



# 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 10bar (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

SF02	2:1	5	53.8	102.5	151.3	200	251.3	302.5	353.8	405	
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	

##### Close Focus (integrated CF lens)

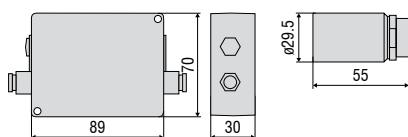
CF10	10:1	6.5	4.8	3	9.3	17.3	25.2	33.1	41	48.9	56.8
	distance in mm	0	15	30	50	75	100	125	150	175	200

Note: Do not use any external CF lens!

Model	CTH-SF02-C3H	CTH-SF10-C3H
Optical resolution	2:1	10:1
Temperature range <sup>1</sup>	-40 to 975°C	
Spectral range	8 to 14µm	
System accuracy <sup>2</sup>	±1% or ±1.5°C	
Repeatability <sup>2</sup>	±0.5% or ±0.5°C	
Temperature resolution	0.25°C	
Response time	100ms	
Emissivity/gain <sup>1</sup>	0.100 to 1.100	
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/analog	channel 1	0/4 to 20mA, 0 to 5/10V, thermocouple J, K
	channel 2	sensor temperature (-20 to 250°C as 0 to 5V or 0 to 10V), alarm output
Outputs/analog	optional	relays: 2 x 60VDC/42 VAC <sub>eff</sub> ; 0.4A; electrically isolated
Ausgänge/digital	optional	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	current output	mA max. 500Ω (with 5 to 36VDC)
	voltage output	min. 100kΩ load impedance, thermocouple 20Ω
Inputs	programmable functional inputs for external emissivity adjustment ambient temperature compensation, trigger (reset of hold functions)	
Cable length	3m (standard), 8m, 15m	
Power supply	8 to 36VDC; max. 100mA	
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	voltage output	IEC 68-2-6: 3 G, 11 to 200Hz, any axis
Shock	voltage output	IEC 68-2-27: 50 G, 11ms, any axis
Weight	sensor: 40g (without massive housing), 200g (with solid case); controller: 420g	

<sup>1</sup> adjustable via programming keys or software

<sup>2</sup> ambient temperature 23±5°C and object temperatures ≥20°C; whichever is greater



### Product identification

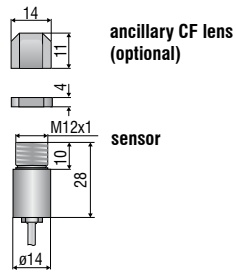
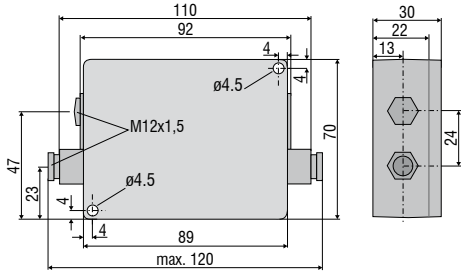
CTH-	SF02-	C3H
Length high temperature cable [3m (standard) / 8m / 15m]		
Focus [SF02 / SF10 / CF10]		
thermoMETER CThot		

