

# AC M2 OLED Meter Instructions

PN 1836/ PN 1837 / PN 1838

## Installation Checklist

- Check for components included
- Read Warning and Cautions
- Read Meter Functions and Connections
- Read Initial System Setup, Detailed Wiring, and Mounting Considerations
- Prepare materials
- Follow Initial System Setup instructions to install meter
- Configure Displays
- Configure Alarms
- Configure Relays

Display Size                      55mm x 28mm  
 Power Supply                    7V–70V DC  
 Power Consumption            0.3W–1.0W\*

\* Variable with voltage, display intensity, and sleep mode

### Regulatory

Monitor face is IP66 – protected against powerful water jets when installed according to instructions

## 1836 Specifications

### Current

Range                                0A–150A (300A optional)\*\*  
 Resolution (100 to 150)        1A  
 Resolution (0.0 to 99.9)        0.1A  
 Current Transformer Included    1 × PN 8256 (150A /50mA)  
 Alarm / Relay Activation        High Current

## 1837 Specifications

### Voltage

Range                                40V–300V AC (RMS)  
 Resolution                         1V AC  
 Alarm / Relay Activation        High and Low Voltage

## 1838 Specifications

### Voltage

Range                                40V–300V AC (RMS)  
 Resolution                         1V AC

### Current

Range                                0A–150A (300A optional)\*\*  
 Resolution (100 to 150)        1A  
 Resolution (0.0 to 99.9)        0.1A  
 Current Transformer Included    1 × PN 8256 (150A /50mA)  
 Alarm / Relay Activation        High/Low Voltage and Frequency,  
 High Current

### Frequency

Range                                40Hz–90Hz  
 Resolution                         1 Hz

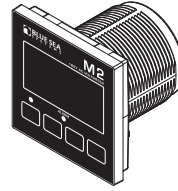
### Power

Range                                0W–45kW  
 Resolution (0W–9990W)        10W  
 Resolution (10kW–45kW)       0.1kW

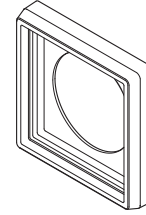
\* Variable with voltage, display intensity, and sleep mode

\*\* Will achieve 300A with an optional current transformer PN 1829

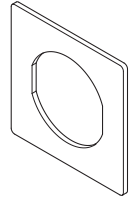
## Components Included



M2 Head Unit



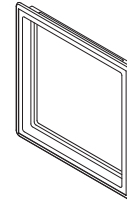
Surface Mount Bezel and Seal



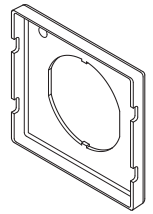
Surface Mount Gasket



Surface Mount Cover



Flat Mount Bezel



Flat Mount Clamp



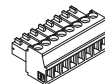
Mounting Ring



Mounting Nut



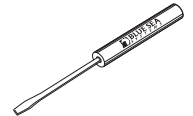
AC Current Transformer  
8256 (1X)  
1836 and 1838 Only



Connector



Connector  
1837 and 1838 Only

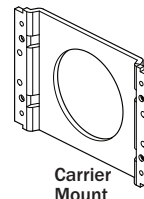


Screwdriver  
Retail Package Only

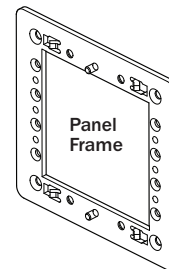
## 360 Panel Mounting Kit (PN 1525 sold separately)



Footer



Carrier Mount



Panel Frame

#6-32 x 1/4"  
Flat Head  
Machine Screws  
(4X)

#6-32 x 3/8"  
Flat Head  
Machine Screws  
(4X)


#8 x 1/2"  
Flat Head Sheet  
Metal Screws  
(4X)

## Resource Information

AC Current Measurement in 120/240V AC Systems. <http://blueseas.com/viewresource/86>

## Warning And Caution Symbols

**WARNING:** The  symbol refers to possible injury to the user or significant damage to the meter if the user does not follow the procedures.

**CAUTION:** The  symbol refers to restrictions and rules with regard to preventing damage to the meter.

### WARNING

- Verify that all AC sources are disconnected before connecting or disconnecting the current transformer. Failure to do so will generate lethal voltages on the current transformer.
- If you are not knowledgeable about electrical systems, have an electrical professional install this unit. The diagrams in these instructions pertain to the installation of M2 Digital Meters and not to the overall wiring of the vessel.
- If an inverter is installed on the vessel, its power leads must be disconnected at the battery before the meter is installed.
- If an AC generator is installed on the vessel, it must be stopped and rendered inoperable before the meter is installed.
- Verify that no other DC or AC sources are connected to the vessel's wiring before installing the meter.
- If the meter must be removed, connect the current transformer leads together before restoring power to the AC system. (P/Ns 1836 & 1838 Only)

### CAUTION

- The back of the unit is not waterproof. Do not install where the back of the meter is exposed to water.

## AC FUNCTIONS (1836, 1837, 1838)

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**1836** AC Ammeter measures the current draw of up to two sources or legs.

**1837** AC Voltmeter measures the voltages of up to two sources or legs.

**1838** AC Multimeter measures the voltage, current, frequency, and power draws of up to two sources or legs.

## Memory

All M2 meters store settings in Flash memory that will remember your settings while powered off.

## Connections

**IMPORTANT!** This section of this manual gives important details to the location of sensors in the AC and/or DC electrical systems of the boat. Improper location and configuration of sensors can result in erroneous readings and possible damage to components.

## Meter Power Supply Connections

All meters must have pins 1 (DC Neg.) and 2 (DC Pos.) connected. These pins are used to provide power to the meter. Connect pin 1 to ground and pin 2 to a 12V to 48V power source, through a 5A fuse. Note on some DC meters, pin 2 is also used to monitor additional voltages.

## AC Connections (1836, 1837, 1838)

### AC Current

In most cases, the AC Current Transformer should be located on the main AC line wire before any other devices.

For advanced 120V/240V installations see: <http://blueseas.com/viewresource/86> for more information on AC Current Transformer location.

The Current Transformer does not indicate polarity. The leads should be twisted to reduce the effects of interference from other electrical circuits.

### AC Voltage

The AC supply HOT ( Line, or "Ungrounded Conductor") connection should be protected with a fast acting fuse of 0.25A to 0.5A to protect against shorts.

# INITIAL SYSTEM SETUP

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**NOTE: If you have any questions regarding the installation of your M2 meter, or any Blue Sea System product, please contact our technical support team.**

Email: Tech.blueseas@OneASG.com

Phone: 1.800.307.6702. Select option 2 for Technical Support. Select Blue Sea Systems from the brand menu.

