

# FX Supervisory Controllers RS-485 Card Installation Instructions

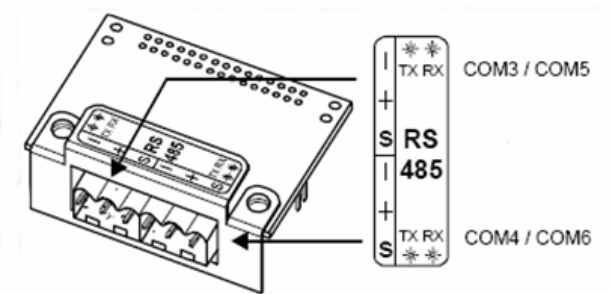
## Applications

The RS-485 option card provides dual port, isolated RS-485 communications capability to the FX Supervisory Controllers. You can install up to two RS-485 option cards per FX Supervisory Controller.

If an RS-485 option card is installed in Option Slot 1, then the ports are COM3 and COM4. If an RS-485 option card is installed in Option Slot 2, then the ports are COM3 and COM4 (unless the RS-232 option card is installed in Option Slot 1). If the RS-232 option card is installed in Option Slot 1, the RS-485 ports are COM4 and COM5. See Table 1.

If two RS-485 option cards are installed, then the ports are COM3 and COM4 for the card in Option Slot 1, and COM5 and COM6 for the card in Option Slot 2.

For related information on FX Supervisory Controller mounting and wiring, refer to the *FX Supervisory Controller Installation Instructions* (Part No. 24-10174-77).



**Figure 1: FX Supervisory Controller RS-485 Card**

## North American Emissions Compliance

### United States

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

### Canada

This Class (A) digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## Installation

Unpack the RS-485 option card and inspect the contents of the package for damaged or missing components. If the option card is damaged, notify the appropriate carrier and return any damaged components for repair or replacement.

### Parts Included

Included in this package are the following items:

- one RS-485 option card, along with connector end plate
- two 3-position terminal plugs, for wiring to two RS-485 networks
- *FX Supervisory Controller RS-485 Card Installation Instructions* (Part No. 24-10174-69)

## Special Tools Needed

The following supplies and tools are required for installation:

- **#2 Phillips screwdriver:** used to install the RS-485 card
- **small flat-blade screwdriver:** used to make wiring connections to the RS-485 network wiring



### **WARNING: Risk of Electric Shock.**

Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electric shock and may result in injury or death.

**IMPORTANT:** Make sure to plug any option card into its connector properly (pins aligned).

**IMPORTANT:** Avoid hot plug-in or the removal of any option card from the FX Supervisory Controller. This means you must first remove power from the unit.

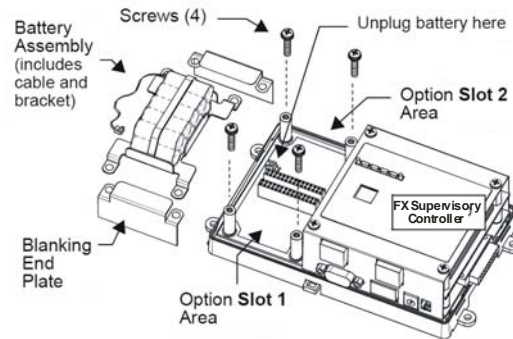
## Mounting

### **Mounting the RS-485 Card onto the FX Supervisory Controller**

Mount the RS-485 card in either of the option card slots on the FX Supervisory Controller, as available.

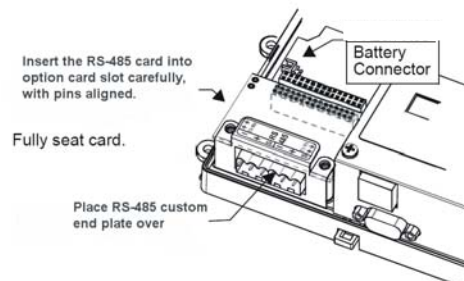
To mount the RS-485 card onto the FX Supervisory Controller:

1. Remove power from FX Supervisory Controller.
2. Remove the FX Supervisory Controller cover by pressing in the four tabs on both ends of the FX Supervisory Controller and lifting off the cover.  
**Note:** If accessory modules are plugged into the FX Supervisory Controller, you may need to slide them away from the unit to access the cover tabs.
3. Remove the battery and bracket assembly by taking out the four screws holding the bracket in place. Set the screws aside for later.
4. Unplug the battery from the connector on the FX Supervisory Controller (Figure 2).



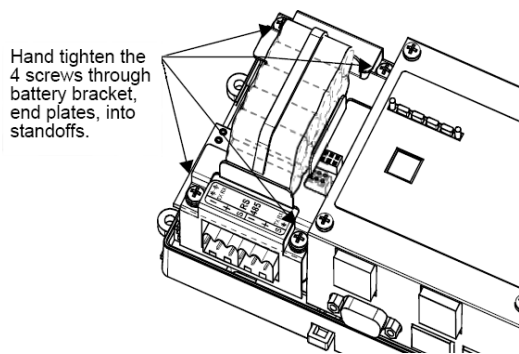
**Figure 2: Removing Battery Assembly**

5. Remove the blanking end plate for the slot you want to install the option card into. Retain the blanking end plate in case you want to remove the option card at a later date.
6. Carefully insert the pins of the RS-485 card into the socket of the appropriate option card slot. The mounting holes on the RS-485 card should line up with the standoffs on the FX Supervisory Controller. If they do not line up, the connector is not properly aligned.
7. Press until the RS-485 Card is completely seated.
8. Place the custom end plate that came with the RS-485 Card over the connector (Figure 3).



