NT328G

Red Lion Networking Series

Industrial Layer 3 Managed Gigabit Switch

THE RED LION SERIES NT328G IS AN INDUSTRIAL RACKMOUNT LAYER 3 MANAGED SWITCH DESIGNED FOR OIL & GAS, WATER & WASTEWATER, ENERGY, TRANSPORTATION, VIDEO, AND SECURITY.

Red Lion's NT328G Layer 3 rackmount industrial Ethernet switch offers 28 high speed ports (24 gigabit, 4 10 gigabit) to meet the performance requirements of bandwidth intensive applications. Designed to meet current and future needs with reliable wire-speed switching performance and a flexible mix of copper and fiber ports, the NT328G's robust feature set includes network redundancy, advanced security, policy-based traffic control and easy-to-use configuration and management. Housed in a rugged IP30 metal enclosure, the switch is designed for long-life use in harsh industrial environments, including wide operating temperature conditions and hazardous locations.

APPLICATIONS

- Oil & Gas
- Water & Wastewater
- Energy
- Transportation
- Video & Security

PRODUCT HIGHLIGHTS

- 24 Gigabit Copper Ports or 8 Gigabit Copper Ports and 16 Gigabit SFP Ports
- 4 10G SFP+ Ports
  Supports 10G SFP+ Fiber or 1G Copper/Fiber SFP Transceivers
- QoS: Traffic Policing, Traffic Shaping, Queue Scheduling
- Layer 3 Routing
- Advanced Security
- Fast Ring, RSTP/MSTP Redundancy Protocols

FEATURES

MANAGEMENT

- Web Browser
- Configuration Backup/Restore
- DHCP Server/Client/Relay Agent with Option 61, Option 82
- IGMP v1, v2, v3
- SNMP v1, v2, v3
- Port Mirroring
- Event Log/Syslog
- Advanced VLAN Operations
- LLDP

NETWORK REDUNDANCY

- STP/RSTP/MSTP
- High-Speed Ring Protocol with <20ms Heal Time
- Chain Protocols
- LACP (Port Trunking)
  Up to 14 Trunks per Switch
  Up to 8 Ports per Trunk

c UL us LISTED 5LS7/5MP5 EN50155 RoHS compliant

NT328G Specifications

SWITCH PROPERTIES
Number of MAC Addresses: 16K
Auto-sensing 10/100/1000BaseT(X), duplex and MDIX
Aging Time: Programmable
Latency (typical): 2.1 µs
Switching Method: Store & Forward
MTBF: >1 Million Hours
Jumbo Frame Support: Up to 9000 bytes
LED Link/Activity Status Indication
Hardened 19" IP30 1U Rackmount Enclosure
802.3 Compliance
Up to 128.0 Gb/s Maximum Throughput

POWER INPUT
Input Voltages: 100-240 VAC
See Tables Below for Unit Specific Power Specifications

RECOMMENDED WIRING CLEARANCE
Front: 4" (10.16 cm)
Back: 2" (5.08 cm)

USER MANAGEMENT INTERFACES
Web Browser Management
CLI: Console, Telnet, SSH
SNMP v1, v2, v3

NETWORK REDUNDANCY
Ring Protocol: Proprietary Ring & Chain, < 20ms Recovery
IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s, 802.1Q MSTP
LACP/LAG: Static and Dynamic Link Aggregation

QOS/RATE LIMITING/TRAFFIC CONTROL
QoS: Traffic Policing, Traffic Shaping, Queue Scheduling
Policy/Profile-based Access Control List:
IP/MAC/TCP/UDP/ToS/DSCP
CoS/DSCP: SPQ, WRR, SPQ+WRR
Rate Limiting / Traffic Control: Storm Control
Multicast/Unicast Filtering

ROUTING
GVRP
IEEE802.1 AD (QinQ)
VRRP v2, v3
RIP v1, v2
OSPF
Static Routing
L3 Forwarding

SECURITY
SNMP v3
SSH, SSL, HTTPS
Access Control List
802.1X Port Authentication
802.1X User Login Authentication
IP Source Guard (DHCP)