## Installation

1. Review installation instructions and have all material prepared before beginning installation.
2. Ensure AC power (Shore, Inverter, Generator, etc.) is turned OFF before installing meter.
3. You may need the following in addition to the meter and its included contents:
  - Up to 2 x 0.25A to 0.5A fast acting fuses (one for each AC Hot Line connected to the meter) and fuse holders
  - Up to 2 x 5A fuses and fuse holders for DC power and Relay input.
  - Common connection point such as a Power Post or Bus Bar.
  - Second current input on 1836 and 1838 will need a second current coil (PN 8256, not included)
  - Wires, terminals, and tools needed for electrical installation
4. Choose mounting style from page 14 and use the provided cutout templates to prepare the installation location
  - Cutout template for the 1525 mounting panel is provided with the 1525.
5. Make all connection to the meter's terminal block before connecting terminal block to meter.
  - See Wiring Diagram and Pinout notes on pages 4 and 5
  - DC Fuses should be installed within seven (7) inches of the source of power, if possible, do not put fuses in fuse holders at this time.
  - Pins 3 and 4 are optional. If you are not using the relay output feature, then pins 3 and 4 do not need to be wired.
  - See page 12 for details about using the meter relay out feature.
6. Plug wired terminal block into the back of the meter.
7. Keeping hands away from the terminal block, insert all fuses into the fuse holders, inserting the fuse to pin 2 last. This will power the meter.
8. You can now turn ON AC power, though it is not required for meter setup.
9. Go to next section "Basic Meter Setup" to properly setup your meter.

## Basic Meter Setup:

**Note: Meters running firmware revision SW014 or higher have the ability to output a configuration file for the meter, allowing you to save your settings to a computer. This can be used to restore previous settings or to quickly set up additional meters.**

**Please see the firmware update and configuration instruction on our website: [https://www.blueseas.com/resources/687/M2\\_Firmware\\_Upgrade](https://www.blueseas.com/resources/687/M2_Firmware_Upgrade)  
Detailed information regarding meter programming starts on page 6.**

### 1836 M2 AC Ammeter Setup:

1. If using the 8255 150A/50mA current transformer (one is included), no setup is required.
  - If you are using a current transformer with a different ratio, see page 11 for instructions on how to set the correct Full Scale Amps.
  - The Full Scale Amps setting will be found under AC1 and AC2 in the setup menu.
2. If you are only monitoring one AC Line, you may want to turn off the unused inputs to prevent them from being displayed.
3. To do this, go to the Setup Menu by pressing any button to bring up the button labels, then pressing the Right button labeled Menu.
4. Use the middle buttons to highlight Setup and press the Select Button.
5. Scroll down to unused inputs (AC1 or AC2) and press the Select Button.
6. Set Enabled to OFF. This will prevent the unused inputs from being displayed on the meter.

### 1837 M2 AC Voltmeter Setup:

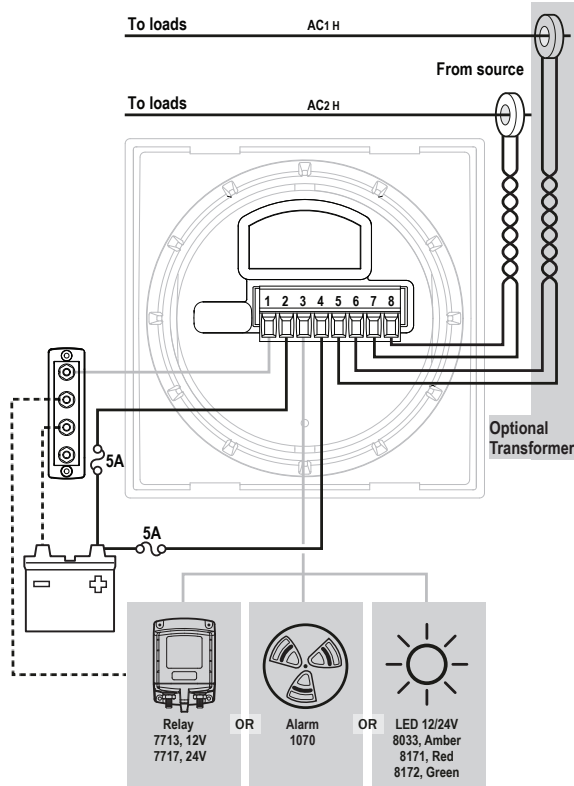
1. No special setup is required for the 1837. However, you may want to turn off unused inputs to prevent them from being displayed.
2. To do this, go to the Setup Menu by pressing any button to bring up the button labels, then pressing the Right button labeled Menu.
3. Use the middle buttons to highlight Setup and press the Select Button.
4. Scroll down to unused inputs (AC1, AC2, AC 1+2) and press the Select Button.
5. Set Enabled to OFF. This will prevent the unused inputs from being displayed on the meter.

### 1838 AC Multimeter Setup:

1. If using the 8255 150A/50mA current transformer (one is included), no setup is required.
  - a. If you are using a current transformer with a different ratio, see page 11 for instructions on how to set the correct Full Scale Amps.
  - b. The Full Scale Amps setting will be found under AC1 and AC2 in the setup menu.
2. If you are only monitoring one AC Line, you may want to turn off the unused inputs to prevent them from being displayed.
3. To do this, go to the Setup Menu by pressing any button to bring up the button labels, then pressing the Right button labeled Menu.
4. Use the middle buttons to highlight Setup and press the Select Button.
5. Scroll down to unused inputs (AC1, AC2, AC 1+2) and press the Select Button.
6. Set Enabled to OFF. This will prevent the unused inputs from being displayed on the meter.

# DETAILED WIRING

## 1836 AC Ammeter



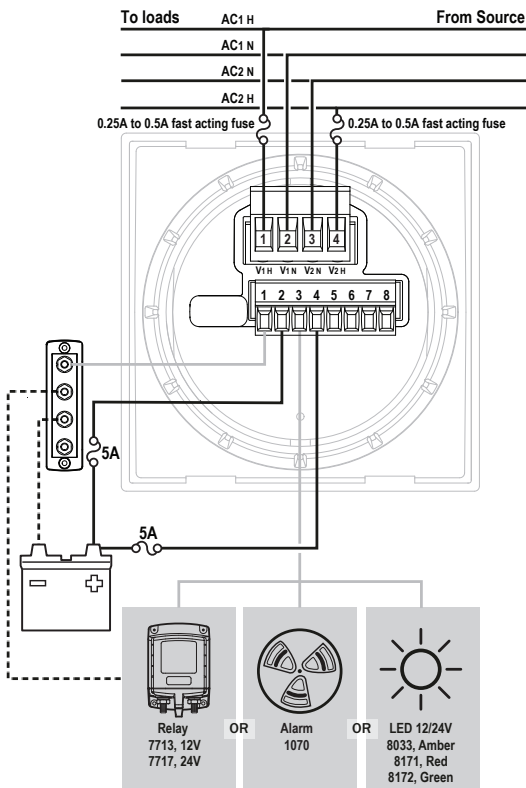
## Pinout Tables

### 1836 Connector Pin Assignment Table

USB	Micro USB Port
<b>8 Pin Connector*</b>	<b>Function</b>
1 <i>Required Connection</i>	DC Negative
2 <i>Required Connection</i>	DC Positive
3	Relay DC Output
4	Relay DC Supply
5	AC 1 Current Transformer -
6	AC 1 Current Transformer +
7	AC 2 Current Transformer -
8	AC 2 Current Transformer +

