ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *OMEGA DP25B-S-A* at our website: *Click HERE*

MADE IN USA

User's Guide

Shop on line at

omega.com®

OMEGA®

omega.com
e-mail: info@omega.com
For latest product manuals
omegamanual.info



DP25-S and DP25B-S

Strain Gage Panel Meter

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

omega.com®

OMEGA®

OMEGAnet® On-Line Service www.omega.com	Internet e-mail info@omega.com

Servicing North America:

USA:
ISO 9001 Certified
One Omega Drive, P.O. Box 4047
Stamford CT 06907-0047
TEL: (203) 359-1660 FAX: (203) 359-7700
e-mail: info@omega.com

Canada:
976 Bergar
Laval (Quebec) H7L 5A1
TEL: (514) 856-6928 FAX: (514) 856-6886
e-mail: info@omega.ca

For immediate technical or application assistance:

USA and Canada:
Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA®
Customer Service: 1-800-622-2378 / 1-800-622-BEST®
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN®

Mexico and Latin American:
TEL: (001)800-TC-OMEGA® FAX: (001) 203-359-7807
En Español: (001) 203-359-7803
e-mail: espanol@omega.com

Servicing Europe:

Czech Republic:
Frystatska 184, 733 01 Karviná
TEL: +420 59 6311899 FAX: +420 59 6311114
e-mail: info@omegashop.cz

Germany/Austria:
Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
TEL: +49 7056 9398-0 FAX: +49 7056 9398-29
Toll Free in Germany: 0800 639 7678
e-mail: info@omega.de

United Kingdom:
ISO 9002 Certified
One Omega Drive
River Bend Technology Centre
Northbank, Irlam Manchester M44 5BD United Kingdom
TEL: +44 161 777 6611 FAX: +44 161 777 6622
Toll Free in England: 0800 488 488
e-mail: sales@omega.co.uk

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.

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.

⚠ 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.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PREFACE

Manual Objectives

This manual shows you how to set up and use the Programmable Digital Meter.

Standard Procedures:

* Checking voltage jumpers, or changing voltage power
* Mounting the panel
* Selecting the input type
* Selecting a decimal point position
* Scaling with known loads (on-line calibration)
* Scaling without known loads
* Selecting ratiometric/non-ratiometric operation
* Displaying the filtered/unfiltered input signal
* Selecting a display color
* Setting the setpoint's active band
* Selecting a latched or unlatched operation
* Setting setpoint deadbands
* Enabling/disabling setpoint changes
* Enabling/disabling the RESET button in the Run Mode

Optional Procedures:

* Setting input resolution
* Enabling/disabling analog output
* Selecting analog output as current or voltage
* Assigning the output to net/gross reading
* Scaling analog output

NEW 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.

Tip ☞ For first-time users: Refer to the QuickStart Manual for basic operation and set-up instructions.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table A-1. Sections of the Manual

If you want to read about:	Refer to section	
Unpacking; safety considerations	1	Introduction
Meter description and features	2	About the Meter
Main board power jumpers; panel mounting, sensor input, main power and analog and relay output	3	Getting Started
Input type; decimal point position; reading scale & offset; reading configuration; display color; setpoint configuration; setpoint deadbands; output configuration (analog output); analog output scaling; lock out configuration; display brightness	4	Configuring the Meter
Display messages	5	Display Messages
Meter menu/sub-menu messages	6	Menu Configuration
Setpoint configuration messages	7	Setpoint Configuration Displays
Specifications	8	Specifications
Factory Preset Values	9	Factory Default Setup as Shipped

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table of Contents

Section		Page
SEC 1	**INTRODUCTION**	1
1.1	Unpacking	1
1.2	Safety Considerations	2
SEC 2	**ABOUT THE METER**	3
2.1	Description	3
2.2	Features	3
2.3	Available Accessories	4
2.4	Front of the Meter	5
2.5	Back of the Meter	8
2.6	Disassembly	10
SEC 3	**GETTING STARTED**	11
3.1	Rating/Product Label	11
3.2	Main Board Power Jumpers	11
3.3	Panel Mounting	14
3.4	Connecting Sensor Inputs	15
3.5	Connecting Main Power	17
3.6	Connecting External Tare Switch	19
3.7	Connecting Analog and Relay Outputs	19
SEC 4	**CONFIGURING THE METER**	21
4.1	Selecting the Input Type	21
4.2	Selecting a Decimal Point Position	22
4.3	Selecting Reading Scale and Offset	22
4.3.1	Scaling with Known Loads	23
4.3.2	Scaling without Known Loads	26
4.4	Using Reading Configuration	27
4.4.1	Selecting Ratiometric/Non-Ratiometric Operation	28
4.4.2	Setting Input Resolution	28
4.4.3	Displaying the Filtered/Unfiltered Input Signal	29
4.4.4	Selecting Gross/Net or Peak Display	29

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table of Contents

Table of Contents

Section		Page
4.5	Selecting a Display Color	30
4.6	Using Setpoint 1 Configuration	30
4.6.1	Setting Setpoint 1's Active Band	31
4.6.2	Selecting if Setpoint 1 is Latched or Unlatched	31
4.6.3	Assigning Setpoint 1 Values to Net or Gross Readings	32
4.7	Using Setpoint 2 Configuration	32
4.7.1	Setting the Setpoint 2's Active Band	32
4.7.2	Selecting if Setpoint 2 is Latched or Unlatched	33
4.7.3	Assigning Setpoint 2 Values to Net or Gross Readings	33
4.8	Setting the Setpoint 1 Deadband	34
4.9	Setting the Setpoint 2 Deadband	35
4.10	Using Output Configuration	37
4.10.1	Enabling or Disabling the Analog Output	37
4.10.2	Selecting Analog Output as Current or Voltage	38
4.10.3	Selecting Analog Output or Proportional Control	38
4.11	Using Output Scale and Offset	39
4.11.1	Examples of Output Scale and Offset	41
4.12	Using Lock Out Configuration	42
4.12.1	Enabling or Disabling the RESET Button in the Run Mode	42
4.12.2	Enabling or Disabling Setpoint Changes	42
4.12.3	Setpoint Display Function: Firmware Version or Setpoint Value	43
4.13	Using Display Brightness Configuration	43
4.13.1	Changing Brightness Level	43
SEC 5	**DISPLAY MESSAGES**	44
SEC 6	**MENU CONFIGURATION DISPLAYS**	45
SEC 7	**SETPOINT CONFIGURATION DISPLAYS**	49
SEC 8	**SPECIFICATIONS**	50
SEC 9	**FACTORY PRESET VALUES**	55
SEC 10	**CE APPROVAL INFORMATION**	56

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

List of Figures

Figure		Page
2-1	Front-Panel with “Big” LED Display	5
2-2	Front Panel with Standard LED Display	5
2-3	Connectors (AC-Powered and DC-Powered)	8
3-1	Main Board Power Jumpers (W1, W2, W3)	11
3-2	Main Board Jumper Positions	12
3-3	Upper Isolated Analog Output Option Board Installation	12
3-4	Meter - Exploded View	14
3-5	Panel Cut-Out	14
3-6	Meter-powered Bridge Input	15
3-7	Externally-powered Bridge Input	15
3-8	4-Wire DC Input Connections with External Excitation	16
3-9	Current Input Connections with Internal Excitation	16
3-10	Current Input Connections with External Excitation	17
3-11	Main Power Connections - AC	17
3-12	Main Power Connections - DC	18
3-13	External Tare Connections	19
3-14	Analog Output Connections	19
3-15	Relay Output Connections	20
3-16	Isolated Analog Output Connections	20
4-1	Alarm Example	36
8-1	Meter Dimensions/Panel Cutout	54

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table of Contents

List of Tables

Table		Page
A-1	Sections of the Manuals	ii
2-1	Accessories and Add-Ons	4
2-2	Connector Description	9
2-3	DIP Switch Positions/Input Range & Excitation	10
3-1	S3 Jumper Functions	13
3-2	AC-Power Connections	18
4-1	Range Selection Dip Switch Positions for Regular Voltage Input	23
4-2	Range Selection Dip Switch Positions for Millivolt/Milliamp Input	23
4-3	Natural Gain	26
4-4	Input Resolution Multiplier	26
5-1	Display Messages	44
6-1	Menu Configuration Displays	45
6-2	Run Mode Displays	48
7-1	Setpoint Configuration Displays	49
8-1	Color Chart for DC Power	53
9-1	Factory Preset Values	55

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

NOTES, WARNINGS and CAUTIONS

Information that is especially important to note is identified by three labels:

- **NOTE**
- **WARNING**
- **CAUTION**
- **IMPORTANT**



NOTE: provides you with information that is important to successfully setup and use the Programmable Digital Meter.



CAUTION or WARNING: tells you about the risk of electric shock.



CAUTION, WARNING or IMPORTANT: tells you of circumstances or practices that can effect the meter's functionality and must refer to accompanying documents.



TIP: Provides you helpful hints.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Notes

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 1. INTRODUCTION

1.1 UNPACKING

Remove the Packing List and verify that all equipment has been received. If there are any questions about the shipment, use the phone numbers listed on the back cover to contact the Customer Service Department nearest you.

Upon receipt of shipment, inspect the container and equipment for any signs of damage. Take particular note of any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

Note The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

Verify that you receive the following items in the shipping box:

QTY	DESCRIPTION
1	Programmable Digital Meter indicator/controller with all applicable connectors attached.
1	Owner's Manual
1	Set Mounting brackets

Note If you ordered any of the available options (except the "BL" Blank Lens option), they will be shipped in a separate container to avoid any damage to your indicator/controller.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1.2 SAFETY CONSIDERATIONS

This device is marked with the **international caution symbol**. It is **important to read** this manual before installing or commissioning this device as it contains important information relating to **Safety and EMC** (Electromagnetic Compatibility).

This instrument is a **panel mount** device protected in accordance with EN 61010-1:2001, electrical safety requirements for electrical equipment for measurement, control and laboratory. Installation of this instrument should be done by qualified personnel. In order to ensure safe operation, the following instructions should be followed.

This instrument has **no power-on switch**. An external **switch or circuit-breaker** shall be included in the building installation as a disconnecting device. It shall be marked to indicate this function, and it shall be in close proximity to the equipment within easy reach of the operator. The switch or circuit-breaker shall not interrupt the Protective Conductor (Earth wire), and it shall meet the relevant requirements of IEC 947–1 and IEC 947-3 (International Electrotechnical Commission). The switch shall not be incorporated in the main supply cord.

Furthermore, to provide protection against **excessive energy** being drawn from the main supply in case of a fault in the equipment, an **overcurrent** protection device shall be installed.

Note

- 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.
- Unit mounting should allow for adequate ventilation to ensure instrument does not exceed operating temperature rating.
- Use electrical wires with adequate size to handle mechanical strain and power requirements. Install without exposing bare wire outside the connector to minimize electrical shock hazards.

EMC Considerations

- 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 wires close to the instrument if EMC problems persist.

Failure to follow all instructions and warnings may result in injury!!

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 2. ABOUT THE METER

2.1 DESCRIPTION

The Digital Programmable Strain meter is a value packed indicator/controller. Four full digits and broad scaling capability allow for display in virtually all engineering units. A wide variety of DC current and voltage input ranges cover typical strain applications. Standard features include sensor excitation and front panel or remote tare. Your meter may be a basic indicator or it may include analog output or dual relay output. Analog or dual relay output must be ordered at time of purchase. Analog output is fully scalable and may be configured as a proportional controller, or to follow your display. Dual 5 amp, form C relays control critical processes. A mechanical lockout has been included to guard against unauthorized changes.