CERTIFICATION & COMPLIANCE
Safety:
UL 61010 Ordinary Locations
ANSI/ISA-12.12.01, Class I and II, Division 2 and Class III, Divisions 1 and 2 Groups A, B, C and D Hazardous Locations
C22.2 No. 61010 Ordinary Locations
C22.2 No. 213 Class I, Division 2 Hazardous Locations
EMI/EMC:
CFR 47, Part 15, Subpart B
Innovation, Science and Economic Development Canada ICES-003 Issue 6
ANSI C63.4:2014
EN 61000-6-2 Generic Standards - Immunity Standard for Industrial Environments
EN 61000-6-4 Generic Standards - Emission Standard for Industrial Environments
IEC 61000-4-2 (ESD)
IEC 61000-4-3 (Radio-Frequency Electromagnetic Field)
IEC 61000-4-4 (Fast Transient)
IEC 61000-4-5 (Surge)
IEC 61000-4-6 (Radio-Frequency Continuous Conducted)
IEC 61000-4-8 (Power Frequency Magnetic Field)
IEC 61000-4-11 (Voltage Dips, Short Interruptions)
IEC 61000-4-16 (Mains Frequency Voltage)
IEC 61000-4-18 (Damped Oscillatory Wave)
Rail:
EN 50155, EN 50121 and EN 61373
Designed to Comply with:
IEEE 1613 for Electric Utility Substations
NEMA TS1/TS2 for Traffic Control
IEC 61850-3

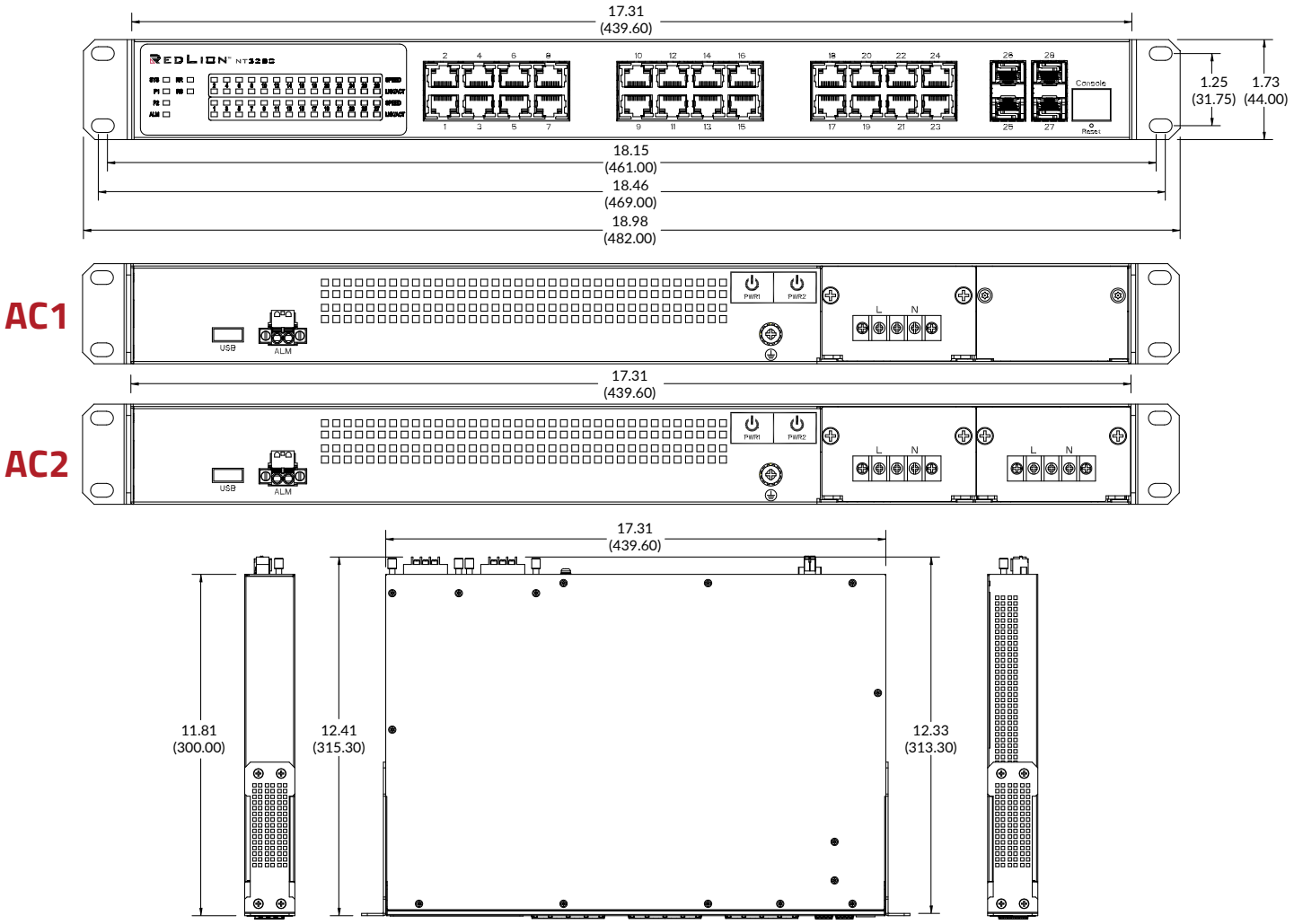
ENVIRONMENTAL
Shock and Vibration:
IEC 60068-2-6: 2 g @ 5-500 Hz 2 g Tri-Axle
IEC 60068-2-27: 50 g @ 11 ms Tri-Axle
IEC 60068-2-32: Test Ed: Free Fall
Operating Temperature: -40°C to 75°C
Storage Temperature: -40°C to 85°C
Operating Humidity: 5% to 95% (Non-Condensing)
Operating Altitude: Up to 10,000 ft.

