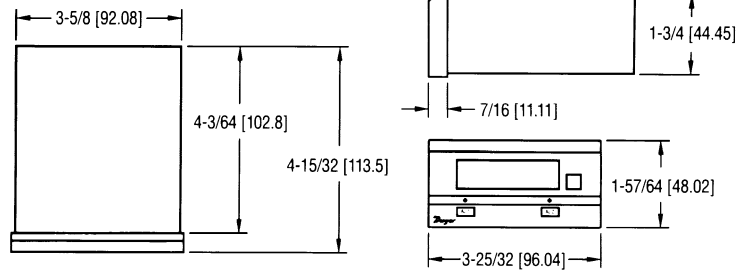




## Model PM706 Temperature Panel Meter

### Specifications– Installation and Operating Instructions



#### DESCRIPTION

Model PM706 Digital Temperature Meter monitors and displays temperature measurements using a Type K thermocouple input. Meter features dual adjustable set points with 1A relays and a selectable 4-20 mA or 0-10 VDC output signal. View alarm settings by depressing the tactile alarm button on the front panel. The bright red LED display has a floating decimal point and displays temperature in °F or °C. Meter is equipped with overrange indication to alert operator of an open thermocouple or faulty connections. Sealed front panel is rated to NEMA 12 to protect against dust and fluids.

#### Installation and Connections

The panel requires a 1.73 x 3.62" (44 x 92mm) panel cut out with minimum radius corners. Maximum panel thickness of 5/16" (4mm).

Remove the two retaining clamps by loosening and removing their screws.

Feed the meter housing through the panel and re-fit the clamps, holding them close to the meter housing as the screws are tightened.

Tighten the screw sufficiently to retain the meter in the panel. DO NOT OVER TIGHTEN THE SCREWS, otherwise the threads in the case will strip.

Ensure the available input power is of the correct level, and is fused at no more than 0.5A, filtered if on the same leg as heavy switch gear, and is provided with an adequate clean ground.

Ensure any signal cabling is secured and kept clear of high

#### PHYSICAL DATA

**Signal Input:** Type K Thermocouple.

**Signal Type:** Single ended, negative wire connected to meter common.

**Temperature Range:** -148 to 1999°F (-100 to 1200°C).

**Accuracy:** ±2% at 23°C ambient.

**Resolution:** 1°F/°C.

**Read Rate:** 2.5 readings/sec.

**Setpoints/Alarms:** One setpoint active below reading (internally reconfigurable to above reading) and one setpoint active above reading. Active condition indicated by LED indication.

**Setpoint Adjustment:** Set points adjustable by 20 turn potentiometers by removal of front cover. 0 to 2000 counts, adjustable within 5 counts or better.

**Setpoint Hysteresis:** 3(0) counts max hysteresis built in to each setpoint.

**Setpoint Viewing:** By depression of front panel accessible switches. Indication agrees within ±5(0) counts of actual setpoint level.

**Analog Output:** Factory configured non-isolated output 4-20mA, 8V maximum compliance or 0-10VDC 1kohm minimum load. Span output set for 0-1000(0) counts, internally adjustable over 500(0) to 2000(0) count span. Accuracy ±1% ±(0.2mA or 0.2V) over operating conditions. Adjustable range of output is -10% to 100% of F.S.

**Relay Output:** One normally open below duty contact output per setpoint. 1A @ 250VAC/30VDC resistive load capacity.

**Ambient Temperature Effect:** +0.01% of rdg, -0.05° per degree.

**Temperature Coefficient:** ±100 ppm/°C.

**Sensor Wire Effect:** 0.01°C power ohm per conductor.

**Broken Sensor:** Display flashes overrange for open circuitry input.

**Sensor Wire Current:** 0.5µA.

**Overrange Indication:** Display flashes.

**Operating Temperature Range:** 32 to 122°F (0 to 50°C).

**Storage Temperature Range:** -4 to 185°F (-20 to 85°C).

**Humidity Range:** 0 to 80%, non-condensing.

**Power Supply:** 115/230 VAC, ±10%, 50/60 Hz.

**Power Consumption:** 7 W.

**Common Mode:** Signal common to power ground 1500V peak DC to 60 Hz. 354V IEC spacing.

**Housing:** ½ DIN, NEMA 12.

**Display:** 7 segment red LED 14.2mm high. Decimal point positioning by internal solder switch. Negative polarity indication by center segment of left hand display. Alarm indication by 3mm round red LED displays.

