Protect Your Boat With the Correct Size Wire, Fuse, and Fuse Holder

U.S. Coast Guard and other regulatory agencies require all circuits, except the starting circuit, to be protected with a circuit breaker or a fuse.

For 24V DC systems divide distance by 2 or consult the Circuit Wizard at www.circuitwizard.bluesea.com

**STEP 1 Choose the Correct Wire**

- Locate the CURRENT FLOW IN AMPS of your circuit along the top of the chart to the right.
- Select the CIRCUIT TYPE.
  - Non-critical circuits with 10% allowable voltage drop include: general lighting, windshield, ballasts, navigation lights.
  - Critical circuits with 5% allowable voltage drop include: panel main leads, life support, navigation lights.
- Find the CIRCUIT LENGTH along the left side of the chart.
  - The circuit length is the length of the negative wire added to the length of the positive wire.

**CIRCUIT LENGTH**

- Calculations are based on 100°F C Wire, for wire rated at 80°F or lower, or for wire that passes through an engine room, the first row of the chart, in gray, does not apply.

**AWG WIRE SIZE CHART**

Circles indicate actual diameter of wire (not including insulation)

**STEP 2 Choose the Correct Fuse and Fuse Amperage**

- Choose a fuse from the list on the top of the chart to the right by following along the line of the AWG WIRE SIZE determined from Step 1. Appropriate fuses will have a gray bar that intersects the line.
- The appropriate fuse amperage will be found in one of the four gray bars below the selected fuse type.
  - Single Wire, Outside Engine Room = First column dark gray bar
  - Single Wire, Inside Engine Room = Second column dark gray bar
  - Bundled Wire, Outside Engine Room = Third column dark gray bar
  - Bundled Wire, Inside Engine Room = Fourth column light gray bar

**STEP 3 Choose a Fuse Holder**

- Using the same colored headings as in the steps above, follow the columns down to find fuse holders or fuse blocks that meet your specific requirements.
- Consider environmental factors:
  - Ignition protection is required where flammable vapors may accumulate.
  - IP69-protected against powerful water jets
- Decide between an inline fuse holder or a fuse block:
  - Inline fuse holders are compact and hold a single low-amperage fuse.
  - Fuse blocks mounted to a solid surface and can hold a single fuse or multiple fuses.

Although this process uses information from ABYC C-25 to recommend wire size and circuit protection, it may not cover all of the unique characteristics that may exist on a boat. If you have specific questions about your installation please consult an ABYC certified installer.

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