



AC 100.100-24 and AC 100.100-36 Sense String Replacement Procedure





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1. Introduction

1.1 Scope

These instructions are intended to support authorized personnel in replacing any of the sense strings (3596-6006) inside the ZeroRPM® AC 100.100-24 (7700-00005) and AC 100.100-36 (7700-00008).

NOTICE: These instructions are designed around the AC 100.100-24. If they are used on the AC 100.100-36, part numbers, component locations, cable/wire routing, etc. will vary.

The following information is subject to change without notice.

CAUTION: Correct location of all components is essential for proper operation of the system. Failure to comply with these instructions may result in poor operation; no operation; and/or damage to the unit, the vehicle, or the vehicle's components. Non-compliance with the instructions and information contained herein will void the warranty.

1.2 Meanings of **WARNING**, **CAUTION**, and **NOTICE**

WARNING: This heading is used to highlight that non-compliance with the instructions may cause injury or death.

CAUTION: This heading is used to highlight that non-compliance with the instructions may cause damage to equipment.

NOTICE: This heading is used to draw attention to specific information.

1.3 Safety

All general safety regulations for the prevention of accidents and the relevant operating safety instructions must be followed. Safety must be the top priority at all times.

1.4 Disclaimer

Employers are required to establish a program and use proper procedures for affixing appropriate lock-out/tag-out protectors to energy-isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy to prevent injury to employees. Refer to your company's lock-out/tag-out program for more details.

The battery sense strings are sensitive to electrostatic discharge. Refer to your company's electrical standards for proper grounding practices.

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2. Tools Required

Tools	Notes
ratchet(s)	
sockets	13mm, 7/16"
SAE wrench	7/16"
3mm Allen bit	
Torx bits	T20, T25
torque driver	30.0 in-lbs
12V-20V battery-powered driver	
torque wrench	75.0 in-lbs, 145.0 in-lbs
volt meter	
torque striping tool	

3. PPE Required

Tools	Notes
safety glasses	
lock-out/tag-out protectors	Follow your company's standards for use.
ESD mat	with attached wrist strap
36" x 36" rubber insulating blanket	such as Altec P/N 970098618
any other company-mandated PPE	

4. Procedure

WARNING: Remove any jewelry before proceeding.

- Engage the hybrid disconnect



- Confirm that the shore power plug is not connected to any power source.
- Remove the primary Rebling connector, the auxiliary Rebling connector, and the 12-pin and 21-pin Deutsch connectors from the unit.
- Remove the lid.

Requires: 12V-20V battery-powered driver
T25 Torx bit



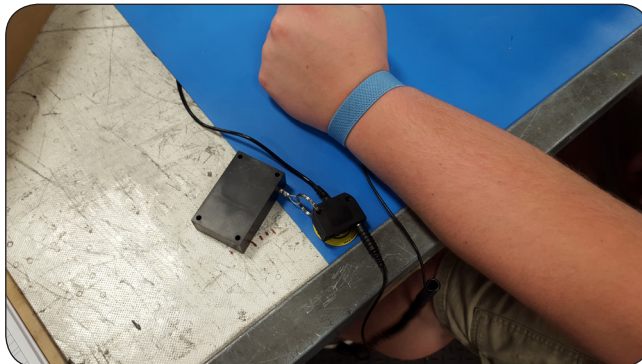
- Measure the voltage on the compressor board power wire (1902-40016) by placing the positive lead of the volt meter on the C2/C4 bus bar node and the negative lead on the ground stud. You should get a reading of less than 5V. If the reading is greater than 5V, continue to check every five minutes until the reading falls below the 5V threshold.
- Place a 36" x 36" rubber insulating blanket (such as Altec P/N 970098618) over the component plate.
- Remove the fuse holder covers. Disconnect the battery power cables in order from right to left. As they are removed, cover them with lock-out/tag-out protectors in accordance with your company's standards to avoid shorting.

CAUTION: Failure to perform these steps may result in accidental shorting.

