

PyroCube M

Pyrometer with fast response and small measurement spot, for low-temperature metals



- Measures small, reflective metal targets at low temperatures
- Temperature ranges from 50°C to 600°C
- Measured spot as small as 1 mm
- Response time 1 ms
- Continuous LED aiming light shows the position and size of the measured spot
- Multilingual touch screen interface (optional)

PYROCUBE G SENSOR SPECIFICATIONS

MEASUREMENT

Temperature Range

50°C to 600°C

Response Time (95%)

1 ms (adjustable via averaging function)

Measured Spot Diameter

From 1.0 mm depending on measurement distance and choice of optics (see Field of View Diagrams below)

Target Sighting

Red LED built-in as standard on all models, shows the position and size of the measurement area. Switchable on/off.

Accuracy of Measurement

± 3°C or 1%, whichever is greater

Repeatability

± (0.2% + 2°C)

Temperature Resolution

2°C below 100°C

0.5°C above 100°C

Emissivity Setting

Adjustable via RS232C or optional touch screen interface

Below 100°C: 0.3 to 1.0

Above 100°C: 0.05 to 1.0

MECHANICAL

Weight (without cable)

-MB models: 85 g

-MA models: 190 g

ENVIRONMENTAL

Environmental rating

IP67

Operating ambient temperature

0°C to 50°C

Storage temperature

-15°C to 70°C

Operating ambient humidity

30% to 85% RH non condensing

DISPLAY

Optional PM030 touch screen terminal for indication, configuration, data logging and alarm outputs. Sensor is available with or without display.

PM030 TOUCH SCREEN INTERFACE

- Optional wall-mounted display, data logging, configuration and alarm unit for PyroCube sensor
- **Read the temperature**
The large, bright backlit temperature display is visible from a distance and turns red in an alarm condition.
- **Record the temperature history**
See a graph of the measured temperature, and log more than a year of data to a single MicroSD Card. The data is stored in a simple text format that can be imported easily into Excel.
- **Configure the sensor**
All the sensor's configuration settings can be adjusted via the intuitive touch screen interface.
- **Trigger temperature alarms**
Two alarms are individually configurable as high, low, band or error. The screen turns bright red to signal an alarm condition, and the built-in 24 V, 1 A relay outputs can be connected directly to alarm sounders and beacons.
- **Accurate measurements, even with reflections of hot objects**
Place the sensor outside an oven or furnace and accurately measure the temperature of objects inside by using the Reflected Energy Compensation feature.

ELECTRICAL

Outputs

1 analogue output and 1 alarm output

Analogue Output

4-20 mA (set by default), 0-20 mA, mV/°C or voltage, selectable via optional PM030 touch screen interface

Alarm Output

1 open drain alarm output, rated 27 V DC, 0.2 A

Supply Voltage

5 to 27 V DC, 100 mA max

Digital Communications

RS232C Modbus RTU, non-isolated

Output Cable Connection to Sensor

-G models: Hardwired

-GH models: Connector built into sensor

Applications

The PyroCube M measures the temperature of small, reflective metal targets from 50°C to 600°C with a response time of 1 millisecond.

MA models can measure areas as small as 1 mm. A choice of optics is available.

