RAYOMATIC TC

8-14 µm compact infrared sensor with dual target T° & internal T° outputs

IRtec Rayomatic TC is a high quality, low cost, compact infrared sensor which measures the temperature of inaccessible or moving objects and materials. The temperature of targets from -20°C to 500°C is accurately and consistently measured, with an outstanding response time of 240 ms.

- 8 to 14 μm
- 2-wire 4-20 mA / 4-wire voltage / 4-wire Tc J, K or T outputs / 4-wire voltage low consumption
- Built-in temperature sensor for 4-wire models
- Emissivity fixed at 0.95
- 2:1, 15:1, 30:1 and CF optics
- IP65 stainless steel housing

Description

IRtec Rayomatic TC is a high quality, low cost, compact infrared sensor which measures the temperature of inaccessible or moving objects and materials. The temperature of targets from -20°C to 500°C is accurately and consistently measured, with an outstanding response time of 240 ms.

Two-wire models transmit the target temperature as a 4-20 mA output and offer a simple solution for most non-contact temperature measurement applications.

Four-wire models transmit the target temperature as a 0-50 mV or thermocouple output (type J, K or T) plus the internal sensor temperature as a 4-20 mA output. This 2nd output can be used to ensure that the sensor is being operated within the correct ambient temperature limits and prevent damage caused by overheating or overcooling. It can also be used to give an approximate indication of the air temperature surrounding the sensor.

The new 4-wire model with 0-50 mV output has an extremely low 3.2 mA current consumption, so it is ideal for maximum battery life in battery-powered applications.
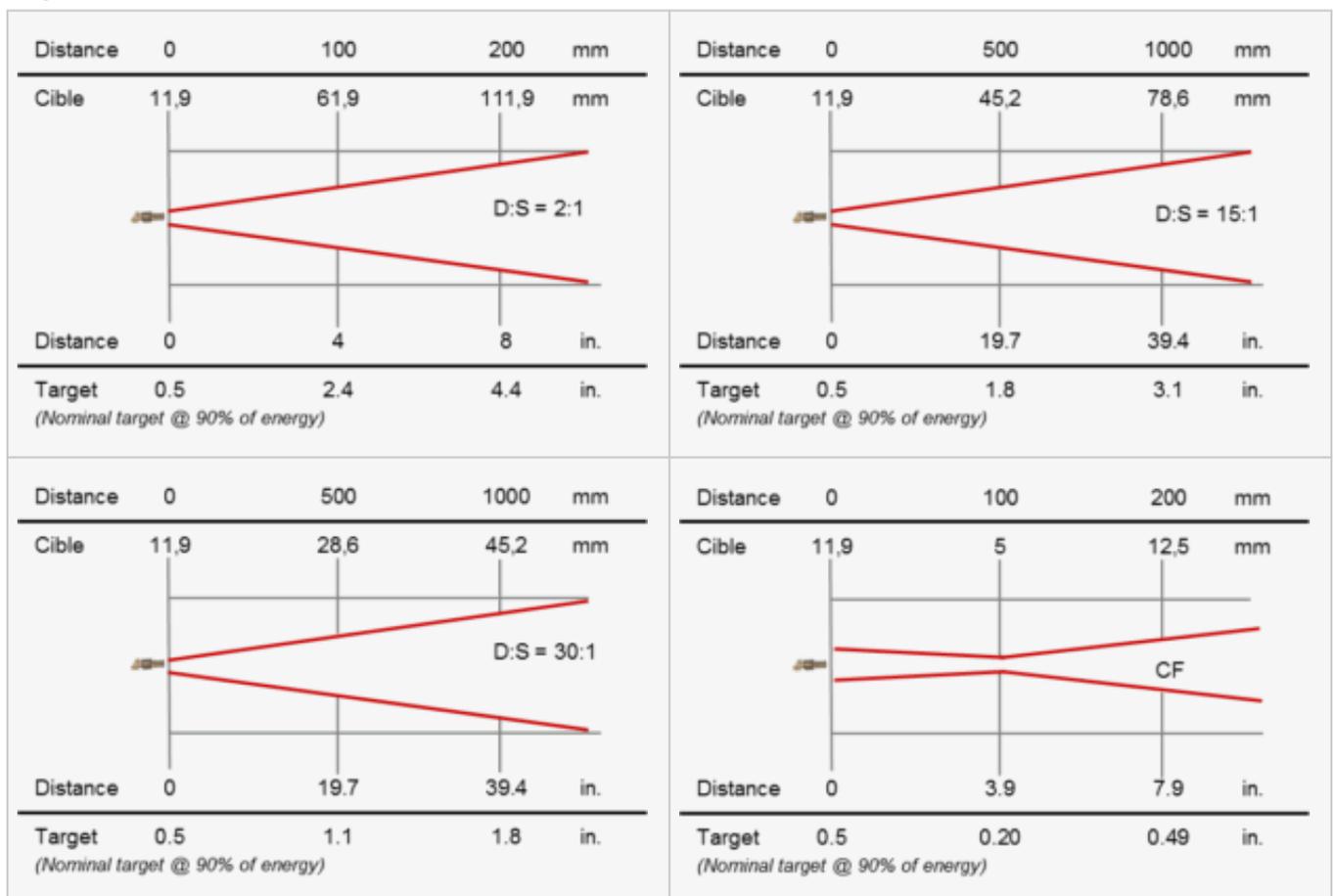
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Specifications

