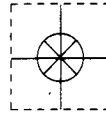
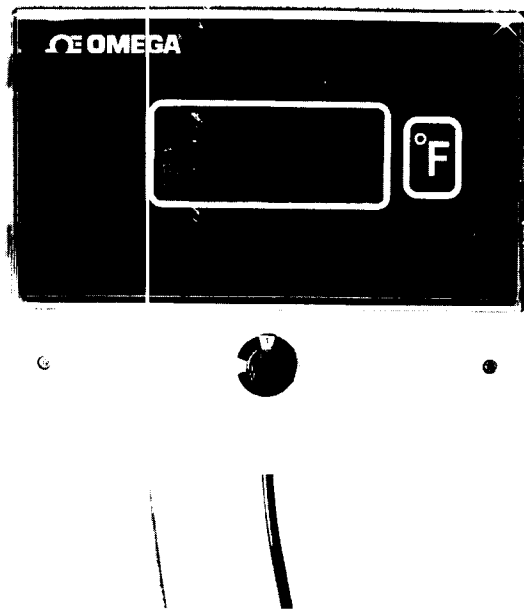


CE



User's Guide



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DP551-TC & DP556-TC Series Wall Mount Thermocouple Meters



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For immediate technical or application assistance:

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Engineering Service: 1-800-872-9436 / 1-800-USA-WHENSM
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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient connected applications.

TABLE OF CONTENTS

INTRODUCTION	3
<u>FEATURES</u>	3
<u>UNPACKING INSTRUCTIONS</u>	4
INSTALLATION	4
<u>MECHANICAL</u>	4
<i>Mounting Procedure</i>	4
<u>WIRING</u>	4
<i>Power Connections</i>	4
<i>Sensor Connections</i>	4
<i>Alarm Connections</i>	4
SETUP	5
<u>SELECT THERMOCOUPLE TYPE</u>	5
<u>°C / °F SELECTION</u>	5
<u>BACKLIGHT ON / OFF SWITCH</u>	5
<u>ERROR CODES: OPEN CIRCUIT SENSOR DETECTION</u>	5
OPTIONAL FEATURES	5
<u>ALARM OUTPUT</u>	5
<u>BATTERY POWER</u>	5
SPECIFICATIONS	6
<u>ENVIRONMENTAL</u>	6
<u>GENERAL</u>	6
<u>ELECTRICAL</u>	6
<u>MEASUREMENT RANGES</u>	7
<i>Notes</i>	7
ORDERING CODES	7
FIGURES	7
<u>FIGURE 1</u>	7
<u>FIGURE 2</u>	8
WARRANTY INFORMATION	9

Introduction

The DP550 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 **DP550** 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:

- DP550 Series meter
- Operators Manual
- °C label (taped to DP550)
- 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	: 110 Vac, 240Vac 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
DP551-TC	Single Input T/C Meter
DP556-TC	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 DP550 series are available to read both **RTD** and **4-20mA** inputs.

