



CSS 11-30S-D-M-ST

- Stainless steel enclosure
- Max. 31 sensors can be wired in series.
- Connector M12, 8-pole
- Ø M30
- 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
- Safety sensor can also be installed behind V4A covers.

Data

Ordering data

EAN (European Article Number)	4030661381664
eCl@ss number, Version 9.0	27-27-24-03
eCl@ss number, Version 11.0	27-27-24-03

Approval - Standards

Certificates	TÜV cULus EAC
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General data

Standards	IEC 61508 IEC 60947-5-3
Active principle	inductive

Housing construction form	Cylinder, thread
Installation conditions (mechanical)	not flush
Sensor topology	Sensor for series wiring
Enclosure material	Stainless steel
Gross weight	245 g
Reaction time, maximum	60 ms
Duration of risk, maximum	60 ms

General data - Features

Diagnostic output	Yes
Short circuit detection	Yes
Short-circuit recognition	Yes
Safety functions	Yes
Cascadable	Yes
Integral System Diagnostics, status	Yes
Number of LEDs	2
Number of semi-conductor outputs with signaling function	1
Number of fail-safe digital outputs	2
Number of Series-wiring of sensors	31

Safety appraisal

Standards	EN ISO 13849-1 IEC 60947-5-3 IEC 61508
Performance level, up to	e
Control category to EN13849	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
Hysteresis (Switch distance), maximum	2 mm
Repeat accuracy R R	1 mm

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

Switch distance	11 mm
Ensured switch distance "ON" S_{ao}	8 mm
Ensured switch distance "OFF" S_{ar}	15 mm

Mechanical data - Connection technique

Note	The cable section of the interconnecting cable must be observed for both wiring variants! Cable length and cable section alter the voltage drop depending on the output current
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Mechanical data - Dimensions

ISO thread of the sensor	M30
Length of sensor	99.5 mm

Ambient conditions

Degree of protection	IP69 to EN 60529
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+65 °C

Storage and transport temperature, minimum	-25 °C
Storage and transport temperature, maximum	+85 °C
Resistance to vibrations to EN 60068-2-6	10 ... 55 Hz, amplitude 1 mm
Resistance to shock	30 g / 11 ms
Protection rating	II

Ambient conditions - Insulation value

Rated insulation voltage U_i	32 VAC/DC
Rated impulse withstand voltage U_{imp}	0.8 kV
Overvoltage category	III
Degree of pollution to VDE 0100	3

Electrical data

Voltage type	DC (direct current)
No-load supply current I_0	100 mA
Rated operating voltage, minimum	20.4 VDC
Rated operating voltage, maximum	26.4 VDC
Operating current	600 mA
Required rated short-circuit current to EN 60947-5-1	100 A
Switching frequency, approx.	3 Hz

Electrical data - Fail-safe digital outputs

Rated operating current (safety outputs)	250 mA
Output current, (fail-safe output), maximum	0.25 A

Versions	p-type
Voltage drop U_d , maximum	0.5 V
Current leakage I_r	0.5 mA
Voltage, Utilisation category DC12	24 VDC
Current, Utilisation category DC12	0.25 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	0.25 A

Electrical data - Diagnostic output

Versions	p-type
Voltage drop U_d , maximum	5 V
Voltage, Utilisation category DC12	24 VDC
Current, Utilisation category DC12	0.05 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	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
PIN 6	X2 Safety input 2
PIN 7	Y2 Safety output 2
PIN 8	IN without function

Scope of delivery

Included in delivery	Actuators must be ordered separately.
Delivery scope of Mounting material	2x Mounting material M30 x 1.5 nuts

Accessory

Recommendation (actuator)	CST 30S-1
Recommended safety switchgear	PROTECT PSC1 SRB-E-301ST SRB-E-201LC

Notes

Note (General)	Evaluation requirements: The switch-off pauses of 250 µs – 1500 µs must be tolerated by the evaluation. The switch-off time of the safety sensor of 250 µs is additionally extended according the cable length and the capacity of the cable used. Typically a switch off time of 500 µs with 100 m of connection cable is reached.
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Schmersal, Inc., 15 Skyline Drive, Hawthorne, NY 10532

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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