GE Fanuc IC694BEM331

http://www.pdfsupply.com/automation/ge-fanuc/rx3i-pacsystem/IC694BEM331

Rx3i PacSystem

RX3i Genius Bus Controller (supports I/O and Datagrams). IC694B IC694BE IC694BEM

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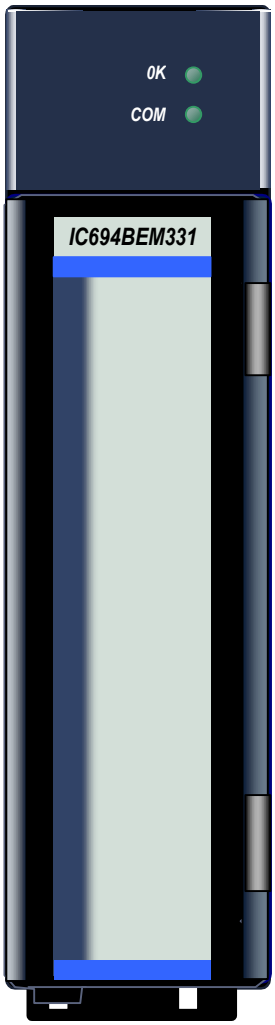
Genius Bus Controller: IC694BEM331

The Genius Bus Controller, IC694BEM331, interfaces a PACSystems RX3i and a Genius I/O serial bus. In addition to the Bus Controller, the bus can serve: Genius blocks, other PLCs with Genius Bus Controllers, Remote Drops, VersaMax and Field Control I/O Stations, Genius Hand-Held Monitor (HHM), Multiple hosts.



Features

- The Bus Controller can exchange up to 128 bytes with each device on the Genius I/O bus.
- Genius blocks and other devices on the bus automatically report faults, alarms and certain other predefined conditions to the Bus Controller. The Bus Controller stores any diagnostic messages it receives. They are read automatically by the CPU. Faults can then be displayed in the fault table using the programming software.
- The Bus Controller supports all Genius datagrams. Refer to chapter 3 of the Genius I/O System and Communications User's Manual, GEK-90486-1, for details on using datagrams.
- The Bus Controller can send up to 128 bytes of Global Data each bus scan. Global Data is data that is automatically and repeatedly broadcast by a Genius Bus Controller.
- The Bus Controller can receive up to 128 bytes of Global Data each bus scan from every other Bus Controller on its bus.

Up to eight Genius Bus Controllers can be included in an RX3i system.

LEDs

The LEDs on the front of the Genius Bus Controller indicate its operating status. Both LEDs should be On during normal operation.

OK Shows the status of the Bus Controller. This LED turns on after power up diagnostics are completed.

COM Shows the status of the Genius communications bus. This LED is on steadily when the bus is operating properly. It blinks for intermittent bus errors and is off for a failed bus. It is also off when no configuration has been received from the CPU.

Specifications: IC694BEM331

Current Consumption	
Diagnostics	Advanced diagnostics capabilities
Communications	Global Data and Datagrams
Data Length	128 bytes per message
Data Rates	Configurable: 153.5Kbaud standard/extended, 76.8Kbaud, or 38.4Kbaud
Genius Bus Specifications	
Bus Type	Daisy-chained bus cable; single twisted-pair plus shield or Twinax. Fiber optical cable and modems can also be used.
Bus Termination	75, 100, 120, or 150 Ohm resistor at both ends of electrical bus cable.
Maximum Bus Length	7800 feet at 38.4Kbaud, 4500 feet at 76.8Kbaud, 3500 feet at 153.6Kbaud extended, 2000 feet at 153.6Kbaud standard. Maximum length at each baud rate also depends on cable type, as listed in the *Genius System and Communications Manual*.
Maximum Number of Devices	32 devices at all baud rates except 38.4Kbaud. 16 devices at 38.4Kbaud.
Isolation	2000 volts Hi-Pot, 1500 volts transient common mode rejection.

Refer to Appendix A for product standards and general specifications.

Compatibility

Specific equipment or software versions required for compatibility with the Bus Controller are listed below.