2.2 FEATURES

The following is a list of standard features:

* 4-digit, three color Programmable, Big LED display or 4-digit, Standard LED display
* NEMA 4/Type 4 Front Bezel
* ±0.03 % accuracy
* 8 DC input ranges: 0-100 mV, ±50 mV, 0-5 V, 1-5 V, 0-10 V, ±5 V, 0-20 mA, and 4-20 mA
* 5, 10, 12, or 24 Vdc sensor excitation
* Peak detection
* Front panel and remote tare function
* Nonvolatile memory-no battery backup
* 115 or 230 Vac 50/60 Hz power supply or 10-32 Vdc or 26-56 Vdc

The following is a list of optional features:

* Dual 5 amp, form C relay outputs
* Scalable analog output
* Proportional control
* Easy setup for proportional control

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2.3 AVAILABLE ACCESSORIES

Table 2-1. Accessories and Add-Ons

Add-On Options

FS	Special Calibration/Configuration
SPC4	NEMA-4 Splash Proof Cover
SPC18	NEMA-4 Splash Proof Cover, NEW

Accessories

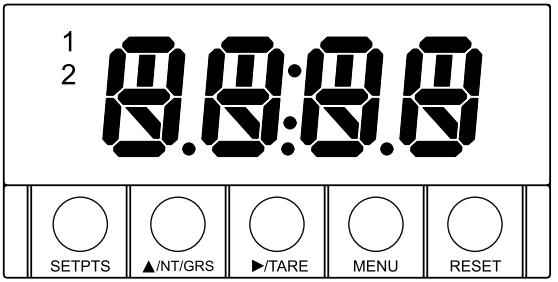
TP1A	Trimplate panel adaptor. Adapts DIN1A/DIN2A cases to larger panel cutouts
RP18	19-In. Rack Panel for one (1) 1/8 DIN instrument
RP28	19-In. Rack Panel for two (2) 1/8 DIN instruments
RP38	19-In. Rack Panel for three (3) 1/8 DIN instruments

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2.4 FRONT OF THE METER

NEW

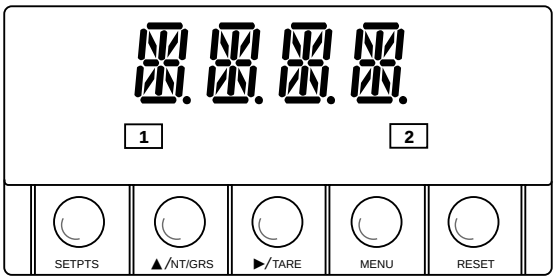
Figure 2-1 shows each part of the front of the three-color programmable “Big” LED display meter (Version B).



Digital LED Display:
-1.9.9.9 or 9.9.9.9 4-digit three color programmable, 21 mm (0.83") high LED display with programmable decimal point.

Figure 2-1. Front-Panel with Big Display

Figure 2-2 shows each part of the front of the standard LED display meter.



Digital LED Display:
-1.9.9.9. or 9.9.9.9.
14 segment, 13.8 mm (0.54") high LED display with programmable decimal point.

Figure 2-2. Front-Panel wtih Standard Display

These meter display windows (both versions) light when appropriate:

1 Setpoint 1 status

2 Setpoint 2 status

5 Pushbuttons for programming the meter.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2 About The Meter

METER BUTTONS

SETPTS Button

In the Run Mode, this button will sequentially recall the previous setpoint settings. As necessary, use the **▲/NT/GRS** and **▶/TARE** buttons to alter these settings, then press the **SETPTS** button to store new values.

Unless you press the **SETPTS**, **▶/TARE**, or **▲/NT/GRS** button within 20 seconds, the meter will scroll to setpoint 2 and then to the Run Mode.

Note

If the dual relay option is not installed or if L.3=1 is displayed on the LK.CF menu, pressing the SETPTS button will display the meter's firmware version.

▲/NT/GRS Button

In the Run Mode, this button will toggle between net/gross readings or peak readings depending upon setup.

In the Configuration Mode, press this button to change the value of the flashing digit shown on the display and/or toggle between menu choices, such as R.1=R or R.1=N on Rd.CF menu. When configuring your setpoint values, press the **▲/NT/GRS** button to advance the flashing digit's value from 0 to 9 by 1.

▶/TARE Button

In the Run Mode press the **▶/TARE** button to tare your reading (zeroing).

In the Configuration Mode, press the this button to scroll to the next digit.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

MENU Button

In the Run Mode, press the **MENU** button to terminate the current measuring strain and enter you into the Configuration Mode.

Note ☞ Only if you have not installed the lock out jumpers on the main board.

In the Configuration Mode, press the **MENU** button to store changes in the nonvolatile memory and then advance you to the next menu item.

RESET Button

If you hard reset (press the **MENU** button followed by the **RESET** button) or power off/on the meter, it shows RSt, followed by StRN.

In the Run Mode, press the **RESET** button to reset the latched setpoints. The meter shows SP.RS and returns to the Run Mode.

In the Configuration Mode, press the **RESET** button once to review the previous menu. Press the **RESET** button twice to perform a hard reset and return to the Run Mode.

In the Peak Mode, press the **RESET** button to reset peak values. The meter shows PK.RS and returns to the Run Mode.

In the Setpoint Mode, press the **RESET** button to reset the latched setpoint. The meter shows SP.RS and enters the Run Mode.

In the Tare Mode, press the **RESET** button to reset. The meter shows t.RSt.

Note ☞ *When in setpoint or Configuration Mode, if the meter shows 9999 or -1999 with all flashing digits, the value has overflowed. Press the* ▲**/NT/GRS** *button to start a new value.*

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2.5 BACK OF THE METER

Figure 2-3 shows the label describing the connectors on the back of the meter. **Table 2-2** on the following page gives a brief description of each connector at the back of the meter.

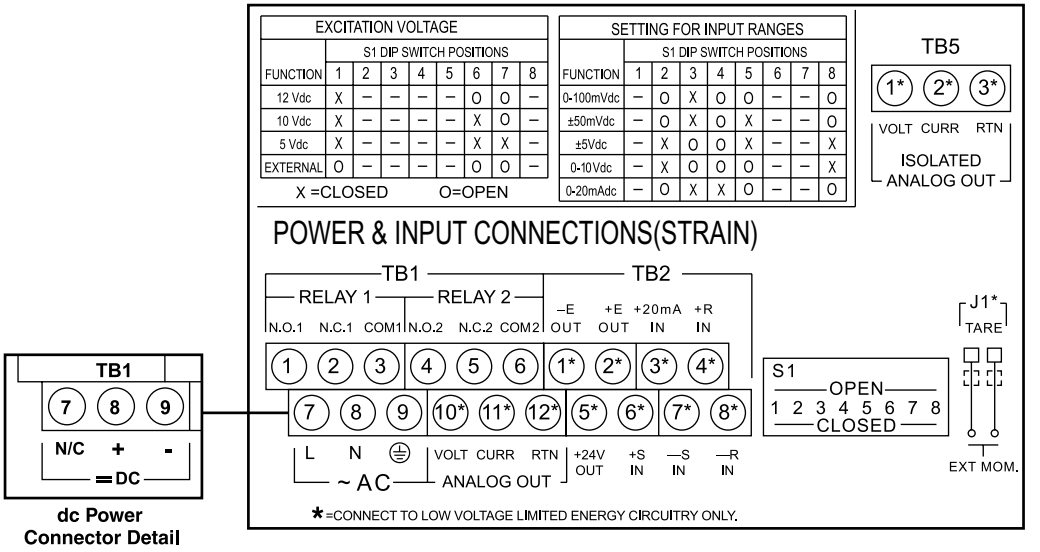


Figure 2-3. Connectors (AC-Powered and DC-Powered Detail)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2.5 BACK OF THE METER (Continued)

Table 2-2. Connector Description

Connector	Description
TB1-1	Setpoint 1: Normally open (N.O.1) connection
TB1-2	Setpoint 1: Normally closed (N.C.1) connection
TB1-3	Setpoint 1: Common (COM1) connection
TB1-4	Setpoint 2: Normally open (N.O.2) connection
TB1-5	Setpoint 2: Normally closed (N.C.2) connection
TB1-6	Setpoint 2: Common (COM2) connection
TB1-7	AC line connection (no connections on DC-powered units)
TB1-8	AC neutral connection (+ Input on DC-powered units)
TB1-9	AC earth ground (DC-power return on DC-powered units)
TB1-10	Analog voltage output
TB1-11	Analog current output
TB1-12	Analog return
TB2-1	-E: Negative excitation connection from meter (5, 10, 12 V)
TB2-2	+E: Positive excitation connection from meter (5, 10, 12 V)
TB2-3	+20 mA connection for analog input
TB2-4	+R (Not used)
TB2-5	+24 V output connection
TB2-6	+S: Positive signal input
TB2-7	-S: Negative signal input and return for +20 mA or +24 V
TB2-8	-R (Not used)
TB5-1	Isolated Analog Voltage Output
TB5-2	Isolated Analog Current Output
TB5-3	Isolated Analog Output Return
J1 (1-2)	Remote tare connection with a momentary switch

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

The DIP switches are located at the S1 position (refer to **Figure 3-2**). Use a small instrument, such as a paper clip, to change the switches from open to closed. **Table 2-3** lists DIP switch settings at the S1 position required to complete the setup of your meter.

Table 2-3. DIP Switch Positions/Input Range & Excitation

Function	S1 DIP Switch Positions							
C= Closed O= Open	1	2	3	4	5	6	7	8
Settings for Excitation Voltage								
Internal 5/10/12 excitation	C	-	-	-	-	-	-	-
External 5/10/12 excitation	O	-	-	-	-	O	O	-
Internal 12 Vdc excitation	C	-	-	-	-	O	O	-
Internal 10 Vdc excitation	C	-	-	-	-	C	O	-
Internal 5 Vdc excitation	C	-	-	-	-	C	C	-
Settings for Input Ranges								
0-100 mV DC	-	O	C	O	O	-	-	O
±50 mV DC	-	O	C	O	C	-	-	O
±5 Vdc	-	C	O	O	C	-	-	C
0-10 Vdc	-	C	O	O	O	-	-	C
0-20 mA DC	-	O	C	C	O	-	-	O

Note The display must also be configured to the selected input type after setting the DIP switches (see **Section 4.1**, Selecting the Input Type)

2.6 DISASSEMBLY

You may need to open up the meter for one of the following reasons:

- To check or change the 115 or 230 Vac power jumpers.
- To install or remove jumpers on the main board.

Note Disconnect the power supply before proceeding.

To remove and access the main board, follow these steps:

- Disconnect the main power from the meter.
- Remove the back case cover.
- Lift the back of the main board upwards and let it slide out of the case.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 3. GETTING STARTED

Caution: The meter has no power-on switch, so it will be in operation as soon you apply power.

If you power off/on the meter, or perform a hard reset (press the **RESET** button twice), the meter shows RSt, followed by StRN.

3.1 RATING/PRODUCT LABEL

This label is located on top of the meter housing (refer to **Figure 3-4**).

3.2 MAIN BOARD POWER JUMPERS (refer to Figure 3-1)

Note

Important: If you want to change the Factory preset jumpers, do the following steps; otherwise go to **Section 3.3**.

Warning: Disconnect the power from the unit before proceeding. This device must only be reconfigured by a specially trained electrician with corresponding qualifications. Failure to follow all instructions and warnings may result in injury!

1. Remove the main board from the case. Refer to **Section 2.6**.
2. Locate the solder jumpers W1, W2, and W3 (located near the edge of the main board alongside the transformer).
3. If your power requirement is **115 Vac, solder jumpers W1 and W3 should be wired, but jumper W2 should not.** If your power requirement is **230 Vac, solder jumper W2 should be wired, but jumpers W1 and W3 should not.**

   Note: W4 jumper is not used.

