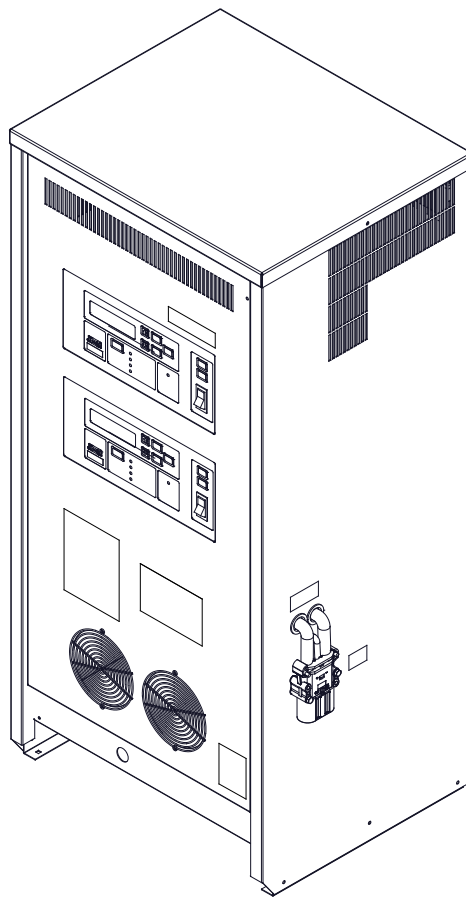




DVS100/DVS150 CAN Board Installation Guide



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1. Safety Precautions: Read before Using

The following safety precautions must be read and observed.

- The controller area network (CAN) board is designed with the safety of the user as the highest priority.
- The CAN board design is such that the installer can safely install it.
- Installation must comply with all local codes.
- The CAN board supports safe operation of basic charging functions by a user.

1.1. Symbol Usage

Take special note, in this manual, of the information marked with the following symbols.

**DANGER**

Indicates information about safety practices which, if not followed, may result in death or serious injury

**NOTE**

Indicates helpful information for installation or usage but does not contain personnel or equipment safety-related information

2. Document Purpose

This guide is intended to provide a technician with the information and guidance necessary to install the CAN board safely onto the DVS100/DVS150 control board.

3. CAN Board Overview

3.1. Description

The CAN board is a circuit board that can be added to the DVS100/DVS150 control board.

3.2. Function

The DVS CAN board sends out a CAN message on the charger's COMM wires. If a vehicle with a BMS (Battery Management System) connects to the charger, the BMS will respond to this message and the charger will begin a charge using the IPC CAN protocol. This protocol is used primarily with lithium-ion batteries.

If a vehicle with a BMID (Battery Monitor Identification Device) connects, the BMID will not respond to the CAN message. The DVS CAN board will then switch to BMID mode and the charger will charge using the BMID protocol. This protocol is primarily used with lead-acid batteries.

3.3. Scope

The CAN board can be used only in the DVS100/DVS150 charger.

3.4. Use Case

If a customer connects an DVS100/DVS150 charger to a truck, then the charger automatically detects whether the truck is using CAN or BMID communication protocols. If the charger detects CAN communication protocols, then it will charge according to those; if it does not detect them—or if it detects BMID communication protocols—then it will charge according to BMID communication protocols.

3.5. Equipment

Equipment Description	Quantity	Part Number	Comments
DVS100/DVS150 CAN package	1	5911438	

3.6. DVS100/DVS150 Charger Decal, Manufacturer Nameplate, and Caution Label

An DVS100/DVS150 charger decal (sticker) (Figure 1) indicating that the DVS100/DVS150 charger is CAN compatible is adhered to the front-panel door of the charger, on the lower-middle right side, under the instructions label (Figure 2).

- 3.6.1. Place the supplied caution label (31407) (Figure 3) on either side of the manufacturer nameplate. Ensure that the caution label does not impede the airflow. (Figure 2).

