

# IEN-9648-SS

Managed 8 x 10/100/1000 RJ45 & 4 x GbE SFP  
Industrial Switch, Substation Approval

## Description

IEN-9648-SS is a high-performance 8-port 10/100/1000 RJ45 downlink and 4-port GbE SFP uplink managed industrial switch designed to meet the requirements and environmental conditions of substation applications. The downlink ports connect to industrial devices and controllers. The fiber ports allow noise-free Gigabit Ethernet transmission for fast recovery, reliable and long-distance to other switches or the control center. It offers auto-negotiation on all its ports and Modbus TCP to aggregate devices easily in industrial Ethernet applications.

This switch is built with industrial-grade components, enclosed in an IP30 aluminum case with high thermal conductivity to protect the device from tools and hazards. To ensure reliability the redundant power supply and alarm relay contact on the terminal block ensures non-stop operations and issues alerts if power fails. Certified for use in substation applications, the device is designed to withstand vibration, shock, free fall, and temperatures ranging from  $-40^{\circ}\text{C}\sim 75^{\circ}\text{C}$  ( $-40^{\circ}\text{F}\sim 167^{\circ}\text{F}$ ) it suits demanding environments.



## Features Highlight

### Robust Switch Performance

IEN-9648-SS is enclosed within IP30 aluminum case and can able to sustain harsh temperature ranging between  $-40^{\circ}\text{C} \sim 75^{\circ}\text{C}$ . Along with this, the switch is built with various protection features such as ESD Protection, Surge Protection and Reverse Polarity Protection to deliver non-stop PoE service to the Powered Devices.



### Redundant Power Supply

Considering the power failure impact in surveillance applications, IEN-9648-SS is developed for redundant power to provide continuous service resulting reliable and consistent network. In addition, the switch is equipped with alarm feature to notify the occurrence of power failure, helps in quick respond and faster troubleshooting.

### Advanced QoS Support

Understanding the need of smoother data transmissions for specific surveillance applications, the IEN-9648-SS supports IEEE 802.1p Quality of Service (QoS) which enhances bandwidth utilization to ensure time sensitive data gets delivered efficiently to mission-critical applications without any delay even during burst of high traffic. Addition to the beneficial fetures, the switch is also configured with efficient Storm Control functionalities which can only allow the traffic of a predefined rate. Both the QoS and Storm Control function can easily managed by DIP Switch without any burden of manual enable and disable.

