


● Characteristics

1500 - PYROMETER - THERMOMETER - MODULAR - ECONOMIC

	- Input:	Infrared radiation
	- Maximum range	-40...+1000 °C
	- Output:	4...20 mA HART (3-wire system)
	- Voltage supply:	24 VDC ±10%
	- Accuracy:	see <i>Technical Data</i>
	- Process connection:	several options
	- Electrical connection:	M12 male, 8-pole
	- Temperature range:	-20...+80 °C (ambient)
	- Limit value contacts:	2 electronically (NPN / PNP)
	- Adjustment:	keys / software
- Material:	stainless steel 1.5471 (medium contact)	

● Technical Data

Input

Infrared radiation: -40...1000 °C (minimum range: 100 °C)

Output

Current signal: 4...20 mA with superimposed communication signal (HART), 3-wire system

Current range: 3,8...20,5 mA

Signal on error: 3,6 mA (sensor short circuit, underflow)
21 mA (sensor break, sensor open circuit, overflow)

Performance Parameters

Infrared sensor:	Spectral region:	8...14 μm
	Optical resolution:	15:1
	Accuracy*:	±1,5 °C, ±1,5%
	Repeatability*:	±0,75 °C, 0,75%
	Temperature coefficient:	±0,05 K/K, ±0,05% (ambient temperature: <18 °C, >28 °C)
	Resolution:	0,1 °C
	Response time:	30 ms (t90)
	Warm-up time:	10 min
	Emissivity, amplification:	0,100...1,100
	Transmittance:	0,100...1,000
*Reference values:	Temperature: ambient = 23±5 °C, test object = >0 °C / whichever is greater / ε = 1 / response time = 1 s / distance D = 20 cm, measuring point S = 16,6 mm	
Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Measuring rate:	10 measurements/s
	Configuration:	Keys on display / via software (HART communication)
	Transmission behaviour:	temperature linear
	Turn-on delay time:	<5 s
	Reponse time:	20 ms
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit

● Applications

The METS-IR is designed for process monitoring with a non-contact measurement of temperature. With its two configurable limit value contacts, the integrated display and the numerous electrical connections, the temperature sensor is also suitable for applications with higher requirements.



● Technical Data (Continued)

Performance Parameters (Continued)

Indicator / limit values: temperature drift: 100 ppm/K

Indication

Display: 7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
 Display head: rotatable approx. 330°
 Memory: minimum / maximum values
 Indication: - measuring value - unit of measurement - control menu
 Decimal point: automatically or manually, dependent on measuring range / unit

Limit Value Contacts

Electronically: 2x PNP or NPN (30 VDC, 200 mA)
 Option: 2x PNP or NPN (30 VDC, 1000 mA)
 Indication: 1 LED red for each limit value
 Voltage across: <1 V
 Settings: with 3 keys (TouchM-Technology)
 Setting range: switch point and hysteresis: any value within measuring range
 Switching delay: 0,0...999,9 s
 Failsafe function: adjustable
 Galvanical isolation: switching outputs are separated from measuring amplifier

Supply

Voltage: 24 VDC ±10%
 Reverse battery protection: available (no function, no damage)

Environmental Conditions

Temperature: Operating range: -20...+80 °C
 Sensing head: -20...120 °C
 Storage: -40...+85 °C
 Humidity: 10...95% rH (no condensation)

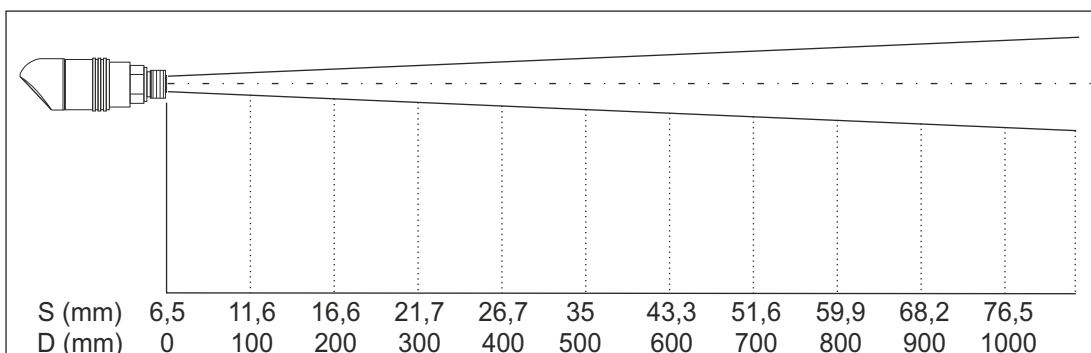
Mechanics

Dimensions: see page 3
 Process connection: 1/2" / 3/4" / 1" / 1/2NPT
 Electrical connection: M12 male, 8-pole
 Material: Process connection: stainless steel 1.4571
 Sensing head: stainless steel
 Body: PBT GF30
 Display head: polycarbonate (makrolon)
 Weight: approx. 240 g
 Fitting position: any (avoid deposition on lens)
 System pressure: 0 bar (barometric pressure)
 Device protection: Protection class: at least IP65 (electronics)
 PCB: potted
 Vibration / Shock: IEC 68-2-6: 3G, 11 – 200 Hz, any axis / IEC 68-2-27: 50G, 11 ms, any axis