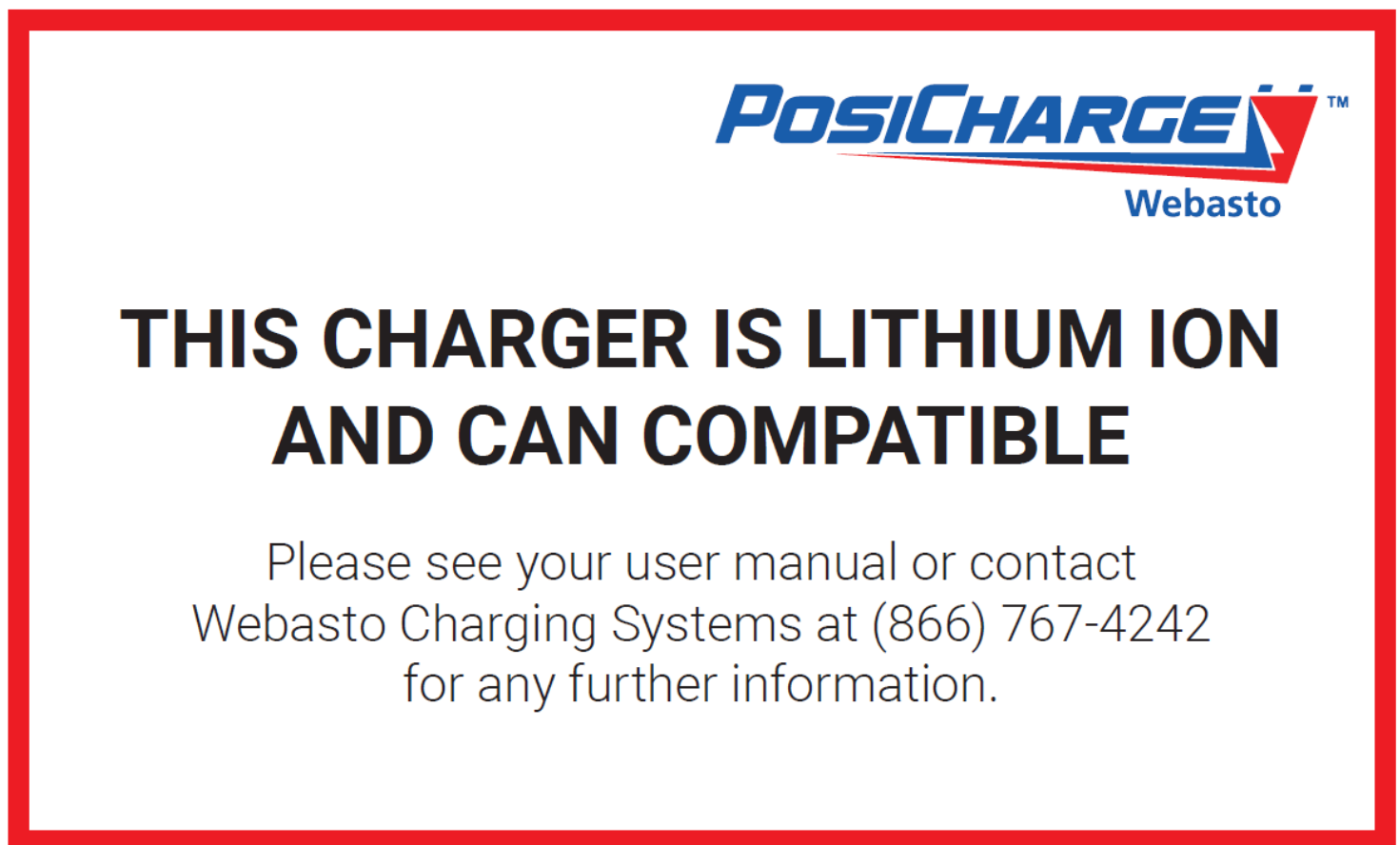


Figure 1 DVS100/DVS150 Charger Decal

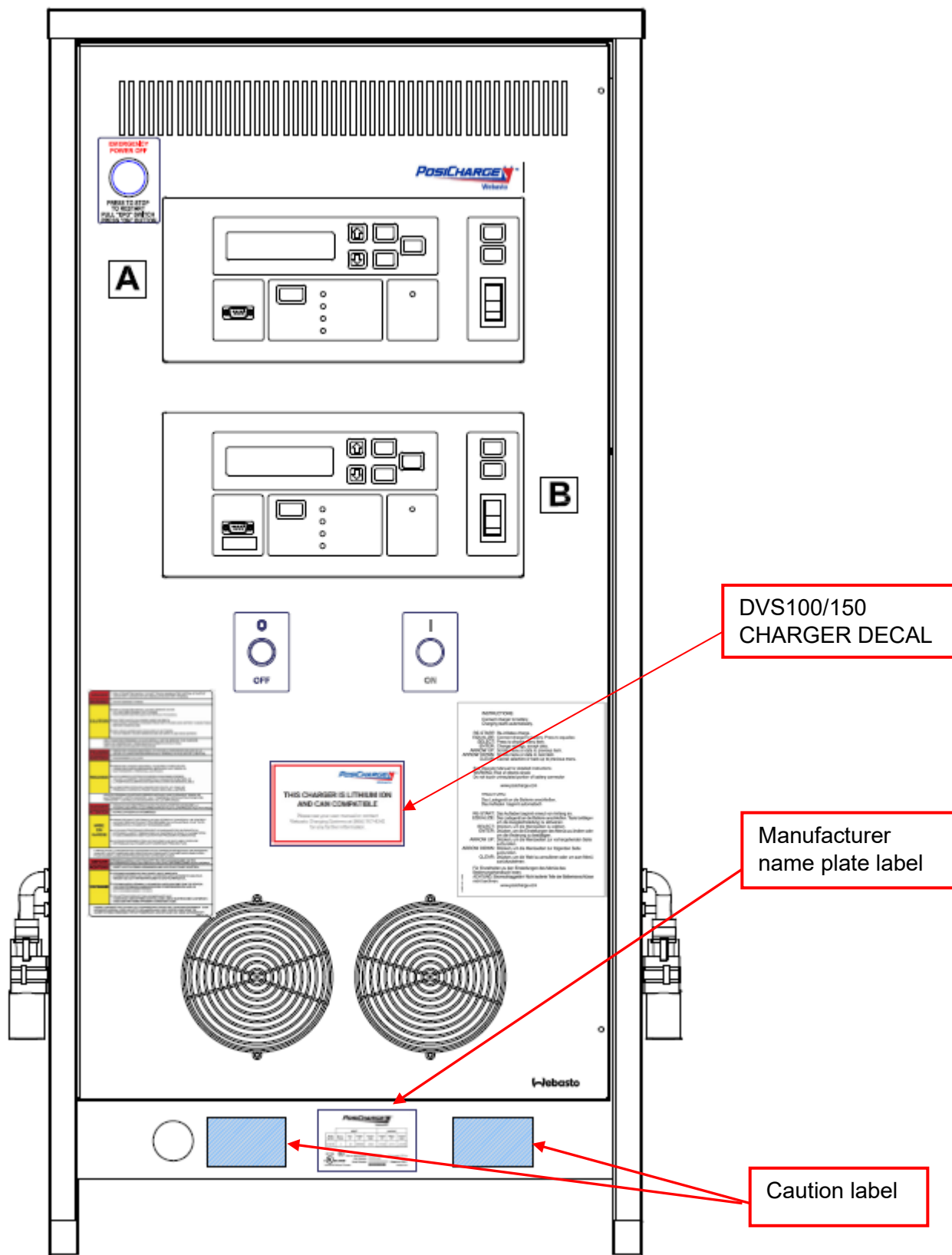


Figure 2 DVS100/DVS150 Charger Decal, Manufacturer Nameplate, and Caution Label Placements

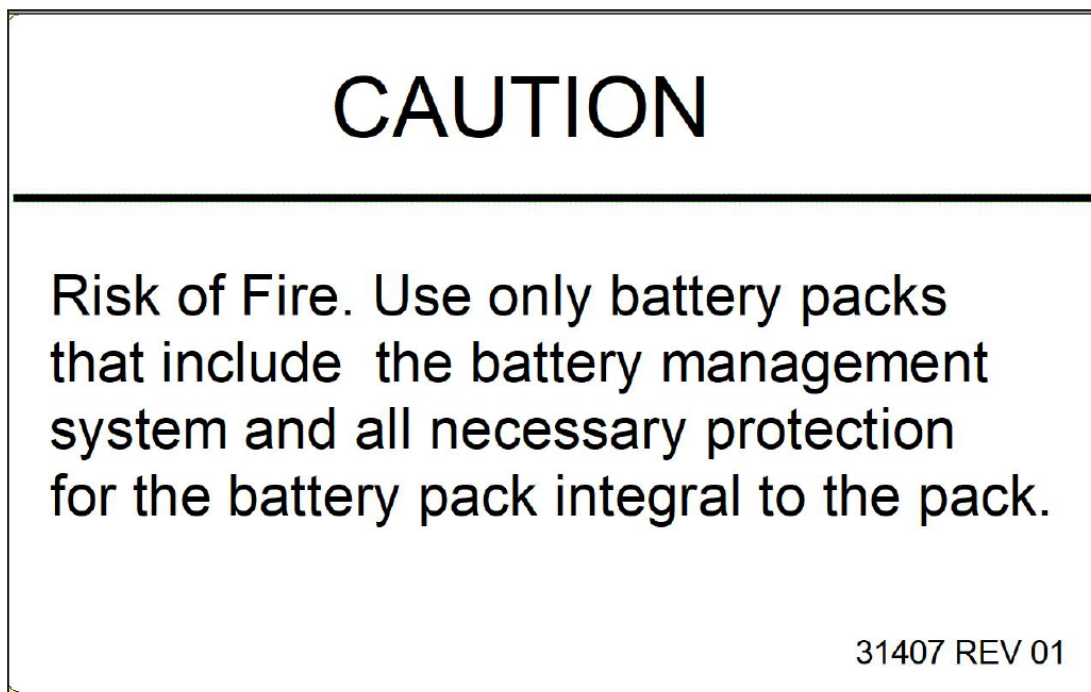


Figure 3 Caution Label

4. DVS100/DVS150 CAN Board Installation Process

A technician should install the CAN board. Installation must comply with the provisions of all local electrical codes in the country of installation. The following sections walk technicians through a four-step installation process.

Step 1: Updating the Charger Software Version

Step 2: Powering off the DVS100/150 Charger

Step 3: Installing the Board

Step 4: Powering Back on the DVS100/DVS150 Charger

Step 1

4.1. Updating the Charger Software Version

- 4.1.1. Update the charger software to version 3.00.00.48 or later, using IPC Charger Tool software version 3.004 or later. Contact your local PosiCharge service representative for copies of the latest software versions.

