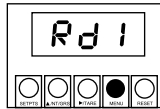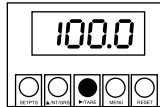## Scaling With Known Loads (Continued)

6. Press **MENU** to store ᴵᴺ¹. The unit displays:

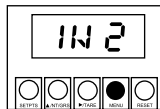| Rd 1 |
| --- |

7. Press ▶/**TARE**. The unit displays the last setting for ᴿᵈ¹.

| 100.0 |
| --- |

8. Change ᴿᵈ¹ as necessary:
   • Press ▶/**TARE** to scroll to the digit(s) you want to change (it flashes on the display).
   • Press ▲/**MAX** to change the value of the flashing digit. Values can range from 0 to 9. For the first digit, you can also enter a minus sign (–) or –1.
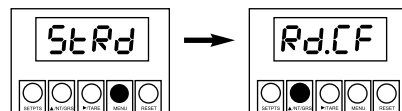
9. Press **MENU** to store the value shown for ᴿᵈ¹. The unit displays:

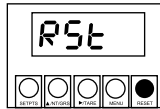| IN 2 |
| --- |

To identify the maximum known load (ᴵᴺ² and ᴿᵈ²):

   1. Apply the maximum known load (100%).

   **2. Repeat steps 4–9 above, for ᴵᴺ² and ᴿᵈ².**

   Once you've completed all steps, the unit displays:

| StRd | → | Rd.CF |
| --- | --- | --- |

To begin operation:
   Reinitialize the unit (press **RESET** twice or press **MENU** until ᴿˢᵗ flashes on the display). When a numeric reading appears, the unit is operational.

| RSt |
| --- |

## Scaling Without Known Loads

For 4-20 mA sensors, the values for the minimum and maximum input loads are always as follows:
• Minimum load (ᴵᴺ¹) — 2000
• Maximum load (ᴵᴺ²) — 9999.
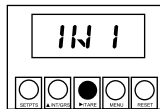
If your installation uses a different sensor type, you must calculate the values for ᴵᴺ¹ and ᴵᴺ² before proceeding with the steps below. Use the formula provided in the Operator's Manual.
To define the minimum load (ᴵᴺ¹ and ᴿᵈ¹):

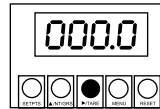1. If it's not already shown, press **MENU** until the unit displays:

| Rd.5.0 |
| --- |

2. Press ▶/**TARE**. The unit displays:

| IN 1 |
| --- |

## Scaling Without Known Loads (Continued)

3. Press ▶/**TARE** again. The unit displays the last setting for ᴵᴺ¹. (The first digit flashes.)

| 000.0 |
| --- |

4. Change ᴵᴺ¹ as necessary:
   • Press ▲/**MAX** to set or change the digit's current value. Continue to press ▲/**MAX** until the meter displays the desired value for the flashing digit. Values can range from 0 to 9. For the first digit, you can also enter a minus sign (–) or –1.
   • Press ▶/**TARE** to scroll to the digit(s) you want to change.

5. Press **MENU** to store ᴵᴺ¹. The unit displays:

| Rd 1 |
| --- |
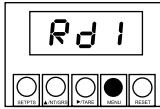
6. Press ▶/**TARE**. The unit displays the last setting for ᴿᵈ¹. (The first digit flashes.)

| 100.0 |
| --- |
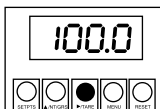
7. Change ᴿᵈ¹ as necessary:
   • Press ▲/**MAX** until the meter displays the desired value for the flashing digit. Values can range from 0 to 9. For the first digit, you can also enter a minus sign (–) or –1.
   • Press ▶/**TARE** to scroll to the digit(s) you want to change.

8. Press **MENU** to store the value shown for ᴿᵈ¹. The unit displays:

| IN 2 |
| --- |
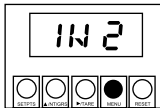
To define the maximum load (ᴵᴺ² and ᴿᵈ²):

   **1. Repeat steps 3–8 above, entering the values for ᴵᴺ² and ᴿᵈ².**
   2. Once you've completed all steps, the unit displays:
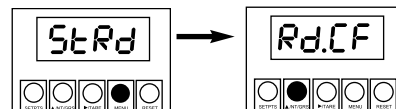
| StRd | → | Rd.CF |
| --- | --- | --- |

To begin operation:
   Reinitialize the unit (press **RESET** twice or press **MENU** until ᴿˢᵗ flashes on the display). When a numeric reading appears, the unit is operational.

| RSt |
| --- |
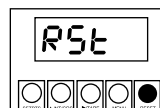
### Determining Reading Offset

The run mode reading for meters scaled without known loads may reflect an offset. For example, say you set ᴿᵈ¹ to 0 and ᴿᵈ² to 100, but when the minimum load is applied, a negative value of –1.5 displays on the front panel.

