

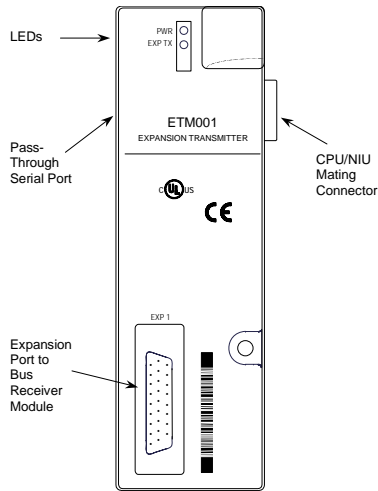
Expansion Transmitter Module

March 2010

GFK-1521C

Module Description

The Expansion Transmitter Module IC200ETM001 / BXIOXRXT00 is used to expand a PLC or NIU I/O station to include up to seven additional "racks" of modules. Each expansion rack can include up to eight I/O and specialty modules, including fieldbus communications modules.



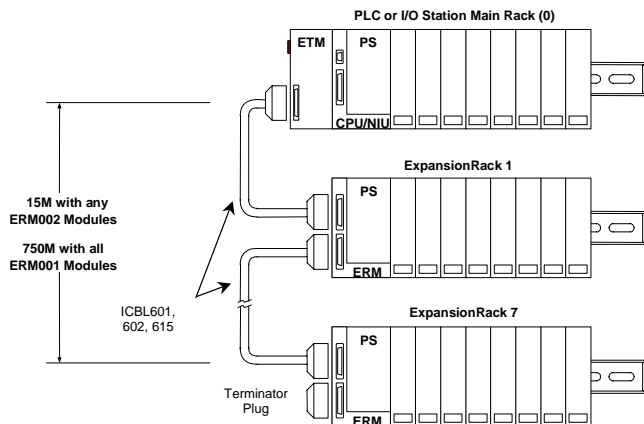
Expansion Connector

The 26-pin female D-shell connector on the front of the Expansion Transmitter is the expansion port for connecting to an Expansion Receiver Module. There are two types of Expansion Receiver Modules: Isolated (module ERM001) and Non-Isolated (module ERM002).

The maximum overall length of the expansion bus depends on which type of Expansion Receivers are used:

- 15 Meters: any Expansion Receivers ERM002 on the bus
- 750 Meters: Isolated Expansion Receivers ERM001 only

By default, the module is set up to operate with the maximum length expansion cable at the default data rate of 250Kbits/second. In a PLC system, if the total length of the expansion cable is less than 250 meters and there are no non-isolated Expansion Receivers (ERM002) in the system, the data rate can be configured to 1Mbit/second. In an NIU I/O Station, the data rate cannot be changed from the default 250Kbits.



Pass-Through Serial Programming Port

The 16-pin male connector on the upper left side of the Expansion Transmitter is the pass-through serial programming port. It can be used to upload firmware updates to an adjacent NIU.

Module Specifications

Module Characteristics	
LED indicators	PWR LED indicates 5VDC power status EXP TX LED indicates expansion bus communication status
Backplane current consumption	5V output: 44mA maximum
Cable Specifications	
Receiver ERM002:	
Maximum cable length	15 meters
Effective data rate	5 Mbits/sec(max)
Electrical Isolation	non-isolated differential communications
Receiver ERM001:	
Maximum cable length	250 meters (if configured for higher data rate), 750 meters (default distance)
Effective data rate	1 Mbits/sec (configurable for less than 250 meters), 250 Kbits/sec (default data rate)
Electrical Isolation	500 VDC isolated differential communications
Firmware Update Interface	
Maximum cable length	6 feet
Effective data rate	See specification for NIU modules (serial lines are pass-through on ETMs)

Compatibility

All I/O and communications modules can be used in expansion racks. Some analog modules require specific module revisions as listed below. The date code is a 3-digit number on the outside of the module and on the shipping box.

Module	Module Version	Module Date Code Range
ALG320, ALG321, ALG322	B or later	Any
ALG430, ALG431	C or later	Any
ALG432	B or later	Any
ALG230	A or later	CPU or NIU Revision 1.5: Date code must begin with a number other than 9 and must be 011 or greater.
	Any	CPU or NIU Revision 2.0 or later: Any date code.
ALG260	A or later	CPU or NIU Revision 1.5: Date code must begin with a number other than 9 and must be greater than 011.
	Any	CPU or NIU Revision 2.0 or later: Any date code.

Product Revision History

Rev	Date	Description
IC200ETM001D	March 2010	Changed manufacturing location. No changes to compatibility, functionality or performance.
IC200ETM001C	April 2004	Changed to V0 plastic for module housing.
BXIOXRXT00C	January 2004	Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications.
IC200ERT001B	January 2004	ATEX approval for Group 2 Category 3 applications.
IC200ETM001A	November 1999	Initial product release.

