

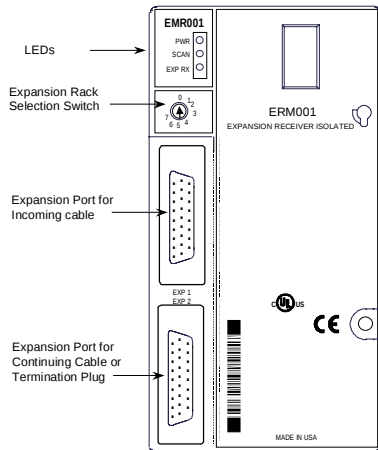
Isolated Expansion Receiver Module

December 2000

GFK-1525B

Description of the Isolated Expansion Receiver Module

The Isolated Expansion Receiver Module (*ERM001) interfaces an expansion "rack" to an I/O bus in a PLC or NIU I/O Station system. The expansion rack can include up to eight I/O and special-purpose modules. A power supply installed on the Expansion Receiver Module provides operating power for the modules in the expansion rack. Isolated Expansion Receiver Module *ERM001 provides up to 500VDC isolation.



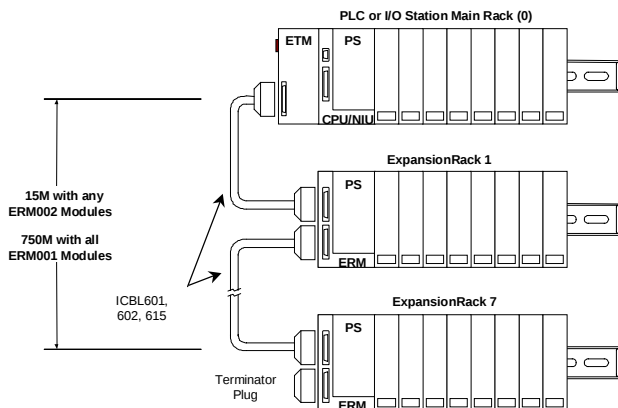
The Isolated Expansion Receiver Module must be used with an Expansion Transmitter Module (*ETM001) in the PLC or I/O Station.

Expansion Connector

The Expansion Receiver has two 26-pin female D-shell expansion ports. The upper port receives the cable from an Expansion Transmitter or upstream Expansion Receiver Module. The lower port is used to daisy-chain the I/O bus cable to the next expansion rack or to attach the terminator plug at the last rack. The Expansion Receiver must always be installed in the leftmost position of the rack (slot 0).

The maximum overall length of the expansion bus depends on whether any Non-Isolated Expansion Receivers are used:

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



LED Indicators

The LEDs on the Expansion Transmitter show the status of power to the module and the status of the expansion port.

Module Specifications

Module Characteristics

LED indicators	PWR LED indicates 5VDC power status EXP RX LED indicates status of the expansion bus SCAN indicates whether CPU/NIU is scanning I/O in expansion racks
Backplane current consumption	5V output: 430mA maximum 3.3V output: 20mA

Cable Specifications

Maximum cable length	250 meters (if configured for higher data rate) 50 meters (default distance)
Effective data rate	1 Mbits/sec (configurable if less than 250 meters) 250 Kbits/sec (default data rate)
Electrical Isolation	500 VDC isolated differential communications

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 Revision	Module Date Code Range
*ALG320	B or later	Any
*ALG321	B or later	Any
*ALG322	B or later	Any
*ALG430	C or later	Any
*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 011 or greater.
	Any	CPU or NIU Revision 2.0 or later: Any date code.

Isolated Expansion Receiver Module

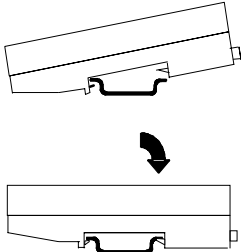
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Installation Instructions

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.

