

PyroCube G

IR Temperature Sensor for Glass Applications



- Temperature ranges from 50°C to 2400°C
- Measured spot as small as 2.2 mm
- Response time as fast as 10 ms
- Continuous LED sighting shows the position and size of the measured spot while readings are being taken
- Multilingual touch screen interface (optional)

PYROCUBE G SENSOR SPECIFICATIONS

MEASUREMENT

Temperature Range

- G models: 50°C to 1200°C
- GH models: 50°C to 2400°C

Response Time (95%)

- G models: 50 ms
- GH models: 10 ms

Adjustable up to 5 s via averaging function

Measured Spot Diameter

From 2.2 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

All models: $\pm 3^\circ\text{C}$ or 1%, whichever is greater

-GH models: $\pm 2\%$ above 1200°C

Repeatability

-G models: $\pm 1^\circ\text{C}$

-GH models: $\pm 0.2\% + 2^\circ\text{C}$

Temperature Resolution

1°C below 100°C

0.5°C above 100°C

Emissivity Setting

Adjustable, 0.3 to 1.0, via RS232C or optional touch screen interface

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

MECHANICAL

Weight (without cable)

-G models: 80 g

-GH 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.

Applications

The PyroCube G measures glass surface temperatures from 50°C to 2400°C.

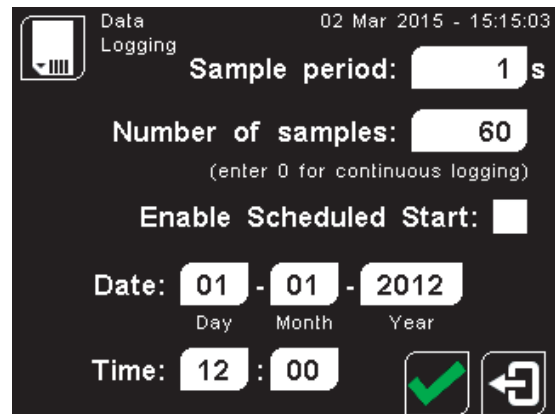
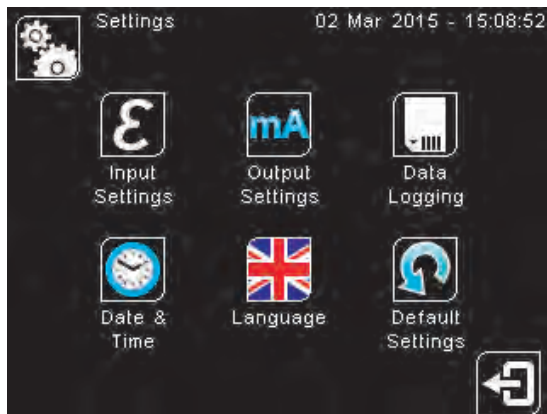
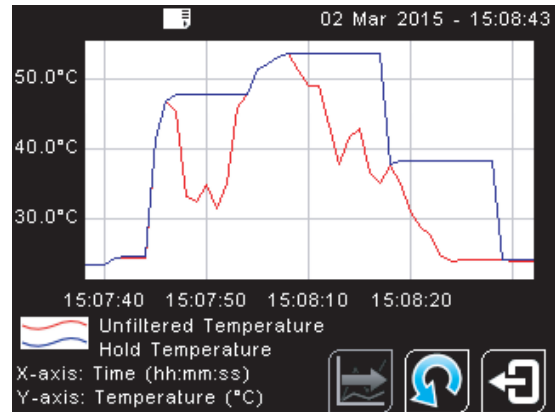
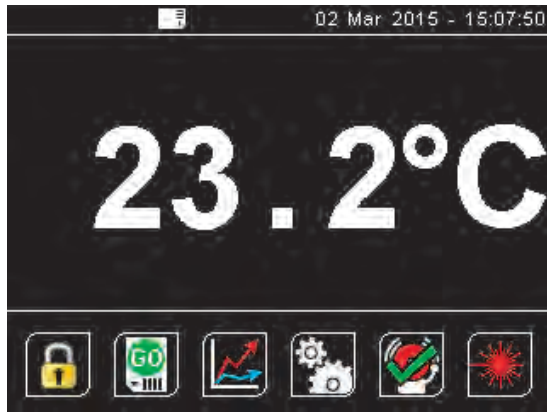
Its measurement wavelength of 5 μm provides maximum accuracy when measuring glass. At this wavelength, reflections have the smallest possible effect on the accuracy of the measurement.

PCU-GH models have a fast response time of 10 ms, making it possible to measure glass gob temperature.