\*The 8 pin low voltage connector supports wire sizes from 16-26 AWG

## 1837 AC Voltmeter



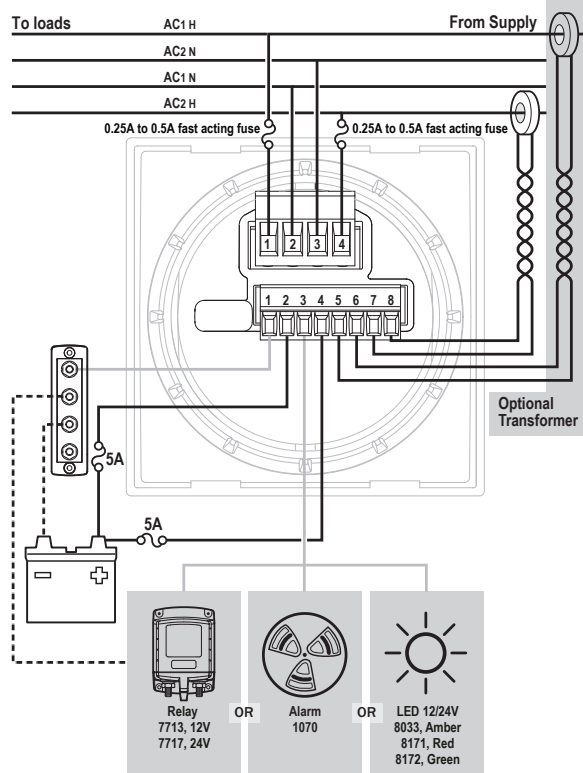
### 1837 Connector Pin Assignment Table

USB	Micro USB Port
<b>4 Pin Connector*</b>	<b>Function</b>
1	AC Voltage 1 - HOT
2	AC Voltage 1 - NEUTRAL
3	AC Voltage 2 - NEUTRAL
4	AC Voltage 2 - HOT
<b>8 Pin Connector**</b>	<b>Function</b>
1 <i>Required Connection</i>	DC Negative
2 <i>Required Connection</i>	DC Positive
3	Relay DC Output
4	Relay DC Supply
5	No Connection
6	No Connection
7	No Connection
8	No Connection

\*The 4 pin high voltage connector supports wire sizes from 12-24 AWG

\*\*The 8 pin low voltage connector supports wire sizes from 16-26 AWG

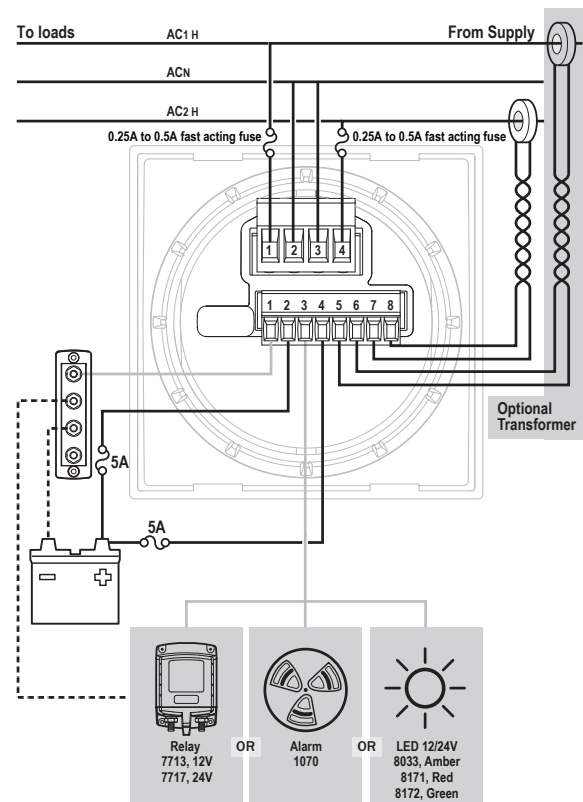
## 1838 AC Multimeter (North American 120V / European 230V)



## 1838 AC Multimeter (North American Split Phase 120V / 240V)

To monitor a split/phase system, place the AC 1 & 2 Voltage Hot ("LINE", or "Ungrounded Conductors") and Neutral ("Grounded Conductor") connections on the LOAD side of the transfer switch as indicated in the diagram.

**NOTE:** AC 1 Voltage Neutral and AC 2 Voltage Neutral are tied together.



## 1838 Connector Pin Assignment Table

USB	Micro USB Port
<b>4 Pin Connector*</b>	
1	AC Voltage 1 - HOT
2	AC Voltage 1 - NEUTRAL
3	AC Voltage 2 - NEUTRAL
4	AC Voltage 2 - HOT
<b>8 Pin Connector**</b>	
1 Required Connection	DC Negative
2 Required Connection	DC Positive
3	Relay DC Output
4	Relay DC Supply
5	AC 1 Current Transformer -
6	AC 1 Current Transformer +
7	AC 2 Current Transformer -
8	AC 2 Current Transformer +

\*The 4 pin high voltage connector supports wire sizes from 12-24 AWG

\*\*The 8 pin low voltage connector supports wire sizes from 16-26 AWG

## 1838 Connector Pin Assignment Table

USB	Micro USB Port
<b>4 Pin Connector*</b>	
1	AC Voltage 1 - HOT
2	AC Voltage 1 - NEUTRAL
3	AC Voltage 2 - NEUTRAL
4	AC Voltage 2 - HOT
<b>8 Pin Connector**</b>	
1 Required Connection	DC Negative
2 Required Connection	DC Positive
3	Relay DC Output
4	Relay DC Supply
5	AC 1 Current Transformer -
6	AC 1 Current Transformer +
7	AC 2 Current Transformer -
8	AC 2 Current Transformer +

\*The 4 pin high voltage connector supports wire sizes from 12-24 AWG

\*\*The 8 pin low voltage connector supports wire sizes from 16-26 AWG

AC Current Measurement in 120/240V AC Systems.

