PyroCube
IR Temperature Sensor with Fast Response Time, Small Measured Spot and Continuous LED Sighting

- Response time 0.001 seconds (-F models) - the fastest in the world
- Measures from 0°C to 500°C
- Ideal for small targets - measurement area as small as 1.6 mm diameter
- Continuous LED sighting on all models - shows the position and size of the measurement spot while readings are being taken
- Multilingual touch screen interface (optional) for temperature display, data logging, sensor configuration and alarms
- Measures surface temperature of paper, thick plastics, food, rubber, electronic components, cable, ceramics, textiles, painted surfaces and some metals, as well as many other materials

PYROCUBE SENSOR SPECIFICATIONS

MEASUREMENT
- Temperature range: 0°C to 500°C
- Response time (95% of step change):
  - -S models: 10 ms to 5 s
  - -F models: 1 ms to 5 s
- Adjustable via averaging function
- Target sighting: Red LED built-in as standard on all models. Indicates the measured spot size. Switchable on/off
- Measurement accuracy †
  - -S models: ± 3°C or 1%, whichever is greater
  - -F models: ± 3.5°C or 1%, whichever is greater
- Repeatability †
  - -S models: ± 0.5°C
  - -F models: ± 1°C
- Resolution †
  - -S models: < 0.5°C
  - -F models: < 1.5°C (0 to 50°C); < 0.7°C (above 50°C)
- Emissivity setting: Adjustable 0.3 to 1.0 via RS232C or optional touch screen interface
- Field of view: See OPTICS on page 2

MECHANICAL
- Weight (without cable): 85 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

* LED SIGHTING AND ALARMS
- Sensor Only
  - These functions are selectable via RS232C and share a common connection, which is configurable either as an input to switch the LED sighting on/off, or an open drain alarm output, but not both at once.
- Sensor with PM030
  - These functions may be configured via the PM030 interface. Two alarm relay outputs are provided in place of the open drain output.
  - Ambient temperature 23 ± 5°C, emissivity 1.0, averaging time 50 ms
  - Voltage can be 0-1, 0-5, or 0-10 V DC, depending on model (see Model Numbers).

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 RS232C or optional 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
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.

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)
Emittance setting (with teach function)
Reflected energy compensation (with teach function)
Output type
Output temperature range
Polarity on error
Alarm mode, levels, hysteresis

Outputs (from touch screen module)
Retransmitted analogue output from sensor, plus 2 relays, rated 24 V DC, 1 A

<table>
<thead>
<tr>
<th>Output Type</th>
<th>Effective Minimum Output</th>
<th>Output Accuracy (additional to Measurement Accuracy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1 V DC</td>
<td>30 mV</td>
<td>±1.5 mV</td>
</tr>
<tr>
<td>mV/°C</td>
<td>30 mV</td>
<td>±1.5 mV</td>
</tr>
<tr>
<td>0 to 20 mA</td>
<td>0.2 mA</td>
<td>±0.02 mA</td>
</tr>
<tr>
<td>4 to 20 mA</td>
<td>4.0 mA</td>
<td>±0.02 mA</td>
</tr>
</tbody>
</table>

Accuracy specifications are valid up to the maximum distances shown in the tables.
DIMENSIONS

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

PYROCUBE CONNECTIONS - SENSOR ONLY

All dimensions in mm
### Accessory List

- **FBC** 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

### PM030 Connections

- **INT GND**
- **EXT GND**
- **Jumper**

**Alarm Relays:**
- 24 V DC, 1 A

**Power Supply:**
- 5 to 27 V DC

**Temperature Output:**
- 0-20 mA
- 4-20 mA
- mV/°C
- 0-1 V DC
- 0-5 V DC
- 0-10 V DC

**PyroCube Sensor**

### Model Numbers

- **PCU**
- **PM030**
- **- S1.6**
- **- 2M**
- **- 1V**

**Voltage output options**
- 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 meters
- 5M = 5 meters
- 10M = 10 meters

**Response time and optics**
- S1.6 = 10 ms response, 1.6 mm spot at 35 mm distance
- S3.0 = 10 ms response, 3.0 mm spot at 70 mm distance
- S5.5 = 10 ms response, 5.5 mm spot at 120 mm distance
- F3.5 = 1 ms response, 3.5 mm spot at 100 mm distance
- F7.0 = 1 ms response, 7.0 mm spot at 200 mm distance

**Touch screen interface module for PyroCube sensor**

**Series**
- PCU = PyroCube sensor

**CALIDAD EMPRESA CERTIFICADA**
- ISO 9001
- Acreditado por ENAC EC-6605/11