

QUIC-STEP™ RETRACTABLE VEHICLE STEP

MODEL VS-24-11 AND VS-24-9

INPOWER CONTROL MODULE UPGRADE MANUAL

Note: This manual provides instruction when upgrading a vehicle step from a "terminal post"-style InPOWER Control Module (PN 3094-005-195) to a "plug-in"-style InPOWER Control Module (PN 3094-030-137).

The following step manuals may ease the upgrade process or be beneficial for future reference, but are not required:

Old InPOWER Module: 3094PM1i (Model VS-24-11) & 3094PM4i (Model VS-24-9)
New InPOWER Module: 3094PM1ii (Model VS-24-11) & 3094PM4ii (Model VS-24-9)

Manuals are available for download at ziamatic.com.

I. Part Information:

ITEM	PART #	DESCRIPTION	QTY
58	3094-030-137	InPOWER CONTROL MODULE	1
63	3094-005-198	TERMINAL, FEMALE, MOLEX 33012-3001	7
64	3094-030-139	WIRE HARNESS	1

II. General Information:

- When the vehicle door is opened and closed, power will flow to Pins 1 (MOT 1) & 5 (MOT 2) for 4 seconds or the power will stop if the amp demand exceeds 12 amps for 100ms. The polarity will also switch from a nominal +12vdc to a nominal -12vdc as the door is closed and opened.
- If testing the InPOWER unit for voltage across the Pins 1 (MOT 1) & 5 (MOT 2), disconnect the Linear Actuator and connect a 12v test light across the Pins 1 & 5 to cause a current flow (amp draw). (The unit will not operate without a current flow (amp draw).) Connect a volt meter across those terminals and either open and close the vehicle door or place a switch between Pin 2 (Bat (+)) and Pin 4 (INP 1). The light should go on momentary (4 seconds) as the voltage registers a nominal 12v. See "Chart of NC Switch" for the polarity of the pins.

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II. Recommended Tools:

Note: The wire harness plug (Item 64) comes with factory installed wires. If hooking the vehicle's wiring directly to the plug is preferred, the following tools are recommended:

Tool for Female Terminals (Item 63):

- Molex 63811-5900 Crimp Tool, 16-14 GA Female Terminals MX150 Series

Tool for Wiring Harness Plug (Item 64)

- Molex 63813-1500 Extraction Tool, MX150 Series

III. Preparing to Wire the New Unit

1. On the wires connecting the old InPOWER module to the vehicle (see Figure 1):
 - Label the wires as (BAT+), (GND), (M2), and (M1)
 - Label the wire going from the "BAT+" to the vehicle door as (Door BAT+)
 - Label the wire going from the "Spade Terminal" to the door as (Door Spade)
2. Disconnect the wires from the old InPOWER unit

IV. Wiring the New Unit

A. Option 1: Attaching the Female Terminals (Item 63) Directly to the Wires from Vehicle

1. Use the Molex 63813-1500 Extraction Tool to remove the female terminals from new wire harness plug
2. Attach Female Terminals (Item 63) to the end of the wires that were labeled in Section 3.1 in accordance with Chart 1 (below)
3. Plug the wires into the new plug in accordance with Chart 1 (below) (for reference, see Figures 3 & 4)
4. Test the unit for proper operation. If the step is operating in the opposite manner, switch the wires going to Pins 1 and 5

Wires Labeled in Section 3.1	New InPOWER Harness lug with wires removed
(M1)	PIN 1 (MOT1)
(BAT +) and (Door BAT+)	PIN 2 (BAT)
(Door Spade)	PIN 4 (INP 1)
(M2)	PIN 5 (MOT 2)
(GND)	PIN 6 (GND)

B. Option 2: Splicing the Wires from Vehicle and Existing Wires on New Wiring Harness

1. Temporarily connect the wires in accordance with Chart 2 (below) (For reference, see Figures 3 & 4)
2. Test the unit for proper operation. If the step is operating in the opposite manner, switch the wires going to Pins 1 and 5.