<http://blueseas.com/viewresource/86>

# USING THE METERS

## Example Screens From PN 1838 AC Multimeter

When an M2 Meter is initially powered up, it will display the Blue Sea Systems Logo, its serial number and its Software revision. After a couple of seconds, the unit will display a high-level System Summary screen.

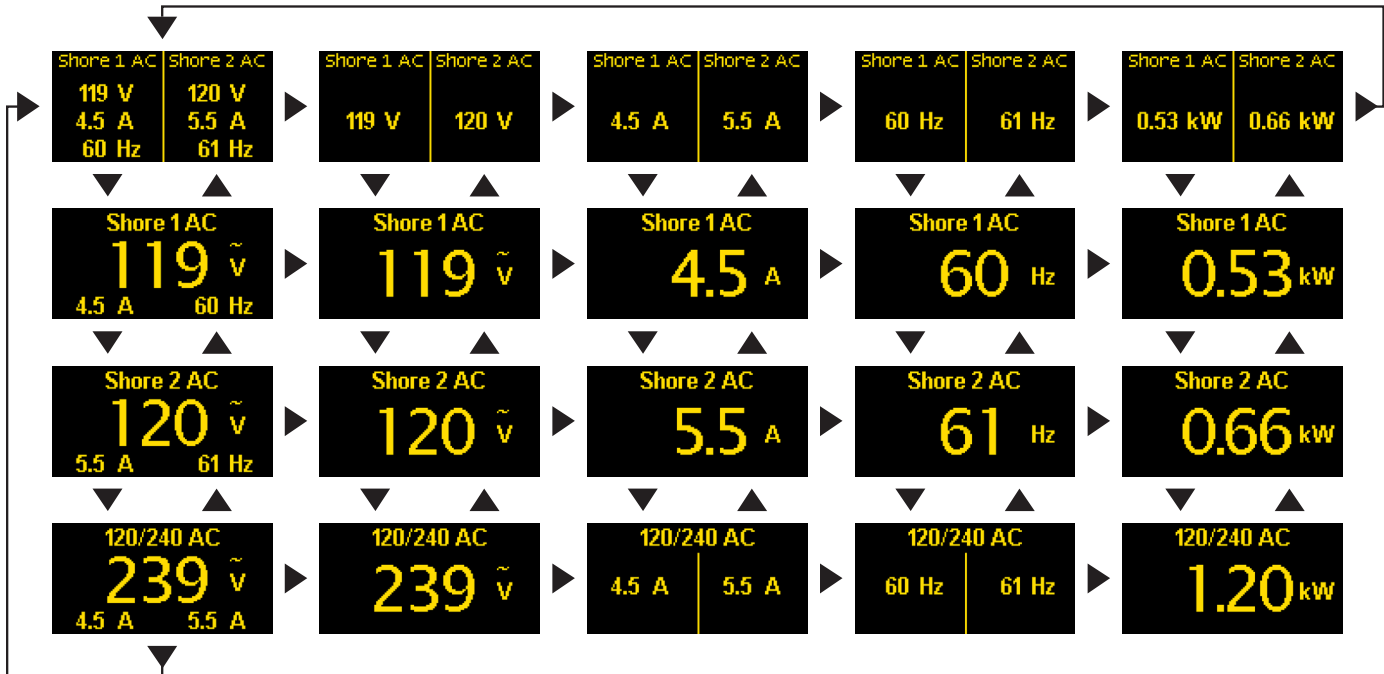
Shore 1 AC	Shore 2 AC
119 V	120 V
4.5 A	5.5 A
60 Hz	61 Hz

Pressing any button will display a temporary pop-up menu. Select an option by pressing the button beneath it. The pop-up menu will disappear after the first button is pressed.

Shore 1	Shore 2
119 V	120 V
4.5 A	5.5 A
Next ↑	↓ Menu

The menu system is a two dimensional matrix. Pressing the the **UP ↑** or **DOWN ↓** arrow buttons will transition the display between the System Summary screen which displays summary information for each of the “voltage” or “current” channels.

Press the **Next** button to display more detailed information about an input channel or to show a single parameter, such as “voltage” in the display (see example below).



Press the **Menu** button to bring up a shortcut menu to for additional summary screens as well as to access the Setup menus. Press the **UP ↑** and **DOWN ↓** arrow buttons to move the cursor over the options and press the **Select** button to see a selected display.

To return to the previous display, press the **Back** button.

Summary	Frequency
Volts	Power
Amps	Setup
Back ↑	↓ Select

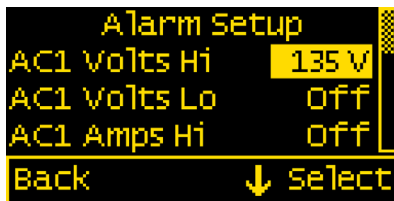
## Configuring the Meter

Meter settings can be configured from the Setup menu. This menu can be accessed by pressing the **Menu** button and then scrolling to and selecting **Setup**. Press the **UP** ↑ and **DOWN** ↓ arrow buttons to move the cursor. The different setup options are described below.



## Alarm Setup & Control

The meter's alarm can be set to trigger under certain conditions of voltage, current, or frequency. Alarms can be set from the Alarm Setup menu. To get there, first navigate to the Setup menu. Then scroll to Alarm Setup and press the button under Select.



## Setting Alarms

The M2 Meter family provides monitoring capability of input channels. The meter can monitor Voltage, Current, and Frequency. Alarms are triggered if a channel is above or below a certain user selected threshold value. (Note: not every meter supports every alarm)

The following example indicates how to setup an over voltage Alarm.

1. Go to the Alarm Setup menu.
2. Scroll to the desired input channel (i.e, AC1 Volts Hi).
3. Press the **Select** button and the cursor should start blinking.
4. Set the voltage threshold using the ← and → buttons. (Holding down the buttons allows faster selection)
5. Press the Enter button to save the change or the Cancel button to cancel any change.

**NOTE:** A low voltage threshold cannot be set above a high voltage threshold. Likewise, a high voltage threshold cannot be set below the low voltage threshold. The meter will automatically increase or decrease the voltage thresholds to enforce this.

In the above example, an alarm will set anytime AC1 voltage is greater than or equal to 135V.

## Voltage Alarm

Voltage alarms can be set for high (Hi) or low (Lo) voltage conditions.

## Current Alarm

The current alarm can only be set for high (Hi) current conditions.

## Frequency Alarm

The frequency alarm can be set for high (Hi) or low (Lo) frequency conditions. The alarm is only valid if the input AC voltage is greater than 40 Volts.