Step 2

4.2. Powering off the DVS100/DVS150 Charger

- 4.2.1. Power off the DVS100/DVS150 charger before installation.



DANGER RISK OF SHOCK

The DVS100/DVS150 charger needs to be powered off during installation. Do not restore power to the charger until the installation is completed. Failure to follow these instructions could result in shock or electrocution.



DANGER ELECTRIC SHOCK CAN KILL

- Touching live electrical parts can cause fatal shocks or severe burns.
- The battery terminals are always electrically live, and the output circuit is live whenever the battery is connected or being charged.
- The input power circuitry and internal circuits are live whenever input power is on.
- An incorrectly installed or improperly grounded charger is a hazard.

Step 3**4.3. Installing the CAN Board**

The CAN board comes preassembled and double-wrapped in a box. The board is mounted to the bracket with flange facing upward (Figure 4). The X1 and P101 cables are connected to the X1 and J101 connectors, respectively, on the board (Figure 4).

**NOTE**

The DVS100/DVS150 CAN board snaps on to the mounting bracket. Ensure that the P101 cable is connected to the J101 connector, as shown in Figure 4.

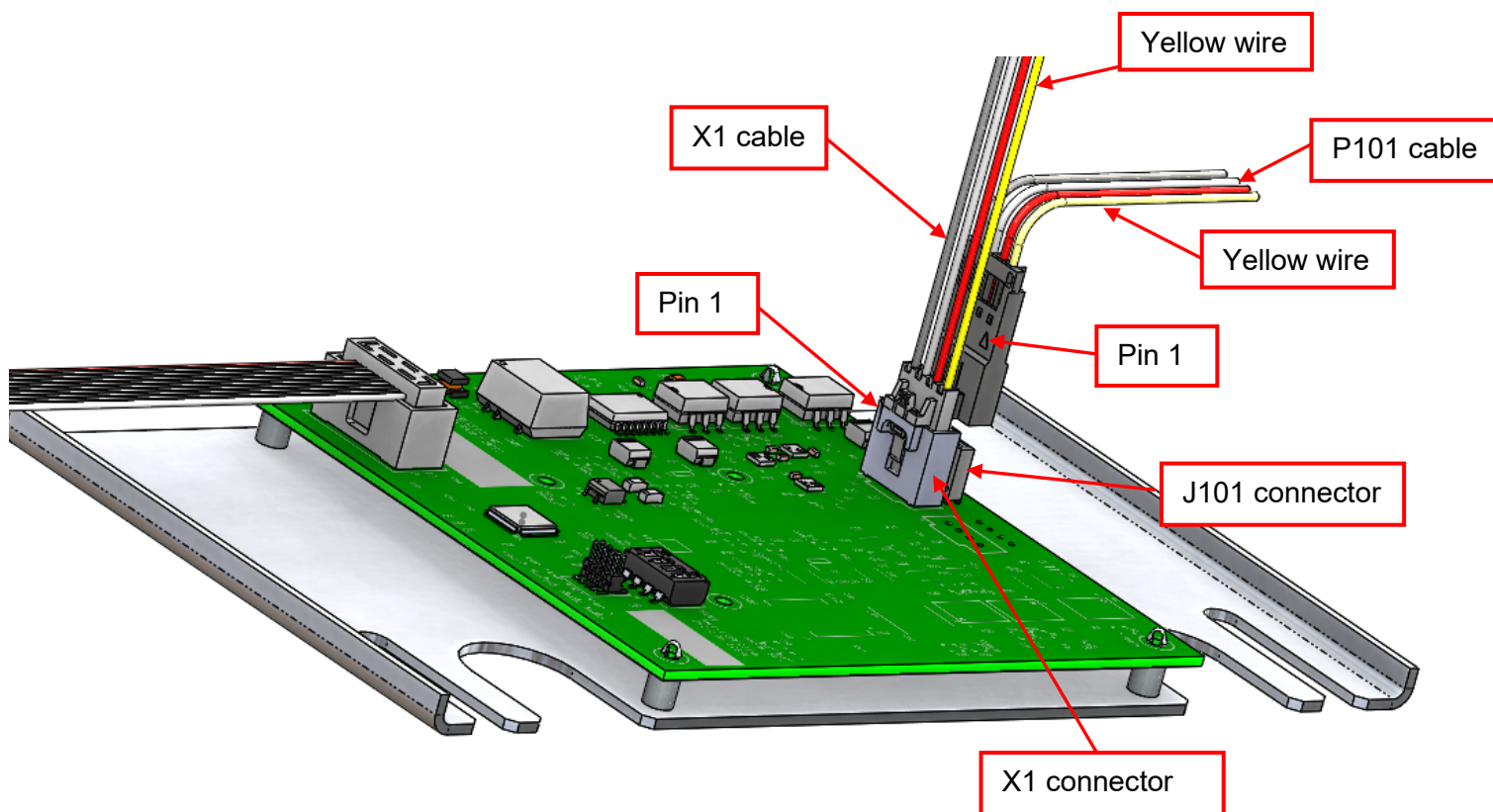


Figure 4 CAN Board Mounted to the mounting Bracket and the X1 and P101 Cables Connected to the X1 and J101 Connectors, Respectively, on the CAN Board

- 4.3.1. Loosen the two top- and bottom-right nuts from the DVS100/DVS150 control board assembly (Channel A) (Figure 5).

