

# Mini-Max M240 Temperature Indicator



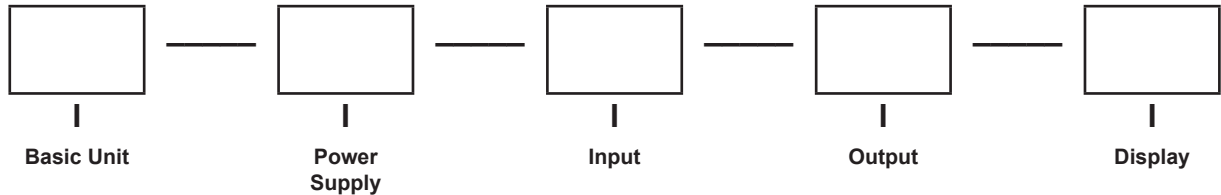
- 3/64 DIN Temperature Indicator
- Jumper – selectable display for °C / °F
- Screw terminals connector for easy installation
- Unique mounting bracket allows for stacking of multiple meters

| Specifications -                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------|-----------------|-------|----------------|---------------------|----------------|---------------------|-------|----------------|---------------------|----------------|---------------------|--------------------|---------------|---------------------|----------------|---------------------|----|-------------|---------------------|
| <b>DISPLAY</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Type                             | 7- segment, red LED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Height                           | 0.56" (14.2mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Display resolution               | 0.1° from -99.9° to 999.9°;<br>1.0° below 100° or above 1000°;<br>0.1mV for mV indication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Overrange Indication (T/C or mV) | The left-most digit shows 1: "1" (other digits are blank)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Open or faulty input connection  | "----"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Uncalibrated instrument          | Display will flash continuously "INFO FAIL CALB REQD" upon application of power.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Polarity                         | Automatic, with "-" indication, "+" indication implied                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| <b>POWER REQUIREMENTS</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| AC Voltages                      | 85 - 250VAC @ 50-60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Power Consumption                | 2 VA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| <b>INPUTS</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Thermocouple                     | J, K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Millivolt                        | ± 70mV (Uncompensated for temperature)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Lead Resistance Effect           | -13µV / 100Ω max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| RTD                              | Platinum 100 Ohm (.00385 alpha)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Lead Resistance Effect           | 2- and 3- wire 1° / .29Ω max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Temperature Coefficient          | ± 0.2°C / °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
|                                  | <table border="1"> <thead> <tr> <th>Input Type</th> <th>Temperature Range</th> <th>Accuracy @ 25°C</th> </tr> </thead> <tbody> <tr> <td rowspan="2">K T/C</td> <td>-100 to 1370°C</td> <td>± (0.1% rdg +1.5°C)</td> </tr> <tr> <td>-148 to 2498°F</td> <td>± (0.1% rdg +2.7°F)</td> </tr> <tr> <td rowspan="2">J T/C</td> <td>-100 to 1200°C</td> <td>± (0.1% rdg +1.5°C)</td> </tr> <tr> <td>-148 to 2192°F</td> <td>± (0.1% rdg +2.7°F)</td> </tr> <tr> <td rowspan="2">RTD Pt100 (4-wire)</td> <td>-100 to 850°C</td> <td>± (0.2% rdg +1.5°C)</td> </tr> <tr> <td>-148 to 1562°F</td> <td>± (0.2% rdg +2.7°F)</td> </tr> <tr> <td>mV</td> <td>-70 to 70mV</td> <td>± (0.1% rdg +0.1mV)</td> </tr> </tbody> </table> | Input Type          | Temperature Range | Accuracy @ 25°C | K T/C | -100 to 1370°C | ± (0.1% rdg +1.5°C) | -148 to 2498°F | ± (0.1% rdg +2.7°F) | J T/C | -100 to 1200°C | ± (0.1% rdg +1.5°C) | -148 to 2192°F | ± (0.1% rdg +2.7°F) | RTD Pt100 (4-wire) | -100 to 850°C | ± (0.2% rdg +1.5°C) | -148 to 1562°F | ± (0.2% rdg +2.7°F) | mV | -70 to 70mV | ± (0.1% rdg +0.1mV) |
| Input Type                       | Temperature Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Accuracy @ 25°C     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| K T/C                            | -100 to 1370°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± (0.1% rdg +1.5°C) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
|                                  | -148 to 2498°F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± (0.1% rdg +2.7°F) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| J T/C                            | -100 to 1200°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± (0.1% rdg +1.5°C) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
|                                  | -148 to 2192°F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± (0.1% rdg +2.7°F) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| RTD Pt100 (4-wire)               | -100 to 850°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ± (0.2% rdg +1.5°C) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
|                                  | -148 to 1562°F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ± (0.2% rdg +2.7°F) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| mV                               | -70 to 70mV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ± (0.1% rdg +0.1mV) |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Input Impedance                  | 22MΩ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| <b>ENVIRONMENTAL</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Operating Temperature            | 0 to 55°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Storage Temperature              | -10 to 60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Relative Humidity                | 0 to 85% non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Warmup time                      | Less than 20 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| A/D Conversion Techniques        | 12 Bit Successive Approximation (SAR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Rate                             | 10 samples per second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| <b>NOISE REJECTION</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| NMRR                             | 60dB, 50/60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| CMRR                             | (w / 1kΩ unbalanced @ 60Hz) 90dB min                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| <b>MECHANICAL</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Bezel                            | 0.94" x 2.83"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Depth                            | 2.36"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Panel cutout                     | 0.89" x 2.71"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Weight                           | 3.5 oz. (99.2 g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |
| Case Material                    | 94-0, UL-rated, glass-filled thermoplastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                   |                 |       |                |                     |                |                     |       |                |                     |                |                     |                    |               |                     |                |                     |    |             |                     |