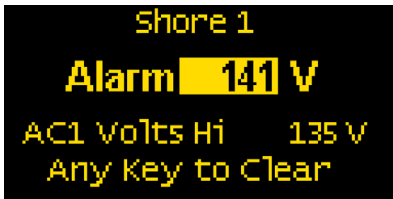
## AC Alarm Dly (Delay)

An alarm delay can be specified so that alarms don't immediately trigger. The hold off timer operates as a count-up/count-down timer. When the measurement exceeds the alarm value then the timer will start counting up until it reaches the delay time. When it reaches the delay timer, an alarm will sound. If the alarm condition goes away before the delay timer has been met, then the timer will count down until the timer is zero again. For example, if the Alarm Delay is set for 5 minutes and an alarm condition is active for 4 minutes and then inactive for 1 minutes then if the alarm condition is active again, the alarm will sound in 2 minutes (5 minutes - 4 minutes + 1 minute). Note that there is only one delay per channel.

## Clearing Alarms

When an alarm occurs, the buzzer will sound, the red ALARM LED will light, and the screen will display which alarm was triggered, the Alarm set point and the current value. Pressing any button silences the buzzer and another button press returns to the previous display.

Until the cause of the alarm is resolved, the ALARM LED will remain on and the channel that triggered the alarm (Voltage, Current, or Frequency) will blink.



## Viewing Alarms Status

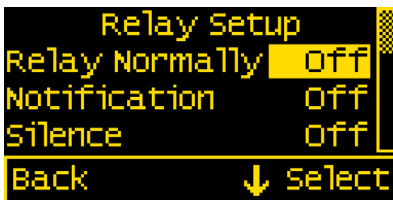
For any active alarm, the parameter will flash if it is displayed. To view a complete list of active alarms, press **Menu>Setup>Alarm Setup**. Any active alarm will flash. You may have to scroll through the menu to see all of the alarms.

## RELAY SETUP & CONTROL

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M2 Meters provide an option to control an external relay. The M2 can trigger the relay based on Voltage, Current, or Frequency.

These relay options can be set from the Relay Setup menu. To get there, first navigate to the Setup menu. Then scroll to Relay Setup and press the Select button.



### Relay Normally On/Off

This setting sets the normal operating state of the connected relay. The options are ON or OFF where ON means the relay is normally on (contacts closed) in normal operation and OFF means it is normally off (contact open). Scroll to Relay Normally, press Select (selection will flash), then press the LEFT or RIGHT arrow buttons to change the setting. Press **Enter** to save your selection. Press **Cancel** to cancel a change.

### Notification

The Notification setting controls whether or not a notification is displayed when a relay is activated. Notifications will show which relay threshold was surpassed and for which channel. Scroll to Notification and press **Select** to change the setting. Press the LEFT ← or RIGHT → arrow buttons to choose either ON or OFF. ON will display notifications and OFF will not. Use this option if you don't want to be notified that the relay is activating. Press **Enter** to save the setting or **Cancel** to cancel a change.



## Silence Relay

Turn this option on if you want the relay to de-activate after the user presses a key on the display. The key press will only de-activate the relay and will not engage any functions on the meter. For example, this option could be used to silence an external buzzer. Scroll to Silence and press Select to change the setting. Press the **LEFT** ← or **RIGHT** → arrow buttons to choose either ON or OFF. Press **Enter** to save the setting or **Cancel** to cancel any change.

## AC Relay Dly (Delay)

A relay delay can be specified so that relays don't immediately trigger. The relay delay functions the same as the alarm delay. See AC Alarm Dly (Delay) section on page 8 for details.

## Setting Input Thresholds

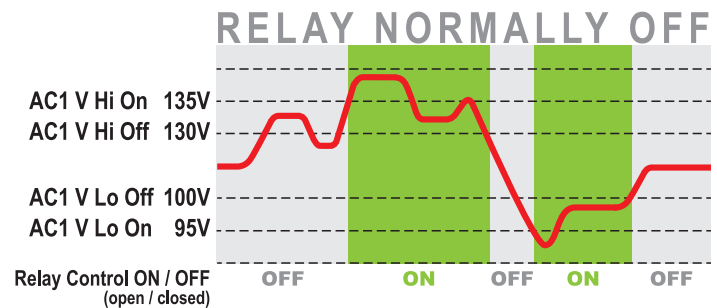
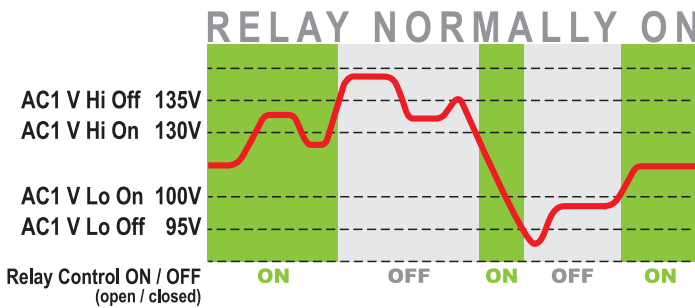
Settings for each channel's high and low voltage thresholds are provided. The connected relay's normal operating state will toggle (change state) if these thresholds are met. For both high and low thresholds, the activation and deactivation voltages are different to prevent the relay from rapidly toggling (cycling on and off). Each channel has Hi ON and Hi OFF settings and Lo ON and Lo OFF settings.



Relay Setup Screen with Relay Normally = Off (Open)



Relay Setup Screen with Relay Normal = On (Closed)



### LEGEND

AC 1 Voltage —

**Example.** If the relay is Normally On (closed) and is connected to AC1, then it will open at the User input threshold value for AC1 V Hi Off (135 V). To close again, the voltage must drop below the User's input value for AC1 V Hi On (130 V). Similarly, the relay will open at the User input for AC1 V Lo Off. The voltage must meet the User input for AC1 V Lo On to close the relay.

To change one of the settings, scroll to desired setting and press **Select**. Press the **LEFT** ← or **RIGHT** → arrow buttons to change the Voltage value and then press **Enter** to save the setting. Press **Cancel** to cancel the change.

**NOTE:** Lower threshold settings cannot be set above higher voltage threshold settings. Similarly, higher voltage thresholds cannot be set below lower voltage thresholds. The meter will automatically increase or decrease the voltage thresholds to enforce this.

## Clearing Relay Notification

If the Notification option is set to ON, then any time the relay changes from its default state (turns Off when set to Normally On or turns On when set to Normally Off) a message will be displayed on the main screen. Pressing a Key will clear this notification. If the Silence Relay setting is set to ON, then clearing a Notification will return the relay to its default state.

## Viewing Relay Status

For any active alarm, the parameter will flash if it is displayed. To view a complete list of active alarms, press **Menu>Setup>Relay Setup**. Any active relay will flash.

