

# Industrial Ethernet Switch - FL SWITCH 2316 - 2702909

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Managed Switch 2000, 16 RJ45 ports 10/100/1000 Mbps, degree of protection: IP20, PROFINET conformance, class B

## Your advantages

- ✓ Suitable for PROFINET and EtherNet/IP™ networks
- ✓ Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- ✓ Configuration memory
- ✓ RSTP
- ✓ DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- ✓ VLANs
- ✓ MRP (client and master)
- ✓ Web-based management, SNMP
- ✓ -40°C ... +70°C ambient temperature



## Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 pc  |
| GTIN         | <br>4 055626 398723 |
| GTIN         | 4055626398723   |

## Technical data

### Note

|                         |   |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

### Dimensions

|        |        |
|--------|--------|
| Width  | 85 mm  |
| Height | 130 mm |
| Depth  | 115 mm |

### Ambient conditions

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### 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)              |
| Air pressure (operation)                 | 53 kPa ... 108 kPa (5000 m above sea level) |
| Air pressure (storage/transport)         | 53 kPa ... 108 kPa (5000 m above sea level) |

### Interfaces

|                               |                                   |
|-------------------------------|-----------------------------------|
| Interface 1                   | Ethernet (RJ45)                   |
| No. of ports                  | 16 (RJ45 ports)                   |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission physics          | Copper                            |
| Transmission speed            | 10/100/1000 Mbps                  |
| Transmission length           | 100 m (per segment)               |
| Signal LEDs                   | Data receive, link status         |

### Function

|                      |  |
|----------------------|--|
| Basic functions      | Store-and-forward switch, complies with IEEE 802.3 |
| Management           | Web-based management (HTTP/HTTPS)                  |
|                      | SNMPv1/v2/v3                                       |
|                      | Command-line interface (Telnet, SSH)               |
| Diagnostic functions | RMON History                                       |
|                      | LLDP (Link Layer Discovery Protocol)               |
|                      | SNMP-Traps   |
|                      | N:1-Portmirroring                                  |
|                      | ACD (Address Conflict Detection)                   |
| Filter functions     | Quality of Service (8 priority classes)            |
|                      | Port-Priorisierung                                 |
|                      | VLAN (up to 32 VLANs)                              |
|                      | IGMP Snooping (32 groups)                          |
|                      | IGMP Query   |
|                      | Auto-Query-Port                                    |
|                      | Extended Multicast Filtering                       |
| MAC address table    | 8k   |
| Redundancy           | MRP (Media Redundancy Protocol)                    |
|                      | RSTP (Rapid Spanning Tree Protocol)                |
|                      | FRD (Fast Ring Detection)                          |
|                      | Large Tree Support                                 |
| IP parameterization  | DHCP-Client  |
|                      | DHCP Option 82 (Relay Agent)                       |
|                      | DHCP server (pool-based, port-based)               |

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### Function

|                                  |   |
|----------------------------------|---|
|                                  | BootP   |
| PROFINET conformance class       | Conformance-Class A   |
| Time synchronization             | SNTP (Simple Network Time Protocol)   |
| Status and diagnostic indicators | LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed) |
| Signal contact control voltage   | 24 V DC (typical)   |
| Signal contact control current   | 200 mA (1 minute, maximum)  |

### Network expansion parameters

|   |  |
|---|--|
| Cascading depth                         | Network, linear, and star structure: any |
| Maximum conductor length (twisted pair) | 100 m                                    |

### Supply voltage

|                             |  |
|-----------------------------|--|
| Supply voltage              | 24 V DC (redundant)  |
| Residual ripple             | 3.6 V <sub>PP</sub> (within the permitted voltage range)         |
| Supply voltage range        | 12 V DC ... 57 V DC  |
| Typical current consumption | 455 mA (at U <sub>S</sub> = 24 V DC)                             |
| Max. current consumption    | 1.8 A (At U <sub>S</sub> = 12 V DC and 70°C ambient temperature) |
| Current consumption         | 455 mA   |

### General

|                  |  |
|------------------|--|
| Mounting type    | DIN rail   |
| Type AX          | Book type  |
| Net weight       | 445 g  |
| Housing material | Polycarbonate fiber reinforced   |
| Note             | Support by phone or on-site (fee is charged)   |
| MTTF             | 379.84 Years (SN 29500 standard, temperature 25 °C, operating cycle 21 % (5 days a week, 8 hours a day))     |
|                  | 199.41 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day)) |
|                  | 27.52 Years (SN 29500 standard, temperature 55 °C, operating cycle 100 % (7 days a week, 24 hours a day))    |

### Connection data

|                                       |                           |
|---------------------------------------|---------------------------|
| Connection method                     | Push-in spring connection |
| Conductor cross section solid min.    | 0.25 mm <sup>2</sup>      |
| Conductor cross section solid max.    | 1.5 mm <sup>2</sup>       |
| Conductor cross section flexible min. | 0.25 mm <sup>2</sup>      |
| Conductor cross section flexible max. | 1.5 mm <sup>2</sup>       |
| Conductor cross section AWG min.      | 24                        |
| Conductor cross section AWG max.      | 16                        |
| Stripping length                      | 9 mm                      |

### Standards and Regulations

|                               |   |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
|-------------------------------|---|

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### Standards and Regulations

|   |  |
|---|--|
| Noise emission  | EN 61000-6-4   |
| Noise immunity  | EN 61000-6-2   |
| Vibration (storage/transport)                                     | 5g, 150 Hz, in acc. with IEC 60068-2-6               |
| Free from substances that could impair the application of coating | Yes  |
| Vibration (operation)   | in acc. with IEC 60068-2-6: 5g, 150 Hz               |
| UL, USA   | UL 60079-0, Ed.6 / UL 60079-7, Ed.5                  |
| UL, Canada  | CSA C22.2 NO.60079-0, Ed.3 / CSA C22.2 NO.60079-7:16 |

### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / EAC / cULus Listed

#### Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / cULus Listed

### Approval details

|           |  |   |               |
|-----------|--|---|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
|-----------|--|---|---------------|

|            |  |   |               |
|------------|--|---|---------------|
| cUL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
|------------|--|---|---------------|

|     |  |  |                     |
|-----|--|--|---------------------|
| EAC |  |  | RU C-DE.A*30.B01735 |
|-----|--|--|---------------------|

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|--------------|--|--|--|
| cULus Listed |  |  |  |
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