

CSS8-180-2P-E-LST



- Connector M12, 4-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

Data

Ordering data

Product type description	CSS 8-180-2P-E-LST
Article number (order number)	101167897
EAN (European Article Number)	4030661219516
eCl@ss number, Version 9.0	27-27-24-03

Certifications

Certificates	IFA cULus EAC
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General data

Product name	CSS 180
Standards	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	140.000 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	Yes
Diagnostics, status	Yes
Number of fail-safe digital outputs	2
Number of Series-wiring of sensors	16

Safety appraisal

Standards	ISO 13849-1 IEC 60947-5-3 IEC 61508
Performance Level	e
Control category to EN13849	4
PFH-value	$2.50 \times 10^{-9} /h$
Safety Integrity Level (SIL)	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 with connector
Length of cable	2 m
Terminal connector, Output	M12 connector, 4 pole

Mechanical data - Dimensions

ISO thread of the sensor	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
Resistance to shock	30 g / 11 ms II

Ambient conditions - Insulation value

Rated impulse withstand voltage	0.8 kV III
Degree of pollution to VDE 0100	3

Electrical data

Voltage type	DC (direct current)
Operating voltage, minimum	20.4 VDC
Operating voltage, maximum	26.4 VDC
No-load current	50 mA
Rated operating voltage	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

P-type
0.5 V

Current leakage 0.5 mA

Status indication

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

Pin assignment

PIN 1 1A1 Ue: (1)

PIN 2 Y2 Safety output 2

PIN 3 A2 GND

PIN 4 Y1 Safety output 1

Scope of delivery

Included in delivery Actuators must be ordered separately.

Delivery scope of Mounting
material 2x nuts M18 x 1

Accessory

Recommendation
(actuator) 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.

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

LST Cable with connector

ST Connector plug

Pictures

Product picture (catalogue individual photo)

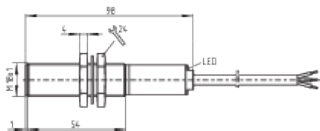


ID: kcs18f01

| 15,4 kB | .png | 74.083 x 34.572 mm - 210 x 98 Pixel - 72 dpi

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

Dimensional drawing basic component



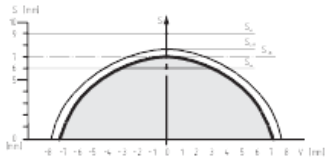
ID: 1css1g01

| 4,9 kB | .png | 74.083 x 29.633 mm - 210 x 84 Pixel - 72 dpi

| 24,2 kB | .cdr |

| 54,5 kB | .jpg | 352.778 x 140.758 mm - 1000 x 399 Pixel - 72 dpi

Characteristic curve



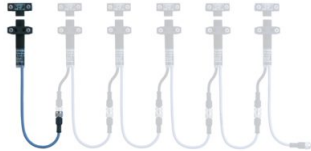
ID: kcsl1d03

| 3,0 kB | .png | 74.083 x 35.278 mm - 210 x 100 Pixel
- 72 dpi

| 83,4 kB | .jpg | 352.778 x 168.275 mm - 1000 x 477
Pixel - 72 dpi

| 22,0 kB | .cdr |

Wiring example



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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