## DISPLAY SETUP

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The meter display settings can be accessed from the Display Setup menu. From the setup screen, scroll to Display Setup and press the **Select** button.

The different display settings are described below. To change a setting, press **Enter** and press the **LEFT ←** or **RIGHT →** arrow buttons to view the available setting options. Press **Enter** to save the setting. Press **Cancel** to cancel a change.

### Brightness

This setting is for adjusting the brightness of the display. The value is a percentage where 0% is dimmest and 100% is brightest.

### Sleep Timer

Following a certain period of inactivity, the meter will enter a sleep mode and will turn off the display. Any button may be pressed to exit the sleep mode and restore the display. The Sleep Timer sets the number of minutes from 0 to 600 before entering sleep mode. This feature will be disabled by changing the setting to OFF.

### Dim Timer

In addition to sleep mode, the meter can also dim its display after a period of inactivity. The duration of delay in minutes from 0 to 600 can be adjusted with this setting. This feature will be disabled by changing the setting to OFF. By continuously pressing the **LEFT ←** button the meter can be placed in AUTO dim mode. In this mode the meter will automatically dim after two minutes when the ambient light is low (night mode). When the light comes back on, the meter will revert to its normal brightness.

### Demo Mode

With Demo Mode ON, the meter displays factory programmed values for the voltages, current, and frequency, depending on meter PN. Changing the setting to OFF returns the meter to display actual measured values. This mode is typically used for commercial or promotional purposes. Note: Alarms and Relay settings will still respond to the actual settings and not the Demo settings. To enter Demo Mode, press **Menu>Setup>Display Setup>Demo Mode**. Press the **LEFT ←** or **RIGHT →** arrow buttons to toggle Demo Mode ON or OFF.

## Changing System Labels

The M2 allows the user to change the labels that are displayed above each channel. Each channel can have a maximum of 16 characters however in the summary screens only the first 11 or 12 characters of the channel label are displayed.

## Changing Label Names

To change the name of a channel, follow the instructions below:

1. Navigate to the setup menu for the desired channel (such as AC1 Setup). **Menu->Setup->AC1 Setup**
2. In the channel setup menu, move the cursor to channel name to be changed (indicated by the >> symbol)
3. Press **Select** to enter the name editing mode.
4. Use the **LEFT ←** and **RIGHT →** arrow buttons to move the cursor over the characters.
5. When the cursor is over a character, press **Enter** to edit that character. The cursor will start blinking.
6. Use the **UP ↑** and **DOWN ↓** arrow buttons to select a new character and press **Ok** to set that character.
7. Once all desired characters have been changed, press the **Cancel** button to exit the name editing mode.

# AC1, AC2, AC1+2 SETUP

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## Enable

To display the channel and its measurements, change this setting to ON. If enable is OFF, the channel along with its measured values will not be displayed. However, any associated alarm or relay settings are still activate. To de-activate the alarm or relay, disable them in the Alarm Setup and Relay Setup menus.

## Toggle A/V

Switch the Current and Voltage display on the channel's Summary Screen. If this option is set to OFF then Voltage will be displayed in the center field. If the option is set to ON Current will be displayed in the center field.



Example: Toggle A/V Set to OFF

## Full Scale Amps

The M2 is shipped with a 150AAC/50mAAC Current Transformer (the ratio is 3000:1). The full scale output is based on transformers with a maximum output value of 50mAAC. A different value transformer can be calculated with the following formula: Full Scale Amps = New Ratio / 20. For example to replace the standard transformer with a 100A/20mA transformer (Note: 20mA = 0.02A):  $(100A / 0.02) / 20 = 250A$ .

## VERSION INFO

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The Version Info option in the Setup menu displays the product name, serial number, and software version. This information will be displayed on a screen after scrolling to Version Info and pressing **Select**. Pressing any button will return to the Setup menu.

## FACTORY RESET

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The Factory Reset option in the Setup menu allows the user to restore the meter's factory default settings. First scroll to Factory Reset and press **Select**. Text will appear asking to confirm or cancel the reset request. Press **Yes** to confirm or **No** to cancel the reset.

## WRITE CONFIG

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Save a configuration file storing all of the meters current settings to a USB thumb drive. File will be saved as Config\_BSSXXXX.bcf, where XXXX is the model number of the meter, e.g. Config\_BSS1830.bcf

## READ CONFIG

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Read a configuration file from a USB thumb drive. Configuration file must be in the root directory, not in a folder, and must be named Config\_BSSXXXX.bcf, where XXXX is the model number of the meter, e.g. Config\_BSS1830.bcf.

During a READ operation, the meter will create a backup configuration file Config.BSSXXXX.bkp that will also be stored on the thumb drive. **IMPORTANT!** This will overwrite all current meter settings to the settings stored in the configuration file.

## SOFTWARE UPDATE

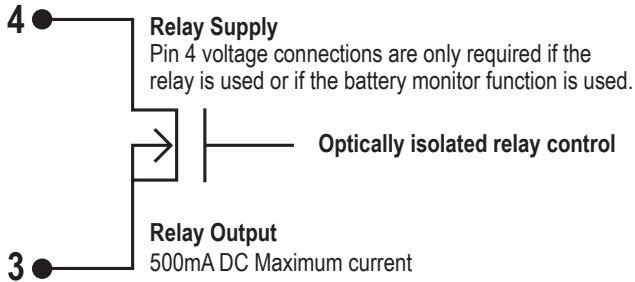
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Meters with firmware SW014 or later have the ability to update their firmware. Instructions for updating firmware and current firmware files can be found on our website: [www.blueseas.com](http://www.blueseas.com).

# OPTIONAL WIRING

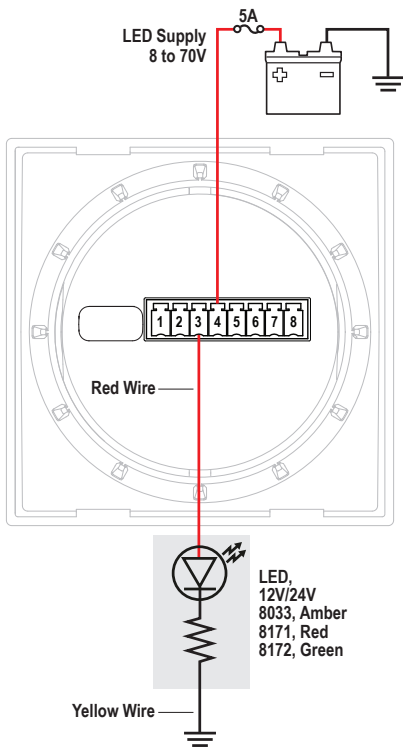
## M2 Relay Connections

M2 Meters contains an internal MOSFET relay that can drive external DC loads up to 0.5A. The input is protected with a thermally activated auto-resetting fuse that will protect against shorts. In addition, an inline fuse rated at 5A should be used to protect against shorts. In typical applications, a power source is connected to the Relay Supply pin and a load is connected to the Relay Output connection. In the 1830 and 1833 meters, the Relay Supply connection can also be used to monitor a voltage.



