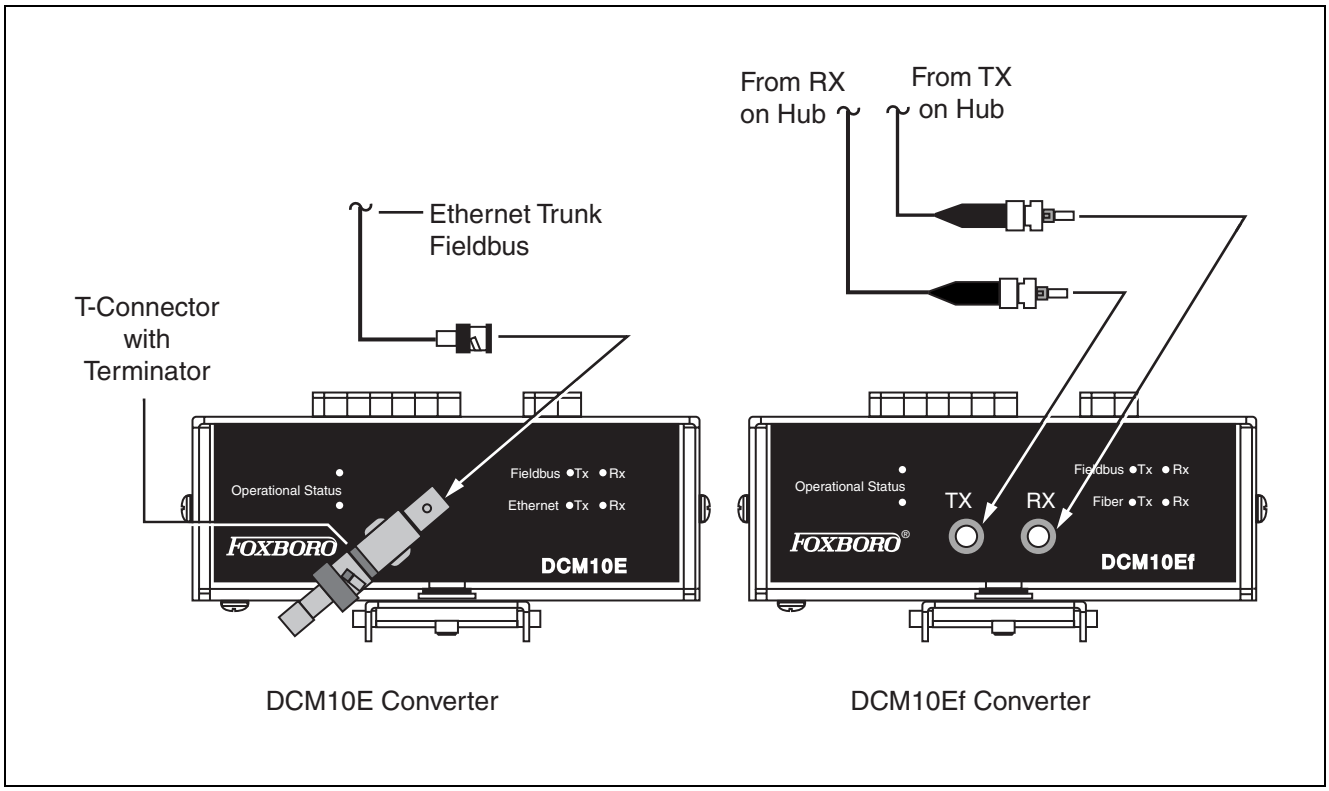
I/A Series® Hardware
DIN Fieldbus Converter Modules, DCM10E and DCM10Ef



DCM10E Converter

DCM10Ef Converter

The DIN Fieldbus Converter Modules, DCM10E and DCM10Ef, allow the Control Processor 60 (CP60) to communicate with Y-Module form factor Fieldbus Modules (FBM01, FBM02 and so forth), SPECTRUM™ migration modules and competitive migration modules via the local or extended Fieldbus. The DCM10E and DCM10Ef convert from/to 10 Mbps signals used by the CP60 and the Ethernet 268.75 kbps HDLC signals required by the other various connected devices (Y-Module form factor FBMs, and so forth).

