Installing the FX302 into the E-Z-GO PDS Golf Car

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REV. C 5/21/25

Conversion Kit Parts List

Qty	Description	FSIP Part Number
1	Motor Control	FX302
1	Wire Harness	51-FX302-EZPDS
1	Switch Plate	81138-2

Table 1

RECOMMENDED TOOLS:

1.) 1/4" drive wrench with 6" extension.
2.) 10, 11, and 14mm sockets.
3.) 13mm (two may be necessary) and 16mm combination wrench.
4.) 5/32 Allen wrench

REMOVAL:

1.) Jack up rear end of car, making sure that both wheels are off the ground
2.) Make sure the key switch is off and the Tow/Run switch is in the Tow position.
3.) Disconnect the battery positive and negative wires.
4.) Remove the motor control cover (**Figure 1**), by removing the four mounting bolts (10mm socket). Follow the Tow/Run switch wires to the control and then unplug connector (**Figure 2**).



Figure 1

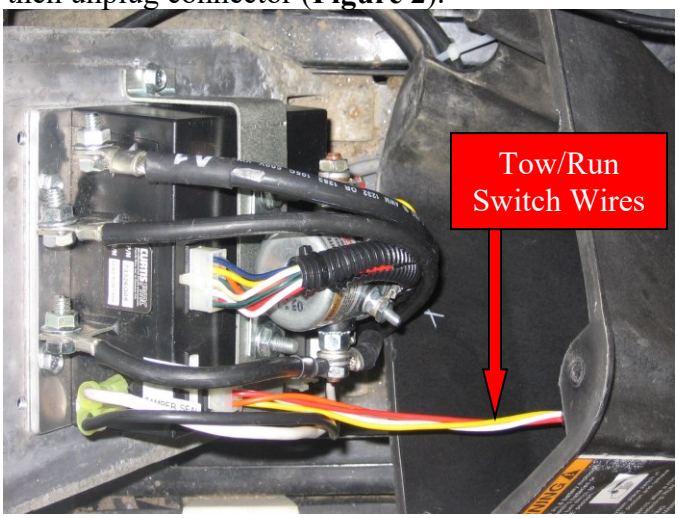
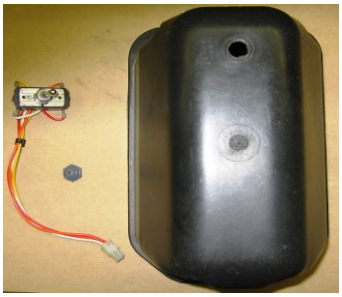


Figure 2

5.) Remove the Tow/Run switch (16mm wrench) from the cover (the switch will be reinstalled on a new bracket later).

Figure 3



Tow/Run switch, mounting nut, and cover after disassembly

6.) Disconnect all remaining connectors on the control.
7.) Disconnect the motor wires (A1, B-, B+, F1 (white wire), and F2 (black wire)) from the control (13mm wrenches, 1/2 inch wrench will also work).
8.) Remove all the terminals from the contactor (13mm wrench) on the side that points to the passenger side of the cart (**Figure 4**). Remove the pre-charge resistor completely (it is not used with the new control)
9.) Remove the two nuts holding the contactor onto the bracket (11mm socket), and move contactor out of the way (**Figure 4**).
10.) Remove the two bolts (10mm socket) holding the contactor bracket to the heat sink and pull bracket out of cart (this bracket will be reinstalled later) as shown in **Figure 4**.
11.) Remove the three bolts (10mm) that mount the control to the heat sink.