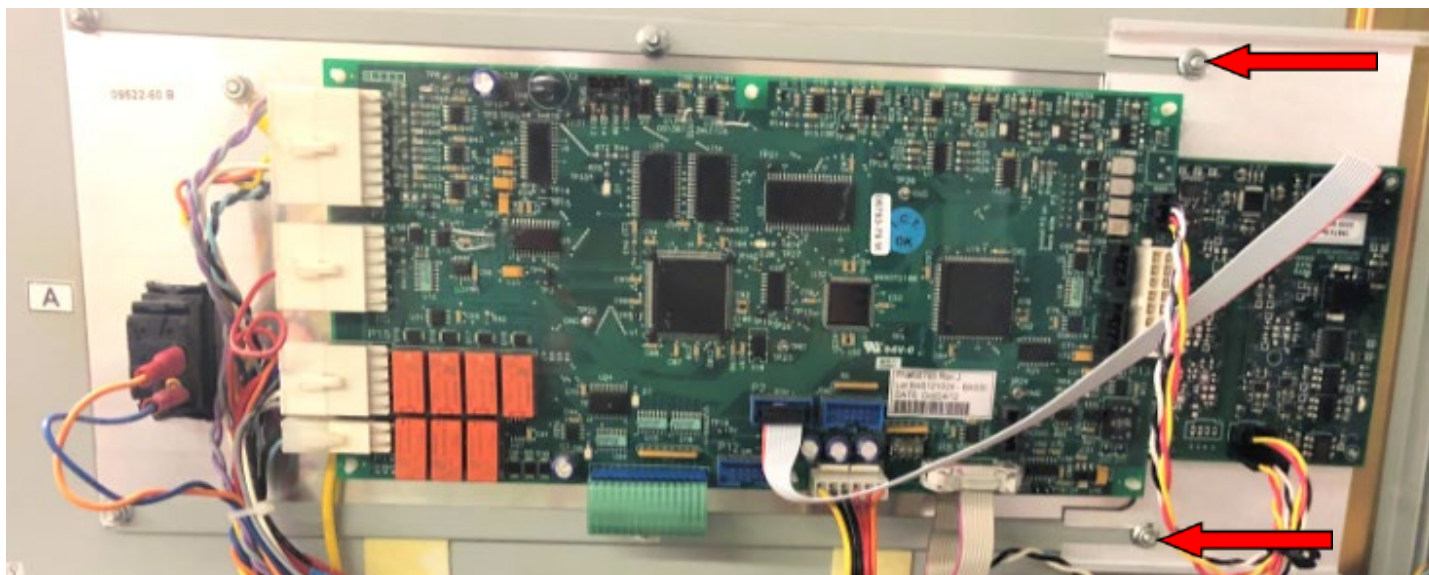


Figure 5 DVS100/DVS150 Channel A Control Board Assembly

- 4.3.2. Place the DVS100/DVS150 CAN board assembly on the Channel A of DVS100/DVS150 control board assembly, over the loosened nuts, and slide the CAN board toward the control board, as shown in Figure 5 approximately, and tighten the two nuts.



NOTE The baud rate can be set with the dual in-line package (DIP) switches on the CAN board (Figures 6 and 7), by using the below DIP switch table.

Baud Rate	DIP 1
125 kbps	On
250 kbps	Off

Note: DIP switches shall be accessible.

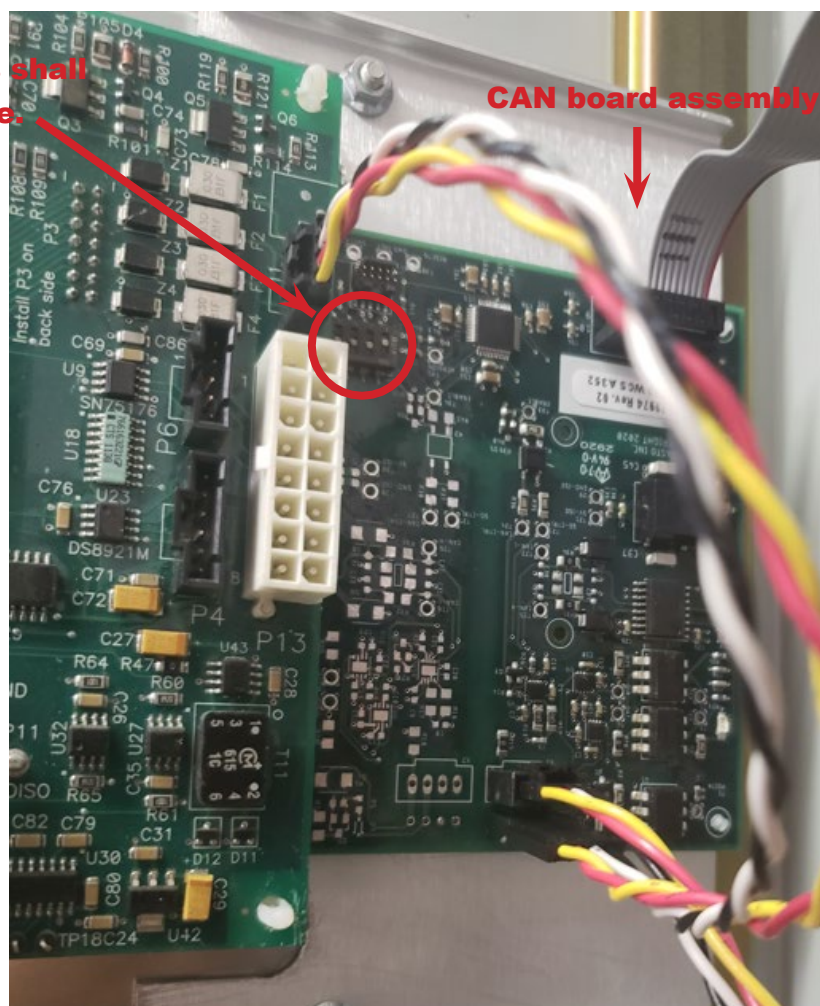


Figure 6 CAN Board Assembly Mounting for Channel A

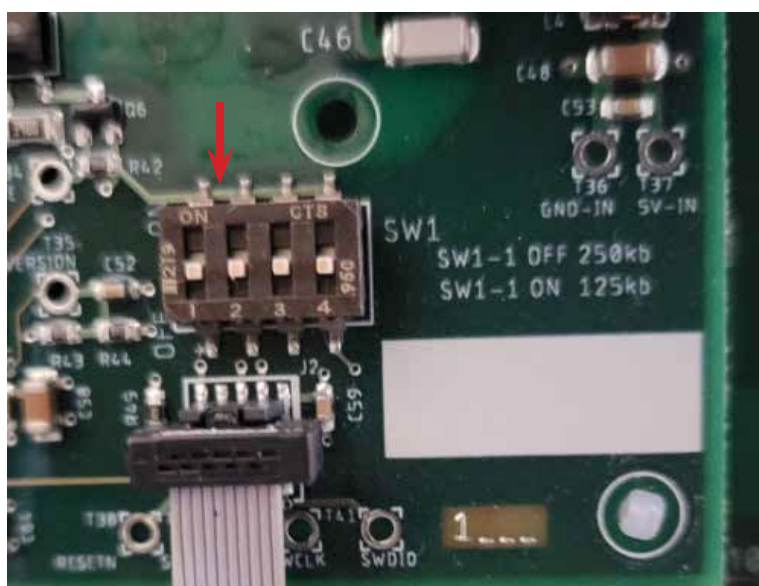


Figure 7 DIP Switches

- 4.3.3. Connect the DVS100/DVS150 CAN board ribbon cable connector to port P2 on the Channel A of DVS100/DVS150 control board(Figure 8).