WARRANTY
3 Years on Design and Manufacturing Defects

Specifications are Subject to Change. Visit www.redlion.net for More Information

NT328G-04SFP Specifications

DIMENSIONS In inches (mm)



NT328G-04SFP-AC1 Specifications	
Weight:	6.28 lbs. (2.85 kg)
Input Voltage:	100-240 VAC
Steady Input Current:	470 mA @ 120 VAC
BTU/hr:	192 @ 120 VAC

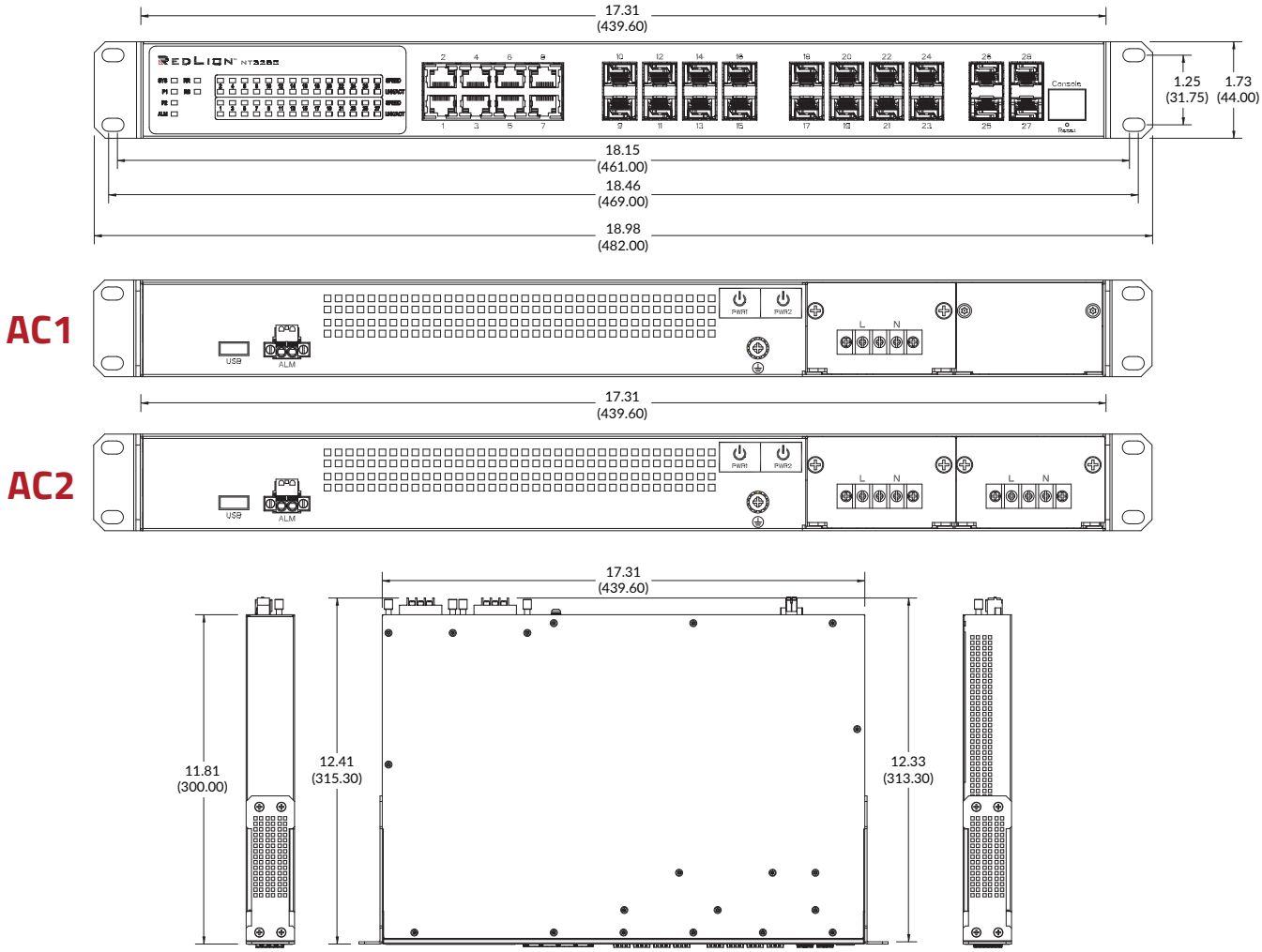
NT328G-04SFP-AC2 Specifications	
Weight:	6.75 lbs. (3.06 kg)
Input Voltage:	100-240 VAC
Steady Input Current:	470 mA @ 120 VAC
BTU/hr:	192 @ 120 VAC

