Compact Series

MI3 Box

Datasheet

Highlights

- Multiple sensor design (up to 8 sensing heads for 1 box)
- Plug & Play (automatic head detection)
- Rugged IP rated metal box or fast mountable DIN rail box
- All boxes support all MI3 spectral models
- Failsafe functions (internal temp., break of head cable)
- Isolated alarm relay output
- User configurable inputs for remote sensor configuration
- Analog outputs with galvanic isolation
- USB 2.0 interface as standard
- Optional serial RS485 communication interface with the protocols: ASCII, Profibus, Modbus®
- Optional Ethernet communication interface with the protocols: ASCII, http, Profinet IO
- Intuitive user interface with high resolution LCD display
- Advanced on-board signal processing like: peak & valley hold, intelligent averaging (flicker)
- DataTemp® Multidrop Software for remote monitoring

Measurement Specifications

Accuracy	
mA / V output	±1°C
Thermocouple output	±1.5°C
Temperature Resolution	
mA/V output	±0.1°C (±0.2°F)[1] / 12 bit (metal box, MI3COMM)
mA/V output	± 0.02°C (±0.04°F) / 16 bit (analog DIN rail box)
Temperature Coefficient	
mA/V output	± 0.02 K / K
Thermocouple output	± 0.05 K / K
Signal Processing	Peak hold, valley hold, adjustable up to 998 s variable averaging filter

[1] for a zoomed temperature span of < 500°C (932°F)

Interfaces

Outputs	4 – 20 mA, 0 – 20 mA, 0 – 5 V, or 0 – 10 V J, K, R, or S thermocouple, 0 – 5 V head ambient signal
Thermocouple	J: -40 to 600°C (-40 to 1112°F) K: -40 to 800°C (-40 to 1472°F) R/S: 250 to 1800°C (482 to 3272°F)
Relay	48 V / 300 mA (solid-state relay, potential-free)
Inputs (1 - 3)	1. Emissivity ε setting (analog, 0 - 5 V_{DC}) 2. Background radiation compensation (analog, 0 - 5 V_{DC}) 3. Trigger/hold or laser switching (digital, high/low) or digital emissivity control via inputs 1 to 3
Communications	USB 2.0 RS485 Profibus DP-V0 Profinet IO Ethernet TCP/IP, http and 64 MB data logger Modbus RTU

General Specifications

Power Supply	8 to 32 VDC, 5 W
Ambient Temperature	-10 to 65°C (14 to 149°F)
Storage Temperature	-20 to 85°C (-4 to 185°F)
Environmental	IP65 / NEMA-4 (MI3COMM only)
EMC	EN 61326-1:2006
Material	die cast zinc (MI3COMM) molded plastic (all other boxes)

Comm Box	**MI3COMM…**	**MI3MCOMMN DIN 3TE**	**MI3MCOMM DIN 4TE**	**MI3MCOMM… DIN 6TE**
Firmware Wiring	8 heads 1 head	8 heads 4 heads	8 heads 4 heads	8 heads 4 heads
Display, Button	✓	–	✓	✓
Outputs: mA / V TC Relay	 ✓ ✓ ✓	 – – ✓	 – – ✓	 4x (optional) – ✓
Inputs: ε – analog ε – digital $T_{Background}$ Trigger/Hold Laser Switch	 ✓ ✓ ✓ ✓ ✓	 – – – ✓ ✓	 – – – ✓ ✓	 – – – ✓ ✓
Interfaces: USB RS485 Profibus Profinet Ethernet Modbus	 standard optional optional optional optional optional	 standard – – – – –	 standard standard – – – –	 standard – optional optional optional optional

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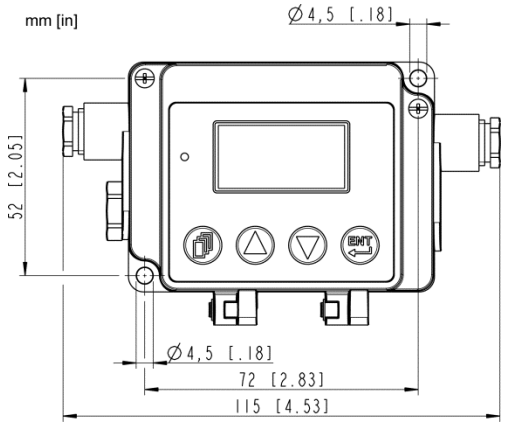
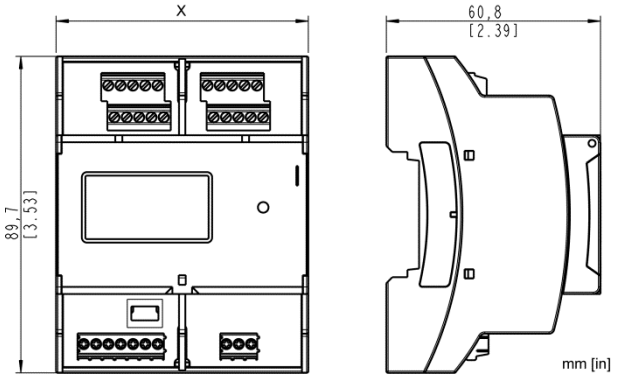
Dimensions

Metal Box (MI3COMM) Height: 31.5 (1.2)



DIN Rail Box (MI3MCOMM…)



Width	MI3MCOMMN	MI3MCOMM	MI3MCOMM…
X	DIN 3TE: 53.6 mm (2.1 in)	DIN 4TE: 71.6 mm (2.8 in)	DIN 6TE: 107.6 mm (4.2 in)

Options

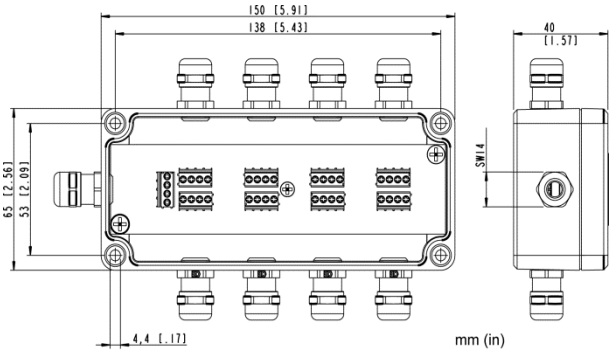
Options must be specified at time of order.

- Fieldbuses for Comm Box:
  RS485, Profibus, Profinet, Ethernet, Modbus
- 4 analog output channels for Comm Box, DIN 6TE:
  mA or V, all channels electrically isolated

Accessories

Accessories include items that may be ordered at any time and added on-site:

- Multi-Channel Box to support up to 8 sensing heads in a network (XXXMICONNBOX)
- USB/RS485 Adapter for boxes with RS485 interface (XXXUSB485)



Multi-Channel Box (XXXMI3CONNBOX)

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