Important: It is highly recommended that the wires are soldered together and that shielding on the wire splices is heat sealable to prevent the wires from disconnecting

3. Permanently splice the wires together and test for proper operation

Chart 2	
Wires that were labeled in step 1	New InPOWER Wiring Harness
(M1)	PIN 1 (MOT1) (WHITE WIRE)
(BAT +) and (Door BAT+)	PIN 2 (BAT) (RED WIRE)
(Door Spade)	PIN 4 (INP 1) (BLUE WIRE)
(M2)	PIN 5 (MOT 2) (ORANGE WIRE)
(GND)	PIN 6 (GND) (BLACK WIRE)

Note: As the step moves to the fully open or fully closed position, the actuator may make a ratchet sound for a brief moment at the end of the either cycle. This is a safety feature of the actuator.

InPOWER LLC
MOTOR CONTROLLER

STEP ACTUATOR MOTOR

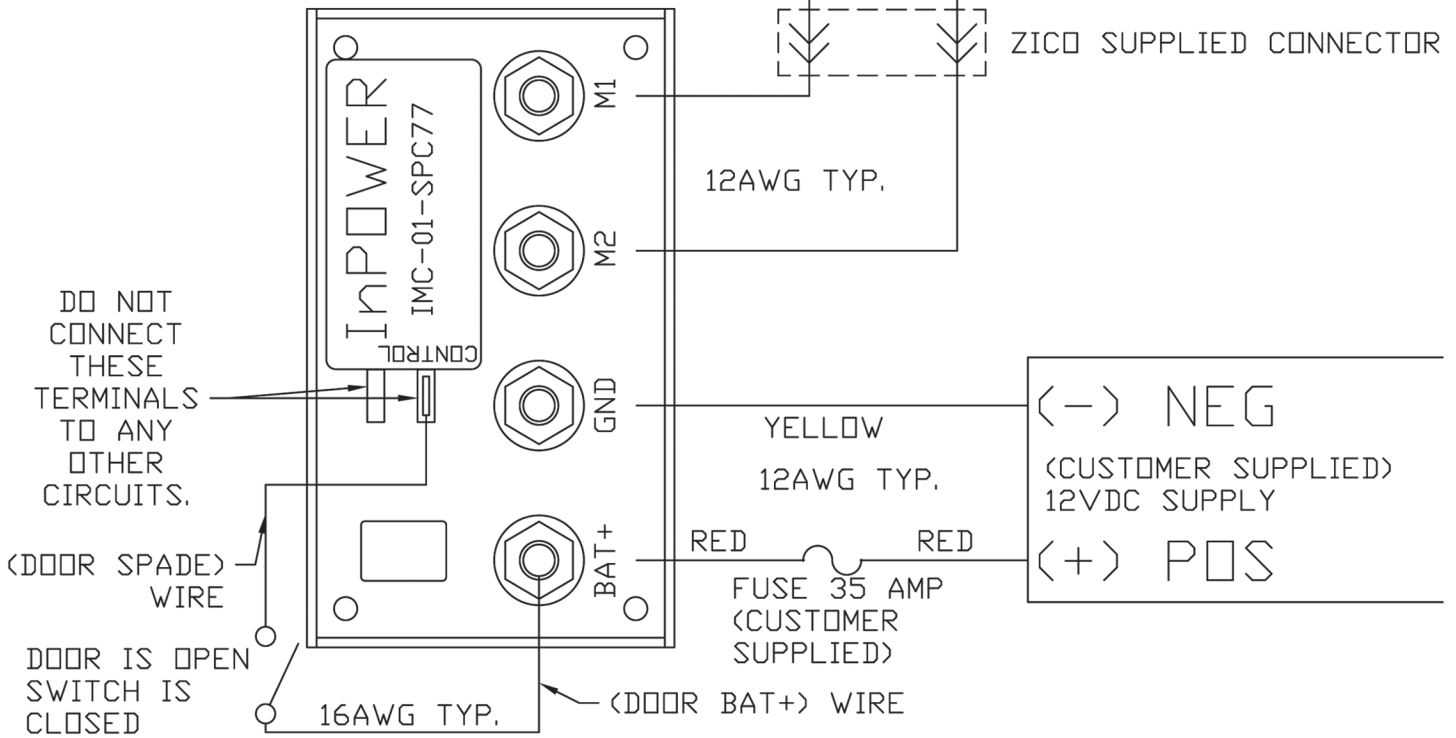


Figure 1
Existing Wiring Setup

FIGURE 2 - InPOWER Control Module with Wire Harness

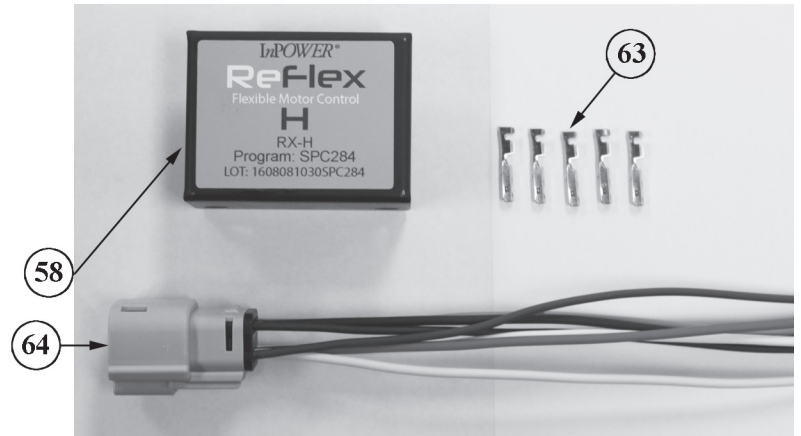