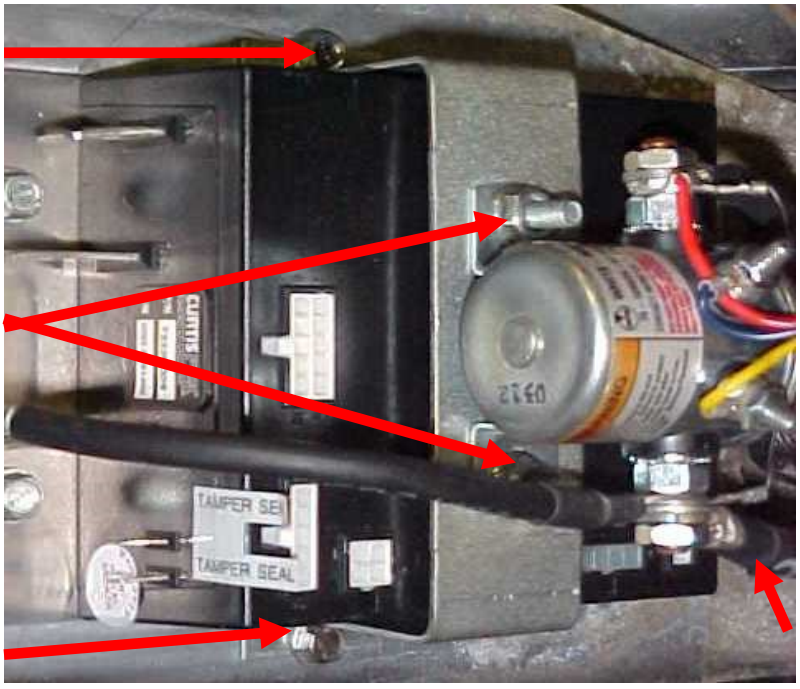


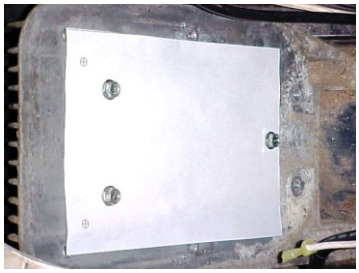
Figure 4

Remove all terminals from this post of the contactor (13mm wrench). The short wire (B+) will be reinstalled to this post later. The "C" will be connected to the new control. Keep the lock washer and nut. Remove the pre-charge resistor completely at this time.

INSTALLATION:

1.) Cut the drill template out, **Figure 14** found at the end of this procedure. Punch out the holes labeled "**A**" and install the template to the heat sink, using the three original motor control mounting bolts as shown in **Figure 5**.

Figure 5



2.) Drill the top two holes indicated by the template, then tap to 1/4 - 20.

3.) Install the new control using the bolts from the above step as shown in **Figure 6**. Be sure to remove the paper template before mounting the new control.

Figure 6



3.) Connect the wire labeled "A1" to the control terminal labeled "A1" using the supplied M6 -1.0 X 25MM bolt (HW B M6 X 25MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket. See **Figure 7**.

4.) Connect the wire labeled "C" (which was disconnected from the contactor) to the control terminal labeled "A2", using the supplied M6 - 1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket. See **Figure 7**.

