



User's Guide

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UV1000-PM OMEGASEZ® Programmable Universal Verbalizer Panel Meter- $\frac{1}{8}$ DIN



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It is the policy of OMEGA Engineering, Inc. 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 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, human applications.



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NOTES, WARNINGS and CAUTIONS

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

- **NOTE**
- **WARNING or CAUTION**
- **IMPORTANT**
- **TIP**



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 electrical shock.



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



TIP: Provides you helpful hints.

Section 1 - Introduction

The UV1000-PM universal verbalizer panel meter is an innovative panel meter that can verbalize and display process signals. It can accept 0 to 10 Vdc voltage input, 0 to 20 mA or 4 to 20 mA current input, and Type J, K, T, and R thermocouple input signals.

You can easily configure and program the verbalizer through the friendly PC user interface - to specify the input range, display decimal point, analog input scaling, select audible engineering unit, high/low alarm set point, alarm deadband and etc. Select from over 100 audible engineering units while you are configuring the verbalizer. The front buttons allows the user to select different inputs, switch between command/continuous talk, and adjusting volumes. The UV1000-PM is a creative solution for you to monitor almost any type of your sensor measurement value in speech/ display/alarming format.



The Universal Verbalizer UV1000-PM is not designed to measure high voltage or current signals. It is designed to measure up to 10 Vdc max. voltage and 20 mA max. current signals.

1.1 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).

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 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.



- 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!

1.2 Before You Begin

Inspecting Your Shipment:

Remove the packing slip and verify that you have received everything listed. Inspect the container and equipment for signs of damage as soon as you receive the shipment. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent. The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing the contents, save the packing material and carton in the event reshipment is necessary.

Customer Service:

If you need assistance, please call the nearest Customer Service Department, listed in this manual.

Manuals, Software:

The latest Operation and Communication Manual as well as free configuration software is available from the website listed in this manual or on the CD-ROM enclosed with your shipment.

External Speaker:

External louder speaker is included as an accessory.

Section 2 – Setup

2.1 Front Panel

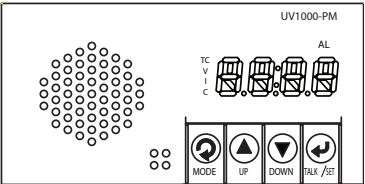


Figure 2.1 Front panel display

Table 2.1 Front Panel Annunciators

TC	Thermocouple input indicator
V	Voltage input indicator
I	Current input indicator
C	Not in use
AL	Alarm indicator
MODE	Change the input selection
UP	Turn the volume up
DOWN	Turn the volume down
TALK/SET	Press to talk, or switch between command talk and continuous talk

2.2 Rear Panel Connections

The rear panel connections are shown in Figures 2.2 and 2.3.

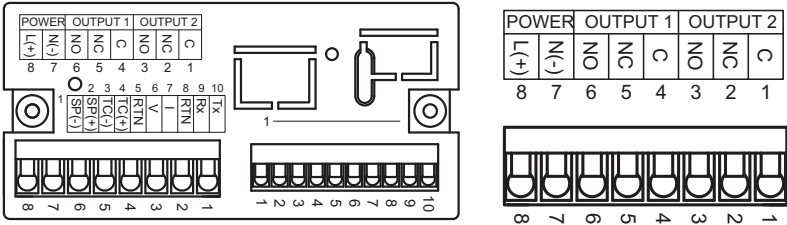


Figure 2.2 Rear Panel View, Power and Output Connections

Table 2.2 Rear Panel Power and Output Connector

POWER	AC/DC Power Connector: All models
OUTPUT 1	Relay SPDT
OUTPUT 2	Relay SPDT

2.2 Rear Panel Connections (Continued)

The rear panel connections are shown in Figures 2.2 and 2.3.

SPEAKER		INPUT					RS232		
SP(-)	SP(+)	TC(-)	TC(+)	RIN	V	I	RIN	R _x	T _x



Figure 2.3 Rear Panel Input Connections

Table 2.3 Rear Panel Input/Output Connector

External Speaker Output	Connect to provide external speaker
TC Input	Thermocouple Input
Voltage Input	0 to 10 vdc Voltage Input
Current Input	0 to 20 mA or 4 to 20 mA Current Input
RS232	RS232 Serial Communication

2.3 Power Connections



Caution: Do not connect power to your device until you have completed all input and output connections. Failure to do so may result in injury!

Connect the main power connection as shown in Figure 2.4

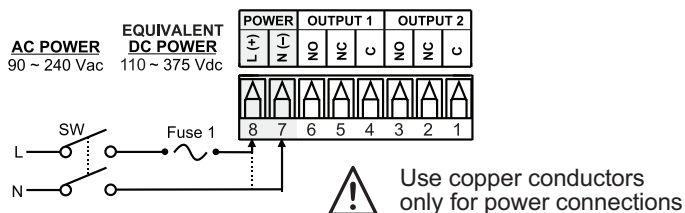


Figure 2.4 Main Power Connections

Table 2.4 Fuse Requirement (see specification)

FUSE	Connector	Output Type	For 115 Vac	For 230 Vac	DC
FUSE1	POWER	N/A	100 mA(T)	100 mA(T)	100 mA(T)

Note

The Safety European Standard EN61010-1 for measurement, control, and laboratory equipment requires that fuses must be specified based on IEC127. This standard specifies for a Time-lag fuse, the letter code "T". The above recommended fuses are of the type IEC127-2-sheet III. Be aware that there are significant differences between the requirements listed in the UL 248-14/CSA 248.14 and the IEC 127 fuse standards. As a result, no single fuse can carry all approval listings. A 1.0 Amp IEC fuse is approximately equivalent to a 1.4 Amp UL/CSA fuse. It is advised to consult the manufacturer's data sheets for a cross-reference.

2.3.1 Thermocouple Input

The figure below shows the wiring hookup for any thermocouple type. For example, for Type K hookup, connect the yellow wire to the "4" terminal - TC(+) and the red wire to the "3" terminal - TC(-).

When configuring your Verbalizer, select Thermocouple and Thermocouple Type in the Input Type menu (see Part 3 and Part 4.5.6 TC Setup).

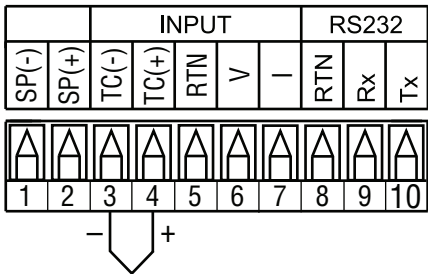


Figure 2.5 Thermocouple Wiring Hookup

Table 2.5 TC Wire Color Chart

TYPE	Input Connector		Jacket (External Insulation)	
	Terminal 3 TC (-)	Terminal 4 TC(+)	Extension	Grade
J	Red	White	Dark-Brown	Black
K	Red	Yellow	Dark-Brown	Yellow
T	Red	Blue	Dark-Brown	Blue
R	Red	Black	-	Green

2.3.2 Process Voltage Input

The figure below shows the wiring hookup for Process Voltage 0–10 Vdc.

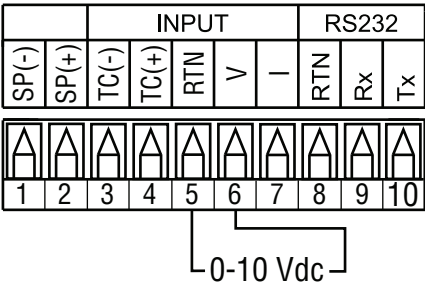


Figure 2.6 Process Voltage Wiring Hookup Without Sensor Excitation

When configuring your instrument, select Process Voltage Type in the Input Type Menu.

