INFRARED TEMPERATURE SENSOR



- NON-CONTACT
- -40 ... +1000 °C
- OPTICS 15:1
- 4...20 MA WITH HART
- DISPLAY AND 2 LIMITS

IP65

KEY DATA

Property	Value	Property	Value
Input	infrared radiation, 8 ... 14 µm	Measuring range	-40 ... +1000 °C (2)
Optical resolution	15:1	Ambient	-20 ... +80 °C (1)
Accuracy	±1.5 °C or ±1.5 % (3)	Measuring head	-20 ... +120 °C
Output	4 ... 20 mA with HART, 3-wire	Supply	24 VDC ±10 %
Response time	30 ms (t90)	Product code	OC

Infrared temperature sensor for non-contact measurement on moving, hot or delicate surfaces.

TECHNICAL DATA

INPUT AND OUTPUT

Input	infrared radiation
Spectral range	8 ... 14 µm
Measuring range	-40 ... +1000 °C, minimum range 100 °C
Optical resolution	15:1
Spot size	6.5 mm at D = 0 · 16.6 mm at D = 200
	76.5 mm at D = 1000 mm (2)
Current signal	4 ... 20 mA with HART, 3-wire
Current range	3.8 ... 20.5 mA
Fault signal	3.6 mA short circuit · 21 mA break

PERFORMANCE

Accuracy sensor	±1.5 °C or ±1.5 % (3)
Repeatability	±0.75 °C or ±0.75 % (3)
Temperature coefficient	±0.05 K/K or ±0.05 %/K
	at ambient < 18 °C or > 28 °C
Resolution	0.1 K
Warm-up time	10 min (4)
Emissivity	0.100 ... 1.100, by software
Transmissivity	0.100 ... 1.100, by software
Transmitter	0.3 % of span · 16 bit
Measuring rate	10 measurements/s · response 20 ms
Display	7-segment, 4 digits, head turns 330°
Limit contacts	2× PNP or NPN, 30 VDC, 200 mA

SUPPLY AND ENVIRONMENT

Supply	24 VDC ±10 %
Ambient	-20 ... +80 °C (1)
Measuring head	-20 ... +120 °C
Storage	-40 ... +85 °C
Humidity	10 ... 95 % rH, no condensation
Vibration	IEC 68-2-6: 3G, 11 ... 200 Hz, each axis
Shock	IEC 68-2-27: 50G, 11 ms, each axis

MECHANICS

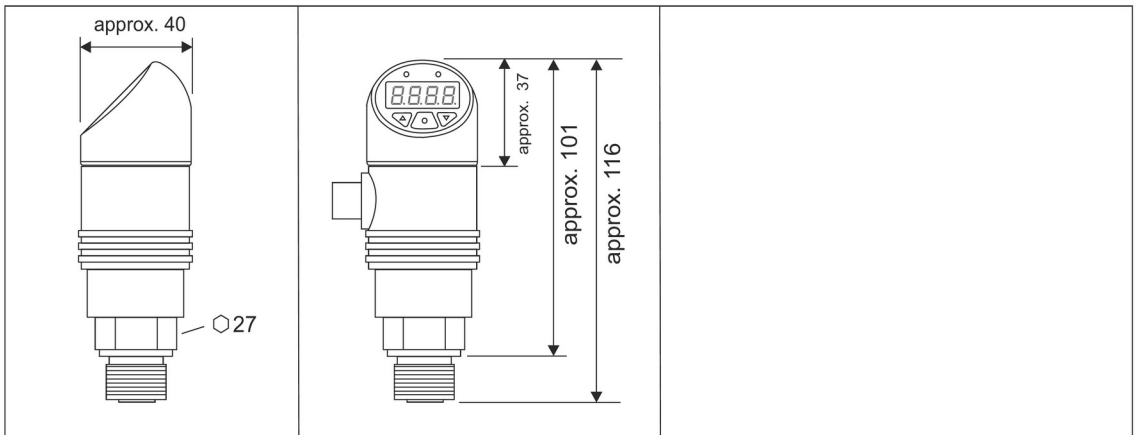
Process connection	1/2" · 3/4" · 1" · 1/2NPT
Material process connection	stainless steel 1.4571
Display head	polycarbonate (Makrolon)
Housing	PBT GF30
Mounting position	any (avoid deposits on the lens)
Protection	at least IP 65, boards partly potted
System pressure	0 bar — atmospheric (5)
Weight	approx. 240 g
Measuring head	stainless steel

(1) The ambient temperature is not the medium temperature: the medium may be hotter than the electronics in the head.
(2) The spot size grows with distance: 6.5 mm at the front edge, 16.6 mm at 200 mm, 76.5 mm at one metre. For a valid measurement the target must be at least as large as the spot.
(3) Reference conditions: ambient 23 ±5 °C, target > 0 °C, emissivity 1, response 1 s, distance 20 cm, spot 16.6 mm. The larger of the two values applies.
(4) 10 minutes warm-up — before that the reading is not dependable.
(5) System pressure 0 bar: this product measures against the open atmosphere and does not belong in a pressurised space.

ELECTRICAL CONNECTION

Built-in connector M12x1, eight-pole — the only connection of this product. Supply, current signal with HART and both limit contacts run through it.

DIMENSIONS



Dimensions in mm.

CONFORMITY

Vibration and shock	IEC 68-2-6 and IEC 68-2-27
Protection	at least IP 65, boards partly potted
System pressure	0 bar — not for pressure vessels (5)

ORDER INFORMATION

Accessories

- HART interface with USB connection and software (HART tool) for commissioning, configuration, signal analysis, data backup and documentation, on request. The sensor is set with the 3 keys on the display or over HART.

ORDER KEY

Field	Value	Meaning
Product code	OC	stands at the beginning of every order code
Input	0	infrared radiation
Sensor type	1	MIELT15
Process connection	3 · 4 · 5 · 9	1/2″ · 3/4″ · 1″ · 1/2NPT
Limit contact	0 … 8	2× or 1× PNP/NPN, 30 VDC, 200 mA or 1000 mA · 2 = none
Electrical connection	2	M12x1, 8-pole — the only one
Configuration	1 · 2	factory setting · customer-specific
Special model	0 · 1	no · yes, please state

The order code is formed from the product code and the fields of the key.