GE GE □□□ Series Service Manual

IS420UCSCS2A

1. Description

SPECIFICATIONS:

3. Product Information

SPECIFICATIONS:

Part Number: IS420UCSCS2A

Manufacturer: General Electric

Series: Mark VIeS

Product Type: Dual Core Controller Module

Life Cycle Status: Active

Redundancy Configurations: Simplex, Dual, and TMR

Microprocessor: Dual core, 1.6 GHz AMD G-Series

Span: -8 mV to +45 mV

Power supply voltage: 28 V dc

Voltage Range: 18 - 32 VDC

Memory: 2 GB DDR3-1066 SDRAM

Memory Storage: 128 GB

Mounting: DIN-rail mounting

Operating temperature: -40 to 70°C

Size: 168 x 150 x 55 mm

Weight: 1,327 g

Repair: 3-7 Day

Availability: In Stock

Country of Origin: United States

Manual: GEI-100867A

FUNCTIONAL DESCRIPTION:

IS420UCSCS2A is a Dual Core Controller Module manufactured and designed by General Electric as part of the Mark VIeS Series used in GE Distributed Control Systems. The dual-core controller runs the Mark VIeS Safety control applications used for functional safety loops to achieve SIL 2 and 3 capabilities. Mark VIeS Safety equipment is used by operators who are knowledgeable in safety-instrumented system (SIS) applications to reduce risk in critical safety functions. Safety controllers and distributed I/O modules are specifically programmed for safety control use, and this specific control hardware and software is compliant with the IEC 61508 certification. The Mark VIeS Safety controller runs on QNX Neutrino, a real-time, multi-tasking operating system (OS). The UCSCS2A is available beginning with ControlST V07.02 and supports Simplex, Dual, and TMR redundancy.

UCSC CONTROLLERS:

UCSC controllers are compact, stand-alone controllers that run application-specific control system logic used in a diverse range of applications, such as wind turbines, gas and steam turbines, and combined-cycle power plants. The UCSC controller offers the following advantages:

Single module

No battery

No fan

No jumper settings required

Flash memory can be conveniently updated

Can be expanded to include seven additional I/O ports

The UCSC controller mounts in a panel and communicates with I/O modules through on-board I/O network (IONet), PROFINET, High-speed Serial Link (HSSL), and/or other interfaces.

OVER-TEMPERATURE PROTECTION:

The UCSC controller uses internal temperature readings and logic to protect its internal electronics. Internal circuitry generates a warning at 85°C (185 °F) and shuts down at 95°C (203 °F). The UCSC will reboot once the internal circuitry detects the temperature has dropped below 75°C (167 °F). Independently, the microprocessor monitors its operating temperature generates a warning at 105°C (221 °F), and shuts down at 107°C (225 °F). A power cycle is required to recover from a microprocessor over-temperature shutdown. Both of these warnings drive the OT LED and are annunciated as diagnostic alarms.

The Mark* VIe and Mark VIeS Functional Safety UCSC controller is a compact, stand-alone controller that runs application-specific control system logic. It can be used in a diverse range of applications, from small industrial controllers to large combined-cycle power plants. The UCSC controller is a base-mounted module, with no batteries, no fans, and no hardware configuration jumpers. All configuration is done through software settings that can be conveniently modified and downloaded using the Mark controls platform software configuration application, ToolboxST*, running on a Microsoft© Windows© operating system. The UCSC controller communicates with I/O modules (Mark VIe and Mark VIeS I/O packs) through on-board I/O network (IONet) interfaces.

The Mark VIeS Safety controller, IS420UCSCS2A, is a dual core controller that runs the Mark

VIeS Safety control applications used for functional safety loops to achieve SIL 2 and SIL

3 capabilities. The Mark VIeS Safety product is used by operators that are knowledgeable in safety-instrumented system (SIS) applications to reduce risk in safety functions. The UCSCS2A controller can be configured for Simplex, Dual, and TMR redundancy.

The non-safety Mark VIe controller, IS420UCSCH1B, can be interfaced with the Safety control system (through EGD protocol on UDH Ethernet port) as a controller for non-SIF loops or as a simple communication gateway to provide data with OPC® UA Server or Modbus® Master feedback signals, if needed by the application.