INDUSTRIAL SWITCHES
QN-IS-220 SERIES

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 2/4x1G SFP uplink 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 24 Gbps of wire-speed switching capacity and up to 17.86 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)
8 Port					
QN-IS-220-8FP	8	2	240	8	8
QN-IS-220-8FP-4SFP	8	4	240	8	8
4 Port					
QN-IS-220-4FP	4	2	120	4	4

Management Ports	8 Port	4 Port
Console RJ45	1	1
Storage (USB Type A)	1	1

Capacity	8 Port	4 Port
Switching capacity	24Gbps	12 Gbps
Forwarding rate	17.86Mpps	8.92 Mpps
MAC address table	16K	16K
Active VLAN support	4096	4096
IPv4 route	480	480
IPv6 route	120	120
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
ACL	1024	1024

Quality of Service	
Port and VLAN based QoS (802.1P)	Single Rate Three Color Marker (srTCM)
QoS based on IP/MAC/Port	Two Rate Three Color Marker (trTCM)
Traffic shaping	Strict priority support
DiffServ	Weighted Round Robin (WRR) support
Class-map & Policy-map	Queue assignment based on DSCP & CoS
QoS aggregate-policer	Traffic classification based on COS/DSCP
QoS Mapping on Queue	

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

Layer 3	
ARP, Gratuitous ARP	DHCPv6 client
IPv6 ND	IPv4 Interface
IP source guard	IPv6 Interface
DHCP relay, DHCP server	VRRP
ISATAP	Route-only support
Layer 3 Routing	
Inter-VLAN routing	IPv6 unicast routing
RIPv2	IPv4 static routing, IPv4 host routing
OSPFv2/v3	Policy based routing
IPv6 host routing	VRF Support
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	
Local GUI	NTP authentication
Industrial standard CLI	SPAN/RSPAN
Telnet support	SSHv1/v2
Storage & File management with USB	Firmware auto install support
TFTP support	Syslog server
SNMP v1/v2c/v3	RMON (All 4 Groups 1,2,3,9)
SNTP	sFlow
Management: RUDDER (Controller)/Standalone	REST API
NetConf/RestConf	Manual/schedule reboot

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 85°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	6 KV

Physical

Model	Net Weight	Dimensions (H x W x D)	Fan	MTBF
QN-IS-220-8FP	0.62 kg	152 x 112 x 48 mm	N/A	2,00,000 hours
QN-IS-220-8FP-4SFP	0.70 kg	152 x 112 x 48 mm	N/A	2,00,000 hours
QN-IS-220-4FP	0.60 Kg	152 x 112 x 48 mm	N/A	2,00,000 hours

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

For detailed information on certifications apply to each model within the series mentioned in this datasheet, please email us at sales@qntmnet.com.

ORDERING INFORMATION

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

NETWORKING SCALE UPGRADE

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

SYSTEM UPGRADE

Part Number	Description
QN-IS-220-PTPU1	System Upgrade for supporting PTP features