CTP-L2-AR-U-HA-AZE-SH-137165 (ORDER NO. 137165)

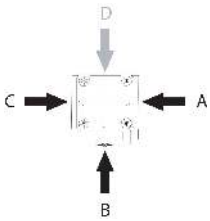
Transponder-coded safety switch CTP-AR, M23, emergency stop, 2 pushbuttons (extended)

- Safety switch with guard locking and integrated evaluation electronics
- Up to 20 switches in series
- Short circuit monitoring
- 2 safety outputs (semiconductor outputs)
- Up to category 4/PL e according to EN ISO 13849-1
- Emergency stop
- 2 pushbuttons (illuminated)
- With plug connector M23
- Unicode
- Door monitoring output
- Approach directions A, B and C (delivery state)



Description

Approach direction



Figure

Horizontal

Can be adjusted in 90° steps

Unicode evaluation

Each actuator is highly coded (unicode). The switch detects only taught-in actuators. Additional actuators can be taught-in. Only the last actuator taught-in is detected.

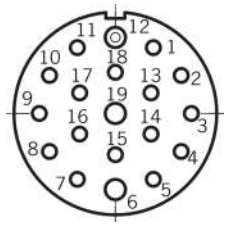
Guard locking type

CTP-L2 Guard locking actuated by power-ON applied and spring released (open-circuit current principle).

