

Form A6285

Part Number D301649X012

November 2009

FOUNDATION[™] Fieldbus HSE Field Conversion Guide

Remote Automation Solutions



Revision Tracking Sheet

November 2009

This manual may be revised periodically to incorporate new or updated information. The revision date of each page appears at the bottom of the page opposite the page number. A change in revision date to any page also changes the date of the manual that appears on the front cover. Listed below is the revision date of each page (if applicable):

Page	Revision
Initial issue	Nov-09

NOTICE

Remote Automation Solutions ("RAS"), division of Emerson Process Management shall not be liable for technical or editorial errors in this manual or omissions from this manual. RAS MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THIS MANUAL AND, IN NO EVENT SHALL RAS BE LIABLE FOR ANY INCIDENTAL, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PRODUCTION, LOSS OF PROFITS, LOSS OF REVENUE OR USE AND COSTS INCURRED INCLUDING WITHOUT LIMITATION FOR CAPITAL, FUEL AND POWER, AND CLAIMS OF THIRD PARTIES.

Bristol, Inc., Bristol Canada, BBI SA de CV and Emerson Process Management Ltd., Remote Automation Solutions division (UK) are wholly owned subsidiaries of Emerson Electric Co. doing business as Remote Automation Solutions ("RAS"), a division of Emerson Process Management. ROC, FloBoss, ROCLINK, Bristol, Bristol Babcock, ControlWave, TeleFlow and Helicoid are trademarks of RAS. AMS, PlantWeb and the PlantWeb logo are marks of Emerson Electric Co. The Emerson logo is a trademark and service mark of the Emerson Electric Co. All other trademarks are property of their respective owners.

The contents of this publication are presented for informational purposes only. While every effort has been made to ensure informational accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. RAS reserves the right to modify or improve the designs or specifications of such products at any time without notice. All sales are governed by RAS' terms and conditions which are available upon request.

RAS does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any RAS product remains solely with the purchaser and end-user.

© 2009 Remote Automation Solutions, division of Emerson Process Management. All rights reserved.

Overview

This *FOUNDATION™ Fieldbus HSE Field Conversion Guide* details the materials and tasks you need to convert a Series 2 ROC800 expansion backplane into a FOUNDATION Fieldbus Interface (FFI) HSE server.



Warning

Adding an FFI into a Series 2 ROC827 currently in the field de-rates the ROC827's T4A temperature code rating to a T4 temperature code rating. Refer to the label on the bottom of the ROC827 for further information.

The conversion focuses on field-installed ROC827 controllers and enables you to reconfigure an expansion backplane on the ROC827 to accept the FFI CPU module. Follow these instructions to ensure a safe installation and correct functioning of the new electronics.

Note: Before you begin the actual conversion, read through this manual to familiarize yourself with the required parts and procedures. If you need additional technical information, refer to the *FOUNDATION Fieldbus Interface Instruction Manual* (Form A6259). The CD-ROM included with the FFI CPU contains a copy of that manual.



Caution

You can perform this conversion ONLY if your ROC800 has Series 2 (black) backplanes. If the ROC800 case is made of gray plastic or the backplanes are green, do not proceed with the conversion.

Upgrade Components

A CD-ROM accompanies the FFI CPU module (and any H1 modules) you order. Ensure that you have these items **before** you begin the upgrade process.

- FOUNDATION Fieldbus Interface CPU module
The CPU module is a faceplate assembly attached to a printed circuit board.

Note: Series 2 CPUs have black faceplates and black printed circuit boards to distinguish them from Series 1 CPUs (which have gray faceplates and green printed circuit boards).

- Up to four H1 modules.
- One CD-ROM (P/N FSFIC-1/FIC1) that contains the Field Interface Configurator software you use to configure your FFI CPU as well as a set of user documentation, including:
 - *FOUNDATION Fieldbus HSE Field Conversion Guide* (Form A6258) (this document, P/N D301649X012)

- *FOUNDATION Fieldbus Interface Instruction Manual* (Form A6259) (P/N D301461X012)
- *Field Interface Configurator User Manual* (Form 16250) (P/N D301575X012)

Tools The following tools are **not** included in the kit but are used in the conversion:

- Philips screwdriver, size 0.
- Flat blade screwdriver, size 2.5 mm (0.1 inch).
- Standard set of pliers.

Preparing for the Conversion



Warning

Adding an FFI into a Series 2 ROC827 currently in the field de-rates the ROC827's T4A temperature code rating to a T4 temperature code rating. Refer to the label on the bottom of the ROC827 for further information.

Converting a Series 2 ROC800 expansion backplane to a FFI HSE server requires you to remove the upper left-most module guide to accommodate the Foundation Fieldbus CPU Interface module. See *Figure 1*:

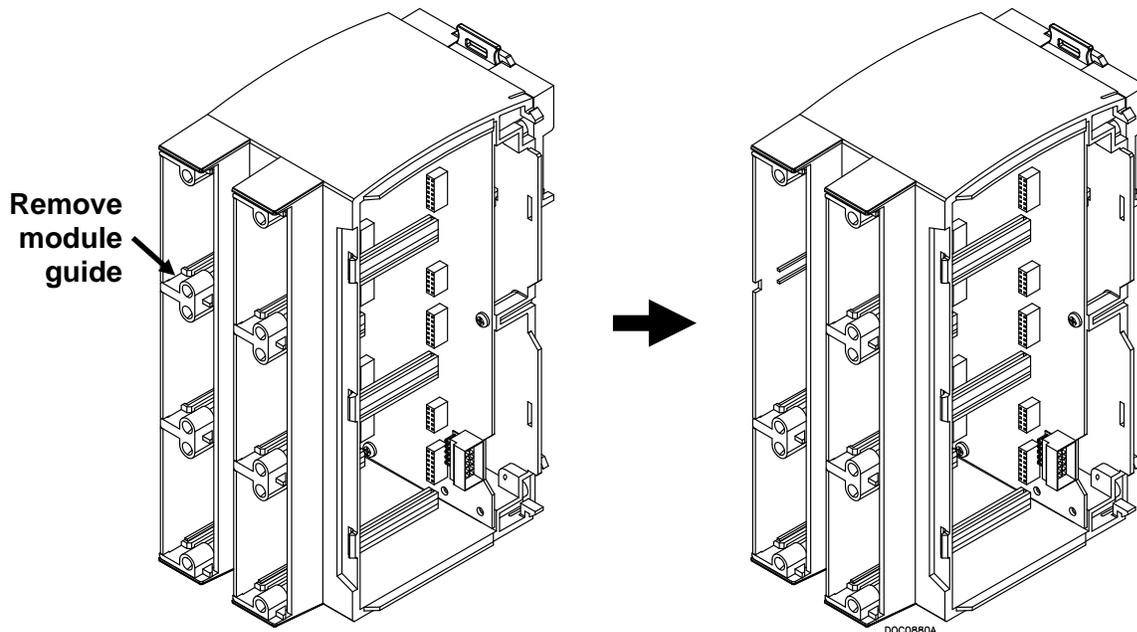


Figure 1. Original and Converted Series 2 Expansion Backplane



Warning

Verify that the area is non-hazardous before you begin the following procedures. Failure to do so may result in serious personal injury.

As a general precaution, save your ROC800's configuration to a PC's hard drive or an external medium such as a flash drive.

1. Disconnect the ROC800 from **all** power sources.
2. Identify the expansion backplane you want to convert and disconnect all wiring from any installed ROC800 modules in that backplane.
3. Remove all ROC800 modules from that backplane and store the modules safely.
4. Locate the left-most upper module guide in the expansion backplane (see *Figure 1*). Using a standard set of pliers, hold the gray tip of the module guide and turn it one-quarter turn either clockwise or counter-clockwise. The guide should release.
5. Pull the module guide carefully out of the expansion backplane and store it. Your backplane is now configured to accept the FFI CPU and H1 modules.
6. Proceed to *Installing the FFI CPU Module*.

Installing the FFI CPU Module

**Caution**

To avoid circuit damage when handling the new electronics, use appropriate electrostatic discharge precautions (such as wearing a grounded wrist strap).

1. Remove the FFI CPU module from its protective envelope and slide the module securely into the chassis.
2. Secure the module to the backplane with the two faceplate screws.
3. Remove each H1 module (up to four) from its protective envelope and slide it securely into the chassis.
4. Secure the H1 module(s) into the chassis.

Note: After you install your H1 modules, if you have any empty slots remaining you can install ROC800 I/O modules in those slots. The advanced architecture of the Series 2 backplane allows the FFI CPU to ignore data from these I/O modules but enables the ROC800 CPU to recognize and use that information. Remember that you cannot exceed **27** ROC800 modules (the maximum number allowed in a ROC827) and that you must wire the I/O modules to the ROC800 CPU as you would normally.

5. Proceed to *Wiring the CPU*.

Wiring the CPU

How you wire power to the FFI CPU module depends on a number of factors:

- Whether you externally power the FFI CPU module or use power from the ROC800 CPU.
- The total number of fieldbus devices the FFI CPU module supports.
- The physical placement of the FFI CPU module in the ROC800 chassis.

Note: The FFI CPU can provide power to “downstream” ROC800 expansion racks. This is helpful if your ROC800 I/O modules require additional power.

- Whether the H1 modules provide conditioned or unconditioned power to their fieldbus devices.

Refer to *Chapter 3, Power Connections*, in the *FOUNDATION Fieldbus Interface Instruction Manual (A6259)* for detailed instructions and wiring diagrams.

Completing the Conversion

With the FFI CPU and H1 modules installed and wired, you use the Field Interface Configurator software to configure your HSE server and H1 modules. Refer to the *Field Interface Configurator User Manual (A6250)* for instructions on this process.

Note: ROCLINK 800 does not “recognize” the FFI CPU or H1 modules, and graphically displays them as empty slots in the ROC827 housing. However, if you have not used all of the module slots and choose to insert a ROC800-Series I/O module in an available slot in the Foundation Fieldbus server housing, ROCLINK 800 does recognize that ROC800-Series module and graphically displays it for configuration.