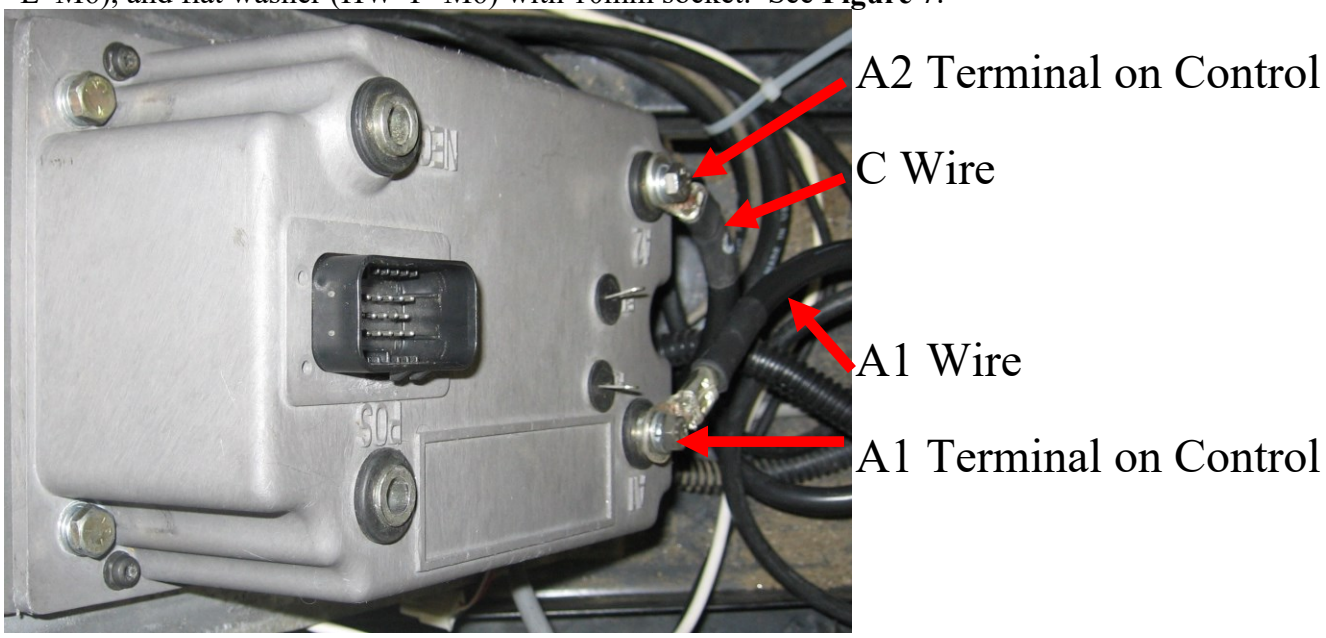


Figure 7

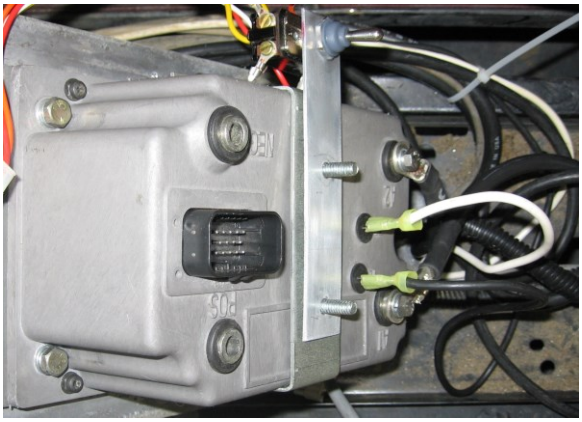
5.) Install the Tow/Run switch (16mm wrench) onto the rectangular plate supplied with the kit, refer to **Figure 8**.

Figure 8



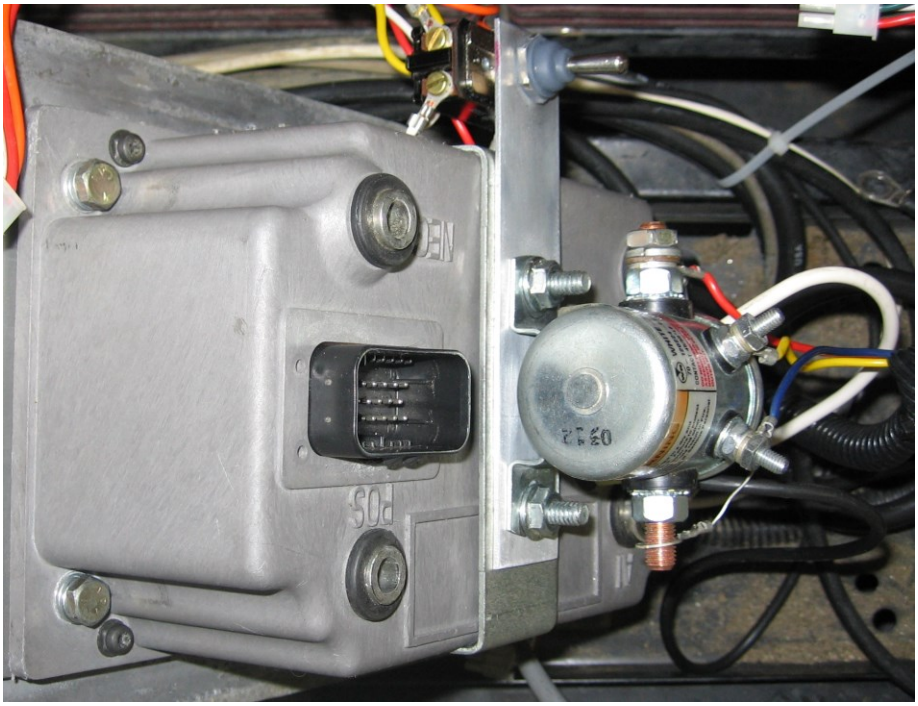
6.) Install the contactor bracket, using the two 1/4 - 20 X 1.5 (HW B 1/4 - 20 1.5) bolts with a 10mm socket. The contactor bracket mounts in the original location, but due to the height of the new control does not rest on the heat sink.
7.) Slide the switch assembly onto the contactor bracket with the switch on the battery side of the control.
8.) Connect the white motor wire to F1 of the control and the black motor wire to F2 of the control.