### Accessories page 40 - 43

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

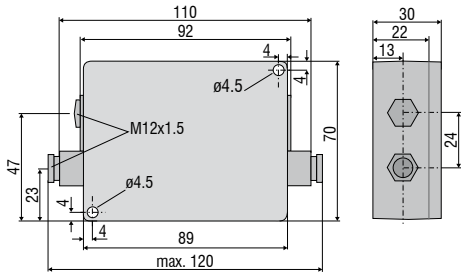
**CT / CTfast / CTM1/M2/M3**

**controller**

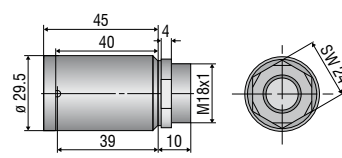


**CThot / CTP-3 / CTP-7**

**controller**

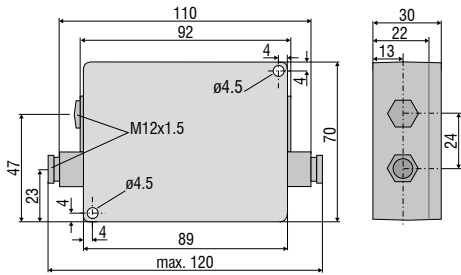


**sensor with protective housing**

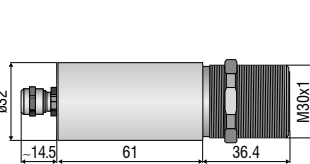


**CTM3-XL**

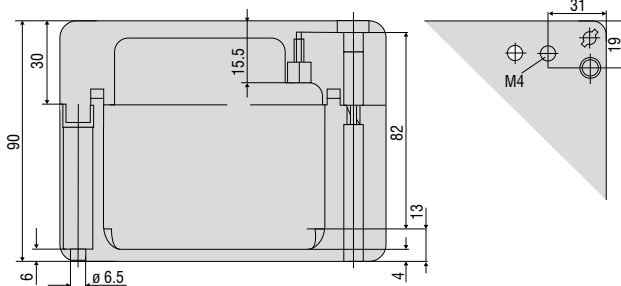
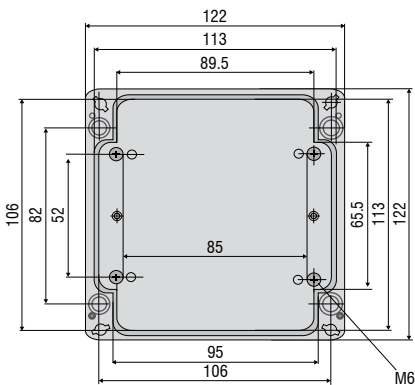
**controller**



**sensor**



**CTex**





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 M1/M2/M3/M5 sensors
2970386	TM-APMH-CT	Air purge collar made from stainless steel for massive housing
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-MHSCF-CT	Massive housing made from stainless steel with integrated ancillary CF lens
2970358	TM-MHSCFH-CT	Massive housing made from stainless steel with integrated ancillary CF lens for M1/M2/M3/M5 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 M1/M2/M3/M5 sensors
2970218	TM-MHB-CT	Massive housing made from brass
2970219	TM-MHBCF-CT	Massive housing made from brass with integrated ancillary CF lens
2970360	TM-MHBCFH-CT	Massive housing made from brass with integrated ancillary CF lens for M1/M2/M3/M5 sensors
2970220	TM-PT-CT	Protective tube made from brass
2970326	TM-PA-CT	Pipe adapter for the mounting of reflection protection tubes
2970327	TM-ST20-CT	Reflection protection tube, length 20mm
2970328	TM-ST40-CT	Reflection protection tube, length 40mm
2970329	TM-ST88-CT	Reflection protection tube, length 88mm
2970221	TM-LST-CT	Laser sighting aid for CT sensors incl. batteries (2xAlkaline AA)
2970300	TM-LSTOEM-CT	OEM laser sighting aid, 635nm, 3.5m cable, for connection to CT controller
2970300.008	TM-LSTOEM-CT(008)	OEM laser sighting aid, 635nm, 8m cable, for connection to CT controller
2970222	TM-EX-CT	Accessories kit for using CT in Ex areas (Zone 1: PTB 01 ATEX 2053/ E II (1/2) G [EEx ia/ib] IIC/ IIB), pre-assembled EX box, without Zener barriers, applicable in combination with CT sensors (except for CTfast)

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 M1/M2/M3/M5 sensors
2970331	TM-CFHAG-CT	Ancillary lens with external thread for M1/M2/M3/M5 sensors
2970299	TM-PWAG-CT	Protective window with external thread
2970332	TM-PWH-CT	Protective window for M1/M2/M3/M5 sensors
2970333	TM-PWHAG-CT	Protective window with external thread for M1/M2/M3/M5 sensors

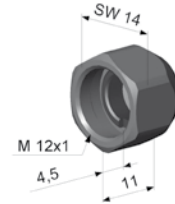
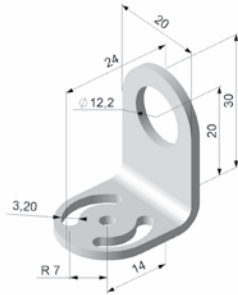
Interfaces		
Art. No.	Model	
2970223	TM-USBK-CT	USB interface kit: USB interface, USB cable, CompactConnect software, second cable gland for controller
2970224	TM-RS232K-CT	RS232 interface: RS232 interface, computer cable, CompactConnect software, second cable gland for controller
2970338	TM-RS485USBK-CTL	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
2970227	TM-CANK-CT	CAN-Bus interface for thermoMETER CT/ protocol: CANopen presets: module address 20 (14H), 250kbaud, 0-60°C
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, 60VDC/ 42VAC <sub>eff</sub> 0.4A

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

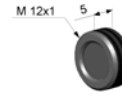
CTM3-XL		
Art. No.	Model	
2970352	TM-FBXL-CT	Mounting bracket, adjustable in one axis
2970353	TM-ABXL-CT	Mounting bracket, adjustable in 2 axes
2970354	TM-APXL-CT	Air purge collar, stainless steel
2970361	TM-XLCERT-CT	Certificate of calibration