Figure 3-1 shows the location of solder jumpers W1 through W3.

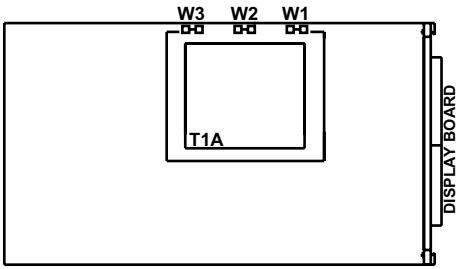


Figure 3.1 Main Board Power Jumpers

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.2 MAIN BOARD POWER JUMPERS (Continued)

Figure 3-2 shows the location jumper positions on the main board.

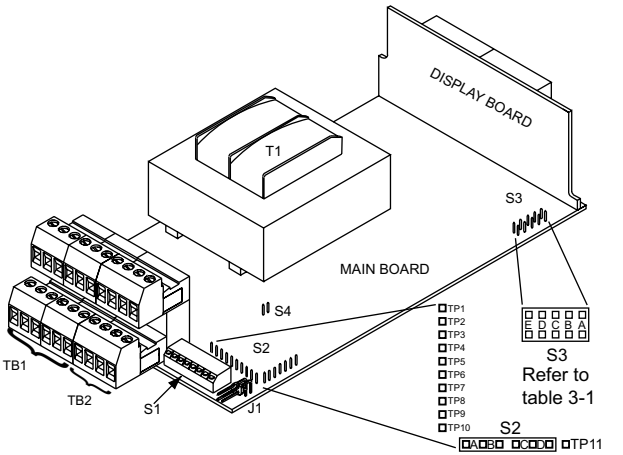


Figure 3-2. Main Board Jumper Positions

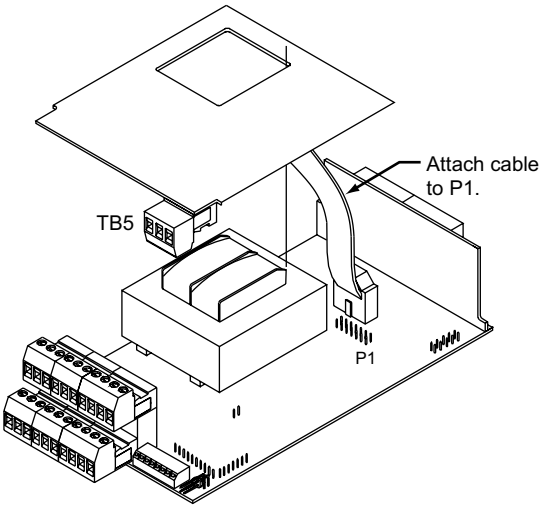


Figure 3-3. Upper Isolated Analog Output Option Board Installation

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.2 MAIN BOARD POWER JUMPERS (Continued)

S2 jumpers are used for testing purposes. Do not use as reading errors may result.

S3 jumpers are used for the following (refer to **Figure 3-2**):

* To enable or disable the front panel push-buttons
* To allow for an extremely low resistance load for analog output
* To disable the **MENU** button
* To perform factory calibration procedure

Test pins TP1 - TP11 are for testing purposes. Do not use as reading errors may result.

S4-A Factory default jumper is removed.

Table 3-1. S3 Jumper Functions

Jumper	Description
S3-A	Install to enable front panel push-buttons. Remove to disable all front panel push-buttons.
S3-B	Removed. For factory calibration only.
S3-C	Removed. Not used.
S3-D	Installed for external ratiometric.
S3-E	If installed without S3-B, the **MENU** button locks out. If you press the **MENU** button, the meter shows LOCK.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.3 PANEL MOUNTING

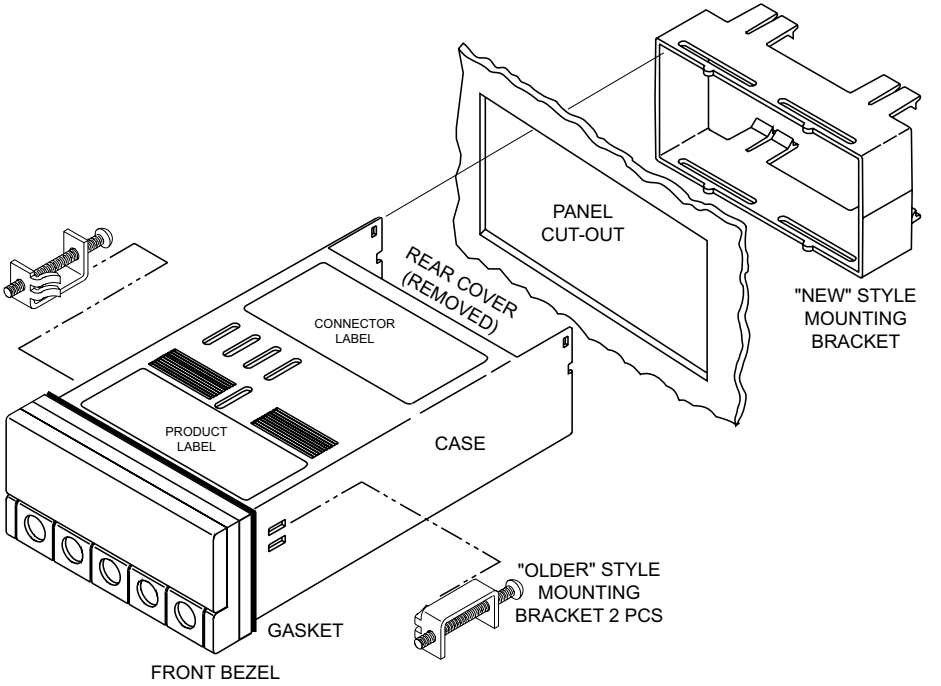
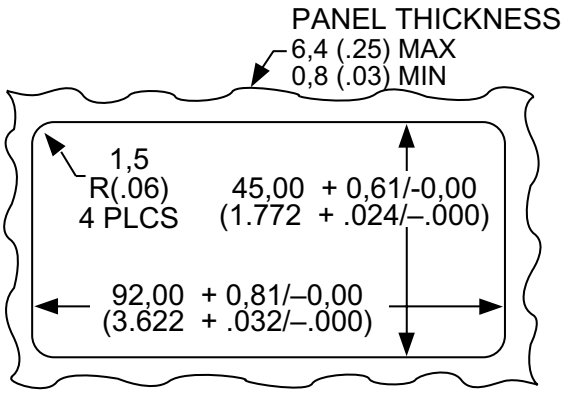


Figure 3-4. Meter - Exploded View

1. Cut a hole in your panel, as shown in **Figure 3-4**. For specific dimensions refer to **Figure 3-5**.
2. Insert the meter into the hole. Be sure the front bezel gasket is flush to the panel.
3. Slide on mounting bracket to secure.
4. Proceed to **Section 3.4** to connect your sensor input and main power.



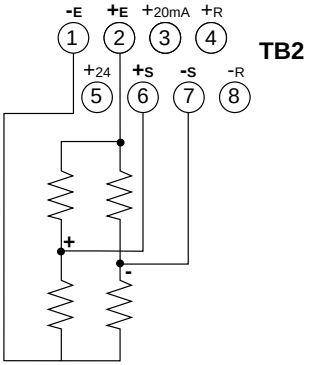
NOTE: Dimensions in Millimeters (Inches)

Figure Figure 3-5. Panel Cut-Out

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.4 CONNECTING SENSOR INPUTS

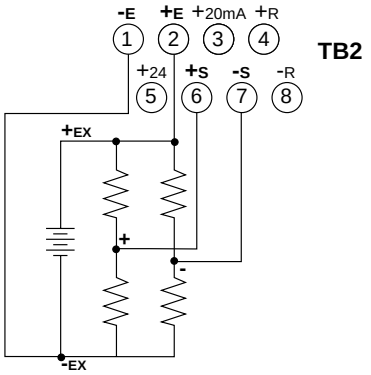
Figures 3-6 shows excitation supplied from the meter's internal supply (50 mA maximum) Select 5, 10, or 12 volt excitation at DIP switch.



Connections with "typical wire colors"
+E = Positive Excitation (red)
-E = Negative Excitation (black)
+S = Positive Signal Input (green)
-S = Negative Signal Input (white)

Figure 3-6. Meter-powered Bridge Input

Figures 3-7 shows the connections required for an externally-powered bridge input: the external supply is brought to the meter's buffer circuits to permit ratiometric readings. Set S1 DIP switch for external excitation for **Figure 3-7** and **3-8**.



Connections with "typical wire colors"
+E = Positive Excitation (red)
-E = Negative Excitation (black)
+S = Positive Signal Input (green)
-S = Negative Signal Input (white)

Figure 3-7. Externally-powered Bridge Input

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.4 CONNECTING SENSOR INPUTS (Continued)

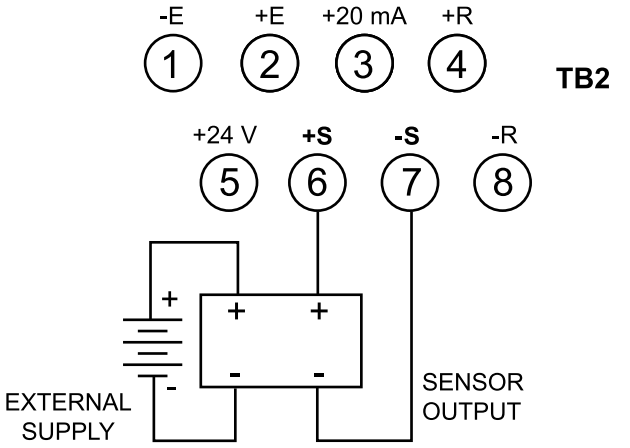


Figure 3-8. 4-Wire DC Input Connections with External Excitation

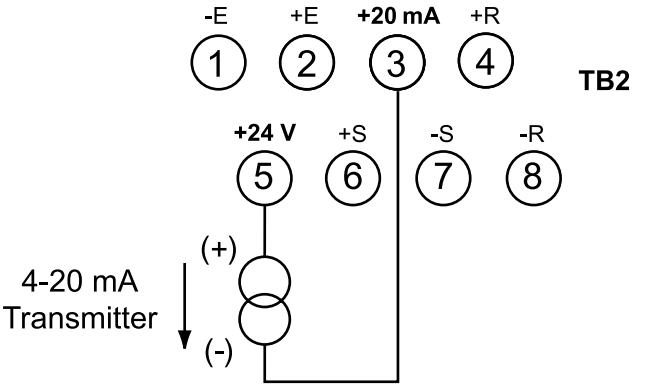


Figure 3-9. Current Input Connections with Internal Excitation

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.4 CONNECTING SENSOR INPUTS (Continued)

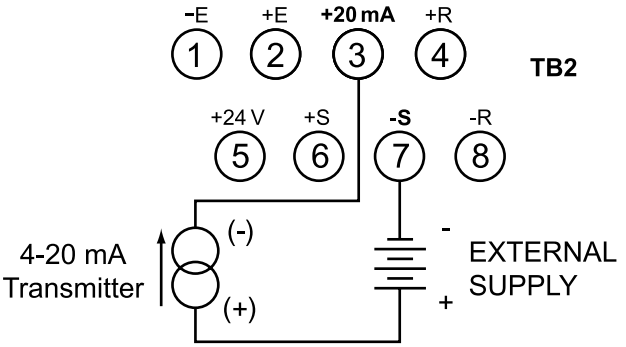


Figure 3-10. Current Input Connections with External Excitation

3.5 CONNECTING MAIN POWER

Connect the AC main power connections as shown in **Figure 3-11**.

