

## Tek-LCD 7802A

NEMA 4X Loop-Powered Flow Rate/Totalizer Indicator



# Quick Start Guide

## 1. Before You Begin

This guide provides basic information to assist you in quickly getting started. Go to our website to download the full User Guide for detailed installation and other information.



Read complete instructions prior to installation and operation of the meter.



Failure to follow installation guidelines could result in death or serious injury.



Make sure only qualified personnel perform the installation.

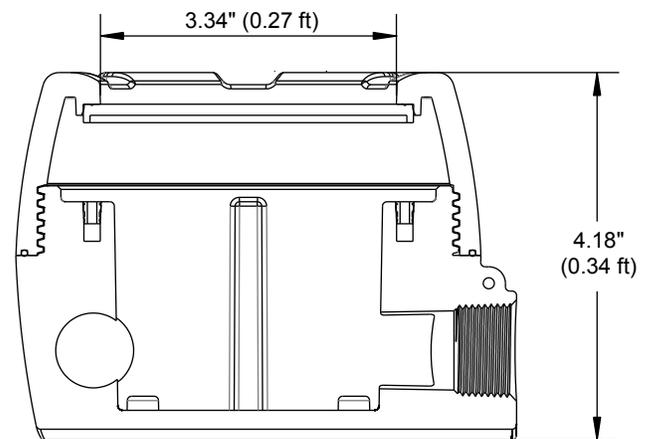
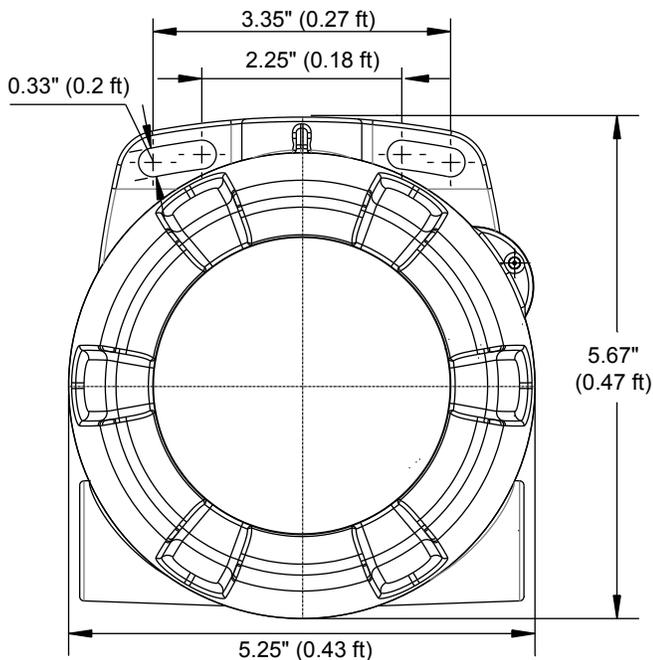


Risk of electric shock or personal injury.

## 2. Unpack

Tek-LCD 7802A NEMA 4X Loop-Powered Flow Rate/Totalizer Indicator

## 3. Dimensional View



## 4. Mounting

The Tek-LCD 7802A has two slotted mounting flanges that may be used for pipe mounting or wall mounting. Alternatively, the unit may be supported by the conduit using the conduit holes provided.



Do not attempt to loosen or remove flange bolts while the meter is in service.