The DCM10E and DCM10Ef support up to 24 FBMs on the local Fieldbus or up to 24 Fieldbus Isolators (FBIs) on the remote Fieldbus per CP60. The CP60 supports up to 32 modules. The number of devices under an FBI or Fieldbus Processor (FBP) cannot exceed the CP60 loading guidelines.

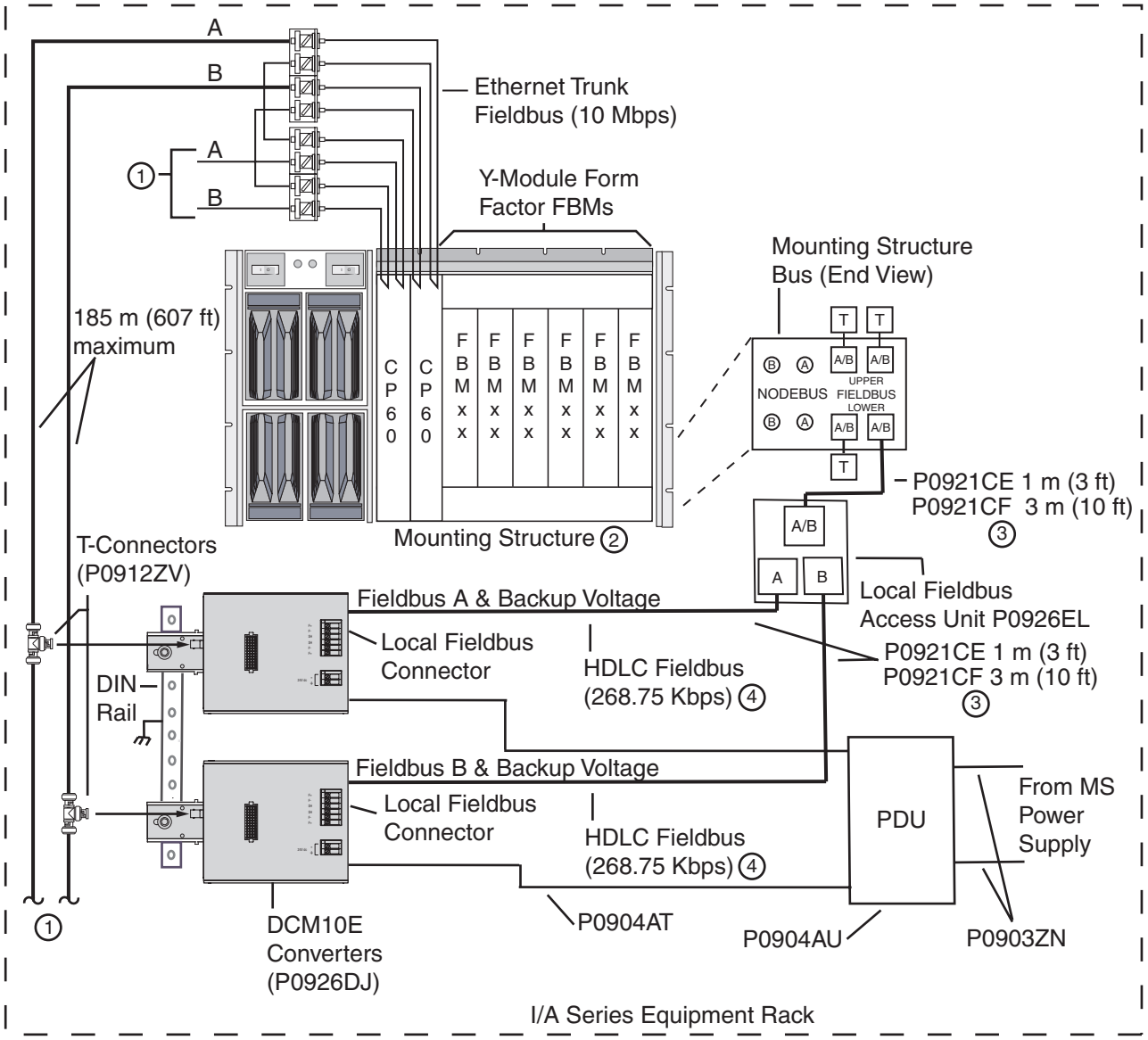
The converter modules are packaged in a metal DIN Rail-mountable housing. They can be mounted in I/A Series enclosures or in customer-provided, third-party enclosures, if there is sufficient DIN rail space.