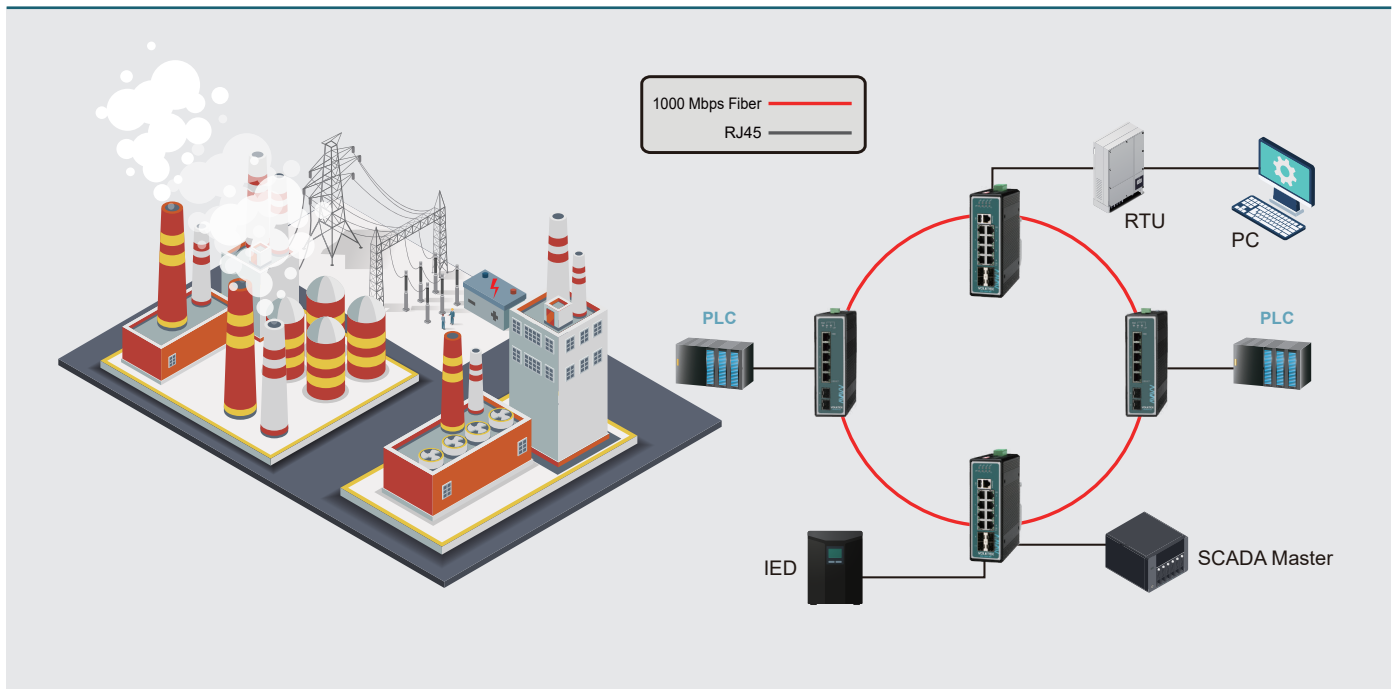
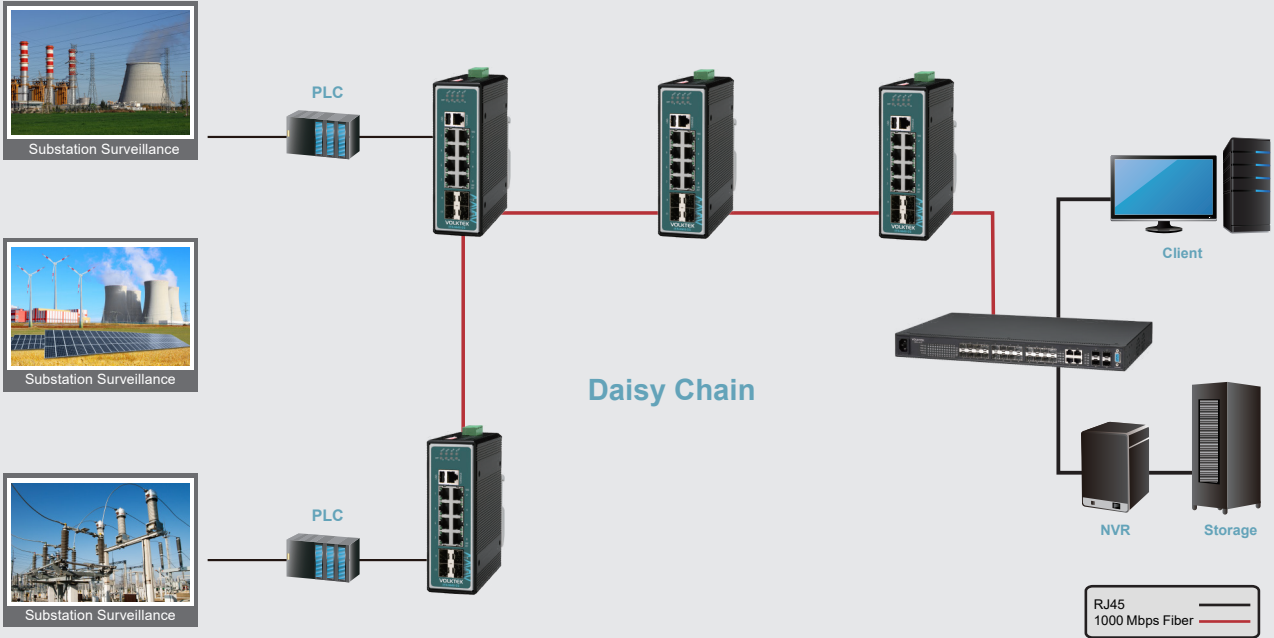
### Eco-friendly Green Ethernet Design

To address the concerns of increasing power consumption, IEN-9648-SS implements IEEE 802.3az Energy Efficient Ethernet (EEE) compliant Green Ethernet technology. This eco-friendly design allows the switch to automatically adjust power consumption and conserve energy during the periods of low data activity. This helps you to lower the energy usage significantly and help you save operational costs.



## Applications

IEN-96XX-SS/94XX-SS series switches are designed to meet the demands of power substation automation systems (IEC 61850-3, IEEE 1613). The switches guarantee reliable operation in critical environments where vibration and shock are common place. Gigabit backbone, redundant ring increase the reliability of the communications and reduce cabling and wiring costs. These are compliant with mandatory sections of EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making the switches suitable for a variety of Railway applications.



