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Introduction

The 4000 thermocouple series of wall mounting meters are microprocessor driven and fully self calibrating, offering exceptional accuracy and long term stability. They are available in single or six input versions.

They versions are switch selectable for one of six thermocouple types.. The large backlit LCD display is easy to read in most light conditions.

Other models in the **4000** series are available to read both **RTD** and **4-20mA** inputs.

Features

- ◇ **Large Backlit LCD**
- ◇ **°C/°F Switchable**
- ◇ **0.1/1 Auto ranging**
- ◇ **Optional Rechargeable Battery Pack**
- ◇ **Selectable Thermocouple type.**
- ◇ **Splash Proof front Panel NEMA 4 (IP65)**
- ◇ **Optional Alarm Output**
- ◇ **Open Circuit Sensor Detection**

Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following:

- 4000 Series meter
- Operators Manual
- °C label (taped to 4000)
- Fixing Screws (3)

After unpacking, inspect the instrument for any physical damage that may have occurred in shipping. Save all packing materials and report any damage to the carrier immediately.

Installation

Mechanical

There are three main mounting holes for the instrument :

- Keyhole slot (Located in the middle).
- Two mounting slots (accessible under the lower front cover)

Mounting Procedure

1. Remove lower front cover by removing two holding screws.
2. Secure to wall first by using the top Key hole slot.
3. Mark positions of mounting slots 'A' and 'B'. (refer to Fig. 2)
4. Secure to wall using the Key hole slot and two mounting slots.

Wiring

Note :

While the instruments have been designed with ease of installation as an important criteria, they should only be installed by a qualified electrician.

Power Connections *(refer to Fig. 1 and 2)*

1. Remove lower front cover, loosen the middle cable gland, install cable through the cable gland.
2. Connect to the terminal block under the cover (Note for **9-30V** ac/dc: connect power wires to either "AC High" and "AC Low" per Fig. 2)
3. Tighten cable gland.
4. Re-install front cover.

Sensor Connections *(refer to Fig. 1 and 2)*

1. Remove lower front cover, loosen the left cable gland, install cable(s) through the cable gland.
2. Connect to the terminal blocks (per Fig 2) under the cover.
3. Tighten cable gland.
4. Re-install front cover.

Alarm Connections *(optional, refer to Fig. 1 and 2)*

1. Remove lower front cover, loosen the right cable gland, install cable(s) through the cable gland.
2. Connect to the Alarm Output terminal block (per Fig. 2) under the cover.
3. Connect wires depending on whether you want the contacts to be '**NO**' normally open or '**NC**' normally closed.
4. Tighten cable gland.
5. Re-install front cover.

Setup

Select Thermocouple Type (refer to Fig. 2) Type J is preset at the factory

To change the thermocouple type, use the appropriate **DIP SWITCH** settings for #1, 2, 3 accessible beneath the front cover.

| TYPE | 1 | 2 | 3 |
|------|-----|-----|-----|
| K | OFF | OFF | OFF |
| T | ON | OFF | OFF |
| R | OFF | ON | OFF |
| N | ON | ON | OFF |
| J | OFF | OFF | ON |
| E | ON | OFF | ON |

°C / °F Selection (refer to Fig. 2) °F is preset at the factory

1. To change the temperature scale, select the appropriate **DIP SWITCH** setting for #4 accessible under the front cover. (**ON = °F, OFF = °C**)
2. Open clear plastic display cover by inserting a screw driver and turning the screw in a counter-clockwise direction 90 degrees. Press the clear plastic tabs inward to release the clear display cover.
3. Under the clear plastic display cover, affix the °C label over the °F on the faceplate.

Backlight ON / OFF Switch (refer to Fig. 2) Backlight is preset ON at the factory

To turn the backlight OFF, remove the lower front cover and find the switch marked '**B/LIGHT**'. Pull the switch up to turn OFF the backlight.

Error Codes: Open Circuit Sensor Detection

Bars (- - -) will appear on the display if either the probe is defective or the temperature being measured is out of range.

Optional Features

To Set Alarm Values

1. Remove the front cover.
2. Press the button marked '**MENU**'.
3. The message '**AL H**' (Alarm High) will be displayed.
4. Press either the '**INC**' (increase) key or '**DEC**' (decrease) key to reach the desired high alarm limit.
5. Press the '**MENU**' key again to adjust the '**AL L**' (alarm low) in the same manner.
6. Press the '**MENU**' key once more to save the changes and exit..

BATTERY POWER (Optional)

The batteries are continuously charged whenever the unit is connected to its power source.

