

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.

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

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.

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.

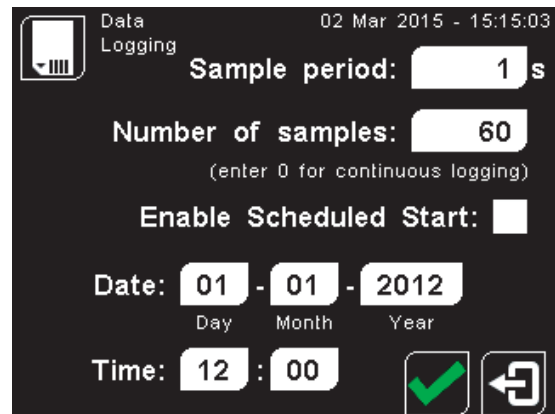
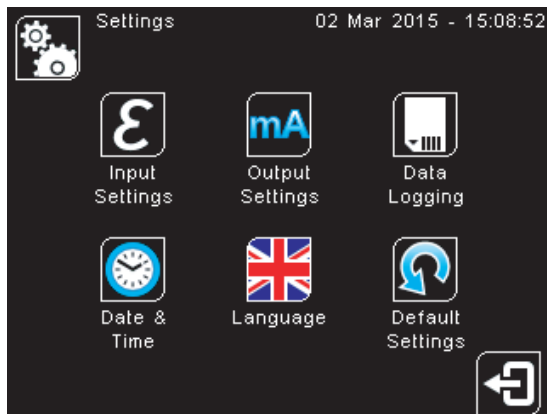
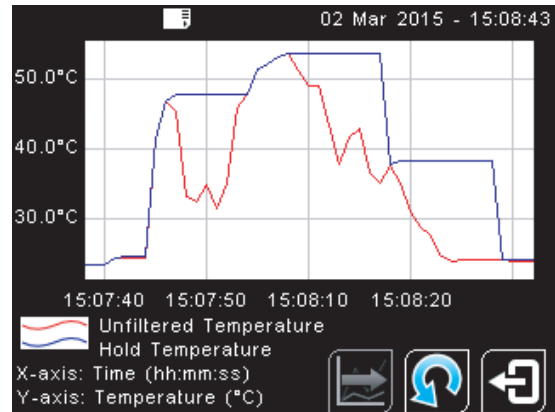
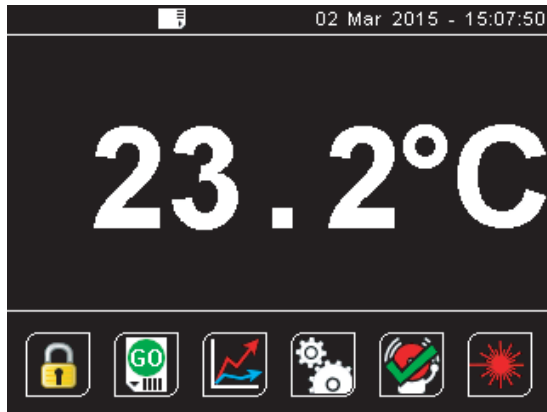
The smaller, lower-cost MB model measures an 11 mm spot.

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



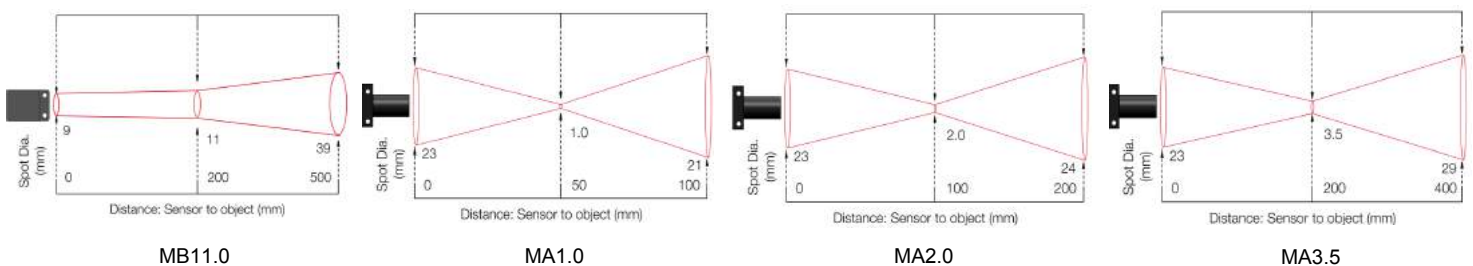
PM030 DATA LOGGING SPECIFICATIONS

- 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

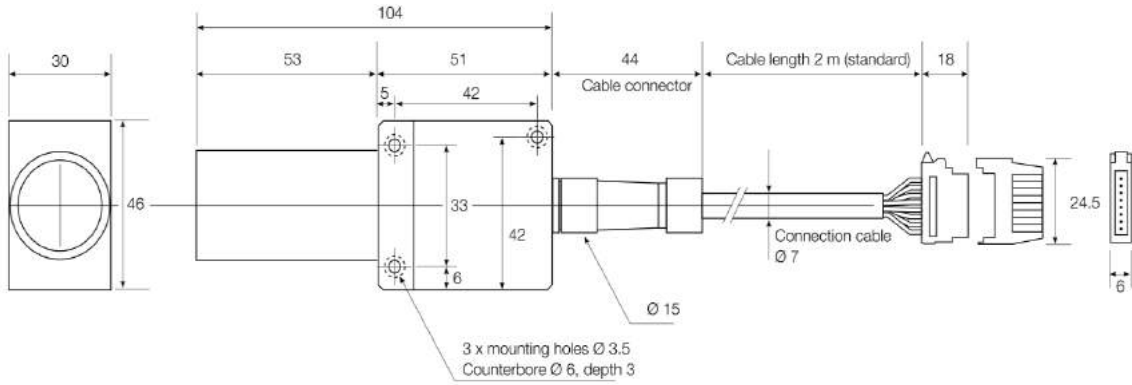
- Display Format**
2.83" (72 mm) resistive touch TFT, 320x240 pixels, backlit
- Configurable Parameters**
Language (English, Chinese, Japanese)
Temperature units °C/°F
Displayed temperature
LED sighting on/off
Password
Date & time (for data logging time stamps)
Peak hold period, decay level
Averaging 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

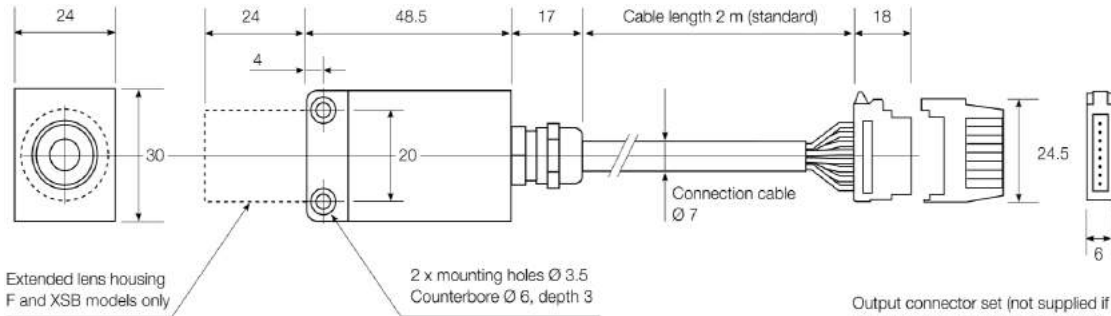


DIMENSIONS

Model MA



Model MB

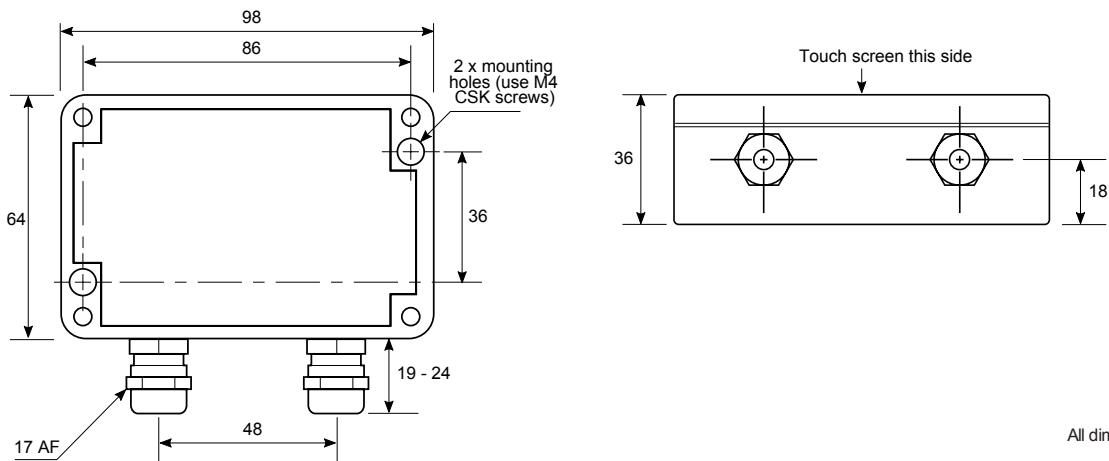


Output connector set (not supplied if sensor is ordered with touch screen terminal)