Figure 9



9.) Slide the contactor back into position and reinstall the contactor nuts (11mm socket) as shown in **Figure 10**.

Figure 10



10.) Connect the wire labeled “B-” to the B- terminal of the control, using the supplied M6 -1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket as shown in **Figure 11**.

11.) Reconnect the short “B+” wire (which was disconnected from the contactor) to the contactor, and then connect the other end of the wire to the B+ terminal of the control, using the supplied M6 -1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket as shown in **Figure 11**.

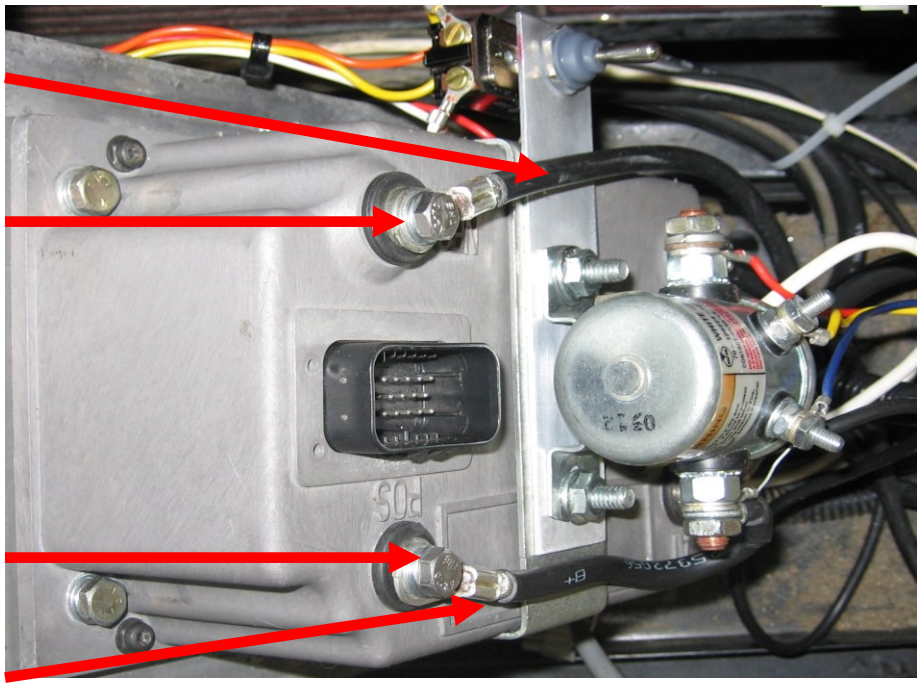


Figure 11

12.) Connect all of the cart connectors to the proper mating connector of the wire harness supplied with the kit (refer to **Figure 12**).
13.) Connect the 23 pin connector to the control as shown in **Figure 12**.
14.) Reconnect the battery cables.

