

# Intelligent PM4 monitors

## Model PM4-RT8

4 inputs of 3-wire RTD or 8 inputs of 2-wire RTD



### Description

The PM4-RT8 accepts 4 channels of 3-wire RTD temperature sensors or 8 channels of 2-wire RTD temperature sensors.

The instrument can function as an accurate monitor, alarm, controller, signal conditioner or transmitter.

The instruments feature flexible pushbutton calibration and programming.

The display may be programmed to show temperature units  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  e.g.  $52.2^{\circ}\text{C}$ .

Each instrument is supplied with a single relay output as standard. Optional outputs include additional relays, isolated outputs, analog (4-20mA, 0-1V, 0-10V, single or dual channel outputs), digital (BCD or binary) or serial communications (RS232 or RS485).

An external input is configurable to perform one of various functions e.g. peak hold, peak and valley memory, two level brightness switching, scale switching, setpoint only access or security lock out.

Electrical isolation between power supply, input signals and retransmission eliminates grounding and common mode voltage problems. Note - the inputs have a common ground. This isolation feature makes the PM4 ideal for interfacing to PLCs, computers and other data acquisition equipment.

### Features

- Accepts 4 channels of 3-wire RTD sensors or 8 channels of 2-wire RTD sensors
- Pushbutton calibration and setup
- Displays in  $^{\circ}\text{C}$ ,  $^{\circ}\text{F}$  or absolute
- Display modes include: Scanning all channels, display of highest input, display of lowest input, display of average of all inputs or display, display of maximum difference between channels
- Electrical isolation between input signal/output/power supply
- 240V, 110V, 32V, 24VAC, 12 to 48VDC or 50 to 110VDC operation (factory configured)
- Programmable digital filter
- Alarm/control relay output (5A)
- 2 year guarantee
- Wide range of options available:
  - Single or dual analog retransmission
  - Up to 3 additional relays - a total of 4
  - RS232 or RS485 serial communications
  - Binary or BCD retransmission
- Remote input for special functions including
  - peak/display hold
  - high/lo memory
  - display brightness control
  - switch display scaling

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# Specifications

## Technical Specifications

|  |  |
|--|--|
| Input types:   | Up to 4 x 3-wire Pt100 or Pt1000 RTD or up to 8 x 2-wire Pt100 or Pt1000 RTD   |
| Display resolution:                                  | 1° or 0.1°   |
| ADC resolution:                                      | 1 in 20,000  |
| Accuracy:  | 0.1% of FS when calibrated (±1 digit)  |
| Sample rate:   | 3-wire - 1 channel sampled per second<br>2-wire - 1 channel sampled per half second  |
| ADC conversion:                                      | Dual slope ADC   |
| Microprocessor:                                      | MC68HC11 CMOS  |
| Ambient temp:  | -10°C to 60°C  |
| Humidity:  | 5% to 95% non condensing   |
| Display types:                                       | 5 digit 14.2mm, status LEDs + keypad.<br>6 digit 14.2mm and 4 way keypad<br>20 segment LED bar graph,<br>5 digit display and 4 way keypad  |
| Power supply:  | 240, 110, 32, 24VAC 50/60Hz,<br>12 to 48VDC or 50 to 110VDC<br>(factory configured)  |
| Power usage:   | AC supply 4 VA max,<br>DC supply, consult supplier   |
| Output (standard):                                   | 1 x relay, form A, rated 5A resistive  |
| Transmitter supply:                                  | 18VDC (25mA maximum)   |
| Relay action:  | Programmable N.O. or N.C.  |
| <b>Output Options - see order code for full list</b> |  |
| Extra relays:  | 1 or 3 extra relays available  |
| Retransmission:                                      | Analog 4 to 20mA, 0 to 1V or 0 to 10V link selectable (single or dual channel versions)<br>Serial RS232 or RS485, choice of ASCII or Modbus RTU protocols<br>Digital Binary or BCD |
| DC voltage out:                                      | Isolated 24V (±12V) standard<br>±5V (10V) link selectable<br>(rated at 20mA)   |

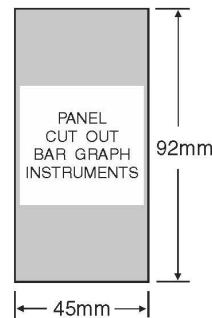
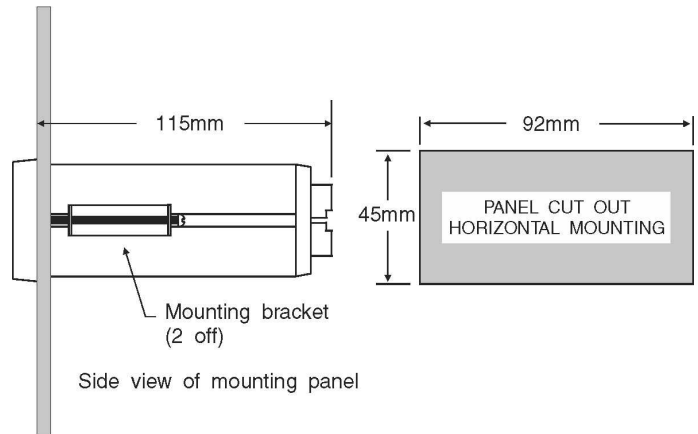
## Physical Characteristics

