

## CSS8-180-2P+D-M-LST



- Thermoplastic enclosure
- Misaligned actuation possible
- Cable with connector M12, 8-pole
- 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

Product type description	CSS 8-180-2P+D-M-LST
Article number (order number)	101169560
EAN (European Article Number)	4030661296005
eCl@ss number, Version 9.0	27-27-24-03

#### Certifications

Certificates	IFA cULus EAC
--------------	---------------------

#### 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	Sensor for series wiring 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	138.000 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 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

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, Input/Output	M12 connector, 8 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

### Electrical data - Diagnostic output

Rated operating voltage 24 VDC

P-type

4 V

### Status indication

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

### Pin assignment

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

### 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)



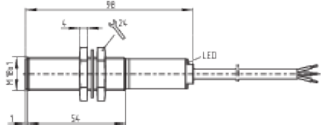
ID: kcs18f01

| 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



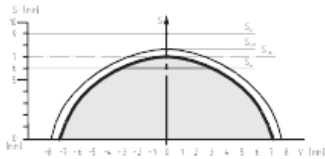
| 4,9 kB | .png | 74.083 x 29.633 mm - 210 x 84 Pixel - 72 dpi

| 24,2 kB | .cdr |

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

### Characteristic curve

ID: kcss1d03



| 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 |

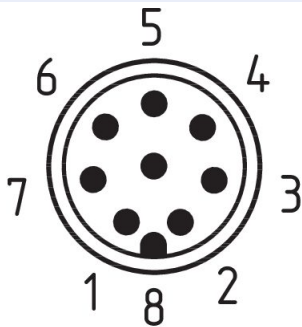
### Family picture (group photo)



ID: kcs18f19

| 176,6 kB | .jpg | 352.778 x 222.603 mm - 1000 x 631 Pixel - 72 dpi

### Contact arrangement



ID: km23-k8b

| 18,2 kB | .cdr |

K.A. Schmersal GmbH & Co. KG, Möddinghofe 3, D-42279 Wuppertal

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.

Generated on 13.08.2020 18:51:58