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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 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	1.5 mm²
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