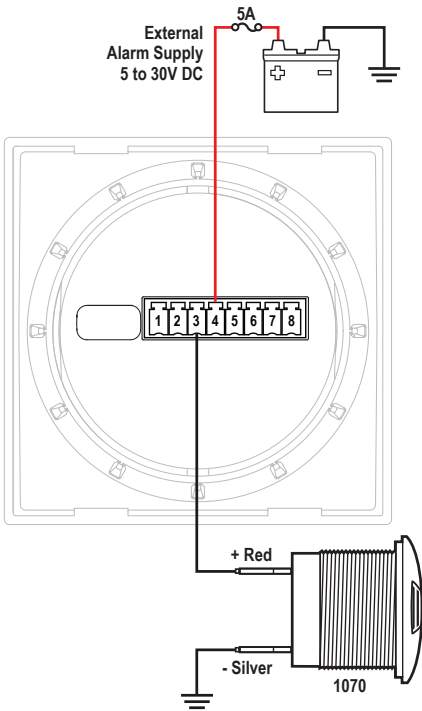
## External LED

An external LED such PN 8171 can be connected to the Relay Output terminal. If the system is going to operate at more than 24V nominal, an additional 4K Ohms of resistance should be placed in-line with the LED.



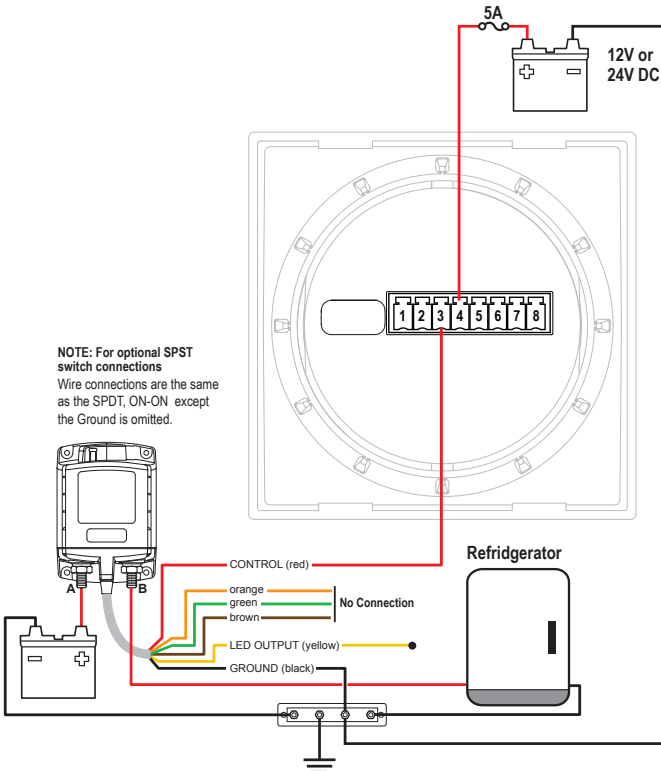
## External Alarm (1070 Floyd Bell Turbo)

The Relay Output terminal can support an external audible alarm. Such as the Floyd Bell Turbo Alarm (PN 1070).



## External Relay

If you need to switch more than 0.5A, you can use an external relay such as 7713, 12V or 7717, 24V Remote Battery Switch. Connect the Relay Output terminal to the red control wire. Activating the internal relay will also activate 7713.



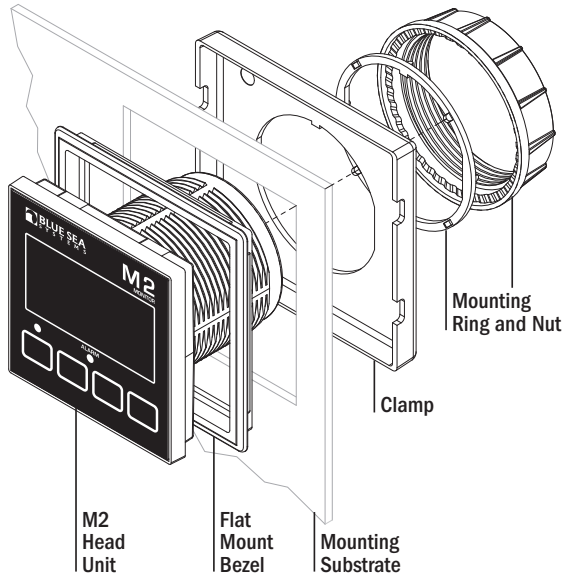
**NOTE:** 9012, 7700, 7701, 7702, & 7703 Remote Battery Switches are not compatible with the internal relay.

# MOUNTING TEMPLATES

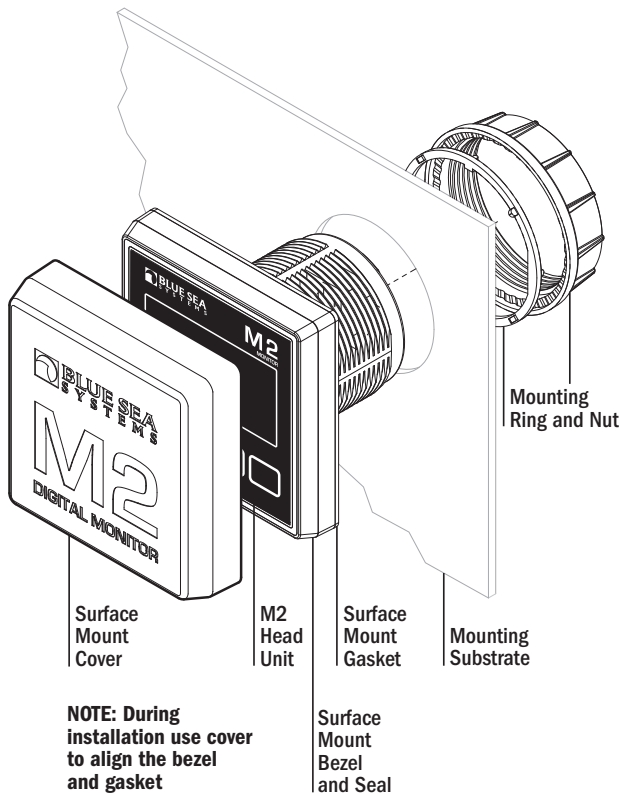
## Mounting Considerations

M2 Digital Meters have three mounting methods: Surface mount, Flat panel mount, and 360 panel mount. When surface mounted per instructions the unit face is waterproof to IP66. Flat panel and 360 mounting systems are not waterproof. The unit should not be flat panel or 360 mounted if used in an exposed location. For all mountings, the back of the unit is not waterproof and must be kept dry.

