GE IS420ESWAH1A

8-Port Copper / Fiber IONet Switch



GE IS420ESWAH1A is an unmanaged industrial Ethernet switch for the IONet communication network in Mark VIe and Mark VIeS control systems. It connects the system's Ethernet devices through eight copper ports and one 100Base-FX multimode LC fiber port, allowing this H1A variant to serve a mixed copper-and-fiber network arrangement. Automatic speed and duplex negotiation support the copper links, while port indicators show connection activity and status. Redundant power inputs support the specified control-network power arrangement, making both the ESWA form and H1A port configuration important when selecting a replacement.

Technical Specifications

Product Identity	
System scope	GE Mark VIe and Mark VIeS IONet
Dimensions (H × W × D)	13.8 × 8.6 × 5.6 cm
Functional Configuration	
Product function	Unmanaged industrial Ethernet / IONet switch
Copper ports	8 × 10/100Base-TX RJ45
Fiber ports	1 × 100Base-FX multimode LC
Minimum buffer	256 KB
Cooling	Convection
Mounting	DIN rail with separately selected clip
Performance & Power	
Supply	24/28 V DC; 1 A maximum
Redundant power	TB1 / TB2 diode-OR inputs
MAC address capacity	4K
Environment	
Operating ambient	-40 to +70°C

Selected original manufacturer material follows on pages 3–5.

Compatibility & Selection Guide

System and software compatibility. IS420ESWAH1A is documented for GE Mark VIe and Mark VIeS IONet applications. It is unmanaged, so selection centers on the port configuration, power arrangement and mounting orientation rather than a managed-switch software feature set. The DIN-rail clip is selected separately; confirm the exact H-variant and installed network design before substitution.

Wiring & Installation Reference

Ethernet and power connections

RJ45 ports · 10/100Base-TX copper · Cat 5e UTP, 8P8C connectors

TB1 / TB2 · Independent DC power inputs · 24/28 V DC; correct polarity

Fiber interface · 100Base-FX multimode LC · Match multimode LC connection

Mounting selection

1. Confirm the orientation Choose the long edge parallel or perpendicular to the rail according to the cabinet design.

2. Select the clip Use 259B2451BVP1 for parallel mounting or 259B2451BVP2 for the specified perpendicular orientation.

3. Check the installed network Verify the full H-variant, power input and link/activity indicators against the system design.

Installation precautions

Follow the complete manufacturer installation instructions and site isolation requirements.

For hazardous locations or safety-system use, apply the system-level conditions referenced by GE; do not infer a standalone safety rating from the switch name.

View connection specifications (PDF) — page 4 · View mounting selection (PDF) — page 3

Mark VIe Industrial Ethernet / IONet Switches Summary Sheet*

GE's product line of industrial, unmanaged Ethernet 10/100 switches, ESWA and ESWB, are specifically designed to meet the needs of real-time industrial control solutions and are required for all IONet switches used in a Mark* VIe and Mark VIeS Safety control system. To meet the requirements for speed and functionality, the following features are provided:



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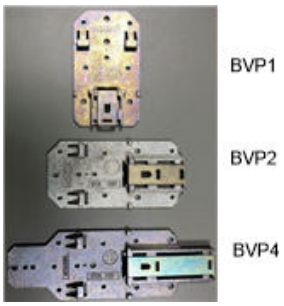
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- 802.3, 802.3u, and 802.3x compatibility
- 10/100 base copper with auto negotiation
- Full/half duplex auto-negotiation
- 100 Mbps FX uplink port
- HP-MDIX auto sensing
- LEDs to indicate status of Link Presence, Activity and Duplex, and Speed per port (each LED has two colors)
- LED to indicate power status
- Minimum 256 KB buffer with 4 K media access control (MAC) addresses
- Redundant power supply inputs (Diode-OR'd)

The GE Ethernet/IONet switches are available in two hardware forms: ESWA and ESWB. Each hardware form is available in five versions (H1A through H5A) that vary in fiber-optic port configuration options, which include no fiber ports, multi-mode fiber ports, or single-mode (longer distance) fiber ports. Refer to the *IS420ESWAH#A IONet Switch Specifications table* and the *IS420ESWBH#A IONet Switch Specifications table* for these fiber option details.

The ESWx switches can be DIN-rail mounted using one of three GE qualified DIN-rail mounting clips, depending on the hardware form (ESWA or ESWB) and the selected DIN-rail mounting orientation. The clips are ordered separately, in accordance with the following table. Mounting screws are included with each switch.

