# ENTERPRISE ACCESS SWITCHES
# QN-SW-230-SERIES

***With Redundant Power Supply***

## PRODUCT OVERVIEW

- QN-SW-230 Switch Series provides robust Layer 2 switching and Layer 3 routing features to meet the diverse needs of enterprise/campus networks.
- On-device management ports include a dedicated console port, an Out of Band management port, and a USB flash drive port for storage.
- Centralized device management options -Cloud hosted Quantum Rudder Network and Services Controller (NSC), on premises Rudder NSC, Device GUI/CLI, SNMP.
- Port density of 24/48 Gigabit ports and 4 SFP+ uplink/stacking interfaces with non-blocking switching capabilities.
- PoE budget options to power advanced devices with the option of PoE /PoE+ per port.
- Three-year limited liability manufacturer's warranty from day one.

## HIGHLIGHTS

- **Simplified Network Management.**
  Unified management stacks (Rudder Network and Service Controller) to deploy, monitor, and troubleshoot wired as well as wireless networks.
- **Centralized Network observability.**
  Dashboards and reporting logs for various network events.
- **Reliable Performance.**
  Delivers Stability, Scalability, and Effortless handling of diverse workloads.
    - The switch supports a non-blocking architecture that provides from 128 Gbps to 176 Gbps of wire-speed switching capacity and from 95 to 131 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

## QN-SW-230-Series

| Communication Ports | Specifications | | | | | |
|---|---|---|---|---|---|---|
| **Model** | **230-48FP** | **230-48P** | **230-48** | **230-24FP** | **230-24P** | **230-24** |
| 10/100/1000 Mbps RJ45 Downlinks | 48 | 48 | 48 | 24 | 24 | 24 |
| 1G/10G Fiber Uplinks | 4 (Expandable up to 8 ports with system upgrade) | | | | | |
| PoE Budget (Watt)[*1] | 1480 Watt | 740 Watt | -- | 740 Watt | 400 Watt | -- |
| Max PoE (802.3af) | 48 | 48 | -- | 24 | 24 | -- |
| Max PoE+ (802.3at) | 48 | 24 | -- | 24 | 12 | -- |
| **Management Ports** | 48 Ports | | | 24 Ports | | |
| Console (RJ45) | 1 | | | 1 | | |
| Management (OOB) | 1 | | | 1 | | |
| Storage (USB Type A) | 1 | | | 1 | | |
| **Capacity** | 48 Ports | | | 24 Ports | | |
| Switching capacity | 176 Gbps | | | 128 Gbps | | |
| Forwarding rate | 131 Mpps | | | 95 Mpps | | |
| MAC address table | Max 16K | | | Max 16K | | |
| Active VLANs support | 4094 | | | 4094 | | |
| IPv4 Route | 1k | | | 1k | | |
| IPv6 Route | 1k | | | 1k | | |
| Multicast Groups | 1k | | | 1k | | |
| 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 | |

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

| Security | |
|---|---|
| RADIUS, TACACS+ | ARP inspection (DAI & SAI) |
| Port security | Downloadable ACL |
| DHCP Snooping | Dynamic ACL |
| AAA (Authentication, Authorization, and Accounting) | Role based access control |
| ACL (Based On IP, Port, Protocol, MAC, Time Based) | Management ACL |
| IP source guard | DoS prevention |
| Protected port | Secure copy (SCP) |
| 802.1x authentication (Port Based, MAC Based, Web Based) | Kerberos, SSL |
| **Multicast** | |
| Internet Group Management Protocol -IGMP v1/v2/v3 | Multicast Listener Discovery- MLD v1/V2 |
| IGMP snooping | MLD snooping |
| PIM-SM/SSM | Multicast TV VLAN |
| PIM-SMv6 | MVR (Multicast VLAN registration) |
| **Layer 3** | |
| IPv4 and IPv6 dual stack | IPv6 prefix list |
| Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) | IP source guard |
| Policy Based Routing (PBR) | DHCP server |
| ARP, Gratuitous ARP | DHCP relay |
| DHCP Client | IPv6 NDRA (Neighbor Discovery Router Advertisement) |
| ICMP redirect & ICMP unreachable | Duplicate Address Detection (DAD) |
| IPv6 SLAAC (Stateless Address Auto configuration) | IPv6 ND |
| ARP-Proxy | DHCP Option 82, 66, 67 |
| **Layer 3 Routing** | |
| Static routing (IPv4, IPv6) | Inter-VLAN routing |
| RIPv2 (Routing Information Protocol, version 2) | OSPFv2/v3 (Open Shortest Path First) |
| BGP (Border Gateway Protocol) | VRF support |
| **Layer 2** | |
| Port Tagging/untagged | BPDU guard |
| MAC based VLANs | GVRP |
| Private VLAN | LLDP/LLDP MED |
| Subnet based VLAN | RADIUS assigned VLAN |
| Auto MDI/MDIX | Link aggregation (Ether Channel) |
| Loopback detection | Link Aggregation Control Protocol (LACP) |
| Port isolation | Port mirroring (Port, ACL, VLAN Based) |
| Root guard | Default VLAN |
| Guest VLAN | Auto voice VLAN |
| Energy Efficient Ethernet (EEE) | Green Ethernet |
| Link flapping detection | Flow control |

