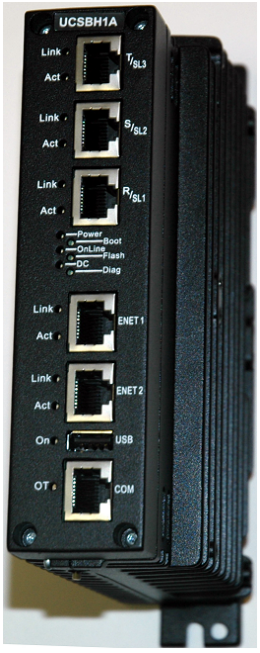
Mark* VIe Controller - UCSB

fact sheet

GEA-S1265E

GE uses the Mark VIe* control system, its most advanced control technology platform, in a diverse range of applications including gas and steam turbines, safety systems, solar and wind farms, gasification, integrated water and power plants, hydro, nuclear and power conversion products. This diversity requires a compact and flexible controller that can deliver the performance, operability, and reliability needed for these applications.



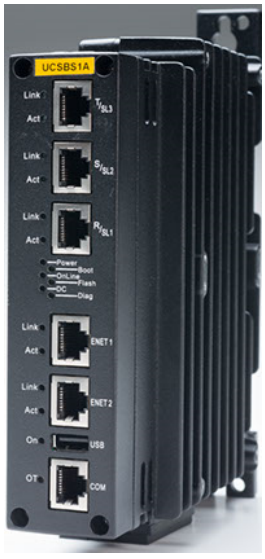
Mark VIe Controller

Controller Features

The UCSB controller is a stand-alone, single-board controller with scalable processing power. It includes built-in power supplies and requires no batteries or jumper settings. Controllers run the ControlST* software suite, providing a common software environment for turbine and generator excitation controls in the power island and balance of plant equipment to simplify operations and maintenance.

Performance

The operating system has a real-time, multi-tasking design for high-speed, reliable, industrial applications. It can be configured for simplex, dual, or triple redundant operation, at incremental frame rates (10 ms or slower) in any configuration. Three Ethernet ports are provided for 100 MB communications with I/O modules (199 maximum per I/O network). Since synchronization is important at these frame rates, the UCSB synchronizes the local processor clocks on the I/O modules.



Mark VIeS Safety Controller

Control Network

The network interface provides two additional 10/100 MB Ethernet ports with RJ-45 connectors. The ports are used for peer-to-peer communications with other control systems on the control network and with operator stations and engineering workstations. TCP/IP and Ethernet Global Data are the primary protocols for communications on the control network. Ethernet Modbus® is supported for third-party communications and HSE is used for FOUNDATION Fieldbus™.

Programming

The ToolboxST* application is used for hardware and software configuration and monitoring of diagnostics. Control software can be edited and downloaded online. This software is represented in block diagram format with Boolean logic shown in ladder format. Sequential Function Charts conforming to IEC 61131-3 standards are also available.

Specifications

Item	Description
Configuration	Simplex, dual, triple redundant
Frame rates	10, 20, 40, 80, 160, 320...(ms)
Speed	UCSBH1A: 600 MHz UCSBH3A: 1200 MHz UCSBH4A: 1066 MHz
Cooling	UCSBH1A (convection) UCSBH3A (redundant fans) UCSBH4A (convection)
HMI	ControlST Software Suite
Ports	5 Ethernet, 1 USB, 1 COM
Voltage range	18 to 32 V dc
Operating	UCSBH1A: -30 to 65ºC(-22 to 149°F) UCSBH3A: 0 to 65ºC(-32 to 149°F) UCSBH4A: -30 to 65°C(-22 to 149 °F)
Diagnostic LEDs	Link, Act, Power, Online, Flash, DC, Diagnostic, On, OT
Storage	-40 to 85ºC (-40 to 185°F)
Humidity	5 to 95%, non-condensing
Certifications	Achilles® level 1 security certification UCSBS1A is IEC 61508 safety certified to SIL-3

Benefits

- Compact for flexible packaging
- Scalable for use in multiple applications
- Excellent performance in a wide range of frame rates and redundancy configurations
- Reliable with rugged design

References

- GEI-100665, *Mark VIe Controllers UCCx and UCSx Instruction Guide*
- GEH-6700, *ToolboxST User Guide for Mark VIe Control*