GE GE □□□ Series Service Manual

IS220YTURS1A

1. Description

SPECIFICATIONS:

2. Specifications

Specification	Value
OEM	**GE Energy**
Product	**Series Mark VI Speedtronic**
Functional	**Part Number IS220YTURS1A**
Functional	**Abbreviation YTUR**
Functional	**Description Turbine Input/Output Pack**
PCB	**Coating Style S-style PCB coating**
1st	**Functional Revision A**
About	**the IS220YTURS1A**
A	**similar model of Turbine Input/Output pack to the similar-sounding PTUR turbine I/O pack, the IS220YTURS1A Turbine Input/Output pack was manufactured by General Electric shell company GE Energy for use alongside their Mark VIes series of Wind Turbine Control automated products and product components. This IS220YTURS1A model comes equipped with a special assembly version; made evident by the inclusion of the IS220 initial series tag present in the IS220YTURS1A functional product part number. This IS220YTURS1A I/O pack is described as a revised printed circuit board, modified through its inclusion of a singular functional revision, graded at an "A" rating. This A-rated functional revision is a functional revision as it makes major improveme**

3. Product Information

SPECIFICATIONS:

Part No: IS220YTURS1A

Manufacturer: General Electric

Product Type: Primary Turbine Protection I/O Module

Series: Mark VIeS

Number of Channels: 6

Power to Contacts: 125 V dc

Input Voltage: 120V AC

Output Voltage: 5V to 24V DC

AccelCalType: 10 to 100

Operating Voltage Range: 90V to 265V AC

Signal Feedback Input/Output: Analog (4-20mA)

Communication Protocols: Modbus

Operating Temperature: 0°C to 60°C

Mounting: DIN-Rail

Availability: In stock

Weight: 2.00 lbs

Size: 3.4 in x 6.37 inch

Country of Origin: USA

Manual: GEH-6721P

FUNCTIONAL DESCRIPTION:

IS220YTURS1A is a Primary Turbine Protection I/O Module manufactured and designed by General Electric and is part of the Mark VIeS Series used in GE Distributed Turbine Control Systems. The Primary Turbine Protection (YTURS1A) pack provides the electrical interface between one or two IONets and a primary protection terminal board. YTUR plugs into the TTUR terminal board and handles four-speed sensor inputs, bus and generator voltage inputs, shaft voltage and current signals, eight flame sensors, and outputs to the main breaker. Safety-certified protection includes:

Speed An interface is provided for up to four passive, magnetic speed inputs with a frequency range of 2 to 20,000 Hz.

Flame Detection Voltage pulses above 2.5 V generate a logic high; the pulse rate is measured in a counter over a configurable time (multiple of 40 ms).

ETD TRPx contains relays for interface with the electrical trip devices (ETD).

YTURS1A is compatible with the TTUR and TRPA terminal boards. As an alternative to TTUR, three YTUR packs can be plugged directly into a TRPA terminal board. In this arrangement, TRPA holds four-speed inputs per YTUR or alternately fans the first four inputs to all three YTURs. TRPA provides two solid-state primary trip relays. This arrangement does not support bus and generator voltage inputs, shaft voltage or current signals, flame sensors, or main breaker output. The YTUR flame detection has been designed and analyzed with the safe state being the presence of flame. Flame sensing is not intended for applications where detected flame is the unsafe state.

YTUR TEST PROCEDURES:

Speed inputs are tested when input signals are varied and compared to the reference signal. Flame detector (Gieger-Muller) inputs are tested when the presence of flame is observed. E-Stop input is tested when actuated and PTRs are observed to drop out. When power (or the communications cable) is removed from one I/O pack in a hardware fault-tolerant channel, the system should maintain the required output.

Configurable items in the YTUR pack are identified in this test plan by including (CFG) at the end of the name of the item. Any configurable items that must be set for a particular test are defined in the detailed test instructions below. If a setting is not given for a configurable item, it is not relevant to that test.

Unless otherwise noted, verify that there are no diagnostics faults on the YTUR pack under test before performing each test case.

Any diagnostic fault(s) that are expected to occur as a result of performing a test case are detailed in the acceptance criteria for the test case.

If additional diagnostics faults are generated that are not detailed in the acceptance criteria, they must be fully explained before acceptance of the test.

IS220YTURS1A Technical Specifications

OEM GE Energy

Product Series Mark VI Speedtronic

Functional Part Number IS220YTURS1A

Functional Abbreviation YTUR

Functional Description Turbine Input/Output Pack

PCB Coating Style S-style PCB coating

1st Functional Revision A

About the IS220YTURS1A

A similar model of Turbine Input/Output pack to the similar-sounding PTUR turbine I/O pack, the IS220YTURS1A Turbine Input/Output pack was manufactured by General Electric shell company GE Energy for use alongside their Mark VIes series of Wind Turbine Control automated products and product components. This IS220YTURS1A model comes equipped with a special assembly version; made evident by the inclusion of the IS220 initial series tag present in the IS220YTURS1A functional product part number. This IS220YTURS1A I/O pack is described as a revised printed circuit board, modified through its inclusion of a singular functional revision, graded at an "A" rating. This A-rated functional revision is a functional revision as it makes major improvements to the overall performance specifications and greater functionality of the IS220YTURS1 parent board. The Mark VI Turbine Control System Series that this IS220YTURS1A device belongs to is consistently characterized and sought after due to its status as one of General Electric's final-developed Mark product series to incorporate the patented Speedtronic control system technology into a range of different functional devices.

Hardware Tips and Specifications

The IS220YTURS1A features three total I/O packs, and is used in conjunction with a series of relevant terminal boards within the GE Energy Mark VIes Series, including the TTURS1C,

TRPAS1A, TRPAS2A, TRPGS1B, and the TRPGS2B terminal boards. For each individual compatible terminal board, the IS220YTURS1A demands different Mark VIeS Safety I/O Types. The TTURS1C terminal board has a Safety I/O type of primary turbine protection, while both the TRPAS1A and TRPAS1A terminal boards both offer different inputs; in 4 speed inputs and 8 flame inputs, respectively. the TRPGS1B terminal board has a Safety I/O type of 3 monitored trip relay outputs, and the final compatible TRPGS2B terminal board is aligned with 1 E-stop in terms of its Safety I/O types. All of these terminal boards, along with the greater IS220YTURS1A module are considered removable, and the IS220YTURS1A I/O pack features box connector types for these terminal boards. The YTUR-abbreviated Input/Output module has a minimum power supply voltage of 27.4 V dc with a nominal power supply voltage sitting at 28.0 V dc. The IS220YTURS1A I/O pack's maximum voltage rests relatively close to its nominal voltage, at 28.6 V dc. The ambient temperature rating for this model is defined in original factory-issued instructional information as -30 to 65 degrees celsius.

While a lot of important information can be derived from original factory-issued instructional materials concerning the IS220YTURS1A I/O pack, additional hardware and performance specifications can be gleaned simply upon a diligent and intensive product part number breakdown of the individualized IS220YTURS1A series product part number. As explained above, the IS220 series tag that starts off the IS220YTURS1A product number is indicative of a I/O pack with a special assembly style. This special assembly style is considered even more unique than the Mark VIe series's more commonly-seen IS215 special assemblies. Moving from the initial series tag, the IS220YTURS1A part number features an inclusion of the part-specific YTUR functional acronym, before relaying to the knowledgable I/O pack inspector its series grouping, conformal coating style, and revision history, all through the use of the "S1A" final product number portion. For an explanation of these IS220YTURS1A specifications, please make use of the diagrammed IS220YTURS1A part number breakdown available in the manuals tab above.