FX302 G29 YDRE Conversion



This sheet is provided to aid in the installation of your FSIP FX replacement controller when replacing a stock Moric control. Upon installation, you may encounter problems that may, or may not, be due to a faulty controller. The following steps should be taken to help diagnose a possible faulty cart, motor or wiring. An analog or digital volt ohm meter (VOM) will be needed to perform these checks.

WARRANTY WILL BE VOID

If These Steps are Not Performed Before Installing The Control

STEPS TO PERFORM ***BEFORE*** CONTROL INSTALLATION

BEFORE INSTALLATION:

☐ Place rear wheels on jack stands

☐ Use proper eye protection and tools when working with electrical equipment

☐ Disconnect the batteries

INSTALLATION:

1. Before removing the stock control, cut the A2 cable, leaving the negative cable intact.
2. Now disconnect all cables from the stock controller and remove controller from cart.
3. Mount control using original motor control mounting bolts.
4. Re-crimp another ring terminal to the cut end of the A2 wire.
5. Connect all motor wires (refer to supplied wiring diagram for proper connection).
6. Install adapter harness.

CHECK MOTOR WINDINGS:

☐ Set your VOM to RESISTANCE (Ω).

☐ With your motor disconnected, measure A1 to A2. This must measure BETWEEN .3Ω and 1Ω.

☐ With your motor disconnected, measure F1 to F2. This must measure BETWEEN 1Ω and 2Ω.

☐ With your motor disconnected, measure A1 to F1. This must measure OPEN.

☐ With your motor disconnected, measure F1 to motor case. This must measure greater than 5MΩ.

CHECK MAIN SOLENOID:

☐ Disconnect all wires from the main solenoid.

☐ Set your VOM to RESISTANCE (Ω).

☐ Measure the solenoid coil. This must measure NO LESS than 180Ω.

☐ Connect VOM leads to the main solenoid lugs.

☐ Attach jumpers from main battery positive and negative to the coil (small terminals).

☐ Meter must jump from infinity to LESS THAN .3Ω.

☐ Remove jumpers and reconnect solenoid wiring from the harness. (If suppression diode is present, The non-banded side must go to the Red/Black wire – from pin 11 from controller.)

CHECK THE CART WIRE HARNESS:

☐ Check the connectors on the wire harness for corrosion, loose, broken, burnt or missing pins.

☐ Repair or replace pins as necessary.

IF ANY OF THE ABOVE ITEMS ARE NOT WITHIN THE SPECIFICED RANGES THE CONTROLLER WILL FAIL. THESE ITEMS MUST BE CORRECTED BEFORE THE CONTROLLER IS INSTALLED OR WARRANTY WILL BE VOID.

It is recommended to replace your solenoid at the time of controller replacement. FSIP now stocks popular replacement White Rodgers solenoids for your convenience.