Figures

Figure 1

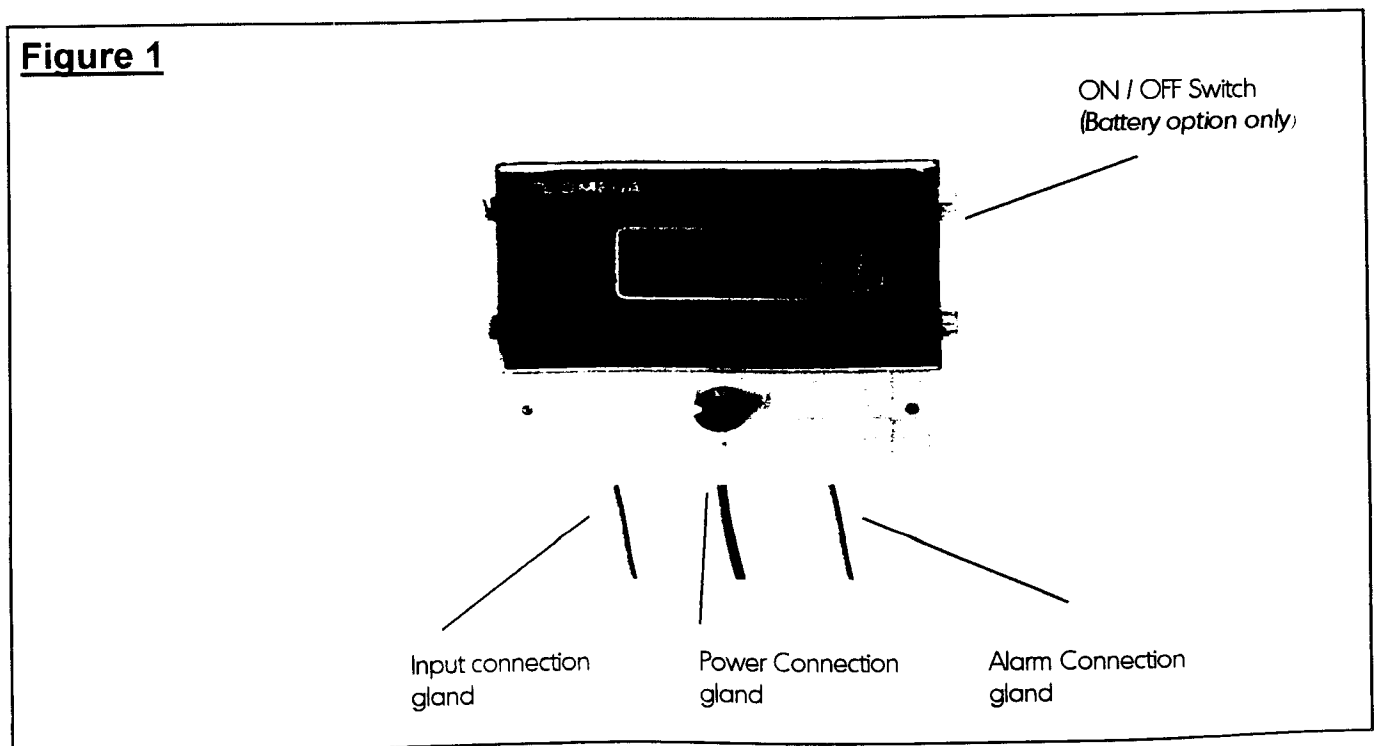
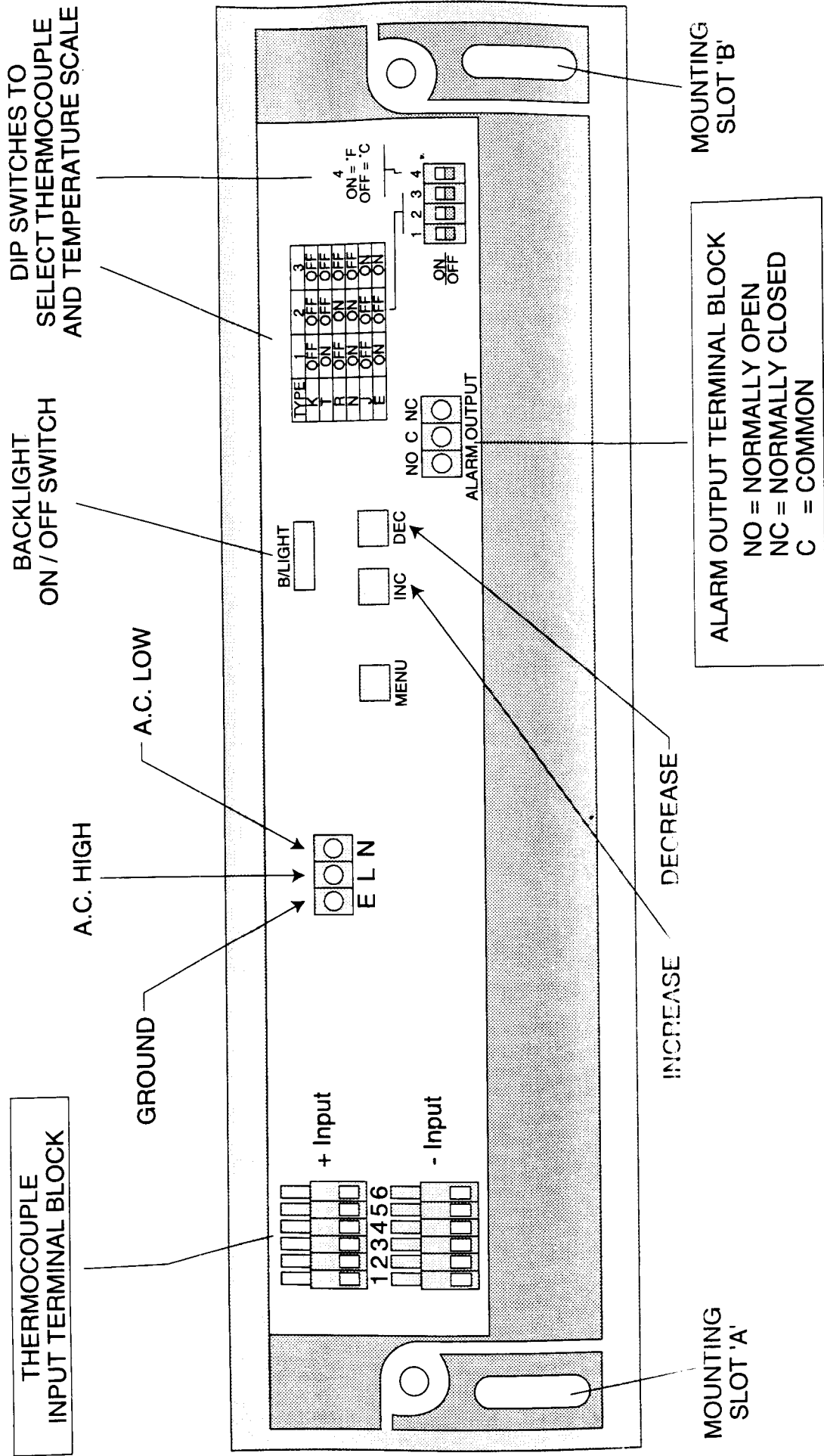


Figure.2



WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. This includes contact points, fuses, and triacs.

OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

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Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

Where Do I Find Everything I Need for Process Measurement and Control? **OMEGA...Of Course!**

TEMPERATURE

- Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
- Calibrators & Ice Point References
- Recorders, Controllers & Process Monitors
- Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- Transducers & Strain Gauges
- Load Cells & Pressure Gauges
- Displacement Transducers
- Instrumentation & Accessories

FLOW/LEVEL

- Rotameters, Gas Mass Flowmeters & Flow Computers
- Air Velocity Indicators
- Turbine/Paddlewheel Systems
- Totalizers & Batch Controllers

pH/CONDUCTIVITY

- pH Electrodes, Testers & Accessories
- Benchtop/Laboratory Meters
- Controllers, Calibrators, Simulators & Pumps
- Industrial pH & Conductivity Equipment

DATA ACQUISITION

- Data Acquisition & Engineering Software
- Communications-Based Acquisition Systems
- Plug-in Cards for Apple, IBM & Compatibles
- Datalogging Systems
- Recorders, Printers & Plotters

HEATERS

- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments