CSS 8-180-2P-E-L



- **Pre-wired cable 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 hysteris range**

Data

Ordering data	
	CSS 8-180-2P-E-L
	101167896
EAN (European Article Number)	4030661219509
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	137.4 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 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	2.50×10^{-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	4-pole
Wire cross-section	0.5 mm^2
Wire cross-section	20 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
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
Status indication	
Note (LED switching conditions display)	Multi-coloured LED: Green, Red, Yellow
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
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.

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

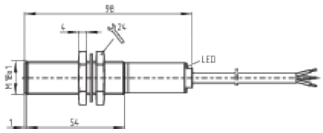
Photo/Product/Catalogue



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

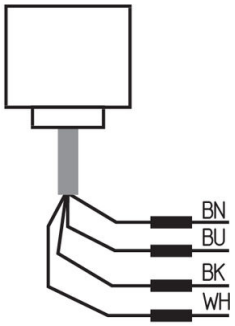
Dimension/Product/Basic



ID: 1css1g01

| 24,2 kB | .cdr |
| 54,5 kB | .jpg | 352.778 x 140.758 mm - 1000 x 399 Pixel - 72 dpi
| 4,9 kB | .png | 74.083 x 29.633 mm - 210 x 84 Pixel - 72 dpi

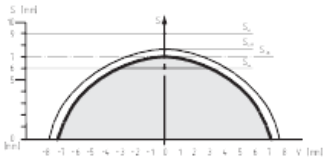
Graphic/Product/Contact



ID: kcss1k06

| 14,9 kB | .cdr |
| 92,4 kB | .jpg | 352.778 x 496.006 mm - 1000 x 1406 Pixel - 72 dpi

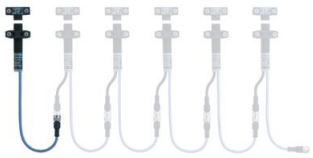
Diagramm/Product/Curve



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 |

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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