### Flat Mount

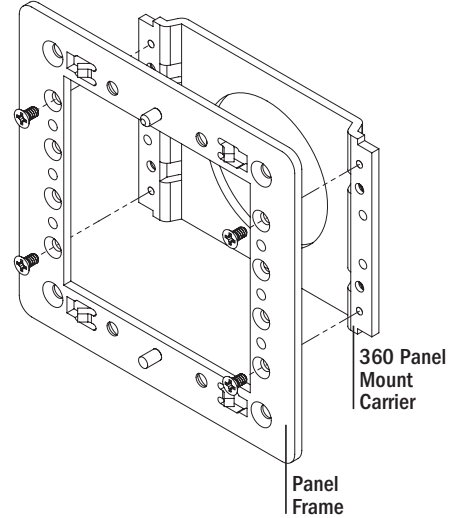


### Surface Mount

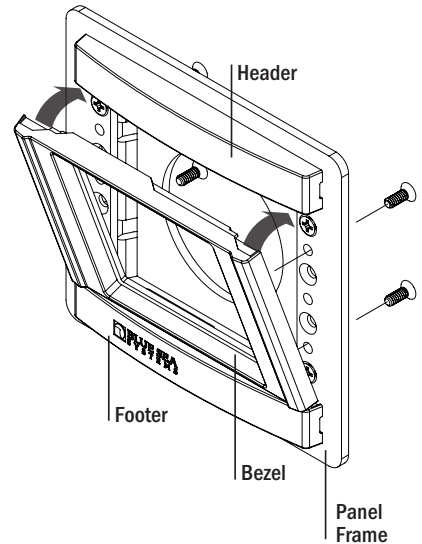


### 360 Panel Mount PN 1525

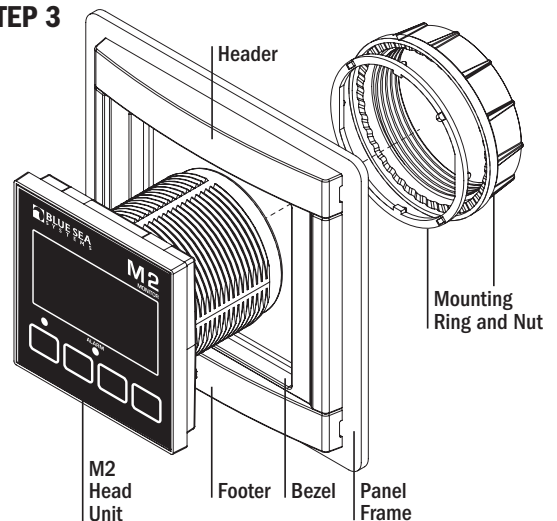
**STEP 1**  
Use 1/4" Mounting Screws



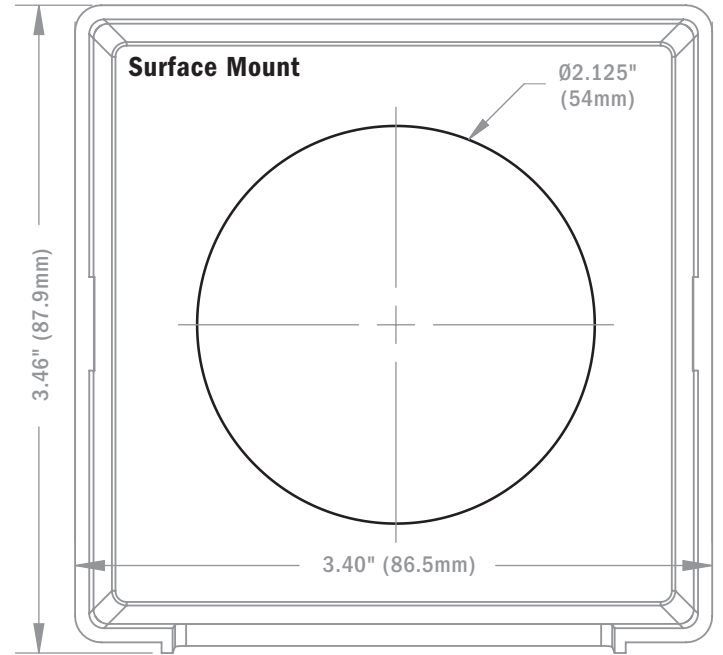
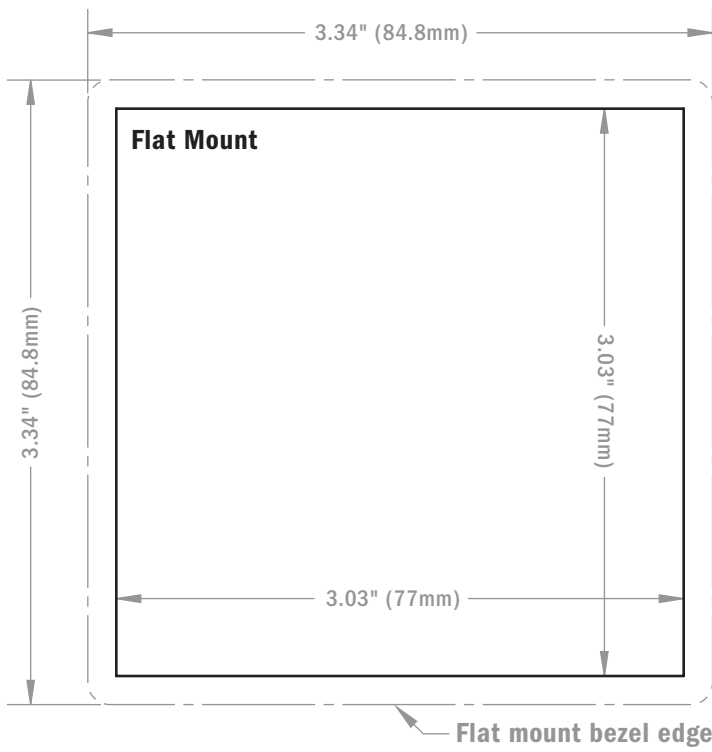
**STEP 2**  
Snap header and footer into mounting clips and post. Snap the mounting bezel into place with the flat edge up.



**STEP 3**



## Cutout Templates



**⚠ WARNING!** For cutouts to be accurate, print the document at full-scale. Do not print to fit paper size or use any other print scaling options. Measure printed cutouts to confirm size prior to cutting.