

## CSS 12-34F0-V-D-M-ST

- Thermoplastic enclosure
- 27 mm x 108.2 mm x 35 mm
- Misaligned actuation possible
- 1 x connector plug M12, 8-pole
- Electronic contact-free, coded system
- Max. length of the sensor chain 200 m
- 2 short-circuit proof PNP safety outputs
- High repeat accuracy of the switching points
- To control positive-guided relay without downstream safety monitoring module
- without edge monitoring of the enabling pushbutton, suitable for automatic start
- Integral cross-short, wire-breakage and external voltage monitoring of the safety cables up to the control cabinet
- Suitable as individual or terminal device in series-wiring of standards sensors to replace a safety monitoring module
- Self-monitored series-wiring of up to 30 CSS 34 sensors and one CSS 34F0/F1 sensor for control category 4 to ISO 13849-1



### Data

#### Ordering data

CSS 12-34F0-V-D-M-ST  
101189088

|                               |               |
|-------------------------------|---------------|
| EAN (European Article Number) | 4030661354880 |
| eCl@ss number, Version 9.0    | 27-27-24-03   |

### Approval - Standards

TÜV  
cULus  
EAC

### General data

|                                      |                                       |
|--------------------------------------|---------------------------------------|
|                                      | CSS 34                                |
|                                      | IEC 60947-5-3                         |
| Active principle                     | inductive                             |
| Housing construction form            | Block                                 |
| Installation conditions (mechanical) | not flush                             |
| Sensor topology                      | Sensor for series wiring              |
| Enclosure material                   | Glass-fibre, reinforced thermoplastic |
| Active area                          | Glass-fibre, reinforced thermoplastic |
| Gross weight                         | 146 g                                 |
| Reaction time, maximum               | 30 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 |
| Input for enabling pushbutton, suitable for automatic start | Yes |
| Integral System Diagnostics, status                         | Yes |
| Number of LEDs                                              | 3   |
| 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

|                                                 |                                           |
|-------------------------------------------------|-------------------------------------------|
|                                                 | ISO 13849-1<br>IEC 60947-5-3<br>IEC 61508 |
| Performance level, up to                        | e                                         |
| Control category to<br>EN13849                  | 4                                         |
| PFH-value                                       | $3.60 \times 10^{-9} /h$                  |
| Safety Integrity Level<br>(SIL), applicable for | 3                                         |
| Mission Time                                    | 20 Year(s)                                |

## Mechanical data

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actuating panels                          | Actuation from top                                                                                                                                                                                                                                                                                                                                                                                   |
| Active area                               | front side                                                                                                                                                                                                                                                                                                                                                                                           |
| Switch distance                           | 15 mm                                                                                                                                                                                                                                                                                                                                                                                                |
| Ensured switch distance<br>"ON" $S_{ao}$  | 8 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ensured switch distance<br>"OFF" $S_{ar}$ | 18 mm                                                                                                                                                                                                                                                                                                                                                                                                |
| Actuator switch distance                  | Actuator CST 34-V-1: 12 mm<br>Actuator CST 34-S-2: 10 mm<br>Actuator CST 34-S-3: 15 mm<br>Actuator CST 180-1 / CST 180-2: 12 mm<br>Actuator CST 34-V-1: 10 mm<br>Actuator CST 34-S-2: 8 mm<br>Actuator CST 34-S-3: 13 mm<br>Actuator CST 180-1 / CST 180-2: 10 mm<br>Actuator CST 34-V-1: 15 mm<br>Actuator CST 34-S-2: 16 mm<br>Actuator CST 34-S-3: 18 mm<br>Actuator CST 180-1 / CST 180-2: 16 mm |
| Hysteresis (Switch<br>distance), maximum  | 1.5 mm                                                                                                                                                                                                                                                                                                                                                                                               |
| Repeat accuracy R R                       | 0.5 mm                                                                                                                                                                                                                                                                                                                                                                                               |
| Note (Repeat accuracy $R$ )               | Axial offset: the front face allows for an axial misalignment (z) of max. $\pm 8$ mm<br>(see figure: operating principle).                                                                                                                                                                                                                                                                           |

## Mechanical data - Connection technique

|                    |                                                                                                                                                                                 |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Terminal Connector | Connector plug M12, 8-pole                                                                                                                                                      |
| 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 |

### Mechanical data - Dimensions

|                  |          |
|------------------|----------|
| Height of sensor | 108.2 mm |
| Length of sensor | 35 mm    |
| Width of sensor  | 27 mm    |

