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Options 217/434

Reverse Polarity Protection Circuit

Operation Manual

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CPN 118665

Instruction Drawing Number: P25-LOPT217_434-1
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Options 217/434 – Operation

General Description

Both of 217 and 434 options provide a Reverse Polarity Protection Circuit to prevent the user from damaging the charger by connecting a battery to the charger in reverse. Refer to the cover page of the manual received with charger for unit specific options list or contact La Marche. See below for functional descriptions dependent on the options included:

Option 217 (Reverse Polarity Protection Circuit with LED):

The circuit consists of a reverse polarity diode and an LED. The diode and the LED are wired as to be reversed biased across the output of the charger. Under normal operating conditions, the Reverse Polarity LED will be off. If the DC Breaker is closed when a reverse battery condition is present, the diode will be forward biased and conducting. This will cause a short circuit across the output of the charger, causing high current, which will cause the fuse and/or DC Breaker to open. The Reverse Polarity LED will illuminate.

The following sequence should be observed when the charger and battery are put in service:

1) Isolate the charger from all power sources by opening the AC/DC breakers associated with the charger.
2) Verify polarity by measuring the negative and positive battery wires against the charger output terminals.
3) Connect the positive and negative battery terminals to the "POS" and "NEG" terminals on the battery charger respectively.
4) Check to see if Reverse Polarity LED is illuminated.
    a. If YES: - Check the Reverse Polarity fuse. Recheck the connections at the "POS" and "NEG" output terminals of the charger by checking both visually and by using a voltmeter to determine polarity. Disconnect the battery and reconnect it, observing the proper polarity.
    b. If NO: - Turn on AC Breaker and, after one minute, turn on DC Breaker for the battery charger.

Option 434 (Reverse Polarity Protection Circuit):

The circuit consists of a reverse polarity diode (**NO Reverse Polarity LED**). The diode is wired as to be reversed biased across the output of the charger. If the DC Breaker is closed when a reverse battery condition is present, the diode will be forward biased and conducting. This will cause a short circuit across the output of the charger, causing high current, which will cause the fuse and/or DC Breaker to open.

The following sequence should be observed when the charger and battery are put in service:

1) Isolate the charger from all power sources by opening the AC/DC breakers associated with the charger.
2) Verify polarity by measuring the negative and positive battery wires against the charger output terminals.
3) Connect the positive and negative battery terminals to the "POS" and "NEG" terminals on the battery charger respectively.
4) Verify polarity by measuring the charger side of DC fuse/breaker against the battery side DC fuse/breaker.
    a. If Incorrect: - Check the DC fuse/breaker. Recheck the connections at the "POS" and "NEG" output terminals of the charger by checking both visually and by using a voltmeter to determine polarity. Disconnect the battery and reconnect it, observing the proper polarity.
    b. If Correct: - Turn on AC Breaker and, after one minute, turn on DC Breaker for the battery charger

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