Requires: volt meter
36" x 36" rubber insulating blanket
1/4" ratchet
13mm socket
lock-out/tag-out protectors

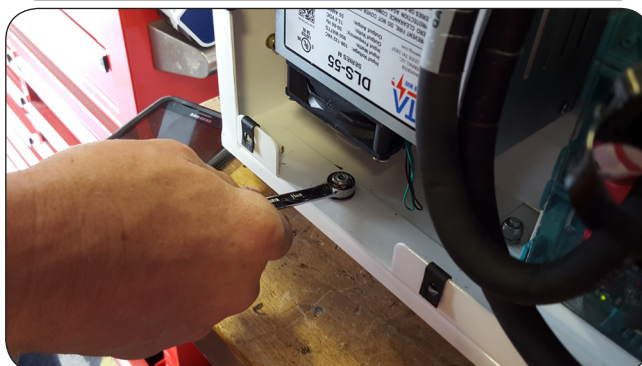


CAUTION: Put on an ESD wrist strap before proceeding and wear it throughout the procedure. Failure to wear the strap could cause the sense boards to be damaged by electrostatic discharge.



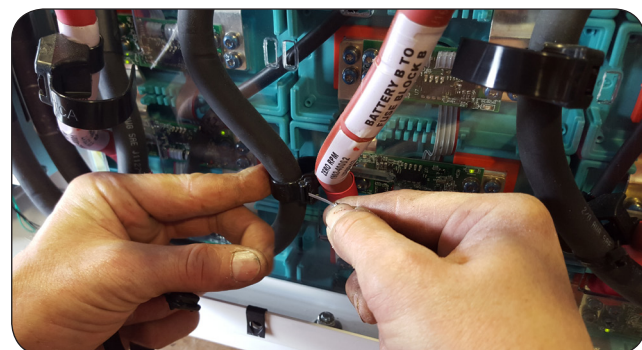
- Remove the U-channel bracket along bottom of unit.

Requires: ratchet
7/16" socket
7/16" wrench



- Take a photo of the front cable routing and zip tie locations that you can reference later in the procedure.
- Remove all zip ties from the battery cables and Lexan cover.

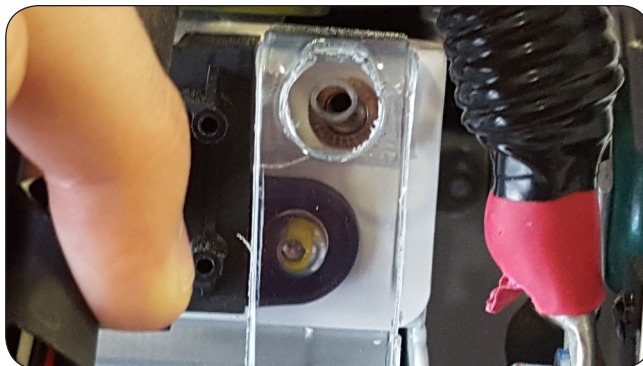
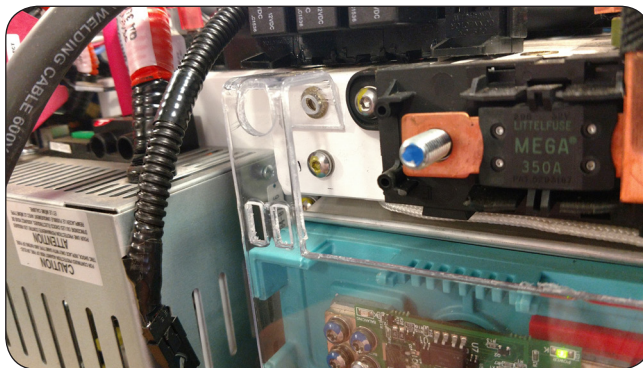
Requires: flush cutters



