GE GE □□□ Series Service Manual

IS200ISBBG1AAB

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Functional	**Part Number IS200ISBBG1AAB**
Revision	**AAB**
Abbreviation	**ISBB**
Product	**Type Insync Bus Bypass Card**
Original	**Manufacturer GE Industrial Systems**
Product	**Family Mark VI Turbine Control**
Revision	**Total 3 Revisions**

3. Product Information

SPECIFICATIONS

Part Number: IS200ISBBG1A

Manufacturer: General Electric

Series: EX2100

Function: Insync Bus Bypass Card

Availability: In Stock

Mounting: DIN-Rail

Product type: PCB

Country of Manufacture: United States (USA)

Functional Description

IS200ISBBG1A is an Insync bus bypass card developed by GE. It is a part of EX2100 excitation system. The module incorporates a JP1 Interlock Bypass feature, which provides enhanced flexibility and control over the interlock functionality. The interlock bypass allows users to temporarily override the interlock system, enabling specific operations or functions to proceed even when certain interlock conditions are present.

IS200ISBBG1A Features

Compact Size and DIN Rail Mounting: Designed to be compact, allowing for easy installation and integration into control systems. It is typically mounted on DIN rails, which are standard mounting rails used in industrial applications. The module's size and form factor make it suitable for space-constrained environments, providing flexibility in installation.

Secure Mounting: Securely mounted on the DIN rail using screws. The DIN rail has four factory-drilled holes that align with corresponding holes on the module. The conductive material surrounding these holes ensures proper grounding and electrical connectivity. The holes are conveniently labeled as E1, E2, E3, and E4, aiding in the identification and connection of external components or other boards.

Connector Options: Equipped with four connectors to facilitate connections with off-board components or other modules. These connectors include three plug connectors labeled as P1, P2, and P3, and a terminal strip labeled as P4. The specific functions of these connectors are identified as follows: P1 - Full Duplex, P2 - XMIT Data Out, P3 - RCV Data In, and P4 - 24 VDC Input. The connectors provide convenient interfaces for data exchange and power supply connections.

Terminal Strip and Screw Connections: In addition to the plug connectors, the module features a terminal strip (P4) with two screw connections. This terminal strip offers a flexible and reliable means of connecting external wires or cables. It allows for secure and easily accessible connections, enhancing the overall functionality and versatility of the module.

Jumper Position Indication: It includes a jumper whose position and corresponding outcome are clearly indicated on the board's surface. This visual indication assists in identifying the current configuration or setting of the jumper. The jumper's position may have an impact on the module's functionality or behavior, and the clear labeling ensures accurate setup and operation.

LED Indicators: Features two LEDs, yellow and green, which serve as status indicators. The yellow LED represents XMIT data, providing visual feedback on the transmission of data. The green LED indicates the active state of the interlock, signaling whether the interlock system is engaged or not. These LED indicators provide quick and intuitive visual cues for monitoring the module's status.

Integrated Voltage Comparator: The module incorporates an integrated circuit that includes a voltage comparator with a response time of 200ns. This voltage comparator plays a critical role in comparing voltages and generating output signals based on predefined thresholds. Its fast response time ensures efficient and accurate voltage comparisons, contributing to the overall performance and reliability of the module.

Control Power Supplies

The exciter shares the HMI on turbine generator sets that include Mark VI turbine controls. The HMI is Windows NT-based, with CIMPLICITY operator display software and data highway communication drivers. From the HMI, the operator can initiate commands and view real-time data and alarms on the CIMPLICITY graphic displays. An HMI can be set up as a server or a viewer, and it can include tools and utility programs.

The exciter is linked to the HMI or HMI/Data Server via the Unit Data Highway (UDH). The network is 10BaseT Ethernet, and uses separately powered network switches. Fiber-optic cables can be used for longer runs.

DIN-Rail-Mounted

This model is exclusively suitable for DIN-rail-mounted setups.

Power supply input for the model operates at 24 VDC.

Functionality as an InSync Bus Bypass Card

Within the Mark VI system, it serves as an InSync Bus Bypass Card.

The top edge of the board is marked with the board number and code 6BA01.

The code 6DA01 is positioned along the bottom edge of the board.

Board Design and Mounting

The board features multiple factory-drilled locations, with four holes (E1, E2, E3, E4) surrounded by conductive material for DIN rail mounting.

Two side-by-side relays are located left of the center of the board.

The presence of rectifier coils, LED indicators (green and yellow), and a jumper switch are notable.