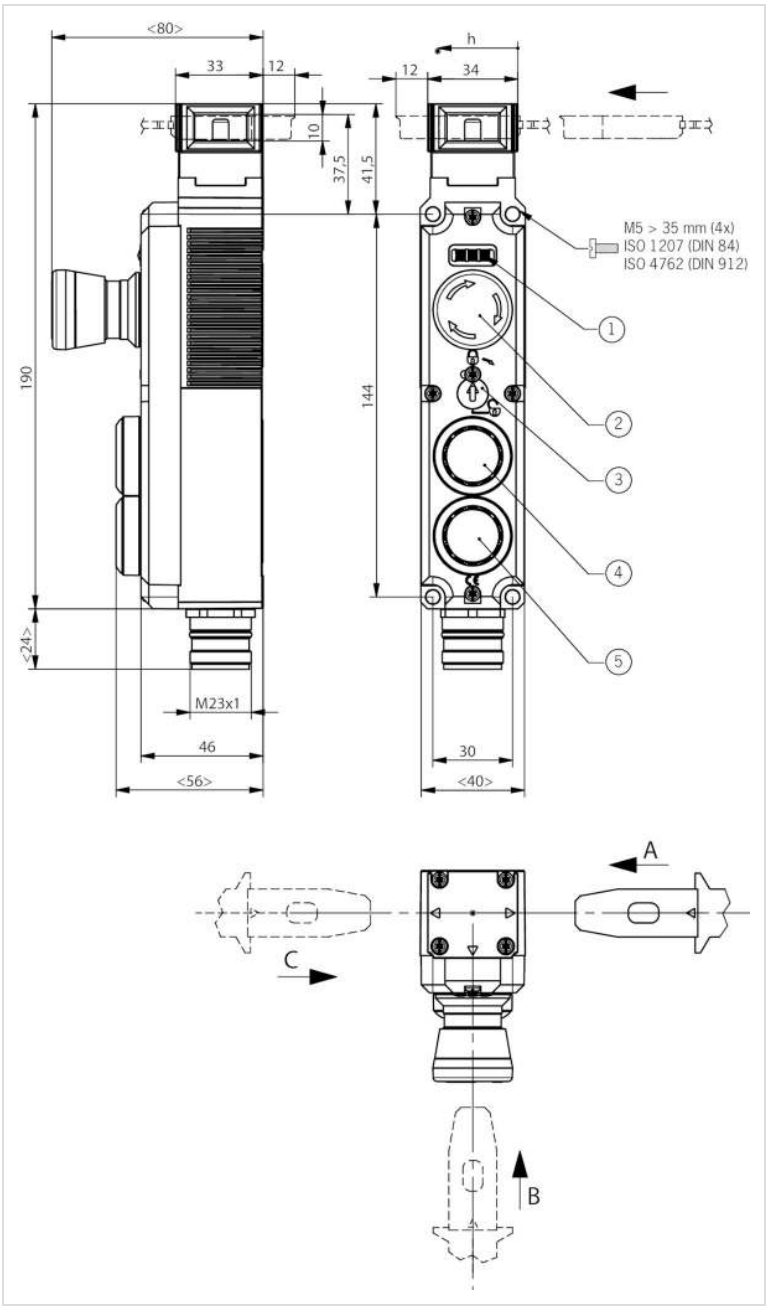
Color cover set

The color of the pushbutton can be selected using the color cover set included (5 colors). Item no.: 120344 (see Accessories)

Connector assignment

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	1	IMP	Operating voltage of guard locking solenoid, 24 V DC	VT
	2	FI1A	Enable input for channel 1	RD
	3	FI1B	Enable input for channel 2	GY
	4	FO1A	Safety output, channel 1	RD/BU
	5	FO1B	Safety output, channel 2	GN
	6	UB	Operating voltage of AR electronics, controls and indicators 24 V DC	BU
	7	RST	Reset input	GY/PK
	8	OD	Door monitoring output	GN/WH
	9	OI	Diagnostic output	YE/WH
	10	S1.A1	Emergency stop (channel A)	GY/WH
	11	S1.A2	Emergency stop (channel A)	BK
	12	FE	Function earth (must be connected to meet the EMC requirements)	GN/YE
	13	S1.B1	Emergency stop (channel B)	PK
	14	S1.B2	Emergency stop (channel B)	BN/GY
	15	S2	Pushbutton 2 (illuminated)	BN/YE
	16	H2	LED 2	BN/GN
	17	S3	Pushbutton 3 (illuminated)	WH
	18	H3	LED 3	YE
	19	0 V	Operating voltage of AR electronics, controls and indicators 0 V/guard locking solenoid 0 V	BN

