, any

Environment

Dimensions min. (W x H x D)

C01: 70 x 40 x 40 mm
C02: 95 x 30 x 12 mm
C04: 42 x 25 x 18 mm

107 x 100 x 46 mm

119 x 40 x 40 mm

Ambient temperature

C01: -20 to +55 °C
C02: -40 to +65 °C
C04: -20 to +65 °C

-20 to +55 °C

-20 to +55 °C

Degree of protection max. EN IEC 60529

C01: IP67 /
C02-C04: IP67 / IP69

IP67

IP67

Typ. switch-on distance

C01: 18 mm
C02: 15 mm
C04: 15 mm

–

20 mm

Locking/adhesive force max.

–

detent mechanism

–

Connection

cable/plug connector M8/M12

plug connector M12

plug connector M12

Bolts for safety guards












–



AP: Version for use as single device








AR: Version for series connection

All data given refer to the respective minimal or maximal values for the entire series.

| | Transponder-coded Safety Switches with guard locking | | | Magnetically Coded Safety Switches |
|--|---|---|--|---|
|  |  |  |  |  |
| Safety switch CES-AH | Safety switch CET | Safety switch CTP | Sicherheitsschalter CEM-C40 | Safety system CMS (Reed/Hall) |
| |  |  |  |  |
| <ul style="list-style-type: none"> currents up to 3.5 A can be switched, internal pulsed signals on the safety outputs | <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 with integrated controls (optional) with bistable locking function (optional) ATEX version available for zone 2/22 | <ul style="list-style-type: none"> integrated solenoid (without guard lock monitoring) adjustable adhesive force | <ul style="list-style-type: none"> read heads/actuators available in different designs |
| Cat. 3 / PL d | Cat. 4 / PL e | Cat. 4 / PL e | Cat. 4 / PL e | Cat. 3 / Cat. 4 |
| - | ● | ● | - | - |
| ● | ● | ● | ● | ● |
| ○ | ● | ● | ● | ● |
| - | - | - | - | - |
| integrated | integrated | integrated | integrated | 1 to 30 |
| - | - | - | - | 2 |
| 2 | 2 | 2 | 2 | - |
| - | 2 | 3 | 3 | 1 (relay) |
| - | CET-AP:1/CET-AR:20 | CTP-AP:1/CTP-AR:20 | CEM-AY:1/CEM-AR:20 | any |
| - | CET-AP | CTP-AP | - | - |
| ● | ● | - | - | ● |
| ● | ● | - | - | ● |
| 3500 mA | 200 mA | 150 mA | 150 mA | 4 A |
| ∞ | 1 x 10 ⁶ | 1 x 10 ⁶ | 1 x 10 ⁶ | 10 x 10 ⁶ |
| - | ● | ● | ● | - |
| 6 ms | CET-AP: 0.3 ms CET-AR: 0.8 ms | CTP-AP: 0.3 ms CTP-AR: 0.8 ms | CEM-AY: 0.8 ms CEM-AR: 0.8 ms | - |
| 171 x 40 x 40 mm | 166 x 42 x 41 mm | 190 x 42 x 40 mm | 140 x 40 x 40 mm | 114 x 99 x 22.5 mm 114 x 99 x 45 mm |
| -20 to +70 °C | -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) | IP65 / IP67 | IP20 |
| 27 mm | - | - | - | depending on the used read head |
| - | 6500 N | 2600 N | 600 N | - |
| plug connector M23 | plug connector M12/M23 | plug connector M12/M23 | plug connector M12/M23 | screw terminals |
| - | ● | ● | - | - |

¹⁾ applied

Safety Engineering at a Glance

| | | Safety Control Systems and Safety Relays | | | |
|------------------------------------|--|---|--|---|--------------------------------------|
| | | Small Safe Control System MSC (Basic modul) | Safety Relays ESM | 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 III C according to EN 574 for two-hand device | <ul style="list-style-type: none"> • Cat. 4 / PL e • stop category 0 and 1 • requirement level III C 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 • 2 OSSD outputs • 2 monitoring outputs • programmable • 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"> • 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 16 safe outputs (time-delay or non-time-delay) • LED status indicators • up to 28 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"> • via AS-Interface | |
| Input modules | | <ul style="list-style-type: none"> • up to 128 inputs (time-delay or non-time-delay) • LED status indicators | – | <ul style="list-style-type: none"> • via AS-Interface | |
| Connection data | | Switching current AC, max. | 400 mA DC / 0,02 – 6A | 6A / 8A | 3A |
| | | Switching voltage AC, max. | 250 V AC / 24 V DC | 250 V | 30V |
| | | Operating voltage | 24 V DC | 24 V AC/DC, 114/230 V AC | AS-Interface (30 V DC) oder 24 V DC |
| | | Mechanical life, max. | > 40 – 10 ⁶ | 1 x 10 ⁷ operating cycles | 1 x 10 ⁷ operating cycles |
| | | Connection type | plug-in screw terminals | plug-in screw terminals | plug-in spring terminals |
| Environment | | Housing material | plastic | plastic | stainless steel |
| | | Installation | DIN rail | DIN rail | DIN rail |
| | | Dimensions (HxWxD) | 114 x 99 x 22.5 mm | 114 x 99 x 22.5 mm | 120 x 96 x 100 mm |
| | | Ambient temperature (at U _b = 24 V) | -10 to +55 °C | -15 to +60 °C | 0 to +55 °C |
| | | Degree of protection according to IEC/EN 60529 | IP20 | IP20 | IP20 |
| LED indicators | | ● | ● | ● | |

Safety Engineering at a Glance

Bolts



| | | |
|------------------------------|----------------|---|
| Can be combined with | CES-C04 | CES-A-C, CES-A-LN, CES-C01, CEM, CET, CTP |
| Material | aluminum | metal |
| Door stop | left and right | left and right |
| Detent mechanism open/closed | ●/● | ●/● |
| Escape release | ● | ● |

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