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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.

#### **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)	600.0 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
Othization restriction	area



## 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	3 (RJ45 ports)
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

#### Function

Basic functions	Ethernet redundancy module for the Parallel Redundancy Protocol
Status and diagnostic indicators	LEDs: U <sub>S1</sub> , U <sub>S2</sub> (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 <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	18 V DC 58 V DC
Typical current consumption	250 mA (at U <sub>S</sub> = 24 V DC)

#### General

Mounting type	DIN rail
Type AX	Block design



## Technical data

## General

Net weight	417 g

#### Connection data

Conductor cross section solid min.	0.2 mm <sup>2</sup>
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

1
IEC 61000-6.2
IEC 61000-4-2 (ESD)
Criterion A
IEC 61000-4-3 (immunity to radiated interference)
Criterion A
IEC 61000-4-4 (burst)
Criterion A
IEC 61000-4-5 (surge)
Criterion A
IEC 61000-4-6 (immunity to conducted interference)
Criterion A
IEC 61000-4-8 (immunity to magnetic fields)
Criterion A
EN 55022 (emitted interference)
Criterion B
EN 61000-6-4
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
eCl@ss 6.0	19170103
eCl@ss 7.0	19170190



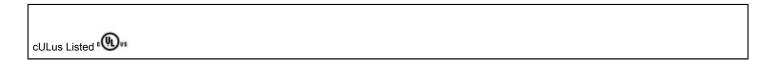
## Classifications

cUL Listed •

eciwss		
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 (I)		



## Approvals



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