

Overview

The **NW-ISM-20G-4F-X4** is a hardened 20-port managed industrial switch designed for mission-critical networking in extreme environments. Combining 16 copper Gigabit ports with 4 fiber SFP slots, this rugged switch delivers reliable connectivity for industrial automation and infrastructure applications. Its robust design ensures continuous operation in harsh conditions, from freezing outdoor installations to high-temperature industrial facilities.

Applications

- Factory automation (PLC/SCADA)
- Mission-critical networks (power/energy)
- Outdoor industrial deployments
- Secure infrastructure (transportation, mining)

Features

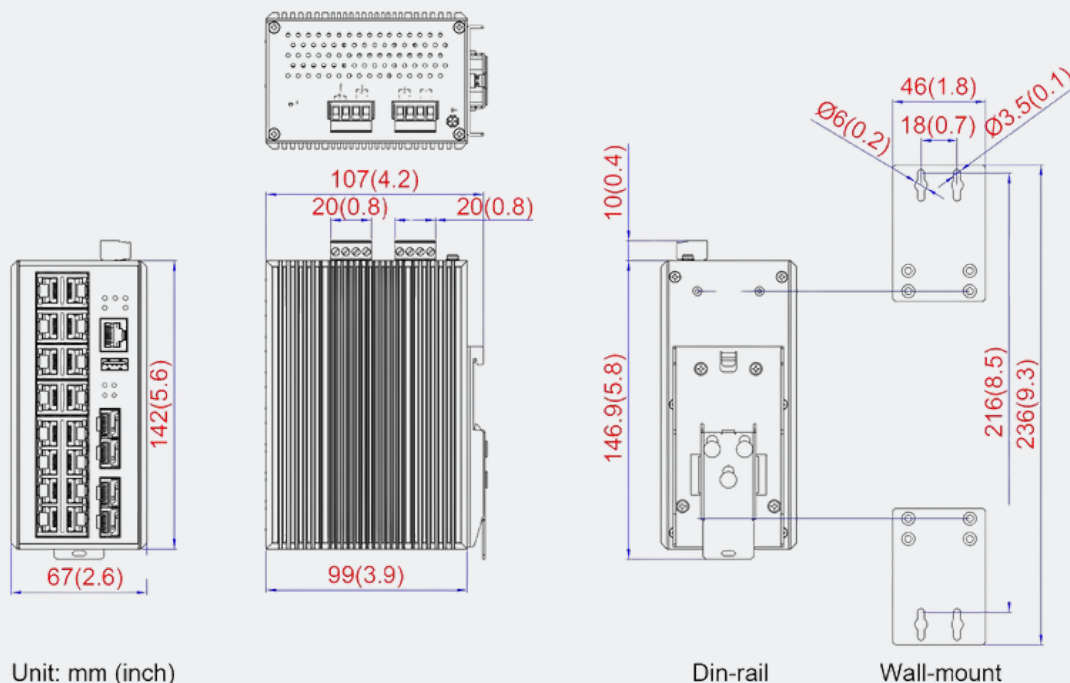
- 16 Gigabit Ethernet ports (10/100/1000Base-TX)
- 4 dual-speed SFP fiber slots (100/1000Base-FX)
- Multi-user access control for system security
- Multiple management interfaces: Web/CLI/SNMP/SSH/Telnet
- Network protection protocols: ERPS v2, STP, RSTP, MSTP
- Static routing capability for network segmentation
- Enterprise authentication: RADIUS and TACACS+ support
- Traffic prioritization and link aggregation (QoS/LACP)
- Advanced security features: VLAN, SNMP, ACL, IP filtering
- Backup power inputs for continuous operation
- Wide temperature tolerance:
 - Standard: -10°C to 65°C
 - Extended: -40°C to 75°C

NW-ISM-20G-4F-X4

Industrial 20 Port Gigabit Ethernet Switch



Dimensions



Specifications

Technology

Standards

IEEE 802.3 10Base-T Ethernet
 IEEE 802.3u 100Base-TX Fast Ethernet
 IEEE 802.3ab 1000Base-T Gigabit Ethernet
 IEEE 802.3z 1000Base-X Gigabit Fiber
 IEEE 802.3x Flow Control
 IEEE 802.1d STP (Spanning Tree Protocol)
 IEEE 802.1w RSTP (Rapid Spanning Tree Protocol)
 IEEE 802.1s MSTP (Multiple Spanning Tree Protocol)
 ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch)
 IEEE 802.1Q Virtual Local Area Network (VLAN)
 IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization
 IEEE 802.1X Network Authentication
 IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
 IEEE 802.3ad Link Aggregation (LACP)

