PRODUCT OVERVIEW

o   The Industrial switch series provides a versatile and robust Layer-2 switching and Layer-3 routing line of industrial-grade switches designed to meet the demands of harsh and challenging environments.

o   Industrial switches are designed to operate under extended temperature conditions. They provide continuous uptime, manageability and operational efficiency.

o   Choose from remote web-based management (Cloud-Hosted Quantum Rudder Network and Service Controller (NSC)), secure on-site control (On-Premises Rudder NSC), direct configuration access (Device GUI/CLI) or centralized monitoring (SNMP).

o   PoE budget options to power advanced devices with the option of PoE /PoE+ per port.

o   Port density of 4/8x1 Gigabit ports and 2x1/10GbE SFP/SFP+ uplink/stacking interfaces with cut -through, wire speed, non-blocking switching capabilities.

o   On-device management ports include a dedicated console port and a USB flash drive port for storage. Additionally, the switch has a DIN Rail mounting facility.

o   Three-year limited liability manufacturer's warranty from day one.

HIGHLIGHTS

o   **Simplified network management.**
    Industrial Switch provides easy configuration and simplified operational manageability to deliver advanced and secure multi-services over industrial networks.

o   **Centralized network observability.**
    The Network Controller provides configurable reporting and analytics to manage large user populations and expedite troubleshooting. Advanced search and sorting capabilities make network management more efficient.

o   **Reliable performance.**
    Delivers stability, Scalability and Effortless handling of diverse workloads.
    - o   The switch supports a non-blocking architecture that provides up to 176 Gbps of wire-speed switching capacity and up to 131 Mpps of forwarding capacity, allowing it to handle a wide range of workloads.
    - o   For better network security, the switch supports multiple authentication methods, including 802.1x and MAC authentication. The switch provides identity-driven security and controls via granular Access Control Lists (ACLs).

KEY SPECIFICATION

Communication Ports	Specification					
Model	Gigabit Ethernet RJ45 Downlinks	10G Fiber Uplinks	PoE Budget (Watt)	Max PoE (802.3af)	Max PoE+ (802.3at)	Max PoE+ (802.3bt)
48 Port						
QN-IS-225-48HP-4SFPP-R	48	4	400	24	12	-
QN-IS-225-48-4SFPP-R	48	4	-	-	-	-
24 Port						
QN-IS-225-24P-4SFPP-R	24	4	400	24	12	-
QN-IS-225-24P-2SFPP-D	24	2	400	24	12	-
QN-IS-225-24-4SFPP-R	24	4	-	-	-	-
QN-IS-225-24-2SFPP-D	24	2	-	-	-	-
8 Port						
QN-IS-225-8 FPU	8	2	240	8	8	2
QN-IS-225-8FP	8	2	240	8	8	-
QN-IS-225-8	8	2	-	-	-	-

Management Ports	48 Port	24 Port	8 Port
Console RJ45	1	1	1
Storage (USB Type A)	1	1	1

Capacity	48 Port	24 Port	8 Port
Switching capacity	176 Gbps	128 Gbps* (Calculate as max. port speed)	56 Gbps
Forwarding rate	131 Mpps	95 Mpps* (Calculate as max. port speed)	42 Mpps
VLANs	4096	4096	4096
MAC address table	16K Entries	16K Entries	16K Entries
Maximum jumbo frame size	9,216 bytes	9,216 bytes	9,216 bytes
Link aggregation groups	Max 32	Max 32	Max 32
Link aggregation ports per group	Max 8	Max 8	Max 8
QoS priority queues	8 per port	8 per port	8 per port

Quality of Service	
ACL mapping to priority queue	Traffic shaping
WRR support	QoS based on classification
Strict priority support	802.1p support
DSCP Prioritization	

Layer 3	
ARP, Gratuitous ARP	DHCPv6 client
IPv6 ND	IPv4 Interface
IP source guard	IPv6 Interface
DHCP relay	VRRP
DHCP server	Route-only support
ISATAP	

Layer 3 Routing	
Inter-VLAN routing	IPv6 unicast routing
RIPv2	IPv4 static routing, IPv4 host routing
OSPFv2/v3	IPv6 static routing
IPv6 host routing	Policy based routing

Layer 2	
Forwarding rate	LLDP/LLDP MED
Switching throughput	RRP (Ring Redundancy Protocol)
STP, RSTP	Port mirroring (Port, ACL, VLAN-Based)
MSTP	BPDU filtering
VLAN (MAC, Protocol, Port based)	Ping/TraceRoute/ICMPv6
Loopback detection	Storm control (Broadcast, Multicast, Unicast)
Auto MDI/MDIX	GVRP
BPDU guard, root guard	Energy Efficient Ethernet, Green Ethernet
IGMP/IGMP snooping v1/v2/v3*	