**Weight:** 1 lb. (500 g).

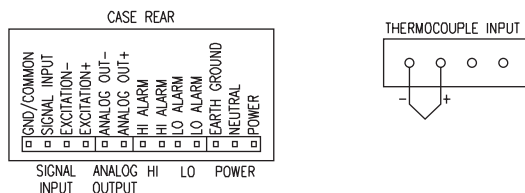


Figure 1: Wiring Connections

current switching cables.

Note the relay outputs of the meter are light duty only and do not incorporate snubber networks.

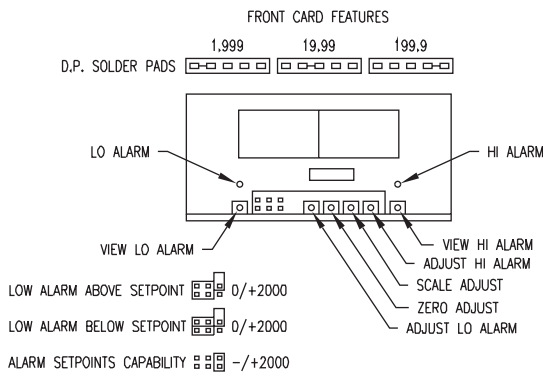
Check that the input supply is disconnected at source before wiring up the meter.

**Adjustments**

Trimming span and zero and adjustment of alarm setpoints is by means of potentiometers inside the front of the meter. See figure 2. The front cover must be pried off to gain access to the controls.

The span and zero adjustments on temperature meters should not need to be changed from their factory settings, unless significant sensor lead resistances are involved.

If the alarm setpoints are not required, they should be set to beyond +2000(0) counts, and the low alarm configured to be active above the setpoint.



**Figure 2: Front Card Features**

**Internal Jumper Switches**

Access to the internal jumper switches requires the removal of the unit from its case. These changes should be made, if required, prior to the installation of the units.

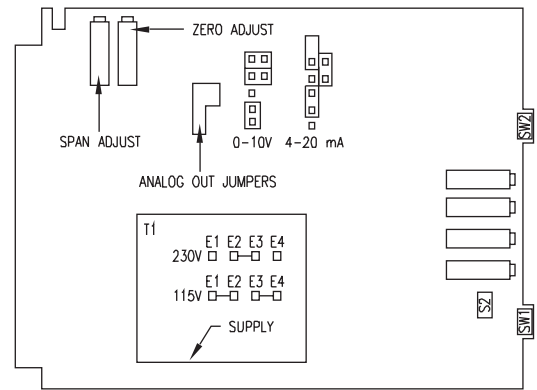
Ensure the power is removed. Unplug all rear panel connectors and unscrew the small retaining screw at the bottom rear of the case. Pry off the front cover and carefully slide the printed circuit board from the case.

Reverse the procedure after the changes are made, ensuring the retaining screw is not over tightened.

Access to the analog output jumper switches requires the removal of the input conditioner card, which can be pulled off the main board. CAREFULLY PULL THE INPUT BOARD STRAIGHT UP OFF THE BOARD. Carefully replace the card by lining up pins in sockets and gently pushing towards main board after configuration.

**Jumper Switches: Analog Output Signal**

To change from standard 4-20mA output to 0-10V, three jumper switches on the input board must be changed. Location of the analog out jumpers is shown on figure 3.

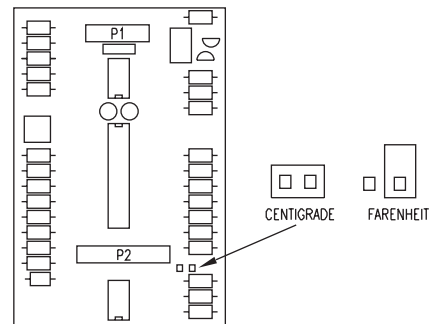


**Figure 3: Analog Out Jumpers**

**Jumper Switches: °F or °C**

There is only one configuration switch; this is located at the front end of the small signal input card. See figure 4.

Close the switch for °C and leave open for °F. Re-calibration will be required if the jumper position is changed. Two known temperatures will need to be monitored close to zero and 800°C, either directly, or using a thermocouple/RTD simulator and the zero and the span adjustments re-trimmed.



**Figure 4: Thermocouple Jumpers**

**Maintenance**

After final installation of the Model PM-706 Temperature Panel Meter, no routine maintenance is necessary. These panel meters are not field serviceable and should be returned to the factory, freight prepaid, if repair is needed. Be sure to include a clear description of the problem plus any application information available.