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BXIOXRXT00A

Installation in Hazardous Locations

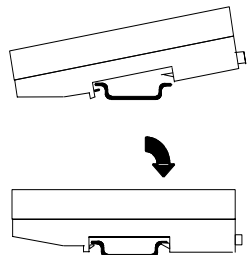
- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS LOCATIONS ONLY
- EQUIPMENT LABELED WITH REFERENCE TO GROUP II CATEGORY 3 GAS GROUP IIC IS SUITABLE FOR USE IN A ZONE 2 OR NON-HAZARDOUS AREA ONLY.
- WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

Installation Instructions

Preinstallation Check

Carefully inspect all shipping containers for damage. If any equipment is damaged, notify the delivery service immediately. Save the damaged shipping container for inspection by the delivery service. After unpacking the equipment, record all serial numbers. Save the shipping containers and packing material in case it is necessary to transport or ship any part of the system.

DIN Rail Installation



All modules and carriers must be installed on the same section of 35mm x 7.5mm DIN rail. The rail must have a conductive (unpainted) finish for proper grounding. For best stability, the DIN rail should be installed on a panel using screws spaced approximately 6 inches (5.24cm) apart.

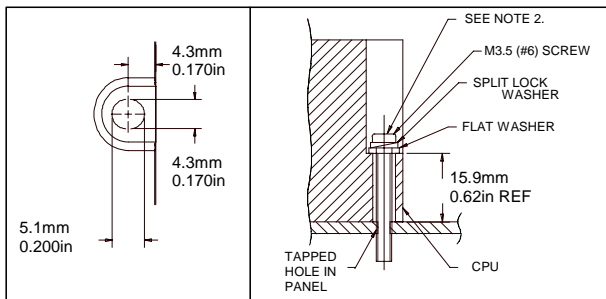
The module snaps easily onto the DIN rail. No tools are required for mounting or grounding to the DIN rail.

Panel-Mounting

If excessive vibration is a factor modules should also be screwed down to the mounting panel.

Note 1. Tolerances are +/- 0.13mm (0.005in) non-cumulative.

Note 2. 1.1-1.4Nm (10-12 in/lbs) of torque should be applied to M3.5 (#6-32) steel screw threaded into material containing internal threads and having a minimum thickness of 2.4mm (0.093in).

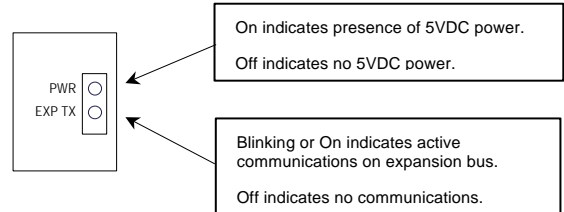


Installing the Expansion Transmitter Module

The Expansion Transmitter Module must be installed to the left of a CPU or NIU.

- Make sure rack power is off.

- Remove the connector cover on the lefthand side of the CPU or NIU. Slide the module toward the CPU or NIU and press together until the connectors are mated.
- After completing any additional system installation steps, apply power and observe the module LEDs.



Removing the Expansion Transmitter Module

- Turn off power to the power supply.
- (If the module is attached to the panel with a screw) remove the power supply module. Remove the panel-mount screw.
- Slide the module away from the CPU or NIU until the connector on the right side disengages.
- With a small flathead screwdriver, pull the DIN rail latch outward while tilting the other end of the module down to disengage it from the DIN rail.

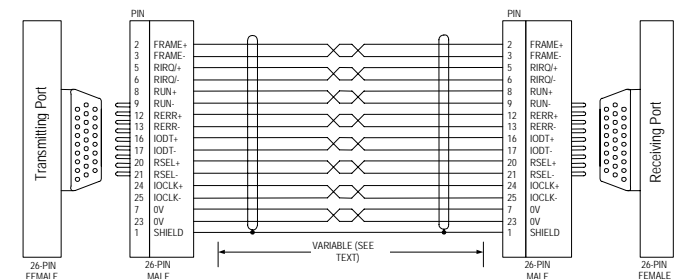
Connecting the Expansion Cable: RS-485 Differential

Connect the cable from the expansion port on the Expansion Transmitter to the Expansion Receivers as illustrated on the previous page.

Terminator Plug

The expansion bus must be terminated with terminator plug ACC201 (included with the Expansion Transmitter). Spare Terminator Plugs may also be purchased separately as part number ACC201 (qty 2). The Terminator Plug installs in the lower port on the last Expansion Receiver.

RS-485 Differential Inter-Rack Connection (CBL601, 602, 615)



Building a Custom Expansion Cable

Custom expansion cables can be built using Connector Kit ACC202, Crimper AMP 90800-1, and Belden 8138, Manhattan/CDT M2483, Alpha 3498C, or equivalent AWG #28 (0.089mm²) cable.

NIU Serial Update

When the Expansion Transmitter is connected to a Network Interface Unit (NIU) module in an I/O station, firmware upgrades to the NIU are performed via the Expansion Transmitter's pass-through serial port.