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

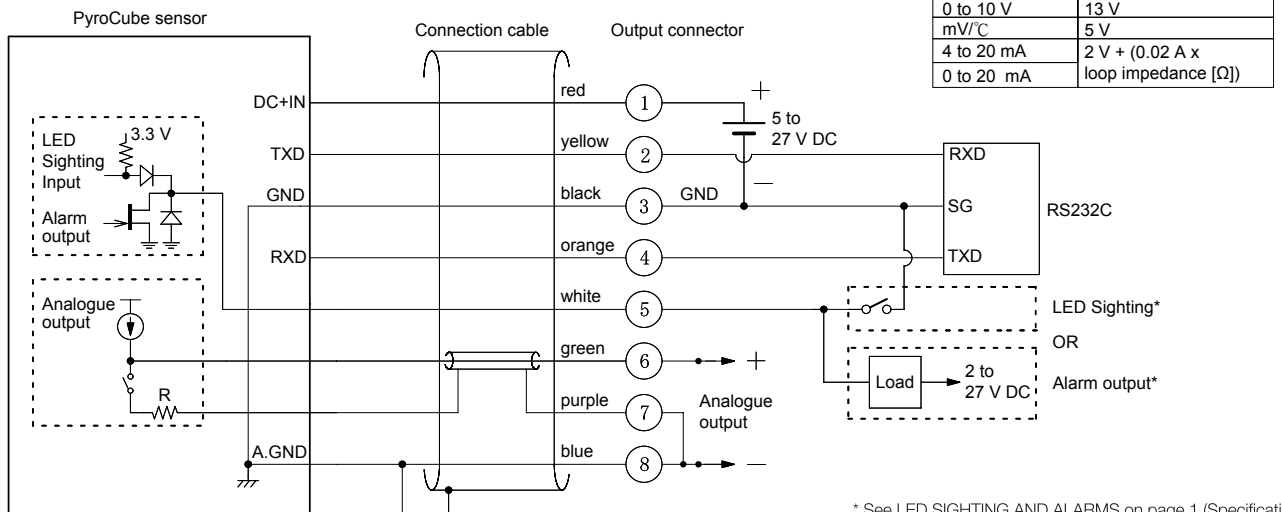
Max sheath Ø 1.5 mm

PM030 Touch Screen Interface

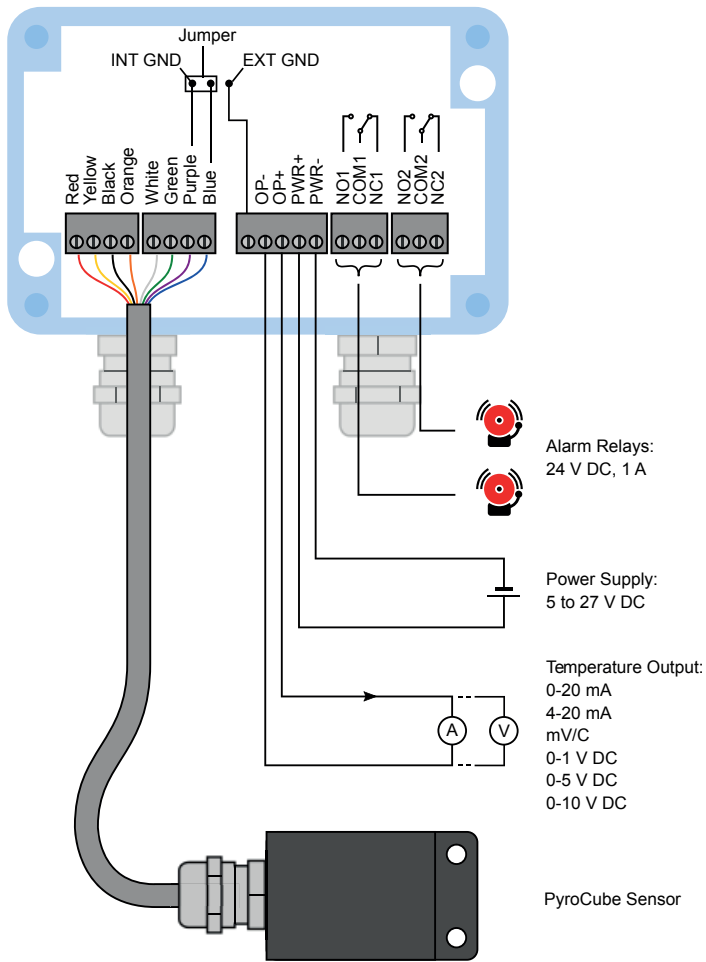


All dimensions in mm

PYROCUBE CONNECTIONS - SENSOR ONLY



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