| | |
|---|---|
| STP/RSTP/MSTP | Native VLAN |
| QinQ (802.1Q) | Loop guard |
| **Environment** | |
| Operating temperature | -5°C (23°F) to 65°C (149°F) |
| Humidity | 5% ~ 95% non-condensing |
| RoHS | Compliant |
| Voltage input | 100-240V. Frequency: 50/60Hz |
| Power consumption | Internal PSU ≤40W, External PSU ≤100W |
| Fan Airflow ** | Front to back |
| **Packaging Content** | |
| Switch with 2 x type D power cord with rack mounting kit | |
| **High Availability** | |
| Stacking (Up-to 8 members) | Ring Redundancy Protocol (RRP) |
| Equal-Cost Multi Path (ECMP) | Virtual Router Redundancy Protocol (VRRP) |
| Storm control (Broadcast, Multicast, Unicast) | |
| **Management** | |
| Local GUI | NetConf/RestConf |
| Industrial standard CLI | NTP authentication |
| Telnet support | SPAN/RSPAN |
| Storage & File management with USB | SSHv1/v2 |
| FTP & TFTP support | Firmware auto install support |
| Dual Flash Images OS | Syslog server |
| SNMP v1/v2c/v3 | RMON (All 4 Groups 1,2,3,9) |
| SNTP | sFlow |
| Management: RUDDER (Controller)/Standalone | REST API |
| 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 |
| 802.3 10Base-T | 802.3af Power over Ethernet |
| 802.3ad link aggregation (Dynamic and Static) | |

** FAN Airflow: Default airflow of fans is front-to-back. Specify back-to-front airflow while placing the order (applicable only for QN-SW-230 series with HSR models).

| Monitoring and Troubleshooting | |
|---|---|
| Errdisable detection and recovery | CPU Utilization |
| Device temp/PSU/FAN/status display & alarm | User operation logs |
| Virtual cable test | Management logs, alarms |
| ICMPv4/v6 | DDM (Digital Diagnostic Monitoring) |
| Traceroute | UDLD (Unidirectional Link Detection) |

| Physical | | | | |
|---|---|---|---|---|
| **Model** | **Net Weight** | **Dimensions (H x W x D)** | **Fan** | **MTBF** |
| QN-SW-230-48FP | 7.80Kg | 44 x 440 x 354 mm | Yes | 1,00,000 hrs |
| QN-SW-230-48P | 6.24Kg | 44 x 440 x 350 mm | Yes | 1,00,000 hrs |
| QN-SW-230-48 | 3.56Kg | 44 x 440 x 350 mm | No | 1,00,000 hrs |
| QN-SW-230-24FP | 5.60 Kg | 44 x 440 x 354 mm | Yes | 1,00,000 hrs |
| QN-SW-230-24P | 5.15 Kg | 44 x 440 x 350 mm | Yes | 1,00,000 hrs |
| QN-SW-230-24 | 3.3 Kg | 44 x 440 x 258 mm | No | 1,00,000 hrs |

## CERTIFICATION & COMPLIANCES*

| Certifications | Parameter | Standards |
|---|---|---|
| Environmental Compliances | CE, RoHS | EU safety, health, and environmental protection |
| Regulatory (USA) | FCC | A product has been tested and found to comply with relevant FCC standards. |
| Regulatory (IN) | BIS | IS-13252, IEC-60950 (Ensuring safety and reliability of IT and telecom equipment.) |
| | IEC-62368 | Compliance with the IEC 62368-1 standard |
| | MTCTE (ER) | EMI/EMC (IEC / EN-61000* & CISPR 32) |
| | | Safety (IS-13252 & IEC-60950) |
| | | Technical (IPv4 & IPv6) |
| | IPv6 Ready | Certified for next-generation network compatibility |
| | IEC 61000-3-2 | Limits for Harmonic Current Emissions |
| | EN 55032 | EMC Standard for Multimedia Equipment |
| | EN 55024 | EMC Immunity Requirements for ICT Equipment |
| | IEC 62368 | Safety Standard for Audio/Video, ICT, and Communication Equipment |
| | IEC 60825 | Laser Product Safety |

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

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| **QN-SW-230-48FP** | Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 1480 Watts PoE Budget &In-built Redundant Power supply, includes 3-year online activation warranty. |
| **QN-SW-230-48P** | Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 740 Watts PoE Budget &In-built Redundant Power supply, includes 3-year online activation warranty. |
| **QN-SW-230-48** | Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, In-built Redundant Power supply, includes 3-year online activation warranty. |
| **QN-SW-230-24FP** | Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 740 Watts PoE Budget &In-built Redundant Power supply, includes 3-year online activation warranty. |
| **QN-SW-230-24P** | Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 400 Watts PoE Budget &In-built Redundant Power supply, includes 3-year online activation warranty. |
| **QN-SW-230-24** | Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, In-built Redundant Power supply, includes 3-year online activation warranty. |

For more information, visit system upgrade reference details.