

FB2100/FB2200 Flow Computer Relay Field Replacement Guide



For Part Numbers (Kits):

- 395282-01-0: Relay

Device Safety Considerations

▪ Reading these Instructions

Before operating the device, read these instructions carefully and understand their safety implications. In some situations, improperly using this device may result in damage or injury. Keep this manual in a convenient location for future reference. Note that these instructions may not cover all details or variations in equipment or cover every possible situation regarding installation, operation, or maintenance. Should problems arise that are not covered sufficiently in the text, immediately contact Customer Support for further information.

▪ Protecting Operating Processes

A failure of this device – for whatever reason -- may leave an operating process without appropriate protection and could result in possible damage to property or injury to persons. To protect against this, you should review the need for additional backup equipment or provide alternate means of protection (such as alarm devices, output limiting, fail-safe valves, relief valves, emergency shutoffs, emergency switches, etc.). Contact Remote Automation Solutions for additional information.

▪ Returning Equipment

If you need to return any equipment to Remote Automation Solutions, it is your responsibility to ensure that the equipment has been cleaned to safe levels, as defined and/or determined by applicable federal, state and/or local law regulations or codes. You also agree to indemnify Remote Automation Solutions and hold Remote Automation Solutions harmless from any liability or damage which Remote Automation Solutions may incur or suffer due to your failure to ensure device cleanliness.

▪ Grounding Equipment

Ground metal enclosures and exposed metal parts of electrical instruments in accordance with OSHA rules and regulations as specified in *Design Safety Standards for Electrical Systems*, 29 CFR, Part 1910, Subpart S, dated: April 16, 1981 (OSHA rulings are in agreement with the National Electrical Code). You must also ground mechanical or pneumatic instruments that include electrically operated devices such as lights, switches, relays, alarms, or chart drives.

Important: Complying with the codes and regulations of authorities having jurisdiction is essential to ensuring personnel safety. The guidelines and recommendations in this manual are intended to meet or exceed applicable codes and regulations. If differences occur between this manual and the codes and regulations of authorities having jurisdiction, those codes and regulations must take precedence.

▪ Protecting from Electrostatic Discharge (ESD)

This device contains sensitive electronic components which be damaged by exposure to an ESD voltage. Depending on the magnitude and duration of the ESD, it can result in erratic operation or complete failure of the equipment. Ensure that you correctly care for and handle ESD-sensitive components.

System Training

A well-trained workforce is critical to the success of your operation. Knowing how to correctly install, configure, program, calibrate, and trouble-shoot your Emerson equipment provides your engineers and technicians with the skills and confidence to optimize your investment. Remote Automation Solutions offers a variety of ways for your personnel to acquire essential system expertise. Our full-time professional instructors can conduct classroom training at several of our corporate offices, at your site, or even at your regional Emerson office. You can also receive the same quality training via our live, interactive Emerson Virtual Classroom and save on travel costs. For our complete schedule and further information, contact the Remote Automation Solutions Training Department at 800-338-8158 or email us at education@emerson.com.

Ethernet Connectivity

This automation device is intended to be used in an Ethernet network which **does not** have public access. The inclusion of this device in a publicly accessible Ethernet-based network is **not recommended**.

Removing/Replacing the Relay

The FB2100/FB2200 Flow Computer supports an optional electro-mechanical relay for switching on/off an external circuit or device. The relay mounts to the top of the battery enclosure. In all cases, the relay requires 24V power. You can wire it to either an isolated or non-isolated digital output (DO), but you must use the appropriate ground for either isolated or non-isolated.

Refer to the table below for the correct field replacement part number.

Item	Field Replacement Kit Part Number
Electro-mechanical Relay	395828-01-0
UL File Number for these kits is: E192567	

Ambient Temperature Range

May be used up to a *maximum* ambient temperature of 70°C and a *minimum* ambient temperature of -40°C; refer to the data plate attached to the device for ambient temperature.