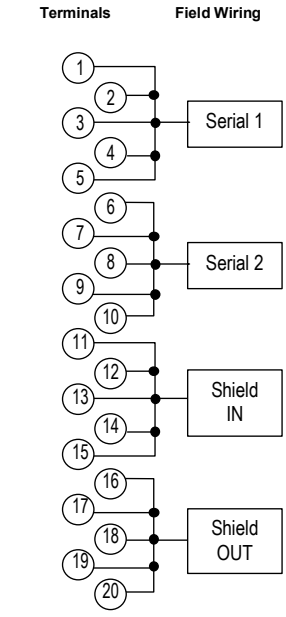
Series 90-30 PLC	If the RX3i Genius Bus Controller is installed in a Series 90-30 PLC, the CPU model can be: IC693CPU311K, 321K, 331L or later, or any version of the IC693CPU313, 323, 340, 341, 350, 351, 352, 360, 363, and 364. The CPU firmware must be release 5.0 or later.
Series Six PLC	To exchange global data with an RX3i Genius Bus Controller, a Series Six Bus Controller must be catalog number IC660CBB902F/903F (firmware version 1.5), or later.
Genius Hand-Held Monitor	There is no Hand-Held Monitor connector on the module, but a Hand-Held Monitor can communicate with the Bus Controller while connected to any other device on the bus. HHM version IC660HHM501H (revision 4.5) or later is required.
Genius Bus	The Genius bus is a shielded twisted-pair wire, daisy-chained between devices, and terminated at both ends. Proper cable selection is critical to successful operation of the system. Suitable cable types are listed in GEK-90486-1, the *Genius I/O System and Communications User's Manual*.

Genius System Documentation

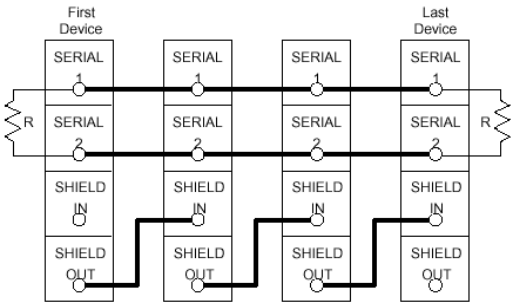
See the following manuals for detailed information on the Genius I/O system:

- GEK-90486-1, *Genius I/O System and Communications User's Manual*
- GEK-90486-2, *Genius I/O Discrete and Analog Blocks User's Manual*

Field Wiring: IC694BEM331



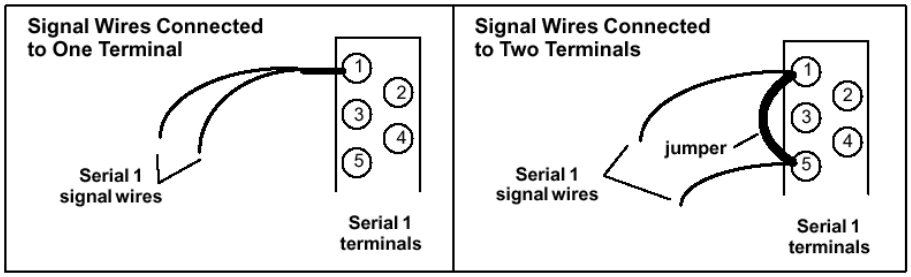
Using the cable type selected for the application, connect the devices as shown below. Each terminal accepts up to one AWG #14 (2.10mm^2) wire or two AWG #16 (1.32mm^2) wires using ring or lug-type connectors.



The bus shield wires are not insulated; do not permit them to touch other wires or terminals. Spaghetti tubing should be used to cover these wires.

1. Connect the Serial 1 terminals of adjacent devices and the Serial 2 terminals of adjacent devices.
2. Connect Shield In to the Shield Out terminal of the previous device. (For the first device on the bus, Shield In is not connected.)
3. Connect Shield Out to the Shield In terminal of the next device. (For the last device on the bus, Shield Out is not connected.)

The Serial 1 and Serial 2 terminals are interconnected *on the circuit boar*d, not on the terminal strip. Incoming and outgoing signal wire pairs can be connected to either one or two Serial 1 or Serial 2 terminals:



When connecting two signal wires to the same terminal, use spade or lug-type connectors, or twist the exposed ends of the wires together before inserting them. This will allow future removal of the Terminal Assembly without disrupting other devices on the bus.

When connecting two signal wires to separate terminals, install a jumper between the two terminals as shown on the right above. Failure to install the jumper will cause the entire bus to be disrupted whenever the faceplate is removed.

Terminating the Bus

The bus must be terminated at both ends by its characteristic impedance. The list of suitable cable types in *the Genius I/O System and Communications User's Manual* includes the termination requirements for each cable type. If the Bus Controller is at the end of the bus, install a resistor of the appropriate impedance across its Serial 1 and Serial 2 terminals as shown below.

If you need to install the terminating resistor across terminals different than those used for the signal wires, attach jumper wires between the signal wire terminals and the resistor terminals to prevent the bus from becoming unterminated if the Terminal Assembly is removed. Failure to do so will cause the entire bus to be disrupted whenever the faceplate is removed.