# General Electric IS420ESWBH3AX

Technical Reference and Engineering Data

General Electric IS420ESWBH3AX is a mark vie 16-port copper ionet ethernet switch for the Mark VIe / Mark VIeS IONet architecture. The complete marking must be matched to the installed hardware, wiring and configuration before replacement.

## 01 Exact identity and system role

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| **Complete model** | IS420ESWBH3AX |
| **Product type** | Mark VIe 16-port copper IONet Ethernet switch |
| **Manufacturer** | General Electric |
| **Technical source** | GE Mark VIeS functional-safety material and IS420ESWBH3A KC registration |
| **Copper Ethernet ports** | 16 |
| **Copper Ethernet standard** | 10/100Base-TX |
| **Copper connector** | RJ-45, 8P8C |
| **Fiber ports** | 0 |
| **Power input** | 24/28 V DC |
| **Input current** | 1 A maximum |

## System position

IS420ESWBH3AX is used as a 16-port 10/100Base-TX copper IONet switch in a documented Mark VIe or Mark VIeS network; port mapping and redundant DC power are project specific.

## Lifecycle and installed-base context

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| **Exact product phase** | A current manufacturer lifecycle phase for the complete IS420ESWBH3AX suffix identity has not been established. |
| **Platform support** | GE documentation and current certification records identify the IS420ESWBH3A 16-port IONet switch base design; confirm the X suffix marking against the installed project. |
| **Supply boundary** | Apter Power availability applies to the exact offered IS420ESWBH3AX unit and is separate from manufacturer lifecycle status. |

## 02 Verified technical data

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|---|---|
| **Copper Ethernet ports** | 16 |
| **Copper Ethernet standard** | 10/100Base-TX |
| **Copper connector** | RJ-45, 8P8C |
| **Fiber ports** | 0 |
| **Power input** | 24/28 V DC |
| **Input current** | 1 A maximum |
| **Redundant power inputs** | 2, diode-OR connected |

## Additional engineering data

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|---|---|
| **Power connector quantity** | 2 |
| **Copper cable category** | Category 5e UTP |
| **Operating temperature** | -40 to +70 deg C |
| **Storage temperature** | -40 to +85 deg C |
| **Mounting** | DIN rail |
| **Cooling** | Convection |
| **Corrosion compliance** | G3 |

## Applicability boundary

The official record establishes IS420ESWBH3A as a 16-port no-fiber IONet switch. The delivered X suffix must be confirmed from the complete nameplate and project record.

## 03 Integration and engineering interpretation

**Mark VIe IONet distribution**

Connect controllers and I/O packs over the approved deterministic control network.

**Copper network expansion**

Provide sixteen RJ-45 connections where the project requires no fiber interface.

**Redundant control paths**

Maintain physically and logically separated IONet paths in approved architectures.

**Turbine-control retrofit**

Replace an exact ESWB assembly while preserving the project port map and cabling.

## Technical notes

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| **Network relationship** | Retain the complete sixteen-port RJ-45 map, Category 5e copper routes and the approved controller-to-I/O segmentation before replacing the switch. |
| **Power and environment** | Verify both diode-OR 24/28 V DC power inputs, 1 A maximum input current, DIN-rail retention and the -40 to +70 deg C cabinet boundary. |
| **Technical reference** | GE Mark VIeS functional-safety material and IS420ESWBH3A registration record supporting the H3A base design. |

## Interpretation boundaries

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| **Probe-only limit** | Do not present complete-system range, scale or linearity as a standalone output of IS420ESWBH3AX. |
| **Target influence** | Material, geometry, finish and nearby conductive surfaces can change the installed response. |
| **Length influence** | Probe lead and extension cable form part of the calibrated electrical relationship. |
| **Temperature influence** | Apply component temperature limits at their actual locations and compare with process transients. |
| **Mechanical influence** | Thread engagement, rigidity, target travel and cable support affect repeatability and service life. |
| **Acceptance rule** | Use the approved machine baseline and maintenance procedure for the final as-left decision. |

