

INS-8405EM

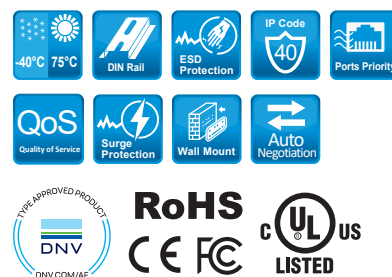
Premium Unmanaged 5 x 10/100/1000 RJ45 Industrial Switch, DNV Marine Approval

Description

INS-8405EM is an unmanaged industrial Gigabit Ethernet switch, with 5 auto-negotiation 10/100/1000Mbps downlink ports for expansion of Ethernet networks. This unmanaged switch can connect to different devices, including managed switches and monitoring systems.

The switch offers various in-built traffic optimization and network performance features to prioritize important industrial data packets, prevent the loss of data during communication, and stable transmission; like flow and storm control and VLAN Passthru. It prioritizes industrial protocols for industrial applications, like Ethernet/IP, PROFINET, and GOOSE packets. Additionally, it offers per-port and 802.1p Tag Quality of Service to ensure the delivery of high priority data.

This networking device is built with industrial grade components to protect it from hazards like vibration, shock, free fall, interference, and extreme temperatures that make it resistant to harsh industrial environments.



Features Highlight

Ruggedized Components Designed for Harsh Industrial Environments

Built with industrial-grade components, good thermal conductivity, and enclosed in an IP40 metal case, this Ethernet switch is resistant to extreme environments, vibration, EMI (electromagnetic interference), ESD (electrostatic discharge), power surge, over-voltage, over-current, and reverse polarity. It withstands operation at extreme temperatures between -40°C~75°C (-40°F~167°F). It follows international safety standards like CE, FCC, and ROHS for safe operation.



Quick and Convenient Installation with Auto-negotiation

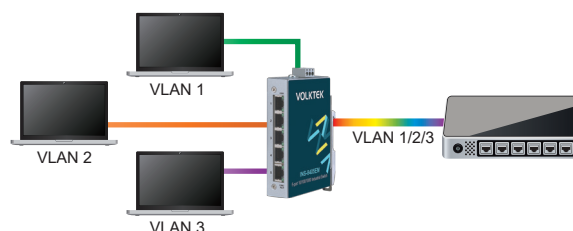
INS-8405EM works as soon as it is connected and makes installation convenient. One 12~48VDC power supply connects to the 3-pin terminal block for power. The 10/100/1000 Mbps ports use auto MDI/MDI-X connection for auto-negotiation to work as soon as connected to other network devices at the required speed without extra software installation needed. The LED light displays when the device is in operation. The slim and small design allows it to fit at different locations for many devices to operate in the same network and can be mounted to a standard TH35 DIN rail.

Traffic Control Mechanisms to Optimize Bandwidth Usage

Traffic control mechanisms regulate excessive traffic to avoid delay, data loss and connection issues between devices. INS-8405EM offers mechanisms such as Flow and Storm Control that prevent devices from overwhelming each other during the exchange of data and to keep the flux at a tolerable rate, hence keeping devices working within their capacity and avoiding the network from collapsing.

Intelligent VLAN Data Forwarding

INS-8405EM is aware enough to read the source and destination of VLAN tagged data packets. This unmanaged switch delivers VLAN packets without changing or dropping them assuring operational data in industrial fields is delivered safely across devices.



Features Highlight

Critical Data Transmission Priority

INS-8405EM streamlines the execution of time-sensitive applications with the 802.1p Tag QoS by classifying data into high and low priority. Mission-critical applications in industrial automation like manufacturing and monitoring can be done without delay through port priority on ports #1 and #2 even during high traffic.