2.3.3 Process Current Input

The figure below shows the wiring hookup for Process Current 0 – 20 mA.

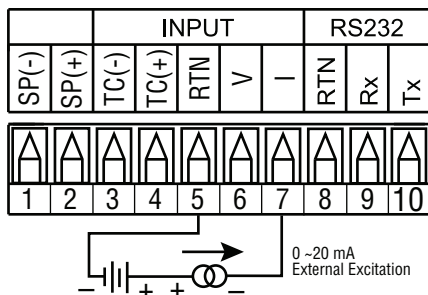


Figure 2.7 Process Current Wiring Hookup (External Excitation)

When configuring your instrument, select Current Type in the Input Type Menu.

2.3.4 Wiring Relay Outputs

Relay outputs OUTPUT1 and OUTPUT2 for High alarm and Low alarm

This meter has two factory installed outputs. The OUTPUT 1 is for high alarm and OUTPUT 2 is for low alarm. The two SPDT Mechanical Relays are shown below.

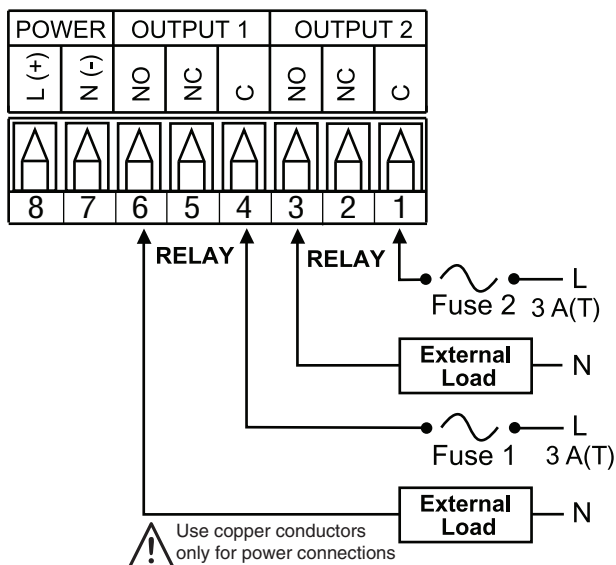


Figure 2.8 Mechanical Relay Outputs Wiring Hookup

This device has snubber circuits designed to protect the contacts of the mechanical relays when it switches to inductive loads (i.e. solenoids, relays). These snubbers are internally connected between the Common (C) and Normally Open (NO) relay contacts of Output 1 and Output 2.

Note

If you have an inductive load connected between Common (C) and Normally Closed (NC) contacts of the mechanical relays and you want to protect them from the rush current during the switching period, you have to connect an external snubber circuit between Common (C) and Normally Closed (NC) contacts as indicated in Figure 2.9.

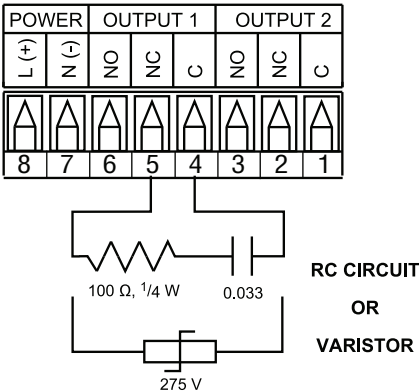


Figure 2.9 Snubber Circuit Wiring Hookup

2.3.5 Wiring RS232 Output

RS232 output

This device has a programmable communication output. The RS232 output connections are shown below.

Table 2.6 RS232 wiring to a computer DB-9 connector

UV1000-PM RS232	DB-9 connector
8-RTN	5-GND
9-RX	3-TxD
10-Tx	2-RxD

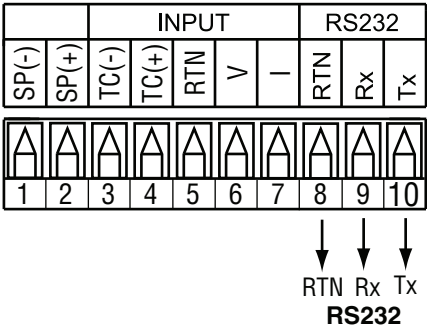


Figure 2.10 RS232 Output Wiring Hookup

2.3.6 Wiring External Louder Speaker

External Loudspeaker Output

This device has an external speaker output. The external loudspeaker output wiring connections are shown below

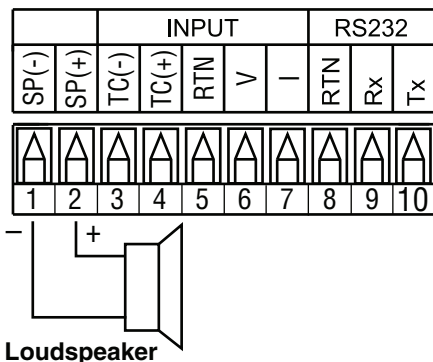


Figure 2.11 External Speaker Output Wiring Hookup

2.4 Panel Mounting, Panel Cutout, Overall Dimensions

1. Using the dimensions from the panel cutout in Figure 2.13, cut an opening in the panel.
2. Remove sleeve from the rear of the case by removing thumbnuts.
3. Insert the case into the opening from the front of the panel, so the gasket seals between the bezel and the front of the panel.
4. Slip the sleeve over the rear of the case.
5. Tighten the thumbnuts to hold the unit firmly in the panel.