Security	
ACLs	Downloadable ACL
DHCP snooping	Dynamic ACL
802.1x authentication	Secure copy (SCP)
MAC authentication	DoS protection
Radius/Tacacs/Tacacs+	Local username/password
AAA, SSH	Protected ports
ARP inspection (DAI & SAI)	RA guard

Management	
Cloud management	RMON
Industrial standard CLI	Telnet support
Local management	SNTP
Stacking	Syslog server
SNMP v1/v2c/v3	IPv6 management
SNMP traps	Storage & File management with USB
TFTP support	Firmware auto-install support
SPAN/RSPAN	Password management
sFLOW	

Standard Compliance	
IEEE Standards Compliance	
802.1AB LLDP/ LLDP-MED	802.3ae 10 gigabit Ethernet
802.1D MAC bridging	802.3at Power Over Ethernet Plus
802.1p Mapping to priority queue	802.3u 100Base-TX
802.1s Multiple Spanning Tree (MST)	802.3x flow control
802.1w Rapid Reconfiguration of Spanning Tree (RSTP)	802.3z 1000Base-SX/LX
802.1x Port-based Network Access Control (PNAC)	802.3 MAU MIB (RFC 2239)
802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)	802.1Q VLAN tagging
802.3ab 1000Base-T	802.3az Energy Efficient Ethernet
Monitoring and Troubleshooting	
Errdisable detection and recovery	CPU Utilization
Device temp/ Status display & alarm	User operation logs
Virtual cable test	Management logs, alarms
ICMPv4/v6	DDM (Digital Diagnostic Monitoring)
Traceroute	UDLD (Unidirectional Link Detection)

Environment	
Operating temperature	-40°C to 75°C
Humidity	5% ~ 95% non-condensing
RoHS	Compliant
IP rating	IP40
Power consumption	10W Max
Dual redundant power input	DC 24-48V
Input voltage	PoE DC48-58V (Switch required DC 24-48V)
Surge protection	Yes

Certification & Compliances		
Regulatory	FCC	
	BIS	
	TEC	
	Shock Drop Vibration	
Environmental	CE	
	RoHS	
	IP40	

* For more information, visit www.qntmnet.com/certification or email us at sales@qntmnet.com.

ORDERING INFORMATION

Part Number	Description
QN-IS-225-48HP-4SFPP-R	Industrial Switch,48×10/100/1000 Base T ports, 4x10G Fiber uplinks, 400 watts power budget, Rack mount, includes 3 years online activation warranty.
QN-IS-225-48-4SFPP-R	Industrial Switch, 48×10/100/1000 Base T ports, 4x10G Fiber uplinks, Non-PoE, Rack mount, includes 3 years online activation warranty.
QN-IS-225-24P-4SFPP-R	Industrial Switch, 24×10/100/1000 Base T ports, 4x10G Fiber uplinks, 400 watts power budget, Rack mount, includes 3 years online activation warranty.
QN-IS-225-24-4SFPP-R	Industrial Switch, 24×10/100/1000 Base T ports, 4x10G Fiber uplinks, Rack mount, includes 3 years online activation warranty.
QN-IS-225-24P-2SFPP-D	Industrial Switch, 24×10/100/1000 Base T ports, 2x10G Fiber uplinks, 400 watts power budget, Din Rail Mount, includes 3 years online activation warranty.
QN-IS-225-24-2SFPP-D	Industrial Switch, 24×10/100/1000 Base T ports, 2x10G Fiber uplinks, Din Rail Mount, includes 3 years online activation warranty.
QN-IS-225-8FPU	Industrial Switch, 8×10/100/1000 Base T ports, 2x10G Fiber uplinks,1-2 PoE++(60W) Ports 240 watts power budget, includes 3 years online activation warranty.
QN-IS-225-8FP	Industrial Switch, 8×10/100/1000 Base T ports, 2x10G Fiber uplinks, 240 watts power budget, includes 3 years online activation warranty.
QN-IS-225-8	Industrial Switch, 8×10/100/1000 Base T ports, 2x10G Fiber uplinks, includes 3 years online activation warranty.

Accessories	Description
QN-IS-PSU-24	Quantum Networks Industrial Power supply for Industrial switch with input voltage 100~264VAC, Output Voltage 12VDC, Power Budget 24 watts, Din Rail Mounting.
QN-IS-PSU-120	Quantum Networks Industrial Power supply for Industrial switch with input voltage 100~264VAC, Output Voltage 48VDC, Power Budget 120 watts, Din Rail Mounting.
QN-IS-PSU-240	Quantum Networks Industrial Power supply for Industrial switch with input voltage 100~264VAC, Output Voltage 48VDC, Power Budget 240 watts, Din Rail Mounting.
QN-IS-PSU-400	Quantum Networks Industrial Power supply for Industrial switch with input voltage 100~264VAC, Output Voltage 48VDC, Power Budget 400 watts, Din Rail Mounting.