Required Tools

- Flat head screwdriver

Electrical Ratings

- **Input Voltage:** 10.5 Vdc to 30 Vdc external supply (Max power at 10 watts)

WARNING

EXPLOSION HAZARD –Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

WARNING

EXPLOSION HAZARD -Substitution of any components may impair suitability for Class I, Division 2.

DANGER

EXPLOSION HAZARD: Never open the enclosure in a hazardous location. Opening the enclosure in a hazardous location could result in an explosion.



Important

If this equipment is used in a manner not specified by the manufacturer, the protection provided by equipment may be impaired.

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Removing/Replacing the Relay

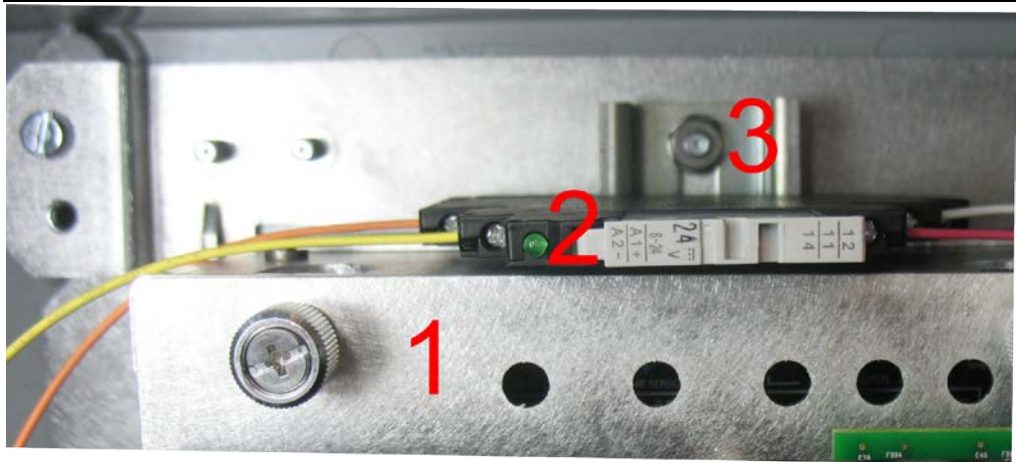
UL Field Installed Accessory Kit for Use in Class I, Division 2, Groups A, B, C, and D

- Flow Computer Relay Field Installed Accessory Kit Part No. 395828-01-0 for use with UL Listed Model Series FB2100 and FB2200.