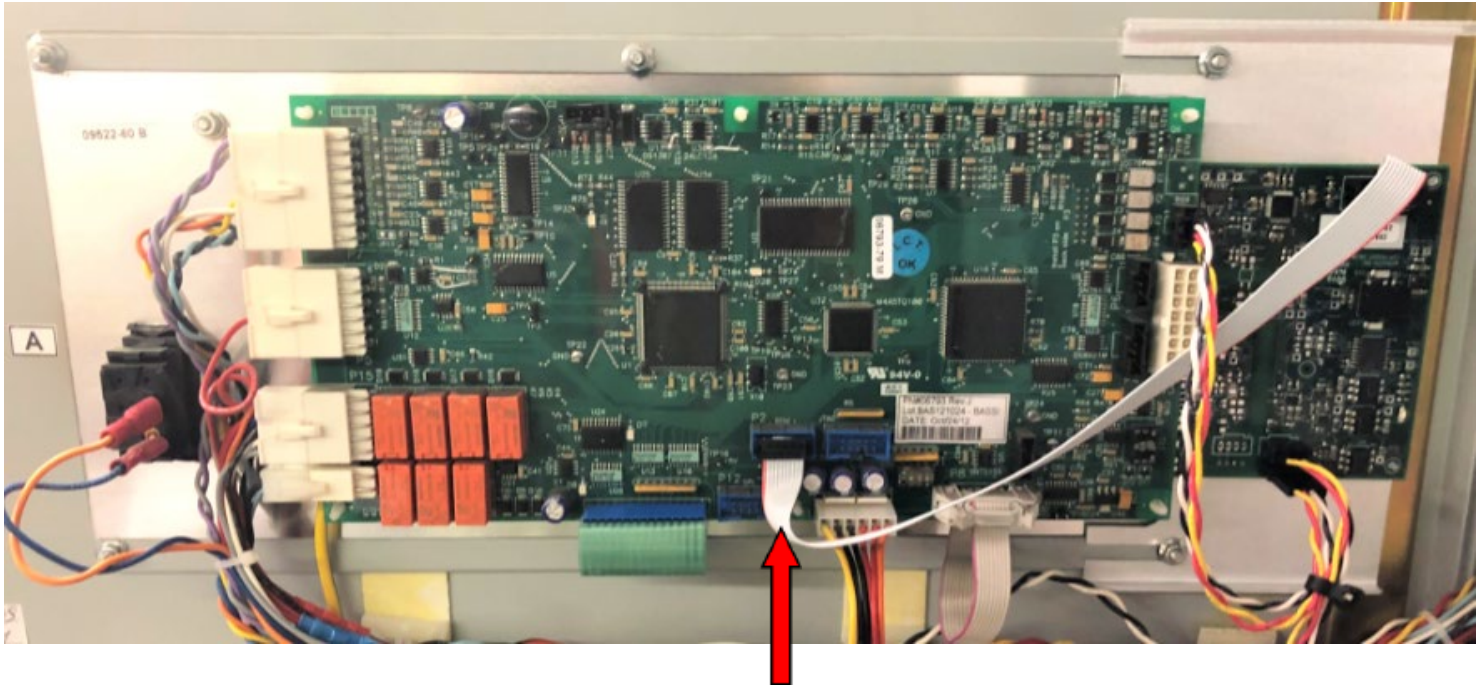


Figure 8 CAN Board Connected to the 5-Volt-Direct-Current (-VDC) Supply, at Port P2, on the Channel A of DVS100/DVS150 Control Board, with the Ribbon Cable

- 4.3.4. Connect the P101 cable from the J101 connector on the Channel A of DVS100/DVS150 CAN board to the J2 connector on the DVS100/DVS150 control board (Figure 9).

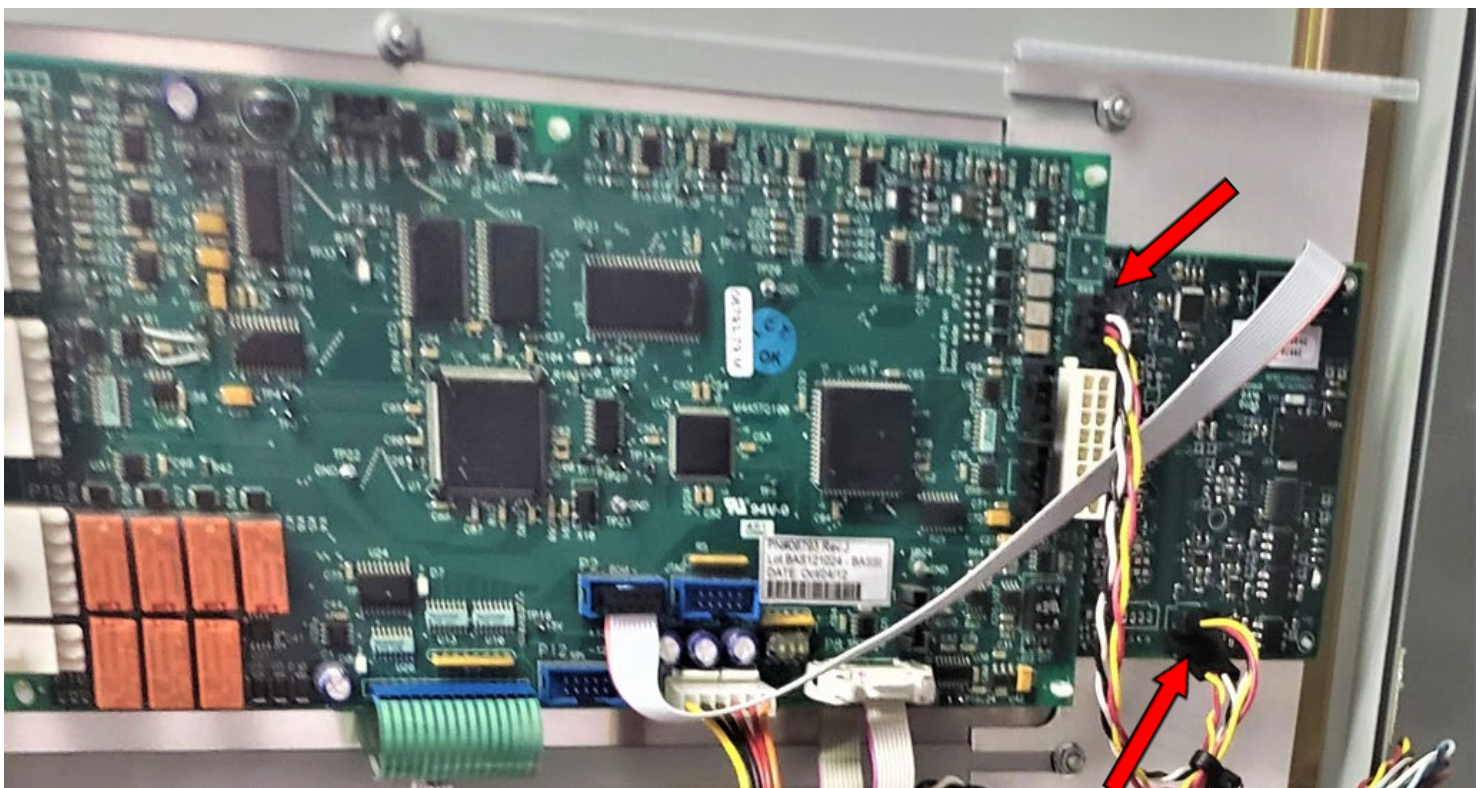


Figure 9 P101 Cable Connected from the J101 Connector on the CAN Board to the J2 Connector on the Channel A of DVS100/DVS150 Control Board

- 4.3.5. Disconnect the BMID connector J13(P13) from the Channel A of DVS100/DVS150 control board, and tie it, along with the attached BMID cable, securely to the harness with provided cable ties (Figure 10).

