



CSS 12-34-V-D-M-ST

- 1 x connector plug M12, 8-pole
- Actuation from top
- Max. 31 sensors can be wired in series.
- Thermoplastic enclosure
- Electronic contact-free, coded system
- Misaligned actuation possible
- 27 mm x 108.2 mm x 35 mm
- High repeat accuracy of the switching points
- Max. length of the sensor chain 200 m
- 2 short-circuit proof PNP safety outputs
- Integral cross-short, wire-breakage and external voltage monitoring of the safety cables up to the control cabinet

Data

Ordering data

Product type description	CSS 12-34-V-D-M-ST
Article number (order number)	101181065
EAN (European Article Number)	4030661314884
eCl@ss number, version 12.0	27-27-46-01
eCl@ss number, version 11.0	27-27-24-03
eCl@ss number, version 9.0	27-27-24-03
ETIM number, version 7.0	EC001829
ETIM number, version 6.0	EC001829

Approvals - Standards

Certificates	TÜV cULus UKCA
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General data

Standards	EN IEC 60947-5-3
Working principle	inductive
Housing construction form	Block
Installation conditions (mechanical)	not flush
Sensor topology	Sensor for series wiring
Housing material	Glass-fibre, reinforced thermoplastic
Active area	Glass-fibre, reinforced thermoplastic
Reaction time, maximum	30 ms
Duration of risk, maximum	60 ms
Gross weight	140 g

General data - Features

Diagnostic output	Yes
Short circuit detection	Yes
Cross-circuit detection	Yes
Safety functions	Yes
Cascadable	Yes
Integral system diagnostics, status	Yes
Number of LEDs	3
Number of semi-conductor outputs with signaling function	1
Number of fail-safe digital outputs	2
Number of series-wiring of sensors	31

Safety classification

Standards	EN ISO 13849-1 EN IEC 60947-5-3 EN IEC 61508
Performance Level, up to	e
Category	4
PFH value	3.60×10^{-9} /h
Safety Integrity Level (SIL), suitable for applications in	3
Mission time	20 Year(s)

Mechanical data

Actuating panels	Actuation from top
Active area	front side
Switching distance actuator	Actuator CST 34-V-1: 12 mm (typical switch distance Sn) Actuator CST 34-V-1: 10 mm (ensured switch distance ON Sao) Actuator CST 34-V-1: 15 mm (ensured switch distance OFF Sar) Actuator CST 34-S-1 / CST 34-S-3: 15 mm (typical switch distance Sn) Actuator CST 34-S-1 / CST 34-S-3: 13 mm (ensured switch distance ON Sao) Actuator CST 34-S-1 / CST 34-S-3: 18 mm (ensured switch distance OFF Sar) Actuator CST 34-S-2: 10 mm (typical switch distance Sn) Actuator CST 34-S-2: 8 mm (ensured switch distance ON Sao) Actuator CST 34-S-2: 16 mm (ensured switch distance OFF Sar) Actuator CST 180-1 / CST 180-2: 12 mm (typical switch distance Sn) Actuator CST 180-1 / CST 180-2: 10 mm (ensured switch distance ON Sao) Actuator CST 180-1 / CST 180-2: 16 mm (ensured switch distance OFF Sar)

Mechanical data - Switching distances according EN IEC 60947-5-3

Hysteresis (Switching distance), maximum	1.5 mm
Repeat accuracy R	0.5 mm
Note (Repeat accuracy R)	Axial offset: the front face allows for an axial misalignment (z) of max. ± 8 mm (see figure: operating principle).

Mechanical data - Connection technique

Note (length of the sensor chain)	Cable length and cross-section change the voltage drop depending on the output current
Note (series-wiring)	Unlimited number of devices, observe external line fusing, max. 31 devices in case of serial diagnostic SD
Termination	Connector plug M12, 8-pole
Wire cross-section	22 AWG

Mechanical data - Dimensions

Length of sensor	35 mm
Width of sensor	27 mm
Height of sensor	108.2 mm

Ambient conditions

Degree of protection	IP65 IP67
Ambient temperature	-25 ... +70 °C
Storage and transport temperature	-25 ... +85 °C
Resistance to vibrations	10 ... 55 Hz, amplitude 1 mm
Resistance to shock	30 g / 11 ms
Protection class	II

Ambient conditions - Insulation values

Rated insulation voltage U_i	32 VDC
Rated impulse withstand voltage U_{imp}	0.8 kV
Overvoltage category	III
Degree of pollution	3

Electrical data

No-load supply current I_0 , typical	100 mA
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Operating current	600 mA
Required rated short-circuit current	100 A
Utilisation category DC-12	24 VDC
Utilisation category DC-12	0.05 A
Utilisation category DC-13	24 VDC
Utilisation category DC-13	0.05 A
Note (Electrical data, Fuse rating)	(Circuit breaker)
Switching frequency, approx.	3 Hz
Utilisation category DC-12	24 VDC / 0.05 A