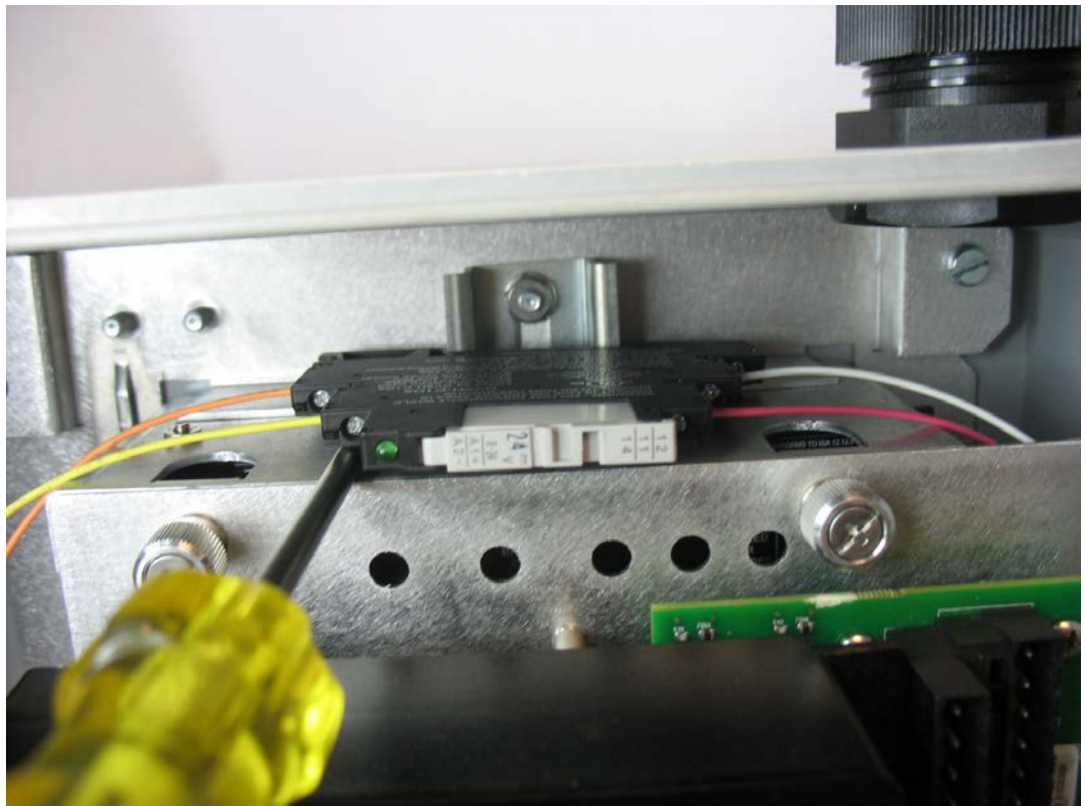
- 1 Flexible tab
- 2 Non-flexible tab

1. Open the enclosure.



- 1 Top of battery enclosure
- 2 Relay
- 3 Relay Mounting Bracket/DIN rail

2. Gently slide the tip of a flat head screwdriver between the relay and the top of the battery enclosure.

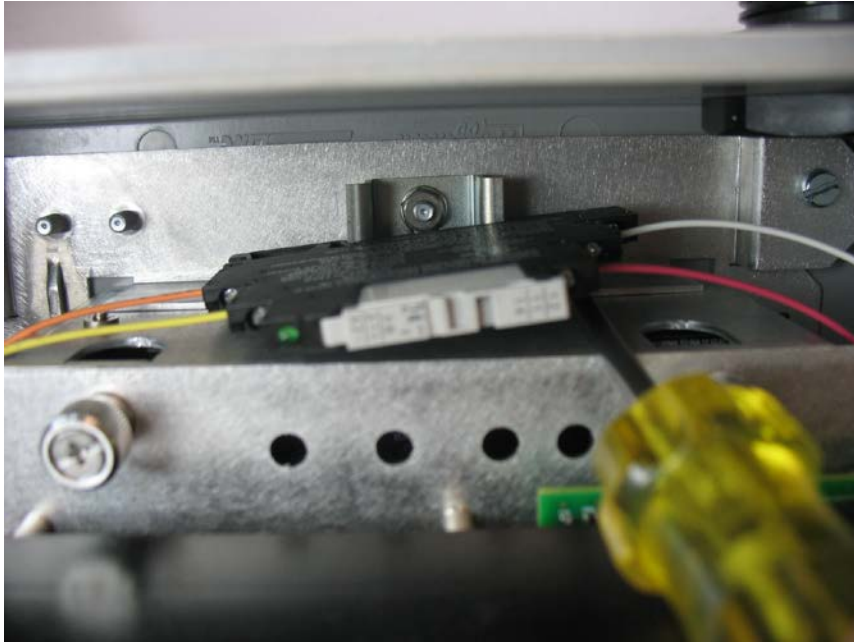


3. Move the screwdriver tip to either side of the relay and press down gently on the screwdriver handle to apply upward pressure on one side of the relay so that it moves slightly up the relay mounting bracket.

