Raytek 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

[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)

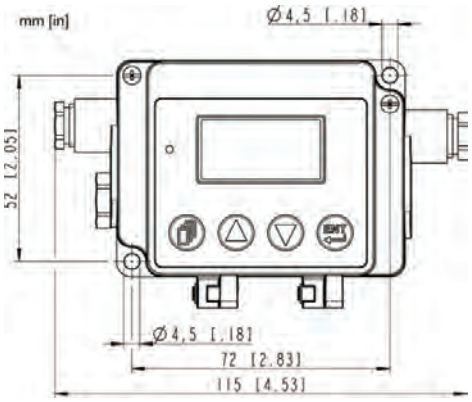
Comm Box	MI3COMM…	MI3MCOMMN DIN 3TE	MI3MCOMM DIN 4TE	MI3MCOMM… DIN 6TE
				
Firmware	8 heads	8 heads	8 heads	8 heads
Wiring	1 head	4 heads	4 heads	4 heads
Display, Button	✓	–	✓	✓
Outputs:				
mA / V	✓	–	–	4x (optional)
TC	✓	–	–	–
Relay	✓	✓	✓	✓
Inputs:				
ε – analog	✓	–	–	–
ε – digital	✓	–	–	–
$T_{Background}$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

Raytek®
Fluke Process Instruments

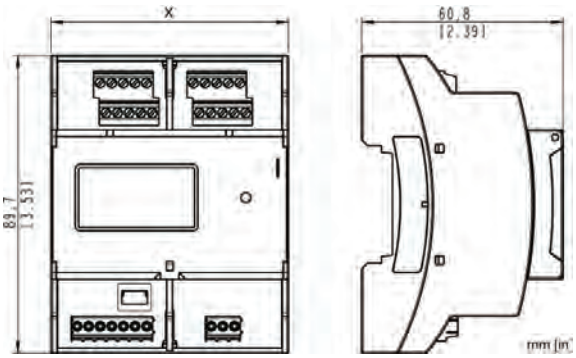
sales@GlobalTestSupply.com Raytek-Direct.com 1.888.610.7664

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

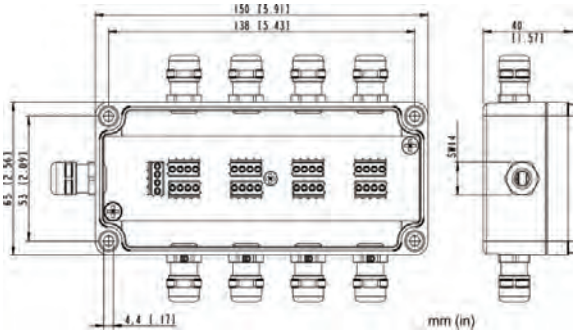
Options must be specified at time of order.

- 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)

sales@GlobalTestSupply.com Raytek-Direct.com 1.888.610.7664

Sensing Heads

RAYMI3 A B C D

A	B	C	D
Optics	Temperature Range	Model	Options

Each MI3 sensor system is comprised of (1) MI3 sensing head and (1) MI3COMM or MI3MCOMM communication module. The sensing head includes one mounting nut and 1m (3.3ft) cable. Longer cables up to 30 m (100ft) maximum are available and must be specified at time of order. The MI3 sensing head and MI3COMM box are ordered as separate items.

Model	Description		
RAYMI3	Miniature infrared sensing head with 1 meter (3.3ft) cable		
Code A	**Optical Resolution**		
02	2:1	20	22:1
10	10:1		
Code B	**Temperature Range**		
LT	-40ºC to 600ºC (-40ºF to 1112ºF) Note: 0ºC to 1000ºC (32ºF to 1832ºF) for LTF and LTS 22:1 models		
G5	250ºC to 1650ºC (482ºF to 3002ºF)		
Code C	**Model**		
S	Standard sensing head, 120ºC (248ºF) maximum ambient		
F	Fast response sensing head, 20 mSec response time, 120ºC (248ºF) maximum ambient (10:1 head only)		
H	High ambient sensing head, up to 180ºC (356ºF)		
Code D	**Options**		
CB3	3m (10ft) cable	CB15	15m (49ft) cable
CB8	8m (26ft) cable	CB30	30m (98ft) cable

Communication Boxes

Model	Description
RAYMI3COMM	MI3 IR thermometer communication box with USB 2.0 communications, cast zinc housing and user-interface
RAYMI3COMM4	MI3 IR thermometer communication box with USB 2.0 communications and RS-485 communication option, cast zinc housing and user-interface
RAYMI3COMMM	MI3 IR thermometer communication box with USB 2.0 communications and Modbus communication option, cast zinc housing and user-interface
RAYMI3COMMP	MI3 IR thermometer communication box with USB 2.0 communications and Profibus communication option, cast zinc housing and user-interface
RAYMI3MCOMM	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and RS485 communications
RAYMI3MCOMMM	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Modbus communications
RAYMI3MCOMMP	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profibus communications
RAYMI3MCOMMN	Modular DIN mountable 4-channel IR communication box with no user interface, display or RS485 interfaceIncludes USB 2.0 and alarm relay, only
RAYMI3MCOMMA	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and 4 galvanic isolated analog outputs
RAYMI3COMME	MI3 IR thermometer communication box with USB 2.0 communications and Ethernet communication and built in HTTP-Server option, cast zinc housing and user-interface
RAYMI3COMMPN	MI3 IR thermometer communication box with USB 2.0 communications and Profinet communication, cast zinc housing and user-interface
RAYMI3MCOMME	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Ethernet interface with built-in HTTP-Server.
RAYMI3MCOMMPN	Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profinet interface.

Raytek is an ISO 9001 certified company

© 2015 Raytek Corporation (3783599 Rev H) 4/2015
Raytek, the Raytek logo and DataTemp are registered trademarks of Raytek Corporation.
Modbus is a registered trademark of the Modbus Organization, Inc
Specifications subject to change without notice.

sales@GlobalTestSupply.com Raytek-Direct.com 1.888.610.7664