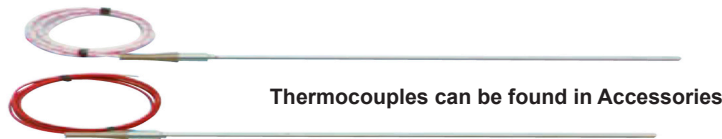
# Mini-Max M240 Temperature Indicator

## Ordering Information -

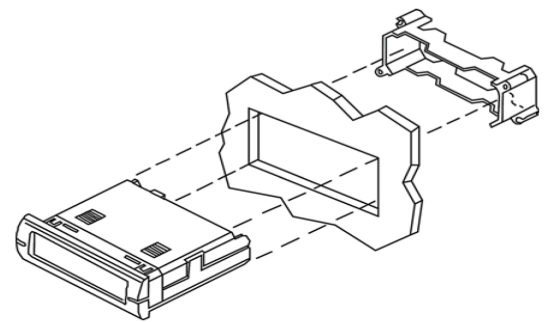
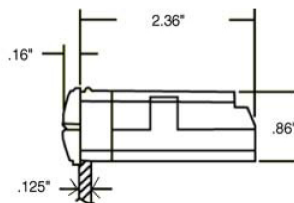
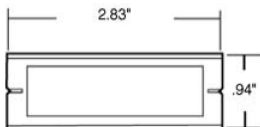
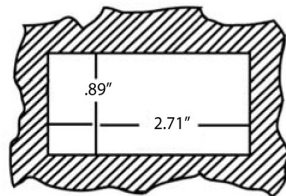
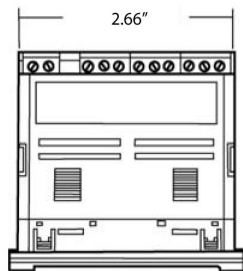
Mini-Max indicators can be configured by making an entry in each section below.  
Example: M240-0-91-0-F.



| Select From Each One Below |             |       |               |         |                                      |
|----------------------------|-------------|-------|---------------|---------|--------------------------------------|
| Basic Unit                 |             | Input |               | Output  |                                      |
| M240                       | 4 Digit LED | 91    | J T/C         | 0       | None                                 |
|                            |             | 92    | K T/C         |         |                                      |
|                            |             | 93    | RTD Pt100 Ohm |         |                                      |
| Power Supply               |             | 94    | DC mV         |         |                                      |
| 0                          | 85-250 VAC  |       |               |         |                                      |
|                            |             |       |               |         |                                      |
|                            |             |       |               | Display |                                      |
|                            |             |       |               | C       | °C                                   |
|                            |             |       |               | F       | °F                                   |
|                            |             |       |               | 0       | mV (only available with DC mV Input) |



## Dimensions and Panel Cutout - M235, M245 & M240



## Mounting Instructions

Insert the Mini-Max through the panel, and then slide the mounting bracket on to the Mini-Max.

The mounting bracket allows Mini-Max units to be stacked side-to-side or top-to-bottom.

Panel cutout instructions for stacking multiple units are provided in the operator's manual.