The modules draw power from a Power Distribution Unit (PDU) located on the side of an I/A Series system mounting structure. The DCM10E also provides two additional terminals for connecting to an external 24 V dc power supply.

Light-emitting diodes (LEDs) on the front of the modules provide visual status indications of transmit, receive and fail functions.

For redundant configurations, the modules are used in pairs, one for the A and one for the B portion of the redundant Fieldbus. A Local Fieldbus Access Unit is required to split the two buses of the single modular connector in the enclosure. Typical implementations of the modules are shown in Figure 1 and 2. Installation details are shown in Figure 3.

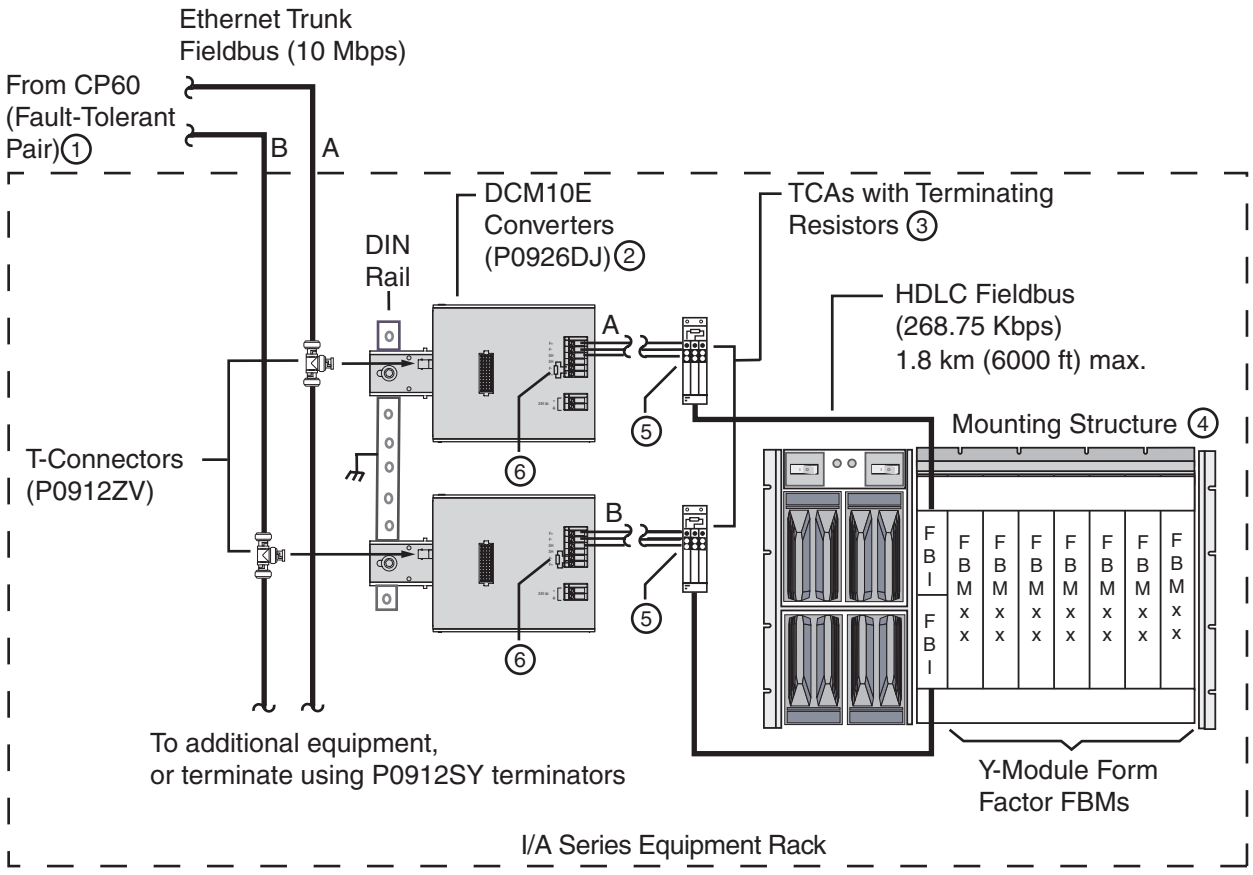
invensys®
FOXBORO®



Notes:

1. A and B Ethernet trunk lines can be connected to additional equipment, or terminated using 50 ohm terminators (P0912SY).
2. A 1x8, 2x4, or 2x8 mounting structure can be used in this configuration.
3. Local Fieldbus cabling, 9 m (30 ft) length (maximum). These cables are special purpose. Standard Ethernet cables do not provide the proper signal pairing.
4. 1.8 km (6000 ft) when using DCM10Ef (maximum).

