



# More Precision

**thermoMETER**  
Non-contact IR temperature sensors





### thermoMETER CS

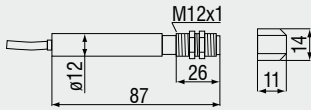
*This self contained, non contact infrared temperature sensor requires no external signal condition controller, which makes it an ideal product for OEM applications. It is fully programmable via the digital interface and provides an accurate temperature reading via the analogue or digital interface.*

- Measuring range from -40 to 400°C
- Robust precision silicon optics with AR coating
- Integrated controller with LED alarm indicator and smart electronic sighting support, selfdiagnostic or temperature code indication
- Up to 80°C ambient temperature without cooling
- Short circuit and reverse polarity protection
- Field programmable
- Several outputs: 0-10 V or 0-5 V free scalable, thermocouple type K, alarmoutput or digital output
- USB programming interface and software, direct serial 9.6 kBaud interface
- Wide input range: 5 - 30VDC
- *Please note: available from 10 pieces*

### Optical specifications thermoMETER CS

□ = smallest spot size (mm)

Standard Focus optics										
<b>SF15</b>	<b>15:1</b>	7	8	13	20	27	33	40	47	53
<i>distance in mm</i>		0	100	200	300	400	500	600	700	800
Close Focus optics (CF lense optional available)										
<b>CF15</b>	<b>15:1</b>	7	5	0.8	5	11	16	21	27	32
<i>distance in mm</i>		0	5	10	15	20	25	30	35	40



### Product identification

**CS - SF15 - C1**

Cable length [1m (standard) / 3m / 8m / 15m]  
 Focus [SF]  
 thermoMETER CS

Model	CS-SF15-C1	CSTK-SF15-C1
Optical resolution	15:1	
Temperature range <sup>1</sup>	-40 to 400°C	
Spectral range	8 to 14µm	
System accuracy <sup>2</sup>	±1.5% or ±1.5°C	
Repeatability <sup>2</sup>	±0.75% or ±0.75°C	
Temperature resolution <sup>3</sup>	±0.1°C	
Response time	25ms to 999s (90%), adjustable	
Emissivity/gain	0.100 to 1.100 (adjustable via 0 to 5V DC input or software)	
Transmissivity/gain <sup>1</sup>	0.100 to 1.100	
Signal processing <sup>1</sup>	peak hold, valley hold, average; extended hold function with threshold and hysteresis	
Certificate of calibration	optional	
Outputs/analogue	0 to 5V or 0 to 10V 1/10/100mV/°C	additional thermocouple type K 0 to 5V or 0 to 10V
Output/alarm	0 to 30V / 50mA (open collector)	
3-state alarm output	adjustable threshold values and voltage level for: no alarm, pre-alarm, alarm	
Outputs/digital	optional	uni/bidirectional, 9.6 kBaud, 0/3V digital level/USB optional
LED functions	alarm indication, automatic aiming support, self diagnostic, temperature indication (via temp. code)	
Inputs	programmable functional input for external emissivity/ambient temperature adjustment (0 to 5VDC), hold function or RS232 / USB (optional) communication	
Cable length	1m (standard), 3m, 8m, 15m	
Power supply	4mA (without LED), 10mA (5 to 30VDC)	
Environmental rating	IP 63 (NEMA-4)	
Ambient temperature	-20°C to 80°C	
Storage temperature	-20°C to 85°C	
Relative humidity	10 to 95%, non condensing	
Vibration	IEC 68-2-6: 3G, 11 to 200Hz, any axis	
Shock	IEC 68-2-27: 50G, 11ms, any axis	
Weight	58g	

<sup>1</sup> adjustable via software

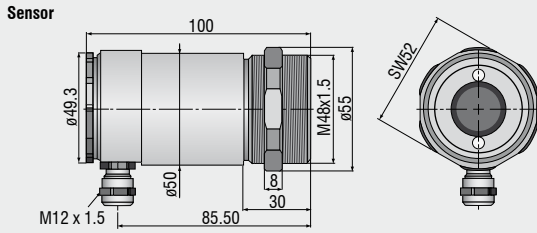
<sup>2</sup> ± ambient temperature: 23 ±5°C; whichever is greater; object temperature ≥0°C

<sup>3</sup> temperature of the object <100°C and time constant >0.2s

### Accessories page 56 - 57

- ▶ CF lense
- ▶ Protective window
- ▶ Mounting bracket / Mounting bolt
- ▶ Air purge collar
- ▶ Right angle mirror
- ▶ Software CompactConnect
- ▶ USB Kit

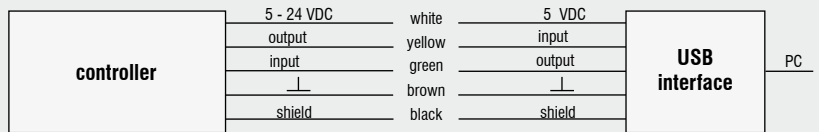
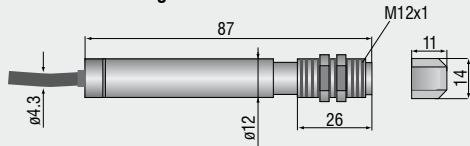
**CSLaser**



**CS**

sensor with integrated controller

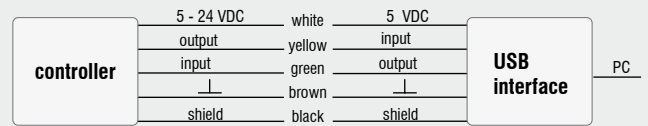
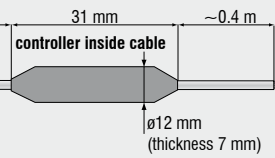
CF lense



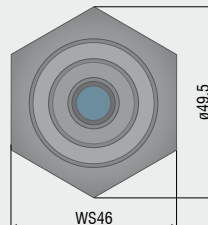
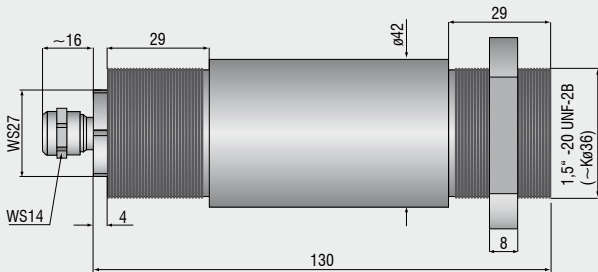
**CSmicro / CSmicro 2W**

CF lense

sensor



**CX**



**Mechanical accessories CS / CSmicro / CSmicro 2W**

Art. No.	Model	Description
2970279	TM-FB-CS	Mounting bracket, fixed
2970280	TM-AB-CS	Mounting bracket, adjustable
2970281	TM-MB-CS	Mounting bolt with M12x1 thread
2970282	TM-MG-CS	Mounting fork, adjustable in 2 axes, with thread M12x1
2970283	TM-AP-CS	Air purge collar for 10:1 sensors
2970284	TM-APL-CS	Air purge collar, laminar
2970285	TM-APLCF-CS	Air purge collar, laminar, integrated CF-lens
2970286	TM-RAM-CS	Right angle mirror for 90°C measurements
2970287	TM-USBK-CS	USB interface kit incl. software CompactConnect

**Optical accessories CS / CSmicro / CSmicro 2W**

2970277	TM-CF-CS	CF-Lens for CS series
2970278	TM-PW-CS	Protective window for CS series

**Calibration CS / CSmicro / CSmicro 2W**

2970288	TM-CERT-CS	Certificate of calibration
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**Mechanical accessories CX**

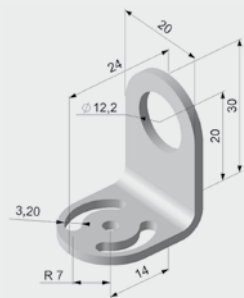
Art. No.	Model	Description
2970307	TM-AP-CX	Air purge collar, aluminium (anodized)
2970321	TM-FB-CX	Mounting bracket, adjustable in one axis, stainless steel
2970322	TM-AB-CX	Mounting bracket, adjustable in two axes, stainless steel
2970311	TM-USBK-CX	USB-Kit: USB programming adapter, Software CompactConnect

**Optical accessories CX**

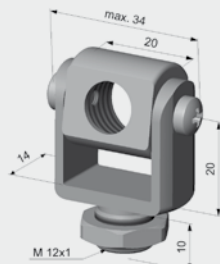
2970302	TM-CF-CX	CF-lens for thermoMETER CX
2970303	TM-PW-CX	Protective window for thermoMETER CX

**Calibration CX**

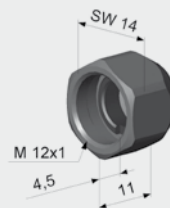
2970323	TM-CERT-CX	Certificate of calibration
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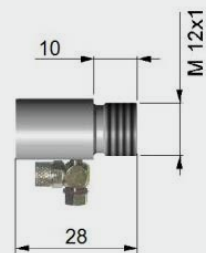
TM-FB-CS Mounting bracket, fixed



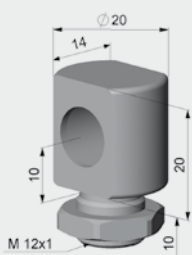
TM-MG-CS Mounting fork with M 12x1 thread adjustable in two axes



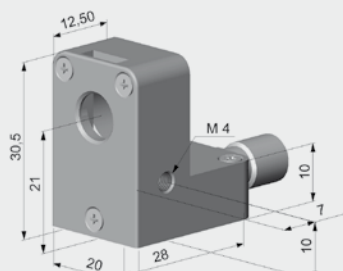
TM-CF-CS Close Focus Lens (LT sensors only)



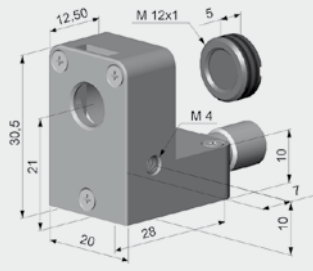
TM-AP-CS Air purge collar for 10:1 sensors



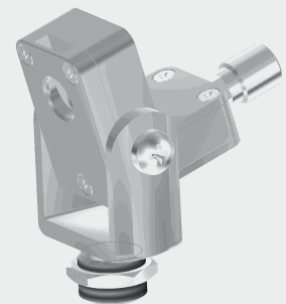
TM-MB-CS Mounting bolt with M12x1 thread adjustable



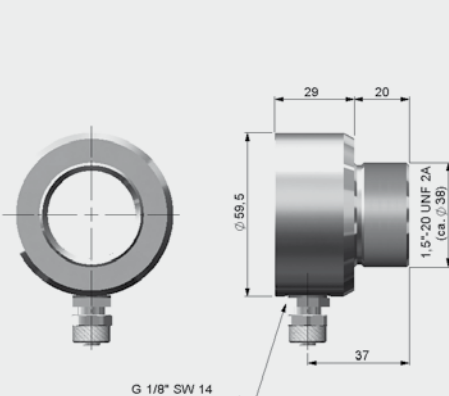
TM-APL-CS Air purge collar



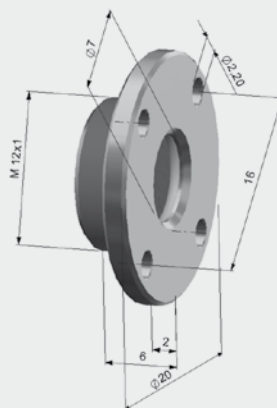
TM-APLCF-CS Air purge collar, laminar, integrated CF-lens



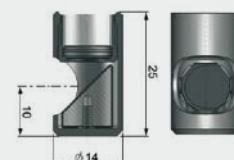
TM-APL-CS Laminar air purge collar and TM-MG-CS Mounting fork



TM-AP-CX Air purge collar CX sensors



TM-CF-CX CF-Lens  
TM-PW-CX Protective window



TM-RAM-CS Right angle mirror



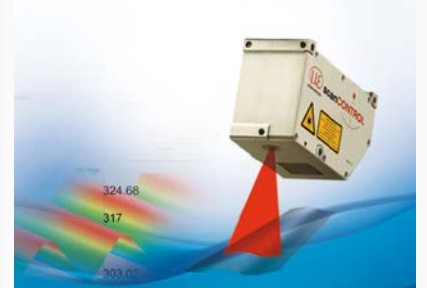
## High performance sensors made by Micro-Epsilon



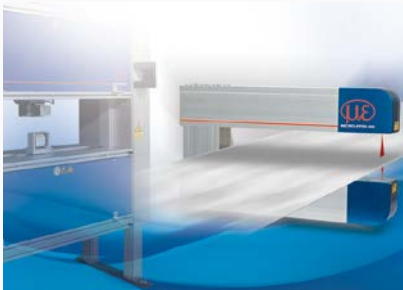
Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Measurement and inspection systems for quality assurance



Optical micrometers, fibre optic sensors and optical fibres



Colour recognition sensors, LED analysers and colour online spectrometer



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