GE GE □□□ Series Service Manual

IS220YDOAS1A

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Type	of I/O Relay and Fuse Feedback
Shipping	Weight 0.8 lb
Series	Mark VIe & Mark VIeS Control System
Part	Number IS220YDOAS1A
Model	Description Discrete Output I/O Pack
Manufacturer	General Electric
Manuals	GEH-6725, Vol I and II
Ambient	Temperature Range -30 to + 65 °C
Functional	Acronym/Abbreviation YDOA
Firmware	V05.00 and Later
Delta	Method Voting Disagreement and Diagnostic Enable/Disable
ControlST	Software Suite Versions Supports V06.01 and Later Versions
Components	Acquisition and Common Processor Board
About	the IS220YDOAS1A
This	IS220YDOAS1A product from General Electric was originally manufactured to exist in their Mark VIe Turbine Control System Series as a Discrete Output Pack Module. This particular IS220YDOAS1A device, while definable as a Discrete Output Pack Module in its own right, is actually not considered the originally-developed device of this specific Mark VIe Series functionality; as that would have to be considered the IS220YDOAS1 parent Discrete Output Pack Mo

3. Product Information

SPECIFICATIONS

Part No.: IS220YDOAS1A

Manufacturer: General Electric

Country of Manufacture: United States of America (USA)

Number of buffered outputs: 14

N28 ripple: 280 mV pk

N28 maximum current: 400 mA

Temperature rating: 0 to 60 oC

Product Type: Discrete Output Pack

Availability: In Stock

Series: Mark VIeS

Functional Description

IS220YDOAS1A is a discrete output pack developed by GE. It is a part of Mark VIeS control system. The I/O pack serves as a crucial electrical interface, facilitating seamless connectivity between one or two I/O Ethernet networks and a discrete output terminal board. Its design encompasses a common processor board along with an acquisition board explicitly tailored to the discrete output function, ensuring efficient and precise operation.

Functionality and Capabilities

Primarily, the pack exhibits remarkable capability, enabling control over a maximum of 12 relays.

Its operational scope extends to accepting terminal board-specific feedback, providing a comprehensive and versatile solution for diverse application needs. Notably, it accommodates various electromagnetic relay types, such as TRLYS1B, D, and F terminal boards, thereby enhancing adaptability.

Input and Output Interfaces

The I/O pack efficiently interfaces with external components through a dual RJ-45 Ethernet connector setup, bolstered by a three-pin power input mechanism.

Output functionality is facilitated via a DC-37 pin connector, establishing a direct and reliable connection with the associated terminal board connector. This streamlined interface architecture ensures seamless transmission and reception of signals.

Diagnostic Features

Incorporated within the I/O pack are indicator LEDs that serve as visual diagnostic aids. These LEDs play a pivotal role in providing real-time status updates and alerts, enhancing the overall monitoring and troubleshooting capabilities of the system. Their presence significantly contributes to the ease of identifying and resolving potential issues promptly.

It stands as an indispensable component, offering a robust electrical bridge between Ethernet networks and discrete output terminal boards. With its versatile relay control, diverse compatibility with terminal boards, and intuitive diagnostic features, it serves as a reliable and adaptable solution for various industrial and technological applications.

Installation

Terminal Board Mounting: Securely mount the preferred terminal board onto the designated space.

YDOA Connection: For simplex operation, directly plug in one YDOA. For TMR, connect three YDOAs into the terminal board connectors.

Pack Securing Process: Mechanically secure the packs utilizing the threaded studs located adjacent to the Ethernet ports. These studs fit into a mounting bracket specific to the terminal board type. Adjust the bracket's positioning to ensure there is no right-angle force exerted on the DC-37 connector linking the pack and terminal board. This adjustment is typically a one-time requirement throughout the product's lifespan.

Ethernet Cable Connection: Plug in one or two Ethernet cables based on the system configuration. The I/O pack functions seamlessly over either port. When using dual connections, it's recommended to link ENET1 to the network associated with the R controller.

Power Application: Apply power to the pack by inserting the connector on the side of the I/O pack. The pack's inherent soft-start capability regulates current inrush during power application, eliminating the need to remove power from the cable before inserting the connector.

Configuration with ToolboxST Application: Utilize the ToolboxST application to configure the YDOA according to specific operational requirements.

IS220YDOAS1A Technical Specifications

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Manuals GEH-6725, Vol I and II

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Functional Acronym/Abbreviation YDOA

Firmware V05.00 and Later

Delta Method Voting Disagreement and Diagnostic Enable/Disable

ControlST Software Suite Versions Supports V06.01 and Later Versions

Components Acquisition and Common Processor Board

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The Mark VIe Series that this IS220YDOAS1A device belongs to is a rather self-describing General Electric Mark product series, given the fact that it exists as one of the

final-developed Mark product series to incorporate the company's patented Speedtronic control system technology across a range of different offerings. With this being the case, the Mark Vle Series that this IS220YDOAS1A device belongs to is additionally considered attractive on the larger automated industrial marketplace 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 offerings.

Hardware Tips and Specifications

As a YDOA Discrete Output Pack module, the IS220YDOAS1A pack is used to interface a discrete output terminal board as well as up to two I/O Ethernet networks. The main components of this board are an acquisition board and a common processor board which are both used for helping with the discrete output functions. One key feature of this pack is its ability to control up to twelve potential relays as well as accept specific feedback from terminal boards. The output from this pack will be provided through a DC-37 pin connector which will connect directly with the associated terminal board.

This pack can be used in two different redundancy configurations. If the IS220YDOAS1A pack is being used in a TMR redundant application three I/O packs are required whereas only one is required when being used in a simplex redundant application. This pack has the ability to perform self-diagnostic tests, and one of these tests is a power-up test that will check the following features:

processor board hardware

flash memory

Ethernet ports

RAM