FIGURE 3 - Control Module Pin Layout

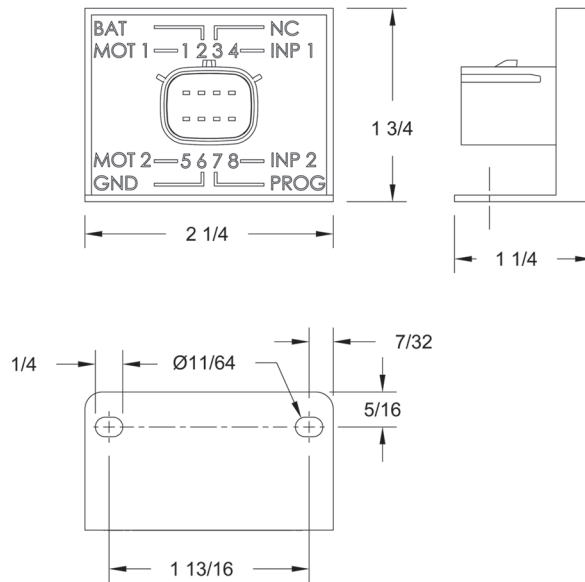


CHART FOR NC SWITCH

Door Position	Switch	Polarity		Actuator Position	Step
Open	Closed	Pin 1 (-)	Pin 5 (+)	Extends	Goes Down
Closed	Open	Pin 1 (+)	Pin 5 (-)	Retracts	Goes Up

NOTE: REVERSE ACTUATOR MOTOR POLARITY ON INPOWER MODULE (PIN 1 & PIN 5) IF DOOR SWITCH IS A N.O. SWITCH

CONTROL LOGIC

OPTION: SWITCH FOR STEP "EXTEND DOWN" DASHBOARD STATUS LIGHT



InPOWER & PLUG PIN #	InPOWER DESIGNATIONS	DEVICE	DEVICE WIRE COLOR	HARNESS WIRE COLOR
1	MOT 1	MOTOR 1	YELLOW	WHITE
2	BAT	BATTERY (+)	RED	RED
3	NC	NOT USED	N/A	PLUGGED
4	INP 1	DOOR SWITCH	RED	BLUE
5	MOT 2	MOTOR 2	RED	ORANGE
6	GND	BATTERY GND (-)	YELLOW	BLACK
7	PROG	NOT USED	N/A	PLUGGED
8	INP 2	NOT USED	N/A	PLUGGED

NOTE:
 1) MOLEX MX150 8-PIN (2X4) FEMALE CONNECTOR 33472-0801
 2) MOLEX MALE MATE 33482-0801 (REF ONLY)
 3) VOLTAGE WILL FLOW FOR $t = 4s$ OR IF THE CURRENT EXCEEDS 10 AMPS.

