# Foxboro FBM223 P0917HD

## Official Technical Reference Excerpt

Foxboro FBM223 P0917HD links PROFIBUS-DP slave devices to the I/A Series control database through two independent RS-485 bus segments.

### VERIFIED PRODUCT ROLE

**Characteristic 1**

Provides two independent PROFIBUS-DP ports for its profibus-dp communication interface module function.

**Characteristic 2**

Handles master/slave PROFIBUS-DP data and diagnostics through the documented Foxboro system path.

**Characteristic 3**

Works with the selected PROFIBUS termination assembly, bus cabling and I/A Series control station.

**Characteristic 4**

The interface transfers slave variables and diagnostic messages into the control database.

### MANUFACTURER DOCUMENT

| | |
|---|---|
| **Manufacturer source** | Invensys, I/A Series FBM223 PROFIBUS-DP Communication Interface Module, PSS 21H-2Z23 B4. |
| **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. |

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# I/A Series® Hardware

PSS 21H-2Z23 B4

# FBM223 PROFIBUS-DP™ Communication Interface Module




*The FBM223 PROFIBUS-DP™ Communication Interface Module provides an interface between PROFIBUS-DP slave devices and the I/A Series® system.*

## FEATURES

Key features of the FBM223 module are:

- Conforms to PROFIBUS-DP Fieldbus specifications
- Provides full support for all device variables and diagnostic messages
- Integrates PROFIBUS slave device data into an I/A Series control database
- The FBM223 and its associated termination assembly (TA) are suitable for installation in Class 1, Division 2 and Zone 2 locations.

## OVERVIEW

The PROFIBUS-DP Communication Interface Module (FBM223) provides an interface between PROFIBUS-DP slave devices — such as motor drives, I/O modules, and field I/O devices — and the I/A Series system.

PROFIBUS is a vendor-independent, open fieldbus standard for a wide range of applications in process automation and manufacturing. Vendor independence and openness are guaranteed by the PROFIBUS Fieldbus standard EN 50170, which specifies the functional, electrical, and mechanical characteristics for a serial transmission bus.

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Physical PROFIBUS-DP wiring is in accordance with Electronic Industrial Association (EIA) standard RS-485.

In addition to the general PROFIBUS-DP configuration shown in Figure 1, several other configurations are possible, including those using repeaters and intrinsic safety protective devices. Figure 2 shows how a bus can be expanded into multiple segments through the use of repeaters, thus providing support for a greater number of slave devices.

FBM223 communicates with the PROFIBUS I/O devices on a master/slave basis. As master, the FBM223 initializes each data communication exchange. The slave devices can only acknowledge received messages, or send messages to the master when requested to do so.