## 5. Power Connections

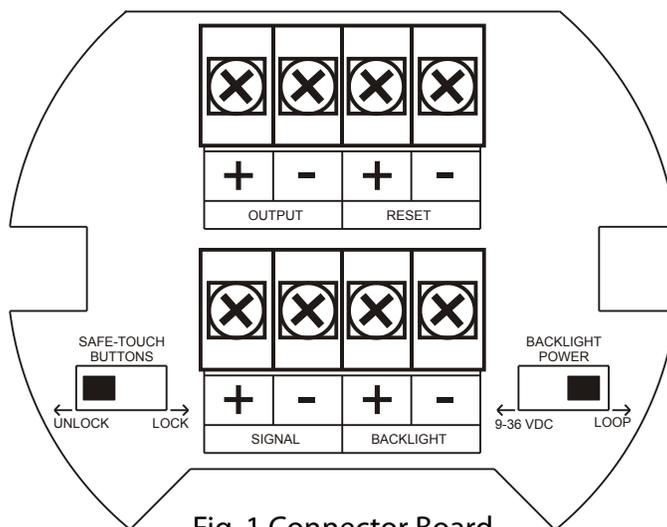


Fig. 1 Connector Board

<b>SIGNAL +</b>	4 - 20 mA signal input positive terminal connection
<b>SIGNAL -</b>	4 - 20 mA signal return/negative terminal connection when not using loop powered backlight.
<b>BACKLIGHT +</b>	+9 - 30 VDC when powering backlight from external supply.
<b>BACKLIGHT -</b>	4 - 20 mA signal return/negative terminal when using the installed loop powered backlight or ground/negative when powering backlight from external supply.
<b>OUTPUT+</b>	NPN open collector output positive.
<b>OUTPUT-</b>	NPN open collector output negative.
<b>RESET +</b>	Contact closure reset pullup to 3 VDC
<b>RESET -</b>	Contact closure reset ground/negative.



Observe all safety regulations. Electrical wiring should be performed in accordance with all agency requirements and applicable national, state, and local codes to prevent damage to the meter and ensure personnel safety.

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## Input Signal & Backlight Connections

Signal and backlight connections are made to a four-terminal connector mounted in the base of the enclosure. For installations without backlight, only the two signal terminals are connected. The 4-20 mA input with no backlight has a maximum voltage drop of 3 VDC and is wired as shown in Figure 2. The loop-powered backlight configuration requires a total maximum voltage drop of 6 V. The backlight is recommended for dim lighting conditions and is enabled when wired as shown in Figure 3 or Figure 4.

