INS-8648 Series

Managed Industrial Ethernet Switch

8-port 10/100/1000BASE-T + 4 SFP Gigabit Ports

Description

Volktek's INS-8648 Series Managed Industrial switch is equipped with 8 port 10/100/1000Base-T and 4 Gigabit SFP slots. Engineered with hardened components and enclosed in a rugged case, the switch can operate in wide temperatures from -40°C to 75°C and also has an excellent tolerance capability to high vibration and shock. As an Industrial switch, the INS-8648 Series suits your heavy industrial environments and yet contains all the standard features of other switches.

Flexible management functions of the switch via Web and SNMP simplifies configuration of switch features such as port settings, security, QoS, VLAN etc. and reduces management burden. In case of any link failure, the INS-8648 Series's Xpress Ring technology offers a very fast recovery time of less than 10ms to ensure continuous network services. The switch offers hassle-free fiber deployments which makes it an ideal solution for industrial network applications. The INS-8648 Series provides most rugged solutions for managing your network and is a reliable option for Industrial networks.

RoHS
CE FC
Modbus
-40°C 75°C Wide Temperature
IP Code 30
DIN Rail

Features Highlight

Robust Switch Performance

INS-8648 Series is built with IP30 aluminum case protection, surge and ESD protection to deliver robust performance and withstand extreme conditions in Industrial environments. The SFP ports support 1000Mbps for high bandwidth transmissions and the SFP DDM feature enables service providers to monitor SFP parameters. In case of any abnormal hardware condition, the switch automatically sends warnings through email and relay output with real-time alarm messages. This assists the system administrators to immediately react to emergency events and diagnose the faults more efficiently for smoother network operations.

Cold
-40°C
Hot
75°C

Port-based VLAN, IEEE 802.1Q VLAN, GARP and GVRP to ease network planning

Planning, designing and managing complex networks is now simplified with INS-8648 Series. The switch supports VLANs which segment large networks into smaller parts and organize them into separate broadcast domains. This helps the administrators to control the traffic patterns, limit broadcast traffic and reduce broadcast storms. As the network expands, to provide control of increased VLANs, the switch offers GVRP feature, an application protocol of GARP, which registers devices and its ports depending on their availability. This feature prevents unnecessary network traffic transmitted by unregistered users and simplifies the network design irrespective of its size.

Code Redundancy

The configuration file of the switch may be lost due to various reasons such as upgrading to a new firmware or power fluctuations and can lead to network down situation. To avoid such situations, the INS-8648 Series provides a perfect alternate solution using its code redundancy feature with its dual flash. The dual flash memory allows the switch to store a backup file of primary configuration on one flash space. Even if the primary configuration file is lost, the backup file will enable the switch and ensure that your network is running continuously.

Redundant Power system

Mission-critical industrial applications need to operate without any interruptions because even a minimum network downtime can hugely impact the overall output. Providing continuous power as well as data to such applications is now made easy with INS-8648 Series's redundant power system. The switch is designed with standard industrial terminal block for redundant power. In case the primary power supply fails, the secondary power source will enable the switch to provide continuous service.

Features Highlight

Efficient network monitoring and proactive capability

In a network, the issues that impact network performance can be quickly resolved with the INS-8648 Series's most accepted and enhanced traffic management, monitoring and analysis protocols such as SNMP and SFP DDMI (Digital Diagnostics Monitoring Interface). SNMP allows to centrally manage different levels in a network and SFP DDMI enabled on the switch, administrators can easily monitor and troubleshoot SFP parameters such as temperature, voltage, laser bias current and evaluate SFP's working condition. User can ensure a reliable network by identifying connectivity and performance issues and isolating the problem remotely on individual switches.