Prioritizes Industrial Standard Protocols

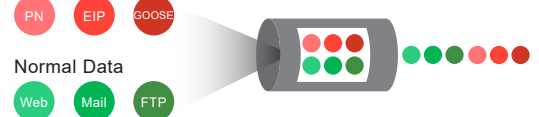
Industrial automation applications employ packet protocols that focus on delivering data under tight time constraints. This unmanaged switch is configured with iQoS to prioritize industrial application protocols and deliver time-sensitive data used in industrial applications first, including Ethernet/IP, PROFINET, and GOOSE (Generic Object Oriented Substation Events).

Industrial protocol

PN EIP GOOSE

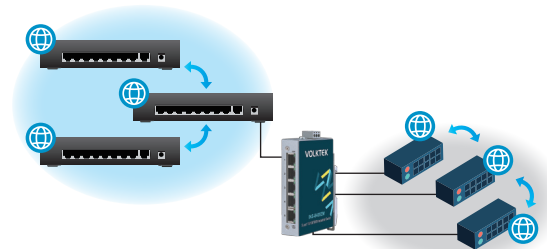
Normal Data

Web Mail FTP



Connects Large Network Groups and Facilitates Data for Monitoring Systems

During network discovery unmanaged switches can cause device flapping and make it difficult for monitoring systems to access device data. INS-8405EM avoids device flapping when connected to a managed switch. Using the LLDP Filter feature the device can be used in large networks. It allows other devices in the network to exchange identifiable data for accurate monitoring without concerns from detecting erroneous messages and false alerts in the presence of an unmanaged switch.