Processing Type

Store and Forward

Flow Control

IEEE 802.3x flow control, back pressure flow control

Specifications

Network Management

Management

IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, USB configuration backup/restore, Power lost warning, relay trigger

Security

Port-based/Single/Multi 802.1X, ACL(Port/Rate Limiters/ACE), MACbased Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection

L2 Switching

Port/MAC/Protocol/IP Subnet-based VLAN, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMP snooping v2/v3, MLD snooping v1/v2, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, G.8032 v1/v2

L3 Switching

DHCP option 82, static routes

QoS

802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode

Power Saving

ActiPHY, PerfectReach, IEEE 802.3az EEE power management

Network Redundancy

STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)

Configuration

Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

System / Diagnostics

Dual Image Protection, PING, PING6

Specifications

Switch Properties

Back-Plane(Switching Fabric)	40Gbps
Priority Queues	8
Max. Number of VLANs	4095
VLAN ID Range	VID 1 to 4095
Memory Buffer	4Mbits
Jumbo Frame	9.6Kbytes
MAC Table Size	8K
IGMP Group	1024
Transfer Rate	14,880pps for Ethernet port
	148,800pps for Fast Ethernet port
	1,488,000pps for Gigabit Ethernet port

Specifications

Interface

RJ45 Ports

16*10/100/1000 Base-T(X)

Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X

Fiber Port

4*100/1000Base-(F)X SFP slots

Wavelength

Depends on SFP modules

LED Indicators

System: Power 1, Power 2, Master, Ring, Status

Ethernet ports: Speed/Link/Active

SFP: Link/Active

RS232 Serial Console

1*RS232 in RJ45 connector with console cable, baud rate
115,200bps,8,N,1

Configuration Backup

1*USB 2.0 host (type-A) for configuration backup/restore

Relay Contact

24 VDC, 1A resistive

DI

1* Digital Input (DI): State 0: -30~8VDC / State 1: 10~30VDC,
Max. input current: 8mA

Network Cable

10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m)

100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)

1000Base-TX: 4-pair UTP/STP Cat.5/5E cable; EIA/TIA-568 100-ohm (100m)

Optical Cable

Multi-mode cable - 50/125um or 62.5/125um,

Single-mode cable - 9/125um or 10/125um

Specifications

Power Requirements

Input Voltage	Dual 12-48VDC redundant power inputs
Power Connection	2*removable 4-contact terminal block
Overload Current Protection	Present (Slow-Blow Fuse)
Reverse Polarity Protection	Present
System Power Consumption	Max. 18.4W full loading

Mechanical Characteristics

Housing	Metal, IP30 protection
Dimensions (W x H x D)	67 x 142 x 99 mm (2.64 x 5.59 x 3.9 inch)
Weight	Unit weight: 1.2kg (2.76 lb), Shipping weight: 1.4kg (3.31 lb)
Mounting	DIN-Rail Mounting, Wall Mounting

Environmental Limits

Operating Temperature	Standard: -10°C ~ 65°C (14°C ~ 149°F)
	Extend: -40°C ~ 75°C (-40°C ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°C ~ 185°F)
Ambient Relative Humidity	5 to 95%, (non-condensing)

Specifications

Regulatory Approvals

EMI	FCC Part 15 Subpart B Class A,
	CE EN55022/EN61000-6-4 Class A
EMS	CE EN55024/EN61000-6-2 Class A:
	IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT),
	IEC61000-4-5 (Surge), IEC61000-4-6 (CS),
	IEC61000-4-8 (Magnetic Field)
Free Fall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration IEC60068-	EC60068-2-6
Green	RoHS Compliant
Safety	UL61010-1, UL61010-2-201
Substation	IEC61850-3 Edition 2.0
MTBF (Telcordia SR-332, Issue 3, GB, 25°C)	TBD
Warranty	5 Years

Ordering Information

NW-ISM-20G-4F-X4

16x 10/100/1000T(x) + 4x 100/1000F(x) SFP Slot

Operating Temperature: -10°C ~ 65°C

NW-ISM-20G-4F-T-X4

16x 10/100/1000T(x) + 4x 100/1000F(x) SFP Slot

Operating Temperature: -40°C ~ 75°C

NW-ISM-20G-4F-I-X4

16x 10/100/1000T(x) + 4x 100/1000F(x) SFP Slot, IEC 61850-3

Operating Temperature: -10°C ~ 65°C

NW-ISM-20G-4F-I-T-X4

16x 10/100/1000T(x) + 4x 100/1000F(x) SFP Slot, IEC 61850-3

Operating Temperature: -40°C ~ 75°C