GE Service Manual

IS200BICLH1AFF

1. Description

IS200BICLH1AFF Technical Specifications

2. Specifications

Specification	Value
Manufacturer	**General Electric**
Series	**Mark VI Speedtronic**
Functional	**Part Number IS200BICLH1AFF**
Functional	**Abbreviation BICL**
Revision	**Total 1 Revision**
Functional	**Revision 1 A**
Assembly	**Type Normal Assembly**
About	**the IS200BICLH1AFF**
The	**IS200BICLH1AFF is an IGBT Drive/Source Bridge Interface Board (BICL) created by GE for the Innovation Series. The purpose of the IS200BICLH1A is to play a go-between an Innovation Series Drive and the Bridge Personality Interface Boards (BPIA, BPIB, or SCNV), being a primary interface between them. This board has the ability to monitor ambient and bridge temperatures. It has an interface with a PWM speed control and a system fault display. This board also has:**

3. Product Information

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a 1024-bit serial memory

a nearly blank faceplate

a label that has “Install in Slot 5 Only” written on it

two brackets on the faceplate

73 resistors

31 capacitors

3 diodes

15 integrated circuits

4 relays

a metal oxide varistor

3 transistors

two P1 and P2 pin connectors

IS200BICLH1A IGBT Drive/Source Bridge Interface Board Configurations

For more information about the IS200BICLH1A, please consult the datasheet GEI-100264. It is important to slide this board into the correct slot because if it is inserted into a different slot, the wrong connection can damage the board. Anti-static procedures should be followed while handling or trying to install this board. In terms of some of this IS200BICLH1A product's processing specifications, any control logic necessitated for the normative daily function of this IS200BICLH1A device is put into action through use of its sole electronically-programmable logic device or its EPLD. The main control board of this IS200BICLH1A product's greater Mark VI Series automated drive assembly pertains to the IS200BICLH1A PCB's EPLD device as is configured from the main central processing unit or CPU on this control board. Each one of this BICL-abbreviated configurations are described by a factory-printed nomenclature label beginning with a tag stating the Mark VI Series products they pertain to in an abbreviated form. The two configurations necessitated by this IS200BICLH1A device's EPLD are again described in the original instructional materials above as the:

BICLEPLD configuration

SCNVEPLD configuration

IS200BICLH1A Specifications and Description

* **Specifications**:

* Part Number: IS200BICLH1A

* Manufacturer: General Electrics

* Series: Drive Control

* Function: IGBT Drive/Source Bridge Interface Board

* Power Requirements: +5 V dc, 6 A

* Technology: Surface mount

* Operating temperature: -40 to +70 degrees Celsius

* Weight: 0.8kg

* Product Type: PCB

* Repair: 3-7 Day

* Availability: In Stock

* Country of Manufacture: United States (USA)

* Manual: GEI-100264

* **Functional Description**: The IS200BICLH1A is an IGBT Drive/Source Bridge Interface Board developed by GE. It is part of the Drive Control series and functions to interface between an IGBT driver and a power module. The board includes level-shifting circuits to convert signals to appropriate voltage levels and may include circuits for overcurrent/overvoltage protection and temperature sensing.

* **Features**:

* It is typically mounted near the power module to reduce the length of high-current traces, which improves system performance and minimizes noise.

* The board monitors ambient and bridge temperatures, features a PWM speed control interface, a system fault display, and a 1024-bit serial memory for identification/revision data.

* The faceplate is nearly blank with "Install in Slot 5 Only" printed on it, featuring brackets and screws for installation in a VME rack.

* Components on the PCB include 73 resistors, 31 capacitors, three diodes, fifteen integrated circuits, four relays, one metal oxide varistor, and three transistors.

* It is critical to insert this board into the correct slot to prevent damage, and anti-static procedures should be followed.

Product Attributes

* Common features include Voltage Level Shifting, Overvoltage and Overcurrent Protection, Temperature Sensing, High Current Traces, Compact Design, and Compatibility with various drivers and modules.

Mark Vle Control System Overview

* **Network Overview**: The system uses a network hierarchy connecting individual nodes to divide communication traffic. The Enterprise layer connects process control to facility-wide monitoring. GE uses Modbus or TCP/IP (GE Standard Messaging/GSM) for facility-wide or DCS communication. The Control layer ensures continuous operation, with controllers communicating at a frame rate between 6 and 100 Hz using EGD.
* **Human-Machine Interface (HMI)**: The HMI serves as the main operator interface, utilizing a Windows operating system and CIMPLICITY graphics. It consists of an HMI Server and a Signal repository. The server acts as a system hub, routing data between the UDH and PDH, and provides a single repository for system alarm messages and definitions.
* **Simplex Controller**: In a simplex architecture, one controller is connected via an Ethernet interface (IONet). There is no redundancy, though non-critical I/O can be replaced online.
* **Redundancy Options**: The system offers scalable redundancy. Options include:
* Dual system: Incorporates two controllers and dual networks to improve resilience, allowing for online repair.
* TMR (Triple Modular Redundant): Features three independent controllers and networks, employing a voting mechanism to determine correct control actions and provide maximum fault detection and availability.
* **Communications**:
* I/O packs are equipped with two RJ-45, 100 MB Ethernet ports to facilitate data exchange and network redundancy.
* If a network or port fails, communication can automatically switch to the backup, ensuring uninterrupted operation.
* Peer-to-peer communication is supported for applications requiring fast response times.
* The system uses a star topology and adheres to the IEEE 802.3u standard, with connectivity provided via Category 5 Ethernet or fiber optic cables.