

Highlights

- Small sensing head fits where other sensors can't
- Ambient head temperatures up to 180°C without cooling
- Industrial rugged head cable: Silicone and Halogen free, resistant against oil, bases, and acids (MID/MIC)
- 1% accuracy across broad temperature range
- 0/4 – 20 mA, 0 – 5 V, J or K thermocouple output
- Interchangeable sensing heads
- Adjustable emissivity, transmissivity, peak hold, valley hold and averaging
- 5-digit backlit LCD user interface
- Accessories for mounting and air purging
- Interface: RS232 (standard) or RS485 (optional)
- Multidrop Network (max. 32 sensors with RS485)

Electrical Specifications

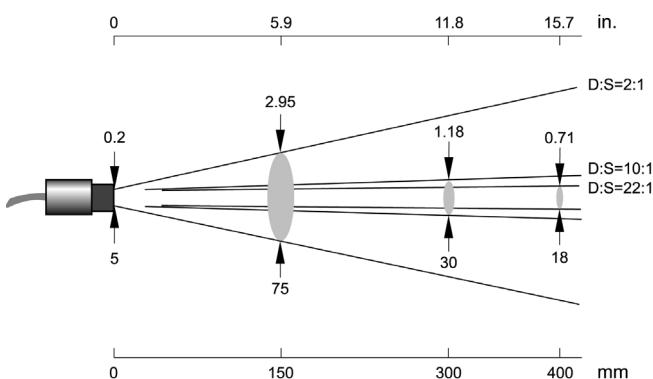
| | |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Outputs | 4 – 20 mA, 0 – 20 mA, 0 – 5 V (scaleable) J or K thermocouple, 10 mV / °C head ambient signal, Alarm (software enabled) |
| Inputs | Emissivity setting, background radiation compensation, trigger (software enabled) |
| Cable Length | 1 m standard |
| Output Impedance (T/C) | 20 Ω |
| Minimum Load Impedance (mV) | 100 kΩ |
| Maximum Loop Impedance (mA) | 500 Ω with 24 VDC power supply |
| Current Draw | 100 mA |
| Power Supply | 12 – 26 VDC |

Sensor Specifications

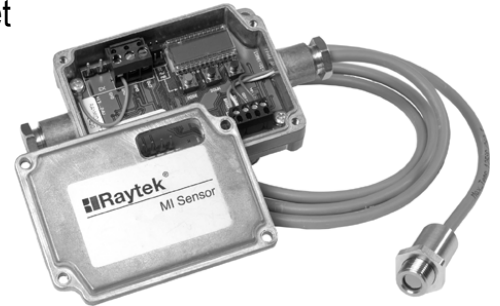
| | |
|-----------------------------|----------------------------------------|
| Environmental Rating | IP65 (NEMA-4) ¹ |
| Ambient Temperature | |
| MIH sensing head | 0 to 180°C |
| MIC sensing head | 0 to 125°C |
| MID sensing head | 0 to 85°C |
| with air cooling | up to 200°C |
| Electronics housing | 0 to 65°C |
| Storage Temperature | -10 to 85°C |
| Relative Humidity | 10 to 95%, non-condensing |
| EMC | IEC 61326-1 (max. cable length 3 m) |
| Weight | |
| Sensing head | 50 g (with 1 m cable), Stainless steel |
| Electronics housing | 270 g, Zinc, die-cast |

¹ not for sensing heads with optical resolution of 2:1

Optical Specifications



MI Datasheet



Measurement Specifications

| | |
|---------------------------------------|-------------------------------------------------------------------------------|
| Temperature Range | |
| LT | -40 to 600°C -25 to 600°C for J-thermocouple output |
| Spectral Response | |
| LT | 8 to 14 μm |
| Optical Resolution¹ | |
| MIH, MIC, MIH | 22:1 (typ.), 21:1 (guaranteed) |
| MID, MIC, MIH | 10:1 |
| MID, MIC | 2:1 |
| System Accuracy² | |
| LT | ±1% or ±1°C ^{3,5} |
| Thermocouple output | ±1% or ±2,5°C ³ |
| Repeatability | ±0,5% or ±0,5°C ³ |
| Temperature Coefficient | |
| MIH sensing head ⁴ | ±0,05°C / °C or ±0,05% / °C ³ (ambient temperature: 23 – 180°C) |
| MIC sensing head ⁴ | ±0,05°C / °C or ±0,05% / °C ³ (ambient temperature: 23 – 125°C) |
| MIC, MIH sensing head ⁴ | ±0,1°C / °C or ±0,1% / °C ³ (ambient temperature: 0 – 23°C) |
| MID sensing head | ±0,15°C / °C or ±0,15% / °C ³ (ambient temperature: 0 – 85°C) |
| Electronics housing | ±0,1°C / °C or ±0,1% / °C ³ |
| Temperature Resolution | |
| LT | 0,1°C |
| System Response Time | 150 ms (95%) |
| Emissivity | 0,100 to 1,100 digitally adjustable increments of 0,001 |
| Transmission | 0,100 to 1,000 digitally adjustable increments of 0,001 |
| Signal Processing | Peak hold, valley hold, variable averaging filter, adjustable up to 998 s |

