

FL SWITCH 2303-8SP1 - Industrial Ethernet Switch



1278397

<https://www.phoenixcontact.com/pc/products/1278397>

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Managed Switch 2000 series, 3 RJ45 ports 10/100/1000 Mbps, 8 SPE ports 10 Mbps, degree of protection: IP20, Ambient temperature (operation): -40 °C ... 70 °C, Supply voltage range: 20 V DC ... 32 V DC, PROFINET Conformance Class B, Extended temperature range, Single Pair Ethernet ports with PoDL, Development process certified in accordance with IEC 62443-4-1, Compatible with IEC 62443-4-2

Your advantages

- Space-saving Single Pair Ethernet ports (10BASE T1L) with PoDL Power Class 11
- Ambient temperature -40 °C ... 70 °C
- RSTP
- MRP (client and manager)
- VLANs
- DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- Slim design
- Configuration memory
- 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	1278397
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNN128
GTIN	4063151475925
Weight per piece (including packing)	434 g
Weight per piece (excluding packing)	347 g
Customs tariff number	85176200
Country of origin	DE

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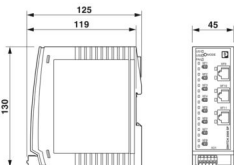


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Technical data

Dimensions

Dimensional drawing	
Width	45 mm
Height	130 mm
Depth	119 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	10/100/1000 Mbps
Transmission physics	Copper
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status
No. of channels	3 (RJ45 ports)

Ethernet (SPE)	
Connection method	SPE
Note on the connection method	10BASE T1L
	PoDL Power Class 11
Transmission speed	10 Mbps (full duplex)
Transmission physics	Copper
Transmission length	1000 m (per segment)
Signal LEDs	Data receive, link status
No. of channels	8 (SPE ports)

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Product properties

Product type	Switch
Product family	Managed Switch 2000
Type	Book type
MTTF	185.12 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	122.03 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	25.3 Years (SN 29500 standard, temperature 70°C, operating cycle 100%)
Special properties	Extended temperature range, Single Pair Ethernet ports with PoDL
	Development process certified in accordance with IEC 62443-4-1
	Compatible with IEC 62443-4-2
Signal delay	≥ 1.9 µs (Store-and-Forward mode, 10/100/1000 Mbps, depending on the frame size)
Basic functions	Store-and-forward switch, complies with IEEE 802.3

Insulation characteristics

Protection class	III (VDE 0106)
Degree of pollution	2

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	Store-and-forward switch, complies with IEEE 802.3
PROFINET conformance class	Conformance Class B
PROFINET device function	PROFINET device
	Fast Startup
Filter functions	Quality of Service (8 priority classes)
	Class of Service
	DiffServ/DSCP
	Port-Priorisierung
	VLAN (up to 32 VLANs)
	IGMP Snooping/Querier (v1/v2)
	Auto-Query-Port
	Extended Multicast Filtering
IP parameterization	DHCP client
	DHCP Option 82 (Relay Agent)
	DHCP server (pool-based, port-based)

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	BootP
	DCP (Discovery and Configuration Protocol)
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)
	FRD (Fast Ring Detection)
	Large Tree Support
	LACP (Link Aggregation Control Protocol)
Status and diagnostic indicators	PROFINET S2 system redundancy
	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)
Additional functions	Transmission of MMS and GOOSE (IEC 61850-8-1)
	Transmission of Modbus/TCP
Time synchronization	SNTP (Simple Network Time Protocol)
Security functions	
Port security	MAC-based, RADIUS (IEEE 802.1X), MAC Authentication Bypass
Basic functions	Store-and-forward switch, complies with IEEE 802.3