|                |   |
|----------------|---|
| Bezel size:    | DIN 48mm x 96mm x 10mm                                |
| Case size:     | 44mm x 91mm x 115mm behind face of panel              |
| Panel cut out: | 45mm x 92mm (+1mm & -0mm)                             |
| Connections:   | Plug in screw terminals (max 2.5mm <sup>2</sup> wire) |
| Weight:        | 400g basic model, 450g with options                   |

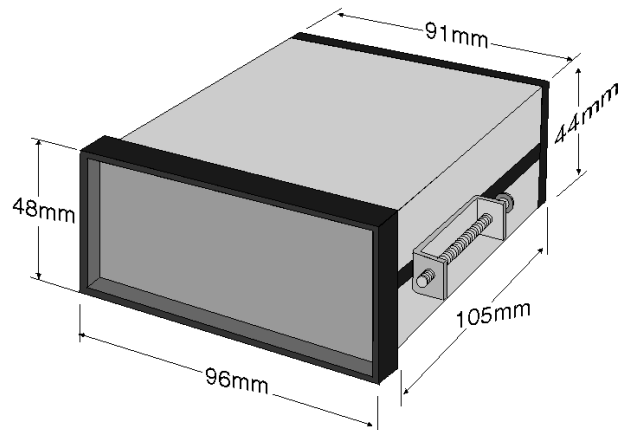
## PM4-RT8 Accessories

| Description                      | Model No.       |
|----------------------------------|-----------------|
| IP65 access cover                | COVER-IP65      |
| Wall mount enclosure             | ENC-PM1-01      |
| Wall mount encl. with IP65 cover | ENC-IP65-PM1-01 |
| Surface mount kit                | PM4-OPT-SMKIT   |
| Portable/bench enclosure AC      | ENC-PM-AC       |
| Portable/bench enclosure DC      | ENC-PM-DC       |

## PM4-RT8 panel mounting details



## PM4-RT8 case dimensions



Wiring diagrams and full operations manual are available from [www.aicpl.com.au/pdf/pm4rt8man.pdf](http://www.aicpl.com.au/pdf/pm4rt8man.pdf).

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## PM4-RT8 order codes

The last section is for optional outputs, if required. (Note: only one of the optional outputs below can be fitted).