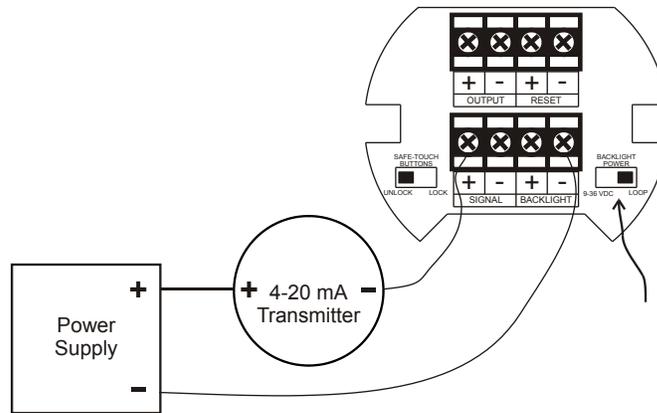


Figure 2. Input Connections without Backlight

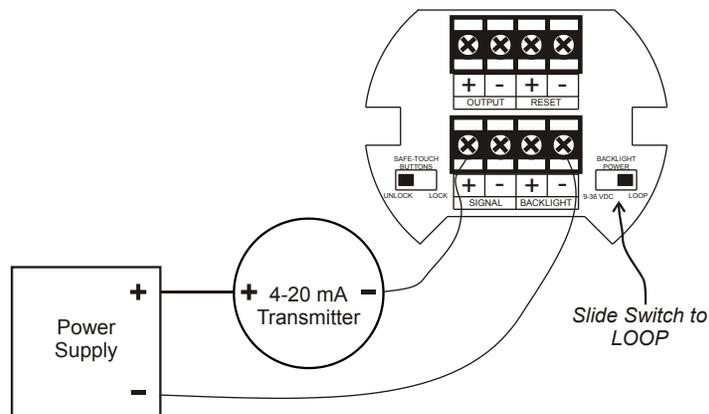


Figure 3. Input Connections with Loop-Powered Backlight

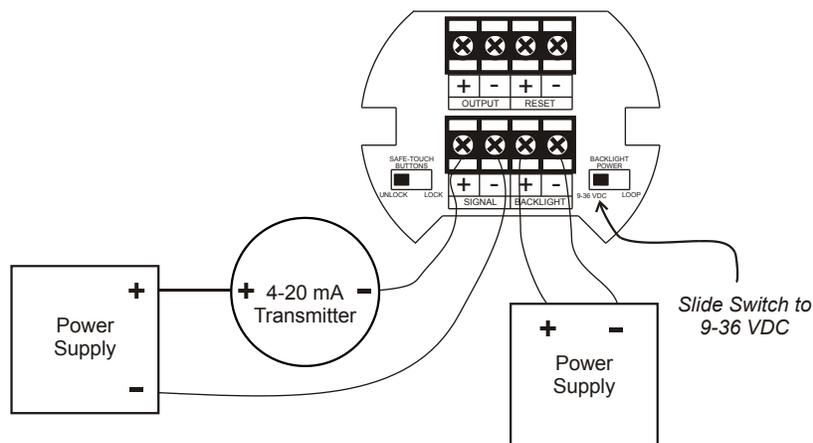


Figure 4. Input Connections with Externally-Powered Backlight

It is possible to use the same transmitter (signal loop) power supply for the externally powered backlight. The backlight circuit will draw 25 mA in addition to the loop circuit.

### External Reset Connection

External reset connections are made to two terminals labeled Reset. Connect to a contact closure source such as a relay or a pushbutton as shown in Figure 5.

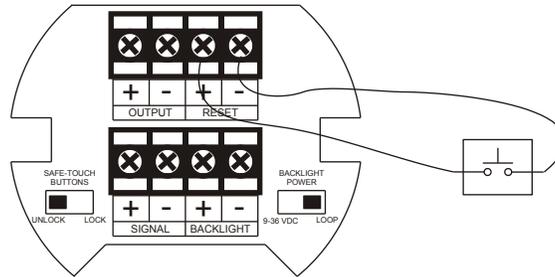


Figure 5. Reset Connections

### Open Collector Output Connections

Output connections are made to two terminals labeled OUTPUT. Connect to an input device such as alarm indicator or pulse counter as shown in Figure 6, or drive a relay as shown in Figure 7.

To avoid damaging the Tek-LCD 7802A's amplifying components, use care not to wire incorrectly or exceed output ratings. A diode, such as 1N4000 series, will provide protection from relay transients.

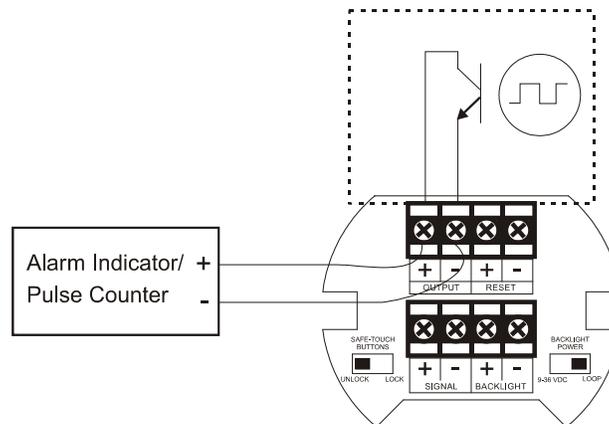


Figure 6. Connection to Device with Internal Pull-Up

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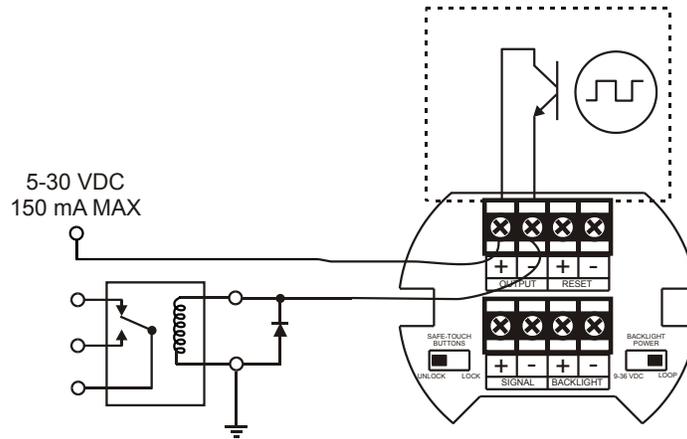


