GE GE □□□ Series Service Manual

IS220PPDAH1A

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Location	**Power Distribution Module**
Quantity	**of Analog Inputs Five**
Part	**Number IS220PPDAH1A**
Manual	**GEH-6721L**
LED	**Quantity Eight**
Functional	**Acronym/Abbreviation PPDA**
Direct	**Protective Actions None**
Board	**Description Power Distribution Feedback System Pack**
Feedback	**Type System Feedback**
PCB	**Circuit Coating Conformal**
Assembly	**Type IS220 Standard Module**
About	**the IS220PPDAH1A**
While	**lauded for its potential wind turbine setting usages, the Mark VIe Series that this IS220PPDAH1A Power Distribution System Feedback Unit belongs to is also considered an attractive option on the greater general automated industrial marketplace as it is one of the last-developed GE Mark product series to incorporate the patented Speedtronic control system technology across a range of its various product iterations, including this IS220PPDAH1A Power Distribution System Feedback Unit featured here.**

3. Product Information

SPECIFICATIONS

Part Number: IS220PPDAH1A

Manufacturer: General Electric

Series: Mark VIe

Product Type: I/O Pack

Availability: In Stock

Country/Region of Manufacture: United States

Manual: GEH-6721_Vol_II V

FUNCTIONAL DESCRIPTION

IS220PPDAH1A is a Power Distribution System Feedback Board manufactured and designed by General Electric as part of the Mark VIe Series used in distributed control systems. The Power Distribution System Feedback (PPDA) I/O pack can receive inputs from as many as six power distribution boards or as many as six sets of feedback signals. It offers the controllers a second redundant Ethernet interface while adjusting the board feedback signals. In order to identify the power distribution boards hooked into the PPDA feedback, electronic IDs are used in a plug-and-play design. By populating the IONet output with this data, connected boards can subsequently receive accurate feedback.

The Mark VIe Control Power Distribution Module's JPDS, JPDM, JPDG, or JPDC 28 V de control power distribution board serves as the host for the PPDA I/O pack (PDM). 50-pin ribbon cable jumpers wired pin to pin 1 are used to connect other boards. The PPDA receives one feedback group from each board.

The PPDA I/O pack includes one of the following compatible BPPx processor boards:

There is a BPPB processor board inside the PPDAHIA.

The ControlST software package V04.07 and later is compatible with the functionally compatible BPPC processor board found within the PPPDAHIB.

The JPDB, JPDE, and JPDF feedback signals are compatible with the PPDA I/O pack.

INSTALLATION:

Mount the selected terminal board firmly.

Directly connect the JAI terminal board connectors to the PPDA I/O pack. The JPDG, JPDS, JPDM, or JPDC 28 V de control power distribution board is where the PPDA I/O pack is mounted.

Using the threaded screws next to the Ethernet ports, mechanically secure the I/O pack. The studs slip into a mounting bracket made for the particular style of the terminal board. It is important to position the bracket such that the DC-62 pin connector connecting the I/O pack and the terminal board is not subjected to right-angle forces. In the course of the product's service life, the adjustment should only be necessary once.

Depending on how the system is set up, connect one or two Ethernet wires. Either port can be used to use the I/O pack. If twin connections are employed, it is customary to link ENETI to the network related to the R controller.

Connect the pack's connector to a power source to turn on the battery. The I/O pack includes a built-in soft-start feature that limits current inrush when power is applied, so it is not essential to unplug the cable before connecting it.

If necessary, set up the I/O pack using the ToolboxST program. Consult the section

Ribbon cables should be connected from connection P2 on JPDG, JPDS, JPDM, or JPDC to additional core boards supplying data to PPDA.

SIGNAL ROUTING:

The JPDG, JPDS, JPDM, or JPDC board is where the PPDA I/O pack is mounted. 50-pin ribbon cable jumpers wired pin to pin 1 are used to connect other boards. One feedback group is contributed to PPDA by each board. There are up to five prior boards that this connection goes through. This connection can be seen in the following figure.

PPDA Basic Hookup Diagram

Fig 1: PPDA Basic Hookup Diagram

Feedback groups are shown in the above diagram as bold lines, and each board's connectors P1 and P2 are also shown. The PPDA I/O pack and connectors on the JPDS board are as follows, going from right to left:

JDPS has provided local comments on signal group A.

Signal group B is the subject of JPDF's feedback.

Signal group C is the subject of JPDB's feedback.

A further JPDF would employ signal group D.

Another board might make use of signal group E

JPDM uses two sets of feedback signals because that board has a substantial number of feedback lines. Utilizing two boards is supported by JDPM. The following illustration would represent the setup.