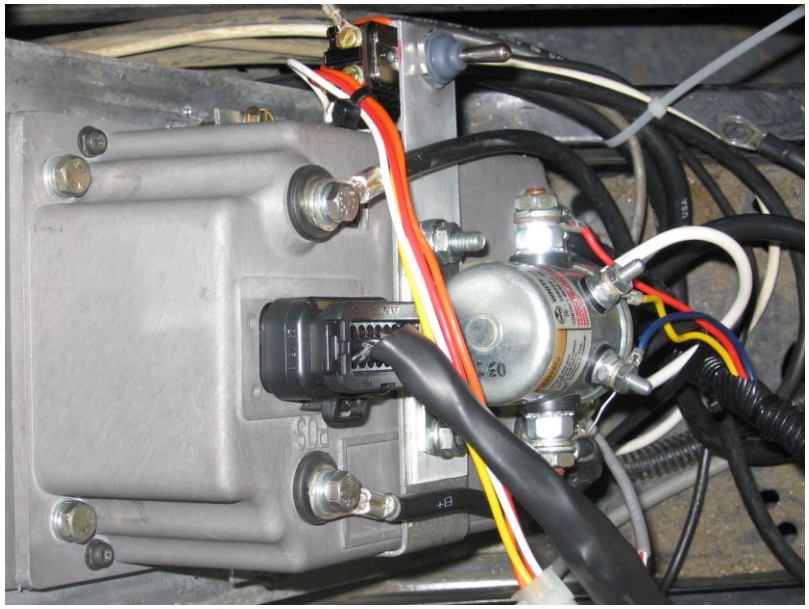
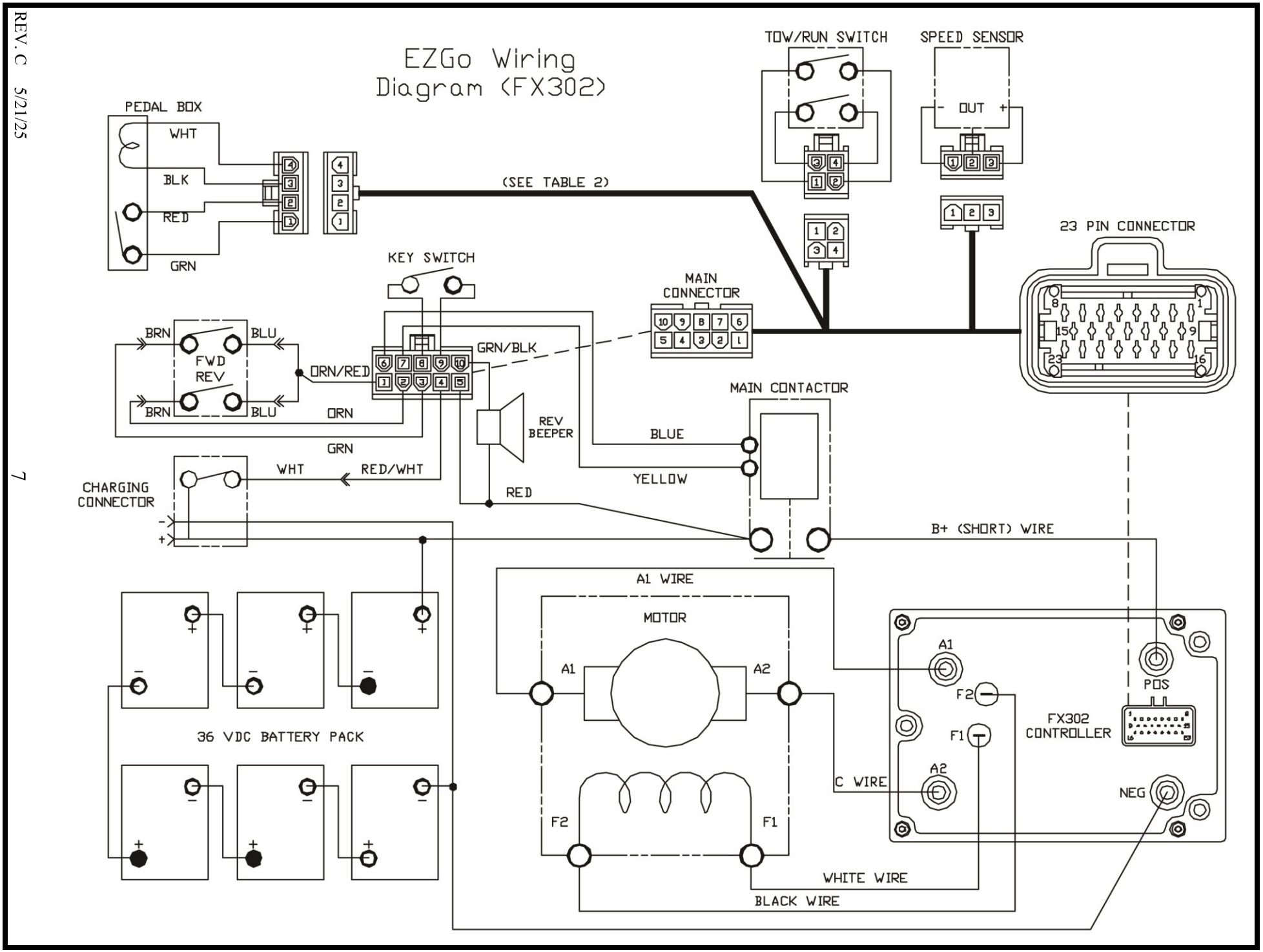


