



## PRODUCT OVERVIEW

- 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.
- Industrial switches are designed to operate under extended temperature conditions. They provide continuous uptime, manageability and operational efficiency.
- 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).
- PoE budget options to power advanced devices with the option of PoE /PoE+ per port.
- Port density of 4/8x1 Gigabit ports and 2x1G SFP/SFP+ uplink/stacking interfaces with cut-through, wire speed, non-blocking switching capabilities.
- 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.
- Three-year limited liability manufacturer's warranty from day one.

## HIGHLIGHTS

- **Simplified network management.**  
Industrial Switch provides easy configuration and simplified operational manageability to deliver advanced and secure multi-services over industrial networks.
- **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.
- **Reliable performance.**  
Delivers stability, Scalability and Effortless handling of diverse workloads.
  - The switch supports a non-blocking architecture that provides up to 20 Gbps of wire-speed switching capacity and up to 14.8 Mpps of forwarding capacity, allowing it to handle a wide range of workloads.
  - 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	1G Fiber Uplinks**	PoE Budget ** (Watt)	Max PoE (802.3af)	Max PoE+ (802.3at)
<b>8 Port</b>					
QN-IS-220-8FP	8	2	240	8	8
QN-IS-220-8FP-4SFP	8	4	240	8	8
<b>4 Port</b>					
QN-IS-220-4FP	4	2	120	4	4
<b>Management Ports</b>		<b>8 Port</b>		<b>4 Port</b>	
Console RJ45	1		1		
Storage (USB Type A)	1		1		
<b>Capacity</b>		<b>8 Port</b>		<b>4 Port</b>	
Switching capacity	20Gbps		12 Gbps		
Forwarding rate	14.8Mpps		8.92 Mpps		
Packet buffer size	12 Mbit		12 Mbit		
VLANs	4094		4094		
MAC address table	16K Entries		16K Entries		
Maximum jumbo frame size	9,216 bytes		9,216 bytes		
Link aggregation groups	Max 32		Max 32		
Link aggregation ports per group	Max 8		Max 8		
QoS priority queues	8 per port		8 per port		
<b>Quality of Service</b>					
ACL mapping to priority queue			Traffic shaping		
WRR support			QoS based on classification		
Strict priority support			802.1p support		
DSCP Prioritization					
<b>Layer 3</b>					
ARP, Gratuitous ARP			DHCPv6 client		
IPv6 ND			IPv4 Interface		
IP source guard			IPv6 Interface		
DHCP relay, DHCP server			VRRP		
ISATAP			Route-only support		
<b>Layer 3 Routing</b>					
Inter-VLAN routing			IPv6 unicast routing		
RIPv2			IPv4 static routing, IPv4 host routing		
OSPFv2/v3			IPv6 static routing		
IPv6 host routing			Policy based routing		

\*\* The PoE power budget will be -30 or +30 watts, depending on the current power budget.

\*\*The switch model with a 1G SFP uplink port does not support the stacking feature.

<b>Layer 2</b>	
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*	
<b>Security</b>	
ACLs	Downloadable ACL
DHCP snooping	Dynamic ACL
802.1x authentication	Secure copy (SCP)
MAC authentication	DoS protection
Radius/Tacacs/Tacacs+	Local username/password
AAA	Protected ports
SSH	RA guard
<b>Management</b>	
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	
<b>Standard Compliance</b>	
<b>IEEE Standards Compliance</b>	
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](http://www.qntmnet.com/certification) or email us at [sales@qntmnet.com](mailto:sales@qntmnet.com).

## ORDERING INFORMATION

Part Number	Description
<b>QN-IS-220-8FP</b>	Industrial Switch, 8×10/100/1000 Base T ports, 2x1G Fiber uplinks, 240 watts power supply, includes 3 years online activation warranty.
<b>QN-IS-220-8FP-4SFP</b>	Industrial Switch, 8×10/100/1000 Base T ports, 4x1G Fiber uplinks, 240 watts power supply, includes 3 years online activation warranty.
<b>QN-IS-220-4FP</b>	Industrial Switch, 4×10/100/1000 Base T ports, 2x1G Fiber uplinks, 120 watts power supply, includes 3 years online activation warranty.

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

## NETWORKING SCALE UPGRADE

Part Number	Description
<b>QN-IS-220-NSU2</b>	System upgrade for networking scale level 2.

## SECURITY SCALE UPGRADE

Part Number	Description
<b>QN-IS-220-SEC-U</b>	System upgrade for enabling MacSec.

## SYSTEM UPGRADE

Part Number	Description
<b>QN-IS-220-PTPU1</b>	System Upgrade for supporting PTP features