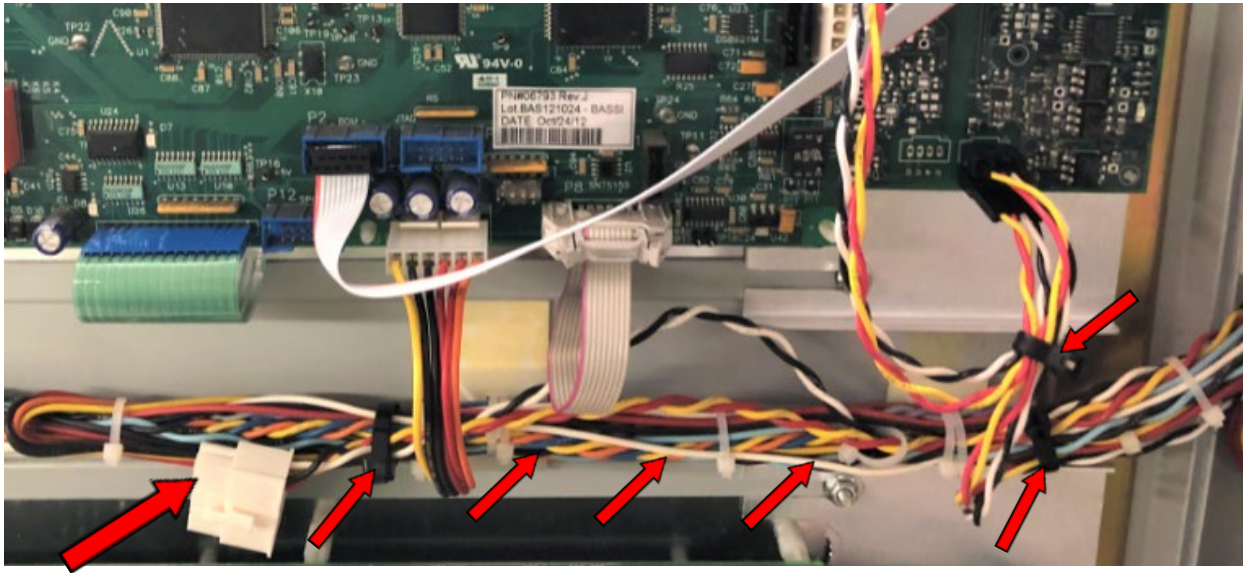


Figure 10 Disconnected BMID Connector J13(P13) and BMID Cable Tied Securely to the Harness with Cable Ties For Channel A cables

- 4.3.6. Remove the four BMID wires that go to the DVS100/DVS150 control board (Pilot Rtn, Pilot, Data and DIR) from terminal block TB1 of Channel A, which is located at the bottom left of the DVS100/DVS150 charger.
- 4.3.7. Connect the X1 cable from the X1 connector on the CAN board to TB1 of Channel A in the DVS100/DVS150 charger (Figure 11), as listed below.
- 4.3.7.1. Yellow wire to the Pilot terminal
- 4.3.7.2. Red wire to the Pilot terminal
- 4.3.7.3. White wire to the Data terminal
- 4.3.7.4. Black wire to the Dir terminal

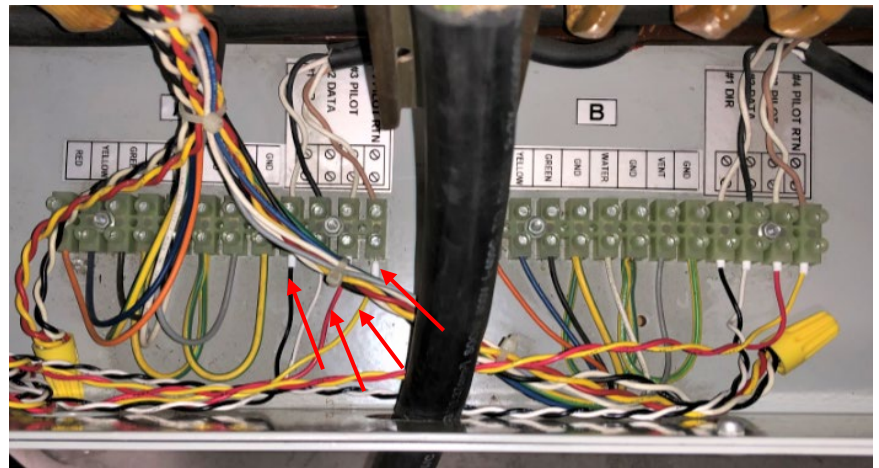


Figure 11 X1 Cable Connected to Channel A of TB1 for Communication Connections in DVS100/DVS150 Charger



NOTE Twisting wires (Figure 11) is recommended for longer distances. Keeping them close together, however, is more important than twisting them.

- 4.3.8. Route the X1 cable along the existing cables, with a provided cable tie.
- 4.3.9. Screw the BMID wires into one wire nut (Figure 12), bend them back, and secure them to the harness with a provided cable tie.



Figure 12 Cut BMID Wires Screwed into One Wire Nut

4.4. Installing the CAN Board for Channel B

- 4.4.1. Loosen the two top- and bottom-right nuts from the DVS100/DVS150 control board assembly (Channel B) (Figure 13).

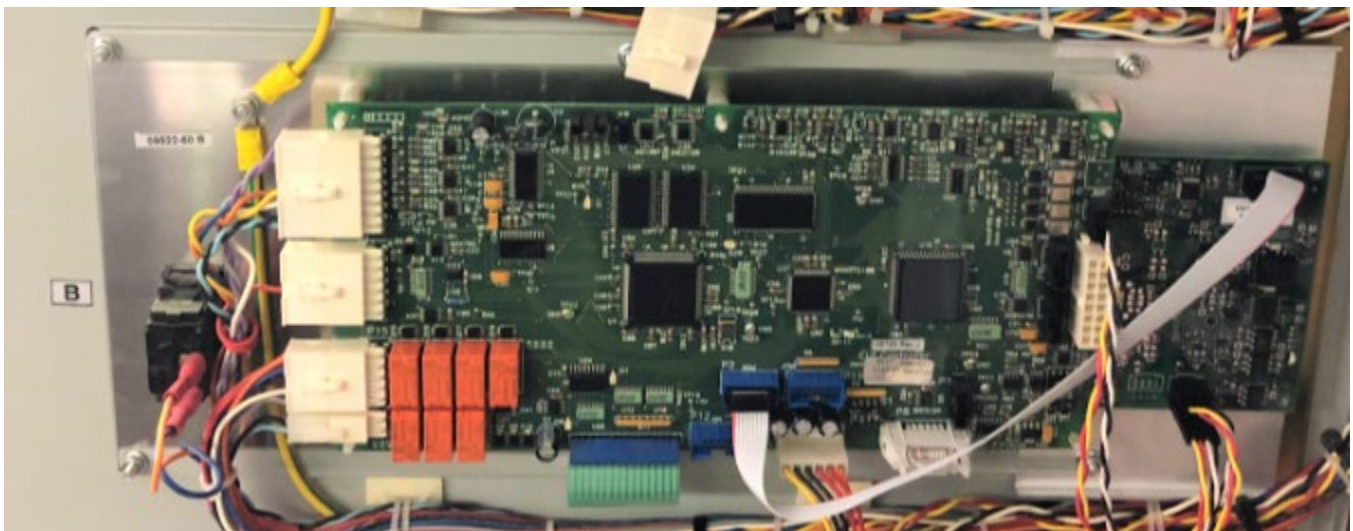


Figure 13 DVS100/DVS150 Channel B Control Board Assembly

- 4.4.2. Place the DVS100/DVS150 CAN board assembly on the Channel B of DVS100/DVS150 control board assembly, over the loosened nuts, and slide the CAN board toward the control board, as shown in Figure 13, approximately, and tighten the two nuts.



NOTE The baud rate can be set with the dual in-line package (DIP) switches on the CAN board (Figures 14 and 15), by using the below DIP switch table.

Baud Rate	DIP 1
125 kbps	On
250 kbps	Off

Note: DIP switches shall be accessible.