Electrical properties

Power consumption	68 W ($V_{in} = \text{Max}$, $T_{amb} = \text{Max}$, $I_{PSE} = 8 \times I_{PoDLmax}$, 100% data traffic on all connected ports)
Local diagnostics	US1/2 Supply voltage US1, US2 Green LED
	FAIL Div. LED red
	LINK Link status Green LED
Maximum power dissipation for nominal condition	13 W ($V_{in} = \text{Max}$, $T_{amb} = \text{Max}$, $I_{PSE} = 8 \times I_{PoDLmax}$, 100% data traffic on all connected ports)
Test section	24 V supply, SPE, PoDL/functional ground 1000 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 (Simultaneous PoDL supply according to IEEE 802.3cg)
Supply voltage range	20 V DC ... 32 V DC
Power supply connection	via COMBICON, max. conductor cross-section 1.5 mm ²
Residual ripple	3.6 V _{PP} (within the permitted voltage range)
Max. current consumption	2.3 A ($U_S = \text{Min}$, $T_{amb} = \text{Max}$, SPE = 8x max. PoDL power, 100% data traffic on all connected ports)
Typical current consumption	1.03 A (at $U_S = \text{Nom}$, $T_{amb} = 25^\circ\text{C}$, SPE = 4x max. PoDL power, 100% data traffic at all connected ports)

Connection data

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Connection method	Push-in spring connection
Note on the connection method	Only use copper cables that are suitable for the permitted temperature range of -40°C ... 100°C (at T _{amb} = 70°C) as connecting cables for the power supply
Conductor cross-section, rigid	0.25 mm² ... 1.5 mm²
Conductor cross-section, flexible	0.25 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16
Stripping length	9 mm

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °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)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Air pressure (operation)	80 kPa ... 110 kPa up to 2000 m above mean sea level (Without derating)
Air pressure (storage/transport)	79 kPa ... 108 kPa up to 2000 m above mean sea level (Without derating)

Standards and regulations

Free from substances that could impair the application of coating	Yes
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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 B, I/O cables up to 2.2 kV
	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 61000-6-4 EN 61000-6-4 (interference) Class A
	EN 61000-6-4 EN 61000-6-4 (conducted interference) Class A
Noise immunity	EN 61000-6-2

Noise emission

Standards/regulations	EN 61000-6-4
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System properties

Functionality

Basic functions	Store-and-forward switch, complies with IEEE 802.3
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Signaling

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Status display	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)
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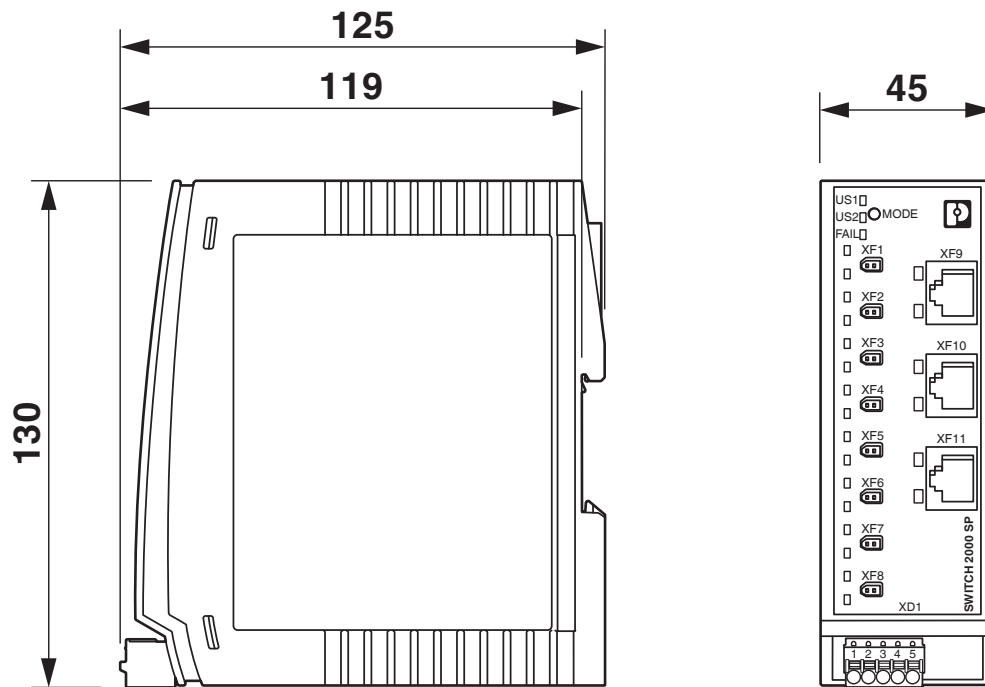


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Drawings

Dimensional drawing



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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 9.0	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	6(a)-I, 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)