GE Genius I-O Series Service Manual

IC660ELB921

1. Description

The IC660ELB921 is a Single Slot PCIM Card manufactured for use with the Genius LAN interface by GE Fanuc. IC660ELB921 also serves as an entry point into the Genius I/O System for the IBM PC/AT/XT family. IC660ELB921 is fully compatible with a handheld monitor and may be used with any GE Fanuc Genius bus controller. For logic power, the IC660ELB921 PCIM requires a 5V DC source. IC660ELB921 uses 8,000 input and 8,000 output locations. When the IC660ELB921 card is configured as input-only, it can

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Genius I/O**
Manufacturer	**GE Fanuc (Former); Emerson Automation (Current)**
Part	**Number IC660ELB921**
Part	**Number IC660ELB921**
Product	**Description PC Interface Module**
Product	**Description PC Interface Module (PCIM)**
Number	**of Channels Single-channel**
Memory	**Requirement 4 bytes**
Number	**of Slots Single-slot**
Compatible	**Daughtercard IC660ELB912**
Board	**Type AT Style**
Communication	**rate 38.4K, 76.8K, 153.6K standard, or 153.6K extended baud rates**
Power	**Requirement 5 Volts DC, 400 milliamps**
LED	**Indicators GENI OK; COMMS OK**
Bus	**Loading 1 LS TTL load per input line**
Installation	**ISA Slot**
Bus	**Drive Capability 10 LS TTL load per output line**
Power	**Requirements 5 volts DC +/- 10%, 400 ma (max)**
Status	**LEDs 2 (for each daughterboard)**
Operating	**temperature 0-60 C(32-140 F)**
Ambient	**Operating Temperature 0 to 60 degrees Celsius**
Storage	**temperature -40 to +70 C(-40 to 158 F)**
Weight	**3 Pounds**
Humidity	**5-95% (non-condensing)**
Operating	**altitude 40,00 feet**
Product	**Lifecycle Discontinued Description**
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3. Product Information

The IC660ELB921 is a Single Slot PCIM Card manufactured for use with the Genius LAN interface by GE Fanuc. IC660ELB921 also serves as an entry point into the Genius I/O System for the IBM PC/AT/XT family. IC660ELB921 is fully compatible with a handheld monitor and may be used with any GE Fanuc Genius bus controller. For logic power, the IC660ELB921 PCIM requires a 5V DC source. IC660ELB921 uses 8,000 input and 8,000 output locations. When the IC660ELB921 card is configured as input-only, it can only read Genius block information. If the configuration of the card is set as output-only, then it can only write to Genius block outputs.

It is important to note that unlike its counterpart IC660ELB922, PCIM IC660ELB921 is marketed with only one daughterboard that provides a convenient method to control devices on the Genius serial bus. Tasks are controlled accordingly during the initialization process, managing errors for a minimum of 30 bus devices. Since this PCIM is an AT-type board, it is easier for IC660ELB921 to be integrated into a user-developed microprocessor system. In all levels mechanical, electrical, and communication timings, IC660ELB922 is fully compatible with all Genius protocols. Additionally, its daughterboard provides low cost tap on any Genius FE I/O bus. In return, this lets the host system manage I/O by utilizing the broad diagnostics, high consistency, and noise protection of the Genius I/O System. The daughterboard may be configured independently due to the configuration software supplied with the IC660ELB921 PCIM. The IC660ELB921 is a single slot PC Interface module (PCIM). This module enables the connection of the host computer to the Genius I/O Bus, allowing monitoring and control functions of Genius I/O devices over the network. It supports the installation of a single daughtercard with catalog number IC660ELB912. This module has a memory requirement of 4 bytes and is mounted to an ISA-compatible slot of the host PC.