Clip Part #	Switch Usage	Mounting Orientation
259B2451BVP1	ESWA (8-port) or ESWB (16-port)	Long edge of switch body parallel to rail
259B2451BVP2	ESWA (8-port)	Long edge of switch body perpendicular to rail
259B2451BVP4	ESWB (16-port)	Long edge of switch body perpendicular to rail



For more information on the ESWx switches, refer to the *Mark VIeS Functional Safety Systems for General Market Volume II System Guide for General-purpose Applications* (GEH-6855_Vol_II), the chapter *Unmanaged Ethernet Swtiches*.

Public Information — This document contains non-sensitive information available for public disclosure.

IS420ESWAH#A IONet Switch Specifications

Item	IONet Switch				
	IS420ESWAH1A	**IS420ESWAH2A**	**IS420ESWAH3A**	**IS420ESWAH4A**	**IS420ESWAH5A**
Product Name	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch
Life-cycle Status	Active	Active	Active	Active	Active
Copper Ports	8 ports 10/100Base-TX copper, RJ-45	8 ports 10/100Base-TX copper, RJ-45	8 ports 10/100Base-TX copper, RJ-45	8 ports 10/100Base-TX copper, RJ-45	8 ports 10/100Base-TX copper, RJ-45
Fiber Ports	1 port 100Base-FX, multi-mode fiber, LC-type connection	2 ports 100Base-FX, multi-mode fiber, LC-type connection	No fiber ports	1 port 100Base-LX10, -mode fiber, LC-type connection	2 ports 100Base-LX10, single-mode fiber, LC-type connection
Power Requirements	24 / 28 V dc, 1 A max, TB1 and TB2 provide inputs for two independent power sources that are Diode-OR'd for redundant power				
Power Supply Connector	Phoenix® contact (MC 1.5/S-STF-3.81) (qty 2, Included)				
Dimensions (H x W x D)	13.8 x 8.6 x 5.6 cm (5.4 x 3.40 x 2.20 in)				
Copper Cables	Cat 5e UTP cable with RJ-45 connectors (8P8C)				
Cooling	Convection cooled				
Safety Rated	Non-interferring				
Hazardous Locations Capability	Class 1, Div 2 / Class 2, Zone 2 / ATEX For ratings and further details, refer to the *Mark VIeS Functional Safety System Equipment in Hazardous Locations (HazLoc) Instruction Guide* (GEH-6861).				
G3 Compliant	Yes				
Ambient Operational Temperature	-40 to 70°C (-40 to 158 °F)				
Storage Temperature	-40 to 85°C (-40 to 185 °F)				
Mounting Method	DIN-rail mounted with separately purchased mounting clip				
Switch Replacement Part Number	IS420ESWAH1A	IS420ESWAH2A	IS420ESWAH3A	IS420ESWAH4A	IS420ESWAH5A

IS420ESWBH#A IONet Switch Specifications

Item	IONet Switch				
	IS420ESWBH1A	**IS420ESWBH2A**	**IS420ESWBH3A**	**IS420ESWBH4A**	**IS420ESWBH5A**
Product Name	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch	Mark VIe IONet Switch
Life-cycle Status	Active	Active	Active	Active	Active
Copper Ports	16 ports 10/100Base-TX copper, RJ-45	16 ports 10/100Base-TX copper, RJ-45	16 ports 10/100Base-TX copper, RJ-45	16 ports 10/100Base-TX copper, RJ-45	16 ports 10/100Base-TX copper, RJ-45
Fiber Ports	1 port 100Base-FX, multi-mode fiber, LC-type connection	2 ports 100Base-FX, multi-mode fiber, LC-type connection	No fiber ports	1 port 100Base-LX10, single-mode fiber, LC-type connection	2 ports 100Base-LX10, single-mode fiber, LC-type connection
Power Requirements	24 / 28 V dc, 1 A max, TB1 and TB2 provide inputs for two independent power sources that are Diode-OR'd for redundant power				
Power Supply Connector	Phoenix contact (MC 1.5/S-STF-3.81) (qty 2, Included)				
Dimensions (H x W x D)	18.8 x 8.6 x 5.6 cm (7.40 x 3.40 x 2.20 in)				
Copper Cables	Cat 5e UTP cable with RJ-45 connectors (8P8C)				
Cooling	Convection cooled				
Safety Rated	Non-interferring				
Hazardous Locations Capability	Class 1, Div 2 / Class 2, Zone 2 / ATEX For ratings and further details, refer to the *Mark VIeS Functional Safety System Equipment in Hazardous Locations (HazLoc) Instruction Guide* (GEH-6861).				
G3 Compliant	Yes				
Ambient Operational Temperature	-40 to 70°C (-40 to 158 °F)				
Storage Temperature	-40 to 85°C (-40 to 185 °F)				
Mounting Method	DIN-rail mounted with separately purchased mounting clip				
Switch Replacement Part Number	IS420ESWBH1A	IS420ESWBH2A	IS420ESWBH3A	IS420ESWBH4A	IS420ESWBH5A

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