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!

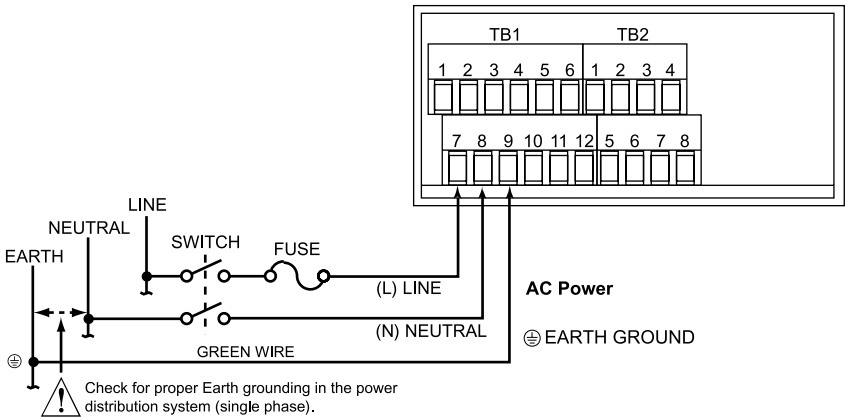


Figure 3-11. Main Power Connections - AC

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

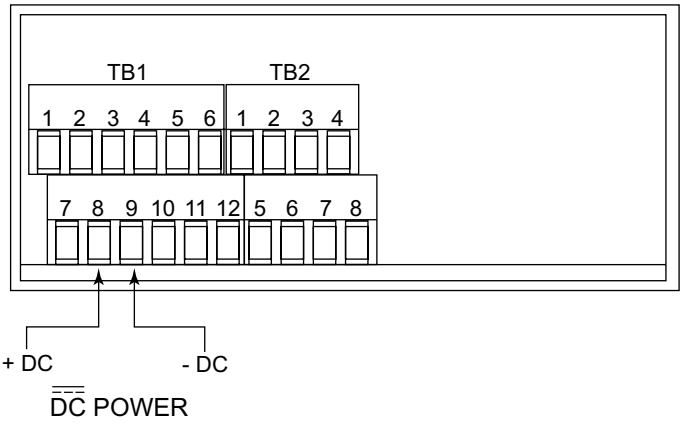
3.5 CONNECTING MAIN POWER (Continued)

Table 3-2 shows the wire color and respective terminal connections for both USA and Europe.

Table 3-2. AC-Power Connections

		WIRE COLORS	
TB1	**AC POWER**	**EUROPE**	**USA**
7	∿ AC Line	Brown	Black
8	∿ AC Neutral	Blue	White
9	∿ AC Earth	Green/Yellow	Green

Connect the DC main power connections as shown in **Figure 3-12**.



When using DC power, refer to the **Table 8-1** Color Chart in the Specifications Section for Display Color, Intensity, Excitation Voltage and Current, and Analog Output Isolated Option. Failure to use proper ratings may result in damaging the unit.

Figure 3-12. Main Power Connections - DC

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.6 CONNECTING EXTERNAL TARE SWITCH

Connect external tare connections as shown in **Figure 3-13**.

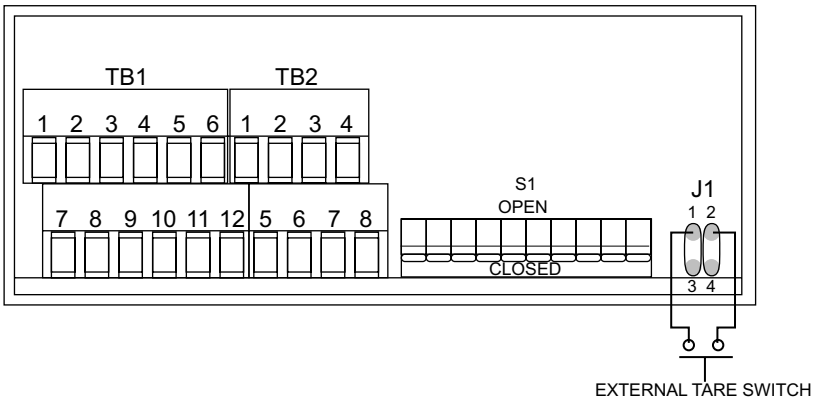


Figure 3-13. External Tare Connections

3.7 CONNECTING ANALOG AND RELAY OUTPUTS

If you have purchased a meter with analog or dual relay or isolated analog output, refer to the following drawings for output connections.

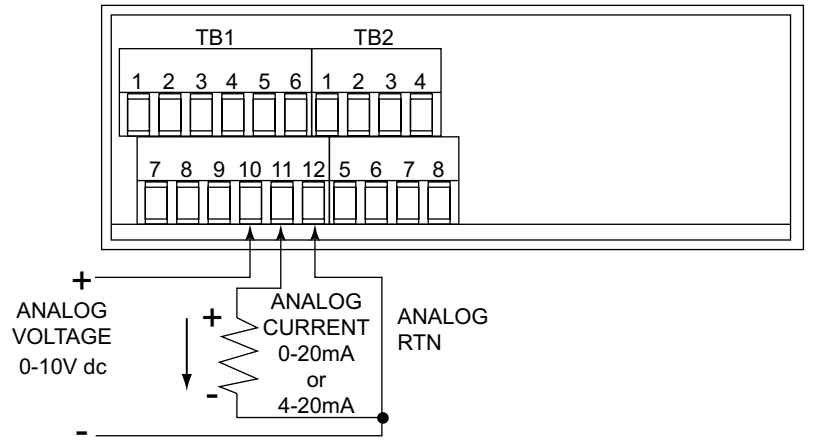


Figure 3-14. Analog Output Connections

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3.7 CONNECTING ANALOG AND RELAY OUTPUTS (Continued)

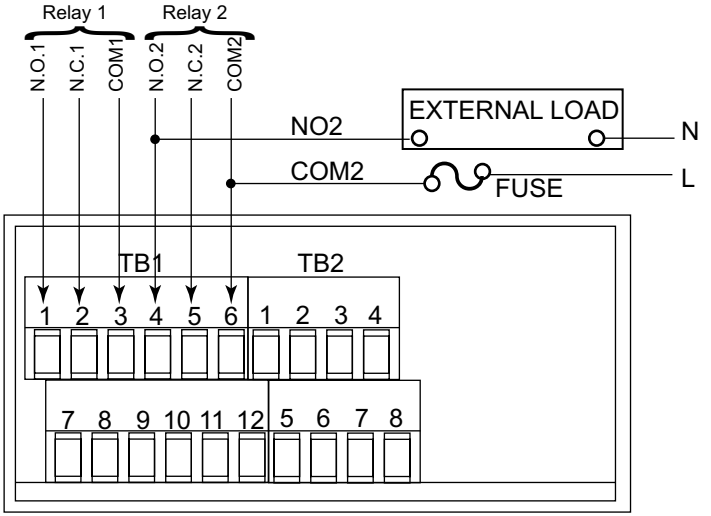


Figure 3-15. Relay Output Connections.

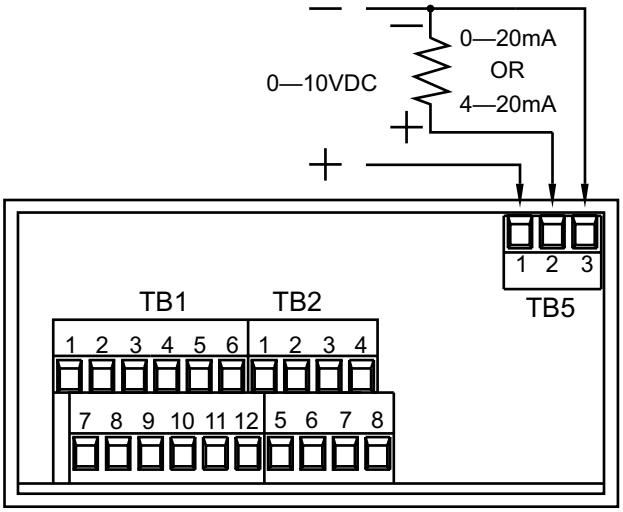


Figure 3-16. Isolated Analog Output Connections.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 4. CONFIGURING THE METER

Note Refer to **Table 6-**1 for a summary list of menu configuration.

Tip For first-time users: Refer to the QuickStart Manual for basic operation and set-up instructions.

4.1 SELECTING THE INPUT TYPE INPt

Note To select your appropriate input type signal, follow these steps:

Before proceeding, set the input DIP switch settings at the back of your meter. (Refer to **Table 2-3**).

1. Press the **MENU** button. The meter shows INPt.

2. Press the ▶/**TARE** button. The meter flashes one of the following:

   - 100M ***(for 0-100 mV dc) (Default)***
   - ±50M (for ±50 mV dc)
   - 10V (for 0-10 Vdc)
   - ±5V (for ±5 Vdc)
   - 0-20 (for 0-20 mA dc)

3. Press the ▲/**NT/GRS** button to scroll through available choices.

4. Press the **MENU** button to store your choice. The meter momentarily shows StRd, followed by dEC.P (Decimal Point).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.2 SELECTING A DECIMAL POINT POSITION dEC.P

Note Refer to **Table 6-1** for a summary list of menu configuration.

To select a decimal point display position, follow these steps:

1. Press the **MENU** button until the meter shows dEC.P.
2. Press the ►/**TARE** button. The meter shows one of the following:
   - FFF.F
   - FF.FF
   - F.FFF
   - FFFF (Default)
3. Press the ▲/**NT/GRS** button to scroll between available choices.
4. Press the **MENU** button to store your choice. The meter momentarily shows StRd, followed by the next menu Rd.S.O (Reading Scale and Offset). Or you can press the **RESET** button to abort and go back to the dEC.P menu.

4.3 SELECTING READING SCALE AND OFFSET Rd.S.O

Note Refer to **Table 6-1** for a summary list of menu configuration.

To scale the meter to show readings in engineering units. There are two methods. One method is to scale with known inputs. Another method is to scale without known inputs: you calculate input values based on the transducer specifications and manually enter them through the keyboard.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.3.1 Scaling with Known Loads (On-Line Calibration)

Note ☞ For maximum resolution, find the maximum signal that will be applied to the meter input.

- For regular voltage input, refer to the main body of **Table 4-1**.
- For millivolt or milliamp input, refer to the main body of **Table 4-2**.

Set the DIP switch positions as indicated at the top of either **Table 4-1** or **4-2**. The numbers 1 through 8 in the top row of either table represent dip switches 1 through 8, and the O, C or X directly below the number indicates the correct position of each switch.

- 'O' Switch should be open or up.
- 'C' Switch should be closed or down.
- 'X' Switch is used to control excitation (refer to **Table 2-3** to determine correct position of these switches).

Once Dip switches have been positioned correctly, apply power. Proceed to the rd.CF (Reading Configuration) and set R2 equal to the value in the right hand column of the chart.