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

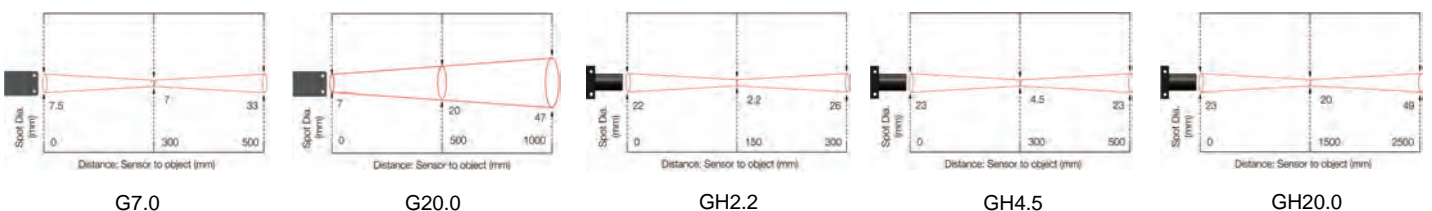
Display Format

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

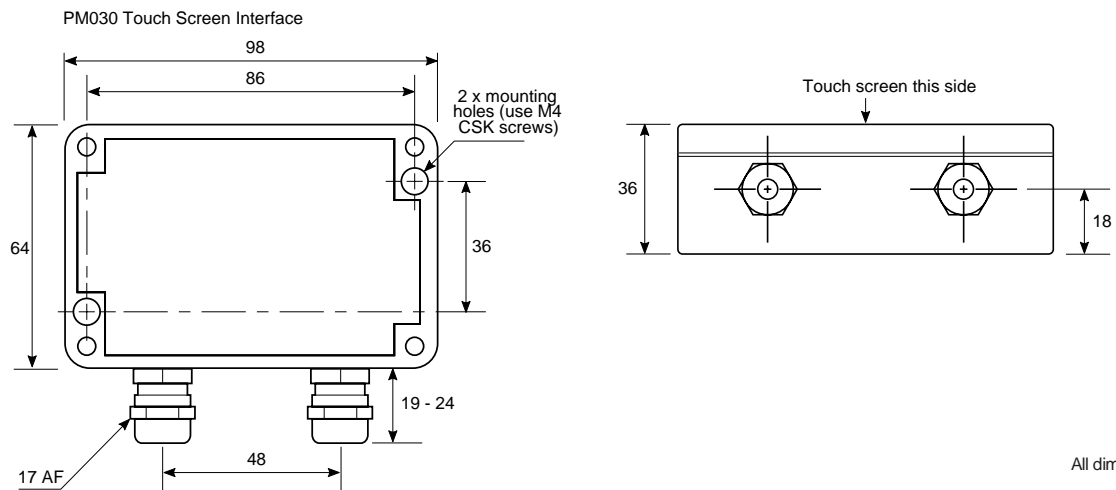
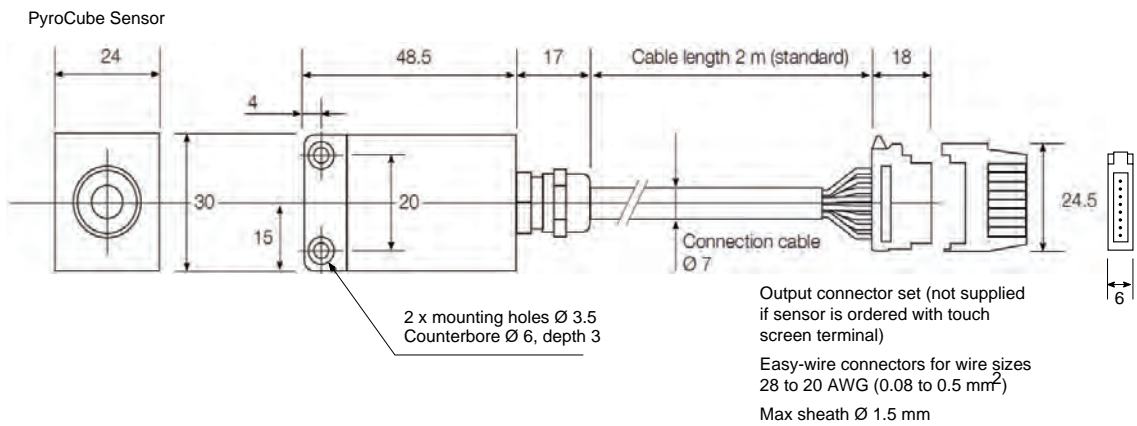
Configurable Parameters

