Foxboro FBM214 P0914XQ

Official Technical Reference Excerpt

Foxboro FBM214 P0914XQ provides eight group-isolated 4 to 20 mA inputs with superimposed HART FSK communication for intelligent field transmitters.

VERIFIED PRODUCT ROLE

Characteristic 1

Provides eight HART-capable input loops for its hart communication input module function.

Characteristic 2

Handles 4 to 20 mA measurement with bidirectional HART messaging through the documented Foxboro system path.

Characteristic 3

Works with the HART termination assembly, loop power and I/A Series database.

Characteristic 4

A dedicated FSK modem supports digital communication with each connected HART device.

MANUFACTURER DOCUMENT

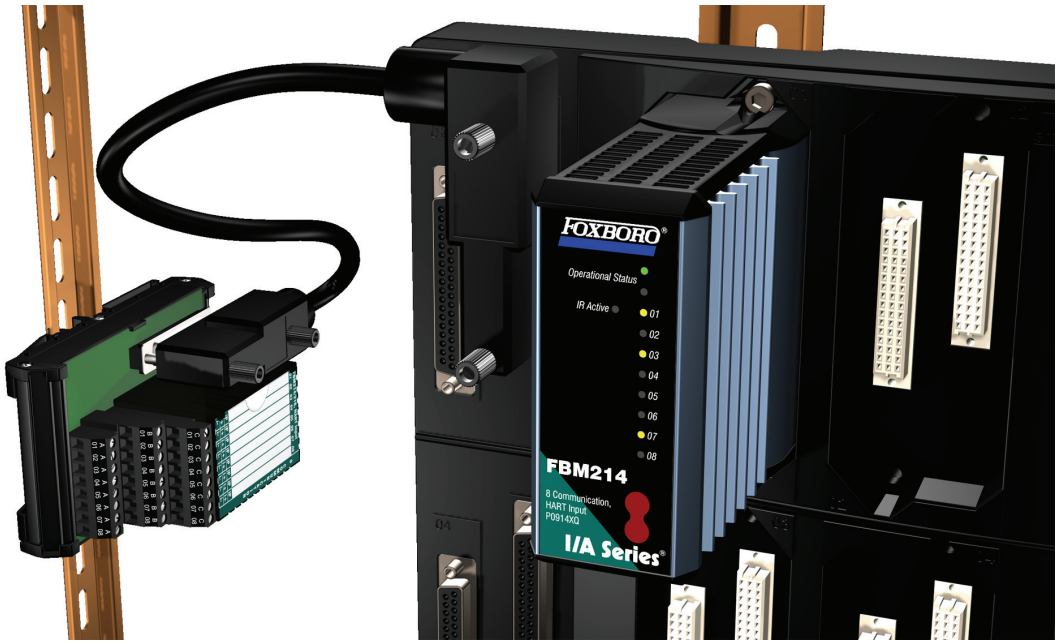
Manufacturer source	Invensys, I/A Series FBM214 HART Communication Input Interface Module, PSS 21H-2Z14 B4; P0914XQ is identified as the legacy FBM214 part number in B0400FA.
Evidence boundary	Technical statements are limited to the identified product or applicable manufacturer family.
Selection control	Use the complete ordering string and verify the installed system before purchase or installation.

APTERPOWER SALES TEAM
WhatsApp / Phone: +86 180 3023 5313
Email: sales13@apterpower.com
Scan the approved WhatsApp code for model-specific support.

INVENSYS PROCESS SYSTEMS

PSS 21H-2Z14 B4

FBM214 HART® Communication Input Interface Module



The FBM214 HART® Communication Input Interface Module provides eight input channels, each accepting a 4 to 20mA analog signal or a digital HART signal superimposed on a 4 to 20 mA analog input signal.

FEATURES

Key features of the FBM214 module are:

- Eight analog input channels, each accepting one of the following inputs:
  - Standard 4 to 20 mA analog sensor signal
  - Digital HART Frequency Shift Keying (FSK) signal superimposed on a 4 to 20 mA analog input signal.
- FSK modem dedicated to each input channel for bi-directional digital communications with a HART field device
- Analog to digital conversion of each of the 4 to 20 mA input signals from the HART devices
- Support for the HART universal commands necessary to interface the field device with the I/A Series® system database
- Galvanic isolation of the group of 8 input channels from ground and module logic
- Compact, rugged design suitable for enclosure in Class G3 (harsh) environments
- High accuracy achieved by sigma-delta data conversions for each channel
- Termination Assemblies (TAs) for locally or remotely connecting field wiring to the FBM214
- Termination Assemblies for per channel internally and/or externally loop powered transmitters.

FOXBORO®

OVERVIEW

The FBM214 HART Communication Input Interface Module contains eight 4 to 20 mA group isolated analog input channels. The FBM214 supports any mix of standard 4 to 20 mA devices and HART devices.

The FBM214 serves as a HART communications field device host, enabling the I/A Series system to request and receive two digital messages per second from the field device. The message pass-through capability can be used to support HART universal, common practice, and device-specific commands, but not the burst communication mode. These commands are implemented using the Intelligent Field Device Configurator (IFDC — refer to PSS 21S-8A3 B3 for details).

The FBM214 provides a common isolated power supply to power all eight channels. Optionally, the channels can be powered by an external power supply. However, when a common external power supply is used with two or more channels, a Cable Balun module is required to prevent channel cross talk.

COMPACT DESIGN

The FBM214 has a compact design, with a rugged extruded aluminum exterior for physical protection of the circuits. Enclosures specially designed for mounting the FBMs provide various levels of environmental protection, up to harsh environments per ISA Standard S71.04.

HIGH ACCURACY

For high accuracy, the module incorporates a Sigma-Delta converter which can provide new analog input values for each channel every 100 milliseconds.

VISUAL INDICATORS

Light-emitting diodes (LEDs) incorporated into the front of the module provide visual indication of the module's operational status, and communication activity on the channels.

EASY REMOVAL/REPLACEMENT

The module can be removed/replaced without removing field device termination cabling, power, or communications cabling.

FIELDBUS COMMUNICATION

A Fieldbus Communication Module or a Control Processor interfaces the redundant 2 Mbps module Fieldbus used by the FBMs. The FBM214 module accepts communication from either path (A or B) of the redundant 2 Mbps fieldbus – should one path fail or be switched at the system level, the module continues communication over the active path.

The use of an external power supply common to two or more loops requires a Cable Balun Module to maintain communication signal line balance.

MODULAR BASEPLATE MOUNTING

The module mounts on a modular baseplate which accommodates up to four or eight FBMs. The modular baseplate is either DIN rail mounted or rack mounted, and includes signal connectors for redundant fieldbus, redundant independent dc power, and termination cables.

TERMINATION ASSEMBLIES

Field input signals connect to the FBM subsystem via DIN rail mounted TAs. The TAs used with the FBM214 are described in "TERMINATION ASSEMBLIES AND CABLES" on page 8.

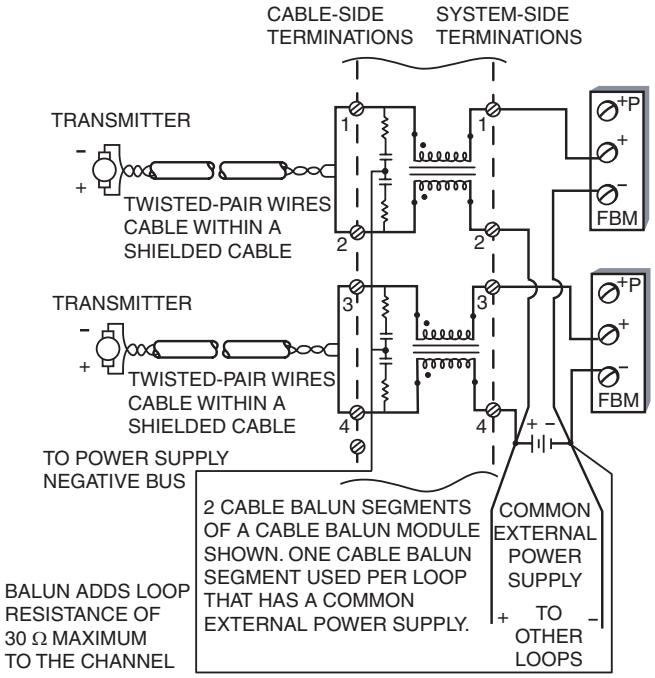
CABLE BALUN MODULE

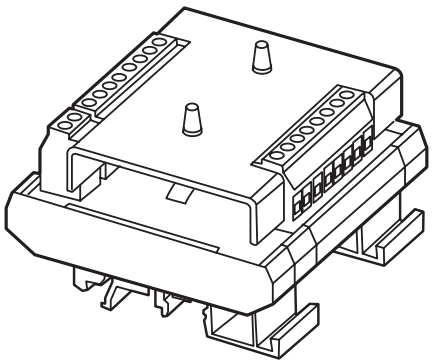
The Cable Balun module is used to maintain digital communication line balance for HART Transmitter to FBM loops that are powered from a common external power supply. This powering effectively connects one line of each loop together. Without the Baluns, in each loop so powered, the common connection at the external power supply, would cause near end crosstalk at the system end of the loop wiring cable. Loops using FBM internal power source do not require Baluns.

The Cable Balun module contains multiple Baluns. One Balun segment is interconnected in each loop powered from an external power supply per the diagram above. There is one Cable Balun module.

Cable Balun Module

Module Model	Module Part No.	No. of Baluns in the Module
CBM-4	P0903SV	4





CABLE BALUN MODULE

Figure 1. Cable Balun Module

Related models and source control

Use these live ApterPower pages for comparison. Verify each complete ordering string independently.

RELATED PRODUCT REFERENCES

GE IC698PSA100	Technical-reference companion. Review the complete ordering string before selection.
Siemens 6ES5454-4UA13	Technical-reference companion. Compare the required interface and system position.
Siemens 6ES5441-4UA14	Technical-reference companion. Confirm the execution independently for the intended task.

EXACT-SELECTION CONTROLS

Product identity	Confirm the complete FBM214 P0914XQ marking.
System interface	the HART termination assembly, loop power and I/A Series database
Technical boundary	Use FBM214 P0914XQ only with the HART termination assembly, loop power and I/A Series database; verify every interface and the controlled project configuration before energizing or pressurizing the subsystem.
Source	Invensys, I/A Series FBM214 HART Communication Input Interface Module, PSS 21H-2Z14 B4; P0914XQ is identified as the legacy FBM214 part number in B0400FA.

APTERPOWER SALES TEAM
WhatsApp / Phone: +86 180 3023 5313
Email: sales13@apterpower.com
Scan the approved WhatsApp code for model-specific support.