Figure 1. Cabling Configuration, CP60 to Y-Module Form Factor FBMs, Local Fieldbus



Notes:

① The CP60 can be located in the same equipment rack as the FBMs, or located remotely from the FBMs.

② A configuration using DCM10Ef converters (P0926DP) is similar, but with the Ethernet Trunk fiber optic cables (RX and TX) connecting to the ST-type connectors on the converters.

③ Terminating resistors, included with the TCAs, are used only if this is the last device in the Fieldbus run.

④ The FBI modules and FBMs can be located in a 1x8, 2x4, or 2x8 mounting structure.

⑤ If the Termination Cable Assembies (TCAs) are the last TCAs in the Fieldbus run, the Fieldbus shields must be connected to the earth bus bar in the equipment rack (which must be connected to solid earth ground).

⑥ Install termination resistors (110 ohm) if DCME or DCM10Ef is last device on the Fieldbus.

Figure 2. Cabling Configuration, CP60 to Y-Module Form Factor FBMs, Remote Fieldbus

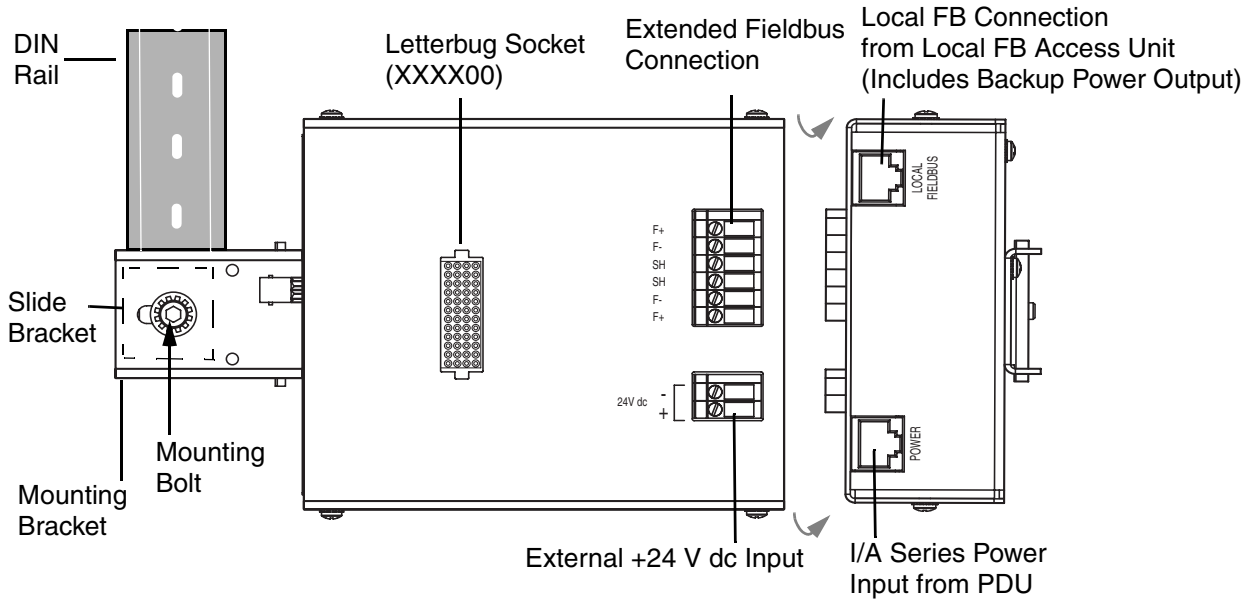


Figure 3. DCM10E Installation

FUNCTIONAL SPECIFICATIONS - MODULE

Input Power	
SUPPLIED FROM POWER DISTRIBUTION UNIT	I/A Series Power Distribution Unit (P0904AU)
Normal Operation	
Voltage	26 V dc to 42 V dc (nominal)
Current	250 mA (maximum)
Consumption	6.5 W (maximum)
Battery Backup Operation - Requires IPM 6	Unit supplies only 4.5 V dc backup voltage to the FBMs
Voltage	15 V dc to 19.5 V dc (nominal)
Current	30 mA plus load current, 200 mA (maximum)
SUPPLIED FROM EXTERNAL 24 V dc	
Voltage	24 V dc ± 15%
Current	300 mA (maximum)
Consumption	6.5 W (maximum)