Network Media Specifications	
10BaseT:	≥Cat3 Cable
100BaseTX:	≥Cat5 Cable
1000BaseT:	≥Cat5e Cable
1000BaseSX Multimode:	50-62.5/125 µm
1000BaseLX Singlemode:	7-10/125 µm
10GBaseSR Multimode:	50/125 µm
10GBaseLR Singlemode:	9/125 µm

Connector Specifications	
10/100/1000BaseT(X):	Twenty-four (24) RJ45 TX Copper Ports
1000 BaseT SFP Port:	Up to four (4) RJ45 SFP Copper Transceiver Ports
1000 BaseSX/LX SFP Port:	Up to four (4) LC SFP Fiber Transceiver Ports
10G BaseSR/LR SFP Port:	Up to four (4) LC SFP Fiber Transceiver Ports

NT328G-20SFP Specifications

DIMENSIONS In inches (mm)



NT328G-20SFP-AC1 Specifications	
Weight:	6.72 lbs. (3.05 kg)
Input Voltage:	100-240 VAC
Steady Input Current:	500 mA @ 120 VAC
BTU/hr:	205 @ 120 VAC

NT328G-20SFP-AC2 Specifications	
Weight:	7.19 lbs. (3.26 kg)
Input Voltage:	100-240 VAC
Steady Input Current:	500 mA @ 120 VAC
BTU/hr:	205 @ 120 VAC

Network Media Specifications	
10BaseT:	≥Cat3 Cable
100BaseTX:	≥Cat5 Cable
1000BaseT:	≥Cat5e Cable
100BaseFX, 1000BaseSX Multimode:	50-62.5/125µm
100BaseFXE, 1000BaseLX Singlemode:	7-10/125 µm
10GBaseSR Multimode:	50/125 µm
10GBaseLR Singlemode:	9/125 µm

Connector Specifications	
10/100/1000BaseT(X):	Eight (8) RJ45 TX Copper Ports
100 BaseFX SFP Port:	Up to sixteen (16) LC SFP Fiber Transceiver Ports
1000 BaseT SFP Port:	Up to twenty (20) RJ45 SFP Copper Transceiver Ports
1000 BaseSX/LX SFP Port:	Up to twenty (20) LC SFP Fiber Transceiver Ports
10G BaseSR/LR SFP Port:	Up to four (4) LC SFP Fiber Transceiver Ports