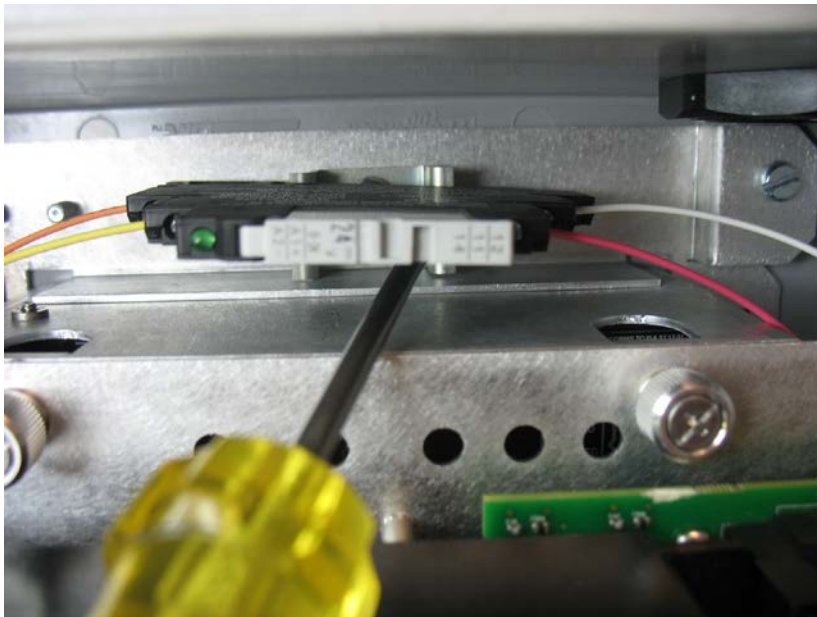
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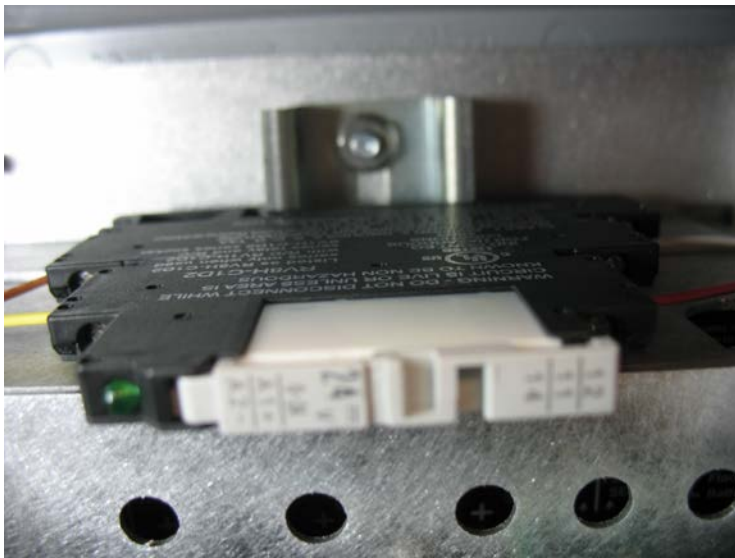
4. Repeat this process on the other side of the relay and continue alternating between the sides to gradually work the relay up and off of the relay mounting bracket.



5. Remove wires from the old relay and then attach them to the new (replacement) relay. (See [Wiring the Relay to an Isolated DO](#) or [Wiring the Relay to a Non-Isolated DO](#) as appropriate to the type of digital output you want to use.)
6. Once you finish wiring to the new relay, slide it across the top of the battery enclosure and hook the non-flexible tab onto the relay mounting bracket.