CAN board assembly

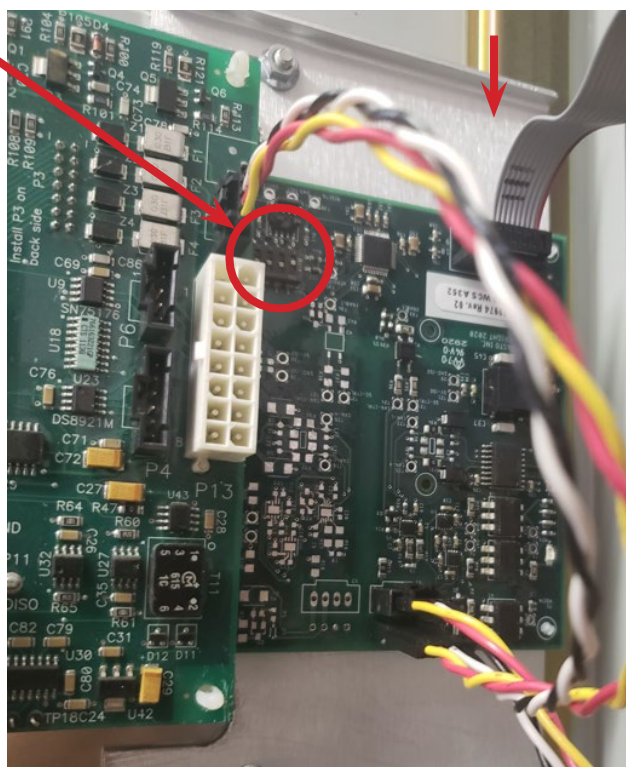


Figure 14 CAN Board Assembly Mounting for Channel B



Figure 15 DIP Switches

- 4.4.3. Connect the DVS100/DVS150 CAN board ribbon cable connector to port P2 on the Channel B of DVS100/DVS150 control board(Figure 16).

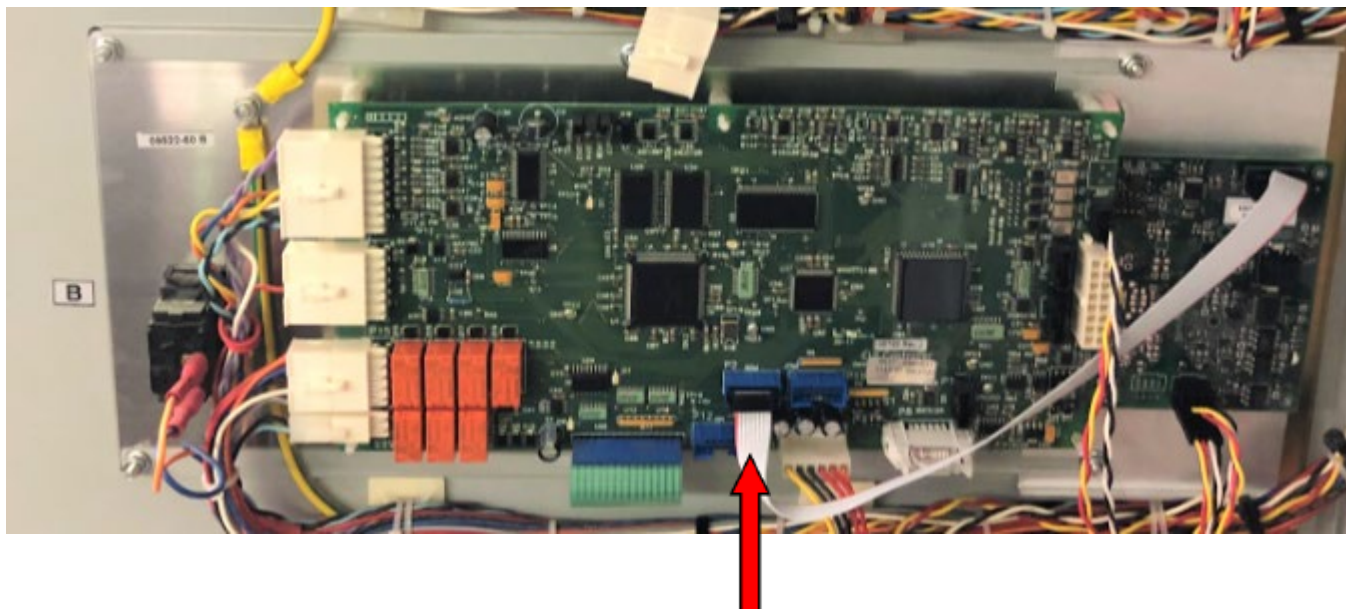


Figure 16 CAN Board Connected to the 5-Volt-Direct-Current (-VDC) Supply, at Port P2, on the Channel B of DVS100/DVS150 Control Board, with the Ribbon Cable

- 4.4.4. Connect the P101 cable from the J101 connector on the Channel B of DVS100/DVS150 CAN board to the J2 connector on the DVS100/DVS150 control board (Figure 17).

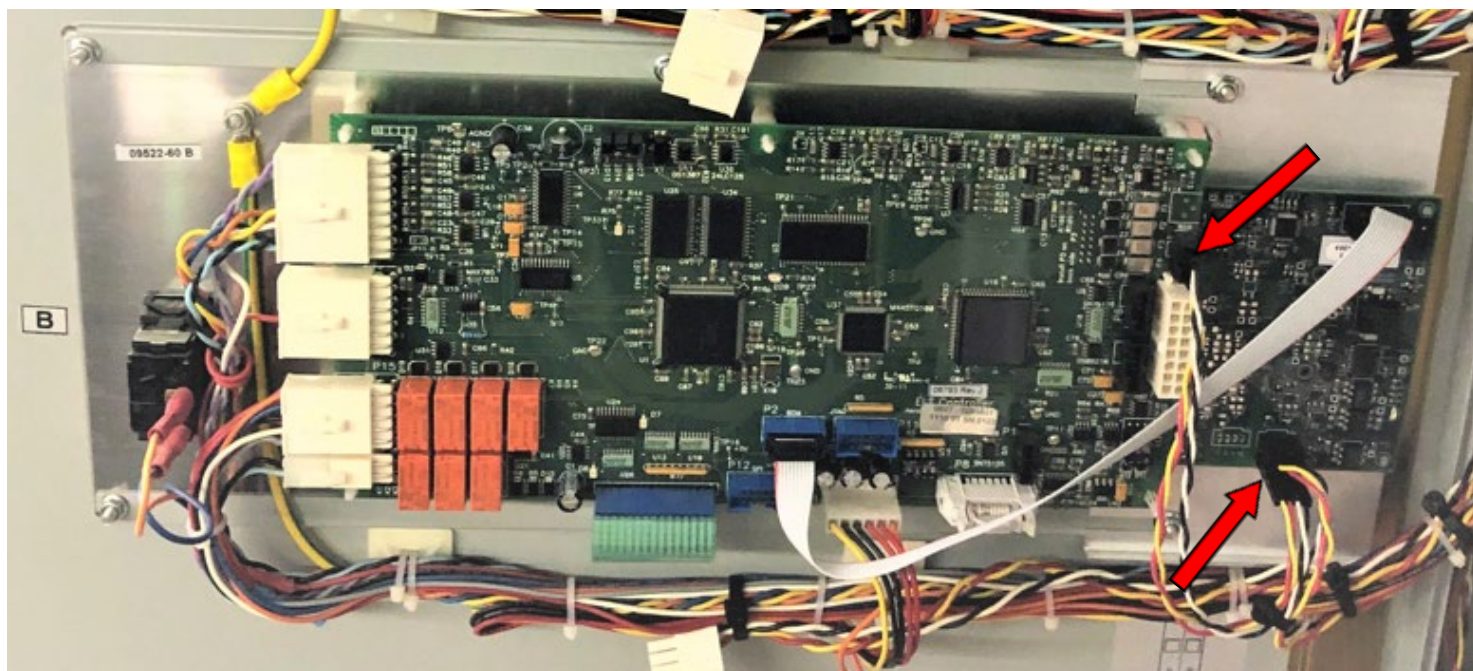


Figure 17 P101 Cable Connected from the J101 Connector on the CAN Board to the J2 Connector on the Channel B of DVS100/DVS150 Control Board