Table 4-1. Range Selection Dip Switch Positions For Regular Voltage Input

12345678 XCOOOXXC	12345678 XCOOCXXC	RD.CF* R.2=
0 - 10 V	±5 V	4
0 - 5 V	±5 V	3
0 - 3 V	±3 V	2
0 - 2 V	±2 V	1
0 - 1 V	±1 V	0

Table 4-2. Range Selection Dip Switch Positions For Millivolt/ Milliamp Input

12345678 XOCOOXX0	12345678 XOCOCXX0	12345678 XOCCOXX0	RD.CF* R.2=
0 - 100 mV	±50 mV	0 - 20 mA	4
0 - 50 mV	±50 mV	0 - 10 mA	3
0 - 30 mV	±30 mV	0 - 6 mA	2
0 - 20 mV	±20 mV	0 - 4 mA	1
0 - 10 mV	±10 mV	0 - 2 mA	0

* Reading Configuration

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.3.1 Scaling with Known Loads (On-Line Calibration) (Continued)

To scale with known inputs: apply known loads to a transducer connected to a meter, or simulate the transducer output with a voltage or current simulator. To scale with known inputs, follow these steps:

1. Apply a known load equal to approximately 0% of the transducer range.

2. Press the **MENU** button until the meter shows rd.S.0.

3. Press the ►/**TARE** button. The meter shows IN 1 (Input 1).

   Note IN 1 (Input 1) is the unscaled display reading at minimum input.

4. Press the ►/**TARE** button again. The meter shows last stored value for Input 1.

5. Press the ►/**TARE** button once more. The meter shows the actual signal being received.

6. Press the **MENU** button to store this value as IN 1 (Input 1). The meter shows rd 1 (Read 1).

   Note rd 1 (Read 1) is the desired display reading at Input 1.

7. Press the ►/**TARE** button. The meter shows the last stored value for Read 1.

8. Press the ▲/**NT/GRS** button to change the value of your digits.

9. Press the ►/**TARE** button to scroll horizontally to the next digit.

10. Press the **MENU** button to store value as rd 1. The meter shows IN 2 (Input 2).

    Note IN 2 (Input 2) is the unscaled display reading at maximum input.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.3.1 Scaling with Known Loads (On-Line Calibration) (Continued)

11. Apply a known load equal to approximately 100% of the transducer range.

12. Press the ►/**TARE** button again. The meter shows the last stored value for Input 2.

13. Press the ►/**TARE** button once more. The meter shows the actual signal being received.

14. Press the **MENU** button to store Input 2 value. The meter shows Rd 2 (Read 2).

Note Rd 2 (Read 2) is the desired display reading at input 2.

15. Press the ►/**TARE** button. The meter shows the last stored value for Read 2.

16. Press the ▲/**NT/GRS** button to change the value of your digits.

17. Press the ►/**TARE** button to scroll horizontally to the next digit.

18. Press the **MENU** button to store value as Rd 2 (Read 2). The meter momentarily shows StRd, followed by Rd.CF. Meter scaling is now complete.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.3.2 Scaling Without Known Loads

To scale without known inputs, calculate input values based on the transducer specifications and manually enter them on the front-panel push buttons. The following example assumes load cells with these specifications:

Maximum Load:	100.0 lbs
Output:	3.1 mV/V
Sensor Excitation:	10 Vdc
Output:	31mV = (3.1 mV/V) x (10 V)

1. Determine the correct values for IN 1 and IN 2 based on the load cell specifications. In most cases, Rd 1 and Rd 2 are equal to the minimum and maximum of the transducer output span. The example assumes Rd 1 and Rd 2 are equal to the range of the load (Rd 1 = 0 and Rd 2 = 100.0). Calculate IN 1 and IN 2 using the loadcell output span and the following equation:

   IN = (Sensor Output) x (Natural Gain) x (Multiplier).

Table 4-3. Natural Gain

Input Range	Span Units	Natural Gain
0 to 100 mV	Millivolts	100 cts/mV
±50 mV	Millivolts	40 cts/mV
0 to 10 V	Volts	1000 cts/V
± 5 V	Volts	400 cts/V
0 to 20 mA	Milliamps	500 cts/mA

2. Determine the multiplier by the Input Resolution setting (R.2 in the Rd.CF menu) and the input range selected. Typically R.2=4 is suitable for most applications.

Table 4-4. Input Resolution Multiplier

Input Range	R.2=4	R.2=3	R.2=2	R.2=1	R.2=0
0 to 100 mV	1.000	2.000	3.333	5.000	10.00
0 to 10 V	1.000	2.000	3.333	5.000	10.00
0 to 20 mA	1.000	2.000	3.333	5.000	10.00
± 50 mV	1.000	1.000	1.667	2.500	5.000
± 5 V	1.000	1.000	1.667	2.500	5.000

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3. Determine IN 1 and IN 2 input range and resolution. The example selects the 0 to 100 mV range and 10 uV resolution (R.2=4).

   Example: IN 1 = (0 mV) x (100 cts/mV) x (1.000) = 0
   IN 2 = (31 mV) x (100 cts/mV) x (1.000) = 3100
   Rd 1 = 0000
   Rd 2 = 100.0

4. Press **MENU** button until the meter shows Rd.S.0.

5. Press the ▶/**TARE** button. The meter shows IN 1.

6. Press the ▶/**TARE** button again, the meter shows the last Input 1 value, with the fourth digit flashing.

7. Press the ▲/**NT/GRS** button to change the value of your digits.

8. Press the ▶/**TARE** button to scroll horizontally to the next digit.

9. Press the **MENU** button to store this value. The meter shows Rd 1.

10. Press the ▶/**TARE** button. The meter shows the last value for Read 1.

Repeat steps 7, 8 and 9 until Rd 1, IN 2 and Rd 2 have been displayed, verified, changed (if necessary) and stored.

4.4 USING READING CONFIGURATION Rd.CF

Note ☞ Refer to **Table 6-1** for a summary list of menu configuration.

You may use Reading Configuration Rd.CF to configure your meter for the following:

- To select ratiometric or non-ratiometric operation
- To set the input resolution of your meter
- To display the filtered/unfiltered signal input value
- To select gross/net vs. peak reading

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.4.1 Selecting Ratiometric/Non-Ratiometric Operation

1. Press the **MENU** button until Rd.CF displays.

2. Press the ►/**TARE** button. The meter shows one of the following:

   - R.1=R ***(Ratiometric reading)*** (Default - for strain meters)
   - R.1=N (Non-ratiometric reading - typically for voltage & current transducers)

3. Press the ▲/**NT/GRS** button to view last stored selection. Press the ▲/**NT/GRS** button to toggle between selections.

4. Press the ►/**TARE** button to select input resolution or press the **MENU** button to store your selection and shows COLR menu.

4.4.2 Setting Input Resolution

To set the input resolution of your meter, follow these steps:

1. Press the **MENU** button until Rd.CF displays, then press the ►/**TARE** button twice.
   or
   Press the ►/**TARE** button from R.1.

   One of the following displays (default is R.2=4):

   R.2=4 **=** ***10 µV for Unipolar inputs. 25 µV for Bipolar inputs***
   R.2=0 = 1 µV for Unipolar inputs. 5 µV for Bipolar inputs.
   R.2=1 = 2 µV for Unipolar inputs. 10 µV for Bipolar inputs
   R.2=2 = 3 µV for Unipolar inputs. 15 µV for Bipolar inputs.
   R.2=3 = 5 µV for Unipolar inputs. 25 µV for Bipolar inputs

Example: 3 µV resolution means that if you input 0-30 mV, at 30 mV the display shows 9999.

2. Press the ▲/**NT/GRS** button to scroll through available selections.

3. Press the ►/**TARE** button to display the filtered/unfiltered signal input or press the **MENU** button to store your selection and shows COLR menu.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.4.3 Displaying the Filtered/Unfiltered Input Signal

To display the filtered/unfiltered signal input, follow these steps:

1. Press the **MENU** button until rd.CF displays, then press the ▶/**TARE** button three times.
   or
   Press the ▶/**TARE** button from R.2.
   One of the following displays:
   - R.3=F ***(Filtered value)*** (Default)
   - R.3=U (Unfiltered value)
2. Press the ▲/**NT/GRS** button to toggle between available choices.
3. Press the **MENU** button to store your selections. StRd momentarily displays, followed by COLR Menu.

4.4.4 Selecting Gross/Net or Peak Display

To select gross/net or peak display:

1. Press the **MENU** button until rd.CF displays, then press the ▶/**TARE** button three times.
   or
   Press the ▶/**TARE** button from R.3.
   One of the following displays:
   - R.4=G ***Gross/Net Display*** (Default)
   - R.4=P Peak Display
2. Press the ▲/**NT/GRS** button to toggle between available choices.
3. Press the **MENU** button to store your selections. StRd momentarily displays, followed by COLR Menu.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.5 SELECTING A DISPLAY COLOR COLR NEW

Note Refer to **Table 6-1** for a summary list of menu configuration.

Selecting Display Color is not active unless your meter is a Version “B”.

To select a display color, follow these steps:

1. Press the **MENU** button until the meter shows COLR.
2. Press the ►/**TARE** button. The meter shows one of the following:
   - GRN
   - REd
   - AMbR
3. Press the ▲/**NT/GRS** button to scroll between available choices.
4. Press the **MENU** button to store your choice. The meter momentarily shows StRd, followed by the next menu S1.CF (Setpoint 1 Configuration). Or you can press the **RESET** button to abort and go back to the Rd.CF menu.

4.6 USING SETPOINT 1 CONFIGURATION S1.CF

Note Refer to **Table 6-1** for a summary list of menu configuration.

Setpoint 1 Configuration S1.CF is not active unless your meter has dual relay output capabilities. The LED's will display whether the S1.CF is active or not. You may use Setpoint 1 Configuration S1.CF for the following:

- To set the setpoint's active band above or below your chosen value
- To select whether the setpoint operation is latched or unlatched
- Assigning setpoint values to the net or gross reading

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.6.1 Setting Setpoint 1's Active Band

1. Press the **MENU** button until the meter shows S1.CF.

2. Press the ▶/**TARE** button. The meter shows one of the following:

   - S1=A ***(Active above the setpoint)*** (Default)
   - S1=b (Active below the setpoint)

3. Press the ▲/**NT/GRS** button to toggle between available choices.

4. Press the ▶/**TARE** button to select if Setpoint 1 is latched/unlatched **or** press the **MENU** button to store your selection. The unit shows S2.CF.

4.6.2 Selecting if Setpoint 1 is Latched or Unlatched

1. Press the **MENU** button until S1.CF displays, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from S1.

   The meter shows one of the following:

   - S2=U ***Setpoint 1 to be unlatched*** (Default)
   - S2=L Setpoint 1 to be latched

2. Press the ▲/**NT/GRS** button to toggle between available choices.

3. Press the ▶/**TARE** button to assign Setpoint 1 values to net or gross reading or press the **MENU** button to enter S2.CF (Setpoint 2 Configuration).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.6.3 Assigning Setpoint 1 Values to Net or Gross Readings

1. Press the **MENU** button until S1.CF displays, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from S2.
   The meter shows one of the following:
   - S3=N ***Setpoint 1 assigned to net reading*** (Default)
   - S3=G Setpoint 1 assigned to gross reading
2. Press the ▲/**NT/GRS** button to toggle between available choices.
3. Press the **MENU** button to store your selection(s). The meter momentarily shows StRd, followed by S2.CF (Setpoint 2 Configuration).

4.7 USING SETPOINT 2 CONFIGURATION S2.CF

Note ☞ Refer to **Table 6-1** for a summary list of menu configuration.