Dimension drawing



1 LEDs

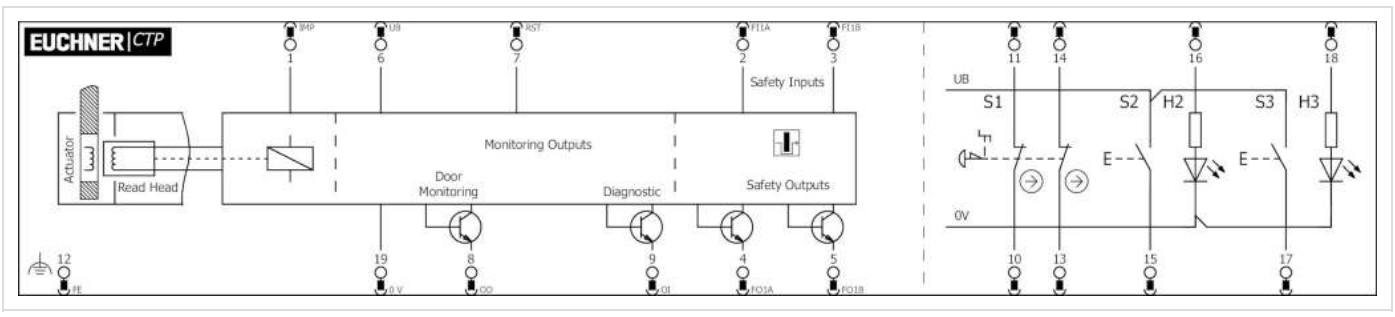
2 Emergency stop

3 Auxiliary release

4 Pushbutton 2 illuminated

5 Pushbutton 3 illuminated

Wiring diagram



Technical data

Approvals

Mechanical values and environment

Shock and vibration resistance	In acc. with EN 60947-5-3
Housing material	
Switch head cover	Die-cast zinc
Safety switch housing	Fiber glass reinforced thermoplastic
Weight	
Net	0,5 kg
Ambient temperature	
At U_B = 24V DC	-20 ... +55 °C
Degree of protection	IP65 (Screwed tight plug connector/mating component)
Mechanical life	1 x 10^6
Installation orientation	Any
Ready delay	8 s
Switching frequency	max.0,5 Hz
Connection	1 plug connector M23, 19-pin, RC18
Approach speed	max.20 m/min
Guard locking principle	Open-circuit current principle
Locking force F_{max}	3900 N
Locking force F_{Zh}	3000 N (Fzh = Fmax/1.3 Depending on the actuator used)
Retention force	20 N
Extraction force	20 N
Actuating force	10 N
Overtravel	5 mm

Electrical connection ratings

Test-pulse interval	min.140 ms
Test pulses	max.1,0 ms (Applies for a load with C ≤ 30nF and R ≤ 20kOhm)
Operating voltage DC	
U_{UB}	24 V DC -15% ... 15% Reverse polarity protected, regulated, residual ripple < 5%, PELV
Current consumption	
I_{IMP}	400 mA
I_{UB}	40 mA
Utilization category acc. to EN 60947-5-2	
DC-13	24V 150mA (Caution: outputs must be protected with a free-wheeling diode in case of inductive loads)
Solenoid operating voltage DC	
U_{IMP}	24 V DC -15% ... +10% Reverse polarity protected, regulated, residual ripple < 5%, PELV
Fusing	

External (operating voltage UB)	0,25 … 8 A
External (solenoid operating voltage IMP)	0,5 … 8 A
Rated insulation voltage U_i	50 V
Rated impulse withstand voltage U_{imp}	0,5 kV
Connection rating	6 W
EMC protection requirements	In acc. with EN IEC 60947-5-3
Solenoid duty cycle	100 %
Degree of contamination (external, according to EN 60947-1)	3
Safety class	
EN IEC 61140	III
Risk time according to EN 60947-5-3	
Single device	max.260 ms
Switching load	
According to UL	24V DC, class 2 (Alternatively see operating instructions)
	Safety outputs FO1A / FO1B
Type of output	2 semiconductor outputs, p-switching, short circuit-proof
Switching current	
Per safety output FO1A / FO1B	1 … 150 mA
Output voltage	
High U(FO1A) / U(FO1B)	UB-1,5 … UB V DC
Low U(FO1A) / U(FO1B)	0 … 1 V DC
Off-state current I_r	max.0,25 mA
Turn-on time	max.400 ms
Discrepancy time	
Both safety outputs	max.10 ms In acc. with EN IEC 60947-5-3
	Monitoring output OD
Type of output	p-switching, short circuit-proof
Switching current	1 … 50 mA
Output voltage	0,8xUB … UB V DC
	Monitoring output OI
Type of output	p-switching, short circuit-proof
Switching current	1 … 50 mA
Output voltage	0,8xUB … UB V DC
	Controls and indicators
Operating voltage	UB V
Operating current	1 … 50 mA
Power supply	
LED	24 V
Current consumption	
LED	10 mA
	Emergency stop
Operating voltage	5 … 24 V
Operating current	1 … 100 mA

Work area

Repeat accuracy R	
According to EN 60947-5-2	10 %

Controls and indicators

	Position 1
Version	Emergency stop
Slide-in label	
Special features	
Color	
Switching element	2 pos. driven NC

	Position 2
Version	Illuminated push buttons
Slide-in label	
Special features	
Color	
Switching element	1NO

	Position 3
Version	Illuminated push buttons
Slide-in label	
Special features	
Color	
Switching element	1NO

Other

Additional feature	Incl. cover set ID. No. 120344
For the approval acc. to UL the following applies	Operation only with UL class 2 power supply, or equivalent measures see operating instructions

Reliability values according to EN ISO 13849-1

	Monitoring of guard locking and the safety guard position
Category	4
Performance Level	PL e
PFH_D	4.1×10^{-9}
	Emergency stop
$B10_D$	$0{,}13 \times 10^6$
Mission time	20 y