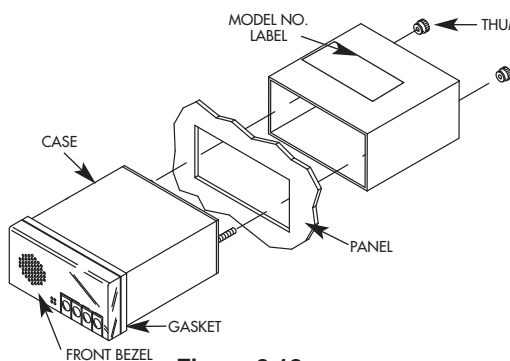


Figure 2.12
Meter—Exploded View

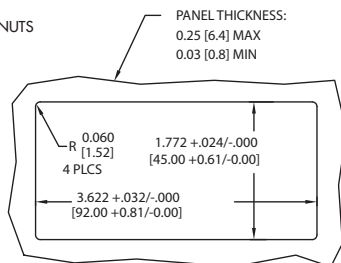


Figure 2.13
1/8 DIN Panel Cutout

2.4 Panel Mounting, Panel Cutout, Overall Dimensions (cont.)

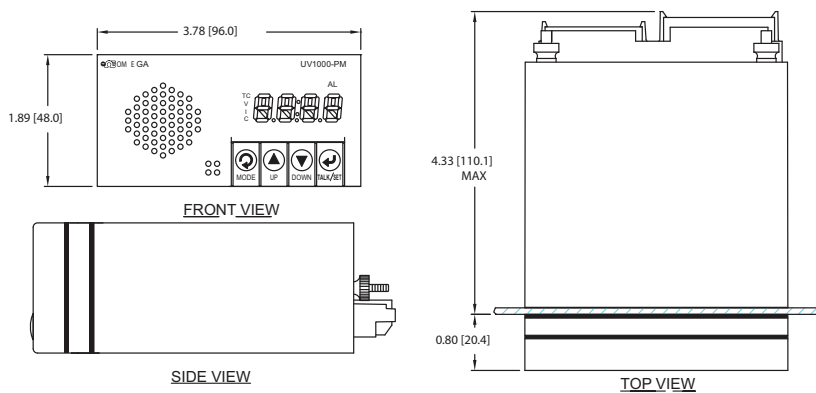


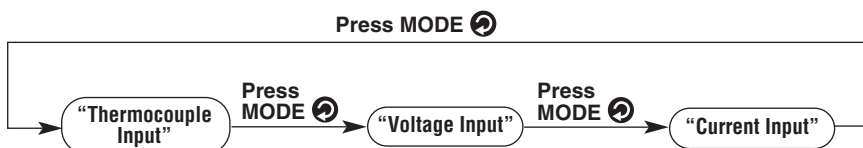
Figure 2.14 Meter-Overall Dimensions

Section 3 – Front Panel Button Operation

3.1 MODE button - Change the Input Selections

Press the MODE button  to select the input for the display and verbalize.

TC input → Voltage input → Current input → TC input



3.2 UP and Down Buttons

UP Button  – With Button Press the Volume Goes Up

DOWN Button  – With Button Press the Volume Goes Down

3.3 TALK/SET Button

- a. At Command talk mode - you must press TALK/SET  button to listen the measurement.
- b. At Continuous talk mode – The Verbalizer will talk the measurement continuously at the selected talking interval. The factory default talking interval is 3s. The interval selecting range is 0 to 120 seconds.
- c. Switch between Command talk and Continuous talk mode

- In Command talk mode, if you Press and hold the Talk/Set Button  for four seconds it will switch to Continuous talk mode.
- In Continuous talk mode, if you press and hold the Talk/Set Button  for four seconds, it will switch to Command talk mode.

Section 4 - Verbaview™ – User Configuration Software

4.1 Verbaview™ Installation

Insert the Verbaview™ software CD into your CD-ROM, the install program will run install automatically and the software will guide you through the whole the installation.

If the program didn't install automatically, click Windows Start→Run, click Browse... find your D: drive and select setup.exe file and then click OK button

You can also visit www.omega.com or our ftp website to update latest Verbaview™ software -

<ftp://ftp.omega.com/public/TEMPERATUREGroup/products/UV1000-PM/>

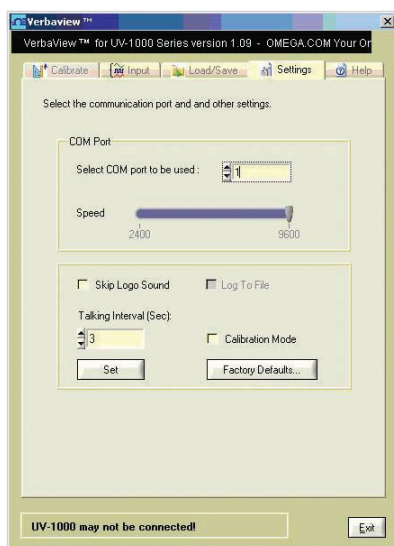
4.2 Starting the Verbaview™ Program

Connect the Universal Verbalizer UV1000 to your PC through RS232 cable. Click Start→Programs→Verbaview UV-1000→Verbaview UV-1000 to run the program.

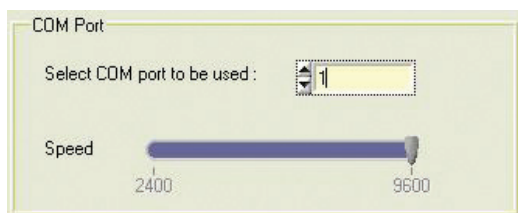
Note: The LED display may flashing or flickering during the communication with PC when you are configuration the unit.

4.3 Settings Tag

Go to the Settings tag



4.3.1 Select the COM port which connects to your Universal Verbalizer and the Speed (Baud Rate) is fixed at 9600bit/sec



4.3.2 Check the “Skip Logo Sound” to disable the sound effect during the Verbaview program at start up.



4.3.3 Talking Interval.

You can set the talking time interval from 0 to 120 seconds. The default talking interval is 3 seconds.



4.3.4 Factory default settings Button



If you click this button the Universal Verbalizer settings will go back to manufacture default settings. Please see Appendix 1 for the complete default settings.

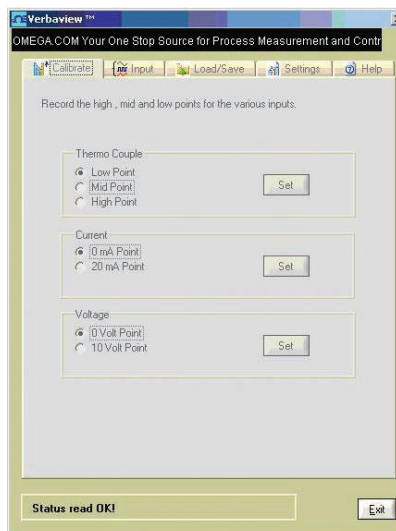
4.3.5 Calibration mode



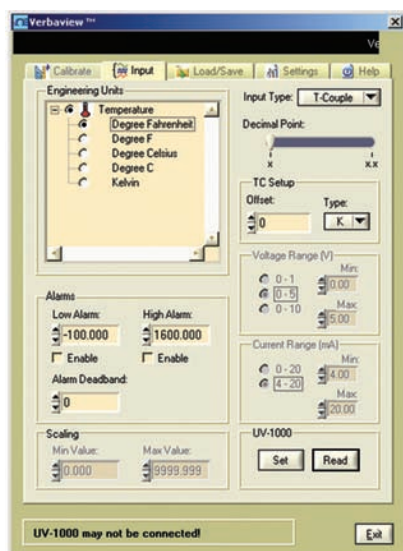
This function is for factory use only. It is password protected.

4.4 Calibrate Tag

This function is disabled (grayed out) and is only for factory calibration use.

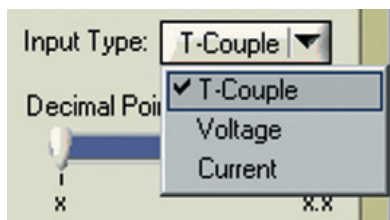


4.5 Input Tag

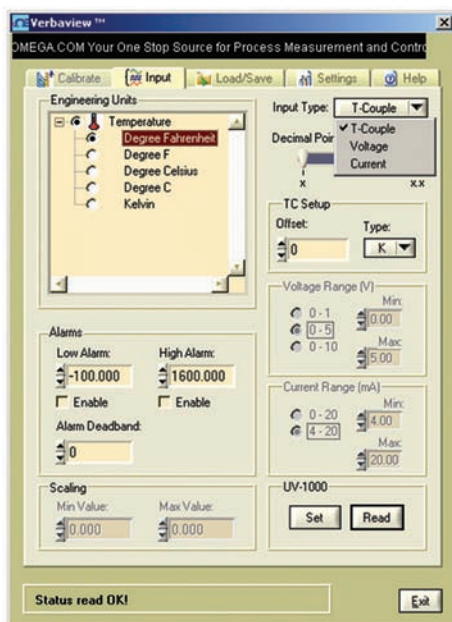


4.5.1 Select the Input Type

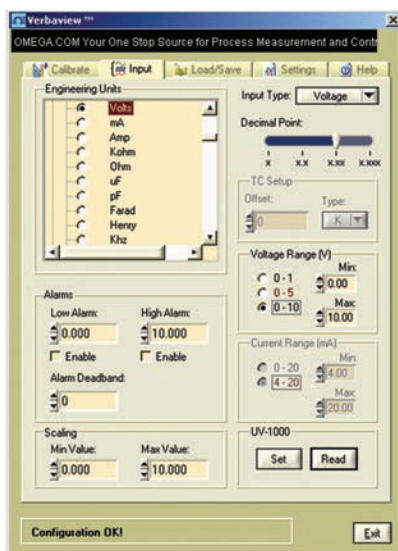
You can select T-Couple (Thermocouple) Input, Voltage Input or Current Input by click the pull down list. On the panel meter display, there are LED indicators to indicate the input selections. (see 2.1 for indication references)



