CONFIGURING THE OUTPUT (continued)

MOdE ENTER OUTPUT MODE CONFIGURATION SUBMENU:

Press '**RESET/ENTER**' 5) Display shows "**StOREd**" stored message momentarily and advances to "**MOdE**" to allow users to select Output type as Voltage (0-10Vdc or Current (4-20mA-dc) source.
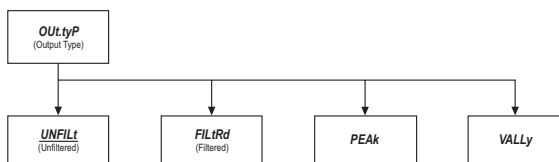
Press '**RESET/ENTER**' 6) Display flashes "**VOLt**" (default) DC-Voltage output option or previous selection ("**CURRNt**" DC-Current output).

Out.tyP ENTER OUTPUT TYPE CONFIGURATION SUBMENU:

Press '**RESET/ENTER**' 7) Display shows "**OUt.tyP**" Output Type Submenu.

```
        ┌─────────────┐
        │   OUt.tyP   │
        │ (Output Type)│
        └──────┬──────┘
    ┌──────┬───┴──┬───────┐
┌────────┐┌────────┐┌──────┐┌──────┐
│ UNFILt ││ FILtRd ││ PEAk ││VALLy │
│(Unfiltered)││(Filtered)││      ││      │
└────────┘└────────┘└──────┘└──────┘
```

Press '**RESET/ENTER**' 8) Display flashes "**UNF IIt**" Unfiltered option or previous selection.

Press '**▲/MAX**' 9) Scroll though and select the following options for your choice of setting:

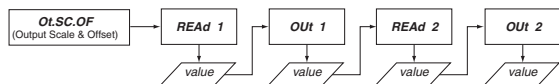"**UNF IIt**" : Transmits the unfiltered value of your signal input.
"**FILtRd**" : Transmits the filtered value of your signal input.
"**PEAk**" : Transmits the recorded Peak "**HI RdG**" Reading value(s).
or "**VALLy**" : Transmits the recorded Valley "**LO RdG**" Reading value(s).

SETTING OUTPUT SCALE AND OFFSET

OT.SC.OF ENTER OUTPUT SCALE & OFFSET CONFIGURATION SUBMENU:

```
┌──────────────┐  ┌───────┐  ┌───────┐  ┌───────┐  ┌───────┐
│   Ot.SC.OF   │─▶│ REAd 1│─▶│ OUt 1 │─▶│ REAd 2│─▶│ OUt 2 │
│(Output Scale & Offset)│  └───┬───┘  └───┬───┘  └───┬───┘  └───┬───┘
└──────────────┘      ▼          ▼          ▼          ▼
                   ╱value╱     ╱value╱     ╱value╱     ╱value╱
```

REAd 1 (READING 1)

Press '**RESET/ENTER**' 10) Display shows "**REAd 1**" Reading 1 menu.

Press '**RESET/ENTER**' 11) Display flashes 1st digit of previous "**Reading 1**" value.

Press '**▲/MAX**' & '**▶/MIN**' 12) Enter "**Reading 1**" value. (Example 000000).

Press '**RESET/ENTER**' 13) Display advances to "**OUt 1**" Output 1 menu.

SETTING OUTPUT SCALE AND OFFSET (continued)

Out 1 (OUTPUT 1)

Press '**RESET/ENTER**' 14) Display flashes 1st digit of previous "**OUt 1**" value.

Press '**▲/MAX**' & '**▶/MIN**' 15) Enter "**OUt 1**" value. (Example 0000.00).

Press '**RESET/ENTER**' 16) Display advances to "**REAd 2**" Reading 2 menu.

REAd 2 (READING 2)

Press '**RESET/ENTER**' 17) Display flashes 1st digit of previous "**Reading 2**" value.

Press '**▲/MAX**' & '**▶/MIN**' 18) Enter "**Reading 2**" value. (Example 999999).

Press '**RESET/ENTER**' 19) Display advances to "**OUt 2**" Output 2 menu.

Out 2 (OUTPUT 2)

Press '**RESET/ENTER**' 20) Display flashes 1st digit of previous "**OUt 2**" value.