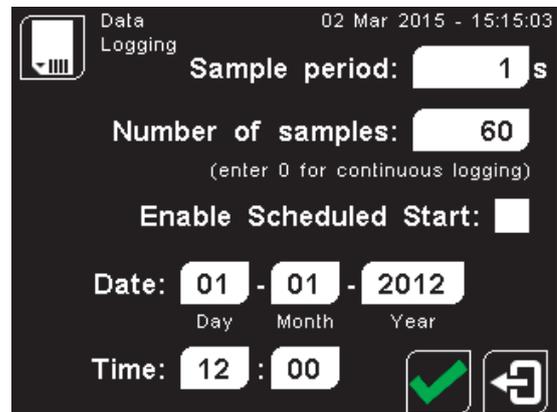
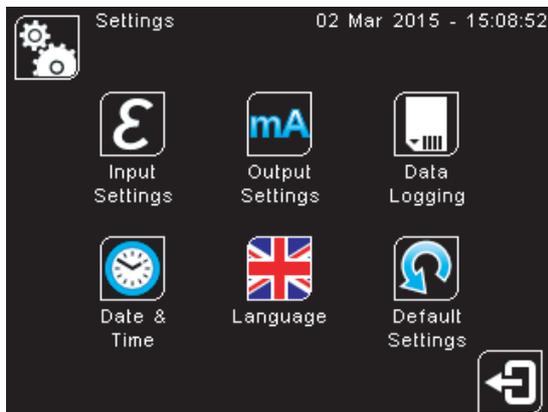
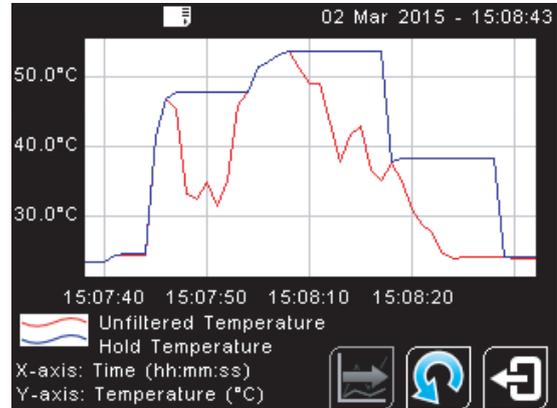
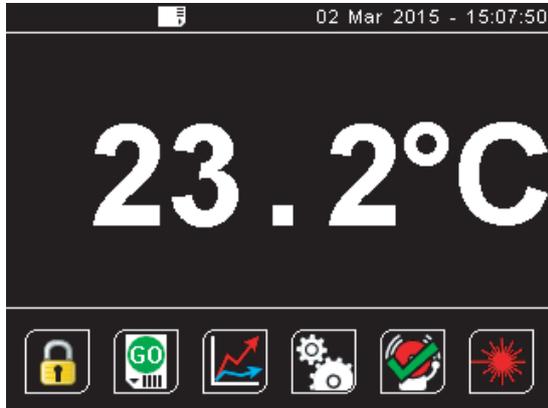
The smaller, lower-cost MB model measures an 11 mm spot.

All models can measure through glass or quartz viewports.

Outputs (from touch screen module)

Retransmitted analogue output from sensor, plus 2 relays, rated 24 V DC, 1 A

Output Type	Effective Minimum Output	Output Accuracy (additional to Measurement Accuracy)
0 to 1 V DC	30 mV	±1.5 mV
mV/°C	30 mV	±1.5 mV
0 to 20 mA	0.2 mA	±0.02 mA
4 to 20 mA	4.0 mA	±0.02 mA



PM030 DATA LOGGING SPECIFICATIONS

Storage

MicroSD Card (optional), max. 32 GB, equal to 16 years of data at the fastest sample rate of 1 per second

Sample Interval

1 second to 1 day (configurable)

Internal Clock Battery

1 x BR 1225, 3 V (not included)

Variables Logged

Instantaneous measured temperature, hold temperature, alarm events

Configurable Parameters

Data logging: Sample period
Number of samples
Scheduled start

Alarm logging: Log times when triggered, acknowledged, reset Log data while triggered