- 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

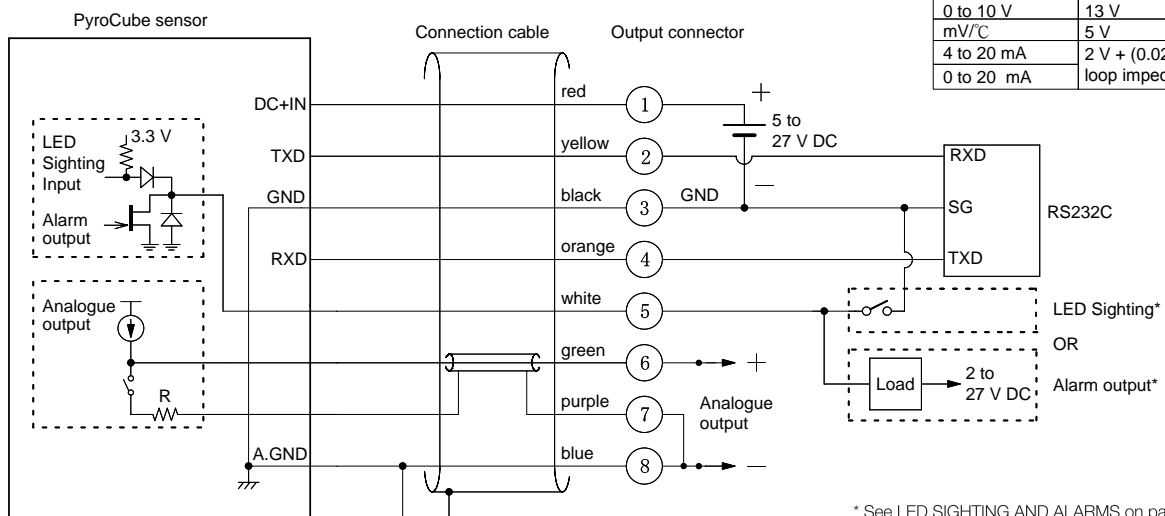


DIMENSIONS



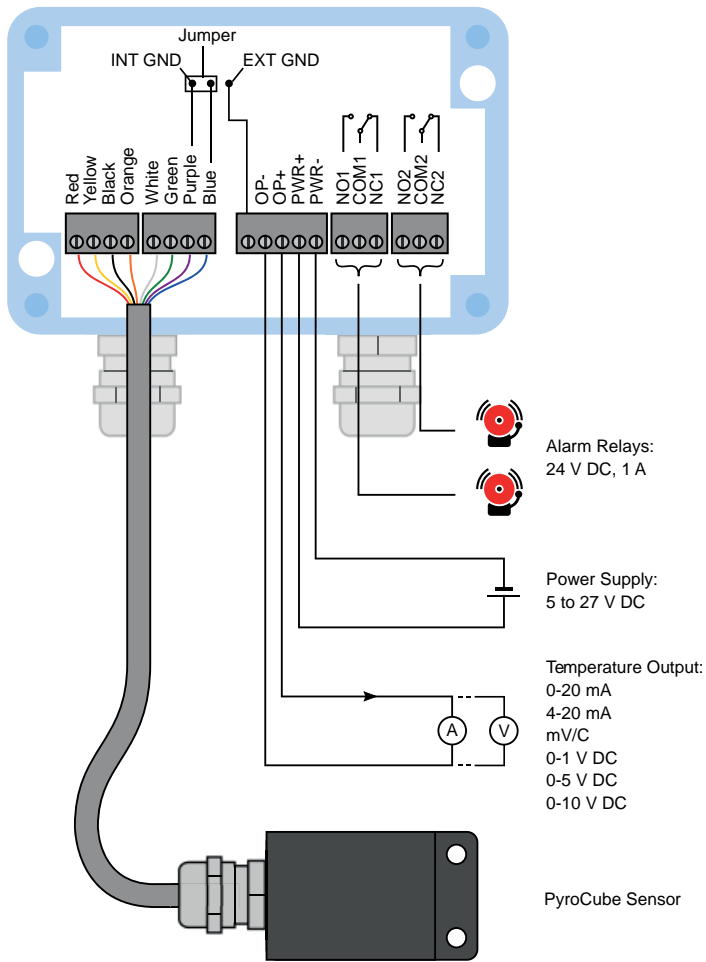
PYROCUBE CONNECTIONS - SENSOR ONLY

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 - G7.0 - 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

Temperature range and field of view
50°C to 1200°C
G7.0 = 7mm measured spot diameter at 180mm distance
G20.0 = 20mm measured spot diameter at 500mm distance
50°C to 2400°C
GH2.2 = 2.2mm measured spot diameter at 150mm distance
GH4.5 = 4.5mm measured spot diameter at 300mm distance
GH20.0 = 20mm measured spot diameter at 1500mm distance

Series
PCU = PyroCube sensor

PM030 Touch screen interface module for PyroCube sensor