

Redundancy module - FL RED 2001E PRP 2LC - 2701864

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Ethernet redundancy module for redundant networks with the redundancy protocol PRP.

Product Description

The compact redundancy modules (RED) enable flexible and economical design of high-availability Ethernet networks in the field of energy and automation. With robustness according to IEC 61850-3 and IEEE 1613, their wide temperature range from -40°C to +70°C, and extensive power supply range from 18 to 58 V DC, they cover all the requirements of industrial and energy technology applications. Parallel redundancy according to IEC 62439 enables high availability networks without switch-over time to be established.

Product Features

- Meets the requirements of IEC 61850-3 and IEEE 1613
- Standardized PRP redundancy function according to IEC 62439-3
- Easy startup without configuration
- Parallel redundancy without switch-over times for maximum availability
- No loss of packets in the event of network failure
- Low power consumption during operation
- -40°C ... +70°C ambient temperature
- Alarm contact



Ethernet IEC 61850-3

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	580.0 g
Custom tariff number	85176200
Country of origin	Germany

Technical data

Note

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

Dimensions

Width	40 mm
Height	100 mm
Depth	109 mm

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-45 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Air pressure (operation)	70 kPa ... 106 kPa (3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (3000 m above sea level)

Interfaces

Interface 1	Ethernet (RJ45)
No. of ports	1 (RJ45 port)
Connection method	RJ45
Note on connection method	Auto negotiation and autocrossing
Transmission physics	Copper
Transmission speed	10/100 MBit/s
Transmission length	100 m (per segment)
Data flow control/protocols	IEC 61850-3, IEEE 1613
Interface 2	Ethernet FO
No. of ports	2 (LC multi-mode)
Connection method	LC
Transmission physics	multi-mode fiberglass
Transmission speed	100 MBit/s (full duplex)
Transmission length	2 km (per segment)

Function

Basic functions	Ethernet redundancy module for the Parallel Redundancy Protocol
Status and diagnostic indicators	LEDs: U_{S1} , U_{S2} (redundant voltage supply), link and activity per port

Supply voltage

Supply voltage	24 V DC (redundant)
	48 V DC (redundant)
Residual ripple	3.6 V _{PP} (within the permitted voltage range)
Supply voltage range	18 V DC ... 58 V DC
Typical current consumption	250 mA (at $U_S = 24$ V DC)

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Technical data

General

Mounting type	DIN rail
Type AX	Block design
Net weight	444 g

Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16

Standards and Regulations

Developed in acc. with standard	IEC 61000-6.2
Test standard	IEC 61000-4-2 (ESD)
Test result	Criterion A
Test standard	IEC 61000-4-3 (immunity to radiated interference)
Test result	Criterion A
Test standard	IEC 61000-4-4 (burst)
Test result	Criterion A
Test standard	IEC 61000-4-5 (surge)
Test result	Criterion A
Test standard	IEC 61000-4-6 (immunity to conducted interference)
Test result	Criterion A
Test standard	IEC 61000-4-8 (immunity to magnetic fields)
Test result	Criterion A
Test standard	EN 55022 (emitted interference)
Test result	Criterion B
Noise emission	EN 61000-6-4
Noise immunity	IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005

Classifications

eCl@ss

eCl@ss 4.0	24010504
eCl@ss 4.1	24010504
eCl@ss 5.0	19030101
eCl@ss 5.1	19030101

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Classifications

eCl@ss

eCl@ss 6.0	19170103
eCl@ss 7.0	19170190
eCl@ss 8.0	27069204

ETIM

ETIM 4.0	EC001478
ETIM 5.0	EC000515

UNSPSC

UNSPSC 6.01	20142601
UNSPSC 7.0901	20142601
UNSPSC 11	20142601
UNSPSC 12.01	20142601
UNSPSC 13.2	20142601

Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approvals submitted

Approval details

UL Listed 

cUL Listed 
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Approvals

cULus Listed 

Accessories

Accessories

Data cable preassembled

FO patch cable - FL MM PATCH 1,0 LC-SC - 2989161



Assembled FO cable, break out cable, multimode fiberglass 50/125 µm (OM2), connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

FO patch cable - FL MM PATCH 2,0 LC-SC - 2989268



Assembled FO cable, break out cable, multimode fiberglass 50/125 µm (OM2), connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 m

FO patch cable - FL MM PATCH 5,0 LC-SC - 2901800



Assembled FO cable, break out cable, multimode fiberglass 50/125 µm (OM2), connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 5 m

Patch cable

Patch cable - FL CAT5 PATCH 0,3 - 2832250



Patch cable, CAT5, assembled, 0.3 m

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Accessories

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1.0 m

Patch cable - FL CAT5 PATCH 1,5 - 2832221



Patch cable, CAT5, assembled, 1.5 m

Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2.0 m

Patch cable - FL CAT5 PATCH 3,0 - 2832292



Patch cable, CAT5, assembled, 3.0 m

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Accessories

Patch cable - FL CAT5 PATCH 5,0 - 2832580



Patch cable, CAT5, assembled, 5.0 m

Patch cable - FL CAT5 PATCH 7,5 - 2832616



Patch cable, CAT5, assembled, 7.5 m

Patch cable - FL CAT5 PATCH 10,0 - 2832629



Patch cable, CAT5, assembled, 10.0 m

Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

Software - IPASSIGN - 2701094



IPAssign is an easy to use tool for setting the IP address of devices which rely on BOOTP. No installation or administrative rights are required to use IPAssign.

This product is free and only available from the "Downloads" tab.

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