Comprehensive QoS Mechanisms to Assign Priority

Industrial applications need different levels of services delivered to them reliably without any transmission delays and interruptions. The INS-8648 Series has comprehensive QoS mechanisms which assign priority to applications and sends only specific dedicated traffic to them. In addition, bandwidth management function of the switch allocates high bandwidths to mission-critical communications and reduce the bandwidth to applications that are less critical. With full control of limiting the bandwidth, the administrators can prevent unpredictable errors and utilize the bandwidth more
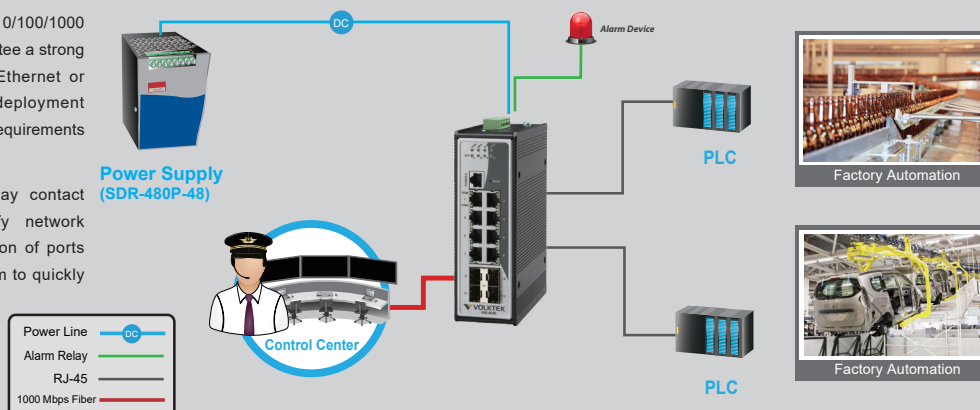
Proprietary Technology Delivers Redundant Ring and Fast Recovery

Even a few seconds of missed communications due to link failures can cause inconvenience, and recovery can become critical. Volktek's proprietary Xpress Ring in INS-8648 Series rapidly reacts to such link failures and recovers in less than 10ms, a much faster fail-over time to support nonstop transmissions. This is critical for networks handling heavy video and data traffic. In addition, ERPS, Dual Homing, LACP and RSTP provide a highly reliable network with redundancy connections whenever required and guarantee continuous network uptime.
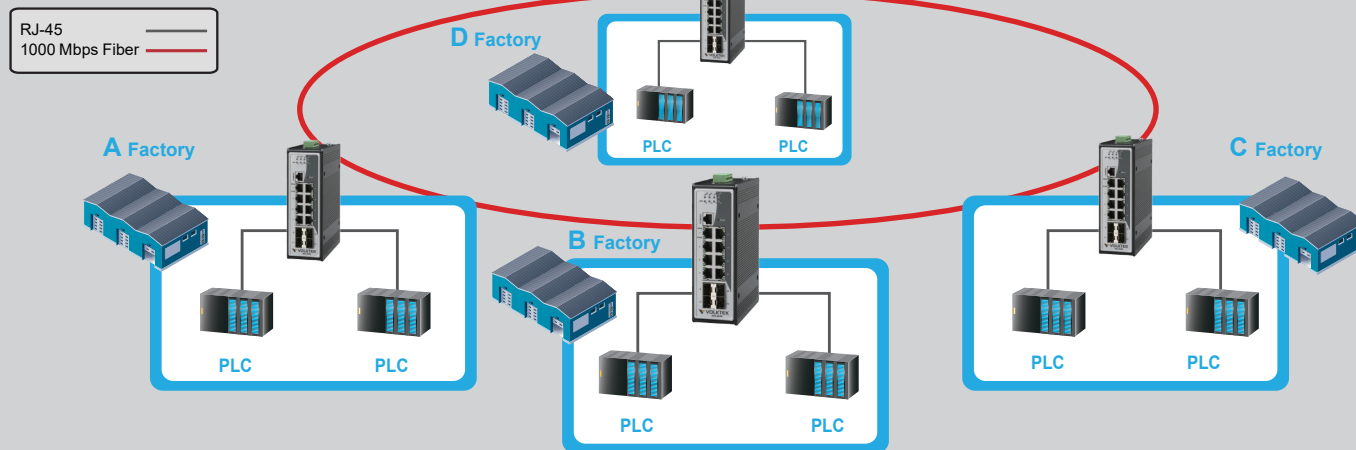
Applications

The INS-8648 Series is compatible with 10/100/1000 Mbps through RJ45 transceivers to guarantee a strong & stable connection of Ethernet, Fast Ethernet or Gigabit Ethernet, providing flexible deployment options to satisfy industrial networking requirements

The INS-8648 Series is built with relay contact outputs that trigger alarms to notify network engineers in the event of any malfunction of ports status or power failure, and enables them to quickly respond and resolve high priority issues.

