

16	Non-contact infrared pyrometer for metal processing	thermoMETER CTM2
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#### thermoMETER CTM2

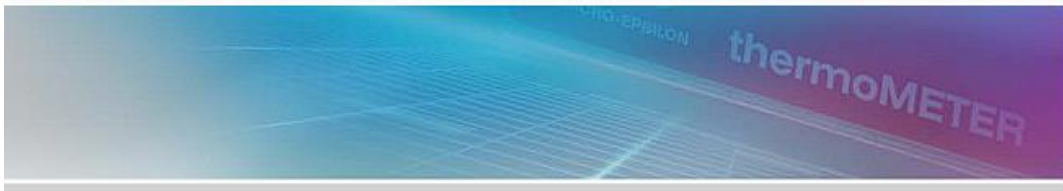
Miniaturized temperature sensor with 1.6  $\mu\text{m}$  measuring wavelength

- Measuring range from 250 °C to 1600 °C
- Up to 125 °C ambient temperature without cooling
- For metal processing such as welding, soldering, forming, sintering and for measurements of metal oxides and ceramics
- Extended compensation for measuring errors using short measuring wavelength (e.g. with emissivity changes or misadjustment)
- High compatibility with electromagnetic fields e.g. with induction welding
- Compact sensor for installation in confined spaces
- Selectable and scalable analog output, optional digital interfaces

#### Optical specifications thermoMETER CTM2

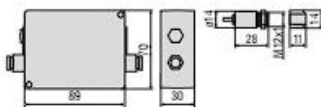
$\square$  = smallest spot size / focal point (mm)

Standard Focus										
2SF40	40:1	6.5	10.7	14.9	19.1	23.3	27.4	31.6	35.8	40
2SF75	75:1	6.5	8.4	10.2	12.1	13.9	15.8	17.6	19.5	21.3
distance in mm	0	200	400	600	800	1000	1200	1400	1600	
Close Focus (integrated CF lens)										
2CF40	40:1	6.5	4.4	2.7	6	10.2	14.4	18.6	22.8	27
2CF75	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	CTM-2SF40-C3	CTM-2SF75-C3
Optical resolution	40:1	75:1
Temperature range <sup>1)</sup>	250 to 800 °C	385 to 1600 °C
Spectral range	1.6 µm	
System accuracy <sup>2), 3)</sup>	±(0.3 % of reading + 2 °C)	
Repeatability <sup>3)</sup>	±(0.1 % of reading + 1 °C)	
Temperature resolution	0.1 °C	
Response time <sup>4)</sup>	1 ms (90 %)	
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 20 mA, 0 to 5/10 V, thermocouple J, K
Outputs/analog	optional	relays: 2 x 60 VDC/42 VAC <sub>eff</sub> ; 0.4 A, electrically isolated
Alarm output		open collector (24 V / 50 A)
Outputs/digital	optional	USB, RS232, RS485, Modbus RTU, Profibus DP, Ethernet
Output impedances	current output	mA max 500 Ω (with 8 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 125 °C
	controller	0 °C to 85 °C
Storage temperature	sensor	-40 °C to 125 °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; controller: 420 g

<sup>1)</sup> adjustable via programming keys or software  
<sup>2)</sup> ambient temperature: 23 ±5 °C  
<sup>3)</sup> ε = 1, response time 1 s  
<sup>4)</sup> with dynamic adaption at low signal levels



**Product identification**

CTM-	2	SF40-	C3
Cable length [3 m (standard) / 8 m / 15 m]			
Focus [SF40 / SF75 / CF40 / CF75]			
Spectral range [2=1.6 µm]			
thermoMETER CTM			

**Accessories page 20 - 23**

- Protective window
- Mounting bracket / mounting bolt
- Air purge collar
- Right angle mirror
- Rail mount adapter for controller
- Massive housing
- Protective tube
- Laser sighting aid
- Digital-interface kits
- Certificate of calibration