Press '**▲/MAX**' & '**▶/MIN**' 21) Enter "**OUt 2**" value. (Example 0010.00).

Press '**RESET/ENTER**' 22) Display Display shows "**StOREd**" stored message momentarily and then advances to the "**SP CNF**" SetPoint Configuration menu.

Note ☞ The above example is for 0-10 V of the entire range of the process input and analog output. For 0-20mA output you need to set "**MOdE**" to "**CURRNt**" DC-Current output and "**OUt 2**" to 0020.00.

SPECIFICATIONS

Analog Output:
0-5 V, 1-5 V, 0-10 V, 0-20 mA, 4-20 mA level; 14-bit resolution; 0.1% accuracy; 6 msec step response.

Isolation:
Power to Input / Analog, Comm, Ethernet, & Relay Output: 2500 Vac per 1 min. test
Relays to Inputs / Analog, Comm, & Ethernet Outputs: 2500 Vac per 1 min. test
Ethernet to Inputs / Analog Outputs: 1500 Vac per 1 min. test
Between Inputs / Analog & Comm Outputs: 500 Vac per 1 min. test

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.

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

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

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.

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OPERATION MANUAL
RoHS 2 Compliant

ΩEOMEGA® 2473.86 °F

DP41-B
Isolated Analog Output Option

omega.com®
ΩEOMEGA®

M2548/0802

FEATURES OVERVIEW

1. Precise analog levels are generated from digital code using a 14-bit DAC chip.

2. Voltage (to 10 V) is available at the same time as current (to 22 mA), but the total current drawn should not exceed 24 mA.

3. Load resistance for the voltage output can be as low as 500 ohms (20 mA at 10 V out) when current output is not used.

4. Loop resistance for the current output can be as high as 600 ohms (12 volts compliance) with negligible current from the voltage output.

5. Both outputs are galvanically isolated from both power and measurement circuits of the meter.

6. Precision calibration is applied by the meter to either the voltage output or the current output (but not to both simultaneously). When both outputs are used simultaneously, the non-calibrated output is stable but does require external adjustment if fine-trimming is required.

7. Independent, 14-bit resolution OuTput SCale and OFfset (OT.SC.OF) can convert a wide range of meter readings to the desired current or voltage output span.

8. The output resolution permits good accuracy for turndown ratios (offset/span) as high as 100:1.

9. 50° to 104°F (10° to 40°C) accuracy within 0.1% after installation calibration.

10. 10% to 90% step response time is 6 milliseconds (plus filter delay, if any, programmed for the analog output).

11. Configurable so that output will track the PEAK or VALLEY measurement.

BOARD INSTALLATION

To install optional Analog Output printed circuit board:

1. Refer to "Reveal the Main Board" in Main Operator's Manual **Section 5.2**, Disassembly.
2. Using figure below as a reference, insert analog option board(s) into J12 connector on the main board.

⚠ **WARNING:** To avoid electrical shock be sure to disconnect the unit from its power supply. After you have opened the meter you are ready to install option card.
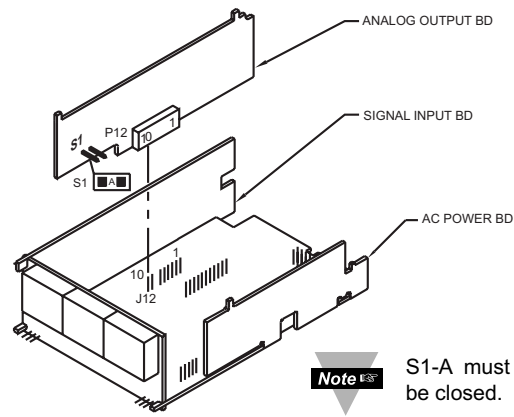
BOARD INSTALLATION (continued)

Figure 1. Board Installation

▼ Note☞ S1-A must be closed.

