

Analog DC Ammeter

50-0-50 Amperes	PN 8252	2-5/8" Face
100-0-100 Amperes	PN 8253	2-5/8" Face
50-0-50 Amperes	PN 8254	2" Face

Meter Specifications

Input Voltage:	48 Volts DC maximum	
Amperage Draw:	1 Milliamp at full scale	
Display:	Analog scale	
Accuracy:	3% of scale range	
Face Width:	2-5/8"	66.7mm PN 8252
	2-5/8"	66.7mm PN 8253
	2"	50.8mm PN 8254
Mounting Hole:	1-7/8"	47.6mm PN 8252
	1-7/8"	47.6mm PN 8253
	1-1/2"	38.1mm PN 8254

Guarantee

Any Blue Sea Systems product with which a customer is not satisfied may be returned for a refund or replacement at any time.

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Installation

Warning

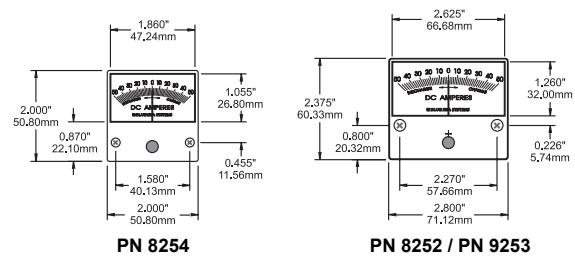
It is not possible within the scope of these instructions to fully acquaint the installer with all the knowledge of electrical systems that may be necessary to correctly install this product. If the installer is not knowledgeable in electrical systems we recommend that an electrical professional be retained to make the installation.

1. Disconnect all AC and DC power

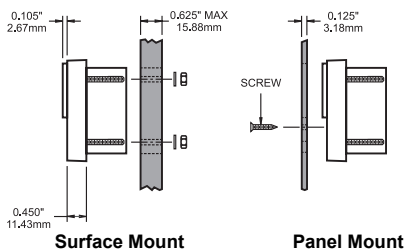
Before starting, disconnect the main positive cable from all batteries to eliminate the possibility of a short circuit while installing the meter. Also disconnect the AC shore power cord from the boat to eliminate the possibility of electrocution from AC wiring near the DC ammeter.

2. Select mounting location

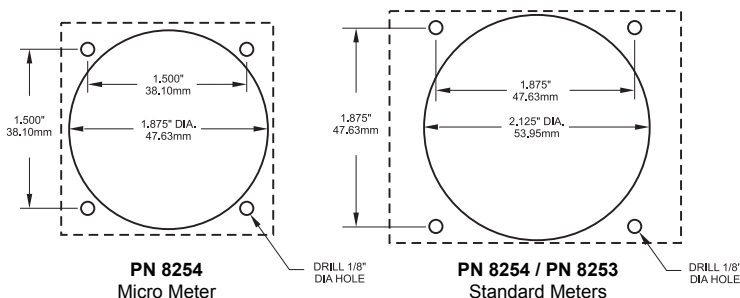
Select a mounting location which is protected from water on the meter front and back and is not in an area where flammable vapors from propane, gasoline or lead acid batteries accumulate. The meter is not ignition protected and may ignite such vapors. There are two mounting methods for the ammeters, surface mount or panel mount.



Installation (continued)



Surface Mount: Drill five clearance holes as shown below. The part number of the meter will determine the size and location of the clearance holes. Use the nuts and washers supplied in the accessory package to secure the four mounting studs to the mounting surface. This method will work on mounting surfaces up to 5/8" thick.



Panel Mount: For thicker mounting surfaces, the meter can be mounted into a 0.125" thick panel. Blue Sea Systems offers meter mounting panels for our standard size meters only. Use PN 8013 to mount a single meter or PN 8014 to mount two meters.

3. Shunt Location

Blue Sea Systems' Ammeters from 50 Amperes to 300 Amperes utilize an external shunt as their current sensing device. The nature of current measurement is that the full current to be measured must flow through the shunt. Choose the site in the circuit to be measured where the shunt is to be installed. It may be either in the positive or negative side of the circuit. The shunt may be mounted at any point in the circuit, but mounting it close to the meter will keep the sense wires short, minimizing voltage loss and interference, creating the most accurate meter reading.

4. Connections

Blue Sea Systems offers zero center ammeters for the purpose of measuring flow in those circuits in which current at different times flows in different directions. Examples of bidirectional current circuits are:

- 4.1. Negative wire connecting the ship's batteries to the negative distribution bus. During discharge current flows toward the battery and during charging current flows away from the battery. Measuring current flow in this wire will tell at any moment whether the battery is in a net charge or discharge situation.
- 4.2. Circuits which have auxiliary charging devices mixed with load devices. Frequently charging devices such as wind generators and solar panels are connected to circuits that also power load devices. This mixture of load and charge devices can create net current values that are sometimes positive and sometimes negative depending on whether the charge device is producing more current than the load devices are consuming.
- 4.3. Inverter/Charger - DC cables connecting the inverter to the battery. The positive wire of this circuit has current flowing away from the batteries during inverter use and toward the batteries when the inverter is receiving AC input and is acting as a battery charger. A zero center meter in this circuit will indicate whether the inverter is acting as a battery charger or is pulling current from the batteries.

Installation (continued)

4. Connections (continued)

In many situations it will require a thoughtful analysis by the boater to determine exactly where to place the ammeter sensing shunt in a circuit to obtain the current flow information that is sought. As illustrated in the initial example, it may sometimes be necessary to place the shunt in the negative wire of the circuit to be able to isolate the exact current value that is desired. The shunt can be placed in either the positive or negative line. Assuming one positive wire from voltage source to load and one negative wire returning to the voltage source, the amperage is always exactly the same in both the positive and the negative wire.

Wiring Diagram Zero Center Ammeter

- ① - Cable connecting the DC batteries to the negative distribution bus., See example 4.1 under Connections.
 - ② - Circuits which have charging devices mixed with load devices. See example 4.2 under Connections.
 - ③ - DC cable connecting the inverter/charger to the battery. See example 4.3 under Connections.
- <> - Bidirectional current flow.
> - One direction current flow.
⊘ - Do not install shunt in the starting circuit.