Figure 7. Output Connection

## 6. Display and Buttons



Button Symbol	Description	Symbol	Status
 MENU	Menu	HI	High Alarm Set
 RESET	Right arrow/Reset	LO	Low Alarm Set
 DISPLAY	Up arrow/Max	SET	Total Alarm Set
 ENTER	Enter		Password Enabled

- Press the **Menu** button to enter or exit the Programming Mode at any time.
- Press the **Right** arrow button to move to the next digit or decimal position during programming.
- Press the **Up**-arrow button to scroll through the menus, decimal point, or to increment the value of a digit.
- Press the **Enter** button to access a menu or to accept a setting.
- Press and hold the **Menu** button for five seconds to access the Advanced features of the meter.

### Main Menu Display Functions & Messages

The meter displays various functions and messages during setup, programming, and operation. The following table shows the main menu functions and messages in the order they appear in the menu.

Display	Parameter	Action/Setting
SETUP	Setup	Enter Setup menu
DEC_pt	Decimal point	Enter Decimal Point menu
rAtE	Rate decimal	Set rate display decimal point
totAl	Total decimal	Set total display decimal point
PRoG	Program	Enter the Program menu
sCALE	Scale	Enter the Scale menu
CAL	Calibrate	Enter the Calibrate menu
Inpt1	Input 1	Calibrate input 1 signal or program input 1 value
DspL1	Display 1	Program display 1 value
Inpt2	Input 2	Calibrate input 2 signal or program input 2 value
DspL2	Display 2	Program display 2 value
Span Error	Span Error	Error, calibration not successful, check signal
TbASE	Time Base	Enter the Time Base menu
sEc	Second	Units per second
min	Minute	Units per minute
hour	Hour	Units per hour
dAy	Day	Units per day
TotCF	Conversion Factor	Enter the Conversion Factor menu
T rST	Total Reset	Enter the Total Reset menu
Auto	Automatic	Automatic Total Reset
T DELAY	Time Delay	Automatic Reset Time Delay
Man Rn	Manual	Manual Total Reset
EnAbl	Enable	Enable Manual reset
EnAbl	Enable	Enable Manual reset
dsabl	Disable	Disable Manual reset

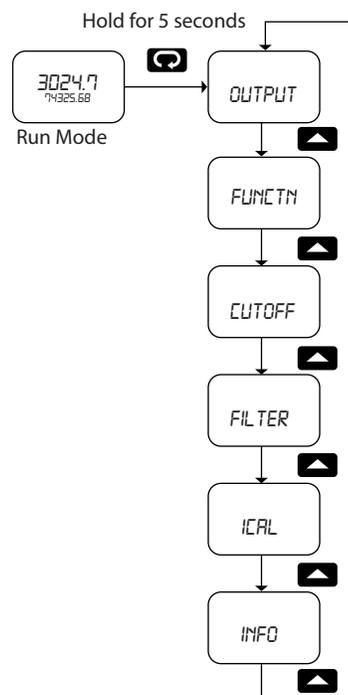
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Display	Parameter	Action/Setting
tAg	Tag/Units	Enter the Tag/Units Menu
On	Tag On	Enable Tag/Units
OFF	Tag Off	Disable Tag/Units
toGIE	Tag Toggle	Toggle Tag and Total
PASSWORD	Password	Enter the Password menu
UNLOCKD	Unlocked	Enter password to unlock meter
LOCKD	Locked	Program password to lock meter
99999 -99999	Flashing display	Overrange condition Underrange condition
SERVICE	Input 2	Calibrate input 2 signal or program input 2 value

## 7. Advanced Features Menu

To simplify the setup process, functions not needed for most applications are located in the Advanced features menu. Press and hold the **Menu** button for five seconds to access the Advanced features menu.