Setpoint 2 Configuration S2.CF is not active unless your meter has dual relay output capabilities. The LED's will display whether the S2.CF is active or not. You may use Setpoint 2 Configuration S2.CF for the following:

- To set the setpoint's active band above or below your chosen value
- To select whether the setpoint operation is latched or unlatched
- To assign setpoint values to the net or gross reading

4.7.1 Setting Setpoint 2's Active Band

1. Press the **MENU** button until the meter shows S2.CF.
   or
2. Press the ▶/**TARE** button. The meter shows one of the following:
   - S1=A ***(Active above the setpoint)*** (Default)
   - S1=b (Active below the setpoint)
3. Press the ▲/**NT/GRS** button to toggle between available choices.
4. Press the ▶/**TARE** button to select if Setpoint 2 is latched/unlatched **or** press the **MENU** button to store your selection. The meter shows S1.db.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.7.2 Selecting if Setpoint 2 is Latched or Unlatched

1. Press the **MENU** button until S2.CF displays, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from S.1.

   The meter shows one of the following:

   - S.2=U ***Setpoint 2 to be unlatched*** (Default)
   - S.2=L Setpoint 2 to be latched

2. Press the ▲/**NT/GRS** button to toggle between available choices.
3. Press the **MENU** button to store your selection(s). The meter momentarily shows StRd, followed by S 1.db (Setpoint 1 Deadband).

4.7.3 Assigning Setpoint 2 Values to Net or Gross Readings

1. Press the **MENU** button until S2.CF displays, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from S.2.

   The meter shows one of the following:

   - S.3=N ***Setpoint 2 assigned to net reading*** (Default)
   - S.3=G Setpoint 2 assigned to gross reading

2. Press the ▲/**NT/GRS** button to toggle between available choices.
3. Press the **MENU** button to store your selection(s). The meter momentarily shows StRd, followed by S 1.db (Setpoint 1 Deadband).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.8 SETTING THE SETPOINT 1 DEADBAND S1.db

Note Refer to **Table 6-1** for a summary list of menu configuration.

Setpoint 1 Deadband S1.db is not active unless your meter has dual relay output capabilities. The LED's will display whether the S1.db is active or not. The Setpoint 1 Default deadband is 0003. To change the deadband (hysteresis) of Setpoint 1, follow these steps:

1. Press the **MENU** button until the meter shows S1.db.
2. Press the ►/**TARE** button. The meter shows the last previously stored 4-digit number (0000 through 9999) with flashing 4th digit.
3. Press the ▲/**NT/GRS** button to change the value of the flashing digit. If you continue to press the ▲/**NT/GRS** button, the flashing digit's value continues to change.
4. Press the ►/**TARE** button to scroll to the next digit.
5. Press the **MENU** button to store your selection. The meter momentarily shows StRd, followed by S2.db (Setpoint 2 Deadband).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.9 SETTING THE SETPOINT 2 DEADBAND S2.db

Note Refer to **Table 6-1** for a summary list of menu configuration.

Setpoint 2 Deadband S2.db is not active unless your meter has dual relay output capabilities. The LED's will display whether the S2.db is active or not. The Setpoint 2 default deadband is 0003. To change the deadband (hysteresis) of Setpoint 2, follow these steps:

1. Press the **MENU** button until the meter shows S2.db.
2. Press the ►/**TARE** button. The meter shows the last previously stored 4-digit number (0000 through 9999) with flashing 4th digit.
3. Press the ▲/**NT/GRS** button to change the value of the flashing digit. If you continue to press the ▲/**NT/GRS** button, the flashing digit's value continues to change.
4. Press the ►/**TARE** button to scroll to the next digit.
5. Press the **MENU** button to store your selection. The meter momentarily shows StRd, followed by Ot.CF (Output Configuration) if you have analog output capabilities.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

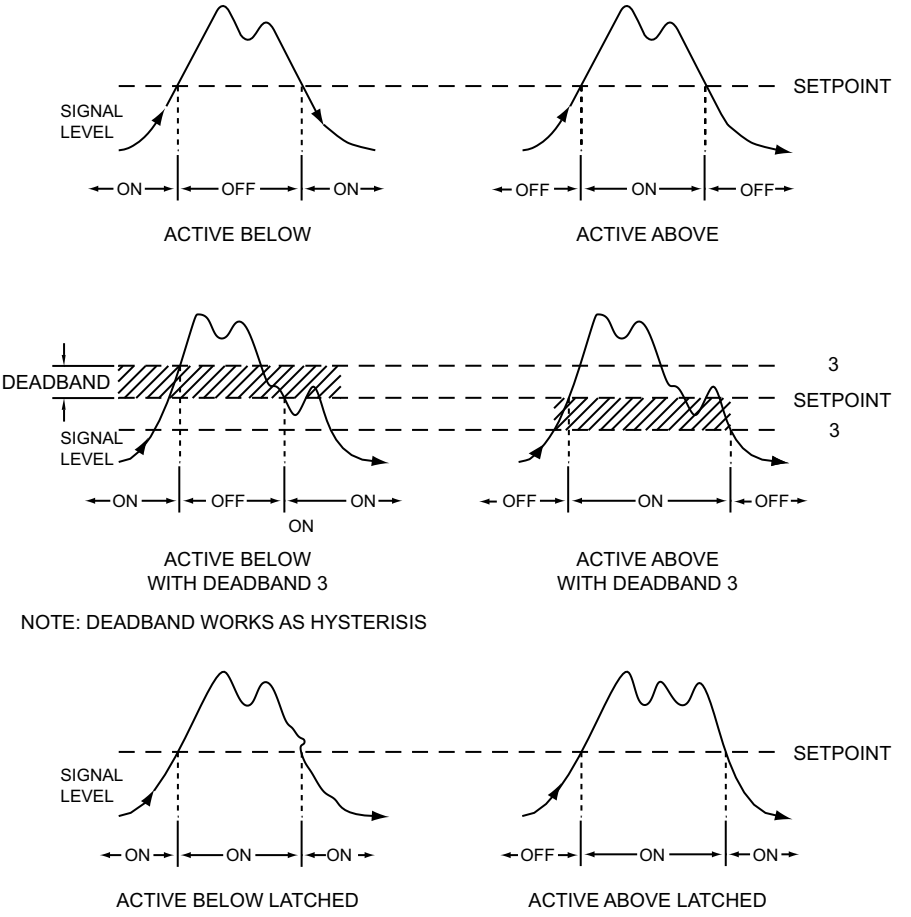


Figure 4-1. Alarm Example

Note

To reset latched alarms you must:

1. Input a signal OUt of the alarm zone
2. Then press **SETPTS** and then, **RESET** button

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.10 USING OUTPUT CONFIGURATION Ot.CF

Note Refer to **Table 6-1** for a summary list of menu configuration.

Output Configuration Ot.CF is not active unless your meter has analog output capabilities. The menu will display whether analog output is present or not. Analog output must be ordered at the time of purchase.

Use Output Configuration Ot.CF to select the following:

- To enable or disable the analog output
- To select if the analog output is current or voltage
- To assign te output to the net or gross reading

4.10.1 Enabling or Disabling the Analog Output

To enable or disable the analog output, follow these steps:

1. Press the **MENU** button until the meter shows Ot.CF.

2. Press the ▶/**TARE** button. The meter shows one of the following:

   - 0.1=E ***(Analog output enabled)*** (Default)
   - 0.1=d (Analog output disabled)

3. Press the ▲/**NT/GRS** button to toggle between available choices.

4. Press the ▶/**TARE** button to select analog output as current or voltage or press the **MENU** button to store your selection and enter Ot.S.0 (Output Scale and Offset).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.10.2 Selecting Analog Output as Current or Voltage

1. Press the **MENU** button until it shows 0t.CF, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from 0.1.

   The meter shows one of the following:

   - 0.2=C ***(Analog output = current)*** (Default)
   - 0.2=V (Analog output = voltage)

2. Press the ▲/**NT/GRS** button to toggle between available choices.

3. Press the ▶/**TARE** button to select analog output or proportional control or press the **MENU** button to store your selection and enter 0t.S.0 (Output Scale and Offset).

4.10.3 Selecting Analog Output or Proportional Control

1. Press the **MENU** button until it shows 0t.CF, then press the ▶/**TARE** button twice.
   or
   Press the ▶/**TARE** button from 0.2.

   The meter shows one of the following:

   - 0.3=N ***(Net Reading)*** (Default)
   - 0.3=G (Gross Reading)

2. Press the ▲/**NT/GRS** button to toggle between available choices.

3. Press the **MENU** button to store your selection. The meter momentarily shows StRd, followed by 0t.S.0 (Output Scale and Offset).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.11 USING OUTPUT SCALE AND OFFSET Ot.S.O

Note ☞ Refer to **Table 6-1** for a summary list of menu configuration.

Output Scale and Offset Ot.S.O is not active unless your meter has analog output capabilities. The menu will display whether analog output is present or not. Output Scale and Offset Ot.S.O scales your analog output to be equal to the meter's display and/or any engineering units you require. You may scale the output for direct (4-20 mA, 0-10 V, etc) or reverse acting (20-4 mA, 10-0 V, etc).

1. Press the **MENU** button until Ot.S.O displays.

2. Press the ►/**TARE** button. Rd 1 (Read 1) displays.

   Note ☞ This is your first point of display reading.

3. Press the ►/**TARE** button again. The meter shows the last previously stored 4-digit number (-1999 through 9999) with flashing 4th digit.

4. Press the ▲/**NT/GRS** button to change the digits.

5. Press the ►/**TARE** button to scroll to the next digit.

6. Press the **MENU** button to store your selection. Out.1 (Output 1) displays.

   Note ☞ This starting analog signal corresponds to your Read 1 display.

7. Press the ►/**TARE** button. Selected output displays.

   Note ☞ If you select 0.2.4 for voltage, the maximum signal you may select is 10.00 for an 0-10 Vdc signal output. If you select 0.2.C for current, the maximum signal you may select is 20.00.

8. Press the ▲/**NT/GRS** button to enter the Output 1 signal selection. If you continue to press the ▲/**NT/GRS** button, the flashing digit's value continues to change.

9. Press the ►/**TARE** button to scroll to the next digit.

10. Press the **MENU** button to store your selection. Rd 2 (Read 2) displays.

    Note ☞ This is your second point of display reading.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.11 USING OUTPUT SCALE AND OFFSET 0t.S.0 (Continued)

11. Press the ►/**TARE** button. The meter shows last previously stored 4-digit number (-1999 through 9999) displays with flashing 4th digit.

12. Press the ▲/**NT/GRS** button to change the value of the flashing digit. If you continue to press the ▲/**NT/GRS** button, the flashing digit's value continues to change.

13. Press the ►/**TARE** button to scroll to the next digit.

14. Press the **MENU** button to store your selection. The meter shows OUt.2 (Output 2).

Note This analog signal should correspond to your Read 2 display.

15. Press the ►/**TARE** button. The meter shows selected output.

Note If you select 0.2=V for voltage, the maximum signal you may select is 10.00 for an 0-10 Vdc signal output. If you select 0.2=C for current, the maximum signal you may select is 20.00 for a 0-20 or 4-20 mA DC signal output.

16. Press the ▲/**NT/GRS** button to change the value of the flashing digit. If you continue to press the ▲/**NT/GRS** button, the flashing digit's value continues to change.

17. Press the ►/**TARE** button to scroll to the next digit.

18. Press the **MENU** button to store your selection. The meter momentarily shows StRd, followed by LK.CF (Lockout Configuration).

