

# FL NAT 2008 - Industrial Ethernet Switch



2702881

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Managed NAT Switch 2000 series, 8 RJ45 ports 10/100 Mbps, degree of protection: IP20, Ambient temperature (operation): 0 °C ... 60 °C, Supply voltage range: 18 V DC ... 32 V DC, PROFINET Conformance Class A, 1:1-NAT, Virtual NAT, IP-Masquerading, Development process certified in accordance with IEC 62443-4-1, Product certified in accordance with IEC 62443-4-2

## Your advantages

- 1:1 NAT, virtual NAT, IP masquerading, port forwarding
- MRP client
- Ambient temperature -40 °C ... 70 °C
- VLANs
- DHCP client, DHCP server (port-based)
- RSTP
- Flexible distribution into several LAN and WAN areas
- Configuration memory
- Slim design
- Web-based management, SNMP
- Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- Suitable for PROFINET and EtherNet/IP™ networks

## Commercial data

Item number	2702881
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN17
Product key	DNN131
GTIN	4055626376622
Weight per piece (including packing)	404.2 g
Weight per piece (excluding packing)	240 g
Customs tariff number	85176200
Country of origin	DE

## Technical data

### Dimensions

Width	45 mm
Height	130 mm
Depth	115 mm

### Notes

General	Support by phone or on-site (fee is charged)
Note on application	
Note on application	Only for industrial use

### Material specifications

Housing material	Polycarbonate fiber reinforced
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### Mounting

Mounting type	DIN rail mounting
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### Interfaces

#### Ethernet (RJ45)

Connection method	RJ45
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps
Transmission physics	Copper
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status
No. of channels	8 (RJ45 ports)

### Product properties

Product type	Switch
Product family	Managed NAT Switch 2000
Type	Book type
MTTF	507.8 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	246.55 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	56.66 Years (SN 29500 standard, temperature 55°C, operating cycle 100%)
Special properties	1:1-NAT, Virtual NAT, IP-Masquerading
	Development process certified in accordance with IEC 62443-4-1
	Product certified in accordance with IEC 62443-4-2
Signal delay	≥ 6.5 μs (Store and Forward mode, 10/100 Mbps, depending on the frame size)

## Insulation characteristics

Protection class	III (VDE 0106)
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## Switch functions

Diagnostic functions	RMON History
	LLDP (Link Layer Discovery Protocol)
	SNMP-Traps
	N:1-Portmirroring
	ACD (Address Conflict Detection)
	SysLog
	CRC-Surveillance
Basic functions	Router for standard routing, NAT, 1:1-NAT and port forwarding
NAT functions	1:1-NAT
	Virtual-NAT
	IP-Masquerading
	Port forwarding
PROFINET conformance class	Conformance Class A
Filter functions	Quality of Service (8 priority classes)
	Class of Service
	DiffServ/DSCP
	Port-Priorisierung
	VLAN (up to 8 VLANs)
	IGMP Snooping/Querier (v1/v2)
	Auto-Query-Port
	Extended Multicast Filtering
IP parameterization	DHCP client
	DHCP server (port based)
	BootP
MAC address table	8k
Management	Web-based management (HTTP/HTTPS)
	Role-based user management (LDAP, RADIUS)
	SNMPv1/v2/v3
	Command Line Interface (Telnet, SSH)
Redundancy	MRP (Media Redundancy Protocol)
	RSTP (Rapid Spanning Tree Protocol)
Status and diagnostic indicators	LEDs: US (power supply), 2 LEDs per Ethernet port (Link/Activity and Speed)
Time synchronization	SNTP (Simple Network Time Protocol)

## Security functions

Basic functions	Router for standard routing, NAT, 1:1-NAT and port forwarding
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## Electrical properties

Current consumption	180 mA
	US Supply voltage Green LED

Local diagnostics	LNK/ACT Link status Green LED
	SPD Data transmission speed Green LED
Maximum power dissipation for nominal condition	4.86 W (At $U_S = 18$ V DC and 60°C ambient temperature)
Test section	24 V supply / functional ground 500 V DC 1 min
	Ethernet interface/all other potentials 2.25 kV DC 1 min
Transmission medium	Copper

## Supply

Supply voltage (DC)	24 V DC (single)
Supply voltage range	18 V DC ... 32 V DC
Power supply connection	via COMBICON, max. conductor cross-section 1.5 mm <sup>2</sup>
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Max. current consumption	0.35 A (At $U_S = 18$ V DC and 60°C ambient temperature)
Typical current consumption	180 mA (at $U_S = 24$ V DC and 25 °C ambient temperature)
Current consumption	180 mA

## Connection data

Connection method	Screw connection
Note on the connection method	Use only copper connecting cables providing the permitted temperature range (-40 °C ... 75 °C)
pluggable	yes
Conductor cross-section, rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	28 ... 16
Stripping length	7 mm

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Shock (operation)	30g (EN 60068-2-27)
Vibration (operation)	2g, according to IEC 60068-2-6
Air pressure (operation)	86 kPa ... 108 kPa (1500 m above sea level)
Air pressure (storage/transport)	86 kPa ... 108 kPa

## Standards and regulations

Free from substances that could impair the application of coating	Yes
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## Approvals

### Conformity/Approvals

UL, USA	UL 61010-1, Ed.3 / UL 61010-2-201, Ed.1
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UL, Canada	CSA C22.2 NO.61010-2-201:14, Ed.1 / CSA C22.2 NO.61010-1-12, Ed.3
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## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conformance with EMC directives	EN 61000-6-2 EN 61000-4-2 (ESD) Criterion B
	EN 61000-6-2 EN 61000-4-3 (electromagnetic fields) Criterion A
	EN 61000-6-2 EN 61000-4-4 (EFT burst) Criterion A
	EN 61000-6-2 EN 61000-4-5 (surge) Criterion B
	EN 61000-6-2 EN 61000-4-6 (line noise immunity) Criterion A
	EN 61000-6-2 EN 61000-6-4 (interference) Class A
Noise immunity	EN 61000-6-4 (conducted interference) Class A
	EN 61000-6-2

## Noise emission

Standards/regulations	EN 61000-6-4
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## System properties

### Functionality

Basic functions	Router for standard routing, NAT, 1:1-NAT and port forwarding
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## Signaling

Status display	LEDs: US (power supply), 2 LEDs per Ethernet port (Link/Activity and Speed)
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## Approvals

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**cULus Listed**

Approval ID: E238705

**Cybersecurity Certificate**

Approval ID: 968 CSP 1043.00 25

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## Classifications

### ECLASS

ECLASS-13.0	19170401
ECLASS-15.0	19170401

### ETIM

ETIM 10.0	EC000734
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### UNSPSC

UNSPSC 21.0	43222600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	32343c0b-ae97-4d47-8cf0-e57836e114b1

### EF3.1 Climate Change

CO2e kg	10.11 kg CO2e
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