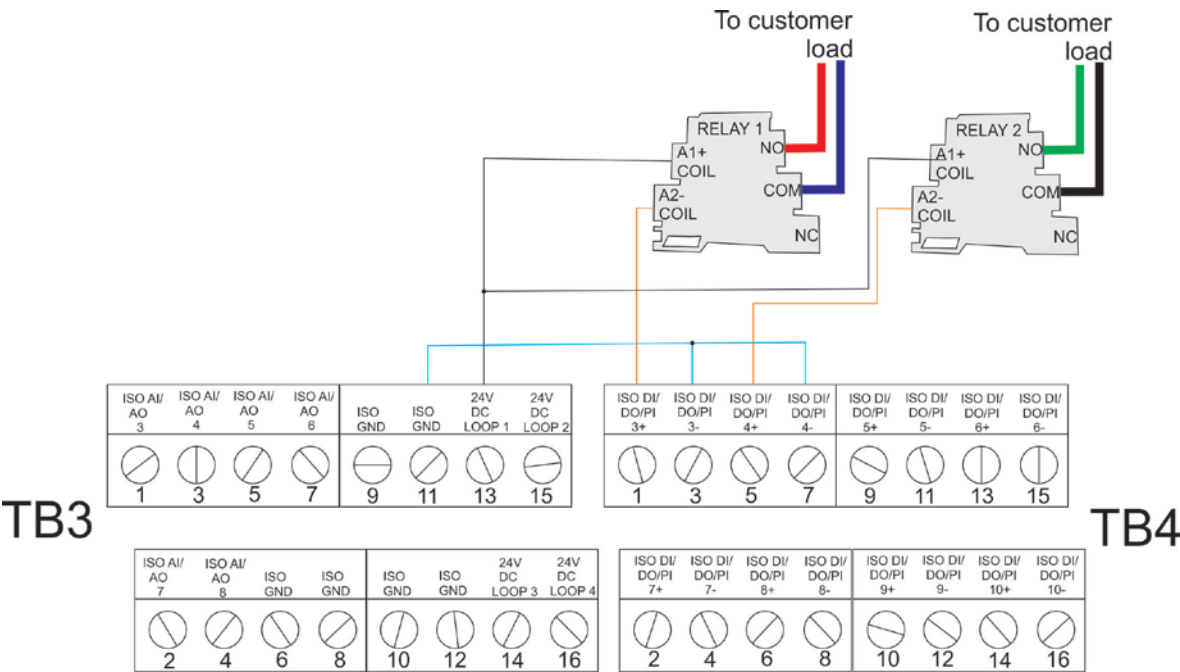
7. Now press the relay against the relay mounting bracket so the flexible tab works around the bracket and the relay snaps into place.



8. Close the enclosure.

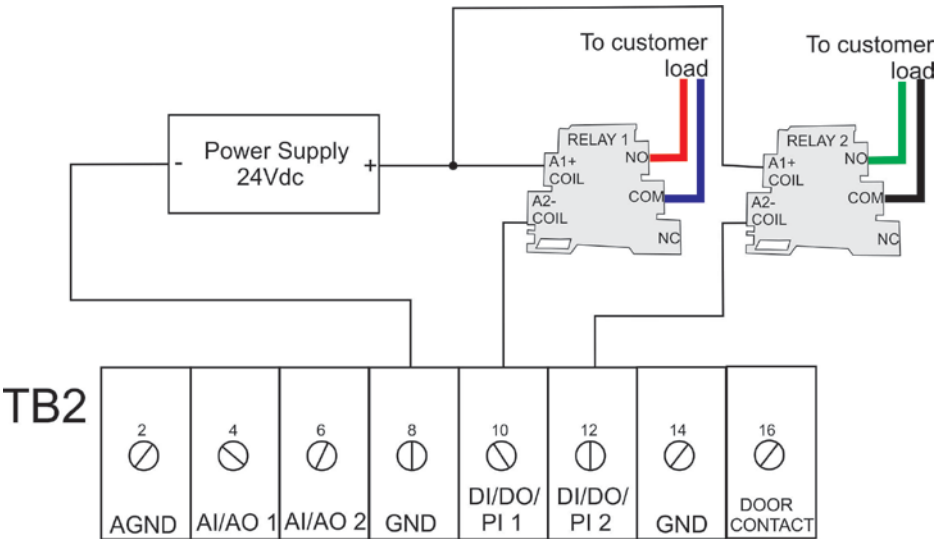
Wiring the Relay to an Isolated DO

You can wire the relay to an isolated DO. You must also use the isolated GND and provide 24V to power the relay. To attach a wire, insert it into the connector and tighten the adjacent screw to secure it.



Wiring the Relay to Non-Isolated DO

Alternatively, you can wire the relay to a non-isolated DO. In that case, you must use the non-isolated GND and provide 24V to power the relay. To attach a wire, insert it into the connector and tighten the adjacent screw to secure it.



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