

CSS 8-180-2P+D-E-L



- Pre-wired cable 5-pole
- Thermoplastic enclosure
- Misaligned actuation possible
- Electronic contact-free, coded system
- Max. length of the sensor chain 200 m
- 2 short-circuit proof PNP safety outputs
- Self-monitoring series-wiring of 16 sensors
- High repeat accuracy of the switching points
- Early warning when operating near the limit of the sensor's hysteresis range
- Comfortable diagnostics through sensor LED and electronic signalling output

Data

Ordering data

	CSS 8-180-2P+D-E-L
	101169552
EAN (European Article Number)	4030661295954
eCl@ss number, Version 9.0	27-27-24-03

Approval - Standards

IFA
cULus
EAC

General data

	CSS 180
	IEC 61508
	IEC 60947-5-3
Active principle	inductive

Housing construction form Cylinder, thread

Installation conditions
(mechanical) not flush

Sensor topology Individual sensor or end sensor in a series

Enclosure material Glass-fibre, reinforced thermoplastic

Active area Glass-fibre, reinforced thermoplastic

Material of the nuts Glass-fibre, reinforced thermoplastic

Gross weight 150 g

Reaction time, maximum 30 ms

Duration of risk,
maximum 30 ms

General data - Features

Short circuit detection Yes

Short-circuit recognition Yes

Safety functions Yes

Integral System
Diagnostics, status Yes

Number of semi-
conductor outputs with
signaling function 1

Number of fail-safe
digital outputs 2

Number of Series-wiring
of sensors 16

Safety appraisal

ISO 13849-1
IEC 60947-5-3
IEC 61508

Performance level, up to e

Control category to
EN13849 4

PFH-value $2.50 \times 10^{-9} /h$

Safety Integrity Level
(SIL), applicable for 3

Mission Time 20 Year(s)

Mechanical data

Switch distance 8 mm

Ensured switch distance
"ON" S_{ao} 7 mm

Ensured switch distance
"OFF" S_{ar} 10 mm

Hysteresis (Switch
distance), maximum 0.7 mm

Repeat accuracy R R	0.2 mm
Tightening torque of nuts, maximum	3 Nm

Mechanical data - Connection technique

Terminal Connector	Cable
Length of cable	2 m
Terminal connector, Output	5-pole
Wire cross-section	0.4 mm ²
Wire cross-section	22 AWG

Mechanical data - Dimensions

	M18
width across flats	24 BK
Length of sensor	92 mm

Ambient conditions

Protection class	IP 65 to IEC/EN 60529 IP 67 to IEC/EN 60529
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+60 °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 30 g / 11 ms II

Ambient conditions - Insulation value

Rated impulse withstand voltage	0.8 kV III 3
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Electrical data

Voltage type	DC (direct current)
Operating voltage, minimum	20.4 VDC

Operating voltage, maximum	26.4 VDC
No-load current	50 mA
	24 VDC
Operating current	1,000 mA
Switching frequency, approx.	3 Hz

Electrical data - Fail-safe digital outputs

Rated operating current (safety outputs)	500 mA
Output current, (fail-safe output), maximum	0.5 A
Versions	p-type
Voltage drop U_d , maximum	0.5 V
Current leakage	0.5 mA
Voltage, Utilisation category DC12	24 VDC
Current, Utilisation category DC12	0.5 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	0.5 A

Electrical data - Diagnostic output

	24 VDC
Versions	p-type
Voltage drop U_d , maximum	4 V
Voltage, Utilisation category DC12	24 VDC
Current, Utilisation category DC12	0.1 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	0.1 A

Status indication

Note (LED switching conditions display)	Multi-coloured LED: Green, Red, Yellow
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Pin assignment

PIN 1	A1 Ue Brown
PIN 2	Y2 safety output 2: White
PIN 3	A2 GND Blue
PIN 4	Y1 Safety output 1 Black
PIN 5	signalling output: Grey

Scope of delivery

Included in delivery	Actuators must be ordered separately.
Delivery scope of Mounting material	2x nuts M18 x 1

Accessory

CST 180-1
CST 180-2
PROTECT PSC1
SRB-E-301ST
SRB-E-201LC

Notes

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. 0.25 ms. Short-circuit recognition by the evaluation is not necessary.
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Ordering code

Product type description:

CSS 8-180-(1)-(2)-(3)

(1)

2P 2 short-circuit proof PNP safety outputs

2P+D 2 short-circuit proof PNP safety outputs and diagnostic output

(2)

E Individual sensor or end sensor in a series

Y Series-wiring

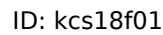
M Multifunction connection

(3)

L Cable

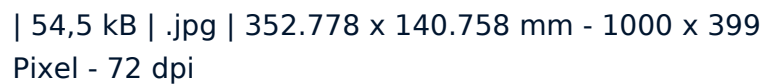
ST Connector plug

Photo/Product/Catalogue



| 188,8 kB | .jpg | 352.778 x 164.747 mm - 1000 x 467
Pixel - 72 dpi

ID: 1css1g01

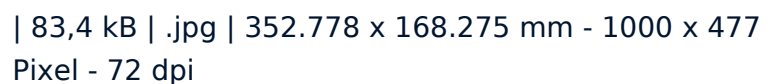


Graphic/Product/Contact



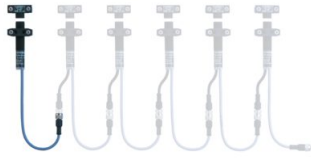
| 15,4 kB | .cdr |

ID: kc551d03



| 22,0 kB | .cdr |

Graphic/Product/Wiring



ID: kcs18f21

| 127,3 kB | .jpg | 352.778 x 178.858 mm - 1000 x 507
Pixel - 72 dpi

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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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