Programmable Features

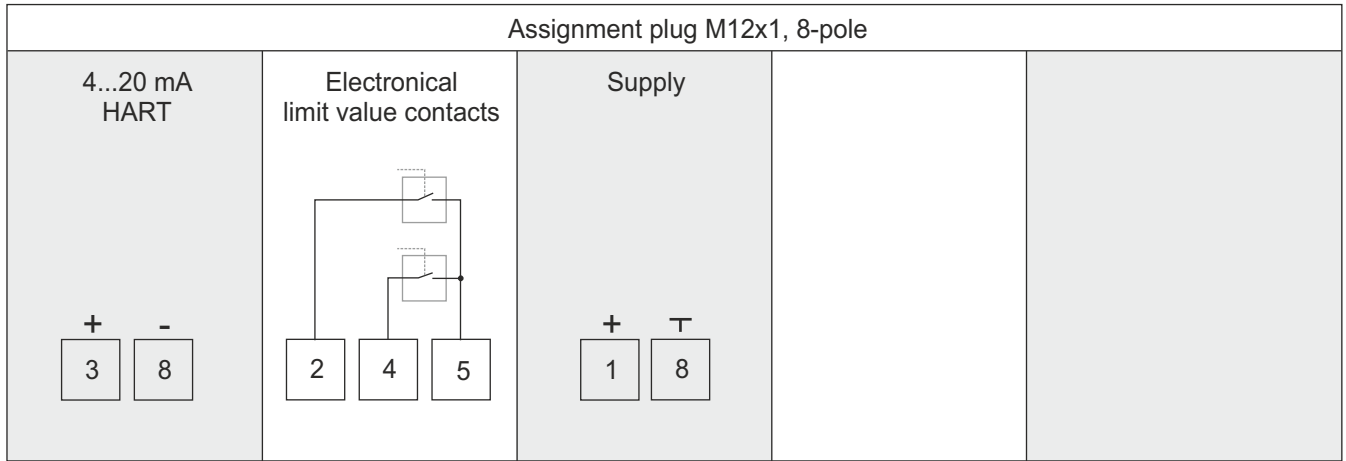
Measuring amplifier: Measuring range start (LRV) / Measuring range end (URV) / Adjustment, output simulation current / Filter function / Linear output signal / HART address / 2-point calibration
 Display: indication range / indication time / decimal point / units / zero point stabilisation / programming lock / calibration points / TAG number
 Limit contacts: limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2
 Features, Operation: according VDMA 24574-1 up to 24574-4

