

FB1100/FB1200 Flow Computer End Cap Field Replacement Guide



For Part Numbers (Kits):

- 399122-01-0 (with window)
- 399123016-KIT (without window)

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 End Caps

The flow computer includes two threaded covers called **end caps**. The front end cap includes a window for viewing the HMI module; the rear end cap provides access to the terminal plate for power and I/O wiring.

You can replace the end cap in the field provided that the replacement is the identical end cap type.

Restriction

Hazardous area approvals require that any part replaced in the field be the exact same part (“like for like”). Upgrading or substituting different parts violates hazardous area certification.

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

Item	UL Field Replacement Kit Part Number
Housing End Cap with Glass Window (Front Cover)	399122-01-0
Housing End Cap without Glass Window (Rear Cover)	399123016-KIT
UL File Number for these kits: E192567	

Ambient Temperature Range

May be used up to a *maximum* ambient temperature of 80 °C and a *minimum* ambient temperature of –40 °C; refer to the data plate attached to the device for ambient temperature.

Required Tools

- 3mm hexagonal torque wrench. Range must include 10 to 12 in-lbs (1.1 to 1.4 N-m).

⚠ WARNING

EXPLOSION HAZARD –Ensure the area in which you perform this operation is non-hazardous. Performing this operation in a hazardous area could result in an explosion.

⚠ WARNING

EXPLOSION HAZARD –Never remove end cap(s) in a hazardous location. Removing cover(s) 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.

Removing/Tightening the End Cap with long screwdriver



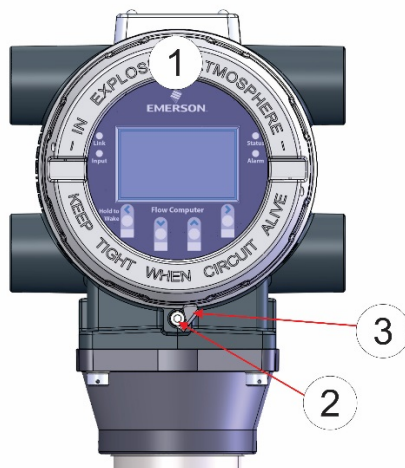
Note

If you need more leverage, place a long screwdriver or other appropriate tool across the two notches in the end cap to act as a pry bar.

Removing/Replacing the Retaining Clamp on End Caps

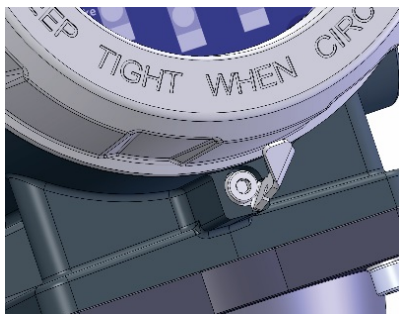
For flameproof ATEX/IEC applications, each end cap includes a retaining clamp which screws down to prevent the end cap from being unscrewed.

Front End Cap with Retaining Clamp Fitted



- 1 End Cap
- 2 Screw
- 3 Retaining Clamp

Retaining Clamp in Place



To loosen or tighten the screw, use a 3mm hexagonal wrench. When tightening, torque to 10 to 12 in-lbs (1.1 to 1.4 N-m).

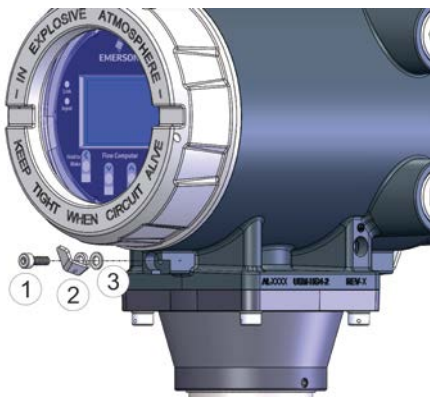
Removing End Caps

⚠ WARNING

EXPLOSION HAZARD –Never remove end cap(s) in a hazardous location. Removing cover(s) in a hazardous location could result in an explosion.

1. Remove the retaining clamp on the front end cap (if present) using a 3 mm hexagonal wrench.

Components of Retaining Clamp Assembly



- 1 Screw
- 2 Retaining Clamp
- 3 Washer

2. Grasp the end cap (front or rear).

Front End Cap



Rear End Cap

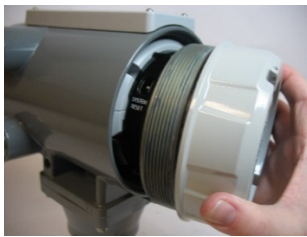


3. Unscrew the end cap by turning it counter-clockwise until it comes off. Set the end cap aside in a safe location.

Note

If you need more leverage, place a long screwdriver or other appropriate tool across the two notches in the end cap to act as a pry bar.

Front End Cap (unscrewed)



Rear End Cap (unscrewed)



Replacing the End Caps

UL Listed End Cap Field Installed Accessory Kit for Use in Class I, Division 1, Groups C, and D; and Class I, Division 2, Groups A, B, C, and D

- Flow Computer End Cap with Window Field Installed Accessory Kit Part No. 399122-01-0 and Flow Computer End Cap without Window Pack Field Installed Accessory Kit Part No. 399123016-KIT for Use with UL Listed Class I, Division 1, Groups C, and D; and Class I, Division 2, Groups A, B, C, and D Model Series FB1100 and FB1200.

WARNING

EXPLOSION HAZARD –When replacing end caps, inspect the housing threads for damage. If housing threads are damaged such that you cannot properly seal the end caps, you cannot operate the flow computer in a hazardous area. You must return the flow computer to Emerson for repair or replacement.

1. Grasp the end cap (front or rear).
2. When replacing the end cap, carefully align the end cap threads with the threads of the enclosure and replace the front end cap.

Important

When replacing the rear end cap, ensure wires connecting to the terminal plate do not get crimped or caught between the end cap threads and the enclosure.

3. Screw the end cap clockwise (eight full turns) until it is tightly sealed to the enclosure. End caps must have at least 8 full threads engaged upon reassembly.

Note

If you need more leverage, place a long screwdriver or other appropriate tool across the two notches in the end cap to act as a pry bar.

4. If applicable, tighten the retaining clamp using the screw and washer onto the end cap using a 3mm hexagonal wrench. When tightening, torque to 10 to 12 in-lbs (1.1 to 1.4 N-m).

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