

# NT328G

Red Lion  
Networking Serie



## ▲ Industrieller Layer 3 Managed Gigabit Switch

DIE INDUSTRIELLE LAYER 3 MANAGED SWITCH SERIE NT328G VON RED LION IST DIE IDEALE LÖSUNG FÜR BANDBREITENINTENSIVE APPLIKATIONEN WIE Z.B IN WASSER / ABWASSER, ENERGIE, TRANSPORT, VIDEO & SICHERHEIT UND ÖL&GAS INDUSTRIEN

Der NT328G Layer 3 Industrial Ethernet Switch mit Rackmontage bietet leistungsfähige 28 Highspeed-Ports (24 Gigabit, 4 10 Gigabit) für bandbreitenintensive Anwendungen. Der NT328G Switch erfüllt aktuelle und zukünftige Anforderungen mit zuverlässiger Schallleistung bei voller Bandbreite und einer flexiblen Mischung von Kupfer- und Glasfaser-Ports. Er beinhaltet Netzwerkredundanz, erweiterte Sicherheit, richtlinienbasierte Datenverkehrssteuerung und benutzerfreundliche Konfiguration und Verwaltung. Mit seinem robusten IP30-zertifizierten Metallgehäuse ist der Switch für eine lange Lebensdauer in anspruchsvollen industriellen Umgebungen, einschließlich breiter Betriebstemperaturbereiche und explosionsgefährdeter Bereiche, ausgelegt.

### APPLIKATIONEN

- ▲ Öl & Gas
- ▲ Wasser & Abwasser
- ▲ Energie
- ▲ Transport
- ▲ Video & Sicherheit

### PRODUKT HIGHLIGHTS

- ▲ 24 Gigabit-Kupfer-Ports oder 8 Gigabit-Kupfer-Ports und 16 Gigabit-SFP Ports
- ▲ 4 10G SFP+ Ports  
Unterstützt 10G-SFP+-Glasfaser- oder 1G-Kupfer/Glasfaser-SFP-Transceiver
- ▲ QoS: Traffic Policing, Traffic Shaping, Queue Scheduling
- ▲ Layer 3 Routing
- ▲ Erweiterte Sicherheit
- ▲ Fast Ring, RSTP/MSTP Redundanzprotokolle

### MERKMALE

#### MANAGEMENT

- ▲ Web Browser
- ▲ Konfigurations-Backup/-Wiederherstellung
- ▲ DHCP Server/Client/Relay Agent mit Option 61, Option 82
- ▲ IGMP v1, v2, v3
- ▲ SNMP v1, v2, v3
- ▲ Port Mirroring
- ▲ Event Log/Syslog
- ▲ Erweiterte VLAN Operations
- ▲ LLDP

#### NETWORKREDUNDANZ

- ▲ STP/RSTP/MSTP
- ▲ High-Speed Ring Protocol mit < 20ms Wiederherstellungszeit
- ▲ Chain Protocols
- ▲ LACP (Port Trunking)  
Bis zu 14 Trunks pro Switch  
Bis zu 8 Ports pro Trunk

# NT328G Spezifikationen

## SWITCH PROPERTIES

Number of MAC Addresses: 16K  
Auto-sensing 10/100/1000BaseT(X), duplex and MDIX  
Aging Time: Programmable  
Latency (typical): 2.1  $\mu$ s  
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.

