GE GE □□□ Series Service Manual

IS200TRLYH1BGF

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Original	**Manufacturer General Electric**
Product	**Series Mark VI Speedtronic**
Functional	**Part Number IS200TRLYH1BGF**
Revision	**Quantity 3 Revisions**
Backwards-Compatibility	**1st two revisions**
PCB	**Coating Style Conformal Coating**
Mark	**VI Series Grouping Group 1**

3. Product Information

SPECIFICATIONS

Part No.: IS200TRLYH1BGF

Manufacturer: General Electric

Country of Manufacture: United States of America (USA)

Temperature rating: 0 to 60 oC

Size: 17.8 cm wide x 33.02 cm high

Temperature: -30 to + 65oC

Product Type: Relay Output Board

Availability: In Stock

Series: Mark VI

Functional Description

IS200TRLYH1BGF is a relay output board developed by GE. It is a part of Mark VI control system. In Mark VI systems, TRLY is under the control of either the VCCC, VCRC, or VGEN board, catering to both simplex and TMR configurations. Cables featuring molded plugs establish the connection between the terminal board and the VME rack, where the I/O boards reside. For simplex setups, Connector JA1 is utilized, while TMR systems employ connectors JR1, JS1, and JT1.

Features

Relay Configuration: The board houses 12 plug-in magnetic relays, offering flexible configurations for different applications and requirements.

Output Options: The board's first six relay circuits are configurable via jumpers, enabling the selection between dry, Form-C contact outputs, or the driving of external solenoids.

Power Sources: Multiple power source options are available, including a standard 125 V DC or 115/230 V AC source, along with an optional 24 V DC source. Each source features individual jumper-selectable fuses and onboard suppression for enhanced safety.

Relay Functionality: Relays 7-11 provide unpowered isolated Form-C contacts, while output 12 offers an isolated Form-C contact designed for specialized applications such as ignition transformers.

Enhanced Control: With its configurable relay circuits and diverse power source options, the TRLYH1B terminal board provides enhanced control and flexibility in various industrial settings.

Reliable Performance: Designed for reliability and longevity, the board ensures consistent performance in demanding operational environments.

Integration and Compatibility: The board seamlessly integrates into existing control systems and is compatible with a wide range of industrial equipment and applications.

Ease of Installation: Installation and setup are streamlined, allowing for easy integration into control systems without extensive modifications or adjustments.

Safety Features: The board incorporates safety features such as onboard suppression and individual jumper-selectable fuses to ensure safe and reliable operation.

Fault Detection Mechanisms

The terminal board is equipped with advanced fault detection mechanisms to ensure system integrity and reliability. These mechanisms include:

1. Loss of Relay Solenoid Excitation Current

The board detects any loss of excitation current to the relay solenoids, triggering an alarm or alert to notify operators of the issue.

This feature ensures that any disruption in solenoid excitation is promptly identified and addressed to prevent potential system malfunctions.

2. Coil Current Disagreement with Command

The TRLYH1B board continuously monitors the coil current and compares it with the commanded value.

If there is a discrepancy between the actual and commanded coil currents, the board flags this as a fault condition, indicating a potential issue with the relay operation.

This helps maintain accuracy and consistency in relay performance, minimizing the risk of errors or inaccuracies in system operations.

3. Unplugged Cable or Loss of Communication

The board actively monitors communication with the associated I/O board, ensuring seamless data exchange and relay control.

In case of an unplugged cable or loss of communication with the I/O board, the TRLYH1B terminal board triggers relays to de-energize as a safety measure.

This proactive approach helps prevent potential hazards or disruptions caused by communication failures, ensuring continuous system functionality.

IS200TRLYH1BGF Technical Specifications

Original Manufacturer General Electric

Product Series Mark VI Speedtronic

Functional Part Number IS200TRLYH1BGF

Revision Quantity 3 Revisions

Backwards-Compatibility 1st two revisions

PCB Coating Style Conformal Coating

Mark VI Series Grouping Group 1

About the IS200TRLYH1BGF

The IS200TRLYH1BGF is a device which is called a termination relay card; most likely due to its small total product size compared to other relevant Mark VI Series product offerings. This is a sort of PCB or printed circuit board which was produced by GE or General Electric. The IS200TRLYH1BGF is a component in the Mark VI Turbine Control System series by General Electric. The Mark VI series is just one of several series which make up the Mark family of gasoline and/or steam turbine controls as you probably have been able to decipher based off of its dull extended GE product series name alone. The Mark VI Series that this IS200TRLYH1BGF product belongs to has to be considered a strong General Electric Mark product series given the fact that it is one of the lastly-developed GE Mark product series to incorporate the patented Speedtronic control system technology across a range of its different product offerings. This IS200TRLYH1BGF device is actually not the originally designed and produced device of its specific Mark VI Series functionality, as that would have to be considered the IS200TRLYH1 parent Termination Relay Card notably missing this IS200TRLYH1BGF product's full three-fold revision history.

Hardware Tips and Specifications

The IS200TRLYH1BGF circuit board is large and rectangular, containing numerous electronic components. The largest components on the IS200TRLYH1BGF are two (2) long black terminal blocks. These are devices which can hold a collection of silver metal components called terminals. The terminal blocks on the IS200TRLYH1BGF each feature twenty-four (24)

of these small terminals. Each has been numbered from one to forty-eight. The center of the IS200TRLYH1BGF is occupied by a series of relays or contactors which have been arranged into a vertical line. The relays are gray and black with covers that are made from transparent plastic. Six (6) black transistors are positioned on either side of the relays on the top half of the IS200TRLYH1BGF. Paired together with each of these transistors is a red MOV or metal oxide varistor which is round in shape. One (1) additional metal oxide varistor is positioned at the lower left corner of the IS200TRLYH1BGF. Many integrated circuits can be found throughout the IS200TRLYH1BGF. Six (6) capacitors which are solid blue may be found arranged in a line to the right of the transistors and metal oxide varistors.

The Mark VI Turbine Control System Series that this IS200TRLYH1BGF device belongs to is generally not continuously being produced by its original manufacturer, as a legacy product series that was discontinued due to a manufacturer-identified series-wide functional obsolescence in one of the many years past its initial release. With this being the case, this IS200TRLYH1BGF device's functional product number can be adopted as a decently-strong primary source of IS200TRLYH1BGF Board hardware component and component specification information, as it codes for these various details through a series of General Electric-identified functional naming components, beginning with the dual-functioning IS200 series tag. The IS200 series tag at the very beginning of the IS200TRLYH1BGF functional product number is telling of this IS200TRLYH1BGF device's normal Mark VI Series assembly version as well as its domestic location of original manufacture. This dual-functional beginning tag is followed in the IS200TRLYH1BGF functional product number through an instance of the TRLY functional IS200TRLYH1BGF product acronym that was created to exist as a convenient promotional and conversational shorthand alternative to the IS200TRLYH1BGF functional product number. This is followed in the IS200TRLYH1BGF functional product number through an instance of the dual-functional H1 series grouping tag delegating this IS200TRLYH1BGF PCB's conformal PCB coating as well as its group one Mark VI Series product grouping. The final three trailing digits in the IS200TRLYH1BGF functional product number are telling of this IS200TRLYH1BGF device's three significant product revisions.