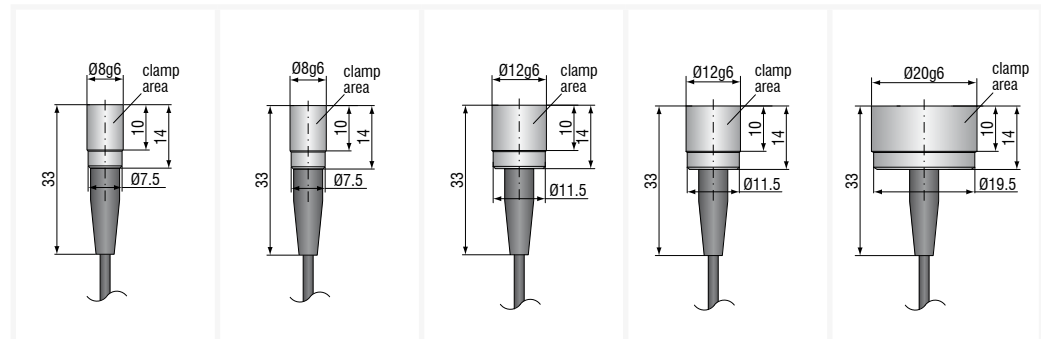




# More Precision

**capa<sup>NC</sup>DT** // Capacitive displacement sensors and systems





| Sensor type                        |                    | CSH02-CAM1,4                    | CSH05-CAM1,4                    | CSH1-CAM1,4                     | CSH1,2-CAM1,4                  | CSH2-CAM1,4                     |
|------------------------------------|--------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|
| Article No.                        |                    | 6610086                         | 6610087                         | 6610088                         | 6610089                        | 6610107                         |
| Measuring range                    | reduced            | 0.1 mm                          | 0.25 mm                         | 0.5 mm                          | 0.6 mm                         | 1 mm                            |
|                                    | nominal            | 0.2 mm                          | 0.5 mm                          | 1 mm                            | 1.2 mm                         | 2 mm                            |
|                                    | extended           | 0.4 mm                          | 1 mm                            | 2 mm                            | 2.4 mm                         | 4 mm                            |
| Linearity <sup>1)</sup>            |                    | $\leq \pm 0.054 \mu\text{m}$    | $\leq \pm 0.13 \mu\text{m}$     | $\leq \pm 0.13 \mu\text{m}$     | $\leq \pm 0.84 \mu\text{m}$    | $\leq \pm 0.5 \mu\text{m}$      |
|                                    |                    | $\leq \pm 0.027 \% \text{ FSO}$ | $\leq \pm 0.026 \% \text{ FSO}$ | $\leq \pm 0.013 \% \text{ FSO}$ | $\leq \pm 0.07 \% \text{ FSO}$ | $\leq \pm 0.025 \% \text{ FSO}$ |
| Resolution <sup>1) 2)</sup>        | static 2 Hz        | 0.15 nm                         | 0.38 nm                         | 0.75 nm                         | 0.9 nm                         | 1.5 nm                          |
|                                    | dynamic 8.5 kHz    | 4 nm                            | 10 nm                           | 20 nm                           | 24 nm                          | 40 nm                           |
| Temperature stability              | Zero <sup>5)</sup> | -19 nm/K                        | -19 nm/K                        | -19 nm/K                        | -19 nm/K                       | -19 nm/K                        |
|                                    | Sensitivity        | -2.4 nm/K                       | -6 nm/K                         | -12 nm/K                        | -14.4 nm/K                     | -24 nm/K                        |
| Temperature range                  | Operation          | -50 ... +200 °C                 | -50 ... +200 °C                 | -50 ... +200 °C                 | -50 ... +200 °C                | -50 ... +200 °C                 |
|                                    | Storage            | -50 ... +200 °C                 | -50 ... +200 °C                 | -50 ... +200 °C                 | -50 ... +200 °C                | -50 ... +200 °C                 |
| Humidity <sup>3)</sup>             |                    | 0 % ... 95 % r.H.               | 0 % ... 95 % r.H.               | 0 % ... 95 % r.H.               | 0 % ... 95 % r.H.              | 0 % ... 95 % r.H.               |
| Dimensions <sup>4)</sup>           |                    | Ø8 × 14 mm                      | Ø8 × 14 mm                      | Ø12 × 14 mm                     | Ø12 × 14 mm                    | Ø20 × 14 mm                     |
| Active measuring area              |                    | Ø2.6 mm                         | Ø4.1 mm                         | Ø5.7 mm                         | Ø6.3 mm                        | Ø8.1 mm                         |
| Guard ring width                   |                    | 1.9 mm                          | 1.2 mm                          | 2.4 mm                          | 2.1 mm                         | 4.4 mm                          |
| Minimum target diameter            |                    | Ø7 mm                           | Ø7 mm                           | Ø11 mm                          | Ø11 mm                         | Ø17 mm                          |
| Weight (incl. cable and connector) |                    | 30 g                            | 30 g                            | 33 g                            | 33 g                           | 38 g                            |
| Material                           | Housing            | 1.4104 (magn.)                  | 1.4104 (magn.)                  | 1.4104 (magn.)                  | 1.4104 (magn.)                 | 1.4104 (magn.)                  |
| Connection                         | Cable integrated   | Ø2.1 mm × 1.4 m axial           | Ø2.1 mm × 1.4 m axial           | Ø2.1 mm × 1.4 m axial           | Ø2.1 mm × 1.4 m axial          | Ø2.1 mm × 1.4 m axial           |
| Mounting                           |                    | clamping                        | clamping                        | clamping                        | clamping                       | clamping                        |

FSO = Full Scale Output CSH Sensors are matched to controller with standard cable length

<sup>1)</sup> Valid with reference controller, relates to standard measuring range

<sup>2)</sup> RMS value of the signal noise

<sup>3)</sup> Non condensing

<sup>4)</sup> Without cable, bend protection and crimp

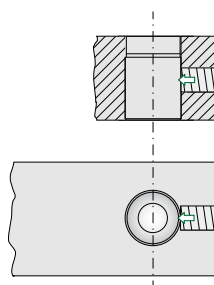
<sup>5)</sup> In the case of a sensor mounting 2 mm behind front surface

### Mounting cylindrical sensors

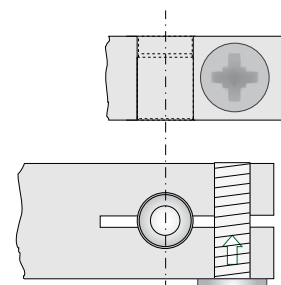
All sensors can be installed as both freestanding and flush units.

The sensors can be clamped or fastened using a collet.

#### Mounting with set screw (plastic)



#### Mounting with collet



### Important!

All Micro-Epsilon sensors are short circuit proof. Unlike other systems the pre-amplifier will not get damaged, if the front face of the sensor gets shorted by touching the conductive target.

## Sensors and Systems from Micro-Epsilon



Sensors and systems for displacement, distance and position



Sensors and measurement devices for non-contact temperature measurement



Measuring and inspection systems for metal strips, plastics and rubber



Optical micrometers and fiber optics, measuring and test amplifiers



Color recognition sensors, LED analyzers and inline color spectrometers



3D measurement technology for dimensional testing and surface inspection