PM030 SPECIFICATIONS

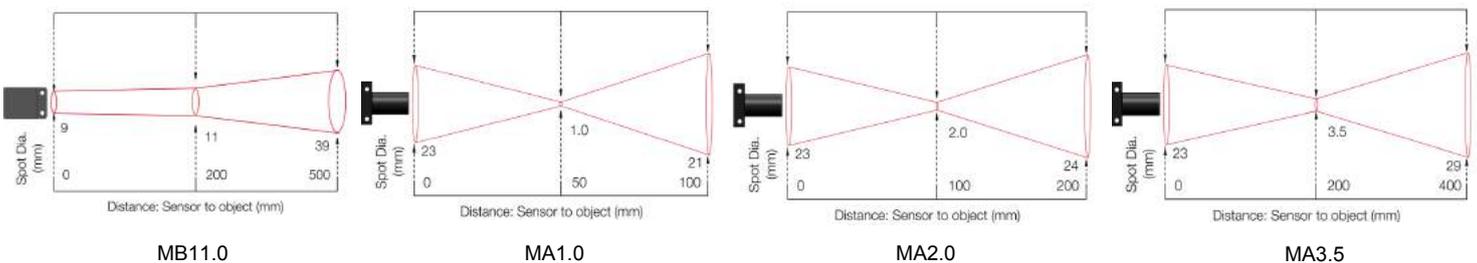
Display Format

2.83" (72 mm) resistive touch TFT, 320x240 pixels, backlit

Configurable Parameters

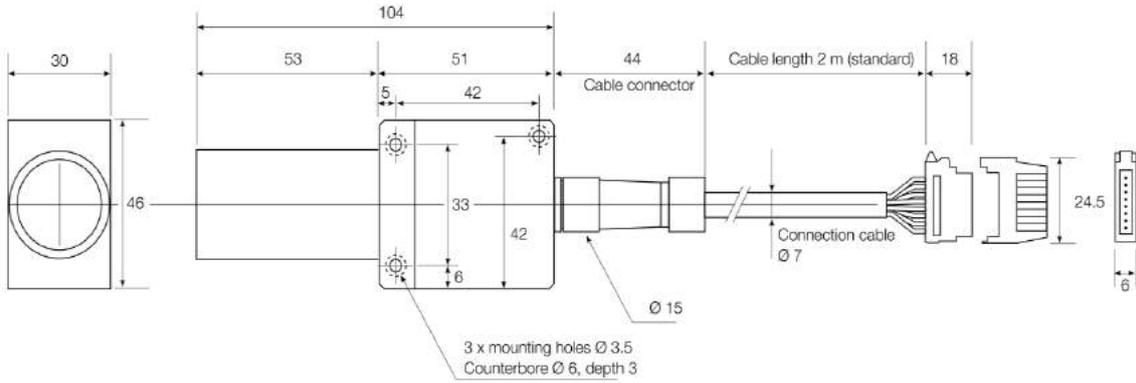
- Language (English, Chinese, Japanese)
- Temperature units °C/°F
- Displayed temperature
- LED sighting on/off
- Password
- Date & time (for data logging time stamps)
- Peak hold period, decay level
- Averaging period
- Correction (gain/offset)
- Emissivity setting (with teach function)
- Reflected energy compensation (with teach function)
- Output type
- Output temperature range
- Polarity on error
- Alarm mode, levels, hysteresis

