VOLKTEK

INS-8648M

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

Description

Volktek's INS-8648M 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. Under DNV (Det Norske Veritas) certified for Industrial switch, the INS-8648M suits your heavy industrial environments in maritime & offshore applications and yet contains all the standard features of a managed switch.

Flexible management functions of the switch via Web and SNMP simplifies configuration of switch features such as port settings, security, QoS, VLANs etc. and reduces management burden. In case of any link failure, the INS-8648M'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-8648M provides most rugged solutions for managing your network and is a reliable option for industrial networks.

Features Highlight

Robust Switch Performance

INS-8648M 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.

### 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-8648M. 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 and deregisters 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.

Network Redundancy

• Volktek's industrial switches redundant ring architecture enhances network reliability and make them ideal for deploying secure automation network systems in tough outdoor industrial environments, such as ITS, maritime, mining, and manufacturing systems.

• New generation of Volktek Xpress Ring delivers a various choice of ring topologies, including Xpress Ring, Dual Xpress Ring, Dual Homing, in rapid recovery time (<20ms @ 250 switches).

• G.8032v2, Ethernet Ring Protection Switching (ERPS) protocol,provides protection for Ethernet traffic in a multiple ring topology with fast recovery time (less than 50ms).
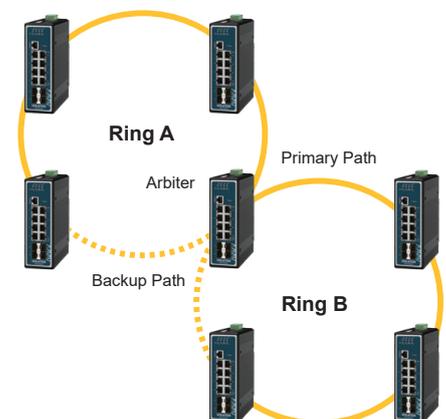
Redundant Power system

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 and as well as data to such applications is now made easy with INS-8648MM'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 will enable the switch to provide continuous service.

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Certificates & Approvals

Marine
Type Approval

TYPE APPROVED PRODUCT
DNV·GL
MARITIME
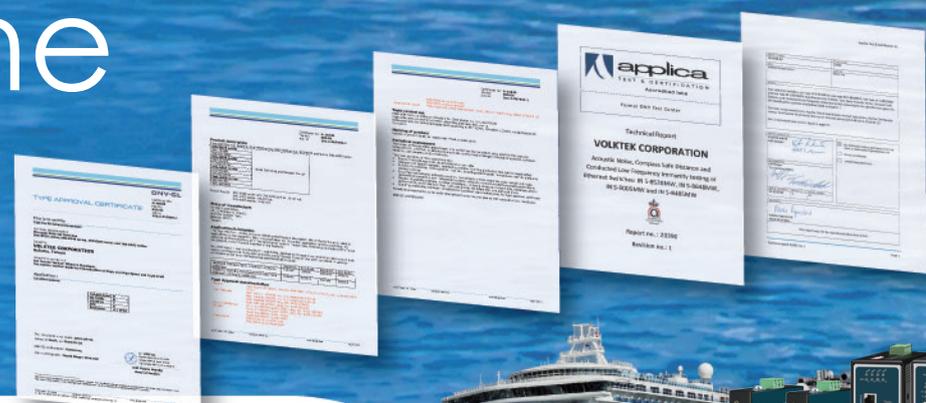
EN 60945
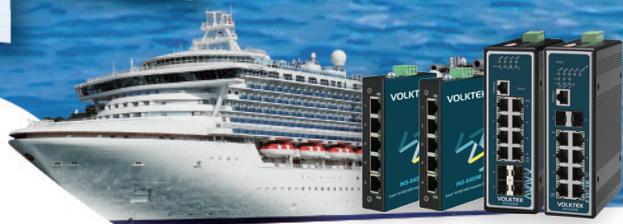
Marine Certifications Ensure Secure Communication Networks for Offshore Environments