Press the **Enter** button to access any menu or press **Up** arrow button to scroll through choices. Press the **Menu** button to exit at any time.



## Advanced Features Menu & Display Messages

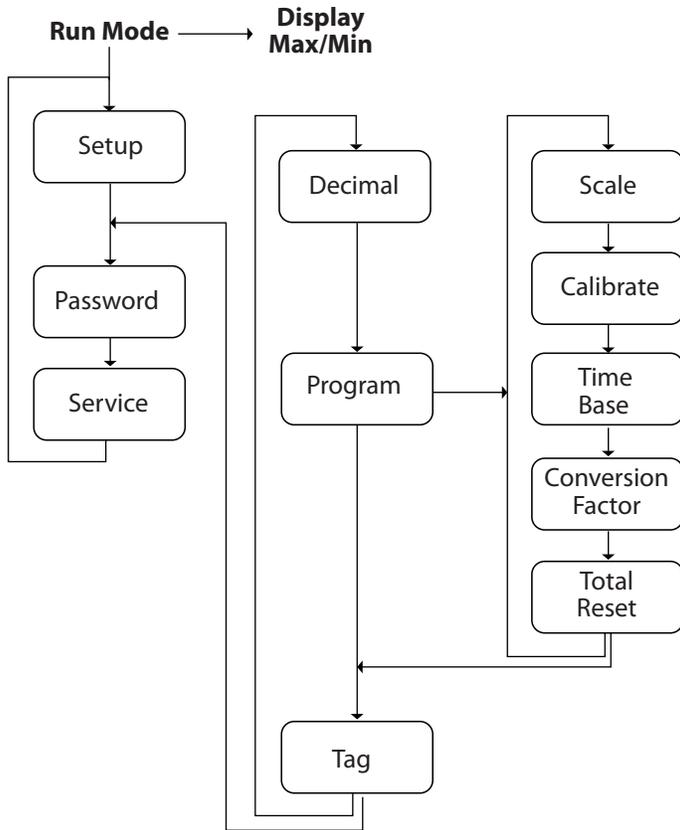
The following table shows the Advanced features menu functions and messages in the order they appear in the menu.

Display	Parameter	Action/Setting
OUTPUT	Output	Enter output menu
OFF	Off	Disable output
AlrM	Alarm Output	Enter alarm output menu
RAtE	Rate Alarm	Assign alarm output to rate
TotAl	Total	Assign alarm output to total
SEt	Set Point	Program set point
REsEt	Reset Point	Program reset point
PulsE	Pulse Output	Program pulse output K-factor
MAX HZ	Frequency	Program pulse output maximum frequency
Funct	Function	Enter advanced function menu
LnEAr	Linear	Set linear scaling
ProG_E	Programmable Exponent	Set programmable exponent
SquAr	Square Root	Set square root extraction
CUTOFF	Low-Flow Cutoff	Set low-flow cutoff
FILTER	Filter	Set noise filter
OFF	Filter Off	Disable noise filter
LO	Filter Low	Set noise filter to low setting
MED	Filter Medium	Set noise filter to medium setting
HI	Filter High	Set noise filter to high setting
ICAL	Internal Calibration	Enter internal reference calibration
INFO	Meter Information	Show software number and version, or reset to factory defaults
SFT	Software	Software number
vEr	Software Version	Software version
RESET DFALTS?	Reset Defaults	Restore factory default parameter settings