OPTICS

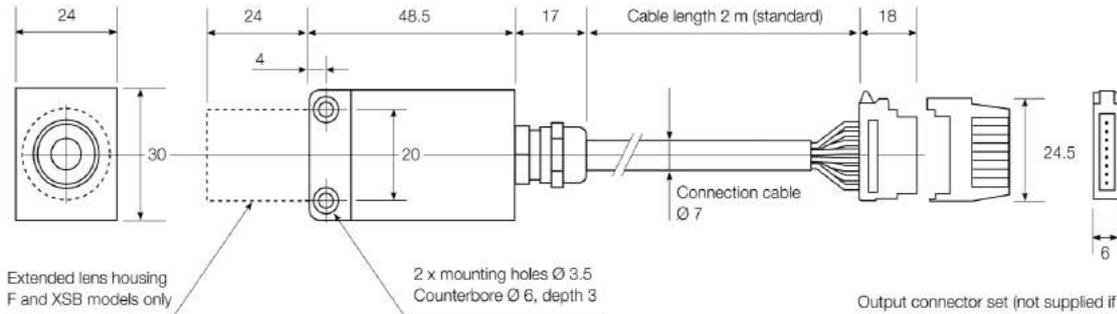


DIMENSIONS

Model MA



Model MB

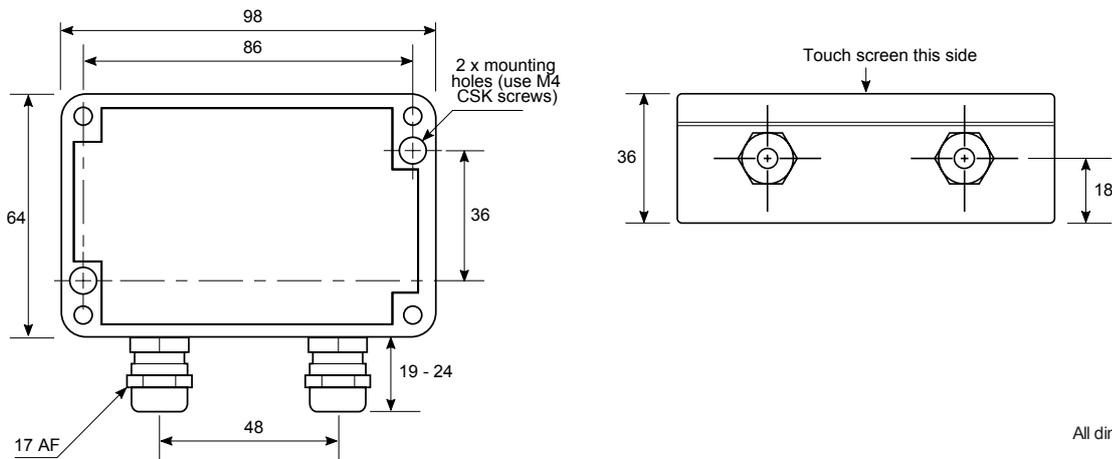


Output connector set (not supplied if sensor is ordered with touch screen terminal)

Easy-wire connectors for wire sizes 28 to 20 AWG (0.08 to 0.5 mm²)