WIRING CONNECTIONS

⚠ **WARNING:** Do not connect ac power to your meter until you have completed all input and output connections. Failure to do so may result in injury! This device must only be installed electrically by specially trained electrician with corresponding qualifications.
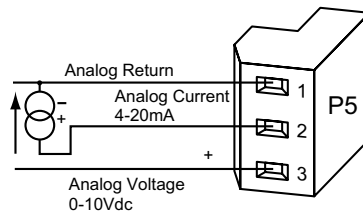

Figure 2. Analog Output Option Board Wiring Connection

LOCKOUT (ACCESS SECURITY) CONFIGURATION MENU

- To prevent unauthorized tampering with the setup parameters, this instrument provides protection by requiring the user to enter the ID (Access Security) Code before allowing access any locked menu item on Main menu.
- The locked menu will be skipped and invisible during Menu Navigation, however Display will show the locked setpoint and value but editing mode is disabled (first digit is not flashing).
- Whether multiple or single menu accessibility/restriction desired, there is only one ID code needed.

LCk.CNF ENTER LOCKOUT (ACCESS SECURITY) CONFIGURATION SUBMENU:

Press '**MENU**'	1) Ten times, Display shows "**LCk.CNF**" Lockout (Access Security) Configuration Menu.
Press '**RESET/ENTER**'	2) Display shows "**Id**" Access Security ID menu.
Press '**RESET/ENTER**'	3) Display shows 4 numbers 0 (**0000**) with the first digit flashing.
Press '**▲/MAX**' & '**▶/MIN**'	4) To enter Access Security ID code.

- The default code is any 4-digit number that has the sum of its 4 digits equal 10. For example 1234 is one of the default ID code since 1+2+3+4 = 10.
- Use numbers that are easy for you to remember. If the ID Code is forgotten or lost, Call customer service with your serial number to access and reset to the default ID code.

Press '**RESET/ENTER**'	5) Display shows "**CHNG. Id**" Change ID Code menu; which Implies that the ID code, was just entered, is accepted otherwise the meter will return to "**Id**" ID Code menu and allows user enter the ID code again if the correct ID code still is not found for over 3 attempts then display shows "**ERROR**" and advances to "**RUN**" Run mode.
Press '**RESET/ENTER**'	6) Display shows 4 numbers 0 (**0000**) with the first digit flashing.
Press '**▲/MAX**' & '**▶/MIN**'	7) To modify and enter new ID code if necessary, otherwise skip this menu by Press '**RESET/ENTER**' again.

LOCk

Press '**RESET/ENTER**'	8) Display shows "**StOREd**" stored message momentarily and then advances to the "**LOCk**" Lockout menu.
Press '**RESET/ENTER**'	9) Display shows "**SP1**" Setpoint 1 submenu. Use '**MENU**' button to regain accessibility or lockout the other following menu functions in the Main Menu: "**SP2**", "**SP3**", "**SP4**", "**INPUt**", "**RdG.CNF**", "**INP.CNF**", "**MP.SC.OF**", "**OUt.CNF**", "**SP.CNF**", "**AL.CNF**", "**COMM**" (If Communication Option Board installed), and "**COLOR**".
Press '**RESET/ENTER**'	10) Display flashes "**dISAbL**" disable option or previous setting.

### *LOCk* (continued)

Press '**▲/MAX**'	11) Scroll and select "**ENAbLE**" to lockout "**OUt.CNF**" Output Configuration from any unauthorized modification or skip this menu, just Press '**RESET/ENTER**'.
Press '**RESET/ENTER**'	12) Display shows "**StOREd**" stored message momentarily and then advances to the "**SP.CNF**" submenu.

CONFIGURING THE OUTPUT

OUt.CNF ENTER OUTPUT CONFIGURATION MENU:

Press '**MENU**'	1) 5 times or scroll though main Menu until Display shows "**OUt.CNF**" Output Configuration Menu.
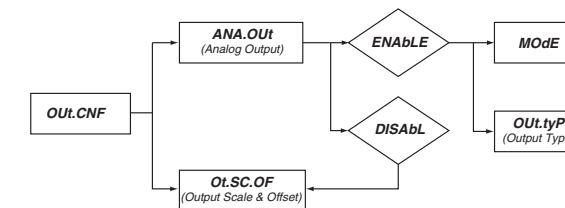
ANA.OUt

Press '**RESET/ENTER**'	2) Display shows "**ANA.OUt**" Analog Output Configuration submenu.
Press '**RESET/ENTER**'	3) Display flashes "**dISAbL**" (Default) or previous setting option.
Press '**▲/MAX**'	4) Select "**ENAbLE**" to setup Analog Output if your controller is equipped With the optional Analog Output board.