Temperature measurement

Model	LT	MT	HT
Temperature range	-20 to 100°C	0 to 250°C	0 to 500°C
Spectral response	8 - 14 µm		
Emissivity	Fixed at 0.95		
Accuracy	±1% RDG or 1°C		
Repeatability	±0.5% RDG or 0.5°C		
Response time	240 ms (90%)		

Optics

Further features

Outputs	2 wires, 4-20 mA 4 wires, 0-50 mV (target T°), 4-20 mA (sensor T°)

	4 wires, Tc T (target T°), 4-20 mA (sensor T°)
	4 wires, Tc J (target T°), 4-20 mA (sensor T°)
	4 wires, Tc K (target T°), 4-20 mA (sensor T°)
	4 wires, 0-50 mV (target T°), low consumption

General specifications

Size L x l x h	Electronic module: Ø 18 x 103 mm Thread mounting: M16 x 1 mm
Weight	95 g with cable
Construction	Stainless steel
Power supply	24 VDC (Max 28 VDC)
Sensor voltage	6 VDC Min
Loop impedance	900 Ω Max (4-20 mA OUT)
Output impedance	56 Ω (mV / Tc OUT)

Environmental specifications

Reference conditions	0°C to +70°C (95% non-condensing)
Environmental rating	IP65

Models and accessories

Instrument:

Ordering code structure: TC-AA-BB-C-DD-E/MAN
Please select the required options from tables A, B... below to define the right device reference.
TC   Rayomatic TC
Delivered in standard with:

- Instruction manual in English

Table AA   Optics - Distance to target
2   Optics 2:1, 61.9 mm @ 100 mm
15   Optics 15:1, 45.2 mm @ 500 mm
30   Optics 30:1, 28.6 mm @ 500 mm
CF   Close focus lens, 5 mm @ 100 mm
Table BB   Temperature range
LT   -20°C to 100°C
MT   0 to 250°C
HT   0 to 500°C (not for 2:1 optics)
Table C   Output signal

0   2 wires, 4-20 mA

1   4 wires, 0-50 mV (target T°), 4-20 mA (sensor T°)

2   4 wires, Tc T (target T°), 4-20 mA (sensor T°)

3   4 wires, Tc J (target T°), 4-20 mA (sensor T°)

4   4 wires, Tc K (target T°), 4-20 mA (sensor T°)

5   4 wires, 0-50 mV (target T°), low current consumption, for battery-powered applications

Table DD   Accessories
NO   None
WJ   Air / Water cooled jacket and air purge collar
Table E   Certificat d'étalonnage
0   None
1   Factory traceable calibration certificate with data

Accessories:

FBS   Fixed mounting bracket for compact sensors
ABS   Adjustable mounting bracket for compact sensors
APSW   Air purge collar for compact 2:1 sensors
APSN   Air purge collar for compact 15:1, 30:1 and close-focus sensors
PWS   Protective plastic window in stainless steel holder (8-14 µm model only)
LSTS   Laser sighting tool for compact sensors
DLSBFS   Dual laser sighting bracket, fixed, for compact sensors
DLSBAS   Dual laser sighting bracket, adjustable, for compact sensors

DLSBCE   Extended cable for Dual Laser Sighting Bracket - Price for 1 m
PCCE   Extended cable for uncooled RAYOMATIC TC sensor, option 0 - 1 m, up to 29 m extension
PCCEV   Extended cable for uncooled RAYOMATIC TC sensor, option 1 - 1 m, up to 29 m extension
PCCET   Extended cable for uncooled RAYOMATIC TC sensor, option 2 - 1 m, up to 29 m extension
PCCEJK   Extended cable for uncooled RAYOMATIC TC sensor, option 3 and 4 - 1 m, up to 29 m extension
PCCEHT   Extended cable, high temperature, for cooled RAYOMATIC TC sensor, option 0 - 1 m, up to 29 m extension
PCCEHTJ   Extended cable, high temperature, for cooled RAYOMATIC TC sensor, option 3 - 1 m, up to 29 m extension
PCCEHTK   Extended cable, high temperature, for cooled RAYOMATIC TC sensor, option 4 - 1 m, up to 29 m extension
CALCERT A   Calibration certificate
CALCERT B   Re-calibration and certificate