- 4.4.5. Disconnect the BMID connector J13(P13) from the Channel B of DVS100/DVS150 control board, and tie it, along with the attached BMID cable, securely to the harness with provided cable ties (Figure 18).

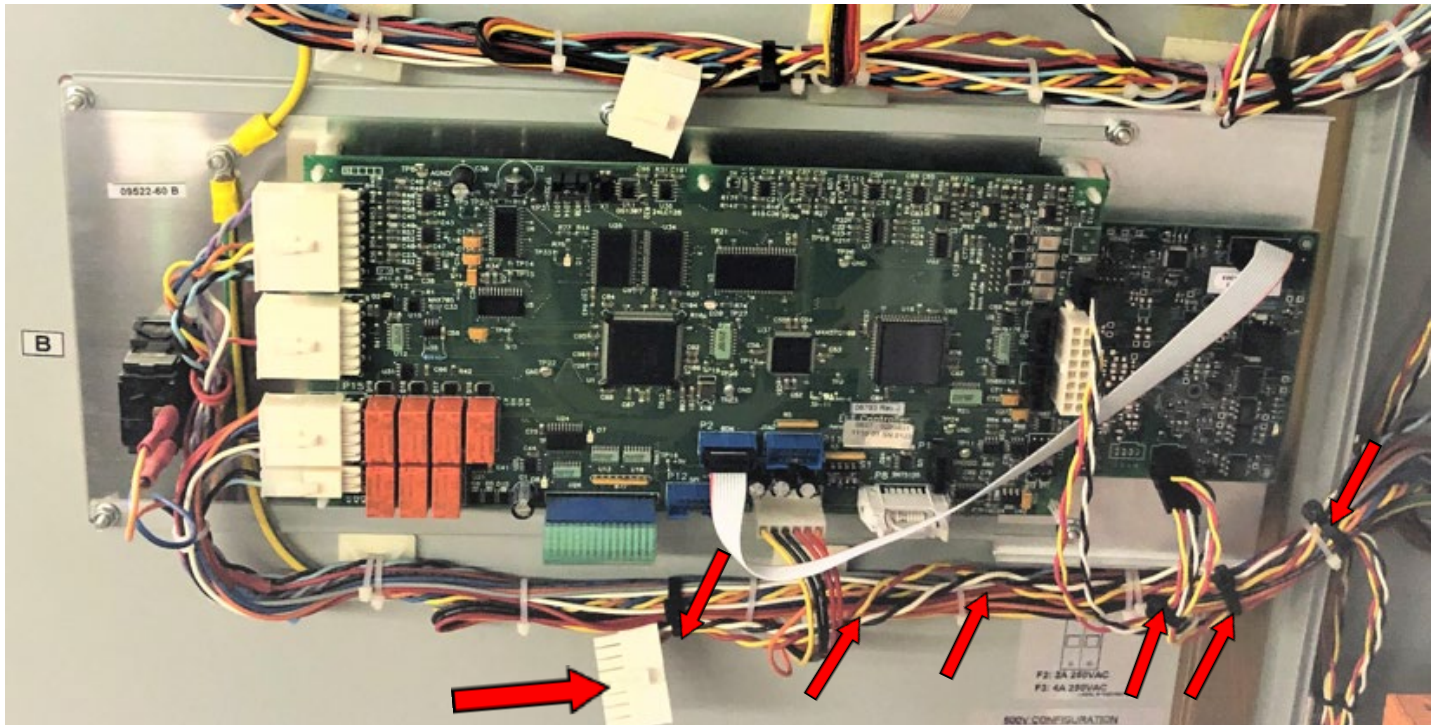


Figure 18 Disconnected BMID Connector J13(P13) and BMID Cable Tied Securely to the Harness with Cable Ties For Channel B

- 4.4.6. Remove the four BMID wires that go to the DVS100/DVS150 control board (Pilot Rtn, Pilot, Data and DIR) from terminal block TB1 (in Channel B), which is located at the bottom right of the DVS100/DVS150 charger.

- 4.4.7. Connect the X1 cable from the X1 connector on the CAN board to TB1 (of Channel B) in the DVS100/DVS150 charger (Figure 19), as listed below.

- 4.4.7.1. Yellow wire to the Pilot terminal

- 4.4.7.2. Red wire to the Pilot terminal

- 4.4.7.3. White wire to the Data terminal

- 4.4.7.4. Black wire to the Dir terminal

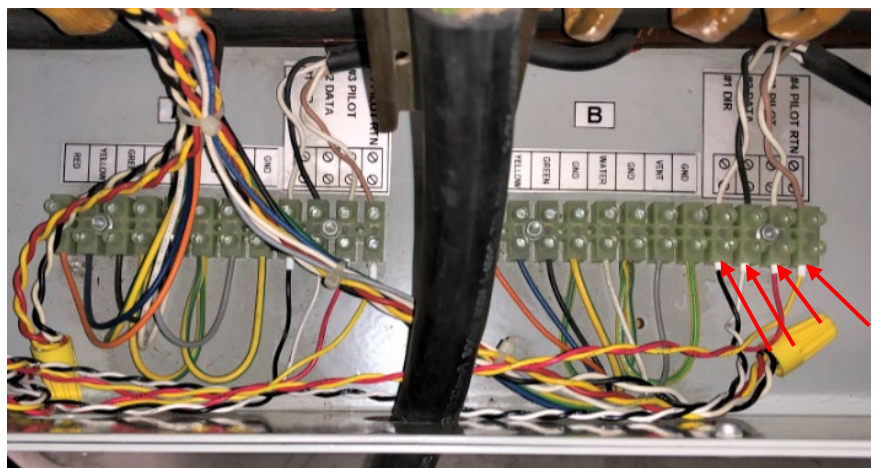


Figure 19 X1 Cable Connected to Channel B of TB1 for Communication Connections in DVS100/DVS150 Charger



NOTE

Twisting wires (Figure 19) is recommended for longer distances. Keeping them close together, however, is more important than twisting them.

- 4.4.8. Route the X1 cable along the existing cables, with a provided cable tie.
- 4.4.9. Screw the BMID wires into one wire nut (Figure 20), bend them back, and secure them to the harness with a provided cable tie.



Figure 20 Cut BMID Wires Screwed into One Wire Nut

Step 4

- 4.5. Powering Back on the DVS100/DVS150 Charger
 - 4.5.1. Power back on the DVS100/DVS150 charger after installation.

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