

Automatic Charge Isolator Owner's Manual

Please read this manual BEFORE operating your Isolator

ACR-160

OWNER'S MANUAL | Installation & Handling

Please read this manual before operating your ACR-160 Automatic Charge Isolator

Description

The ACR-160 microprocessor controlled battery isolator is used in starter and auxiliary battery systems like on boats, RV, service vans. It supervises the starter state of charge and, therefore, avoids starting problems. The ACR-160 can also be used as a voltage dependent switch. The working principle is the following:

- The ACR-160 lets the starter battery be recharged by the alternator until a voltage of 13.2V (26.4V) during at least 7 seconds is reached. Then the two batteries are put in parallel by the contact of the relay.
- The secondary users are normally connected to the auxiliary battery. The relay opens when the batteries voltage reaches 12.8V (25.6V) during at least 60 seconds. This way the starter battery remains charged. If a battery charger is connected to the auxiliary battery and this battery reaches a voltage of 13.2V (26.4V) during at least 7 seconds, the relay closes and charges at the same time the starter battery. This is an advantage if the vehicle remains stationary over a long period of time. If the battery charger is disconnected and the battery voltage reaches 12.8V (25.6V) during at least 60 seconds, then the ACR-160 separates again the two batteries.

Start Assistance

The ACR-160 has an additional connection enabling an assistance to the starting. If the connection STATUS is connected to the starter contact, the ACR-160 contact closes and this way the 2 batteries contribute to the engine start. CAUTION: When this function is used. Very high currents may go through the relay contact by the start of bigger engines. These high currents may damage the contact of the ACR-160 if they exceed its nominal current.

Voltage Dependent Switch

In some cases, it is needed to have a powerful DC source supply but only when the engine is running. The ACR-160 allows also this kind of installations.

It is sufficient to simply connect "+" of the starter battery to the connection A1, the system ground to the connection MINUS and the positive of the equipment to be supplied to the connection A2. When the engine runs and a voltage of 13.2V (26.4V) during at least 7 seconds is reached, the equipment is then powered through the contact of the ACR-160.

Remote Indication of Relay ON Condition Connect external LED as shown.

Disable Relay Permanently Use external switch as shown.

Protection Against Over Voltages

The ACR-160 has also a function enabling to protect the battery and the appliances that are connected to it against an over voltage generated, for instance, by a defective alternator. As soon as a voltage higher than 16V (32V) is detected, the contact of the ACR-160 opens immediately.

Installation

To implement the function «start assistance», a fuse protected connection has to be carried out between the connection STATUS and the contact of the starter contact. A short-circuit between the positive and negative of the batteries can damage your system. Make sure that the connections are properly done!

Technical Specifications

Supply	. Automatic detection 12/24V
Max. current	160A
Peak current	480A for 250 millisec
Battery connection.	M8
Other connections	Faston 6,3 mm
Cable cross section	50mmq
Consumption OFF	12V=1.8mA / 24V=2.0mA
Consumption ON	12V=340mA / 24V=170mA
Minimum charge tin	ne 60 seconds
Fast opening: < 11.8V (12V) / 23.6 (24V) after 4 sec	
Dimensions: 106.4 x 73 x 57.2 mm / 4.2 x 2.9 x 2.3 in	
Weight: 0.46 kg. / 1.0 lb.	

Connections

A1: Positive terminal of the starter battery

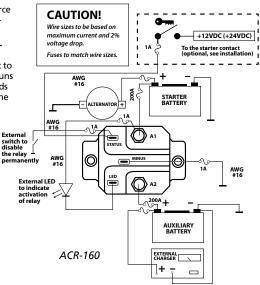
A2: Positive terminal of the auxiliary battery (If the function «voltage dependent switch» is needed, connect the equipment positive here).

- 1. Contact to "+", relay is closed (Start assistance)
- 2. No connection on STATUS, normal operation
- 3. Contact to "-", relay remains open

MINUS: Negative terminal

(Caution - this connection must always remain connected via a fuse of 1A)

LED: Connection for remote indication for status of ACR-160)



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