Accessories

Actuator

Bent actuator for safety switches CTP



122667
A-C-H-W-SST-122667

- Actuator bent at top
- Two safety screws included



122668
A-C-H-W-SST-122668

- Actuator bent at bottom
- Two safety screws included

Hinged actuator for safety switch CTP



122675
A-C-H-RO-LS-122675

- Hinged actuator for doors hinged at the top
- Two safety screws included



122672
A-C-H-RR-LS-122672

- Hinged actuator for doors hinged on the right
- Two safety screws included



122676
A-C-H-RU-LS-122676

- Hinged actuator for doors hinged at the bottom
- Two safety screws included



122671
A-C-H-RL-LS-122671

- Hinged actuator for doors hinged on the left
- Two safety screws included

Straight actuator for safety switch CTP



126015
A-C-H-G-SST-126015

- Straight actuator
- Two safety screws included

Bolt

Bolt BTC-CTP-S for safety switch CTP



123659
BTC-CTP-S-TH-00-X

- Aluminum bolt
- For doors hinged on the left or right
- Can be locked in open position with padlocks
- Actuator included

Bolt BTM-UNIP-S... for safety switches TP, STP, STA and CTP



159951
BTM-UNIP-S-TH-00-X-159951

- Steel bolt
- For doors hinged on the left or right
- Can be locked in open position with padlocks
- Actuator not included

Bolt CTP-GFK for safety switch CTP



123657
RIEGEL CTP-GFK

- Fiber glass reinforced plastic bolt
- For doors hinged on the left or right
- Can be locked in open position with padlocks
- Actuator included

Bolts for safety switches series CTP



123653
RIEGEL CTP-AC-123653

- Steel bolt
- For doors hinged on the right or left
- Can be locked in open position with padlocks
- Actuator included

Connection material

Connection cable with plug connector M23 with option C1825, 1.5m, angled



092907
C-M23F19-19XDIFPU01,5-MA-092907

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 1.5 m
- With flying lead
- Cores color-coded



092906
C-M23F19-19XDIFPU01,5-MA-092906

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 1.5 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 1.5m, straight



092761
C-M23F19-19XDIFPU01,5-MA-092761

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 1.5 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 3m, angled



092908
C-M23F19-19XDIFPU03,0-MA-092908

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 3 m
- With flying lead
- Cores color-coded



092909
C-M23F19-19XDIFPU03,0-MA-092909

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 3 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 3m, straight



092816
C-M23F19-19XDIFPU03,0-MA-092816

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 3 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, angled



085194
C-M23F19-19XDIFPU06,0-MA-085194

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 6 m
- With flying lead
- Cores color-coded



077018
C-M23F19-19XDIFPU06,0-MA-077018

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 6 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, straight



077014
C-M23F19-19XDIFPU06,0-MA-077014

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 6 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, angled



085195
C-M23F19-19XDIFPU08,0-MA-085195

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 8 m
- With flying lead
- Cores color-coded



077019
C-M23F19-19XDIFPU08,0-MA-077019

- RC18 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 8 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, straight



077015
C-M23F19-19XDIFPU08,0-MA-077015

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 8 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, angled



092902
C-M23F19-19XDIFPU10,0-MA-092902

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 10 m
- With flying lead
- Cores color-coded



092901
C-M23F19-19XDIFPU10,0-MA-092901

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 10 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, straight



092898
C-M23F19-19XDIFPU10,0-MA-092898

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 10 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, angled



077020
C-M23F19-19XDIFPU15,0-MA-077020

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 15 m
- With flying lead
- Cores color-coded



085196
C-M23F19-19XDIFPU15,0-MA-085196

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 15 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, straight



077016
C-M23F19-19XDIFPU15,0-MA-077016

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 15 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, angled



092911
C-M23F19-19XDIFPU20,0-MA-092911

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable

- Cable length 20 m
- With flying lead
- Cores color-coded



092910
C-M23F19-19XDIFPU20,0-MA-092910

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 20 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, straight