ENVIRONMENTAL SPECIFICATIONS (a)

Operating	
TEMPERATURE (b)	0 to 60°C (32 to 140°F)
RELATIVE HUMIDITY	5 to 95% (noncondensing)
Storage	
TEMPERATURE	-40 to +70°C (-40 to +158°F)
RELATIVE HUMIDITY	5 to 95% (noncondensing)
Contamination	Class G1 as defined in ISA Standard, S71.04.
Mechanical Vibration	0.5 g at 5 to 500 Hz
Regulatory Compliance	In compliance with European EMC directive 89/336/EEC

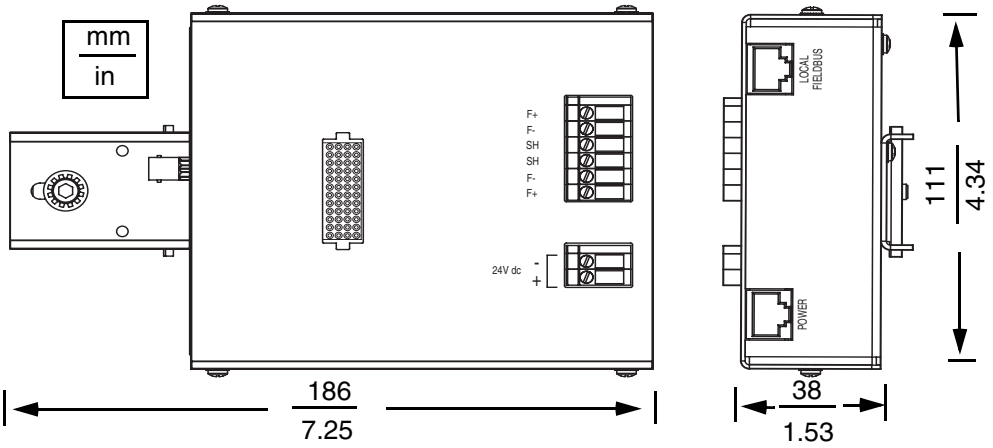
(a) The environmental limits of this module may be enhanced by the type of enclosure containing the module. Refer to the applicable Product Specification Sheet (PSS) which describes the specific type of enclosure that is to be used.

(b) Forced air cooling required over 50°C ambient for the module.

PHYSICAL SPECIFICATIONS

Mounting	The DCM10E and DCM10EF can be mounted horizontally or vertically on a DIN rail.
Mass	795 g (28 oz) approximate
Dimensions	
HEIGHT	38 mm (1.53 in)
WIDTH	111 mm (4.34 in)
DEPTH	186 mm (7.25 in)
Indicators (mounted on front of module)	
OPERATIONAL INDICATORS	Active (Green) and Fault (Red) LEDs
NETWORK INDICATORS	
Fieldbus TX/RX (268 kbs)	TX Active (Yellow) and RX Active (Yellow) LEDs
Ethernet TX/RX (10 Mbps)	TX Active (Yellow) and RX Active (Yellow) LEDs

PHYSICAL DIMENSIONS



RELATED PRODUCT SPECIFICATION SHEETS

PSS Number	Description
PSS 21H-2W1 B3	DIN Rail Mounted FBM Subsystem Overview
PSS 21H-2W2 B3	DIN Rail Mounted FBM Equipment, Agency Certifications

33 Commercial Street
Foxboro, MA 02035-2099
United States of America
www.foxboro.com
Inside U.S.: 1-866-746-6477
Outside U.S.: 1-508-549-2424
or contact your local Foxboro
representative.
Facsimile: 1-508-549-4999

MB 021 Printed in U.S.A. 0207