

Cascade Custom Auto-Start Controller

Installation Instructions



BEFORE BEGINNING INSTALLATION OF THIS PRODUCT:

- Read and follow all installation instructions.
- A visual inspection of this product for damage during shipping is recommended before mounting.
- It is your responsibility to have a qualified person install this unit and make sure it conforms to NEC and local codes.
- Disconnect all electrical power to the machine.
- Make sure the machine cannot operate during installation.
- Follow all safety warnings of the machine manufacturer.



CL1 DIV 2
GRPA, B, C, D
HAZARDOUS
LOCATIONS

00-02-0791
2013-03-05

Installing the Cascade Auto-Start Controller

The Cascade controller offers automatic start/stop control with easy configuration for a broad number of engine driven applications.

Tools Needed

To install the Cascade, the following tools are needed:

- #2 Philips (cross head) head screwdriver
- 5/16" Nut driver to fit #6-32 machine nuts
- Wire for hook-up (rising cage clamp suitable for 14-24 gage wire)

Mounting the Cascade



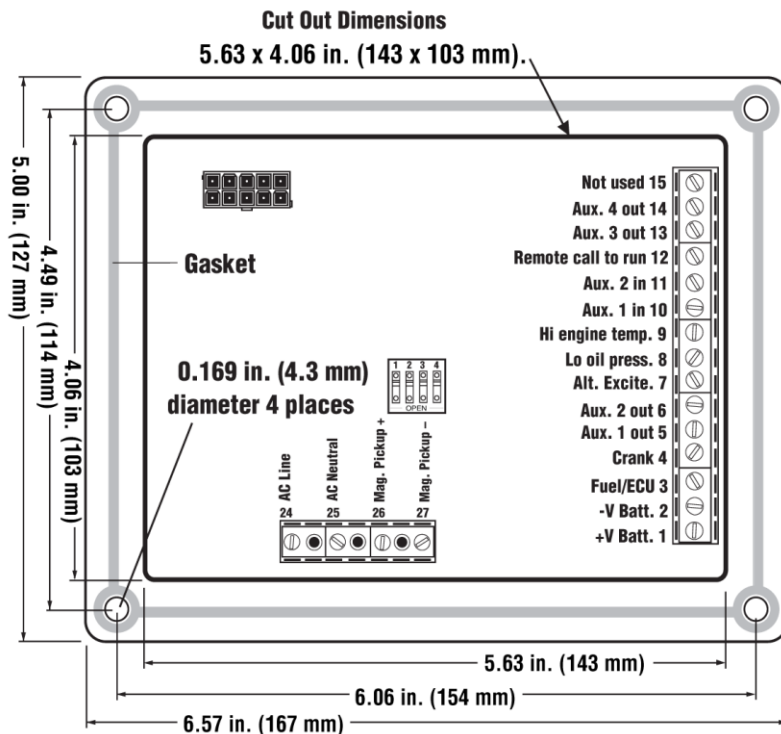
WARNING

THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, AND D OR NON-HAZARDOUS LOCATIONS ONLY.

WARNING - EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

WARNING - EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.

NOTE: This unit shall be mounted in a Type 1 electrical enclosure (minimum requirement) for other than indoor applications.



Cut a 5.63 x 4.06 in. (143 x 103mm) mounting hole, and drill four 0.169 in. (4.3mm) diameter holes for the mounting screws.

Recommended Wiring Practices



WARNING: For applications involving automatic start equipment, we strongly recommend the installation of an appropriate Emergency Stop safety device.

The CASCADE is designed for pilot-duty use. Outputs should be connected to relays to pilot the loads. Wire the CASCADE controller with 18-gage stranded wire.

1. To help prevent electrical noise and voltage drop to the controller during cranking and preheat, wire the controller DC power connections directly to the cranking battery. This will also help improve “Low battery” starting capability.
2. When using a battery charger, it should be connected directly to the battery to help prevent electrical noise which could cause an engine ECU or associated equipment to operate erratically.
3. Never route low voltage DC wiring in the same conduit as high voltage AC wiring. Noise from electrical loads such as motors and variable frequency drives can be coupled into the engine ECU, governor, or associated equipment and may cause erratic operation.
4. Always use twisted shielded pair wires for the magnetic pickup wiring. Ground one end of the shield only.
5. In spark ignited engine applications, always use resistive spark plugs and spark plug wires, as these greatly reduce the amount of radiated noise.
6. Always place a snubbing diode (sometimes also called a flyback, anti-kickback or reverse bias diode) directly across any inductive load. This helps eliminate a common source of electrical noise, as well as increases the operating lifetime of any solid-state output.
7. Always use twisted shielded pair communications wiring for RS-485 and SAE J1939 compliant wiring for J1939 communications. Make sure that terminating resistors (if required) have the correct rating and are installed properly.

Typical Wiring Diagrams

Cascade – Basic Engine AC Speed Sensing