Figure 12


EZGo Wiring
Diagram (FX302)
PEDAL BOX
WHT
BLK
RED
GRN
(SEE TABLE 2)
TOW/RUN SWITCH
SPEED SENSOR
OUT
23 PIN CONNECTOR
KEY SWITCH
MAIN
CONNECTOR
BRN
BLU
FWD
REV
ORN/RED
GRN/BLK
ORN
GRN
REV
BEEPER
MAIN CONTACTOR
BLUE
YELLOW
RED
WHT
RED/WHT
CHARGING
CONNECTOR
B+ (SHORT) WIRE
A1 WIRE
MOTOR
A1
A2
F2
F1
36 VDC BATTERY PACK
C WIRE
WHITE WIRE
BLACK WIRE
FX302
CONTROLLER
POS
NEG

Harness Wiring Table

Connector Name	Pin Numbers	23 Pin Connector Pin Numbers
Tow/Run Switch	2	1
	4	2
Main Connector (10 Pin)	1, 7, 9	1
	2	5
	3	4
	6	11
	8	6
	10	10
Pedal Box	1	1
	2	3
	3	7
	4	15
Speed Sensor	1	16
	2	14
	3	15
Pins 1 and 3 of the **Tow/Run Connector** are connected to Pin 5 of the **Main Connector** There is a 475 Ohm resistor between Pins 7 and 8 of the **23 Pin Connector**		