DC

Alarm Device

Power Supply
(SDR-480P-48)

Control Center

PLC

Factory Automation

PLC

Factory Automation

Power Line	DC
Alarm Relay	
RJ-45	
1000 Mbps Fiber	

Redundant Ring

It incorporates, advanced Redundant Ring technologies, into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments.

| RJ-45 | |
| 1000 Mbps Fiber | |

MEN-9632

Control Center

D Factory

PLC   PLC

A Factory

PLC   PLC

B Factory

PLC   PLC

C Factory

PLC   PLC

Specifications

Standards

IEEE 802.3	10BASE-T
IEEE 802.3u	100BASE-TX
IEEE 802.3ab	1000BASE-T
IEEE 802.3z	1000BASE-SX/LX
IEEE 802.3x	Flow Control
IEEE 802.3ad	Link Aggregation
IEEE 802.1d	STP
IEEE 802.1w	RSTP
IEEE 802.1p	CoS Prioritization
IEEE 802.1q	VLAN Tagging
IEEE 802.1x	Port Authentication
IEEE 802.1ab	LLDP

Interface

Ports	8 x 10/100/1000Base-T (RJ-45)
	4 x Gigabit SFP Slots
	1 x Console Port (RJ-45 to RS-232)
DIP Switch	Ports/PWR/RPS Alarm setting

Features

Configuration	Command Line Interface, Telnet, Web GUI, SNMP v1/v2c/v3, Management VLAN, Firmware Upgradable, Configuration Upload/Download
LAN	IEEE 802.1Q, GARP/GVRP support, Port-based VLAN, 4K active VLAN support
Redundancy	Xpress Ring, Dual Homing, ERPS, STP/RSTP, LACP
Traffic control	IGMP snooping/Querier, QoS, Flow Control, Abnormal Traffic Detection, Rate Limitation, Storm Control, Port Isolation, Loop Detection
Security	Access Control List, SSH, Port Security, 802.1x Port Authentication, DHCP snooping, MAC limitation
Diagnostics	LED status, SNMP trap, E-mail alarm, SFP DDMI, Port Mirroring, Real-time Statistic Traffic, SNTP, RMON, Syslog

Power

Input Voltage	Primary inputs：48V~57VDC
	Redundant inputs：48V~57VDC
Power Consumption	System：18W
	PoE Power Budget：240W
Alarm Relay	One relay output, 1 A @ 24V DC

Mechanical and Environment

Housing	Aluminum (IP30 Protection)
Mounting	DIN-Rail
Operating Temperature	-10°C~70°C
Wide Operating Temperature	-40°C~70°C
Storage Temperature	-40°C~85°C
Operating Humidity	10 to 95% RH (non-condensing)
Storage Humidity	5 to 95% RH (non-condensing)
Weight	860g
Dimension (WxHxD)	50x160x120mm (1.97x6.3x4.72inch)

Certifications

EMI	FCC Part 15 Subpart B Class A
	EN55022 : class A
	EN 55011 : 2009 class A
	EN 61000-6-4
EMS	EN 55024
	EN 61000-6-2
	IEC/EN 61000-4-2 (ESD)
	IEC/EN 61000-4-3 (RS)
	IEC/EN 61000-4-4 (Burst)
	IEC/EN 61000-4-5 (Surge)
	IEC/EN 61000-4-6 (CS)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Ordering Information

INS-8648	8-port 10/100/1000Base-T + 4-slot Gigabit SFP Industrial Managed Switch
INS-8648W	8-port 10/100/1000Base-T + 4-slot Gigabit SFP Industrial Managed Wide Temperature Switch

Optional Accessories

Power Supplies	SDR-480P-48: 480W DIN-Rail 48 VDC power supplies
MEN-9632	Managed 24-slot 100FX/GbE SFP, 4G Combo Aggregation Switch
GBM-104	1000Base-SX 1.25G, Multi-mode SFP, 500m
GBM-104-2	1000Base-SX 1.25G, Multi-mode, 3.3V, 1310nm, 2Km
GBM-104-10	1000Base-LX 1.25G, Single mode SFP, 10Km
GBM-123	1000Base-LX Bi-di Single Mode SFP Module, 10Km

Note :
* The SFP communication distance upon the request.
* Industrial SFP with wide operating temperature from -40°C~85°C is available upon request.
* Specifications subject to change without notice.

Dimension