

Technical Data Sheet

CT18.03

Infrared Radiation Thermometer

- Robust stainless steel housing IP67
- Very fast response time from 1 ms on
- Focusable: spot size from 0.4 mm
- Focus laser or viewfinder option indicate the size of the measurement spot



Measurement specifications

Temperature range (select one or more):	450 ... 1000 °C, 500 ... 1400 °C, 550 ... 1800 °C, 600 ... 2000 °C, 650 ... 2200 °C, 700 ... 2500 °C, 750 ... 3000 °C
Spectral range:	0.85 ... 1.1 µm
Measurement uncertainty:	0.1 °C ± 0.4 % of the measured value in temperature units at an ambient temperature of 25 °C for the given temperature range or value of temperature resolution. The higher value shall prevail.
Temperature resolution (NETD):	Depending on the measured temperature and the response time Typical value is 0.2 °C (2 Sigma, by t_{90} : 0.1 s, 450 °C; $\epsilon = 1$)
Temperature drift:	0.004 % of the measured temperature where the internal temperature of the radiation thermometer deviates from 25 °C
Long-term stability:	Better than 0.01 % of the absolute measured temperature in Kelvin per month
Field of view:	From Ø 0.4 mm (± 5 %) on, depending on optic and detector
Response time (t_{90}):	Adjustable from 1 ms ... 10 s
Temperature unit:	°C, K or °F
Emissivity:	0.050 ... 1.000 in 0.001 steps
Lens:	ACR – optimized flint glass combination

Electrical specifications / Functions

Analog output:	0 ... 1 V; 0 ... 10 V; 0 ... 20 mA; 4 ... 20 mA; resolution: 16 bit
Function:	Actual, maximum or minimum value (scalable (minimum span 50 K))
Digital output option:	Programmable relais contact
Function:	Switching capacity: < 10 VA Load: voltage < 24 V, current < 0.5 A
Digital input option:	Dry contact switch, operating voltage, open-collector
Function:	Reset of memory, (de-)activate digital outputs or laser
Serial interface:	Switchable RS232/RS485 interface, 9.6 ... 230.4 kBaud RS232 interface: bi-directional RS485 interface: half duplex or full duplex For programming and data transfer
Focus laser option:	Laser class 2, < 1 mW, 650 nm
Programmable via serial interface:	Emissivity, analog output, analog output function, response time, temperature unit, Min and Max value memory adjustable with decay rate, reset by contact or temperature threshold, alarm switching point, time period etc.
Operating voltage:	DC: 10.5 ... 30 V
Power consumption:	2.5 W

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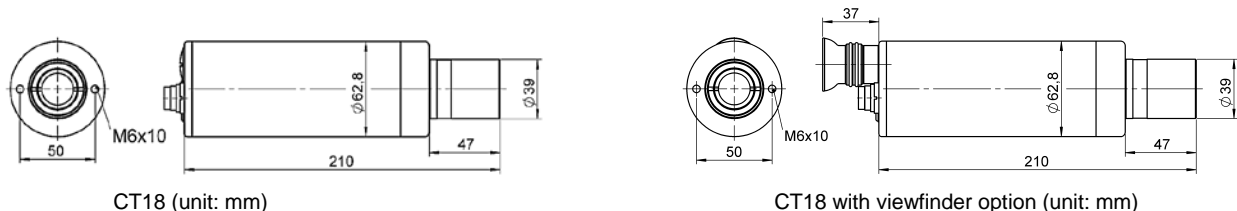
General specifications

Storage temperature:	-20 ... 80 °C
Permissible ambient temperature:	-20 ... 70 °C (protective cooling jacket option up to 250 °C)
Protection class:	IP67
Protection against oscillation:	EN 60068-2-6, frequency range: 10 ... 500 Hz, 10 ... 60 Hz, amplitude: 0.35 mm, 60 ... 500 Hz, acceleration: 100 m/s ² Resistance to vibrations: class B
Housing:	Stainless steel
Weight:	Appr. 1.5 kg

Scope of supply and options¹

Accessories:	<ul style="list-style-type: none"> ■² Manual CT18 ■ Software EasyConfig □ Software EasyMeas ■ Connecting cable with 12-pin female connector 2 m length, PVC, unterminated ends □ Connecting cable ≥ 5 m length: PTFE; PUR; PVC; TPE, unterminated ends or 12-pin plug
Calibration certificate:	□ HEITRONICS certificate
Laser aiming options (either ... or):	<ul style="list-style-type: none"> □ Focus laser (class 2) defines the measurement spot diameter and center point by producing a red centering circle with cross hairs when the adjusted focus distance and the actual working distance are the same. □ A centering circle in the viewfinder defines the measurement spot diameter when the adjusted focus distance and the actual working distance are the same.
Housing:	<ul style="list-style-type: none"> □ Protective cooling jacket (water) WK15 up to 250 °C ambient temperature □ Ex-proof housing stainless steel (II 2 G, Ex D e IIC T5 Gb Tamp: -50 ... 60 °C)
Adapter and flanges:	□ See document Options and Accessories
Bus interface:	□ Different Gateway options to connect to different fieldbus types

Dimensions³



CT18 (unit: mm)

CT18 with viewfinder option (unit: mm)

¹ Special model specification on request.

² ■ Standard function

□ Option

³ The dimensions given within this document will be valid for the drawing shown.