



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 ¹ | | | 250°C to 800°C ¹ | 385°C to 1600°C ¹ |
| Spectral range | 8 to 14µm | | | 1.6µm | |
| System accuracy | ±1.0% or ±1.0°C ³ | | | ±(0.3% of reading +2°C) ⁴ | |
| Repeatability | ±0.5% or ±0.5°C ³ | | | ±(0.1% of reading +1°C) ⁴ | |
| Temperature coefficient | ± 0.05°C/°C or ± 0.05%°C ⁵ | | | | |
| Temperature resolution | 0.1°C ⁶ | | | | |
| Response time (90%) | 30ms | 150ms | | 10ms | |
| Emissivity/Gain | 0.100 to 1.100 ² | | | | |
| Transmissivity/gain ¹ | 0.100 to 1.100 | | | | |
| Signal processing ¹ | 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 ⁷ | | | | |
| Outputs/alarm | 0-30V / 500mA (open collector) | | | | |
| Outputs/digital (optional) | mono-/bidirectional, 9.6kBaud, 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 | | | | |

¹ adjustable via software

² adjustable via 0 to 5VDC input or software

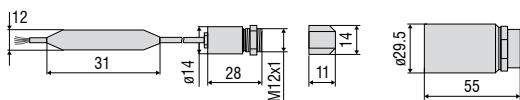
³ ambient temperature 23±5°C; whichever is greater; object temperature ≥ 0°C

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

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

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

⁷ depends on supply voltage



Product identification

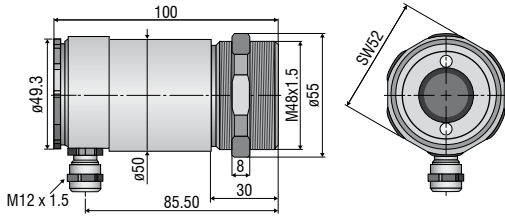
| | | |
|--|-------|----|
| CSmi2W - | SF15- | C1 |
| Cable length [1m (standard) / 3m / 8m / 15m] | | |
| Focus [SF / CF] | | |
| thermoMETER CSmi2W (TwoWire) | | |

Accessories page 54 - 55

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

CSLaser

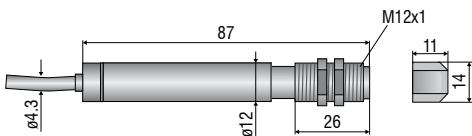
sensor



CS

sensor with integrated controller

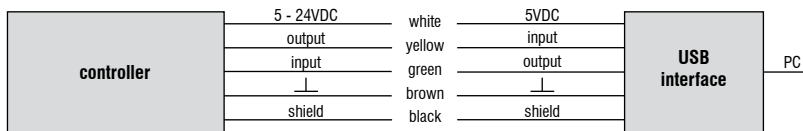
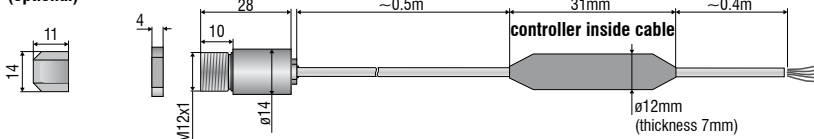
ancillary CF lens (optional)



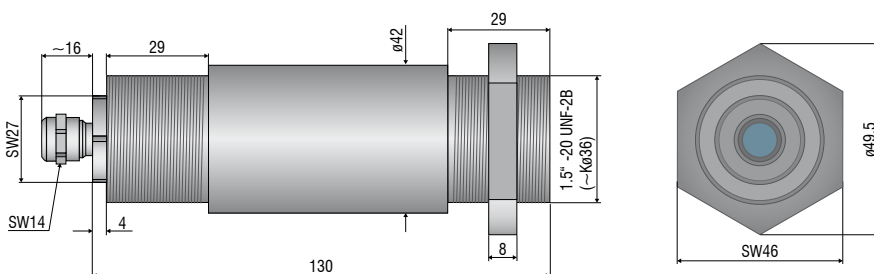
CSmicro / CSmicro 2W

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 |
|---------|------------|----------------------------|

Mechanical accessories CX

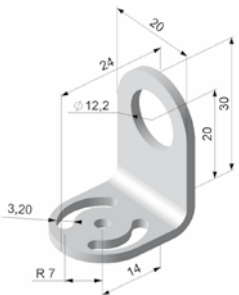
| Art. No. | Model | Description |
|----------|------------|---|
| 2970307 | TM-AP-CX | Air purge collar, aluminum (anodized) |
| 2970321 | TM-FB-CX | Mounting bracket, adjustable in 1 axis, stainless steel |
| 2970322 | TM-AB-CX | Mounting bracket, adjustable, in 2 axes, stainless steel |
| 2970311 | 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 |
|---------|------------|----------------------------|



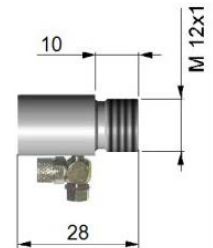
TM-FB-CS mounting bracket, fixed



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



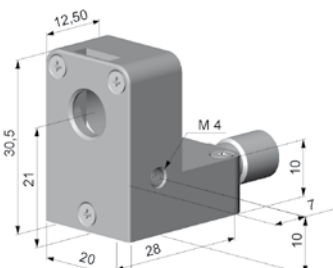
TM-CF-CS Ancillary CF lens (only for LT models)



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
Infrared temperature sensors with crosshair
laser sighting and video output



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