WARNING: If the meter displays all flashing values on any item, the value has overflowed. Press the ▲/**NT/GRS** button to start new values.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.11.1 Examples for Output Scale and Offset

Example: You want to send 4-20 mA output for 0 to 100.0. The meter has 0.1 degree resolution. Complete the following steps:

1. Press the **MENU** button until the meter shows Ot.S.0.
2. Press the ▶/**TARE** button. The meter shows Rd.1 (Read 1).
3. Press the ▶/**TARE** button to show the existing value.
4. Change the value of Read 1 to 000.0 by pressing the ▲/**NT/GRS** and ▶/**TARE** buttons.
5. Press the **MENU** button to store your selection. The meter shows OUt.1 (Output 1).
6. Press the ▶/**TARE** button to show the existing value.
7. Change the value of Output 1 to 04.00 by pressing the ▲/**NT/GRS** and ▶/**TARE** buttons.
8. Press the **MENU** button to store your selection. The meter shows Rd.2 (Read 2).
9. Press the ▶/**TARE** button to show the existing value.
10. Change the value of Read 2 to 100.0 by pressing the ▲/**NT/GRS** and ▶/**TARE** buttons.
11. Press the **MENU** button to store your selection. The meter shows OUt.2 (Output 2).
12. Press the ▶/**TARE** button to show the existing value.
13. Change the value of Output 2 to 20.0 by pressing the ▲/**NT/GRS** and ▶/**TARE** buttons.
14. Press the **MENU** button to store your selection. The meter shows LK.CF (Lock Out Configuration).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.12 USING LOCK OUT CONFIGURATION LK.CF

Note Refer to **Table 6-1** for a summary list of menu configuration.

Use Lock Out Configuration LK.CF for the following:

- To enable or disable setpoint changes
- To enable or disable the **RESET** button in the Run Mode
- To enable or diable displaying meter firmware version

4.12.1 Enabling or Disabling the RESET button in the Run Mode

1. Press the **MENU** button until the meter shows LK.CF (after 0t.S.0).
2. Press the ▶/**TARE** button. The meter shows one of the following:
   - RS.=E ***To enable the RESET button in the Run Mode*** (Default)
   - RS.=d To disable the **RESET** button in the Run Mode
4. Press the ▲/**NT/GRS** button to toggle between available choices.
5. Press the **MENU** button to store the changes. The meter shows StRd if the new value is different otherwise the meter shows bR.tE and returns to the Run Mode.

4.12.2 Enabling or Disabling SETPOINT Changes

1. Press the **MENU** button until the meter shows LK.CF (after 0t.S.0).
2. Press the ▶/**TARE** button twice. The meter shows one of the following:
   - SP.=E ***To enable setpoint changes*** (Default)
   - SP.=d To disable setpoint changes
3. Press the ▲/**NT/GRS** button to toggle between available choices.
4. Press the **MENU** button to store the changes. The meter shows StRd if the new value is different otherwise the meter shows bR.tE and returns to the Run Mode.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4.12.3 SETPOINT Display Function: Firmware version or Setpoint value

1. Press the **MENU** button until the meter shows LK.CF (after Ot.S.0).
2. Press the ▶/**TARE** button three times. The meter shows one of the following:

   - L.3=0 **SETPTS** button will display setpoint values.
   - L.3=1 **SETPTS** button will display the meter's firmware version.

3. Press the ▲/**NT/GRS** button to toggle between the choices above.
4. Press the **MENU** button to store the changes. The meter shows StRd if the new value is different otherwise the meter shows bR it and returns to the Run Mode.

Note

If your meter does not have the relay option, setpoint menu items above will not be available and **SETPTS** button will always display the meter's firmware version. These units will have FOL (overload) or FOPN memory indicated by Alarm 1 & 2 LED displays. LEDs can be reset by pressing **MENU** then **RESET** button or by Power **OFF** then **ON**.

4.13 USING DISPLAY BRIGHTNESS CONFIGURATION NEW

4.13.1 Changing Brightness Level

Changing Display Brightness is not active unless your meter is a **Version "B"**.

1. Press the **MENU** button until the meter shows bR it (after LKCF).
2. Press the ▶/**TARE** button from bR it. The meter shows one of the following:

   - M.brt Medium Brightness
   - L.brt Low Brightness
   - H.brt ***High Brightness*** (Default)

3. Press the ▲/**NT/GRS** button to toggle between available choices.
4. Press the **MENU** button to store your selection. The meter momentarily shows StRd followed by StRd, RSt, StRN, then measured value.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table 5-1. Display Messages

MESSAGE	DESCRIPTION
StRN	Strain Meter
RSt	Hard (power on) Reset
InPt	Input Type
dEC.P	Decimal Point Position
Rd.S.O	Reading Scale and Offset
Rd.CF	Reading Configuration
COLR	Display Color NEW
S1.CF	Setpoint 1 Configuration
S2.CF	Setpoint 2 Configuration
S1.db	Setpoint 1 Deadband
S2.db	Setpoint 2 Deadband
Ot.CF	Output Configuration
Ot.S.O	Output Scale and Offset
LK.CF	Lock Out Configuration
bRit	Display Brightness NEW
+OL	+ Overload Signal
-OL	- Overload Signal
RS.OF	Resolution Overflow
+999	Value Overflow in Setpoint/Menu Routines
-999	Value Overflow in Setpoint/Menu Routines
Nt.OF	Net Value Overflow
Gt.OF	Gross Value Overflow
ER 1	2 Coordinate Format Programming Error
PEAK	Peak Value
PK.RS	Peak Reset
t.RS	Tare Reset
SP.RS	Setpoint Reset
Net	Net Value
GROS	Gross Value
SP 1	Setpoint 1 Value
SP2	Setpoint 2 Value
R.OV.S	Resolution Over Scale
V.-8.8	Firmware Version (where 8 is 0 ~ 9)
RUN	Operating Mode

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 6. MENU CONFIGURATION DISPLAYS

Not all menu items display on standard meters.

Table 6-1. Menu Configuration Displays

(Defaults in Bold and Italics)

MENU	►/TARE	▲/NT/GRS
INPt	Show input choices:	100M (***Default***) ±50M 10V ±5V 0-20
dEC.P	Show current decimal point position	FFFF (***Default***) F.FFF FF.FF FFF.F
(Reading Scale & Offset) Rd.S.O	Shows IN1 **1** Shows prior value entered and flashing digit. Scrolls to the next digit. • If ►/**TARE** is pressed, actual input is shown and can not be changed with ▲/**NT/GRS**. • If ▲/**NT/GRS** is pressed, unit can scroll through digits with ►/**TARE**.	Changes the value of the flashing digit
2 Enter new value and show Rd1	**3** Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit
4 Enter new value and show IN2	**5** Shows prior value entered and flashing digit. Scrolls to the next digit. • If ►/**TARE** is pressed, actual input is shown and can not be changed with ▲/**NT/GRS**. • If ▲/**NT/GRS** is pressed, unit can scroll through digits with ►/**TARE**.	Changes the value of the flashing digit
6 Enter new value and show Rd2	**7** Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 6. MENU CONFIGURATION DISPLAYS (Continued)

Table 6-1. Menu Configuration Displays (Continued)

(Defaults in Bold and Italics)

MENU	►/TARE	▲/NT/GRS
Reading Configuration rd.CF	**R.1=**	r.1=R ***(Ratiometric Reading)*** r.1=N (Non-ratiometric reading)
	R.2=	r.2=0 (1 µV resolution for unipolar & 5 µV resolution for bipolar) r.2=1 (2 µV resolution for unipolar & 10 µV resolution for bipolar) r.2=2 (3 µV resolution for unipolar & 15 µV resolution for bipolar) r.2=3 (5 µV resolution for unipolar & 25 µV resolution for bipolar) r.2=4 ***(10 µV resolution for unipolar & 25 µV resolution for bipolar)*** ***Note:*** *3 µV resolution means if your input is 0-30 mV, at 30 mV the display shows 9999.*
	R.3=	r.3=F ***(Filtered value)*** r.3=U (Unfiltered value)
	R.4=	r.4=G ***(Gross/Net Display)*** r.4=P (Peak Display)
NEW Display Color Selection COLR	**Show input choices:**	GRN (Green) REd (Red) AMbR (Amber)
Setpoint 1 Configuration S1.CF	**S.1=**	S.1=A ***(Active above)*** S.1=b (Active below)
	S.2=	S.2=U ***(Unlatched)*** S.2=L (Latched)
	S.3=	S.3=N ***(Net Reading)*** S.3=G (Gross Reading)
Setpoint 2 Configuration S2.CF	**S.1=**	S.1=A ***(Active above)*** S.1=b (Active below)
	S.2=	S.2=U ***(Unlatched)*** S.2=L (Latched)
	S.3=	S.3=N ***(Net Reading)*** S.3=G (Gross Reading)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 6. MENU CONFIGURATION DISPLAYS (Continued)

Table 6-1. Menu Configuration Displays (Continued)

(Defaults in Bold and Italics)

MENU	▶/TARE	▲/NT/GRS
Setpoint 1 Deadband S1.db	Press to scroll to the next digit to the right	Press to change the value of the flashing digit
Setpoint 2 Deadband S2.db	Press to scroll to the next digit to the right	Press to change the value of the flashing digit
Output Configuration Ot.CF	**0.1 =** 0.2 = 0.3 =	0.1=E ***(Analog output is enabled)*** 0.1=d (Analog output is disabled) 0.2=C ***(Analog output is current)*** 0.2=V (Analog output is voltage) 0.3=N ***(Net reading)*** 0.3=G (Gross Reading)
Output Scale & Offset Ot.S.O (Shown if 0.3=A in Output Configuration Menu Ot.CF)	**1** Shows Rd1 Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit
2 Enter new value and show Out1	**3** Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit
4 Enter new value and show Rd2	**5** Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit
6 Enter new value and show Out2	**7** Shows prior value entered and flashing digit. Scrolls to the next digit.	Changes the value of the flashing digit

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 6. MENU CONFIGURATION DISPLAYS (Continued)

Table 6-1. Menu Configuration Displays (Continued)

(Defaults in Bold and Italics)

MENU	▶/TARE	▲/NT/GRS
Lock Out Configuration LK.CF	**RS=**	RS=E ***(Enable RESET button in the Run Mode)*** RS=d (Disable **RESET** button in the Run Mode)
	SP=	SP=E ***(Enable setpoint changes)*** SP=d (Disable setpoint changes)
	L3=	L3=0 ***(SETPTS button display setpoint values)*** L3=1 (**SETPTS** button display firmware version V.-0.0 where 0 is 0 ~ 9)
NEW **Brightness Configuration** bR it	**Shows input choices**	M.brt (Medium Brightness) L.brt (Low Brightness) H.brt ***(High Brightness)***

Table 6-2. Run Mode Displays

Display	▶/TARE	▲/NT/GRS	RESET	Description
NEt / GROS		Displays NET or GROSS reading. Once reading shows, respective value shows.		**Peak Reading** Toggle between Net and Gross values.
t.RSt	Press to activate.		Will reset your tare when viewing this function.	**Tare Reset**
SP.RS				**Reset Latched Alarms** Pressing the **RESET** button resets your latched alarms.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 7. SETPOINT CONFIGURATION DISPLAYS

Table 7-1. Setpoint Configuration Displays

MENU	▶/TARE	▲/NT/GRS	Description
	Press to scroll to the next digit to the right	Press to change the value of the flashing digit	SETPOINT 1 Select from -1999 through 9999
	Press to scroll to the next digit to the right	Press to change the value of the flashing digit	SETPOINT 2 Select from -1999 through 9999

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 8. SPECIFICATIONS

SIGNAL INPUT

Input Ranges:	0-100 mV, ± 50 mV, 0-10 V, ± 5 V, 0-20 mA, 4-20 mA
Isolation:	Dielectric strength to 2500V transient per 3mm spacing based on EN 61010 for 260Vrms or DC working voltage
Noise Rejection:	Normal Mode Rejection (NMR) = 60 dB Common Mode Rejection (CMR) = 120 dB
Resistance:	100 Meg ohms for 100 mV or ±50 mV input range 1 Meg ohm for 10 V or +5 V input range 5 ohms for 20 mA current input range
NEW “Big” Display:	4-digit, three color programmable 9-segment, LED 21 mm (0.83")
Symbol:	8.8.8.8 (-1.9.9.9 ~ 9.9.9.9)
Standard Display:	4-digit, 14-segment LED, 13.8 mm (0.54”)
Symbol:	8.8.8.8 (-1.9.9.9. ~ 9.9.9.9.)