|          |                         |   |                      |   |   |
|----------|-------------------------|---|----------------------|---|---|
| PM4-RT8- | <input type="text"/>    | - | <input type="text"/> | - | <input type="text"/>  |
|          | ↑                       |   | ↑                    |   | ↑   |
|          | <b>Power supply</b>     |   |                      |   |   |
| 240      | -----                   |   | -----                |   | 240VAC  |
| 110      | -----                   |   | -----                |   | 110VAC  |
| 32       | -----                   |   | -----                |   | 32VAC   |
| 24       | -----                   |   | -----                |   | 24VAC   |
| DC       | -----                   |   | -----                |   | 12-48VDC isolated   |
| DCH      | -----                   |   | -----                |   | 50-110VDC isolated  |
|          | <b>Display type</b>     |   |                      |   |   |
| 4E       | -----                   |   | -----                |   | 4 Digit 20mm red led  |
| 5E       | -----                   |   | -----                |   | 5 digit 14mm red led with front pushbuttons & annunciators  |
| 6E       | -----                   |   | -----                |   | 6 digit 14mm red led with front pushbuttons   |
| 8E       | -----                   |   | -----                |   | 8 digit 10mm red led with front pushbuttons   |
| 5BP      | -----                   |   | -----                |   | Bargraph with 7.6mm red led and front pushbuttons   |
| 5GP      | -----                   |   | -----                |   | Circular bargraph with 7.6mm red led and front pushbuttons  |
| 4C       | -----                   |   | -----                |   | 4 digit 12.7mm lcd  |
| 4CG      | -----                   |   | -----                |   | 4 digit 12.7mm lcd with backlight   |
| 6C       | -----                   |   | -----                |   | 6 digit 12.7mm lcd  |
|          | <b>Optional outputs</b> |   |                      |   |   |
| R        | -----                   |   | -----                |   | 2nd setpoint relay  |
| R12      | -----                   |   | -----                |   | 2nd setpoint relay and 24V (+/- 12V) isolated transmitter supply                                      |
| RRR      | -----                   |   | -----                |   | 2nd, 3rd and 4th setpoint relays  |
| R6       | -----                   |   | -----                |   | 2nd to 7th setpoint relays (i.e. 6 extra relays)  |
| 12       | -----                   |   | -----                |   | 24V (+/- 12V) isolated transmitter supply   |
| A        | -----                   |   | -----                |   | Analog retransmission (isolated)  |
| AR       | -----                   |   | -----                |   | Analog retransmission (isolated) and 2nd setpoint relay   |
| ARRR     | -----                   |   | -----                |   | Analog retransmission (isolated) and 2nd, 3rd and 4th setpoint relays                                 |
| AR12     | -----                   |   | -----                |   | Analog retransmission (isolated), 2nd relay and 24V (+/- 12V) isolated transmitter supply             |
| A12      | -----                   |   | -----                |   | Analog retransmission (isolated) and 24V (+/- 12V) isolated transmitter supply                        |
| AR6      | -----                   |   | -----                |   | Analog retransmission (isolated) and 2nd to 7th setpoint relays                                       |
| AA       | -----                   |   | -----                |   | Dual analog retransmission (isolated)   |
| AAR      | -----                   |   | -----                |   | Dual analog retransmission (isolated) and 2nd setpoint relay  |
| A2       | -----                   |   | -----                |   | Analog retransmission, 4-20mA only (isolated) and RS232 communications (isolated)                     |
| A2R      | -----                   |   | -----                |   | Analog retransmission, 4-20mA only (isolated), RS232 communications (isolated) and second relay       |
| A4       | -----                   |   | -----                |   | Analog retransmission, 4-20mA only (isolated) and RS485 communications (isolated)                     |
| A4R      | -----                   |   | -----                |   | Analog retransmission, 4-20mA only (isolated), RS485 communications (isolated) and second relay       |
| 2        | -----                   |   | -----                |   | RS232 communications (isolated)   |
| 2R       | -----                   |   | -----                |   | RS232 communications (isolated) and 2nd setpoint relay  |
| 2R12     | -----                   |   | -----                |   | RS232 communications (isolated), 2nd setpoint relay and 24V (+/- 12V) isolated transmitter supply     |
| 4        | -----                   |   | -----                |   | RS485 communications (isolated)   |
| 4R       | -----                   |   | -----                |   | RS485 communications (isolated) and 2nd setpoint relay  |
| 4R12     | -----                   |   | -----                |   | RS485 communications (isolated), 2nd setpoint relay and 24V (+/- 12V) isolated transmitter supply     |
| DN       | -----                   |   | -----                |   | Digital NPN 16 bit Binary/BCD retransmission  |
| DNR      | -----                   |   | -----                |   | Digital NPN 16 bit Binary/BCD retransmission and 2nd relay  |
| DN12     | -----                   |   | -----                |   | Digital NPN 16 bit Binary/BCD retransmission and 24V (+/- 12V) isolated transmitter supply            |
| DNR12    | -----                   |   | -----                |   | Digital NPN 16 bit Binary/BCD retransmission, 2nd relay and 24V (+/- 12V) isolated transmitter supply |
| DP       | -----                   |   | -----                |   | Digital PNP 16 bit Binary/BCD retransmission  |
| DPR      | -----                   |   | -----                |   | Digital PNP 16 bit Binary/BCD retransmission and 2nd relay  |
| DP12     | -----                   |   | -----                |   | Digital PNP 16 bit Binary/BCD retransmission and 24V (+/- 12V) isolated transmitter supply            |
| DPR12    | -----                   |   | -----                |   | Digital PNP 16 bit Binary/BCD retransmission, 2nd relay and 24V (+/- 12V) isolated transmitter supply |
| ABP      | -----                   |   | -----                |   | Analog retransmission bipolar output (-10V to +10VDC only)  |

## Applications/input types available with panel mount display models

- Analog input, process transmitters etc.  $\pm 20\text{mA}$ , 4-20mA or  $\pm 2.5\text{VDC}$  or  $\pm 25\text{VDC}$
- Pulse input, rate, total, count, grand total (encoders, switches, proximity sensors etc.)
- Rate, total from quadrature pulse input
- Liquid conductivity/resistivity/ppm
- pH/Redox (ORP)
- Loop powered displays
- AC current or AC voltage input
- Temperature - RTD, thermocouple, 4-20mA
- Weighing - 4 or 6 wire mV/V output loadcells
- Pressure measurement - 4 or 6 wire mV/V pressure sensors or 4-20mA analog transducers
- Liquid level measurement - 4 or 6 wire mV/V pressure sensors or 4-20mA analog transducers
- Serial input - RS232, RS485, Serial current loop for slave displays etc.
- Synchronous Serial Interface (SSI) for high accuracy position etc. measurement
- Binary, BCD or Gray Code input
- Real time clock with alarms
- Timer, elapsed time, stopwatch, run time etc.
- Auto/Manual station

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