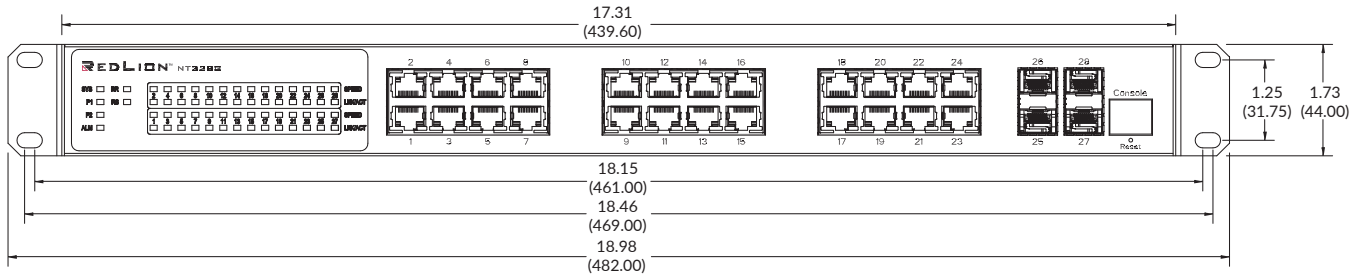
## WARRANTY

3 Years on Design and Manufacturing Defects

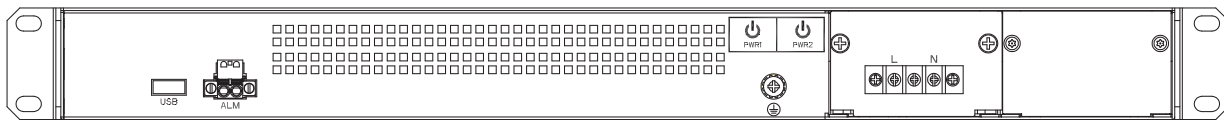
Specifications are Subject to Change. Visit [www.redlion.net](http://www.redlion.net) for More Information

# NT328G-04SFP Spezifikationen

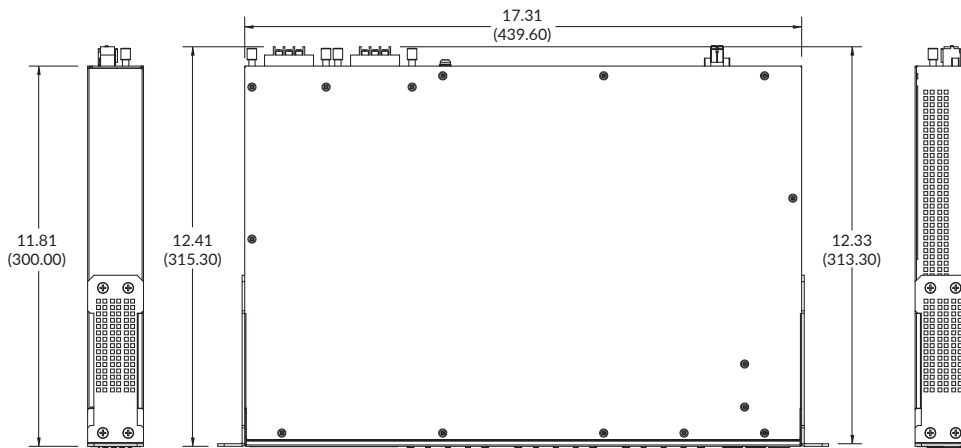
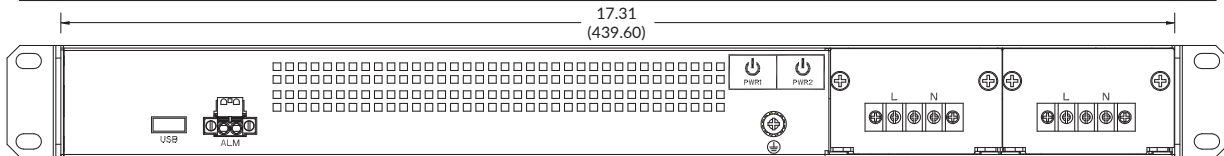
DIMENSIONS In inches (mm)



AC1



AC2



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

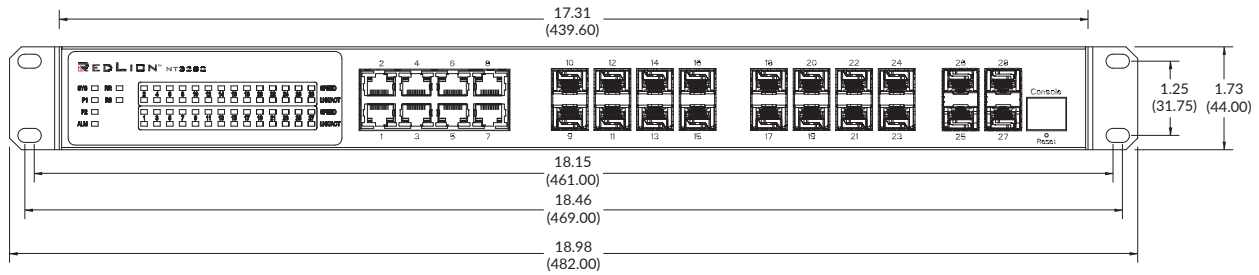
NT328G-04SFP-AC2 Specifications	
Weight:	6.75 lbs. (3.06 kg)
Input Voltage:	100-240 VAC
Steady Input Current:	470 mA @ 120 VAC
BTU/hr:	192 @ 120 VAC

