



# More Precision

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





### thermoMETER CSmicro

Miniature OEM infrared temperature sensor with controller integrated in the cable

- Measuring range from -40 °C to 1030 °C
- Applicable in ambient temperatures up to 120 °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

□ = 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	
	distance in mm	0	100	200	300	400	500	600	700	800	
Close Focus (with optionally available CF lens)											
CF15	15:1	7	3.9	0.8	4.7	8.6	10.9	12.5	16.4	20.3	24.2
	distance in mm	0	5	10	15	20	23	25	30	35	40

Model	CSmi-SF15-C1
Optical resolution	15:1
Temperature range	-40 °C to 1030 °C <sup>1)</sup>
Spectral range	8 to 14 μm
System accuracy	±1.0 % or ±1.0 °C <sup>4)</sup>
Repeatability	±0.5 % or ±0.5 °C <sup>3)</sup>
Temperature coefficient	± 0.05 °C/°C or ± 0.05 % °C <sup>5)</sup>
Temperature resolution	0.15 °C <sup>6)</sup>
Response time (90 %)	14 ms (adjustable up to 999 s via optional programming adapter)
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 35 mm; ø12 mm
Outputs/analog	0 to 5 V or 0 to 10 V 1/10/100 mV/°C
Max. loop resistance	-
Outputs/alarm	alarm (50 mA / 24 V)
Outputs/digital (optional)	mono-/bidirectional, 9.6 kBaud, 0/3 V level, alternative USB
Inputs	programmable functional inputs for external emissivity adjustment (0 to 5 VDC), hold function or USB communication
LED functions	alarm display, automatic aiming aid, self-diagnostics, temperature display (via temp. code)
Cable length	1 m (standard length); 0.5 m between sensor and controller; 0.4 m between controller and terminal device
Power supply	9 mA (5 to 30 VDC)
Protection class	IP65 (NEMA-4) sensor head
Ambient temperature	sensor: -20 °C to 120 °C controller: -20 °C to 80 °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 200 Hz, any axis
Shock	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	42 g

<sup>1)</sup> adjustable via software

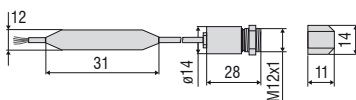
<sup>2)</sup> adjustable via 0 to 5 VDC input or software

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

<sup>4)</sup> ambient temperature 23 ± 5 °C; whichever is greater; object temperature > 20 °C

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

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



**Product identification**

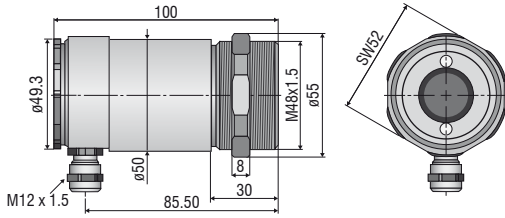
CSmi -	SF15-	C1
Cable length [1 m (standard) other cable lengths on request]		
Focus [SF / CF]		
thermoMETER CSmicro		

**Accessories page 32 - 35**

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

**CSLaser**

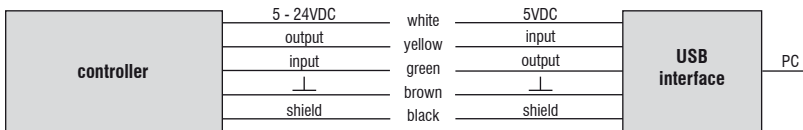
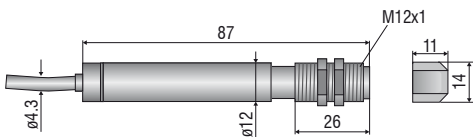
sensor



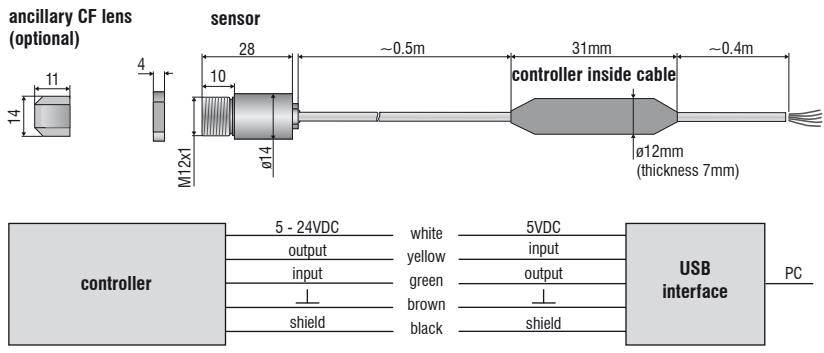
**CS**

sensor with integrated controller

ancillary CF lens (optional)



CSmicro / CSmicro 2W



## Infrared thermal imagers from Micro-Epsilon



### **thermoIMAGER TIM** Compact thermal imaging cameras for industrial temperature monitoring

- Temperature range from -20 °C to 1900 °C
- Ideal for OEM
- Real-time thermography using license-free software
- Protective housing for harsh environments
- Special variants for the glass, metal and plastics industries