● Optical Charts

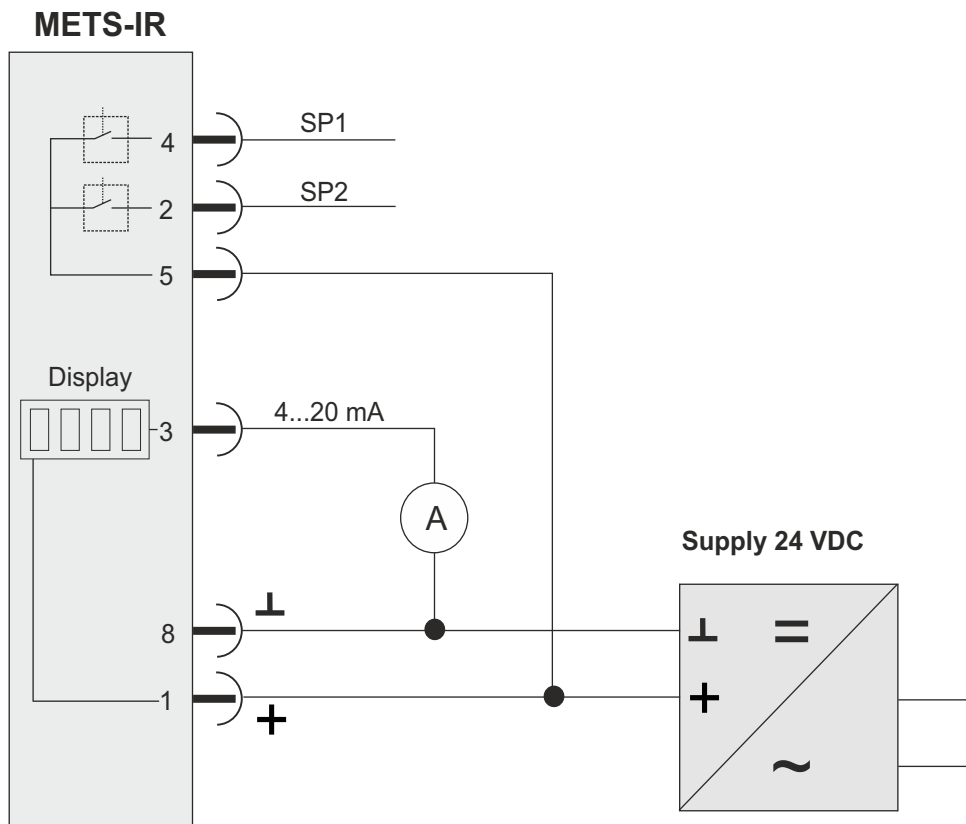


S = Measuring point size
 D = Distance from sensing head front to the object
 For valid measurement the point size should be as large as the object or smaller.

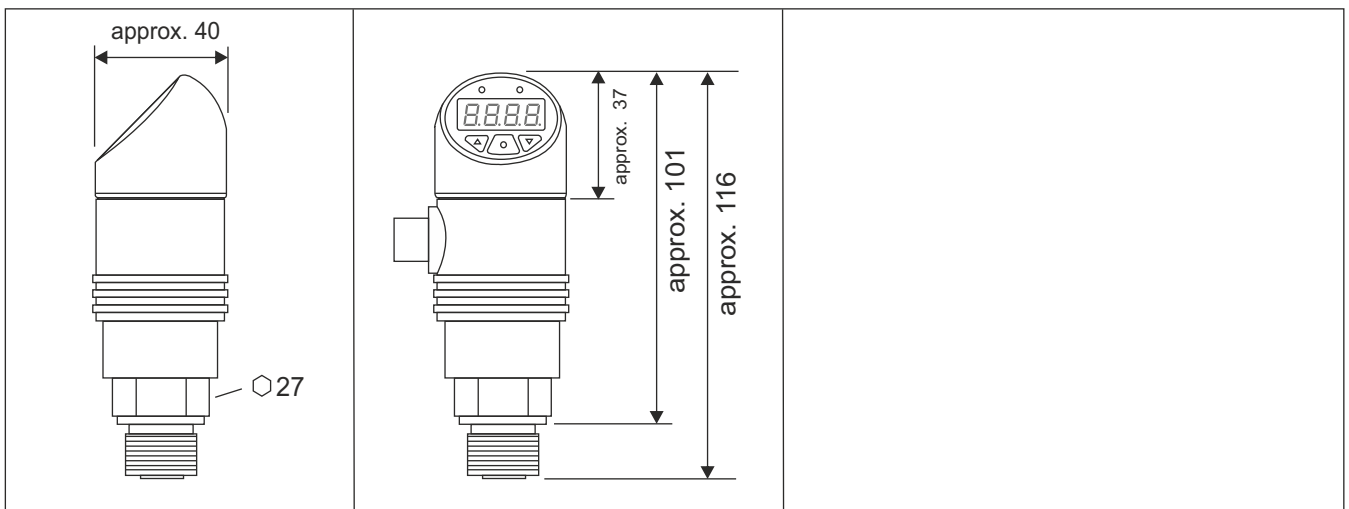
● **Electrical Connection**



Electrical Connection (Example)



● **Dimensions (in mm)**



● **Order Code**

O C X X X X X X - X X X

Input:	Infrared radiation	0								
Sensor type:	MIELT15	1								
Process connection:	1/2"		3							
	3/4"		4							
	1"		5							
	1/2" NPT		9							
Limit value contacts:	2x PNP, 30 VDC, 200 mA (standard)		0							
	1x PNP, 30 VDC, 200 mA		1							
	Without		2							
	2x NPN, 30 VDC, 200 mA		3							
	1x NPN, 30 VDC, 200 mA		4							
	2x PNP, 30 VDC, 1000 mA		5							
	1x PNP, 30 VDC, 1000 mA		6							
	2x NPN, 30 VDC, 1000 mA		7							
	1x NPN, 30 VDC, 1000 mA		8							
Electrical connection:	M12, 8-pole						2			
Configuration:	Factory setting ¹⁾								1	
	Customized (please specify) ²⁾								2	
Special model:	No									0
	Yes (please specify)									1

1) Measuring range: Indicating range / Limit values: 40% / 80%

2) Please select settings as per technical data. For values not given, factory settings will be used

Accessories:

Interface HART, USB, software

Order No.: **01310-00220**

● **HART Communication**

The HART-Tool is a graphical user interface for the ME series with menu-driven program for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device. Operating systems: Windows 2000, XP, Windows 7, 8.1 and 10.

Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

- Settings:
- Adjustment of output current
 - Simulation of output current
 - Filter function
 - Limits of measuring range
 - Linear output signal
 - HART address
 - HART TAG number
 - 2-point calibration

Please note: When using communication via a HART modem, a communication resistance of 250 Ω has to be taken into account.