



More Precision

thermoMETER // Non-contact infrared temperature sensors





thermoMETER CHot

Housed IR temperature sensor for harsh ambient conditions

- Measuring range from -40 °C to 975 °C
- Up to 250 °C ambient temperature without cooling
- Pressure-resistant sensor head up to 10 bar (autoclave applications)
- Integrated high temperature cable
- For a number of applications in dryers, kilns, heat treatment in the processing of metals, plastics, textiles and in the semiconductor industry
- Narrow-focused lenses enable diagonal alignment to the target (avoids influence by material thickness)
- Selectable and scalable analog output, optional digital interfaces

Optical specifications thermoMETER CHot

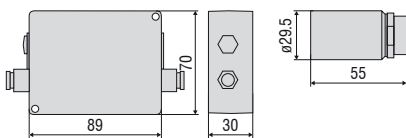
□ = smallest spot size / focal point (mm)

| Standard Focus | | | | | | | | | | |
|----------------|----------------|-----|------|------|------|-----|------|------|------|------|
| SF10 | 10:1 | 6.5 | 14.9 | 23.3 | 31.6 | 40 | 51.6 | 63.3 | 74.9 | 86.5 |
| | distance in mm | 0 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |

| Model | CTH-SF10-C3H | |
|-----------------------------------|--|---|
| Optical resolution | 10:1 | |
| Temperature range ¹⁾ | -40 °C to 975 °C | |
| Spectral range | 8 to 14 μm | |
| System accuracy ²⁾ | ± 1 % or ± 1.5 °C | |
| Repeatability ²⁾ | ± 0.5 % or ± 0.5 °C | |
| Temperature resolution | 0.25 °C | |
| Response time | 100 ms | |
| Emissivity/gain ¹⁾ | 0.100 to 1.100 | |
| Transmissivity/gain ¹⁾ | 0.100 to 1.100 | |
| Signal processing ¹⁾ | peak hold, valley hold, average; extended hold function with threshold and hysteresis | |
| Certificate of calibration | optional | |
| Outputs/analog | channel 1 | 0/4 to 20 mA, 0 to 5/10 V, thermocouple J, K |
| | channel 2 | sensor temperature (-20 to 250 °C as 0 to 5 V or 0 to 10 V), alarm output |
| Outputs/analog | optional | relays: 2 x 60 VDC/42 VAC _{eff} ; 0.4 A; electrically isolated |
| Ausgänge/digital | optional | USB, RS232, RS485, Modbus RTU, Profibus DP, Ethernet |
| Output impedances | current output | mA max. 500 Ω (with 5 to 36 VDC) |
| | voltage output | min. 100 kΩ load impedance, thermocouple 20 Ω |
| Inputs | programmable functional inputs for external emissivity adjustment ambient temperature compensation, trigger (reset of hold functions) | |
| Cable length | 3 m (standard), 8 m, 15 m | |
| Power supply | 8 to 36 VDC; max. 100 mA | |
| Protection class | IP65 (NEMA-4) | |
| Ambient temperature | sensor: -20 °C to 250 °C; controller: 0 °C to 85 °C | |
| Storage temperature | sensor: -40 °C to 250 °C; controller: -40 °C to 85 °C | |
| Relative humidity | 10 to 95 %, non-condensing | |
| Vibration | sensor | IEC 68-2-6: 3 G, 11 to 200 Hz, any axis |
| Shock | sensor | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | sensor: 40 g (without massive housing), 200 g (with solid case); controller: 420 g | |

¹⁾ adjustable via programming keys or software

²⁾ ambient temperature 23 ± 5 °C and object temperatures ≥ 20 °C; whichever is greater



Product identification

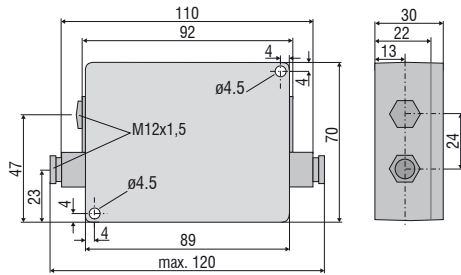
| CTH- | SF10- | C3H |
|-------------------|-------|---|
| | | Length high temperature cable [3 m (standard) / 8 m / 15 m] |
| | | Focus [SF10] |
| thermoMETER CThot | | |