To correct the reading offset:

1. With zero load applied, note the reading on the display.

2. Subtract that amount from the ᴿᵈ¹ and ᴿᵈ² values you originally entered.

   In the example, the offset would be –1.5. If ᴿᵈ¹ is to read 0 in Run Mode, it must be reentered as 1.5. ᴿᵈ² must likewise be reentered as 101.5 if the meter is to read 100 when the maximum load is applied.

3. Repeat the steps for "Scaling Without Known Loads," but when the values for ᴵᴺ¹ and ᴵᴺ² display, do not change them. Instead, press **MENU** to move to the prompts for ᴿᵈ¹ and ᴿᵈ² and make the necessary changes.

4. Reinitialize the unit and resume operation.

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MQS3597/0918

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**QUICK START** ➤

**For complete product manual: www.omega.com/manuals/manualpdf/M3597.pdf**

**5 YEAR WARRANTY** C€



### DP25B-E
### Process Panel Meter

## ΩE OMEGA™

**omega.com   info@omega.com**

**Servicing North America:**

**U.S.A. Headquarters:** Omega Engineering, Inc.
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The information contained in this document is believed to be correct, but OMEGA 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.

⚠ This device is marked with the international caution symbol. It is important to read the Setup Guide before installing or commissioning this device, as the guide contains important information relating to safety and EMC.

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.

## Using This Quick Start Manual

Use this Quick Start Manual to set up your Process Meter and begin operation. Information is provided on how to:

- Connect ac power
- Connect the sensor
- Set basic options for operation
- Scale the meter.

Features with [NEW] are for the "B" version which has three-color programmable "Big" LED display - All segment characters shown are for the "B" version.

⚠️ **IMPORTANT:** For complete information on all setup options, please refer to the Operator's Manual.

▽ *Note* **This Quick Start Manual includes specific configuration parameters for transducers with an output range of 4–20 mA and 24 V excitation. Other sensor types may require different parameters or additional ones. When this is the case, we refer you to the Operator's Manual for detailed instructions.**

## Safety Consideration

⚠️ **This device is marked with the international Caution symbol.**

The instrument is a panel mount device protected in accordance with 2014/35/EU, electrical safety requirements for electrical equipment for measurement, control and laboratory. Remember that the unit has no power-on switch. Building installation should include a switch or circuit-breaker that must be compliant to IEC 947-1 and 947-3.
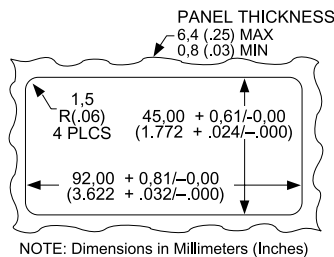
**SAFETY:**
- Do not exceed voltage rating on the label located on the top of the instrument housing.
- Always disconnect power before changing signal and power connections.
- Do not use this instrument on a work bench without its case for safety reasons.
- Do not operate this instrument in flammable or explosive atmospheres.
- Do not expose this instrument to rain or moisture.

**EMC:**
- Whenever EMC is an issue, always use shielded cables.
- Never run signal and power wires in the same conduit.
- Use signal wire connections with twisted-pair cables.
- Install Ferrite Bead(s) on signal wire close to the instrument if EMC problems persist.

## Mount the Unit

1. Cut a panel opening using the dimensions shown to the right.
2. Position the unit in the opening, making sure the front bezel is flush with the panel.
3. Install retaining clips on both sides of the meter and tighten against the panel.