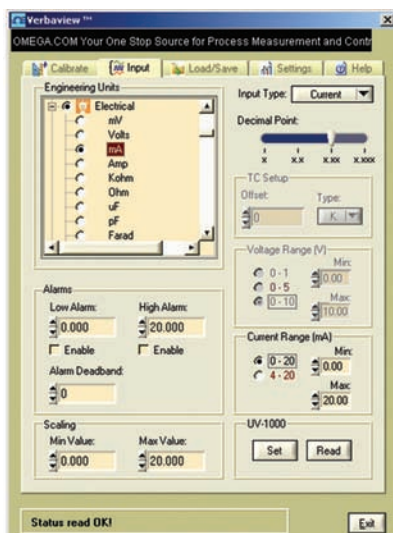
- Thermocouple input configuration interface



- Voltage input configuration interface

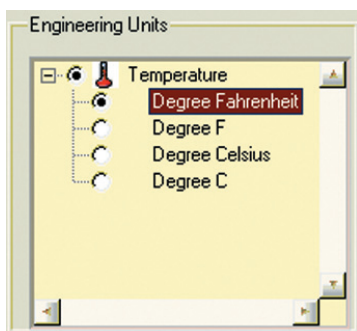


- Current input configuration interface



4.5.2. Select the Engineering Unit

Select the Engineering Unit from the trees at Engineering Units window after you select the Input type.



The Engineering Units categories are:

- Acceleration
- Area
- Conductivity
- Dissolved
- Electrical
- Energy
- Flow
- Force
- Humidity
- Length
- pH
- Power
- Pressure
- Salinity
- Sound
- Temperature
- Time
- Turbidity
- Vacuum
- Velocity
- Viscosity
- Volume
- Weight

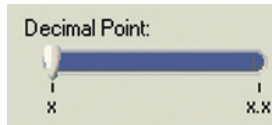
Please see Appendix 2 on Page 5-4 Engineering Units Table for Complete Engineering Units Selection.

4.5.3 Select the Decimal Point

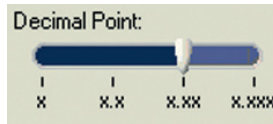
You can select the Decimal Point for the verbal number. You can select no decimal point, one decimal, two decimal point and up to three decimal point.

Thermocouple Input: x, x.x

(Note: When you select one decimal point in TC input mode, the temperature display resolution on the LED display will be $0.5^{\circ}\text{F}/^{\circ}\text{C}$)



Voltage and Current Input: x, x.x, x.xx, x.xxx;



For example:

For Thermocouple input, the temperature measurement is 75.3°F . If you select Decimal Point is 'x.x', then the Verbalizer will talk "Seventy Five Point Three Degrees F" $\rightarrow 75.3^{\circ}\text{F}$; If you select Decimal point is 'x', then the Verbalizer will talk "Seventy Five Degrees F" $\rightarrow 75^{\circ}\text{F}$;

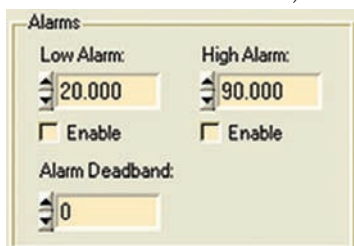
4.5.4 Alarms Settings

- Set the High or Low alarm, Alarm Deadband value
- Enable or disable the High or Low alarm settings

When the alarm condition occurs, the followings will happen:

- The LED display will turn to RED
- The red LED 'AL' on the display will flashing
- The corresponding alarm output relay will be energized
- The Verbalizer will keep on saying "High alarm" or "Low alarm"

If you set the Alarm Deadband value, the high alarm will not stop until the display value below (High Alarm value - Alarm Deadband value) and the low alarm will not stop until the display value above the (Low Alarm + Alarm Deadband) value.



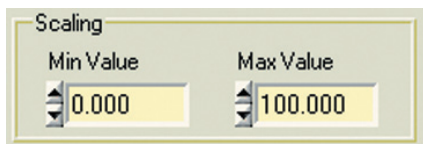
The 'Alarms' window contains three input fields with spinners: 'Low Alarm' set to 20.000, 'High Alarm' set to 90.000, and 'Alarm Deadband' set to 0. Each input field has an 'Enable' checkbox to its right, all of which are currently unchecked.

4.5.5 Scaling – (Voltage and Current input only, will be grayed out in other analog input selection)

Please reference the following application examples for your proper setting scaling values

Input the Engineering Unit range value to the text boxes

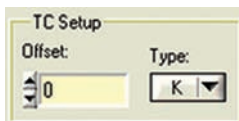
These text boxes are for Engineering Units input values:



The 'Scaling' window contains two input fields with spinners: 'Min Value' set to 0.000 and 'Max Value' set to 100.000.

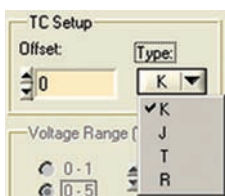
4.5.6 TC Setup (Thermocouple input only, will be grayed out in other analog input selection)

- Offset – input range ± 1000



The 'TC Setup' window contains an 'Offset' input field with a spinner set to 0, and a 'Type' dropdown menu currently showing 'K'.

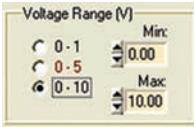
- Type – You can select Type K, J, T or R thermocouple input from the pull down list.



This image shows the 'TC Setup' window with the 'Type' dropdown menu open. The menu lists 'K', 'J', 'T', and 'R', with 'K' selected. Below the dropdown, there is a 'Voltage Range' section with two radio buttons: '0-1' and '0-5', both of which are currently disabled.

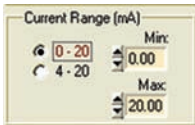
4.5.7 Voltage Range – (Voltage input only, will be grayed out in other analog input selection)

You can select the voltage range 0-1v, 0-5v or 0-10v. Also you can type in the specified Min and Max voltage value into the text box. The maximum voltage value should not exceed 10Vdc and the minimum voltage values should not less than 0 voltage.



4.5.8 Current Range – (Current input only, will be grayed out in other analog input selection)

You can select the current range 0-20 mA or 4-20 mA. Also you can type in the specified Min and Max current value into the text box. The maximum current value should not exceed 20mA and the minimum current value should not less than 0 mA.



4.5.9 Scaling the Engineering Unit

The Scaling function will gray out in Thermocouple input, but will be enabled in Voltage or Current input.



4.5.10 The Set and Read buttons



When you Click Set button, you will be asked for “Set the UV-1000 with these settings?”