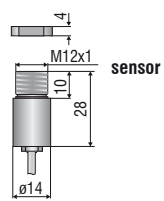
Accessories page 20 - 23

- Rail mount adapter for controller
- Digital-interface kits
- Certificate of calibration

CT / CTfast / CTM2/M3

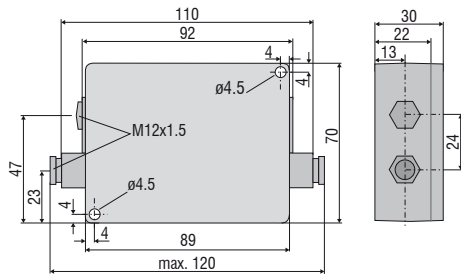
controller



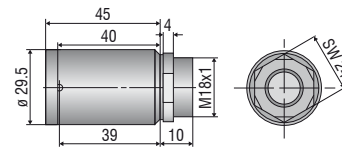
**ancillary CF lens
(optional)**


CThot

controller



sensor with protective housing



| Mechanical accessories | | |
|------------------------|-------------------|---|
| Art. No. | Model | |
| 2970203 | TM-FB-CT | Mounting bracket, fixed |
| 2970325 | TM-FB2-CT | Mounting bracket, adjustable in one axis, for simultaneous assembly of CT sensor and laser sighting aid |
| 2970336 | TM-FBMH-CT | Mounting bracket, adjustable in one axis, for massive housing |
| 2970204 | TM-AB-CT | Mounting bracket, adjustable in 2 axes |
| 2970205 | TM-MB-CT | Mounting bolts with M12x1 thread |
| 2970206 | TM-MG-CT | Mounting fork, adjustable in 2 axes, with M12x1 fastening |
| 2970207 | TM-AP-CT | Air purge collar for sensors from 10:1 lens |
| 2970335 | TM-APS-CT | Air purge collar for sensors from 10:1 lens made from stainless steel |
| 2970208 | TM-AP2-CT | Air purge collar for sensor with 2:1 lens |
| 2970209 | TM-APL-CT | Air purge collar, laminar |
| 2970210 | TM-APLCF-CT | Air purge collar, laminar with integrated ancillary CF lens |
| 2970357 | TM-APLCFH-CT | Air purge collar, laminar with integrated ancillary CF lens for M sensors |
| 2970386 | TM-APMH-CT | Air purge collar made from stainless steel for massive housing |
| 2970463 | TM-TAS-CT | Pivoted joint for CT sensors |
| 2970211 | TM-RAM-CT | Right angle mirror for measurements 90 °C to the sensor axis |
| 2970212 | TM-RAIL-CT | Rail mount adapter for CT controller |
| 2970213 | TM-COV-CT | Closed cover for controller |
| 2970214 | TM-MHS-CT | Massive housing made from stainless steel |
| 2970215 | TM-MHSFC-CT | Massive housing made from stainless steel with integrated ancillary CF lens |
| 2970358 | TM-MHSFCFH-CT | Massive housing made from stainless steel with integrated ancillary CF lens for M sensors |
| 2970216 | TM-MHA-CT | Massive housing made from anodized aluminum |
| 2970217 | TM-MHACF-CT | Massive housing made from stainless steel with integrated ancillary CF lens |
| 2970359 | TM-MHACFH-CT | Massive housing made from anodized aluminum with integrated ancillary CF lens for M sensors |
| 2970326 | TM-PA-CT | Pipe adapter for the mounting of reflection protection tubes |
| 2970327 | TM-ST20-CT | Reflection protection tube, length 20 mm |
| 2970328 | TM-ST40-CT | Reflection protection tube, length 40 mm |
| 2970329 | TM-ST88-CT | Reflection protection tube, length 88 mm |
| 2970221 | TM-LST-CT | Laser sighting aid for CT sensors incl. batteries (2xAlkaline AA) |
| 2970300 | TM-LSTOEM-CT | OEM laser sighting aid, 635 nm, 3.5 m cable, for connection to CT controller |
| 2970300.008 | TM-LSTOEM-CT(008) | OEM laser sighting aid, 635 nm, 8 m cable, for connection to CT controller |