¹ 90% energy

² at ambient temperature 23°C ± 5°C

³ whichever is greater

⁴ with ISO Calibration Certificate, based on NIST/DKD certified probes

⁵ ± 2°C for target temperatures < 20°C

Options

Options must be specified at time of order.

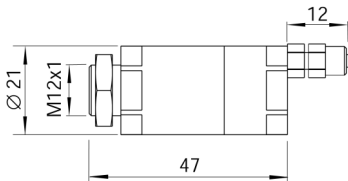
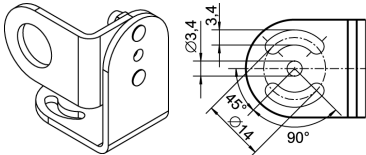
- Longer cable lengths: 3 m (...CB3), 8 m (...CB8), 15 m (...CB15)
- RS485 serial interface (...4), for multidrop networks or long distances
- Box lid with view port (...V)

Accessories

Each standard MID package includes a sensing head, one mounting nut, 1 m of cable, die-cast housing with pre-mounted electronics, and an operator's manual.

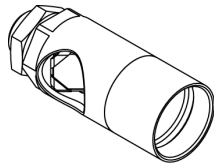
- PC connection kit for models with RS232, including DataTemp MultiDrop Software (RAYMISCON)
- PC connection kit for models with RS485, including DataTemp MultiDrop Software and RS232/485 converter: 110 VAC (RAYMINCONV1), 230 VAC (RAYMINCONV2)

Adjustable Mounting Bracket
(XXXMIACAB),
or fixed mounting bracket
(XXXMIACFB)

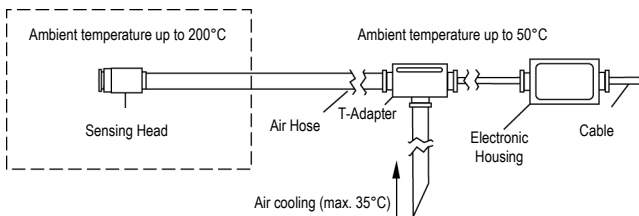


Air Purge Jacket with fitting,
no cooling (XXXMIACAJ)

Right Angle Mirror for Air Cooling
Jacket and Air Purge Jacket only
(XXXMIACRAJ)



Air Cooling Jacket and T-Adapter incl. air hose and insulation (XXXMIACCJ: 0,8 m, XXXMIACCJ1: 2,8 m)



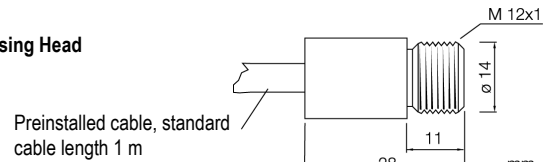
Protective Window
(XXXMIACPW)



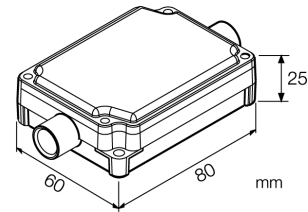
Box Lid with View Port
for post installation (XXXMIACV)

Dimensions

Sensing Head



Electronics Housing



DataTemp® Multidrop Software



For use with RS232 or RS485 models, DataTemp Multidrop software allows access to the extended digital features of the MID with an easy-to-use interface. Compatible with WIN 95/98/NT/2000/XP, DataTemp Multidrop provides for sensor setup, remote monitoring, and simple data logging for analysis or to meet quality record-keeping requirements.

Additional features configurable with RS232 or RS485 communications and DataTemp MultiDrop Software:

- 5V alarm signal triggered by target temperature or ambient head temperature
- Eight-position "recipe" table that can be easily interfaced to an external control system
- External reset signal input for signal processing
- External inputs for analog emissivity adjustment or background radiation compensation
- Remote digital communication and control of up to 32 sensors in an RS-485 multidrop configuration

www.raytek.com
for up-to-the-minute features

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