AC 100.100-24 and AC 100.100-36 Sense String Replacement

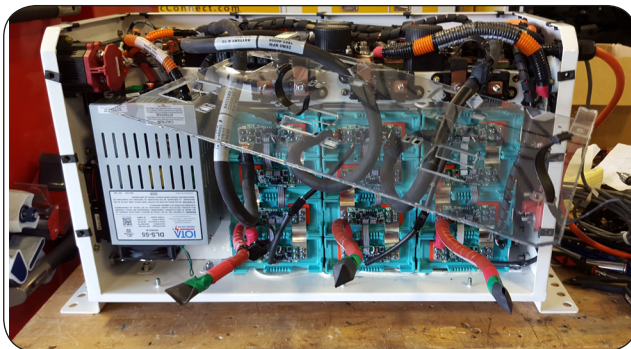
- Carefully remove the [2] M5 bolts located at the top of each corner of the Lexan cover.

Requires: torque driver
3mm Allen bit

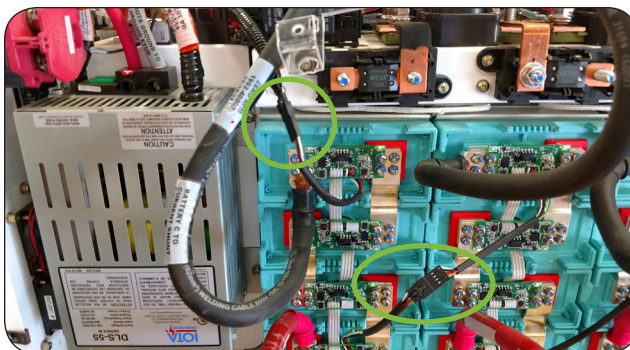


- Carefully slide the Lexan cover upward, out from in front of the batteries.

NOTICE: If possible, do not remove the ground cables.



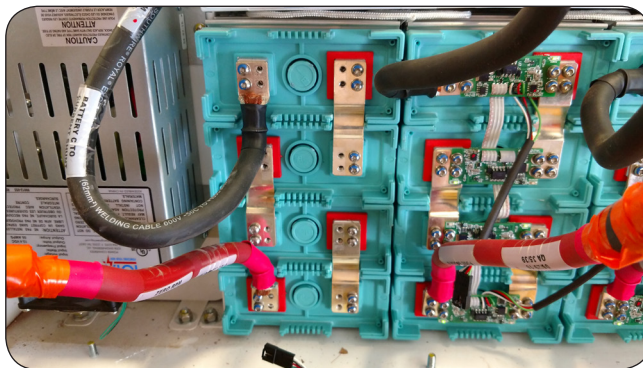
- Disconnect each end of the malfunctioning sense string(s).



AC 100.100-24 and AC 100.100-36 Sense String Replacement

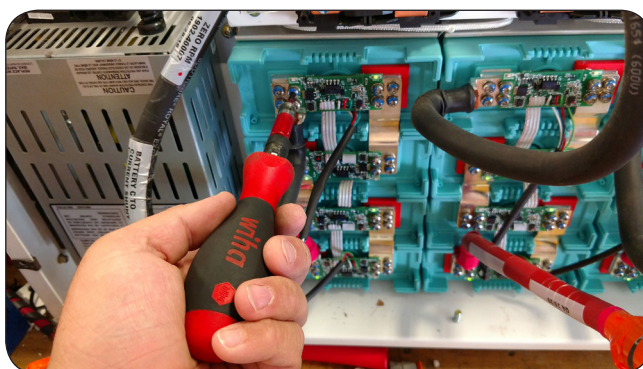
- Remove the malfunctioning sense string(s) (3596-6006).

