GE GE □□□ Series Service Manual

DS215TCDAG1BZZ01A

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Manufacturer	**GE General Electric**
Series	**Mark V**
Part	**Number DS215TCDAG1BZZ01A**
Product	**Type Digital I/O Board with Firmware**
Instruction	**Manual GEH-6195**
Optional	**Firmware Offered ZZ01A**
Revision	**Quantity 1 Revision**
About	**the DS215TCDAG1BZZ01A**
The	**DS215TCDAG1BZZ01A is a GE Turbine Control Printed Circuit Card. The Mark V Series that this DS215TCDAG1BZZ01A product offering belongs to is one of the final General Electric Mark product series to incorporate their patented Speedtronic control system technology into its various offerings.**

3. Product Information

SPECIFICATIONS

Part Number: DS215TCDAG1BZZ01A

Manufacturer: General Electric

Series: Mark V

Manual: GEH-6195

Product type: Board with Firmware

Function: I/O Board

Country of Manufacture: United States (USA)

Functional Description

DS215TCDAG1BZZ01A is an I/O Board with Firmware developed by GE. It is a part of mark V control system. If present, the Digital IO Board is located in the digital I/O cores Q11, Q51, and Q21. The board is responsible for processing digital contact input signals from the DTBA and DTBB terminal boards, as well as contact output (relay/solenoid) signals from the two boards. The signals are routed through the IONET to the TCQC board in R1, R2 if Q21 is present, and the CTBA terminal board in R5.

Connectors

JP Connector: The JP connector serves as a power distribution channel within the system. Originating from the TCPS board, this connector carries power to the Q11, Q21, and Q51 cores. It accomplishes this task by routing power via the R1, R2, and R5 cores. By effectively distributing power, the JP connector ensures that the designated cores receive the necessary electrical supply to function optimally.

JQ Connector: The JQ connector establishes a link between the DTBA board's JQR socket and the I/O boards. It serves as a conduit for transporting contact input signals from the DTBA to the boards. This communication pathway enables the TCDA boards to receive and process input signals generated by the DTBA, facilitating critical interactions and responses within the system.

JR Connector: Similar to the JQ connector, the JR connector connects the DTBB board's JRR socket to the I/O boards. It functions as a conduit for transmitting contact input signals from the DTBB to the boards. By establishing this connection, the system enables seamless data transfer between the DTBB and the I/O boards, enhancing the system's ability to monitor and respond to input signals.

JO1 and JO2 Connectors: JO1 and JO2 connectors are responsible for sending contact output signals, often associated with relays or solenoids, to the TCRA board. JO1 transmits these signals to the TCRA board located in position four, while JO2 accomplishes the same task for the board in location five. Notably, the relays in position four are controlled directly by TCQE in R1 and are not utilized in Q11. These connectors enable precise control over output signals, contributing to the overall functionality of the system.

JX1 and JX2 Connectors: JX1 and JX2 connectors are part of a shielded twisted pair used for IONET signals. These connectors play a key role in data transmission between different components. Specifically, the module in the Q11 core writes signals to the JX2 connection on the TCEA board located in position five of the P1 core. Similarly, the board in the Q51 core writes signals to the JX connection on the CTBA in the R5 core. This communication mechanism allows for the exchange of critical signals and data, contributing to the coordination and operation of the entire system.

Configuration

Hardware - The TCDA board has eight hardware jumpers. J1 and J8 are used for factory testing. J2 and J3 are used to connect IONET termination resistors. J4, J5, and J6 are used to configure the board's IONET ID. J7 controls the stall timer. For information on the hardware jumper settings for this board, see Appendix A and the hardware jumper screen on the operator interface. Software. I/O configuration constants for contact input inversions are entered in the HMI's I/O Configuration Editor.

Software - SDCC contains the primary control circuits and software for the drive. The board also includes general-purpose interface circuits that connect to other boards to form different types of ac and do motor drives. Drive and motor signals, as well as customer I/O, are controlled and processed by the interface circuits.

Contact Input Circuits

Contact inputs from the DTBA and DTBB terminal boards are routed to the TCDA board via the JR and JQ connectors.

The board's circuitry conditions the signals, timestamps any changes in state, and sends them to the IONET via the JX1 (JX2) connector. Contact signal inversions are performed using software and I/O configuration constants.

DS215TCDAG1BZZ01A Technical Specifications

Manufacturer GE General Electric

Series Mark V

Part Number DS215TCDAG1BZZ01A

Product Type Digital I/O Board with Firmware

Instruction Manual GEH-6195

Optional Firmware Offered ZZ01A

Revision Quantity 1 Revision

About the DS215TCDAG1BZZ01A

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This DS215TCDAG1BZZ01A printed circuit board product offering is not the original device of its functionality developed for the Mark V Turbine Control System Series, as it edits the original DS215TCDAG1 parent circuit board through its adoption of a B-rated significant functional product revision as well as an optional software package. Additionally, this DS215TCDAG1BZZ01A PCB is not considered to be a device with a normal Mark V Series assembly version, as indicated by the presence of the abnormal DS215 series tag at the very beginning of the DS215TCDAG1BZZ01A functional product number.

Hardware Tips and Specifications

The DS215TCDAG1BZZ01A is a Digital I/O Board. The TCDA board can be found within the digital I/O cores <Q11> and <Q51>. It has the power to process output signals coming from the two TCRA boards and the input signals coming from the DTBB and DTBA boards. These signals are then normally sent across the IONET to the terminal board CTBA and the TCQC board. The DS215TCDAG1BZZ01A has several types of connectors that do different things. The JP connector has the ability to transfer power from the TCPS board to the <Q11> and <Q51> cores.

The JX1 is a connection for the IONET signals that is a shielded twisted-pair connector. The JX2 connector is also used for IONET signals. The JQ connector goes to the JQR plug on the DTBA board and has the power to ferry signals to the TCDA board. The JO1 link is usually not used with the <Q11> core but in other cores, it is used for communication and can write the contact output signals going to the TCRA board that is in location 4. The JO2 connection can be utilized with the <Q11> and <Q51> cores and the output signals it collects are transcribed to the TCRA board that is positioned in location 5. The JR connection can ferry the input signals that are coming from the DTBB card to the TCDA card. The DTBB board is linked to the JRR socket.

The above connector information is purely reminiscent of a visual inspection of the DS215TCDAG1BZZ01A product itself, paired with our lead service technician's knowledge of standard Speedtronic Mark V Series connections and interfacing potentials. This is the case as this DS215TCDAG1BZZ01A Digital I/O Board or Digital I/O Module's original instructional manual materials are not available in troves on the internet for research purposes. With this in mind, the DS215TCDAG1BZZ01A functional product number itself can be considered a great source of DS215TCDAG1BZZ01A hardware component and component specification information, with functional naming chunks coding for DS215TCDAG1BZZ01A board details including its:

Special Mark V Series assembly version

TCDA functional product abbreviation

Normal PCB coating style

Group one Mark V Series product grouping

B-rated primary functional revision

Optional software package included