CONVERSION HARNESS

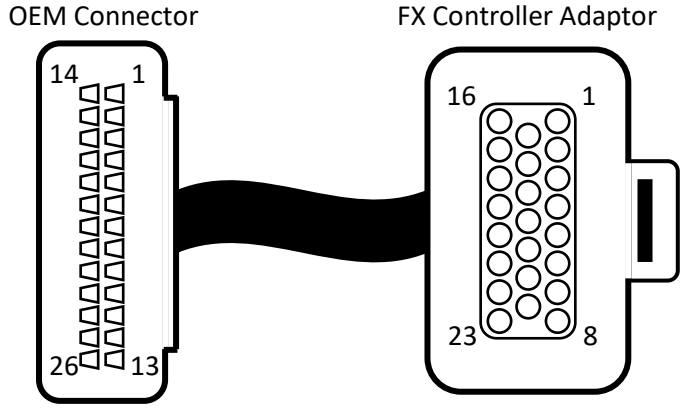
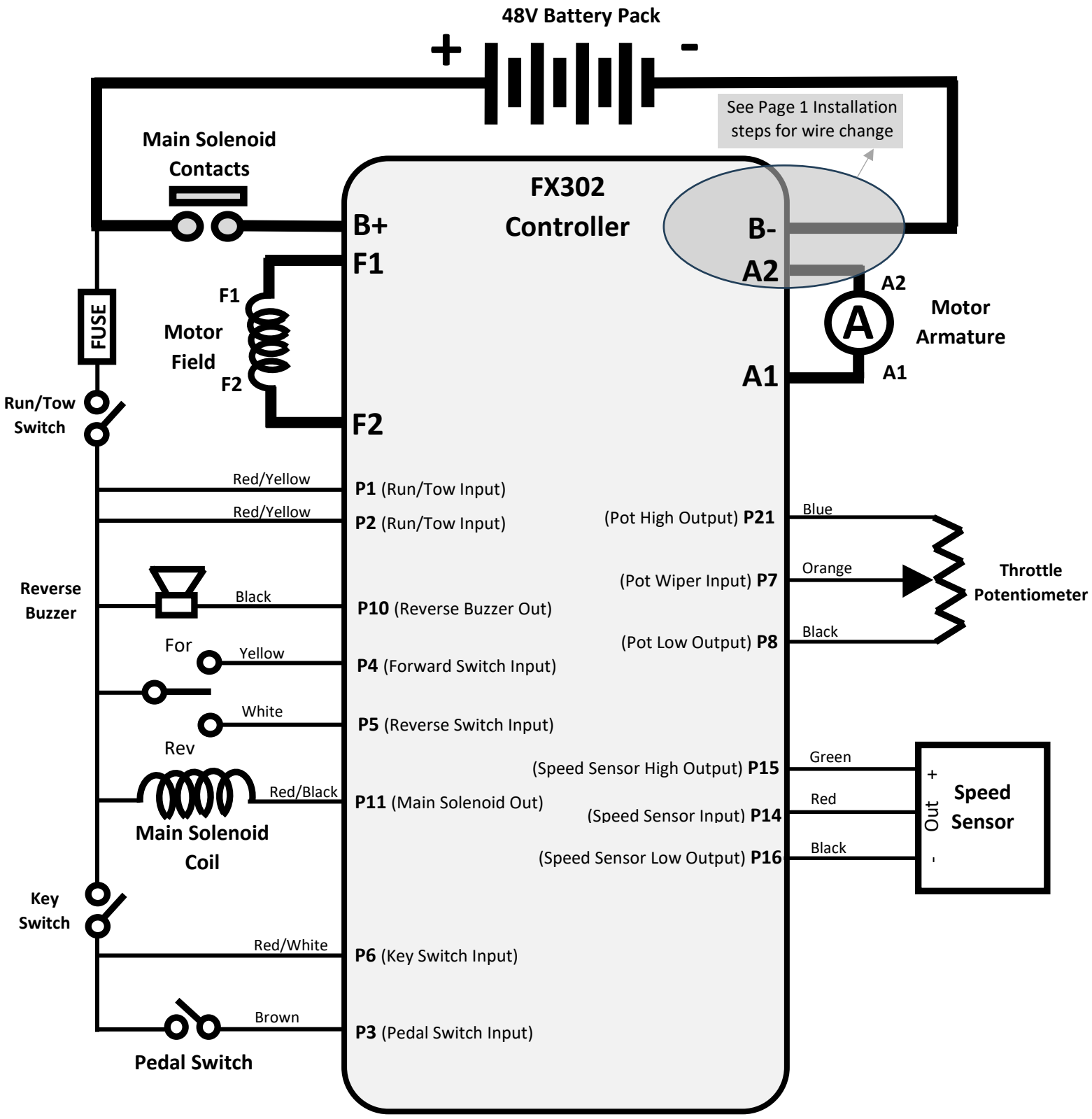


Diagram shows the back (wire) side of Connector

OEM Connector *26 Pin*	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12	Pin 13	Pin 24	Pin 25	Pin 26
FX Adaptor *23 Pin*	Pin 11	Pin 10	Pin 21	Pin 8	Pin 7	Pin 6	Pin 5	Pin4	Pin 3	Pin 2	Pin 1	Pin 16	Pin 15	Pin 14



PIN INPUTS ABOVE SHOWN AT 23PIN HARNESS

GE FX302 G29 Troubleshooting Sequence

FOR SAFETY, ALWAYS LIFT THE DRIVE WHEELS OFF THE GROUND WHEN TROUBLESHOOTING!

ALL TESTS ARE CONDUCTED WITH A GOOD BATTERY PACK VOLTAGE MEASUREMENT. ALSO, THE CONNECTOR MUST BE ATTACHED TO THE CONTROLLER WHEN MAKING THESE CHECKS. YOU WILL NEED TO 'BACK PROBE' THE PINS FROM THE WIRE SIDE OF THE CONNECTOR. USE A PAPERCLIP IF NECESSARY.