PANEL THICKNESS
6,4 (.25) MAX
0,8 (.03) MIN

1,5 R(.06) 4 PLCS

45,00 + 0.61/–0,00 (1.772 + .024/–.000)

92,00 + 0.81/–0,00 (3.622 + .032/–.000)

NOTE: Dimensions in Millimeters (Inches)

## Wiring

⚠️ **Warning: Do not connect AC power to your device until you have completed all input and output connections. This device must only be installed by a specially trained electrician with corresponding qualifications. Failure to follow all instructions and warnings may result in injury!**

1. Remove the panel at the back of the unit.
2. Locate the TB1 connector.
3. Insert the correct wire in each terminal as shown in the following figure and tighten the lockdown screws.
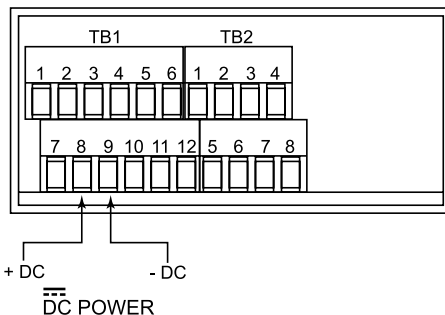4. Tug gently on the wires to verify the connections.

**External Fuse Required:**

| Time-delay, UL 248-14 listed | Time-lag, IEC 127-3 recognized |
|---|---|
| 175 mA (115 Vac line) | 125 mA (115 Vac line) |
| 80 mA (230 Vac line) | 63 mA (230 Vac line) |
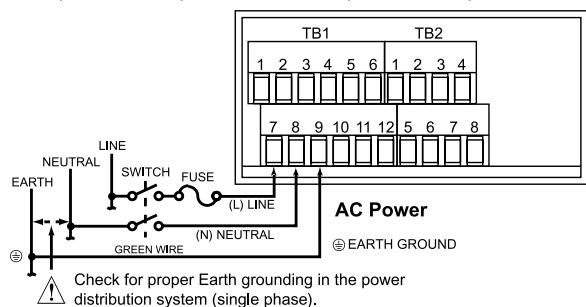
**AC Powered Unit Connections**

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## Wiring (continued)

When using DC power, do not use internal excitation or Isolated Analog Output for high color brightness. For low or medium brightness, internal excitation is limited to 24 V @ 25 mA; 5 V, 10 V, 12 V @ 35 mA.

⚠️ In order to maintain the same degree of protection as the AC units, always use a Safety Agency Approval DC source with the same Overvoltage Category and Pollution Degree.

**DC Powered Unit Connections**

## Connect the Sensor

1. Locate the TB2 connector on the rear of the unit.
2. Attach the sensor wires and tighten the lockdown screws. The diagram below shows the wiring for 4–20 mA sensors with internal excitation.

▽ *Note* Refer to the Operator's Manual for setup requirements for other sensor types.
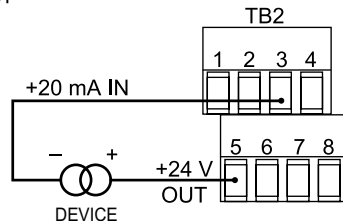
**Current Input Connections (4–20 mA) with Internal Excitation**

3. Tug gently on the wires to verify the connections.
4. Replace the panel at the back of the unit.

## Using the Configuration Menu

To configure the meter, you use the buttons on the front panel.

| To: | Take This Action: |
|---|---|
| Display the Configuration Menu | Press the **MENU** button. The first function on the menu, INPt, displays. |
| Select a submenu function | 1. Press **MENU** until the function you want is shown. 2. Press ▶/**TARE**. The information you can change flashes. |
| Select a value for that submenu function | 1. Press ▲/**MAX** to display the option you want. 2. Press **MENU** to store it. StRd quickly flashes, indicating that the selection has been stored in memory. Then the next menu function displays. |
| Go back to previous menu function | Press **RESET** once. |
| Exit the Configuration Menu | Press **RESET** twice. The unit displays RSt as it reinitializes. When a numeric value displays, the unit is in run mode. (Optionally, you can press **MENU** to move through all the menu functions until the unit reinitializes.) |