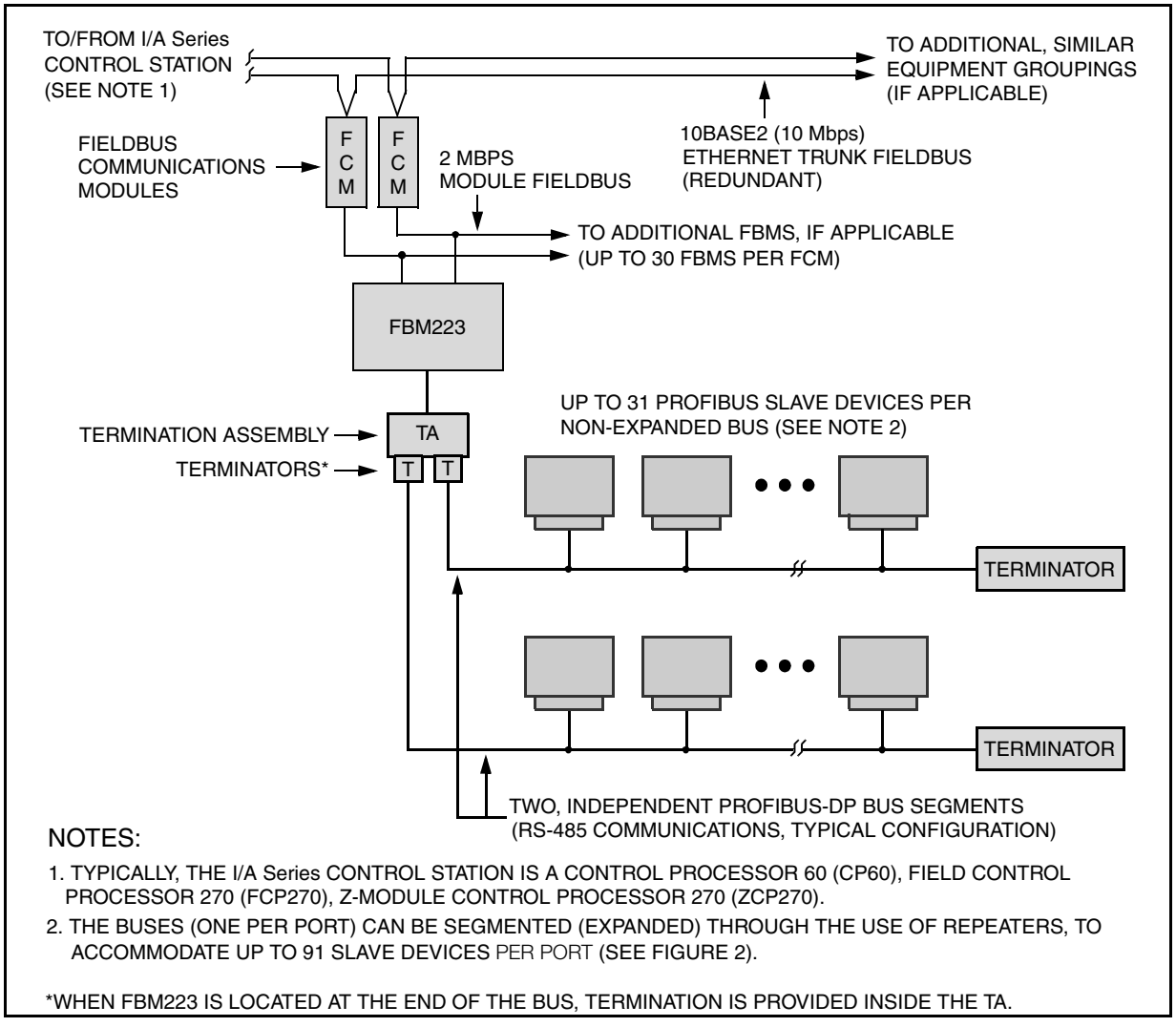



*Figure 1. FBM223 used in a Typical Network Configuration*

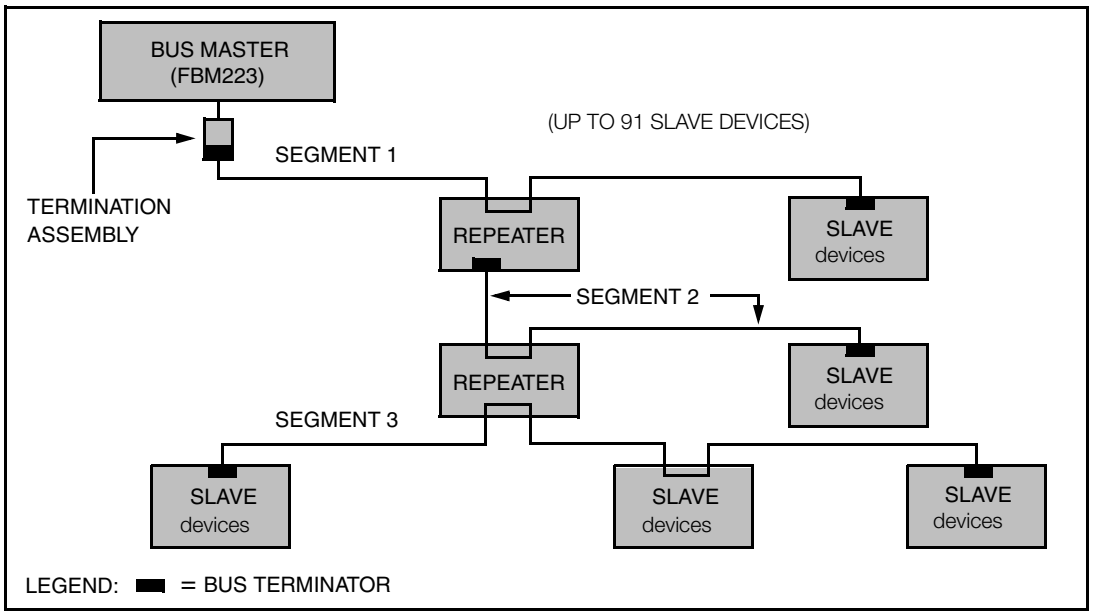



*Figure 2. PROFIBUS-DP Network Expansion Using Repeaters*

## PROFIBUS-DP TECHNOLOGY

"DP" (in PROFIBUS-DP) represents the communication profile that is most often used with PROFIBUS — decentralized periphery. It is optimized for speed, efficiency, and low connection cost, and is designed especially for communication between automation systems (such as the I/A Series control system) and distributed field devices.

The data transmission method used with PROFIBUS-DP is in accordance with EIA standard RS-485, a proven serial communication technology used in universal applications in process control and manufacturing automation. Applications for RS-485 include all areas in which high transmission speed and simple, inexpensive installation are required. The physical communication medium consists of twisted-pair shielded copper cable containing a single conductor pair. Active bus terminators, required at either end of the bus or bus segment, typically exist within the bus connectors or within the devices themselves.

## GSD FILES

A GSD file identifies a PROFIBUS-DP device. It contains information specific to each device and specifies parameters such as baud rates, timing information and supported options such as diagnostics and data length. A GSD file, provided by the device manufacturer, is available for each device type.

The I/A Series system uses the information in the GSD file to set up communication to the slave device. A configurator, available on the operator station (UNIX® or Windows® based) allows the importation of such files for establishing supported options and for validating the values set by the user for the communication parameters during editing.

# Related models and source control

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

## RELATED PRODUCT REFERENCES

| | |
|---|---|
| Siemens 6ES7417-4XT05-0AB0 | Technical-reference companion. Review the complete ordering string before selection. |
| Schneider Electric BMXNOC0401 | Technical-reference companion. Compare the required interface and system position. |
| Toshiba SDI01 | Technical-reference companion. Confirm the execution independently for the intended task. |

## EXACT-SELECTION CONTROLS

| | |
|---|---|
| **Product identity** | Confirm the complete FBM223 P0917HD marking. |
| **System interface** | the selected PROFIBUS termination assembly, bus cabling and I/A Series control station |
| **Technical boundary** | Use FBM223 P0917HD only with the selected PROFIBUS termination assembly, bus cabling and I/A Series control station; verify every interface and the controlled project configuration before energizing or pressurizing the subsystem. |
| **Source** | Invensys, I/A Series FBM223 PROFIBUS-DP Communication Interface Module, PSS 21H-2Z23 B4. |

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