092726
C-M23F19-19XDIFPU20,0-MA-092726

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 20 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, angled



092912
C-M23F19-19XDIFPU25,0-MA-092912

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit C (left)
- PUR cable
- Cable length 25 m
- With flying lead
- Cores color-coded



092913
C-M23F19-19XDIFPU25,0-MA-092913

- M23 plug connector, 18-pin + PE
- Angled plug connector
- Cable exit A (right)
- PUR cable
- Cable length 25 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, straight



092727
C-M23F19-19XDIFPU25,0-MA-092727

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 25 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 30m, straight



095993
C-M23F19-19XDIFPU30,0-MA-095993

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 30 m
- With flying lead
- Cores color-coded

Connection cable with plug connector M23 with option C1825, 40m, straight



102490
C-M23F19-19XDIFPU40,0-MA-102490

- M23 plug connector, 18-pin + PE
- Straight plug connector
- PUR cable
- Cable length 40 m
- With flying lead
- Cores color-coded

Female connector RC18 angled with option C1825

- Plug connector M23, angled



077026
RC18WF-C1825

- Plug connector M23, angled
- Number of pins: 19-pin with shield spring

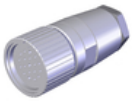
Female plug RC18 angled



074617
RC18WF

- Plug connector M23, angled
- Number of pins: 19-pin with shield spring

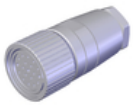
Female plug RC18 straight



074616
RC18EF

- Plug connector M23, straight
- Number of pins: 19-pin with shield spring

Female plug RC18 straight with option C1825



077025
RC18EF-C1825

- Plug connector M23, straight
- Number of pins: 19-pin with shield spring

Replacement crimp contacts for female connector RC18

094309
CRIMPKONTAKT BUCHSE RCF

- 19 crimp sockets
- Conductor cross-section 19 x 0.75 - 1 mm²
- For plug connector RC18

Replacement crimp contacts for female connector RC18 with option C1825

094310
CRIMPKONTAKT BUCHSE RCF-C1825

- 19 crimp sockets
- Conductor cross-section 16 x 0.25 - 0.5 mm² and 3 x 0.75 - 1 mm²
- For plug connector RC18..C1825

Function expansion

Lockout mechanism CTP



123411
AE-L-C-H-123411

- Prevents unintentional closing of the door
- Can be secured with padlocks

Miscellaneous accessories

Lens set 5 colors



120344
AY-SET-LNS-0001-120344



163284
AY-SET-LNS-0003-163284

Lens set 6 colors



120378
AY-SET-LNS-0002-120378

Lens set labeled



120377
AY-SET-LNS-SY01-120377



125359
AY-SET-LNS-SY02-125359



126158
AY-SET-LNS-SY03-126158



160049
AY-SET-LNS-SY05-160049

Mounting accessories

Efficient protection against tampering for safety switch mounting



161344
AM-C-SW4-V3-161344

- Plastic inserts for hexagon socket screws a/f 4
- Efficient protection against tampering for safety switch mounting
- The packaging includes inserts for 18 screws



161348
AM-C-SW5-V3-161348

- Plastic inserts for hexagon socket screws a/f 5
- Efficient protection against tampering for safety switch mounting
- The packaging includes inserts for 18 screws

Mounting plates AM-P for safety switches CTP



126026
AM-P-126026

- For vertical and horizontal mounting of safety switch CTP

Mounting plates EMP-B1 for actuators for safety switches CTP, TP...A, STA, STP, TX and TZ



093457
EMP-B1

Mounting plates EMP-B2 for actuators for safety switches CTP, TP...A, STA, STP, TX and TZ



093458
EMP-B2

Mounting plates EMP-SB for safety switches CTP, TP...A, STA, STP and TX



093456
EMP-SB

- For vertical and horizontal mounting of safety switches TP...A, STA, STP and TX

Contacts

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