Redundancy module - FL RED 2003E PRP - 2701863

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Ethernet redundancy module for redundant networks with the redundancy protocol PRP and three RJ45 connections.

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.

Your advantages

- ☑ 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

RoHS

IEC 61850-3

Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356867443
Weight per Piece (excluding packing)	417.000 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	Ethernet (RJ45)
No. of ports	3 (RJ45 ports)
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Copper
Transmission speed	10/100 Mbps
Transmission length	100 m (per segment)
Data flow control/protocols	IEC 61850-3, IEEE 1613

Function

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

Network expansion parameters

Maximum conductor length (twisted pair)	100 m

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)

General

Mounting type	DIN rail
Type AX	Block design
Net weight	417 g

Connection data

Conductor cross section solid min.	0.2 mm²

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Connection data

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

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 61000-6-4
Noise immunity	IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005

Environmental Product Compliance

	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Classifications

eCl@ss

eCl@ss 10.0.1	19170404
eCl@ss 4.0	24010500
eCl@ss 4.1	24010500
eCl@ss 5.0	19030100
eCl@ss 5.1	19030100
eCl@ss 6.0	19170100
eCl@ss 7.0	19170101
eCl@ss 8.0	19170101
eCl@ss 9.0	19170101

ETIM

ETIM 4.0	EC001478
ETIM 5.0	EC000515
ETIM 6.0	EC000515
ETIM 7.0	EC000515

UNSPSC

UNSPSC 6.01	20142601
UNSPSC 7.0901	20142601
UNSPSC 11	20142601
UNSPSC 12.01	20142601
UNSPSC 13.2	43201404
UNSPSC 18.0	43201404

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Classifications

UNSPSC

UNSPSC 19.0	43201404
UNSPSC 20.0	43201404
UNSPSC 21.0	43201404

Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

cULus Listed		

Accessories

Accessories

Data cable preassembled

Patch cable - NBC-R4AC-R4AC-IE8A/.../... - 1411854

Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6$_A$, cable outlet: straight

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Accessories

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/2,0 - 1408360

Patch cable, CAT6$_A$, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/3,0 - 1408365

Patch cable, CAT6$_A$, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

Patch cable - NBC-R4AC/1,0-93B/R4AC - 1408968

PROFINET patch cable, shielded, star-quad, 22 AWG stranded (7-wire), green, straight RJ45 male connector/IP20 to straight RJ45 male connector/IP20, length: 1.0 m

Patch cable - NBC-R4AC/2,0-93B/R4AC - 1408969

PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20, to straight RJ45 plug/IP20, length: 2 m

Patch cable - NBC-R4AC/5,0-93B/R4AC - 1408970

PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20 to straight RJ45 plug/IP20, length: 5 m

End block

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Accessories

End clamp - E/NS 35 N - 0800886

End clamp, width: 9.5 mm, color: gray

Patch cable

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 m

Patch cable - FL CAT5 PATCH 2,0 - 2832289

Patch cable, CAT5, assembled, 2 m

Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991

Dust protection caps for RJ45 socket

Safety locking

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Accessories

Port Guard Security Element - FL SEC PAC 4TX - 2832865

Layer1 security elements for four RJ45 network connections for use with patch boxes and panels