ANALOG TO DIGITAL

Technique:	Dual slope
Internal resolution:	15 bits
Read Rate:	3/sec Polarity Automatic

ACCURACY AT 25°C

Max Error Strain:	±0.03% of reading, ±1 count
Span Tempco:	50 ppm/°C
Step Response:	1 sec
Warm Up to Rated Accuracy:	30 min

Excitation Voltage:	<u>AC power units</u> 24 V @ 25 mA, 12 V @ 50 mA, 10 V @ 120 mA, 5 V @ 60 mA	<u>DC power units</u> **Refer to Table 8-1** Color chart for DC Output Excitation
Load Regulation:	1.1%	
Line Regulation:	0.02% per Vac	

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 8. SPECIFICATIONS (Continued)

ALARM OUTPUTS (if applicable)

2 Form "C" on/off relays. Configurable for latched and unlatched by software.

Max current: 5 AMPS, resistive load
Max voltage: 250 Vac or 30 Vdc

ANALOG OUTPUT (if applicable)

Signal Type:	Current or voltage
Signal Level:	Current: 10 V max compliance at 20 mA output Voltage: 20 mA max for 0-10 V output
Function:	May be assigned to a display range or proportional control output with Setpoint #1 when used as a control output.
Linearity:	0.2%
Step Response Time:	2 - 3 seconds to 99% of the final value

ISOLATED ANALOG OUTPUT (TB5, if applicable)

Same as non-isolated analog output except isolated.

Signal Type:	Current or voltage
Signal Level:	Current: 10 V max compliance at 20 mA output Voltage: 20 mA max for 0-10 V output
Function:	May be assigned to a display range or proportional control output with Setpoint #1 when used as a control output.
Linearity:	0.2%
Step Response Time:	2 - 3 seconds to 99% of the final value
Isolation	130 Vrms working voltage, 1000 V/60sec Dielectric test

Note

- Only one analog output is available on each unit and it must be factory installed.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 8. SPECIFICATIONS (Continued)

INPUT POWER INFORMATION

AC units: 115/230 V~(AC) ± 10%, 50/60 Hz
9.5 W max, power consumption (Non-Isolated Analog Out)
11.0 W max, power consumption (Isolated Analog Out)

DC units: 10-32 Vdc or 26-56 Vdc, 8 W
Do not use a combination of dc power and internal excitation or Isolated Analog Out, unless using dc power of 20-32 Vdc.

External Fuse Required: Refer to Table 8-1 below.

IEC 127-2/III	
Power	Fuse
115 V	125 mA @ 250 (T)
230 V	63 mA @ 250 (T)
UL 248-14 (Listed Fuse)	
Power	Fuse
115 V	175 mA @ 250 V Slow-Blow
230 V	80 mA @ 250 V Slow-Blow

ENVIRONMENT

Operating temperature: 0° to 50°C (32° to 122°F)
Storage temperature: -40° to 85°C (-40° to 185° F)
Relative humidity: 90% at 40°C (non-condensing)

MECHANICAL

Panel cutout: 1/8 DIN 3.62 x 1.78" (45 x 92mm)
Weight: 1.27 lb (575 g)
Case material: Polycarbonate, 94 V-O UL rated
Protection: NEMA-4/Type 4 Front Bezel

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 8. SPECIFICATIONS (Continued)

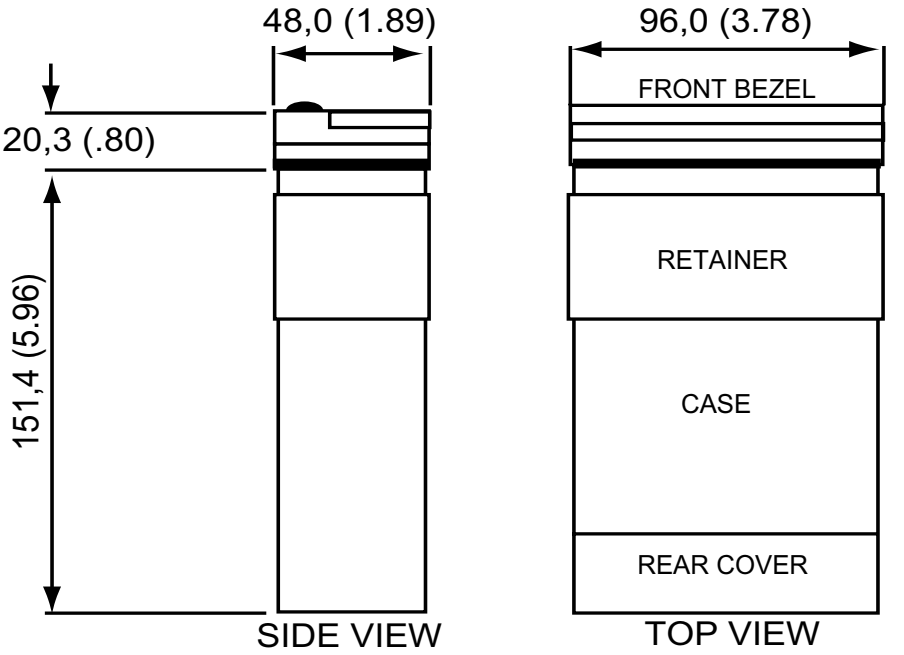
Table 8-1. COLOR CHART FOR DC POWER

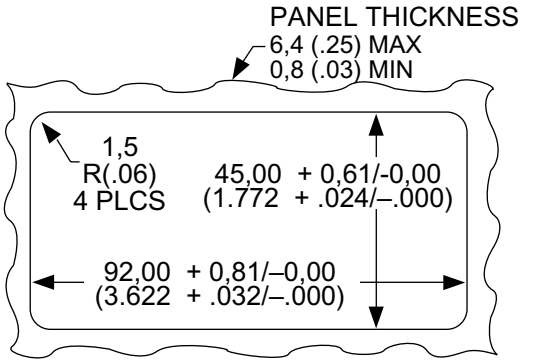
COLOR	HIGH BRIGHTNESS	MEDIUM & LOW BRIGHTNESS
RED	Sensor Excitation: 24 V @ 25 mA, 12 V, 10 V, 5 V @ 35 mA Max Analog Output: Non-Isolated option only	Any combination of Sensor Excitation and Analog Output 24 V @ 25 mA, 12 V @ 35 mA Max 10 V @ 35 mA Max 5 V @ 35 mA Max Analog Output: Non-Isolated options or Isolated Analog option
GREEN	**Warning:** • Do not use Internal Excitation. Use External Excitation. • Do not use Isolated Analog Output. Use Non-Isolated Analog Ouput.	
AMBER		

Note HIGH/LOW Brightness and AMBER are only available on Version “B” meters. Standard display meters are MEDIUM Brightness.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 8. SPECIFICATIONS (Continued)





NOTE: Dimensions in Millimeters (Inches)

Figure 8-1 Meter Dimensions/ Panel Cutout

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

SECTION 9. FACTORY PRESET VALUES

Table 9-1. Factory Preset Values

MENU ITEM	FACTORY PRESET VALUES
INPt	Input Type: 0-100 (0-100 mV) input
dEC.P	Decimal Point Position: FFFF
Rd.S.O	Reading Scale and Offset: 0-100 mV = 0-1000
Rd.CF	Reading Configuration: R.1=R (Ratiometric) R.2=4 (10 µV resolution for unipolar & 25 µV resolution for bipolar) R.3=F (Filtered value) R.4=G (Gross/Net reading)
NEW COLR	Normal Color Display: RED or GRN (Note: depending how unit was ordered)
S1.CF	Setpoint 1 Configuration: S.1=A (Setpoint is Active above) S.2=U (Setpoint is Unlatched) S.3=N (Net reading)
S2.CF	Setpoint 2 Configuration: S.1=A (Setpoint is Active above) S.2=U (Setpoint is Unlatched) S.3=N (Net reading)
S1.db	Setpoint 1 Deadband: 0003
S2.db	Setpoint 2 Deadband: 0003
Ot.CF	Output Configuration: O.1=E (Analog output is Enabled) O.2=C (Analog output is Current) O.3=N (Analog output follows the Net value)
Ot.S.O	Output Scale and Offset: 0-1000 = 4-20 mA DC
LK.CF	Lock Out Configuration RS=E (Enable the **RESET** button in the Run Mode) SP=E (Enable setpoint changes) L3=O (Display setpoint values)
NEW bRit	H.brt (Brightness Level)
SP1	Setpoint 1 Value: 0000
SP2	Setpoint 2 Value: 0000
Sensor Excitation	10 Vdc

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

CE APPROVALS INFORMATION

CE This product conforms to the EMC directive 89/336/EEC amended by 93/68/EEC, and with the European Low Voltage Directive 72/23/EEC.

Electrical Safety EN61010-1:2001

Safety requirements for electrical equipment for measurement, control and laboratory.

Double Insulation

Pollution Degree 2

Dielectric withstand Test per 1 min

- Power to Input/Output: 2300 Vac (3250 Vdc)
- Power to Input/Output: 500 Vac (720 Vdc)
  (Low Voltage dc Power Option*)
- Power to Relays Output: 2300 Vac (3250 Vdc)
- Relay 1 to Relay 2: 2300 Vac (3250 Vdc)
- Isolated Analog to Inputs: 1000 Vac (1420 Vdc)
- Analog to Inputs: No Isolation

Measurement Category I

Category I are measurements performed on circuits not directly connected to the Mains Supply (power). Maximum Line-to-Neutral working voltage is 50 Vac/dc. This unit should not be used in Measurement Categories II, III, IV.

Transients Overvoltage Surge (1.2 / 50uS pulse)

- Input Power: 2500 V
- Input Power: 500 V
  (Low Voltage dc Power Option*)
- Isolated Analog: 500 V
- Input/Output Signals: 500 V

Note: **Units configured for external low power dc voltage, 10-32 Vdc (Basic Insulation)*

EMC EN61326:1997 + and A1:1998 + A2:2001

Immunity and Emissions requirements for electrical equipment for measurement, control and laboratory.

- EMC Emissions Table 4, Class B of EN61326
- EMC Immunity** Table 1 of EN61326

Note: ***I/O signal and control lines require shielded cables and these cables must be located on conductive cable trays or in conduits. Furthermore, the length of these cables should not exceed 30 meters*

⚠ Refer to the EMC and Safety installation considerations (Guidelines) of this manual for additional information.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **one (1) year** from the date of purchase. In addition to OMEGA's standard warranty period, OMEGA Engineering will extend the warranty period for **four (4) additional years** if the warranty card enclosed with each instrument is returned to OMEGA.

If the unit malfunctions, 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. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been 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 are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

© Copyright 2002 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

TRADEMARK NOTICE: OMEGA®, omega.com® and OMEGA® are trademarks of OMEGA Engineering, Inc.

PATENT NOTICE: This product is covered by one or more of the following patents: U.S. Pat. No. Des. 336,895; 5,274,577; 6,243,021 / CANADA 2052599; 2052600 / ITALY 1249456; 1250938 / FRANCE BREVET No. 91 12756 / SPAIN 2039150; 2048066 / UK PATENT No. GB2 249 837; GB2 248 954 / GERMANY DE 41 34398 C2. The "Meter Case Bezel Design" is a trademark of NEWPORT Electronics, Inc., registered in the U.S. USED UNDER LICENSE. Other US and International Patents pending or applied for.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

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

Shop on line at omega.com

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

M3598/0906

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP