



# More Precision

**thermoMETER** // Non-contact infrared temperature sensors





### thermoMETER CSmicro 2W

Miniature OEM two-wire IR temperature sensor with controller integrated in the cable

- Measuring range from -40°C to 1600°C
- Applicable in ambient temperatures up to 180°C without cooling (sensor)
- Robust, silicon-coated lens
- Integrated controller with LED alarm display and intelligent sighting aid, alarm signal, temperature-code display or self-diagnostics
- Integrated controller in the cable
- Scalable analog output and simultaneous alarm output
- Protection against short circuit and polarity change
- Programmable controller
- Optional USB interface and software for programming
- Best price - ideal for OEM applications

#### Optical specifications thermoMETER CSmicro 2W

□ = smallest spot size / focal point (mm)

Standard Focus										
SF15	15:1	6.5	11.6	16.6	21.7	26.7	35	43.3	51.6	59.9
SF22	22:1	6.5	10.5	14.4	18.4	22.3	26.3	30.2	34.2	38.1
	distance in mm	0	100	200	300	400	500	600	700	800
SF40	40:1	6.5	10.7	14.9	19.1	23.3	27.4	31.6	35.8	40
SF75	75:1	6.5	8.1	9.7	11.3	12.8	14.4	16	19.8	23.5
	distance in mm	0	200	400	600	800	1000	1200	1400	1600
Close Focus (with optionally available CF lens)										
CF15	15:1	7	3.9	0.8	4.7	8.6	12.5	16.4	20.3	24.2
CF22	22:1	7	3.8	0.6	4.4	8.2	12	15.8	19.6	23.4
	distance in mm	0	5	10	15	20	25	30	35	40
Close Focus (integrated CF lens in the sensor head)										
CF40	40:1	6.5	4.4	2.7	6	10.2	14.4	18.6	22.8	27
CF75	75:1	6.5	3.8	1.5	4.4	8	11.7	15.3	19	22.6
	distance in mm	0	60	110	150	200	250	300	350	400

Model	CSmi2W-SF15-C1	CSmi2W-SF15H-C1	CSmi2W-SF22H-C1	CSmi2WM-2SF40-C1	CSmi2WM-2SF75-C1
Optical resolution	15:1		22:1	40:1	75:1
Temperature range	-40°C to 1030°C <sup>1</sup>			250°C to 800°C <sup>1</sup>	385°C to 1600°C <sup>1</sup>
Spectral range	8 to 14μm			1.6μm	
System accuracy	±1.0% or ±1.0°C <sup>3</sup>			±(0.3% of reading +2°C) <sup>4</sup>	
Repeatability	±0.5% or ±0.5°C <sup>3</sup>			±(0.1% of reading +1°C) <sup>4</sup>	
Temperature coefficient	± 0.05°C/°C or ± 0.05%°C <sup>5</sup>				
Temperature resolution	0.1°C <sup>6</sup>				
Response time (90%)	30ms	150ms		10ms	
Emissivity/Gain	0.100 to 1.100 <sup>2</sup>				
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				
Dimensions of controller	length 35mm; ø12mm				
Outputs/analog	4 to 20mA				
Max. loop resistance	1000Ω <sup>7</sup>				
Outputs/alarm	0-30V / 500mA (open collector)				
Outputs/digital (optional)	mono-/bidirectional, 9.6kBaoud, 0/3V level, alternative USB				
Inputs	programmable functional input for triggered signal output or peak hold function				
LED functions	alarm display, automatic aiming aid, self-diagnostics, temperature display (via temp. code)				
Cable length	1m (standard length); 0.5m between sensor and controller; 0.4m between controller and terminal device				
Power supply	4...20mA (5 to 30VDC)				
Protection class	IP65 (NEMA-4) sensor head				
Ambient temperature	sensor: -20°C to 120°C controller: -20°C to 75°C	sensor: -20°C to 180°C controller: -20°C to 75°C		sensor: -20°C to 125°C controller: -20°C to 75°C	
Storage temperature	-40°C to 85°C (sensor and controller)				
Relative humidity	10 to 95%, non-condensing				
Vibration	IEC 68-2-6: 3 G, 11 to 200Hz, any axis				
Shock	IEC 68-2-27: 50 G, 11ms, any axis				
Weight	42g				

<sup>1</sup> adjustable via software

<sup>2</sup> adjustable via 0 to 5VDC input or software

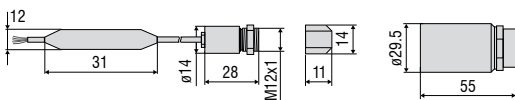
<sup>3</sup> ambient temperature 23±5°C; whichever is greater; object temperature ≥ 0°C

<sup>4</sup> ε = 1, response time 1s, object temperature >450°C

<sup>5</sup> with object temperature <100°C; time constant from >0.2s

<sup>6</sup> with object temperature > 20°C; time constant from >0.2s

<sup>7</sup> depends on supply voltage



#### Product identification

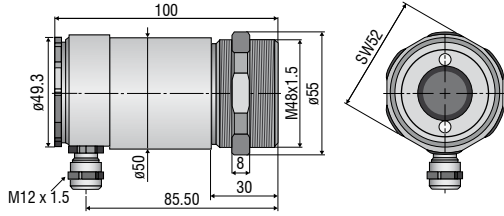
CSmi2W -	SF15-	C1
Cable length [1m (standard) / 3m / 8m / 15m]		
Focus [SF / CF]		
thermoMETER CSmi2W (TwoWire)		

#### Accessories page 54 - 55

- Ancillary CF lens
- Protective window
- Mounting bracket / mounting bolt
- Air purge collar
- Right angle mirror
- USB kit

**CSLaser**

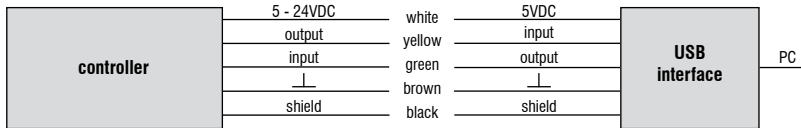
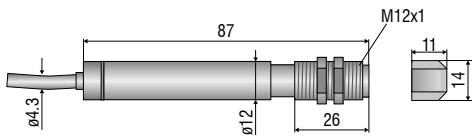
sensor



**CS**

sensor with integrated controller

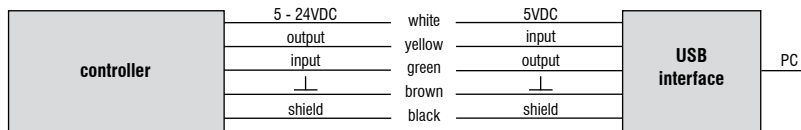
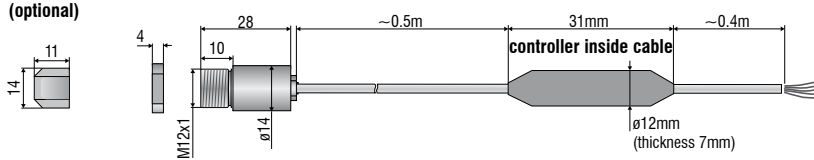
ancillary CF lens (optional)



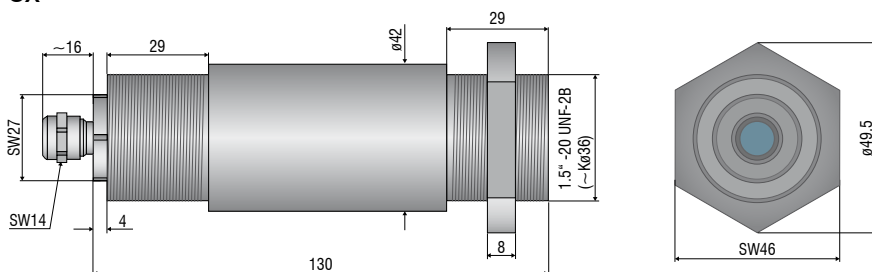
**CSmicro / CSmicro 2W**

ancillary CF lens (optional)

sensor



**CX**



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

Art. No.	Model	Description
2970279	Emissivity	Mounting bracket, fixed
2970280	TM-AB-CS	Mounting bracket, adjustable
2970281	TM-MB-CS	Mounting bolts with M12x1 thread
2970282	TM-MG-CS	Mounting fork, adjustable in 2 axes, with M12x1 fastening
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 with integrated ancillary CF lens
2970286	TM-RAM-CS	Right angle mirror for measurements 90°C to the sensor axis
2970287	TM-USBK-CS	USB kit: USB programming adapter, CompactConnect software

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

2970277	TM-CF-CS	Ancillary CF lens for CS models
2970278	Aluminum	Protective window for CS models

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

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

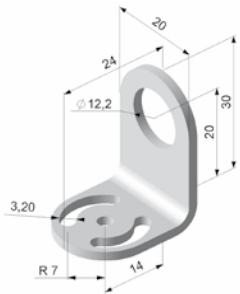
Art. No.	Model	Description
2970307	TM-AP-CX	Air purge collar, aluminum (anodized)
2970321	TM-FB-CX	Mounting bracket, adjustable in 1 axis, stainless steel
2970322	TM-AB-CX	Mounting bracket, adjustable, in 2 axes, stainless steel
2970311	TM-USBK-CX	USB kit: USB programming adapter, CompactConnect software

**Optical accessories CX**

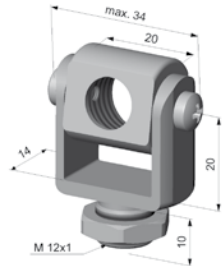
2970302	TM-CF-CX	Ancillary CF lens for CX models
2970303	TM-PW-CX	Protective window for CX models

**Calibration CX**

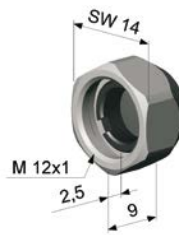
2970323	TM-CERT-CX	Certificate of calibration
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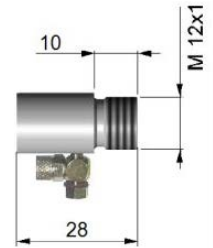
TM-FB-CS mounting bracket, fixed



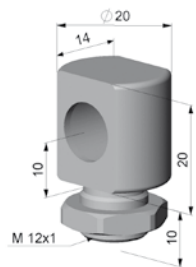
TM-MG-CS Mounting fork with M12x1 thread, adjustable in two axes



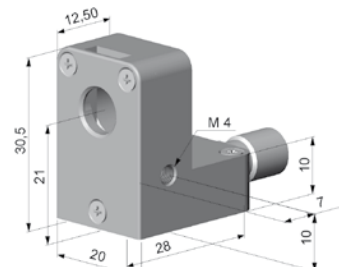
TM-CF-CS Ancillary CF lens (only for LT models)



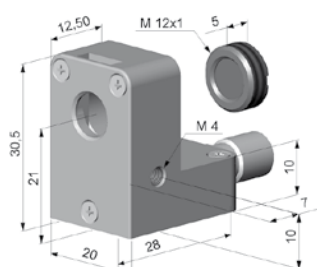
TM-AP-CS Air purge collar for 10:1 sensors



TM-MB-CS Mounting bolts with M12x1 thread adjustable in one axis



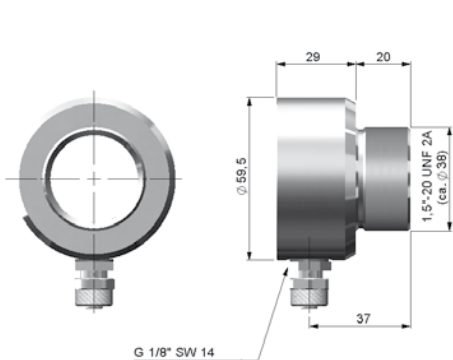
TM-APL-CS Air purge collar, laminar



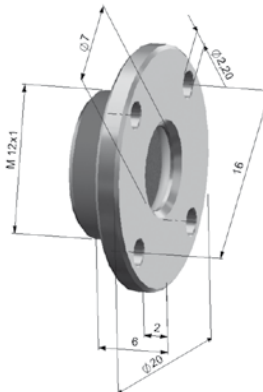
TM-APLCF-CS Air purge collar, laminar with integrated ancillary CF lens



TM-APL-CS Air purge collar, laminar  
TM-MG-CS Mounting fork



TM-AP-CX Air purge collar for CX sensors



TM-CF-CX Ancillary CF lens, TM-PW-CX Protective window



TM-RAM-CS Right angle mirror



## Further IR temperature measurement devices from Micro-Epsilon



**thermoIMAGER TIM**  
Compact USB thermal imaging cameras  
for precise thermography



**thermoMETER CTVideo/CSVideo**  
IR temperature sensors with crosshair laser  
sighting and video output



**thermoMETER Handheld**  
Innovative handheld pyrometer with laser  
sighting for inspection and maintenance