| Optical accessories | | |
|---------------------|-------------|--|
| Art. No. | Model | |
| 2970201 | TM-CF-CT | Ancillary CF lens (only for SF models) |
| 2970202 | TM-PW-CT | Protective window (only for SF models) |
| 2970297 | TM-CFAG-CT | Ancillary lens with external thread |
| 2970330 | TM-CFH-CT | Ancillary lens for M sensors |
| 2970331 | TM-CFHAG-CT | Ancillary lens with external thread for M sensors |
| 2970299 | TM-PWAG-CT | Protective window with external thread |
| 2970332 | TM-PWH-CT | Protective window for M sensors |
| 2970333 | TM-PWHAG-CT | Protective window with external thread for M sensors |

| Interfaces | | |
|------------|-----------------|---|
| Art. No. | Model | |
| 2970729 | TM-USBK-CT | USB-Interface board, cable with Micro-USB plug and adapter for USB-C and USB-A, CompactConnect software (as download), Quick reference, second cable gland for controller |
| 2970224 | TM-RS232K-CT | RS232 interface: RS232 interface, computer cable, CompactConnect software, second cable gland for controller |
| 2970338 | TM-RS485USBK-CT | RS485-USB-adapter, incl. PC cable, CompactConnect software and CTmulti, second cable gland for use with interface board TM-RS485B-CT |
| 2970226 | TM-RS485B-CT | RS485-interface board incl. second cable gland |
| 2970228 | TM-PFBDPK-CT | Profibus-DPv1 interface for thermoMETER CT with plug-in connection |
| 2970229 | TM-ETHNK-CT | Ethernet-Kit: interface board, external Ethernet adapter, CompactConnect software, second cable gland |
| 2970230 | TM-RI-CT | Relay interface: two electrically isolated relays, 60 VDC/ 42 VAC _{eff} , 0.4 A |
| 2970719 | TM-MBRTU-CT | Modbus-RTU-interface board incl. second cable gland |

| Calibration | | |
|-------------|--------------|--|
| Art. No. | Model | |
| 2970231 | TM-CERT-CT | Certificate of calibration |
| 2970310 | TM-HTCERT-CT | Certificate of calibration for CTM sensors |



TM-FB-CT Mounting bracket, adjustable in one axis



TM-CF-CT Ancillary CF lens (only for SF models)



TM-CFAG-CT Ancillary CF lens with external thread
TM-PWAG-CT Protective window with external thread



TM-AB-CT Mounting bracket, adjustable in two axes



TM-MB-CT mounting bolt with M12x1 thread adjustable in one axis



TM-APL-CT Air purge collar, laminar and
TM-MG-CT Mounting fork



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



TM-APLCF-CT
Ancillary CF lens/protective window - integrable variant
for laminar air purge collar



TM-RAIL-CT rail mount adapter for controller



TM-KF40GE-CT KF40 Flange with Ge window
TM-KF40B270-CT KF40 Flange for CTM-1,-2,-3
with B270 window



TM-APMH-CT
Air purge collar made from stainless steel
for massive housing



TM-PA-CT Pipe adapter for reflection protection tube



TM-ST40-CT Reflection protection tube





TM-LST-CT Laser sighting aid, battery-operated (2x Alkaline AA), for alignment of CT sensors (dimensions identical to CT sensor)



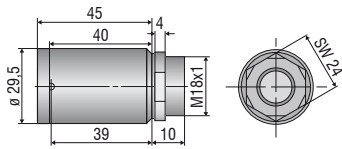
TM-FB2-CT Mounting bracket for sensor and laser sighting aid



TM-RAM-CT Right angle mirror



TM-MHS-CT Massive housing, stainless steel
TM-MHA-CT Massive housing, aluminum



TM-TAS-CT Pivoted joint for CT sensors



Dirt and deposit on the lens like smoke, steam and high air humidity (condensation) are avoided or reduced by using an air purge collar.

TM-AP-CT Standard air purge collar for 10:1 / 15:1 / 22:1 lenses
TM-APS-CT Air purge collar, stainless steel



TM-AP2-CT Standard air purge collar for 2:1 lens

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