Applications

Bridge
Surface Search Radar

Sea Workstation

INS-8648M

Control room
INS-8648M

PLC

INS-8648M

PLC

Engineer Control room

RJ45 ——— 1000 Mbps Fiber ———

INS-8405M   **INS-8005M**

PLC   PLC

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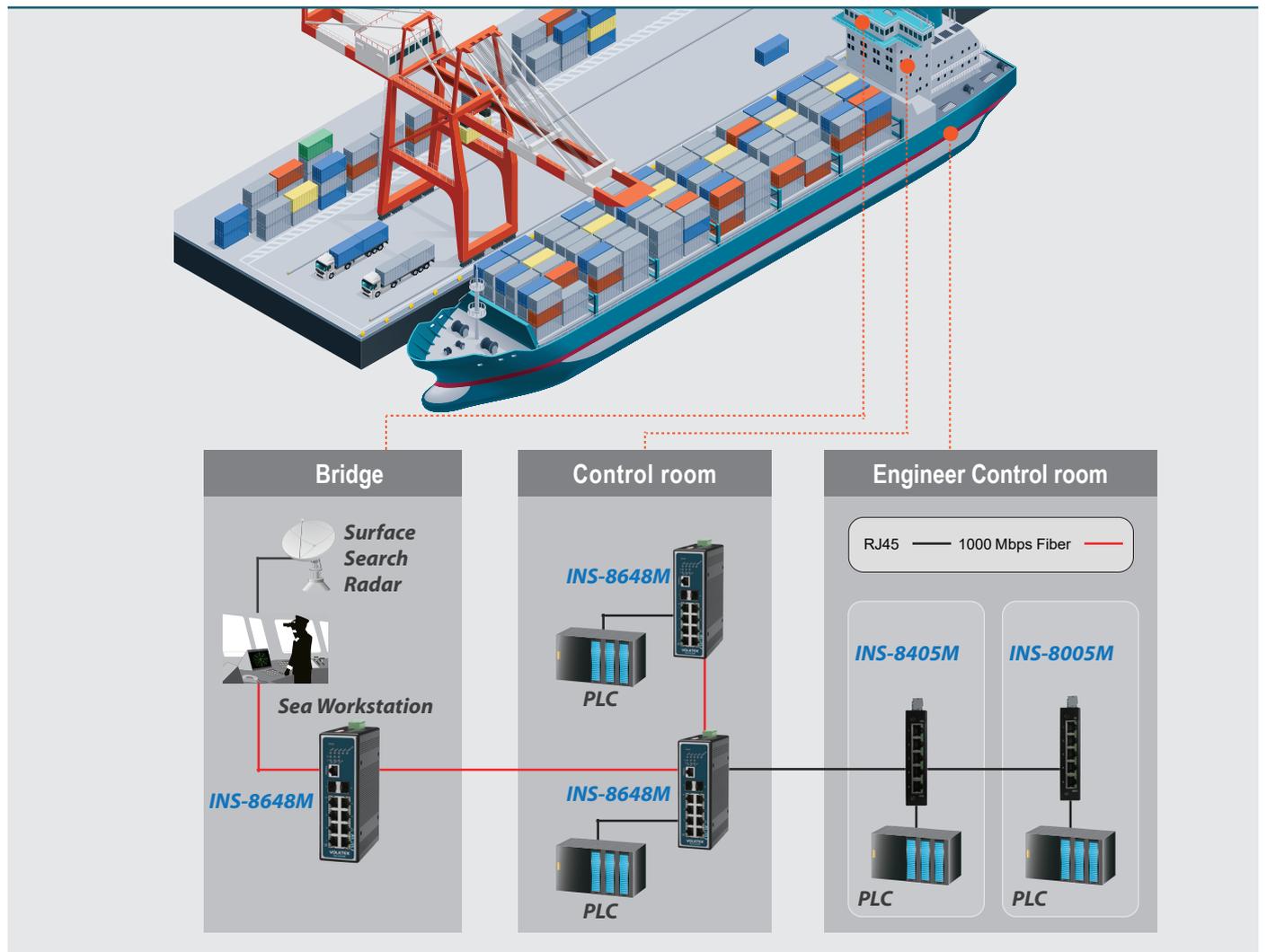
Specifications

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 802.3az	Energy Efficient Ethernet (EEE)
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
DIP Switch	Primary/Redundant Power Voltage Drop Alarm setting Port link alarm reporting
LED Panel	PWR, RPS, ALM, POST, 1000, 10/100, SFP, 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, PTP, LLDP, UDLD, DHCP Client/Relay/Option82, e-mail Alarm, Server Control, Mirroring, DDM, SFP Info, Auto-Provisioning, RMON Statistics, ModbusTCP
Reliability	STP/RSTP/MSTP, Xpress Ring, ERPS v1/v2, Dual Homing, LACP, Static Trunk, 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, IGMP Proxy/Filter, MLD, MVR, QoS, Flow Control, Rate Limit, Storm Control, Traffic Monitor, Port Isolation, Loop Detection, Static Route
Security	ACL, SSH, HTTPs, SNMPv3, Port-based 802.1x, TACACS+, Port Security, MAC Search, Refusal MAC, Sticky MAC, Static MAC, DHCP Snooping, DHCP Sever Screening, ARP Inspection, BPDU Guard/Filter, Root Guard, Managed Host

Power	
Input Voltage	Primary inputs: 12~60VDC
	Redundant inputs: 12~60VDC
Connection	Teminal Block
Power Consumption	System: 18W
Alarm Relay	One relay output, 1 A @ 24VDC

Mechanical and Environment	
Housing	Aluminum (IP30 Protection)
Mounting	DIN-Rail
Operating Temperature	-40°C~75°C (-40°F~158°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	860 g (1.9 lb)
Dimension (WxHxD)	50 x 165 x 122.2 mm (1.97 x 6.50 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)
Marine	DNVGL-CS-0339:2016 DNVGL-RU-SHIP-Pt4Ch9:2018 IEC-60945, IACS E10 (Rev.6 2014)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Safety	UL 61010-1, UL 61010-2-201

Ordering Information	
INS-8648M	Managed 8 x 10/100/1000 RJ45 & 4 x GbE SFP Industrial Switch, DNV GL Marine Approval

Optional Accessories	
Power Supply	SDR-120-48: 120W DIN-Rail 48VDC Industrial Power Supply, -25°C~70°C (-13°F~158°F)
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.
* The highest degree of temperature operation certified by DNV is (Class D) -25°C~70°C (-13°F~158°F), and the nominal voltage of 24VDC for DNV type approval is specified.
* Specifications subject to change without notice.