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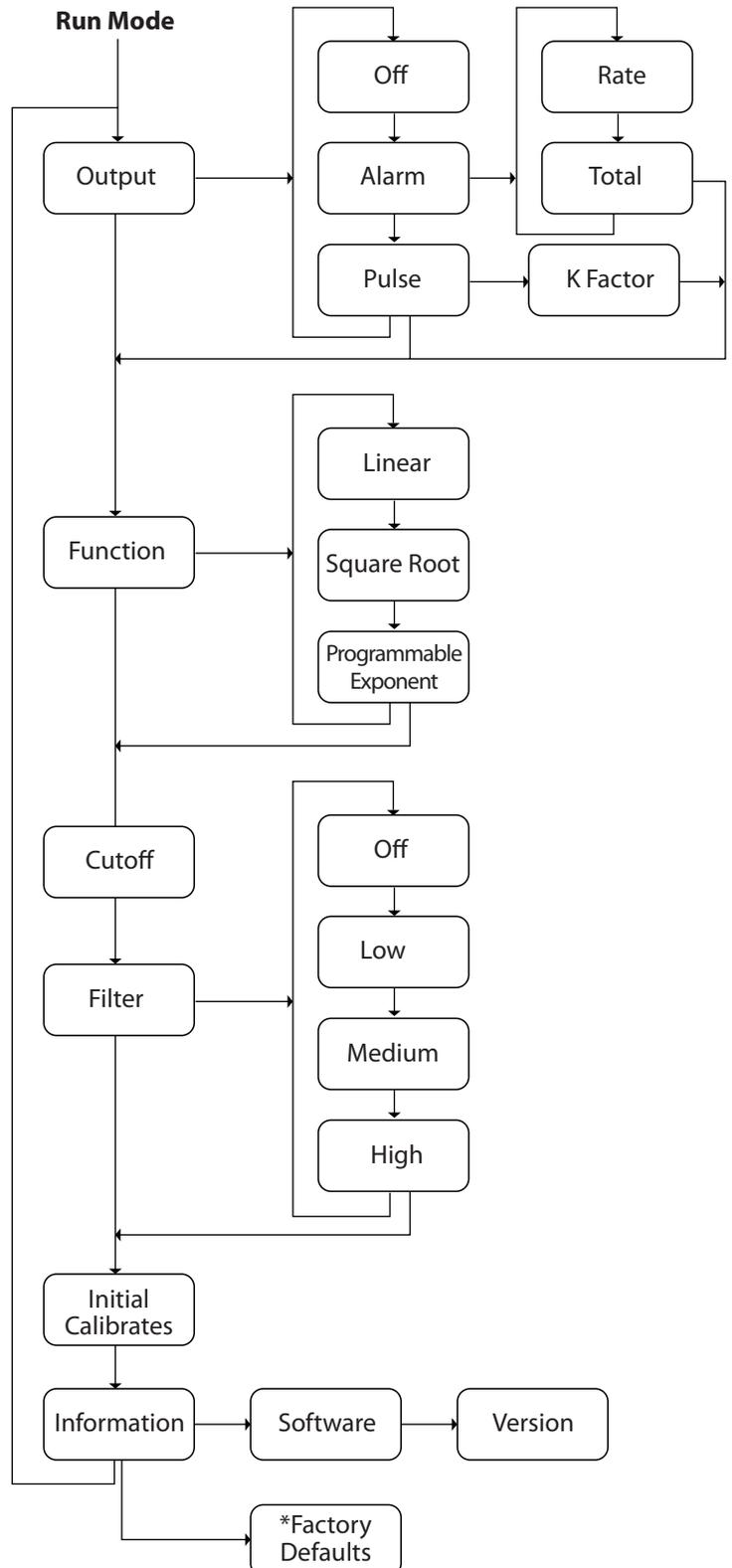
## 8. Menu Tree