Attach voltmeter negative (-) lead to main battery negative (-) for the following tests

Use the following sequence when checking individual pins (don't skip steps). **If you find a fault, do not move on to the next step until the fault is corrected:**

☐ Measure the voltage at the main battery positive post (let's call it Pack Voltage)

☐ **Pin 1** **With Run/Tow Switch Engaged**, must be equal to Pack Voltage
- *If not Pack Voltage, check Run/Tow Switch and main Fuse for open/shorted condition*

☐ **Pin 2** **With Run/Tow Switch Engaged**, must be equal to Pack Voltage
- *If not Pack Voltage, check Run/Tow Switch and main Fuse for open/shorted condition*

☐ **Pin 6** **With Key Switch On**, must equal Pack Voltage
- *If not Pack Voltage, check wiring and Key Switch for an open condition*

☐ **Pin 4** **With F/R Switch in Reverse**, must equal 0 volts
- *If not 0 volts, check wiring and F/R Switch for a shorted condition*

☐ **Pin 4** **With F/R Switch in Forward**, must equal Pack Voltage
- *If not Pack Voltage, check wiring and F/R Switch for an open condition*

☐ **Pin 5** **With F/R Switch in Forward**, must equal 0 volts
- *If not 0 volts, check wiring and F/R Switch for a shorted condition*

☐ **Pin 5** **With F/R Switch in Reverse** must equal Pack Voltage
- *If not Pack Voltage, check wiring and F/R Switch for an open condition*

☐ **Pin 3** **With Pedal Up**, must equal 0 volts
- *If not 0 volts, check wiring and Pedal Switch for a shorted condition*

☐ **Pin 3** **With Pedal Down**, must equal Pack Voltage
- *If not Pack Voltage, check wiring and Pedal Switch for an open condition*

☐ **Pin 10** **With Direction Switch in Neutral/Forward**, must equal Pack Voltage
- *If not Pack Voltage, check wiring and make sure beeper is present and connected*

☐ **Pin 10** **With Direction Switch in Reverse**, must equal approximately 0 volts (and beeper sounds)
- *If not approximately 0 volts, check connector and wire terminal for being burnt/corroded. If terminal is clean, controller may be defective*

☐ **Pin 8** Must equal 0 volts
- *If not 0 volts, check connector and wire terminal for being burnt/corroded. If terminal is clean, controller may be defective*

☐ **Pin 21** Must equal approximately 3.5 volts
- *If not approximately 3.5 volts, check connector and wire terminal for being burnt/corroded. If terminal is clean, controller may be defective*

☐ **Pin 7** **With Pedal Up**, must be approximately 0.5 volts.
- *If not, check wiring and MCOR for open condition*

☐ **Pin 7** **With Pedal Fully Down**, must equal approximately 3.5 volts.
- *If not approximately 3.5 volts, check wiring and MCOR for shorted condition*

Continued on next page …

☐ **Pin 11 With Pedal Up**, must equal approximately pack voltage
- *If not approximately pack voltage, check solenoid coil and wiring for an open condition*

☐ **Pin 11 With Pedal Down**, must equal approximately 0 volts
- *If not approximately 0 volts, check terminal for being burnt/corroded. If terminal is clean, controller may be defective.*

☐ **Pin 15** Must equal approximately 12 volts
- *If not approximately 12 volts, remove speed sensor to see if voltage recovers to 12 volts. If it does return, replace speed sensor, if it does not return, check wiring*

☐ **Pin 16** Must equal approximately 0 volts
- *If not approximately 0 volts, check terminal for being burnt/corroded. If terminal is clean, controller may be defective.*

☐ **Pin 14 While <u>slowly</u> turning the drive wheel**, must toggle between 0 volts and approximately 5 volts
- *If not toggling, check wiring and if necessary replace Speed Sensor and magnet*

If any issues with above readings, it could be good to check back with the OEM harness to ensure no issues with adaptor pigtail.

Helpful Hints

☐ **DO NOT UNDER ESTIMATE THE IMPORTANCE OF MOTOR RESISTANCE CHECKS AND MAIN SOLENOID CHECKS. MANY CART ISSUES ARE CAUSED BY BURNT/DAMAGED BRUSHES THAT WILL BE FOUND AS PART OF THE ARMATURE RESISTANCE CHECK. ALSO A SHORTED ARMATURE AND FIELD WITHIN THE MOTOR <u>WILL</u> DAMAGE THIS CONTROLLER.**

FSIP Electronics also offers the following Technical Support options …

Troubleshooting Manuals / Codes
www.shop.fsip.biz/en/content/technical-documents

Live Tech Support Chat
www.shop.fsip.biz

Technical Support Forum
fsip.websitetoolbox.com

Phone Support
1-800-333-1194 (Option 4)

PRE-INSTALLATION INSTRUCTIONS MUST BE FOLLOWED OR WARRANTY WILL BE VOID

IMPORTANT!
GE FX302 G29 CONVERSION TROUBLESHOOTING INFORMATION INCLUDED IN THIS PACKET