NT328G Specifications

100BASE SFP FIBER TRANSCEIVER CHARACTERISTICS (NT328G-20SFP MODEL ONLY)				
Fiber Mode	MM	SM	SM	SM
Fiber Length*	2 km	15 km	40 km	80 km
TX Power Min	-19 dBm	-15 dBm	-5 dBm	-5 dBm
RX Sensitivity Max	-31 dBm	-34 dBm	-34 dBm	-34 dBm
Wavelength	1310 nm	1310 nm	1310 nm	1550 nm
Laser Type	FP	FP	FP	DFB

GIGABIT SFP FIBER TRANSCEIVER CHARACTERISTICS				
Fiber Mode	MM	SM	SM	SM
Fiber Length*	550 m @ 50/125 µm 275 m @ 62.5/125 µm	10 km	40 km	80 km
TX Power Min	-9.5 dBm	-9.5 dBm	-2 dBm	0 dBm
RX Sensitivity Max	-17 dBm	-20 dBm	-22 dBm	-24 dBm
Wavelength	850 nm	1310 nm	1310 nm	1550 nm
Laser Type	VCSEL	FP	DFB	DFB

10 GIGABIT SFP+ FIBER TRANSCEIVER CHARACTERISTICS				
Fiber Mode	MM	SM	SM	SM
Fiber Length*	300 m	10 km	40 km	80 km
TX Power Min	-7.3 dBm	-8.2 dBm	-4.7 dBm	-1.0 dBm
RX Sensitivity Max	-11.1 dBm	-12.6 dBm	-15.8 dBm	-23.0 dBm
Wavelength	850 nm	1310 nm	1550 nm	1550 nm
Laser Type	VCSEL	DFB	EML	EML

*Note:
Fiber length distances represent typical performance.
Link budgets should be evaluated based on specific application conditions.

NT328G Specifications

ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT328G-20SFP-AC1	28-port Managed L3 Industrial Ethernet Switch (8 10/100/1000BaseT RJ45 ports; 20 Dual Mode (16 100/1000Base; 4 1000/10GBase) (SFP expansion slots); one 100-240 VAC power input
NT328G-20SFP-AC2	28-port Managed L3 Industrial Ethernet Switch (8 10/100/1000BaseT RJ45 ports; 20 Dual Mode (16 100/1000Base; 4 1000/10GBase) (SFP expansion slots); two 100-240 VAC power inputs
NT328G-04SFP-AC1	28-port Managed L3 Industrial Ethernet Switch (24 10/100/1000BaseT RJ45 ports; 4 Dual Mode (1000/10GBase) (SFP expansion slots); one 100-240 VAC power input
NT328G-04SFP-AC2	28-port Managed L3 Industrial Ethernet Switch (24 10/100/1000BaseT RJ45 ports; 4 Dual Mode (1000/10GBase) (SFP expansion slots); two 100-240 VAC power inputs
NTSFP-FX	100BaseFX multimode fiber SFP pluggable transceiver (LC style connector, 2km)
NTSFP-FXE-YY	100BaseFX singlemode fiber SFP pluggable transceiver (LC style connector)
NTSFP-TX	1000BaseT copper SFP pluggable transceiver
NTSFP-SX	1000BaseSX multimode fiber SFP pluggable transceiver (LC style connector, 550m)
NTSFP-LX-ZZ	1000BaseLX singlemode fiber SFP pluggable transceiver (LC style connector)
NT10GSFP-SR	10GBase multimode fiber SFP+ pluggable transceiver (LC style connector 300m)
NT10GSFP-LR-ZZ	10GBase singlemode fiber SFP+ pluggable transceiver (LC style connector)
NT328G-AC-US	US Industrial High-Temp Power Cord Assembly for use with the NT328G (Cord Length: 7 Ft., Gauge/Conductor: 18/3, Temp. Rating: 105°C, Plug: NEMA 5-15, Voltage Rating: 300V)

Where YY=15, 40, or 80 km
Where ZZ=10, 40, or 80 km
Note:
The four 10G SFP+ ports support 1 gigabit copper or fiber SFP transceivers, or 10 gigabit fiber SFP transceivers.

RED LION®