## Specifications

Standards	
IEEE 802.3	10BASE-T
IEEE 802.3u	100BASE-TX
IEEE 802.3ab	1000BASE-T
IEEE 802.3z	1000BASE-SX/LX
IEEE 802.3	Nway Auto-negotiation
IEEE 802.3x	Flow Control
IEEE 802.3ad	Link Aggregation
IEEE 802.1AB	LLDP
IEEE 802.1ad	QinQ
IEEE 802.1D	STP
IEEE 802.1w	RSTP
IEEE 802.1s	MSTP
IEEE 802.1p	Class of Service
IEEE 802.1Q	VLAN Tagging
IEEE 802.1X	Port Authentication
IEEE 1588v2	PTP
Interface	
Ports	8 x 10/100/1000BASE-T (RJ45) 4 x GbE SFP Slots 1 x RJ45 Console Port 1 x USB Port
DIP Switch	Primary/Redundant Power Voltage Drop Alarm setting
LED Panel	PWR, RPS, ALM, POST, 1000, LNK/ACT
Features	
Performance	Jumbo frame Size: 10KBytes MAC Table Entries: 16K Active VLAN: 4K Switch Fabric: 24Gbps L2 Forwarding Rate: 17.9Mpps
Management	CLI, Telnet/SSH, HTTP/HTTPS, SNMP v1/v2c/v3, SNMP Trap, MVLAN, Firmware Upgradable, Configuration Backup/Restore, Syslog, SNTp, LLDP, UDLD, DHCP Client, DHCP Option 82, e-mail Alarm, Service Control, DDM
Reliability	STP/RSTP/MSTP, Xpress Ring, ERPS v1/v2, Dual Homing, LACP, Code Redundancy
VLAN	IEEE 802.1Q, GARP/GVRP, Port-based VLAN, MAC-based VLAN, IP-based VLAN, Protocol-based VLAN, QinQ
Traffic Control	IGMP snooping/Throttling/Proxy, MVR, QoS, Flow Control, Abnormal Traffic Detection, Rate Limit, Storm Control, Port Isolation, Loop Detection
Security	ACL, SSH, Port Security, Port-based 802.1x, MAC-based 802.1x, TACACS+, MAC limit, MAC Search, Refusal MAC, Static MAC, DHCP Snooping, DHCP Sever Screening, ARP Inspection, BPDU Guard/Filter, Root Guard, Management Host
Power	
Input Voltage	Primary inputs: 12V~48VDC Redundant inputs: 12V~48VDC
Connection	Terminal Block
Power Consumption	System: 18W
Alarm Relay	One relay output, 1A @ 24V DC
Mechanical and Environment	
Housing	Aluminum (IP30 Protection)
Mounting	DIN-Rail
Operating Temperature	-40°C~75°C (-40°F~167°F)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Operating Humidity	5 to 95% RH (non-condensing)
Storage Humidity	5 to 95% RH (non-condensing)
Weight	955 g (2.1 lb)
Dimension (WxHxD)	50 x 164.9 x 122.2 mm (1.97 x 6.49 x 4.81 in)
Certifications	
EMI	FCC Part 15 Subpart B Class A, EN 55022: class A EN 55011: 2009 class A, EN 61000-6-4
EMS	EN 55024, EN 61000-6-2, EN 61000-4-2 (ESD) EN 61000-4-3 (RS), EN 61000-4-4 (Burst) EN 61000-4-5 (Surge), EN 61000-4-6 (CS) EN 61000-4-8 (PFMF)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Power Substation	IEEE1613, IEC61850-3
Safety	UL 61010-1, UL 61010-2-201
Ordering Information	
IEN-9648-SS	Managed 8 x 10/100/1000 RJ45 & 4 x GbE SFP Industrial Switch, Substation Approval
Optional Accessories	
Power Supply	SDR-480P-48: DIN-Rail 480W, 48VDC, Industrial Power Supply with PFC Function
GBM-104	1000BASE-SX 1.25G, Multi-mode SFP, 500m
GBM-123TS	1000BASE-LX, Bi-Di SFP TX:1310/RX:1550 Single Mode, 10Km, 0°C~70°C (32°F~158°F)
GBM-123RS	1000BASE-LX, Bi-Di SFP TX:1550/RX:1310 Single Mode, 10Km, 0°C~70°C (32°F~158°F)

**Note :**

\* The SFP communication distance upon the request.

\* Industrial SFP with wide operating temperature from -40°C~85°C (-40°F~185°F) is available upon request.

\* Specifications subject to change without notice.

## Dimension