Electrical data - Safety digital outputs

Rated operating current (safety outputs)	250 mA
Output current, (fail-safe output), maximum	0.25 A
Design of control elements	p-type
Voltage drop U_d , maximum	0.5 V
Leakage current I_r , maximum	0.5 mA
Voltage, Utilisation category DC-12	24 VDC
Current, Utilisation category DC-12	0.25 A
Voltage, Utilisation category DC-13	24 VDC
Current, Utilisation category DC-13	0.25 A

Electrical data - Diagnostic outputs

Design of control elements	p-type
Voltage drop U_d , maximum	5 V

Voltage, Utilisation category DC-12	24 VDC
Current, Utilisation category DC-12	0.05 A
Voltage, Utilisation category DC-13	24 VDC
Current, Utilisation category DC-13	0.05 A

Electrical data - Electromagnetic compatibility (EMC)

Interfering radiation	IEC 61000-6-4
EMC rating	IEC 61000-6-2

Pin assignment

PIN 1	1A1 Ue: (1)
PIN 2	X1 Safety input 1
PIN 3	A2 GND
PIN 4	Y1 Safety output 1
PIN 5	OUT Diagnostic output OUT
PIN 6	X2 Safety input 2
PIN 7	Y2 Safety output 2
PIN 8	IN without function

Scope of delivery

Scope of delivery	Actuator must be ordered separately.
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Accessory

Recommendation (actuator)	CST 34-V-1 CST 34-S-2 CST 34-S-3 CST 180-1 CST 180-2
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Recommended safety
switchgear

PROTECT PSC1
SRB-E-301ST
SRB-E-201LC

Note

Note (General)

Evaluation requirements: dual-channel safety input, suitable for p-type sensors with NO function. The safety-monitoring module must tolerate internal functional tests of the sensors with cyclic switch-off of the sensor outputs for max. 0.5 ms. Short-circuit recognition by the evaluation is not necessary.

Ordering code

Product type description:
CSS (1)-34-(2)-(3)-(4)-M-(5)

(1)	
12	Actuation from top
14	Actuation from side
(2)	
without	Standard version
F0	Input for enabling pushbutton, suitable for automatic start
F1	Input for reset pushbutton, with edge monitoring
(3)	
S	lateral active surface
V	frontal active surface
(4)	
D	With diagnostic output
SD	Serial diagnostic output
(5)	
L	with connecting cable
ST	with connector

Pictures

Product picture (catalogue individual photo)



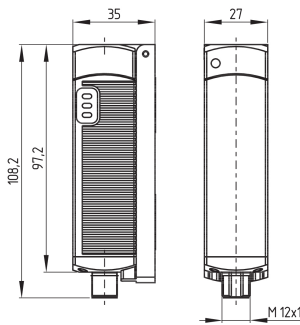
ID: kcsc3f10

| 346,8 kB | .jpg | 352.778 x 235.303 mm - 1000 x 667 px - 72 dpi

| 24,8 kB | .png | 74.083 x 49.389 mm - 210 x 140 px - 72 dpi

| 51,8 kB | .jpg | 123.472 x 82.197 mm - 350 x 233 px - 72 dpi

Dimensional drawing basic component



ID: 1css3g01

| 50,7 kB | .cdr |

| 4,4 kB | .png | 73.731 x 79.022 mm - 209 x 224 px - 72 dpi

| 204,8 kB | .jpg | 352.778 x 377.119 mm - 1000 x 1069 px - 72 dpi

Clipart

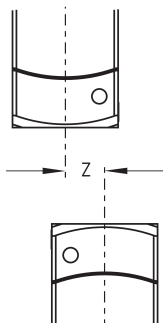


ID: kcsc3c07

| 16,0 kB | .cdr |

| 875,0 b | .png | 74.083 x 21.167 mm - 210 x 60 px - 72 dpi

Operating principle



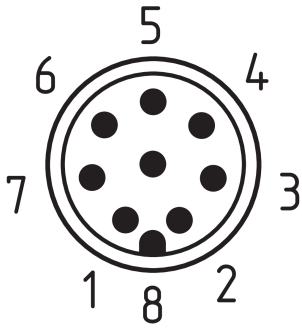
ID: kcsc3a10

| 22,4 kB | .cdr |

| 138,9 kB | .jpg | 352.778 x 705.556 mm - 1000 x 2000 px - 72 dpi

| 2,3 kB | .png | 74.083 x 148.167 mm - 210 x 420 px - 72 dpi

Contact arrangement



ID: km23-k8b

| 5,3 kB | .png | 73.731 x 79.728 mm - 209 x 226 px - 72 dpi

| 139,8 kB | .jpg | 352.778 x 380.647 mm - 1000 x 1079 px - 72 dpi

Schmersal France SAS, BP 18, 38181 Seyssins Cedex

The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.

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