To conserve the battery life two switches are provided :

1. '**ON/OFF**' power switch is located on the right hand side of the instrument..
2. '**B/LIGHT**' switch is used to switch the backlight of the display off. The backlight significantly effects the battery life.

With Backlight : 3.5 Hours

Without Backlight : 2000 Hours

Specifications

Environmental

| | |
|-------------------------|---------------------------------|
| Ambient Operating Range | : 0 to 50 °C (32 to 122°F) |
| Storage Temperature | : -40 to 50°C (-40 to 122°F) |
| Humidity | : TO 70% RH |
| Front Panel Protection | : NEMA 4 (IP65) |

General

| | |
|-------------------|--|
| Dimensions | : 7.28 X 8.38 X4.45 inches (185 X 213 X 113 mm) |
| Weight | : 2.5lbs (1.1Kg) |
| Packed Dimensions | : 9.45 X 12 X 9.06 inches 240 X 305 X 230 mm |
| | : 1.5 Kg |

Electrical

| | |
|----------------------------|---|
| Inputs | : Thermocouple J, K, T, E, N, R; |
| Display | : Backlit LCD 1 inch (25mm) Character Height |
| Accuracy | : ±0.25% of reading. + 0.2 °C; |
| Resolution | : 0.1 to 999.9 1 above 1000 |
| Temperature Coefficient | : 0.01% of reading./°C |
| Cold Junction Compensation | : 0.0075°/° |
| Optional Alarm Output | : Relay 5A@ 30Vdc, 5A@120Vac |
| Optional Battery Life | : With Backlight 3.5 Hrs: Without Backlight 2000 Hrs |
| Power | : 240 Vac or 110Vac or 9-30V ac / dc |

Measurement Ranges

| RANGE TABLE | | |
|-------------|--------------|--------------|
| | °C | °F |
| J | -200 to 1200 | -328 to 2192 |
| K | -200 to 1372 | -328 to 2502 |
| T | -200 to 400 | -328 to 752 |
| E | -200 to 1000 | -328 to 1832 |
| N | -200 to 1200 | -328 to 2192 |
| R | 0 to 1767 | 32 to 3212 |

Notes :

Strong RF fields may adversely affect measurement accuracy.

To avoid earth ground problems, it is recommended that wherever possible, insulated sensors be used.

If grounded sensors are used, care must be taken to minimize the common mode voltage between the sensor input and the power supply to the instrument.

Ordering Codes for Thermocouple Meter

| Model Number | Description |
|---------------------------------|------------------------|
| 4001 | Single Input T/C Meter |
| 4006 | Six Input T/C Meter |
| Output and Power options | |
| -ALM | Alarm Relay |
| -BATT | Battery Pack Power |
| -9-30 | 9-30 V ac/dc Power |
| -230 | 230 V ac Power |

NOTE

Other models in the 4000 series are available to read both **RTD** and **4-20mA** inputs.

Figures

Figure 1

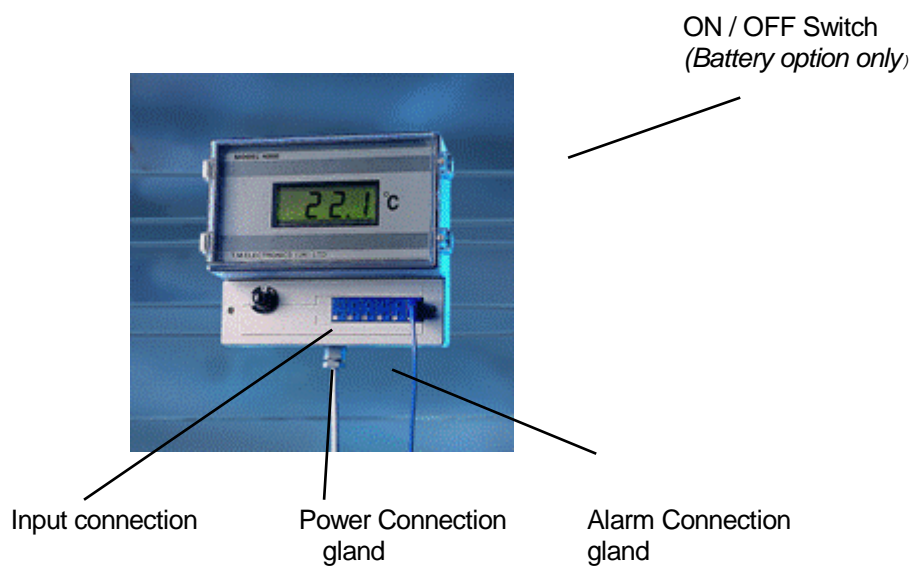


Figure.2