### Ambient conditions

|                                               |                                                        |
|-----------------------------------------------|--------------------------------------------------------|
| Protection class                              | IP 65 to IEC/EN 60529<br>IP 67 to IEC/EN 60529         |
| Ambient temperature,<br>minimum               | -25 °C                                                 |
| Ambient temperature,<br>maximum               | +70 °C                                                 |
| Storage and transport<br>temperature, minimum | -25 °C                                                 |
| Storage and transport<br>temperature, maximum | +85 °C                                                 |
| Resistance to vibrations<br>to EN 60068-2-6   | 10 ... 55 Hz, amplitude 1 mm<br><br>30 g / 11 ms<br>II |

### Ambient conditions - Insulation value

|                                    |                        |
|------------------------------------|------------------------|
| Rated impulse withstand<br>voltage | 0.8 kV<br><br>III<br>3 |
|------------------------------------|------------------------|

### Electrical data

|                                                             |                     |
|-------------------------------------------------------------|---------------------|
| Voltage type                                                | DC (direct current) |
| No-load current                                             | 100 mA              |
| Operating current                                           | 600 mA              |
| Required rated short-<br>circuit current to EN<br>60947-5-1 | 100 A               |
| Switching frequency,<br>approx.                             | 3 Hz                |

### Electrical data - Fail-safe digital outputs

|                                                |        |
|------------------------------------------------|--------|
| Rated operating current<br>(safety outputs)    | 250 mA |
| Output current, (fail-safe<br>output), maximum | 0.3 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 | 0.3 A  |
| Voltage, Utilisation category DC13 | 24 VDC |
| Current, Utilisation category DC13 | 0.3 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 | 0.1 A  |
| Voltage, Utilisation category DC13 | 24 VDC |
| Current, Utilisation category DC13 | 0.1 A  |

#### Electrical data - Electromagnetic compatibility (EMC)

IEC 61000-6-4  
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 OUT |
| 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. |
|----------------------|---------------------------------------|

#### Accessory

CST 34-V-1  
CST 34-S-2  
CST 34-S-3  
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. 0.5 ms. Short-circuit recognition by the evaluation is not necessary.

## Ordering code

Product type description:

CSS (1)-34-(2)-(3)-(4)-M-(5)

(1)

**12** Actuation from top

**14** Actuation from side

(2)

**without** Standard version

**F0** Input for enabling pushbutton, suitable for automatic start

**F1** Input for reset pushbutton, with edge monitoring

(3)

**S** lateral active surface

**V** frontal active surface

(4)

**D** With diagnostic output

**SD** Serial diagnostic output

(5)

**L** with connecting cable

**ST** with connector

## Pictures

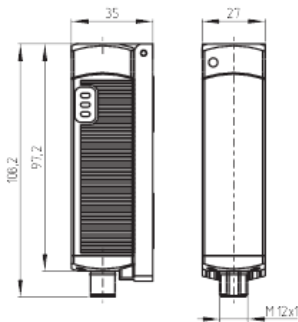
## Photo/Product/Catalogue



ID: kcsc3f09

| 273,0 kB | .jpg | 352.778 x 235.303 mm - 1000 x 667  
Pixel - 72 dpi  
| 21,0 kB | .png | 74.083 x 49.389 mm - 210 x 140  
Pixel - 72 dpi

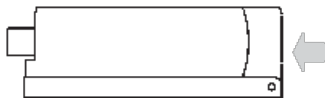
## Dimension/Product/Basic



ID: 1css3g01

| 4,4 kB | .png | 73.731 x 79.022 mm - 209 x 224 Pixel  
- 72 dpi  
| 50,7 kB | .cdr |  
| 204,8 kB | .jpg | 352.778 x 377.119 mm - 1000 x  
1069 Pixel - 72 dpi

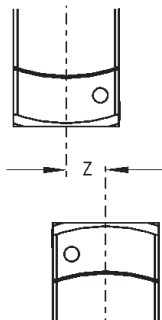
## Graphic/Clipart



ID: kcsc3c07

| 875,0 b | .png | 74.083 x 21.167 mm - 210 x 60 Pixel  
- 72 dpi  
| 16,0 kB | .cdr |

## Illustration/Product/Function



ID: kcsc3a10

| 2,3 kB | .png | 74.083 x 148.167 mm - 210 x 420  
Pixel - 72 dpi  
| 138,9 kB | .jpg | 352.778 x 705.556 mm - 1000 x  
2000 Pixel - 72 dpi  
| 22,4 kB | .cdr |

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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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