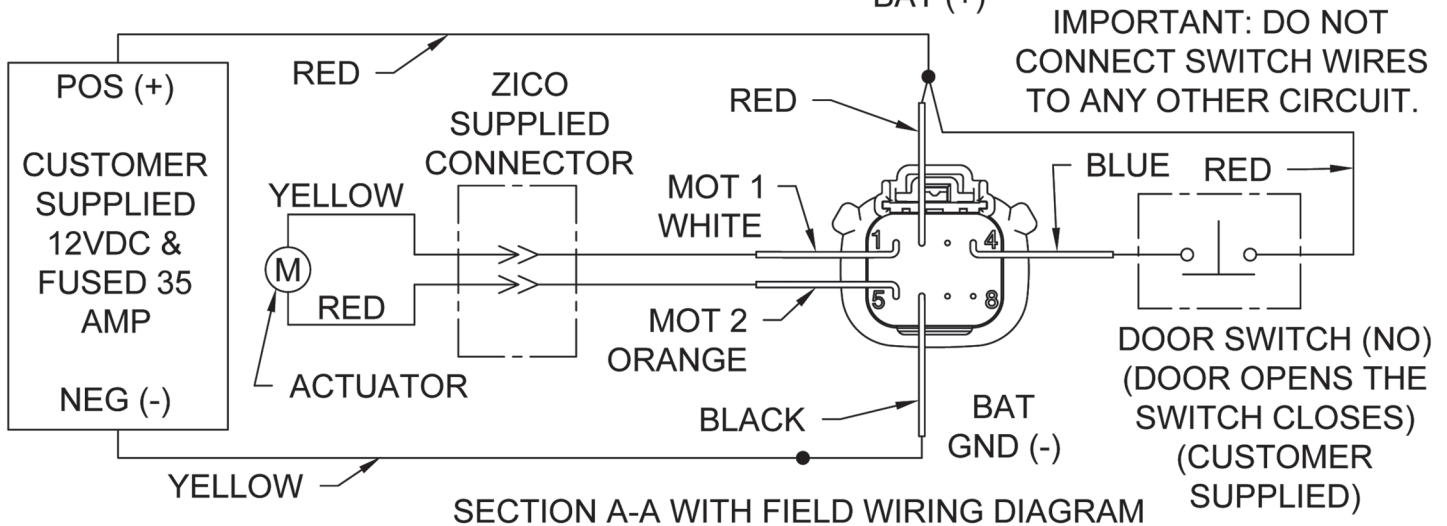
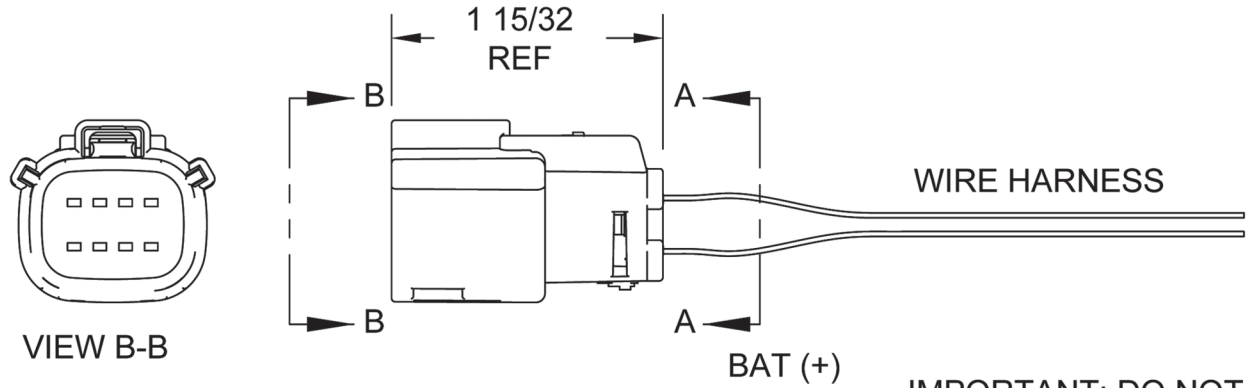


FIGURE 4 - FIELD WIRING DIAGRAM

WARNING

ELECTRICAL SHOCK
OR
CRUSHING INJURY

DISCONNECT FROM POWER
BEFORE SERVICING

Failure to do so could result
in serious injury or death

Note: Switch and electrical panel should be mounted in waterproof compartments. Once all electrical connections are complete and system has been tested, protect connections with a weather proofer like liquid tape.

MODE OF OPERATION

- PROVIDE POWER TO AUTOSTEP

EXTEND MODE:

- STEP WILL AUTOMATICALLY EXTEND AS SOON AS THE DOOR IS OPENED.
- STEP WILL REMAIN EXTENDED AS LONG AS DOOR REMAINS OPEN.

RETRACTED MODE:

- STEP WILL AUTOMATICALLY RETRACT AS SOON AS THE DOOR IS CLOSED.
- STEP WILL REMAIN RETRACTED AS LONG AS DOOR REMAINS CLOSED.



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