PPDA Wiring using Two JPDM Boards

Fig 2: PPDA Wiring using Two JPDM Boards

DIAGNOSTICS:

A power-up self-test that examines the majority of the processor board components, Ethernet ports, RAM, and flash memory monitoring the internal power supply continuously to ensure proper operation.

Verification that the hardware set matches using the electronic ID data from the terminal board, acquisition card, and processor card, followed by verification that the application code loaded from flash memory is appropriate for the hardware set.

Precision reference voltages are included in each scan of the analog input circuitry.

The health of the A/D converter circuits is verified by comparing measured values to expected values. The ToolboxST program provides information about specific diagnoses.

CONFIGURATION:

For operation with desired PDM boards, the PPDA I/O pack utilizes configuration values. For the specific PDM hardware version being used in a system, the ToolboxST program offers the appropriate options. The following is a list of the different configurations that have been encountered:

JPDB:

For each of the two ac buses, the nominal voltage magnitude, the magnitude tolerance, and the neutral voltage correction factor are all specified.

It is possible to turn on or off the status of each fused switched branch circuit.

JPDC:

If P28R, S, and T are possible in a system, the PPDA has to know about it. The low voltage diagnostics for that power bus can be disabled if it appears that none is present, as stated.

You can customize the 125 V bus magnitude and centering tolerance as well as toggle on or off the diagnostic for switched branch circuit fuse conditions.

When using an ac input, the nominal voltage magnitude, magnitude tolerance, and an ac bus neutral voltage adjustment factor are all supplied. You can turn on or off the status of each fuse in a switched branch circuit.

JPDG:

The P28 feedback and diagnostics are switchable It is advised to leave them on.

The switched branch circuit fuse status diagnostic can be turned on or off, as well as the 24/48 V bus magnitude and centering tolerance.

JPDE:

The switched branch circuit fuse status diagnostic and the 24 V bus magnitude and centering tolerance configurations are also switchable.

JPDF:

You can specify the 125 V bus magnitude, centering tolerance, and switch on or off the diagnostic for switched branch circuit fuse condition.

JPDS/JPDM:

A system's ability to contain P28R, S and T must be known to the PPDA. The low voltage diagnostics for that power bus can be disabled if it is reported that one is not present.

PPDA:

The diagnostic daisy chain's PDM boards must be known to the LO pack.

IS220PPDAH1A Technical Specifications

Location Power Distribution Module

Quantity of Analog Inputs Five

Part Number IS220PPDAH1A

Manual GEH-6721L

LED Quantity Eight

Functional Acronym/Abbreviation PPDA

Direct Protective Actions None

Board Description Power Distribution Feedback System Pack

Feedback Type System Feedback

PCB Circuit Coating Conformal

Assembly Type IS220 Standard Module

About the IS220PPDAH1A

While lauded for its potential wind turbine setting usages, the Mark VIe Series that this IS220PPDAH1A Power Distribution System Feedback Unit belongs to is also considered an attractive option on the greater general automated industrial marketplace as it is one of the last-developed GE Mark product series to incorporate the patented Speedtronic control system technology across a range of its various product iterations, including this IS220PPDAH1A Power Distribution System Feedback Unit featured here.

Hardware Tips and Specifications

This board is part of the Power Distribution Modules and when in this configuration it will provide feedback for ground fault detection, bulk power supply health, power bus voltages, and branch circuit statuses. This model is able to have complete system feedback and monitoring which separates it from standard methods of power distribution. Please note that although this model provides feedback for branch circuits, the branch circuits do not directly connect to the PPDA pack.

Another key feature of the IS220PPDAH1A board is that it allows for corrective action to occur by sending and reporting information but it cannot take directive protection action. This board supports system maintenance by sending timely information to the PDM. The PPDA board can receive feedback from up to six PDM components, most of these components are JPDx boards and will host the PPDA I/O pack.

IS220PPDAH1A Device Fault Diagnosis

The IS220PPDAH1A board uses electronic IDs to determine power distribution information, the information will then be used to populate the IONet outputs and provide the correct information and feedback to the conjoining boards. Please note that when the IS220PPDAH1A board is used in applications reading two hundred forty volts of alternating current it should not cross-connect with the volts of direct current; when this occurs the peak voltage will exceed the MOV rating and cause a failure. Failures occur as most of the alternating current supplies must operate on a grounded neutral.

IS220PPDAH1A

DISCONTINUED BY MANUFACTURER

POWER DISTRIBUTION SYSTEM FEEDBACK I/O PACK

PDM DIAGNOSTICS TYPE

FOR MARK VIE TURBINE CONTROL SYSTEMS

AMBIENT TEMPERATURE: -30 TO 65 DEGREES C