Certificates & Approvals

Marine

Type Approval



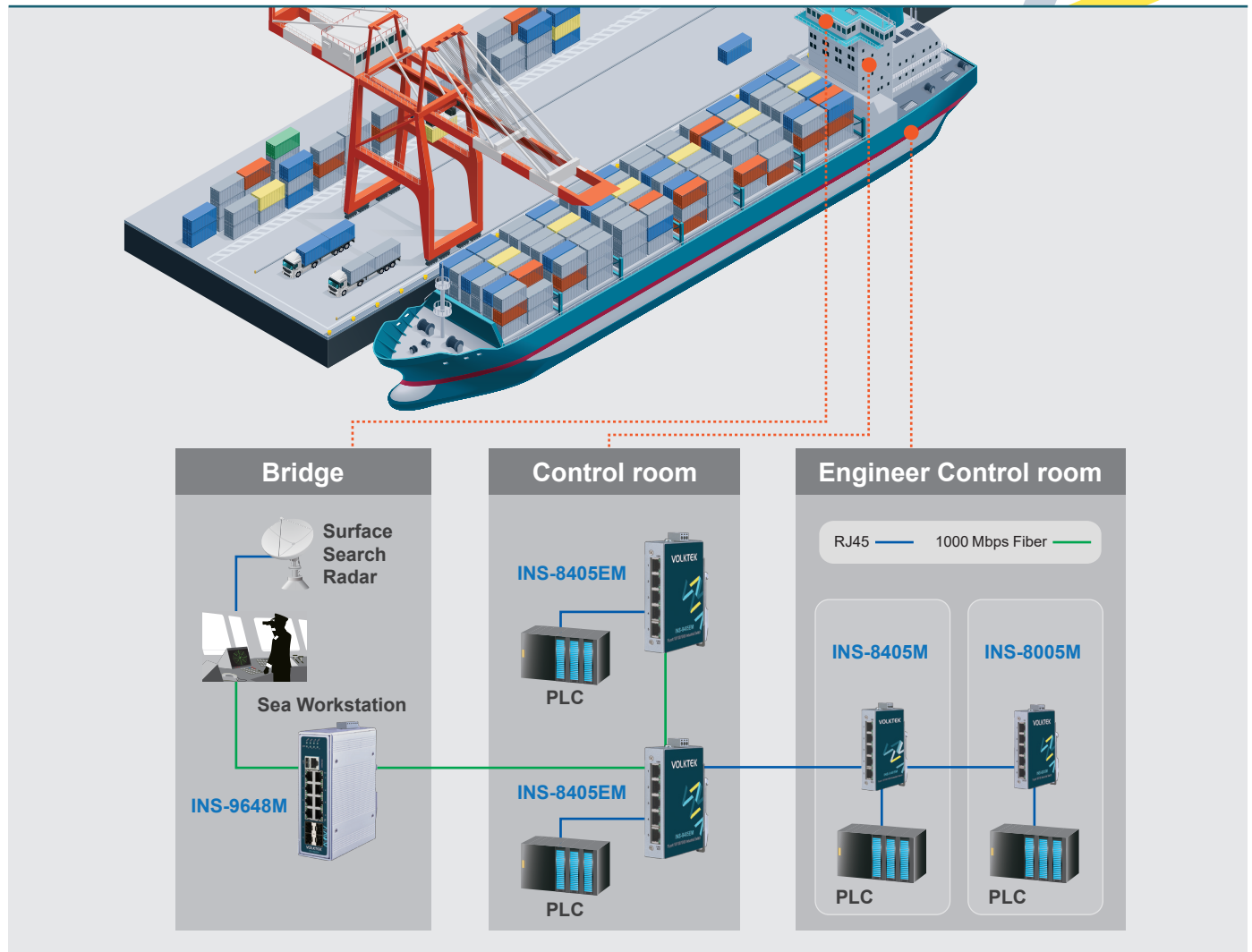
EN 60945





Marine Certifications Ensure Secure Communication Networks for Offshore Environments

Applications



Specifications

Standards	
IEEE 802.3	10BASE-T
IEEE 802.3u	100BASE-TX
IEEE 802.3ab	1000BASE-T
IEEE 802.3	Nway Auto-negotiation
IEEE 802.3x	Flow Control
IEEE 802.1p	Class of Service
Interface	
Ports	5 x 10/100/1000BASE-T (RJ45)
LED Panel	PWR, 1000, LNK/ACT
Features	
Performance	Jumbo Frame size: 9216 Bytes
	MAC Table size: 2K
	Throughput: 14,880 pps to 10 Mbps ports
	148,800 pps to 100 Mbps ports 1,488,000 pps to 1000 Mbps ports
Switch Fabric	10Gbps
Forwarding Rate	7.4Mpps
Functions	LLDP Filter, Flow Control, Storm Control, Port Priority (Port 1), 802.1p CoS/QoS, VLAN Passthru, iQoS (EIP/PROFINET/GOOSE QoS)
Power	
Input Voltage	12~48VDC (Nominal 24VDC for marine use)
Connector	Terminal block
Max Power Consumption	4W
Reverse Polarity Protection	Present
Over Load Protection	Present
Mechanical and Environment	
Housing	Aluminum (IP40 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	183.4 g (0.4 lb)
Dimension (WxHxD)	23.6 x 109.2 x 73.8 mm (0.93 x 4.3 x 2.90 in)

Standards and Certifications		
CE	EMI	FCC Part 15 Subpart B Class A EN 55011 / BS EN 55011 Class A EN 55032 / BS EN 55032 Class A EN 61000-6-4 / BS EN 61000-6-4
	EMS	EN 55035 / BS EN 55035 EN 61000-6-2 / BS 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		DNV-CG-0339: 2021 DNV-RU-SHIP-Pt4Ch9:2024 IEC-60945, IACS E10 (Rev.9 2023) LR certify environmental category ENV1, ENV2, and ENV3
Shock		IEC 60068-2-27
Freefall		IEC 60068-2-31
Vibration		IEC 60068-2-6
Safety		UL 61010-1, UL 61010-2-201
Ordering Information		
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Note:

- * The highest degree of temperature operation certified by UL is -40°C~75°C (-40°F~167°F).
- * 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.
- * The switch enclosure is designed to meet IP40 ingress protection, while the device is DNV type approved with an ingress protection rating of IP20.
- * Specifications subject to change without notice.

Dimension