Components and Connectivity

A voltage comparator integrated circuit is present on the board.

Connectors include three plugs marked P1 through P3, labeled Full Duplex, Xmit Data Out, and Rcv Data In.

A short terminal strip with screw connections is labeled 24 VDC Input.

Comparison Between ISBB Groups

Due to the lack of documentation from General Electric, any major differences between ISBB groups are unknown.

Visual inspection reveals no apparent differences between the two models.

Features such as relays, potentiometers, and LED indicators are common to both models.

LED Indicators and Data Status

The model incorporates two LEDs: Interlock Active (green) and XMIT Data (yellow).

These LEDs signify data and activity status.

Whether the LEDs remain solid or flash to indicate faults is uncertain.

Data Output Indication

The XMIT Data LED assists in indicating data transmission or reception.

A labeled plug for XMIT Data out facilitates data outputs.

Connectors

P1-Full Duplex: Plug connector for full-duplex communication.

P2-XMIT Data Out: Plug connector for transmitting data.

P3-RCV Data In: Plug connector for receiving data.

P4-24 VDC Input: Terminal strip with two screw connections for a 24 VDC input.

Mounting

Typically designed to be mounted on DIN rails.

The board can be mounted using screws to four of its six factory-made drill holes. The holes used for mounting are labeled E1, E2, E3, and E4 and are ringed with a conductive material.

IS200ISBBG1AAB Technical Specifications

Functional Part Number IS200ISBBG1AAB

Revision AAB

Abbreviation ISBB

Product Type Insync Bus Bypass Card

Original Manufacturer GE Industrial Systems

Product Family Mark VI Turbine Control

Revision Total 3 Revisions

About the IS200ISBBG1AAB

The IS200ISBBG1AAB is a Mark VI Insync Bus Bypass board. The MkVI is a steam/gas industrial turbine control management system that is part of the Speedtronic line of control systems from General Electric. The Speedtronic control systems have been distributed by GE since the late 1960s. The Mark VI Turbine Control System Series containing this IS200ISBBG1AAB PCB, as it is known at length, exists with a specific series of possible functional applications particularly in the control and management systems of General Electric-compatible gas, steam, and wind turbine automated drive assemblies. This must be summarized as quite the significant functional upgrade upon the Mark V Turbine Control System Series of more or less the same full extended series title, as the Mark VI Series introduced the alternative energy-based wind turbine functional role on top of the gas and steam turbine-based environments established through the previous industry-standard Mark V Series.

Hardware Tips and Specifications

The IS200ISBBG1AAB functions within the Mark VI as an InSync Bus Bypass Card. It is a small board and typically mounts to DIN rails. These rails mount to the board using screws inserted into factory-made holes in the corner of the board. Some factory-drilled holes in the IS200ISBBG1AAB are ringed with a conductive material, including E1 through E4. The IS200ISBBG1AAB has four off-board connectors that are used for communicating with components located on other boards. This includes a single terminal strip (P4,) and three plug connectors (P1 through P3.) P1 is labeled Full Duplex, P2 is labeled XMIT Data Out, P3 is labeled RCV Data in. The terminal strip is labeled 24 VDC Input. The terminal strip has two screw connections. Other components on the IS200ISBBG1AAB include two LED indicators, including one yellow indicator and one green indicator. The board has two jumper switches, two relays, resistors, capacitors, and diodes.

Additional information about the board, including important information regarding handling, maintenance and installation, please refer to publications from General Electric like user guides and manuals. AX Control keeps millions of dollars of inventory on-hand so we can ship the part you need as quickly as possible. If you don’t see exactly what you need on our website, please contact us directly. This IS200ISBBG1AAB printed circuit board product offering's greater Mark VI Turbine Control System Series is really not surrounded online by very many originally-pertinent GE Mark Series instructional manual materials, as it has been the subject of a series of relevant copyright infringements beyond its initial release. With this lack being the case, the IS200ISBBG1AAB functional product number itself in this instance can be rolled out as a decent functional source of IS200ISBBG1AAB Board hardware component and component specification information, as it code for these details through a series of consecutive functional naming elements. For example, the IS200ISBBG1AAB functional product number here is kicked off by its inclusion of the dual-functional IS200 series tag indirectly asserting both its normal Mark VI Series assembly version as well as its domestic original GE manufacture location. Some of the other details made evident through the IS200ISBBG1AAB part number include its:

ISBB functional acronym

Group one Mark VI Series grouping

Normal PCB coating style

Three-fold revision history