RhinoSwitch® RSM-1600 Managed Switches

The RhinoSwitch® RSM-1600 Managed Switches are industrially hardened and offer up to sixteen Fast Ethernet RJ45 ports. Based on the power supply selected, these ports can be either PoE or PoE+. They can alternately be configured with 12 Fast Ethernet and 2 Gigabit fiber or copper ports. The RhinoSwitch® RSM-1600 Managed Switches are highly suitable for harsh or extreme environments.

- Up to 16 100Mb copper or fiber (with up to 8 PoE+ ports) OR up to 2 Gigabit ports and 12 100Mb copper or fiber ports (with up to 8 PoE+ ports)
- Robust, user-friendly Management Software
- Extended operating temperatures ranging from -40° to +85° C
- Multi-level passwords, SNMPv3, IEEE 802.1X, RADIUS, TACACS+, HTTPS, and SSL/SSH for network security
- High and low AC/DC power options

The features of the Management Software in RhinoSwitch® RSM-1600 Managed Switches are:

- Robust GUI and CLI-based Management Software
- RSTP, RSTP-2004 & MSTP for rapid recovery
- VLAN (802.1q) with Double Tagging and GVRP
- IGMP Snooping and GMRP multicast filtering
- Quality of Service (802.1p) and TOS/DiffServ
- LLDP for automated topology discovery

- LACP 802.3ad
- Port Rate Limiting and Broadcast Storm Limiting
- Port Mirroring for Troubleshooting
- SNMP (Simple Network Management Protocol)
- SNTP (Simple Network Time Protocol)
- Remote Monitoring (RMON)
- DHCP Client, Server, and Relay
- Port Trunking for optimal bandwidth utilization
- Port Manager for Speed/Duplex/auto negotiation
- Event Monitoring with automatic email warnings

The features of Cyber Security in RhinoSwitch® RSM-1600 Managed Switches are:

- SSH/SSL Encryption
- Radius-based Access Management and Authentication
- TACACS+ based User Management
- Multiple levels of Passwords/User Access
- Port Security with MAC based Access Control
- 802.1X Port Based Network Access Control
- SNMPv3 Encrypted Authentication and Access Security
- VLAN (802.1Q) for Security and Traffic Segregation

Product Specifications

Table 1: Specifications for RhinoSwitch® RSM-1600 Managed Switches

Heading	Specifics
General	■ Operation: Store and forward wire speed switching, non-blocking ■ Modes: Full or half duplex operation with flow control supported on all ports ■ Switching bandwidth: 6.4 Gbps ■ Latency (100Mb typical): 5 µs plus frame time ■ Packet Buffer: 2Mb (256KB) ■ Ethernet isolation: 1500 Vrms 1 minute ■ Console port: RJ45

	■ 8K MAC addresses
RJ45 Copper Ports	■ RJ45 ports: Up to 16 ports fully IEEE 802.3 compliant (Optional: up to 8 PoE ports (802.3af) or PoE+ ports (802.3at) ■ RJ45 speed and duplex: Configurable or 10/100/1000 auto-detecting for speed & duplex (full or half) ■ RJ45 MDI/MDIX: Auto-MDI/MDIX-Crossover automatically supports either straight or crossed cables ■ RJ45 polarity: Auto-polarity for automatic correction of crossed TXD and RXD pairs
100Mb Fiber Ports	■ Multi-mode and Single-mode. Up to 16 fiber ports total, each FDX or HDX. FDX mode is default.
Gigabit 1000Base-X SFP Ports	■ Optional: FP Slots for 2 Gigabit fiber optic transceivers or 1000Mb copper transceivers for distances up to 40km ■ Optional: 2 Gigabit fixed fiber ports may be selected rather than Gigabit SFP slots
Power and Alarm Output	■ AC: Input: 100-125VAC at 60 Hz, 215-240VAC at 50 Hz ■ DC Power input: Dual redundant power inputs for single power supplies ■ DC: Low Input voltage range (24/28V, 48/55V) DC: 18-75VDC ■ DC: High Input voltage range (110, 125, 150, 250VDC): 90-300VDC ■ Power consumption: 30 watts max ■ Industrial surge and spike protection: 15 kW peak, 5 kW (10 times for 10 μs) ■ Alarm Output (RJ45): 2 alarms; form C contact relay and normally closed
Environmental	■ Operating temperature for all models: -40°C to +85°C ■ Storage temperature for all models: -45°C to +90°C ■ Humidity: 5 to 95% RH (non-condensing) ■ Altitude: 19,000 ft. (6,000m) ■ MTBF: > 219,000 hours ■ **Optional Conformal Coating available on request**
Standards and Compliance	■ Safety: UL/CSA/EN/IEC 60950-1, 2nd Edition CB report ■ Emissions: EN/ETSI 300-386; FCC Part 15 ■ EN55032,24; AN/NZ CISPR22, VCCI, EN61000-6-4 Class A ■ CFR 47-FCC part 15, ICES 003, Class A ■ **Hazardous Locations:** UL/cUL Class 1 Div 2; ATEX Zone 2 ■ IEC 61850 EMC & Environmental Operating Conditions Class C for **Power Utility substations (KEMA)** ■ IEEE 1613 Class 2 Environmental Standard for **Power Utility Substations** ■ NEMA TS-2 & TEES for DC- and PoE-**powered traffic control equipment** ■ Military: MIL-STD-461G ■ Military: MIL-STD-810G ■ Marine: DNV ■ Mining: Directive 2006/21/EC

	■ Telecom: NEBS, GR63 & GR1089, L3; ETSI 300 386, EN 301 489 ■ Railways: EN50155 and EN50121-4 Compliant ■ Vibration: IEC 60068-2-6 ■ Shock: IEC 60068-2-27 ■ Freefall: IEC 60068-2-32 ■ RoHS (Pb free) and WEEE compliant ■ Immunity: EN61000-4-2 (ESD) Level 4; EN61000-4-3 (RFI) Level 4 EN61000-4-4 (EFT) Level 4; EN61000-4-5 (Surge) Level 4 EN61000-4-6 (C. Susceptibility) Level 3 EN61000-4-8 (PF Magnetic Field) Level 4 EN61000-4-10 (Damp Osc.) Level 4 EN61000-4-11 (VDI) Class 3 EN61000-4-12 (Osc. Wave Im.) Level 3 EN61000-4-16 (I.C. CMD) Level 3 EN61000-4-29 VDSI on DC Input EN61000-6-2; EN61000-6-5 DT&T-NL, Immunity PS&SS
Mechanical	■ Chassis: 1RU; may be rack-mounted or DIN rail-mounted ■ Material: Metal with powder coating ■ Dimensions: Width: 11.3 in (28.7 cm) Depth: 8 in (20.3 cm) Height: 1.73 in (4.4 cm) ■ Weight: 3 lb. (1.4 kg)
IP Rating	IP32
Warranty	5 years
Made in	USA