MAGNUM ENERGY

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DMX POWER

Introduction

The Magnum Energy ANL Fuse/Fuse Block is designed to provide code compliant overcurrent protection for DC systems up to 32-volts. It protects the battery bank, inverter, and cables from damage caused by short circuits and overloads. The ANL fuse cartridge delivers instantaneous protection in the event of a short circuit, as well as a time delay to allow the momentary current surges that are common in inverter applications. Magnum small fuse blocks are available in 125 and 200 amp models. Our ANL fuse holder is molded from glass-filled nylon, has an insulating cover, and includes two black rubber terminal insulators to protect conductive areas from accidental shorts.

The ANL fuses are rated for 32-volt DC systems (48-volts maximum) and are an economical alternative to the Class-T fuses. These fuses have a clear window that provides open-fuse indication; and, have a durable Polyethersulfone body and riveted construction to offer superior service life in heavy-duty applications.

Fuse selection is based upon the size of the conductor between the battery and the load. Keep in mind that the conductor's current carrying capability is affected by: the length of the cable between the battery and the load, and the conductor's wire type and temperature rating. Refer to the Table 1 for assistance in selecting a fuse.

Installation

The battery, fuse block, and inverter should be located as close together as possible – without being in the same enclosure. Batteries can produce explosive gasses that may be ignited by the fuse. For code compliance, locate the fuse within 18" (45 cm) of the battery, and with at least 6" (15 cm) clearance from other equipment on each end. When changing the fuse, it may be energized by the battery; allow additional clearance if grounded metal surfaces (such as the inverter's chassis) are nearby.

Attach the fuse block base to a secure surface using the appropriate hardware (refer to Figure 1). Make the connections to the fuse block first (see Figure 2 for proper hardware stacking), then to the battery, and finally to the inverter. Place the rubber terminal insulators on the battery cables before securing the cable lugs to the fuse posts.

NOTE: The fuse should not be installed in the grounded conductor.

Torque the Hex nuts to ~150 inch-pounds (16.9 N-m). The lock washers provided must be installed to ensure a quality and long lasting connection.

Check the cables for correct polarity with a voltmeter before making the final connections to the inverter.

WARNING: Failure to comply with torque specifications may result in damage and premature failure of the product. Failures caused by not adhering to the proper torque specifications are not covered by warranty.

WARNING: Before replacing a fuse, ensure all AC/DC power sources are de-energized (i.e., breakers opened, fuses removed) to prevent accidental shock.

Table 1, Fuse Selection

Conductor Gauge	Current Capacity*	Recommended Fuse
#1 AWG/42.39 mm²	190	200**
#4 AWG/21.14 mm²	125	125

* - Current capacity based on 75° C cable rating in free air @ 30° C (86° F).

** - The next larger standard size overcurrent device may be used if the de-rated cable ampacity falls between the standard overcurrent devices found in the NEC.

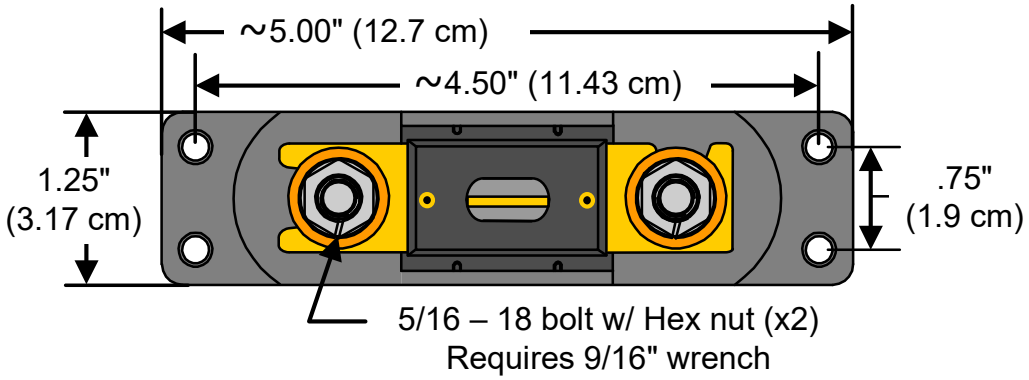

Figure 1, Small Fuse Block Dimensions

WARNING: During installation, incorrect stacking of the fuse block hardware can create a highly resistive connection that generates heat. **DO NOT place anything (i.e., washers) between the fuse and <u>either</u> battery cable lug** as this can cause the fuse to overheat and blow open, resulting in a partial melting of the fuse holder and cover. Before stacking, refer to Figure 2.

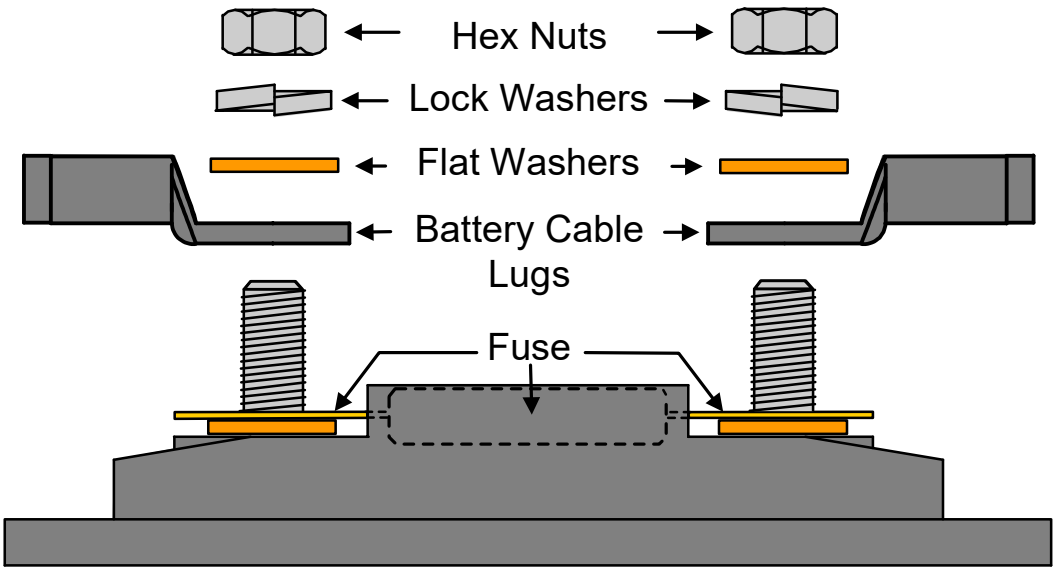

Figure 2, Small Fuse Block Hardware Stacking