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

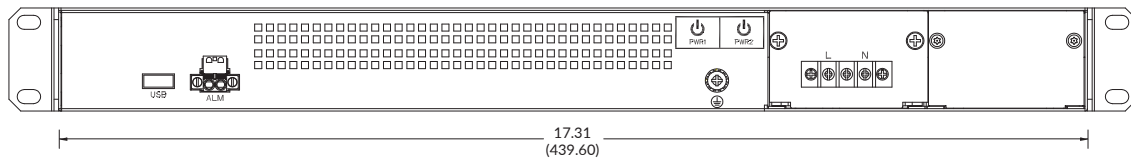
Connector Specifications	
10/100/1000BaseT(X):	Twenty-four (24) RJ45 TX Copper Ports
1000 BaseT SFP Port:	Up to four (4) RJ45 SFP Copper Transceiver Ports
1000 BaseSX/LX SFP Port:	Up to four (4) LC SFP Fiber Transceiver Ports
10G BaseSR/LR SFP Port:	Up to four (4) LC SFP Fiber Transceiver Ports

# NT328G-20SFP Spezifikationen

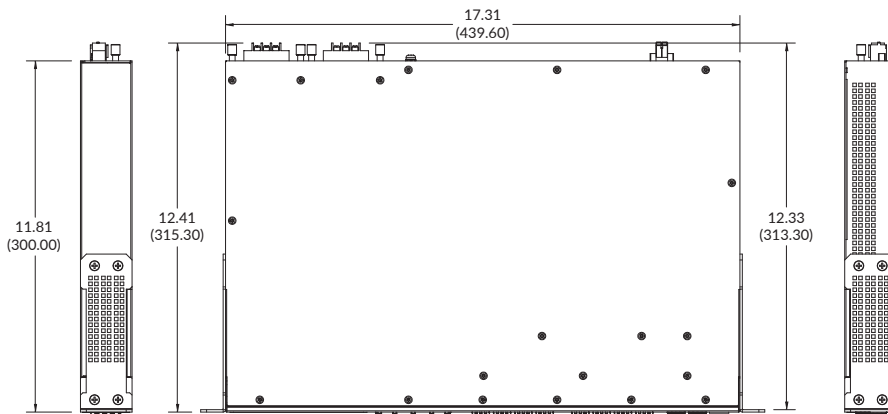
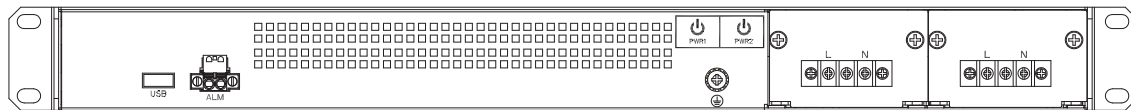
DIMENSIONS In inches (mm)



AC1



AC2



## 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) RJ45TX 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 Spezifikationen

### 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 $\mu$ m 275 m @ 62.5/125 $\mu$ m	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 Spezifikationen

## 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.



[www.redlion.net](http://www.redlion.net)

Als ein internationaler Experte für Kommunikation, Überwachung und Steuerung für die industrielle Automatisierung und Vernetzung bietet Red Lion seinen Kunden seit über vierzig Jahren innovative Lösungen an. Unsere Automatisierungs-, Ethernet- und M47M-Mobilfunktechnologie ermöglicht Unternehmen auf der ganzen Welt eine Datenvisualisierung in Echtzeit, die Produktivität steigert. Produktmarken sind u. a. Red Lion, N-Tron und Sixnet. Red Lion ist in York, Pennsylvania, USA beheimatet, und hat Niederlassungen in Nord- und Südamerika, im asiatisch-pazifischen Raum und in Europa. Red Lion ist Teil der Spectris plc, einem Unternehmen für produktivitätssteigernde Geräteausstattungen und Steuerungen.

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