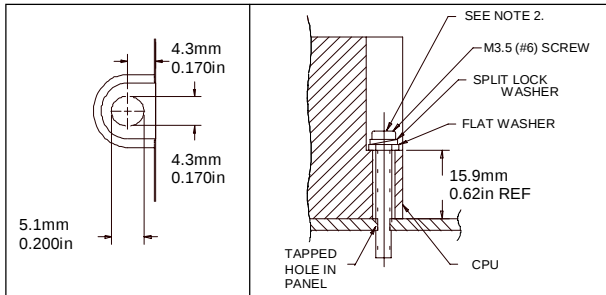
The module snaps easily onto the DIN rail. No tools are required for mounting or grounding to the DIN rail.

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).



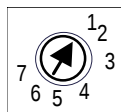
Expansion Rack Power Sources

Power for module operation comes from the Power Supply installed on the Expansion Receiver Module. If the expansion rack includes any Power Supply Booster Carrier and additional rack Power Supply, it must be tied to the same source as the Power Supply on the Expansion Receiver Module.

Installing the Isolated Expansion Receiver Module

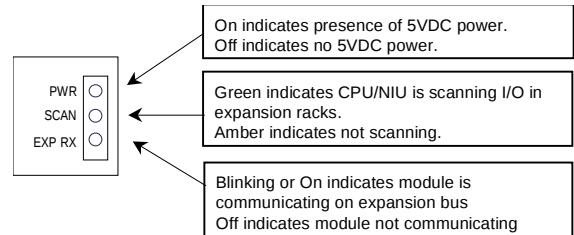
The Expansion Receiver Module must be installed in the leftmost slot of an expansion "rack".

1. Insert the label inside the small access door at the upper left corner of the module.
2. Attach the module to the DIN rail at the left end of the expansion rack.
3. Select the expansion rack ID (1 to 7) using the rotary switch under the access door at upper left corner of the module.



4. Install a Power Supply module on top of the Expansion Receiver.
5. Attach the cables and terminator plug as described at right.

6. After completing any additional system installation steps, apply power and observe the module LEDs.

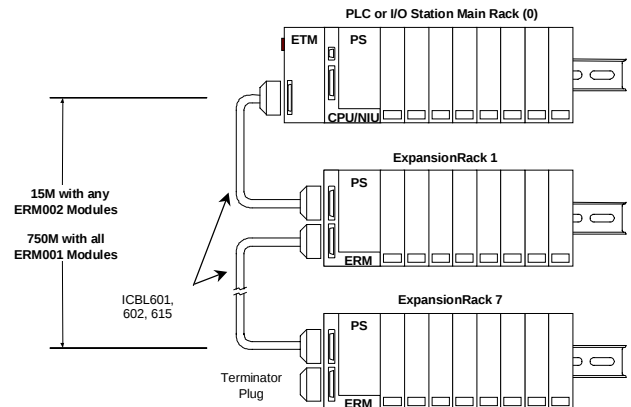


Removing the Expansion Receiver Module

1. Make sure rack power is off.
2. Un-install the Power Supply module from the Expansion Receiver Module.
3. Slide the Expansion Receiver Module on DIN rail away from the other modules.
4. Using a small screwdriver, pull down on the tab on the bottom of the module and lift the module off the DIN rail.

Connecting the Expansion Cable: RS-485 Differential

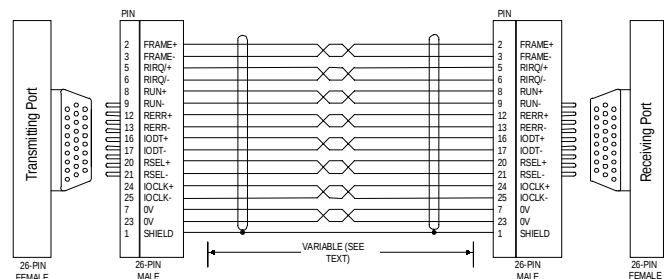
Connect the cable from the expansion port on the Expansion Transmitter to the Expansion Receivers as shown below.



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.