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



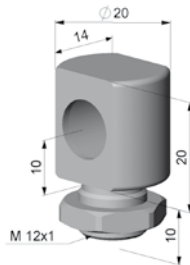
TM-CF-CT Ancillary CF lens (only for SF models)



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



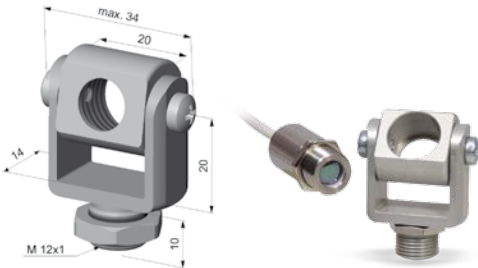
TM-AB-CT Mounting bracket, adjustable in two axes



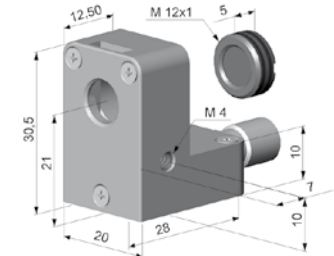
TM-MB-CT mounting bolt with M12x1 thread adjustable in one axis



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



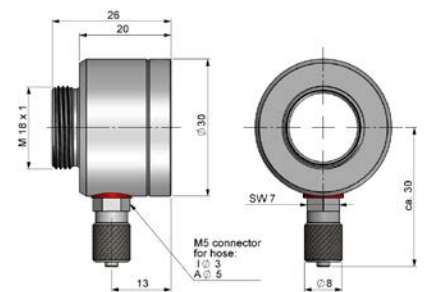
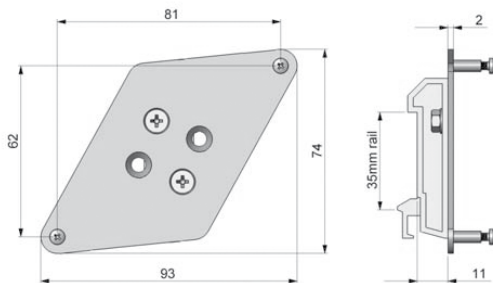
TM-MG-CT Mounting fork with M12x1 thread, adjustable in two axes



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



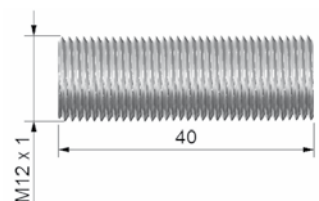
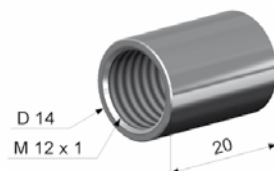
TM-RAIL-CT rail mount adapter for controller



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



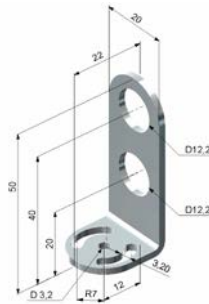
TM-PA-CT Pipe adapter for reflection protection tube



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)



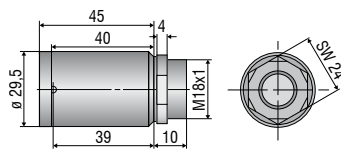
TM-FB2-CT Mounting bracket for sensor and laser sighting aid



TM-RAM-CT Right angle mirror



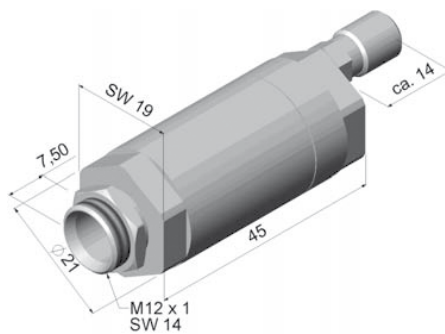
TM-MHS-CT Massive housing, stainless steel  
 TM-MHA-CT Massive housing, aluminum  
 TM-MHB-CT Massive housing, brass



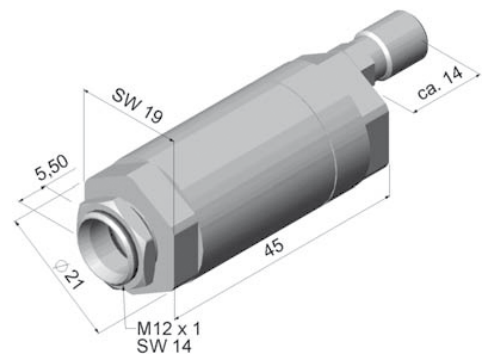
TM-TAS-CT Pivoted joint for CT sensors



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

## 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