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Technical specifications for IC660ELB921

Brand GE Fanuc

Series Genius I/O

Manufacturer GE Fanuc (Former); Emerson Automation (Current)

Part Number IC660ELB921

Part Number IC660ELB921

Product Description PC Interface Module

Product Description PC Interface Module (PCIM)

Number of Channels Single-channel

Memory Requirement 4 bytes

Number of Slots Single-slot

Compatible Daughtercard IC660ELB912

Board Type AT Style

Communication rate 38.4K, 76.8K, 153.6K standard, or 153.6K extended baud rates

Power Requirement 5 Volts DC, 400 milliamps

LED Indicators GENI OK; COMMS OK

Bus Loading 1 LS TTL load per input line

Installation ISA Slot

Bus Drive Capability 10 LS TTL load per output line

Power Requirements 5 volts DC +/– 10%, 400 ma (max)

Status LEDs 2 (for each daughterboard)

Operating temperature 0–60 C(32–140 F)

Ambient Operating Temperature 0 to 60 degrees Celsius

Storage temperature –40 to +70 C(–40 to 158 F)

Weight 3 Pounds

Humidity 5-95% (non-condensing)

Operating altitude 40,00 feet

Product Lifecycle Discontinued Description

The IC660ELB921 is a PC Interface Module (PCIM) that is mainly utilized to enable connection to Genius I/O devices residing over Genius I/O Bus, allowing data exchange and controller-like functions implemented by the host controller. This PCIM module is formerly produced by GE Fanuc, currently under Emerson Automation. The IC660ELB921 is a single slot PC interface module supporting the installation of a single daughterboard with catalog number IC660ELB912. This interface module is mounted to the host computer’s ISA Slot and requires 4 bytes of memory from the host device and additional 16 Kbytes for the installed daughtercard. It draws current from the backplane amounting to 400 mA, maximum at 5 VDC, +/- 10%. It has bus loading of 1 LS TTL load per input and Bus drive capability of 10 LS TTL loads per output. This PCIM card is a single slot “AT” styleboard. It provides a connection to an external Hand-Held Monitor (HHM) as well as a Serial bus connection through board edge terminals or external connectors. The IC660ELB921 comes with a status LED indicators such as Daughterboard OK and Communication OK. The operating temperature of the IC660ELB921 is 0–60 C(32–140 F) while the Storage temperature is –40 to +70

C(–40 to 158 F) and relative humidity of 5-95% (non-condensing). It has an operating altitude of 40,00 feet, operating vibration of 0.2-inch displacement, and operating shock of hock 5 G, 10 ms duration. The IC660ELB921 is configured using the PCIM configuration software where the software library providing the high-level interface can be accessed. This software library is supplied in a version compatible with the MSDOS operating system such as C/MSDOS and BASIC/MSDOS.

The IC660ELB921 PC Interface Module is a single-channel PCIM board manufactured by GE Fanuc as part of the Genius I-O series. It can be interfaced to only 1 Genius bus at a time. This module is made for use with the IBM PC, XT, and AT type personal computers. This AT type interface board is also compatible with the different Genius communication protocols as well as with communications timing. The IC660ELB921 PC Interface Module is available with a single daughterboard and with a motherboard. The configuration software which is provided with this module can be used to configure the daughterboard independently of the motherboard. The daughterboard can be connected with a Genius bus device individually and it acts as a general-purpose I/O controller for the I/O system. The IC660ELB921 single-slot PCIM board has an efficient motherboard that connects the daughterboard with IBM-compatible host computers. It is made to buffer all the signals which are needed for communication with the host bus of the system. Some of the daughterboard controls and monitoring facilities provided by the motherboard include ISA-compatible backplanes, detection of low supply voltage levels, address decoding through memory maps, and signal sequencing. Each daughterboard has 2 LEDs for indicating the status of the board and the communication process. The memory requirement of the motherboard is 4 bytes and the requirement for the daughterboard is 16 KB. The IC660ELB921 PC Interface Module is supplied with the configuration software and the PCIM software library that provide a high-level interface between the user-developed software and the PCIM. It uses 5 Volts DC of logic power and it should not vary by more than 10% below or above the nominal level in order for the module to function correctly. During installation, make sure to leave at least 1/8 inch space between this module and other modules to allow proper cooling.