Table 2

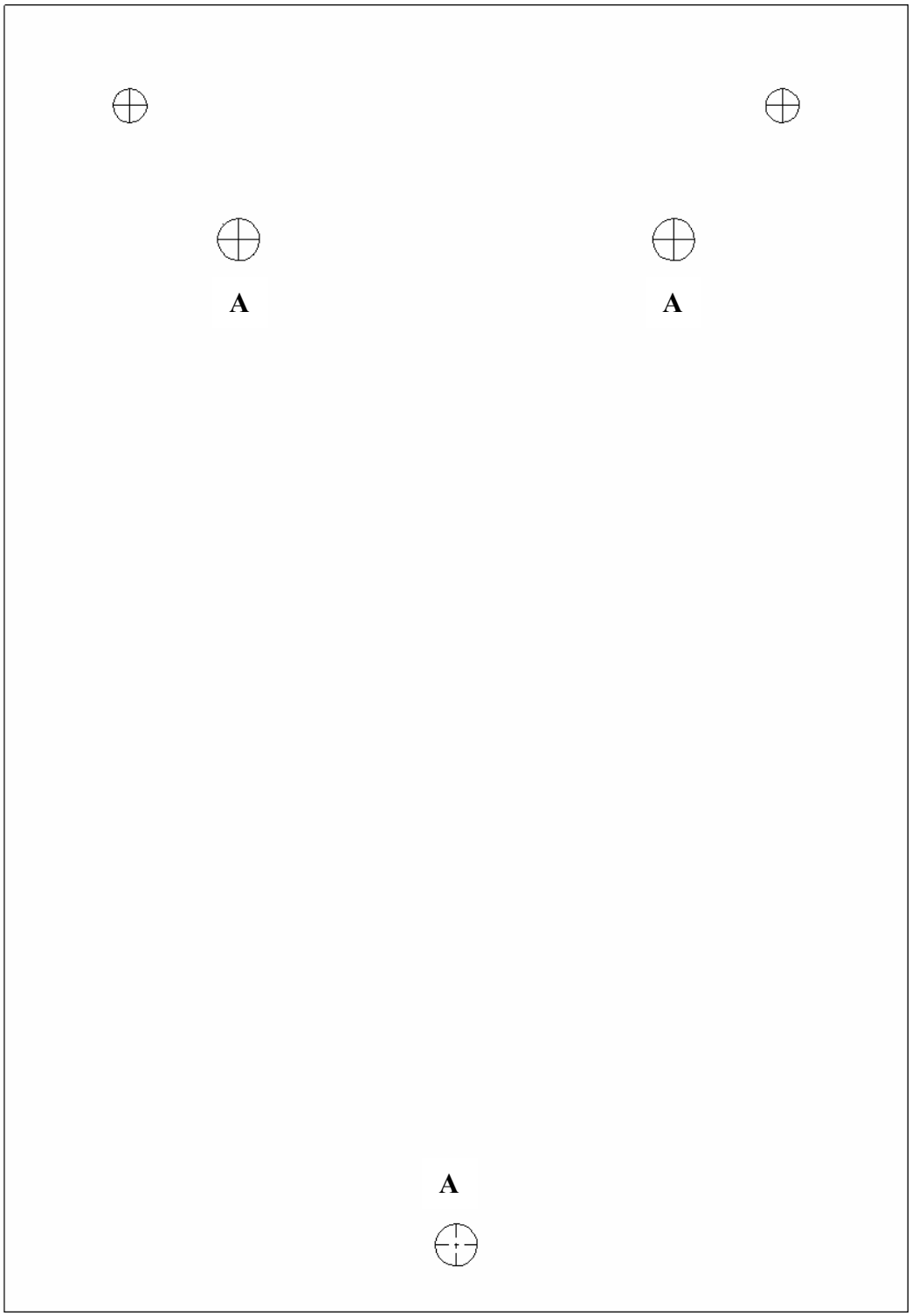


Figure 13

Notes:

 Troubleshooting: 

Perform all troubleshooting checks with rear wheels off the ground.

Cart does not operate

- Verify that all wire connections are correct and secure.
- Verify that the Tow switch is in the run position and the key is on.
- Verify battery volts on pins 1, 2, & 6 on the control.
- Verify approximately battery volts on pin 11 of the control.
- Verify zero volts on pin 3 of the control with no throttle.
- Verify battery volts on pin 3 of the control at full throttle.
- Verify battery volts on pin 4 and zero volts on pin 5 of the control when the forward direction is selected.
- Verify battery volts on pin 5 and zero volts on pin 4 of the control when the reverse direction is selected.
- Verify that control is configured for the correct application (check label).

Contactor closes but no movement

- Verify proper armature and field connections (Refer to supplied wiring diagram).
- Verify approximately 0.5 volts to 1.6 volts on pin 7 of the control as the accelerator is slowly depressed.

Disclaimer:
FSIP Electronics is not responsible for personal injury or equipment damage due to misuse of the product.