Requires: T20 Torx bit
Torque driver

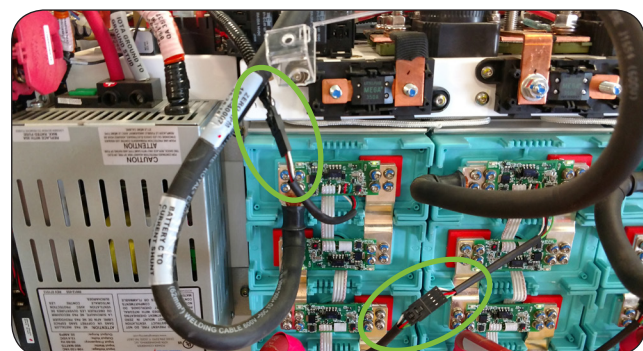


- Install the new sense string(s) (3596-6006), verifying that the connectors on each end will match and that they go on exactly the same way the malfunctioning sense string(s) came off.
- Torque each screw to 30.0 in-lbs. Mark them with a torque striping tool as you go.

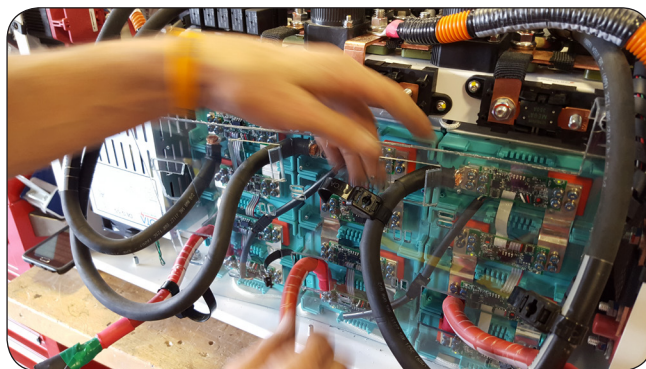
Requires: torque driver
T20 Torx bit
torque striping tool



- Plug in each end of the sense string(s) to the neighboring battery/batteries and/or harness.

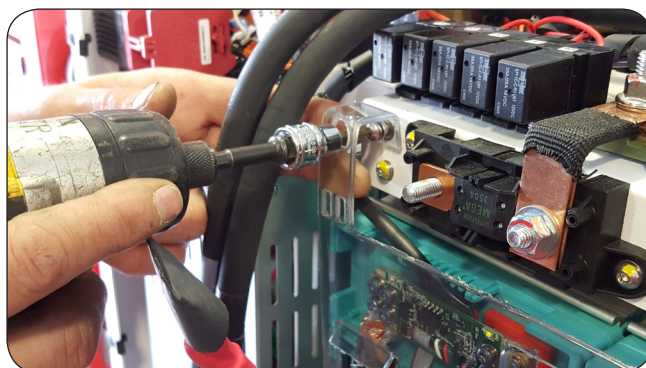


- Carefully work the Lexan cover down the ground cables in front of the batteries into its original position.



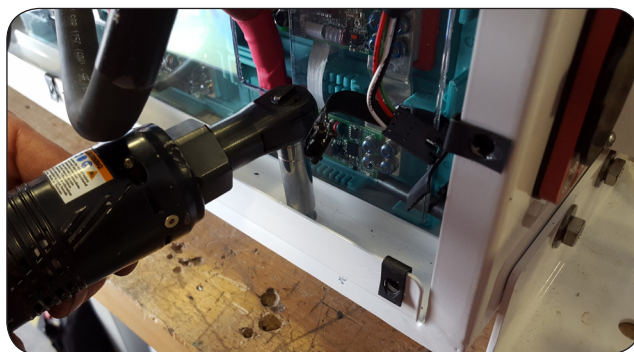
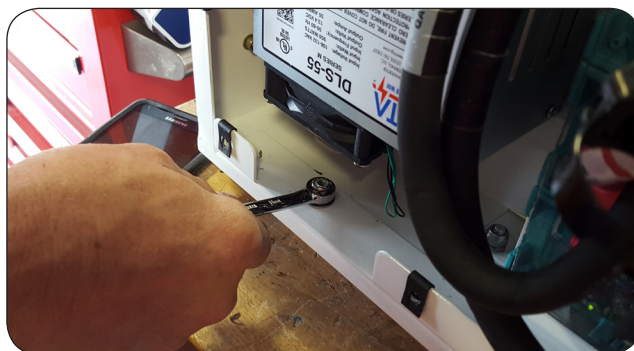
- Reinstall the Lexan cover.
- Torque the bolts to 30.0 in-lbs; mark them with a torque striping tool white as you go.