**Figure 3: Inserting RS-485 Card**

9. Plug the battery cable into the battery connector on the FX Supervisory Controller. See Figure 2 for the location.
10. Set the battery and bracket assembly back over the option card slots, with the mounting holes aligned with the standoffs.
11. Place the four screws through the battery bracket, end plates, and into the standoffs on the FX Supervisory Controller. Hand tighten these screws with screwdriver. See Figure 4.



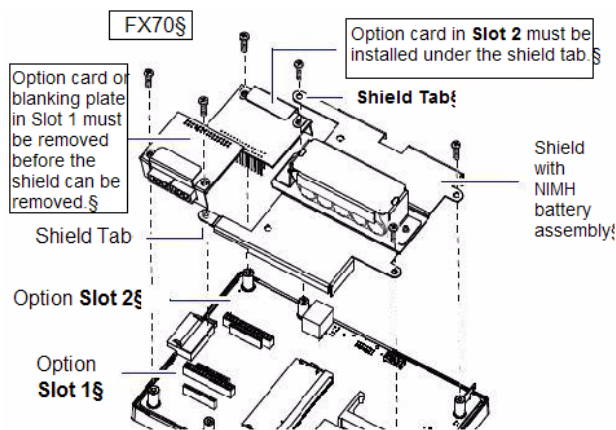
**Figure 4: Refasten Screws**

12. Replace the FX Supervisory Controller cover. If accessory modules were unplugged, plug them back into the FX Supervisory Controller as before, and secure the modules.

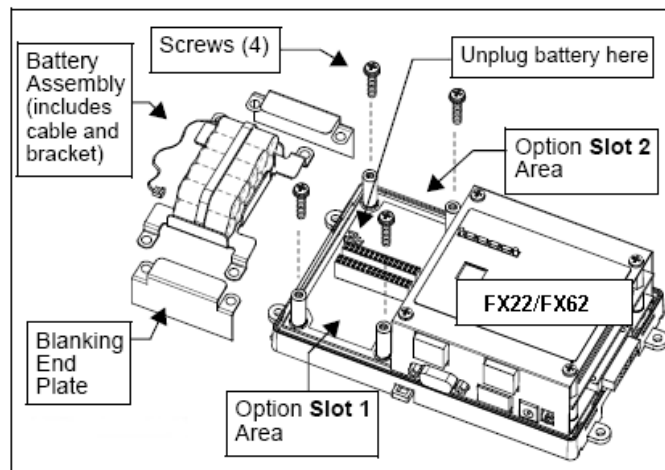
## Wiring

Connect the RS-485 network communications wiring to the 3-position connector of the RS-485 Card. The screw terminals from left to right are shield, plus (+), and minus (-).

Refer to the TIA/EIA-485 standard for technical guidelines associated with RS-485 network wiring guidelines.



**Figure 5: FX70 Option Card Slots**



**Figure 6: FX22/62 Option Card Slots**

## Repair Information

If the RS-485 option card fails to operate within its specifications, replace the unit. For a replacement option card, contact the nearest Johnson Controls® representative.

## Operation

### Light-Emitting Diodes (LEDs)

Two sets of two LEDs (one set for each RS-485 port) appear on the top of the RS-485 option card (cover must be removed from the FX Supervisory Controller):

- **RX (green):** Receive. Indicates that another RS-485 device is transmitting a message.
- **TX (yellow):** Transmit. Indicates that the FX Supervisory Controller is transmitting a message on the RS-485 network.

**Table 1: RS-485 Card Option Slots**

<b>FX20/FX60</b>		<b>FX70</b>		<b>FX22/FX62</b>
Up to 2 RS-485 cards supported		Up to 2 RS-485 cards supported		Only 1 RS-485 card supported
<b>Option Slot 1</b>	<b>Option Slot 2</b>	<b>Option Slot 1</b>	<b>Option Slot 2</b>	<b>Option Slot</b>
RS-485 = COM3, COM4	RS-485 = COM5, COM6	RS-485 = COM5, COM6	RS-485 = COM7, COM8	RS-485 = COM7, COM8
RS-232 = COM3	RS-485 = COM4, COM5	RS-232 = COM5	RS-485 = COM6, COM7	
LON = LON1	RS-485 = COM3, COM4	LON = LON1	RS-485 = COM5, COM6	
Wireless TEC = COM1	RS-485 = COM3, COM4	NA	NA	
Sedona = COM3	RS-485 = COM4, COM5	Sedona = COM5	RS-485 = COM6, COM7	
Modem = COM1	RS-485 = COM3, COM4	Modem = COM3	RS-485 = COM5, COM6	
GPRS = COM3, COM4	RS-485 = COM5, COM6	GPRS = COM5, COM6	RS-485 = COM7, COM8	



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