Click “OK” to update the settings or click “No” to the cancel settings’ change.

When you click Read button, you will read the current settings from the UV1000 device.

4.5.11 Application Examples of Rescaling the Engineering Unit

4.5.11.1 Voltage Input Settings and Rescaling

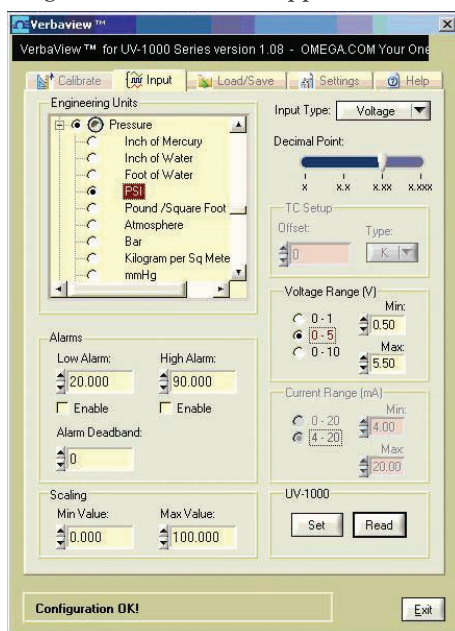
Application Example 1: General Purpose Output Pressure Transducer

Omega Model Number: PX303-100A5V

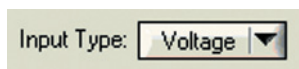
Output: 0.5 – 5.5 Vdc

Pressure Range: 0-100 PSIA

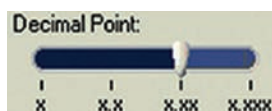
The following PC user interface graphic, showing all the configuration settings and values for this application example.



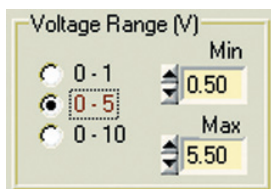
a. Select the Voltage Input



c. Select the decimal points – 2 decimal points

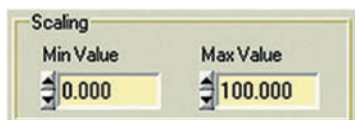


- d. Input the voltage range value to the text boxes
These text boxes are for the voltages input values:



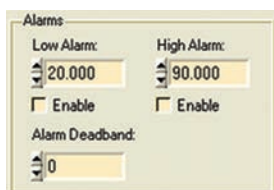
The 'Voltage Range (V)' window contains three radio buttons for range selection: '0 - 1', '0 - 5' (which is selected and highlighted with a dashed border), and '0 - 10'. To the right of these are two vertical spin boxes. The 'Min' spin box is set to '0.50' and the 'Max' spin box is set to '5.50'.

- e. Input the Engineering Unit range value to the text boxes
These text boxes are for Engineering Units input values:



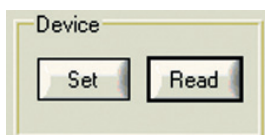
The 'Scaling' window features two vertical spin boxes. The 'Min Value' spin box is set to '0.000' and the 'Max Value' spin box is set to '100.000'.

- f. Set the High or Low alarm, Alarm Deadband value
Enable or disable the High or Low alarm settings



The 'Alarms' window has two sections. The 'Low Alarm' section includes a spin box set to '20.000' and a checkbox labeled 'Enable' which is currently unchecked. The 'High Alarm' section includes a spin box set to '90.000' and a checkbox labeled 'Enable' which is also unchecked. Below these is an 'Alarm Deadband' section with a spin box set to '0'.

- g. Click the Set button to send the settings to Universal Verbalizer.



The 'Device' window contains two buttons: 'Set' and 'Read'.

- h. After a few seconds, you will see 'Configuration OK!' message at the bottom of the User interface. Now you are done with the rescaling and also updated other settings for the Verbalizer.



A message box with the text 'Configuration OK!' and an 'Exit' button.

- i. If you click the
Read button, you will get all the settings from the
Universal Verbalizer at Voltage input mode.



The 'Device' window, identical to the previous one, showing 'Set' and 'Read' buttons.

Application Example 2:

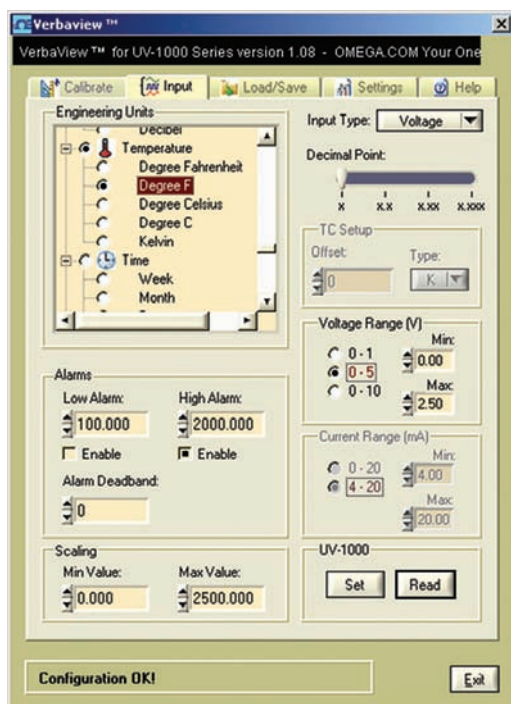
High Temperature Handheld Infrared Thermometer

Omega Model Number: OS523E

Analog Output: 1 mV/deg

Temperature Range: 0 to 2500°F

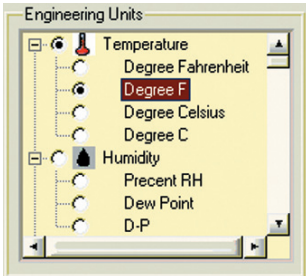
The following PC user interface graphic, showing all the configuration settings and values for this application example.



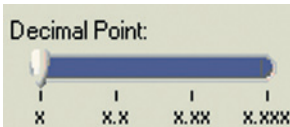
a. Select the Voltage input

Input Type: Voltage ▼

b. Select the Engineering Unit – Degree F.



c. Select the decimal points x – No decimal point



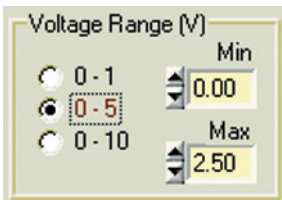
d. Input the voltage range value to the text boxes

Calculate the Voltage Range: Since the Analog Output: 1 mV/deg and the Temperature Range is 0 - 2500°F

The Voltage Min = 1 mV/deg * 0 deg = 0 mV = 0 V;

The Voltage Max = 1 mV/deg * 2500 deg = 2500mV = 2.5 V;

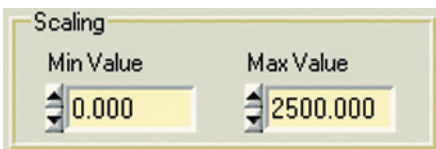
Type these calculated voltage values into the Min and Max text boxes:



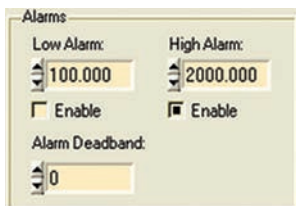
e. Input the Engineering Unit range value to the text boxes according to:

Temperature Range: 0 - 2500°F

So, the Min Value is 0 and the Max Value is 2500.

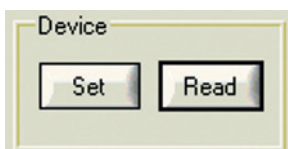


f. Set the High or Low alarm Value, and Alarm Deadband enable or disable the High or Low alarm settings.



The 'Alarms' window contains three sections. The 'Low Alarm' section has a numeric input field set to '100.000' and an 'Enable' checkbox that is unchecked. The 'High Alarm' section has a numeric input field set to '2000.000' and an 'Enable' checkbox that is checked. The 'Alarm Deadband' section has a numeric input field set to '0'.

g. Click the Set button to send the settings to Universal Verbalizer.



The 'Device' window contains two buttons: 'Set' and 'Read'.

h. After a few seconds, you will see 'Configuration OK!' message at the bottom of the User interface. Now you are done with the rescaling and also updated other settings for the Verbalizer.



A green message bar with the text 'Configuration OK!' on the left and an 'Exit' button on the right.

i. If you click the Read button, you will get the all the settings from the Universal Verbalizer at Voltage input mode.



The 'Device' window contains two buttons: 'Set' and 'Read'.



4.5.11.2 0 to 20 mA or 4 to 20 mA Current Input Settings and Rescaling

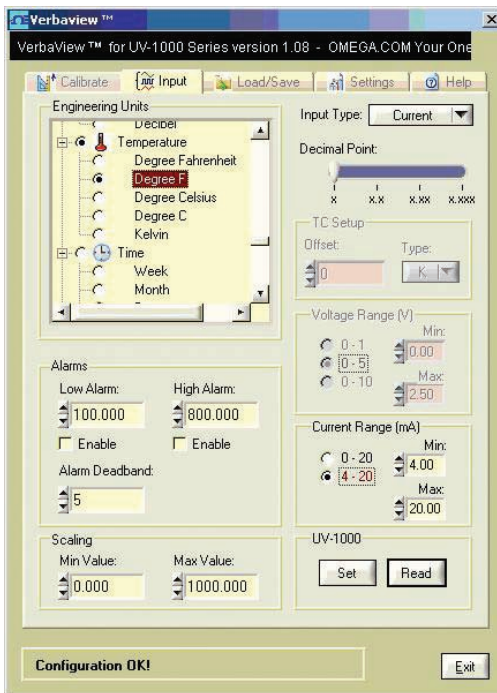
Application Example 3: Miniature Low Cost Non-Contact IR Temperature Sensor/Transmitter

Omega part number: OS101-MA Transmitter with 4 to 20 mA output

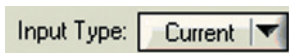
Current Output: 4 to 20 mA

Temperature Range: 0 to 1000°F

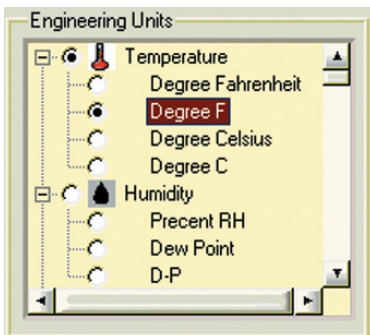
The following PC user interface graphic, showing all the configuration settings and values for this application example.



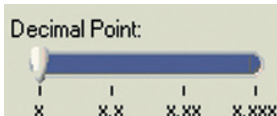
a. Select the Current input



b. Select the Engineering Unit – Degree F.



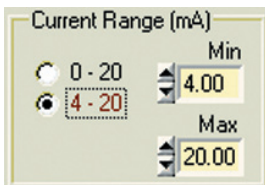
c. Select the no decimal points – x



d. Input the Current range value to the text boxes

This Transmitter Current Output range is : 4 – 20 mA

Select Current Range 4-20 or just type in 4 to Min text box and 20 to Max text box



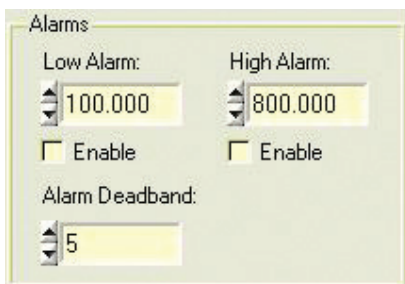
e. Input the Engineering Unit range value to the text boxes

The Transmitter temperature range is: 0-1000°F

So, type in 0 in Scaling Min Value, 1000 in Scaling Max Value



- f. Set the High or Low alarm value and Alarm Deadband
Enable or disable the High or Low alarm settings



The 'Alarms' dialog box contains the following controls:

- Low Alarm:** A numeric input field with a value of 100.000 and an 'Enable' checkbox.
- High Alarm:** A numeric input field with a value of 800.000 and an 'Enable' checkbox.
- Alarm Deadband:** A numeric input field with a value of 5.

- g. Click the Set button to send the settings to Universal Verbalizer



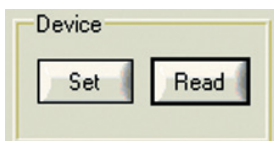
The 'Device' dialog box contains two buttons: 'Set' and 'Read'.

- h. After a few seconds, you will see 'Configuration OK!' message at the bottom of the User interface. Now you are done with the rescaling and also updated other settings for the Verbalizer.



A green message bar with the text 'Configuration OK!' and an 'Exit' button.

- j. If you click the Read button, you will get all the settings from the Universal Verbalizer at Current input mode



The 'Device' dialog box contains two buttons: 'Set' and 'Read'.

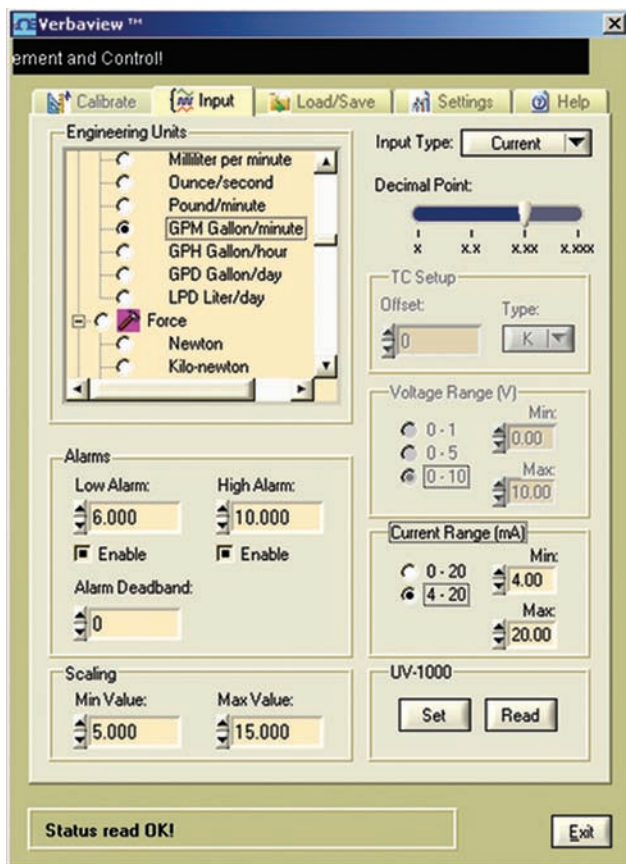
Application Example 4: Liquid Flow Transmitters

Omega Model number: FPR205-PC 500, transmitter with clear cover

Current Output: 4 – 20 mA

Flow Measuring Range: 0.5 to 15.0 GPM

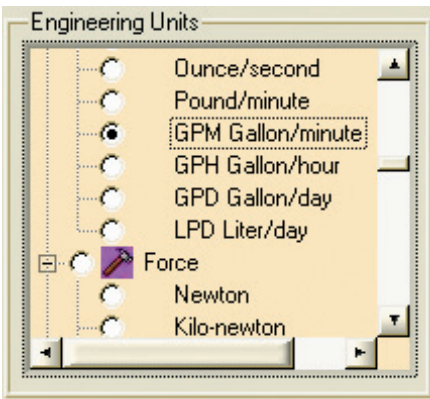
The following PC user interface graphic, showing all the configuration settings and values for this application example.



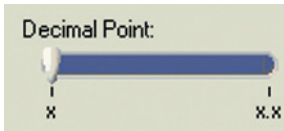
a. Select the Current input

Input Type: **Current**

b. Select the Engineering Unit – GPM at Engineering Unit window



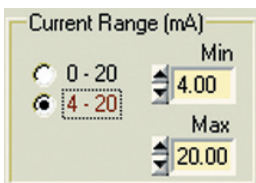
c. Select the one decimal points – x.x



d. Input the Current range value to the text boxes

This transmitter Current Output is 4 – 20 mA

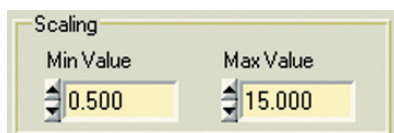
Select Current Range to 4-20 or type in the Min and Max value in the text boxes.



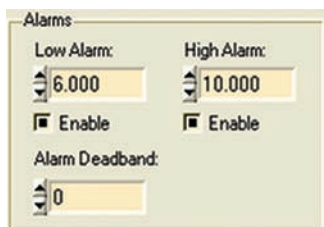
e. Input the Engineering Unit range value to the text boxes

This transmitted Flow Measuring Range: 0.5 to 15.0 GPM

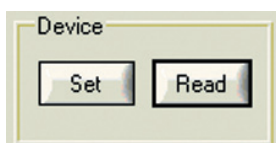
Type in the Scaling Min and Max Value according to the Measuring Range



- f. Set the High or Low alarm value and the Alarm Deadband
Enable or disable the High or Low alarm settings



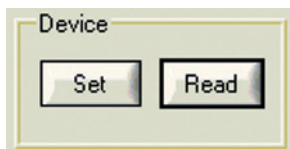
- g. Click the Set button to send the settings to Universal Verbalizer.



- h. After a few seconds, you will see 'Configuration OK!' message at the bottom of the User interface. Now you are done with the rescaling and also updating other settings for the Verbalizer.

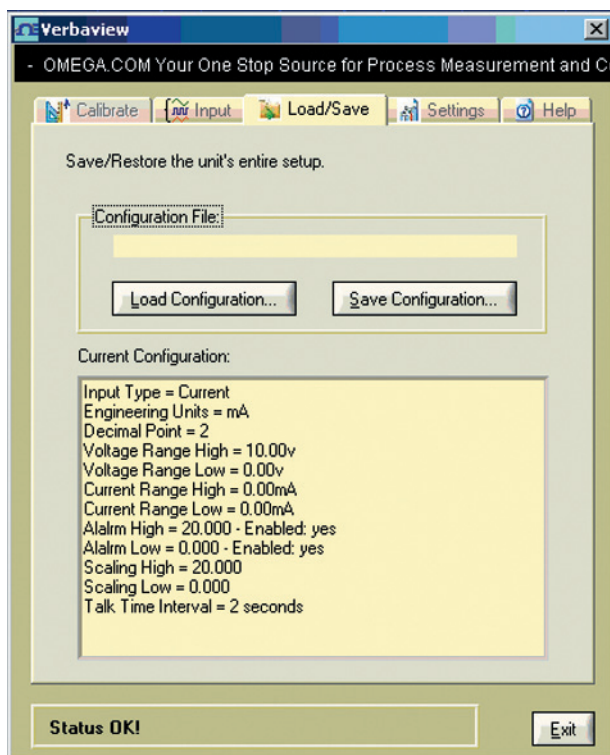


- i. If you click the Read button, you will get all the settings from the Universal Verbalizer at Current input mode.



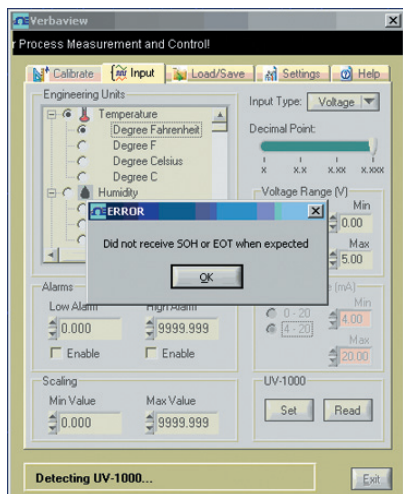
4.6 Load/Save Tag

At this tag, you can Load the saved previous configuration settings from your PC to the program. Or you can save the Configuration settings to your PC for future reference.

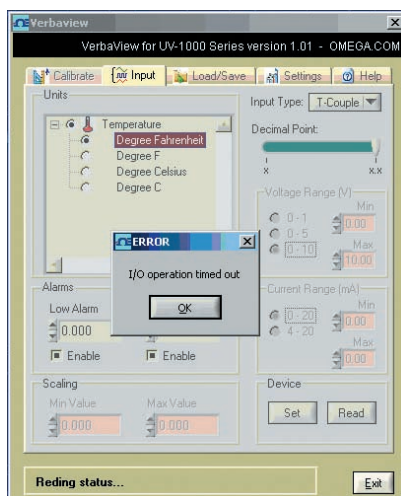


4.7 Error Messages

- You may get the error message “Did not receive SOH or EOT when expected”. If this happens, please make sure the Universal Verbalizer power is turn on, check the COM port selection in Settings tag, the cable connections between PC and Universal Verbalizer and then try again



- You may get “I/O operation time out” error messages during the configuration. If this happens, please check the COM port, cable connection between PC and Universal Verbalizer and make sure the universal Verbalizer power is turn on. Then try again



Section 5 - Specifications:

Voltage Input:	0-10 Vdc
Input Impedance:	500 K ohms
Current Input:	0-20 mA, 4-20 mA
Voltage and Current Input:	
Accuracy:	0.2% of full scale
Thermocouple Input:	Type K, J, T and R
Thermocouple Range:	Type K: -100 to 871°C (-148 to 1600°F) Type J: -75 to 650°C (-103 to 1202°F) Type T: -75 to 380°C (-103 to 716°F) Type R: 260 to 1710°C (500 to 3110°F)
Thermocouple Input Accuracy:	Type K, J and R: 2.0°C (3.6°F) Type T: 1.0°C (1.8°F)
Thermocouple Input Offset:	±1000
Command/Continuous Talk:	Set via front button
High & Low Alarm Set Points:	
And the Alarm Deadband:	Set via RS232 PC interface
High & Low Alarm:	
Set Value Range:	±9999.999
High & Low Alarm Deadband:	
Set Value Range:	0~ 1000
High & Low Alarm Relay Output:	2 Form C (SPDT) relays, 3 A @ 30 Vdc, or 3 A @ 250 Vac, (resistive load)
Engineering Scale:	Set via RS232 PC interface
Engineering Scaling	
Min & Max Value Range:	±9999.999
Engineering Unit:	Over 100 audio Engineering Unit selectable Set via RS232 PC interface
Volume Control:	Set via front button, 8 levels at 4 dB intervals
Power:	90 to 240 Vac, 50 to 400 Hz 110 to 375 Vdc, equivalent voltage 4 W without external speaker
Color Change LED Display:	GREEN - normal operation condition AMBER - in TC open or overrange condition RED - in alarm condition
Low Battery Indication:	Red LED, Flashing
Speech Sampling Rate:	8 KHz
Build in Speaker:	Built-in, 8 Ohms
External Speaker:	3w, 8 Ohms
Operating Ambient Temperature:	0 to 50°C (32 to 122°F)
Operating Relative Humidity:	0 to 95% RH (Non-condensing)
Dimensions:	131 L x 96 W x 48 mm D (5.13 x 3.78 x 1.89")
Weight:	250 g (0.55 lb)

Inputs

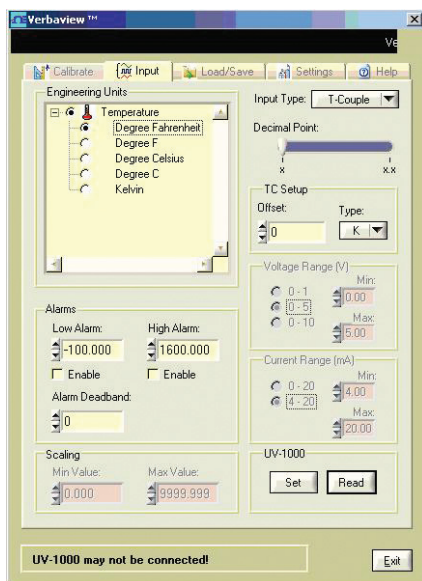
	Input Types	Range	Accuracy
	Process Voltage	0 to 10 Vdc	0.2% of full scale
	Process Current	0 to 20 mA or 4 to 20 mA	0.2% of full scale
K	CHROMEGA®- ALOMEGA®	-148 to 1600°F -100 to 871°C	3.6°F 2°C
J	Iron-Constantan	-103 to 1202°F -75 to 650°C	3.6°F 2°C
T	Copper-Constantan	-103 to 716°F -75 to 380°C	1.8°F 1.0°C
R	Pt/13%Rh-Pt	500 to 3110°F 260 to 1710°C	3.6°F 2°C

Appendix 1

Factory Default Settings

NOTE:

The Factory default input is TC input, Command Talk and the Talking Interval is 3s and each input default settings are as followings



Talking Interval (Sec):

3

Set

Talking interval at Settings tag

- TC Input:

Engineering Unit: Degree F

TC Type: K

TC Offset: 0

Decimal Point: x – No decimal points

Alarms are disabled

Low Alarm: -100

High Alarm: 1600

Alarm Deadband: 0

Talking interval: 3 s

- Voltage Input:

Engineering Unit: volt

Decimal Point: x.xx – Two decimal points

Alarms are disabled

Low Alarm: 0

High Alarm: 10

Alarm Deadband: 0

Voltage Range(V): 0 to 10v

Voltage Min: 0.00

Voltage Max: 10.00

Rescaling Min Value: 0

Rescaling Max Value: 10

Talking Time Interval: 3s

- Current Input:

Engineering Unit: mA

Decimal Point: x.xx – Two decimal points

Alarms are disabled

Low alarm: 0

High alarm: 10

Alarm Deadband: 0

Current Range(V): 0 to 20 mA

Current Min: 0.00

Current Max: 20.00

Rescaling Min Value: 0

Rescaling Max Value: 20

Talking Time Interval: 3 s

Appendix 2

Engineering Units Table:

Categories	Engineering Units --> For the tree of PC GUI	Note
Acceleration	Centimeter per square second	Metric
	g	
	Meter per square second	English
	Foot per square second	
Area	Inch per square second	Metric
	Are	
	Square centi-meter	English
	Square deci-meter	
	Square meter	
	Square kilo-meter	
	Square nanometer	
	Square micrometer	
	Acre	
	Square foot	
	Square inch	
Conductivity	Square yard	
	mho	ppm
	Siemens	
Dissolved Oxygen	ppm - Part per million	ppm
	Milligram/liter	
Electrical	mV	
	Volts	
	mA	
	Amp	
	Kohm	
	Ohm	
	uF	
	pF	
	Farad	
	Henry	
	Khz	
	Hertz	

Categories	Engineering Units --> For the tree of PC GUI	Note
Energy	Newton meter	English
	Inch pound force	
	Joule	
	Kilojoule	
	Gram Calorie	
	Calorie	
	Horsepower-hour	
	Watt Hour	
	Kilowatt-hour	
Flow	Electron volt	Metric
	Gram/second	
	Kilogram/Minute	
	Ton/day	
	LPM	
	Cubicmeter per minute	
	Milliliter per minute	
	Ounce/second	
	Pound/Minute	
	GPM - Gallon/Minute	
	GPH - Gallon/Hour	
	GPD - Gallon/Day	
	LPD - Liter/Day	
Force (Strain)	Newton	Metric
	Kilo-Newton	
	Dyne	
	Long	
	Short	
Humidity	Percent RH	English
	Dew Point	
	D-P	
Length	Nanometer	Dew Point Metric
	Millimeter	
	Centimeter	
	Decimeter	
	Kilometer	

Categories	Engineering Units --> For the tree of PC GUI	Note
Length cont.	Foot	English
	Inch	
	Yard	
	Mile	
pH	pH	
Power	Watt	
	Kilowatt	
	Horsepower	
	Calorie (IT) per hour	
Pressure	Inch of Mercury	English
	Inch of water	
	Foot of water	
	PSI	
	Pound per Square foot	Metric
	Atmosphere	
	Bar	
	Kilogram per square meter	
	mmHg	
	millimeter of water	
	Pascal	
	Hecto-Pascal	
	Kilo-Pascal	
Salinity	Total dissolved solid	
	% concentration	
Sound	Decibel	
Temperature	Degree Fahrenheit	Metric
	Degree F	
	Degree Celsius	English
	Degree C	
	Kelvin	

Categories	Engineering Units --> For the tree of PC GUI	Note
Time	Week	
	Month	
	Day	
	Hour	
	Minute	
	Second	
	AM	
	PM	
Turbidity	NTU - Nephelometric Turbidity Unit	
Vacuum	Torr	
Velocity	Meter per second	Metric
	KPH	
	Knot's	
	Foot per second	English
	Inch per second	
	Foot per Minute	
	Inch/Minute	
	MPH - Mile per hour	
Viscosity	Meter	
	Centipoise	
	Stoke	
Volume	Centistoke	
	Cubic meter	Metric
	Cubic Centimeter	
	Milliliter	
	Liter	
	Barrel	English
	Gallon	
	Pint	
Weight	Quart	
	Ounce	
	Gram	Metric
	Kilogram	
	Ton	
General Units	Ounce	English
	Pound	
	Units	
	No Unit	

Select this, there will be no engineering units pronounce.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit 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 in which wear is not warranted, include but are 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 the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED 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 the product, and
3. Repair instructions and/or specific problems relative to the product.

PATENT NOTICE: U.S. Patent No. 7,400,133. U.S. Patent No. 6,243,021; 6,329,926 used under license. Other U.S. and International patents pending.

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.

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