### Main Menu



### Advanced Menu

Press and hold Menu for 5 seconds



\*Access by holding Right/ Reset for 3 seconds

## 9. Troubleshooting

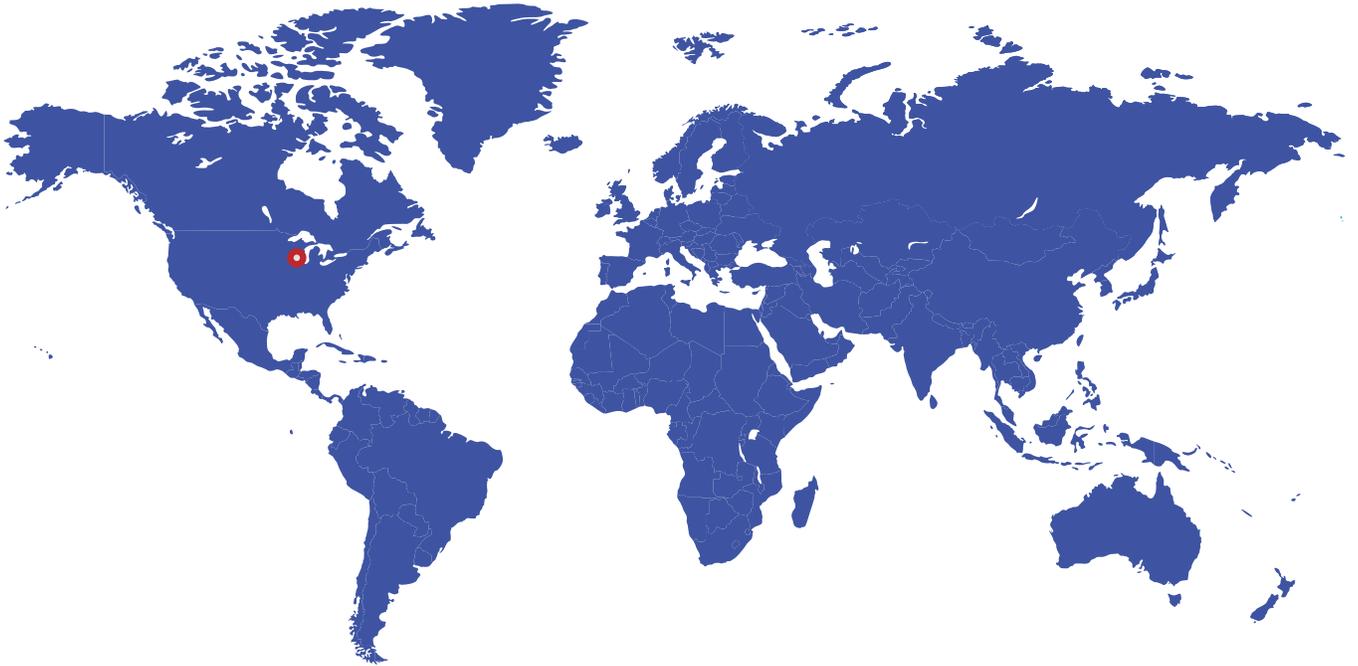
The rugged design and the user-friendly interface of the meter should make it unusual for the installer or operator to refer to this section of the manual. If the meter is not working as expected, refer to the recommendations below.

### Troubleshooting Tips

Symptom	Check/Action
No display or faint display	Check input signal connections. Perform hard reset by shorting S+ and S- terminals.
Rate display unsteady	Increase filter setting in Advanced menu.
Meter displays error message during calibration (SpAn ERROR)	Check signal connections. Verify minimum input span requirements
Meter flashes 99999 or -9999	Check input signal is within scaled range of 99999 and -9999.
Display stuck displaying MAXIMUM or MINIMUM	Press <b>Menu</b> to exit Max/Min display readings.
Display response is too slow	Check filter setting to see if it can be lowered to LO or OFF.
If the display locks up or the meter does not respond at all	Perform hard reset by shorting S+ and S- terminals.
Backlight does not appear	Backlight is intended for viewing assistance in dim lighting conditions. It may not be noticeable under good lighting conditions. Check connections are as shown in Figure 3 or Figure 4
Other symptoms not described above	Call Technical Support for assistance.
Through-window buttons do not respond	Service menu was selected, or mechanical button was pushed. The through-window buttons will be re-enabled automatically <b>60 seconds</b> after the last button push. If slide switch on connector board is in Lock position, switch to Unlock. Sunlight can interfere with the sensors. It is recommended to shield the window from sunlight while operating the buttons by standing so as to block direct sunlight.



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