Max sheath Ø 1.5 mm

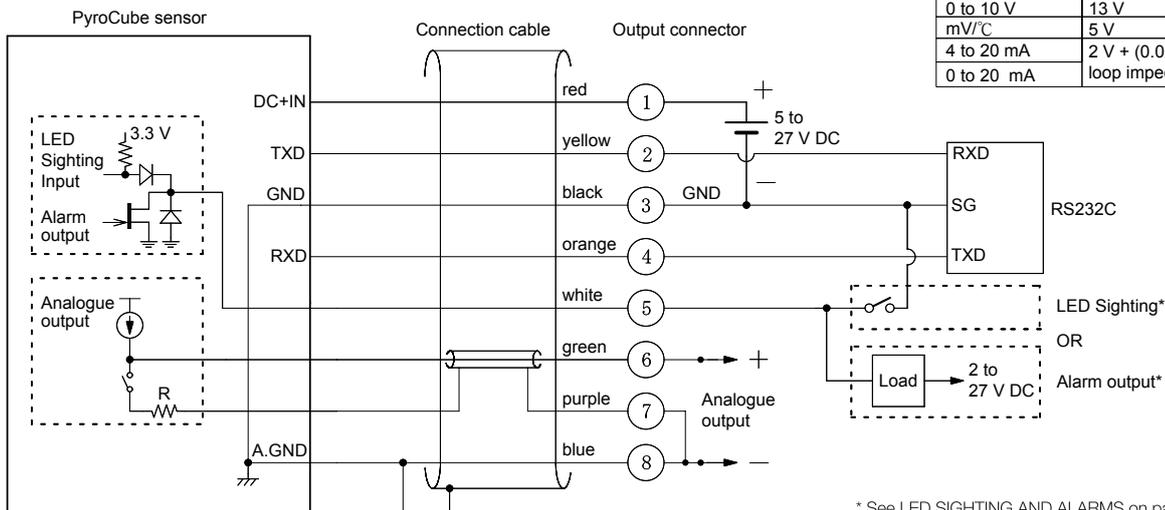
PM030 Touch Screen Interface



All dimensions in mm

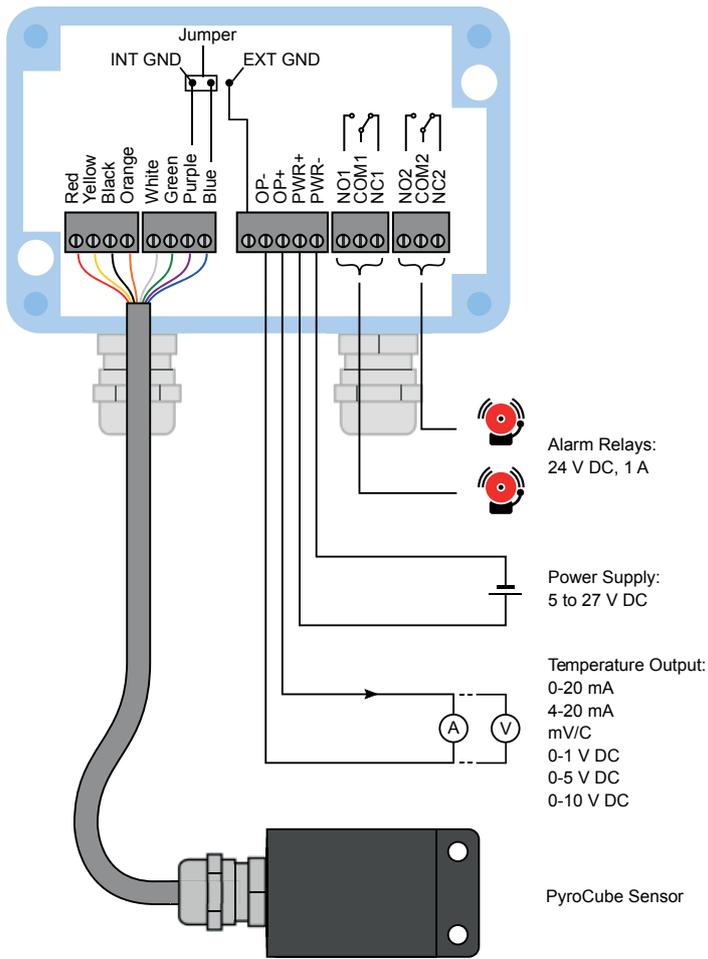
PYROCUBE CONNECTIONS - SENSOR ONLY

Analogue output	Minimum supply voltage
0 to 1 V	5 V
0 to 5 V	8 V
0 to 10 V	13 V
mV/°C	5 V
4 to 20 mA	2 V + (0.02 A x loop impedance [Ω])
0 to 20 mA	



* See LED SIGHTING AND ALARMS on page 1 (Specifications)

PM030 CONNECTIONS



ACCESSORIES



Mounting bracket



PWC Protective lens cover



APC Air purge collar



ADP Airless dust protector



RAM Right angled mirror



WCJ Water Cooling Jacket



PCMCE5 5 m extension cable with connectors

MODEL NUMBERS



PCU-MA



PCU-MB

PCU - MA1.0 - 2M - 1V

Voltage output option

1V = 0 to 1 V DC

5V = 0 to 5 V DC

10V = 0 to 10 V DC

Note: All models also have 0-20 mA, 4-20 mA, and mV/°C outputs as standard.

Cable length

2M = 2 metres

5M = 5 metres

10M = 10 metres

Optics

MA1.0 = 1 mm diameter spot at 50 mm distance

MA2.0 = 2 mm diameter spot at 100 mm distance

MA3.5 = 3.5 mm diameter spot at 200 mm distance

MB11.0 = 11 mm diameter spot at 200 mm distance

Series

PCU = PyroCube

PM030

Touch screen interface module for PyroCube sensor