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## Using the Configuration Menu (continued)

| MENU | SUBMENU | ▶/TARE | DESCRIPTION |
|---|---|---|---|
| INPt | 100A, ±50A, 10V, ±5V, 0-20* | | Input |
| dEC.P | FFFF*, F.FFF, FF.FF, FFF.F | | Decimal Point |
| Rd.S.O | IN 1, Rd 1, IN 2, Rd 2 | | Scale and Offset |
| Rd.CF | R.1-t*, R.1-N | | Reading Configuration |
| | R.2-0, R.2-1, R.2-2, R.2-3, R.2-4* | | |
| | R.3-F*, R.3-V | | |
| COLR | GRN, REd, AMbR | | Display Color |
| S1.CF | S.1-A*, S.1-b | | Setpoint 1 Configuration |
| | S.1-U*, S.2-L | | |
| S2.CF | S.1-A*, S.1-b | | Setpoint 2 Configuration |
| | S.2-U*, S.2-L | | |
| S1.db | 0003* | | Setpoint 1, Deadband |
| S2.db | 0003* | | Setpoint 2, Deadband |
| Ot.CF | 0.1-E*, 0.1-d | | Analog Output Configuration |
| | 0.2-C*, 0.2-4 | | |
| | 0.3-A*, 0.3-P | | |
| | 0.4-d, 0.4-R | | |
| | 0.5-F, 0.5-H | | |
| P.bNd | 0000 shown if 0.3 = P | | Proportional Band |
| M.RSt | 0000 shown if 0.3 = P | | Manual Reset |
| Ot.S.O | Rd 1, OUt 1, Rd 2, OUt2 | | Output Scale & Offset |
| LK.CF | RS-E*, RS-d | | Lockout Configuration |
| | SP-E*, SP-d | | |
| | L3-0*, L3-1 | | |
| bRIt | M.brt, brt, H.brt | | Display Brightness |

\* Factory Default Settings

### To Set the Input Type
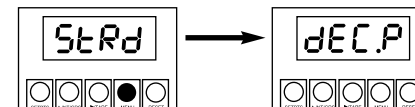
1. Press **MENU** until the unit displays: INPt
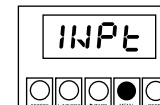
2. Press ▶/**TARE**. The unit displays: 0-20
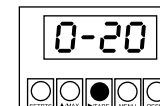
3. For this application you want 0-20. If 0-20 is not displayed, press ▲/**MAX** until it appears. Other choices are 100A, 50A, 10V and 5V.
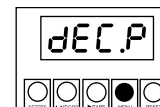
▽ *Note* **Refer to the Operator's Manual for more information on changing ranges.**

4. Press **MENU** to select the sensor shown. The meter displays the next menu item. If you changed input type, the meter displays: StRd → dEC.P
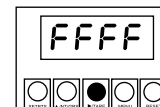
### To Set the Decimal Point

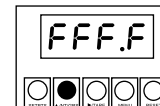1. If it's not already shown, press **MENU** until the unit displays: dEC.P
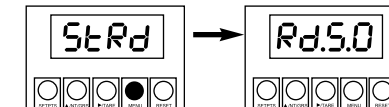
2. Press ▶/**TARE**. The unit displays: FFFF

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## To Set the Decimal Point (continued)

3. Press ▲/**MAX** to move the decimal point to the desired location. The choices are FFFF, F.FFF, FF.FF, and FFF.F. ⟶ FFF.F

4. Press **MENU** to select the decimal point position shown. The unit displays: StRd → Rd.S.O

## To Scale the Meter

You can scale the meter in one of two ways:

1. With a known load — This method uses input (load) information sent from another device such as a scale or a simulator for voltage or current.
2. Without a known load — This involves calculating the load based on transducer specifications and manually entering it to the meter.

For both methods, you must first identify the minimum input load IN 1 and the corresponding display reading you want Rd 1. Then you identify the maximum input load IN 2 and its corresponding display reading Rd 2.

▽ *Note* The decimal point is for display purposes only — you set it where you want it to display for your application.

When entering IN 1 and IN 2 values, ignore any decimal point on the display. However, you must enter Rd 1 and Rd 2 values with the decimal point in the desired position.
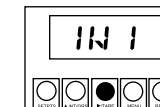
## Scaling With Known Loads

To identify the minimum known load (IN 1 and Rd 1):

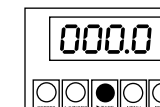1. If it's not already shown, press **MENU** until the unit displays: Rd.S.O
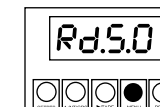
2. Apply the minimum known load (0%).

3. Press ▶/**TARE**. The unit displays: IN 1

4. Press ▶/**TARE** again. The unit displays the last setting for IN 1. 000.0

5. Press ▶/**TARE** again. The unit displays the actual reading being received from the sending device. 000.0