

# C-CHARGER® DIAGNOSTIC ALARM RELAYS FOR AA & AE SERIES™ BATTERY CHARGERS

An alarm system needs to alert the operator to abnormal battery conditions and to aid him or her in the rapid diagnosis of the condition's causes. By choosing to install diagnostic alarm relays in C-Charger Auto Equalize (AA) and Manual Float/Equalize (AE) Battery Chargers, you can save time and money by diagnosing problems before resorting to a service technician call.

Charles Industries provides a wide range of alarm components to allow operators more control in the design of their system. Alarm relays are available for AC power failure, low and high DC voltage, and current failure. The AC power failure alarm indicates no AC supply voltage or a tripped AC circuit breaker. The low DC voltage alarm indicates no AC supply voltage, input AC breaker has tripped, or the charger has failed. High DC voltage alarm indicates battery or load problems.

Low voltage alarms, set to signal below the charger output voltage but above the open circuit voltage of the battery, duplicate the operation of current failure alarms. Since current failure alarms are subject to false signaling due to the low current drain of fully charged batteries, low voltage alarms are preferred.

An operator needs a user-friendly system. Illuminated diagnostic indicators allow operators to quickly assess their C-Charger's condition. Green means AC is ON and the system is operating normally. Yellow means the system is being equalized. Red means the system battery is incorrect and needs immediate attention.

C-Chargers also offer operators the convenience of remote alarm monitoring. If the monitoring location is near, a single summary alarm contact may be all that is necessary. If the

monitoring location is distant or difficult to reach, it is desirable to communicate all of the necessary alarms so that the monitoring site can completely diagnose the problem before dispatching service people. Charles offers alarm relays that feature precision adjustments to tailor the alarm system to the battery and the environment.

**Diagnostic Alarm Relays offer operators of AA & AE Series C-Chargers greater control of their system and increased peace of mind.**



AA Series



AE Series

## Features

### Operator Convenience

- Green yellow, red illuminated indicators alert operators to potential problems and permit rapid diagnosis of abnormal conditions.
- Fifteen-turn potentiometers and hysteresis adjustments permit precision tailoring of the alarm system to the battery and the environment.

### Local and Remote Capabilities

- Summary alarm relay is supplied in Remote Alarm Package. Separate alarm relays are available to provide complete information to remote sites.

### Heavy-Duty SPDT Relays

- Rated 10 amps 250 VAC/30 VDC



**SOLID  
POWER**

# Alarm Relays

---

## Low Voltage (L)

Illumination conditions:

- Battery has been discharged
- No AC supply voltage
- AC breaker has been tripped
- Charger has failed

## High Voltage (H)

Illumination conditions:

- Battery problem
- Acceptable load exceeded

## AC Power Failure (P)

Illumination conditions:

- No AC supply voltage
- AC breaker has been tripped

## Current Failure (F)

Illumination conditions:

- No AC supply voltage
- AC breaker has been tripped
- Charger has failed
- False alarm—low current due to fully charged battery

# Remote Alarm Package

---

- Summary Alarm (SPDT)
- RED LED for high DC voltage
- RED LED for low DC voltage
- GREEN LED for AC-ON
- YELLOW LED for equalize

**Low and high alarms have precision adjustments**

# Alarm Indicators

---

Neon AC-ON light replaces standard equalize light. LED for above alarm relays. Maximum of four alarms per charger.

- RED High DC voltage
- RED Low DC voltage
- RED Current failure
- GREEN AC-ON
- YELLOW Equalize

# Specifications

---

## Normal Settings

	<u>VDC</u>	<u>IN</u>	<u>OUT</u>
<i>Alarm Relays</i>			
Low Voltage	LA	2.08	2.00
High Voltage	LA	2.50	2.40
<i>Remote Alarm Package</i>			
Low Voltage	LA	2.08	2.00
High Voltage	LA	2.40	2.50

## Terminals

Each alarm relay has a terminal board at the top of the PC board with three screw lugs for use with 18 GA wire.

Terminal 1 is normally closed, terminal 2 is common, and terminal 3 is normally open.

**Contact your Charles sales representative for specific product information and instructions on how to specify alarm relays when ordering C-Charger Auto Equalize (AA Series) and Manual Float/Equalize (AE Series) Battery Chargers.**



D-IND005-B01 Rev. 3



Charles Industries, Ltd.  
Industrial Group  
5600 Apollo Drive  
Rolling Meadows, IL 60008 USA

**Voice:** (847) 806-6300  
**Fax:** (847) 806-6352  
**Web:** www.charlesindustries.com  
**E-mail:** marine.industrial@charlesindustries.com