Requires: torque wrench
3mm Allen bit
torque striping tool



- Reinstall the U-channel bracket along the bottom of unit.
- Torque the nuts to 75.0 in-lbs; mark them with a torque striping tool as you go.

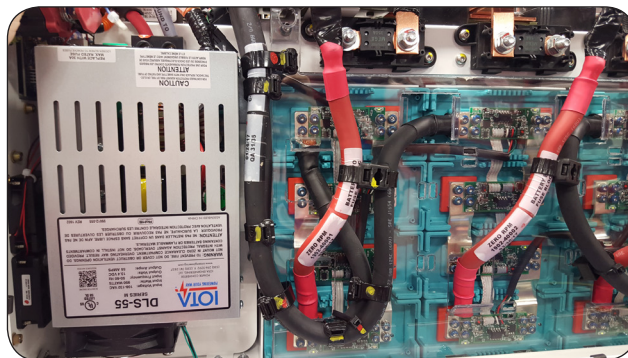
Requires: torque wrench
7/16" socket
7/16" wrench
torque striping tool



- Replace any zip ties that were removed earlier in the procedure; reference the photo taken earlier for cable routing and zip tie location.

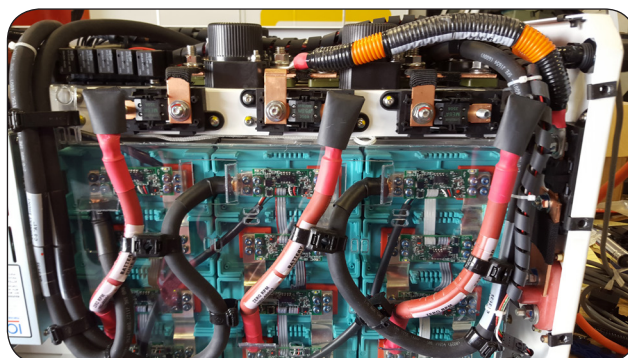
CAUTION: The zip ties must be pulled tightly to prevent movement that can cause the cables to rub, leading to abrasion.

Requires: flush cutters

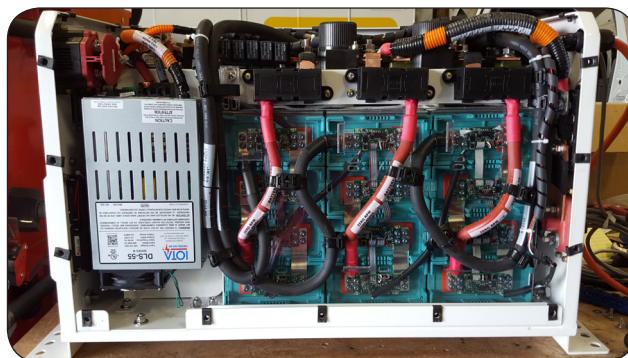


- Individually remove the lock-out/tag-out protectors from the battery power cables and reinstall them.
- Torque the nuts to 145.0 in-lbs.
- Mark the nuts white with a torque striping tool to indicate that they have been re-torqued.

Requires: torque wrench set to 145.0 in-lbs
13mm socket
torque striping tool



- Reinstall the fuse holder covers.



- Reinstall the lid.
- Reference the figures below for lid fastener rundown comparisons.

Requires: 12V to 20V battery-powered driver
T25 Torx bit

Properly Seated



Properly Seated



Under-tightened



Under-tightened



Over-tightened



Over-tightened



- Reconnect the primary Rebling connector, the auxiliary Rebling connector, and the 12-pin and 21-pin Deutsch connectors to the unit.



- Disengage the hybrid disconnect.