## 04 Diagnostic decisions and support record

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| **How should every cable on IS420ESWBH3AX be documented before replacement?** | Photograph both ends, record port numbers, controller or I/O-pack destinations, redundant-network identity and cabinet route before unplugging any RJ-45 connector. |
| **What should be checked if one port on IS420ESWBH3AX has no link after replacement?** | Confirm the port map, cable continuity, mating device power, connector condition and the assigned network path before moving the cable to another port. |
| **How should redundant IONet paths through IS420ESWBH3AX be proved?** | Use the approved turbine-control procedure to verify each path separately while monitoring controller and I/O-pack diagnostics for loss or recovery events. |
| **Why must the X suffix on IS420ESWBH3AX remain in the maintenance record?** | It is part of the delivered marking; do not collapse it to the H3A base identity until GE project documentation establishes equivalence. |
| **What evidence should be recorded before replacing IS420ESWBH3AX?** | Capture the complete nameplate, installed slot or mounting position, companion hardware, wiring identifiers and the accepted operating baseline for the mark vie 16-port copper ionet ethernet switch. |
| **How should an intermittent fault around IS420ESWBH3AX be isolated?** | Separate field wiring, connector, supply, grounding, configuration and host-system causes. Reproduce the symptom under a controlled test and change only one variable at a time. |
| **What configuration evidence should be retained after commissioning IS420ESWBH3AX?** | Retain the hardware identity, firmware or parameter record where applicable, channel assignment, as-left measurements, alarm or diagnostic state and the approved functional-test result. |
| **When should IS420ESWBH3AX be rejected during incoming inspection?** | Quarantine the item if the complete marking, connector keying, board revision, protective coating, terminal condition or required companion hardware differs from the approved replacement record. |

## Verified source

GE Mark VIeS functional-safety material and IS420ESWBH3A KC registration

## Related product references

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|---|---|
| **Related product** | DS3800HCMC1A1B |
| **Related product** | DS200DSPCH1AEA |

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|---|---|
| **Related product** | IS220PTURH1A |
| **Related product** | 531X133PRUALG1 |

## Engineering contact

Discuss the exact marking and installed application with Apter Power.
sales13@apterpower.com | +86 18030235313

## Acceptance evidence package

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| **Nameplate evidence** | Overall and close photographs showing IS420ESWBH3AX, revision, approval and serial details where present. |
| **Installation evidence** | Views of the rack position, mechanical datum, terminal assignment, cable route and strain relief. |
| **Configuration evidence** | Export or screenshots identifying the approved hardware assignment and parameters without exposing credentials. |
| **Baseline evidence** | As-found readings with units, test conditions, machine state and the instrument used. |
| **Inspection evidence** | Connector, contact, insulation, fastener, contamination and heat-condition observations. |
| **Functional evidence** | As-left readings and the controlled input, output or channel response used for acceptance. |
| **Change evidence** | Any wiring, setting, firmware or mechanical change linked to its approved work reference. |
| **Release evidence** | Technician, reviewer, date, asset reference and the maintenance-record location for traceability. |

## Controlled acceptance sequence

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| **01 Isolate** | Place the monitored machine and channel in the approved maintenance state; prove the required isolation. |
| **02 Photograph** | Capture IS420ESWBH3AX, the installed datum, connector, route and companion-component markings. |
| **03 Measure** | Record mechanical position and the applicable stopped-machine electrical reading before removal. |
| **04 Compare** | Check delivered identity, interfaces and evidence against the approved drawing and spare-parts record. |
| **05 Install** | Fit without twisting the lead; preserve thread engagement, target clearance, bend radius and strain relief. |
| **06 Set point** | Establish the operating gap or datum only with the approved stopped-machine procedure. |
| **07 Prove** | Compare local reading, monitor indication and controlled operating response with the accepted baseline. |
| **08 Handover** | Record as-left values, photographs, deviations, responsible technician and release approval. |

## Evidence quality controls

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| **Traceability** | Each value is tied to IS420ESWBH3AX, the asset location, test state, instrument and date. |
| **Repeatability** | The same approved method and comparable operating state are used for before-and-after readings. |
| **Resolution** | Recorded precision does not exceed the capability of the instrument or source document. |
| **Reference state** | Stopped, energized, loaded and process-running observations are clearly distinguished. |
| **Change control** | Every changed setting, connection or mechanical datum has an approved reason and reviewer. |
| **Retention** | Evidence remains accessible with the maintenance record for future troubleshooting and replacement review. |