

# Technical Information

## RNF22

Power and error message module 24 V DC



Power and error message module 24 V DC with relay output

### Application

- Power and error message module, supply current up to 3.75 A
- Optional single or redundant supply of the 24 V<sub>DC</sub> supply voltage to the DIN rail bus connector
- Integrated error evaluation: power supply failure or fuse error
- Group error evaluation of connected NAMUR isolating amplifiers
- Activation/deactivation of group error detection via DIP switch
- Relay output for error message
- For ambient temperatures -20 to 60 °C (-4 to 140 °F)

### Your benefits

- Compact housing width: 17.5 mm (0.69 in)
- Installation in Ex zone 2 permitted in the option with Ex approval
- Simple and fast wiring with pluggable terminals  
Protected against reverse polarity

## Table of contents

<b>Function and system design</b> .....	<b>3</b>
Product description .....	3
Dependability .....	3
<b>Input</b> .....	<b>3</b>
Input data .....	3
<b>Output</b> .....	<b>3</b>
Output .....	3
Relay output data .....	3
Ex connection data .....	3
<b>Power supply</b> .....	<b>4</b>
Quick wiring guide .....	4
Terminal assignment .....	4
Performance characteristics .....	4
Terminals .....	4
<b>Mounting</b> .....	<b>5</b>
Mounting location .....	5
Installing a DIN rail device .....	5
<b>Environment</b> .....	<b>5</b>
Important ambient conditions .....	5
Electromagnetic compatibility (EMC) .....	5
<b>Mechanical construction</b> .....	<b>6</b>
Design, dimensions .....	6
Weight .....	6
Color .....	6
Materials .....	6
<b>Display and operating elements</b> .....	<b>7</b>
Local operation .....	7
<b>Ordering information</b> .....	<b>7</b>
<b>Accessories</b> .....	<b>8</b>
Device-specific accessories .....	8
Service-specific accessories .....	8
<b>Certificates and approvals</b> .....	<b>8</b>
CE mark .....	8
<b>Documentation</b> .....	<b>8</b>
Brief Operating Instructions (KA) .....	9
Operating Instructions (BA) .....	9
Safety Instructions (XA) .....	9
Supplementary device-dependent documentation .....	9

## Function and system design

### Product description

### Product design

#### *Power and error message module*

- The RNF22 power and error message module is used to provide the supply voltage to the DIN rail bus connector. Via a relay contact and a flashing LED, the integrated error analysis function signals a power supply failure/fuse error and a group error of the RLN22 Namur modules that are connected via the DIN rail bus connectors.
- The device is optionally available with Ex approvals for installation and operation in the hazardous area (Zone 2) and hazardous atmospheres formed by combustible dust (Zone 22). Separate Ex documentation (XA) is supplied with these devices. Compliance with the installation instructions and connection data in this documentation is mandatory!

### Dependability

We only provide a warranty if the device is installed and used as described in the Operating Instructions.

## Input

### Input data

Input signal	19.2 to 30 V <sub>DC</sub>
Redundant power feed-in	Decoupled via diodes
Protection against reverse polarity and overvoltage	Yes

## Output

### Output

Maximum output current (supply current to the DIN rail bus connector )	I <sub>OUT</sub> = 3.75 A
Output voltage for I <sub>OUT</sub>	U <sub>IN</sub> -0.8 V

### Relay output data

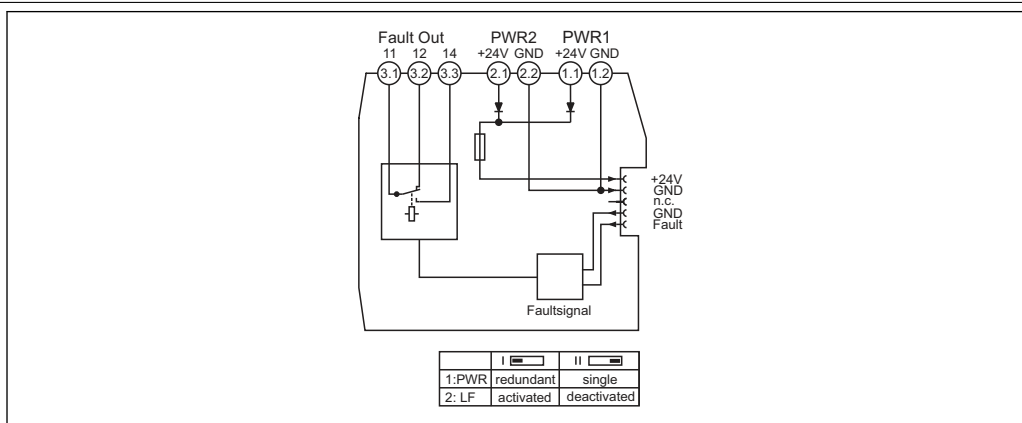
Contact design	1 changeover
Contact material	Gold (Au)
Maximum switching voltage	50 V <sub>AC</sub> (2 A) / 30 V <sub>DC</sub> (2 A) / 50 V <sub>DC</sub> (0.22 A)

### Ex connection data

See associated XA Safety Instructions

## Power supply

### Quick wiring guide



A0042592

1 RNF22 terminal assignment: power and error message module

### Terminal assignment

#### Special connection instructions

- Disconnecting units and auxiliary circuit protective systems with suitable AC or DC values must be provided in the building installation.
- A switch/power circuit breaker must be provided close to the device and clearly marked as a disconnecting unit for this device.
- An overcurrent protection unit ( $I \leq 16 \text{ A}$ ) must be provided in the installation.
- The voltages applied at the input, output and relay output are all extra-low voltages (ELV).

#### Terminal connection for supply voltage

The power can be supplied via terminals 1.1 and 1.2 for PWR1 or 2.1 and 2.2 for PWR2.

#### NOTICE

**The tapping of energy from the DIN rail bus connector for further distribution is not permitted.**

- The supply voltage must never be connected directly to the DIN rail bus connector!

#### Supply to the DIN rail bus connector via terminals

Devices installed side by side can be connected using the DIN rail bus connector supplied with the device. If used, make sure the module and DIN rail bus connector are mounted in the correct direction.

### Performance characteristics

#### Power supply

Supply voltage	24 V <sub>DC</sub> (-20% / +25%)
Maximum current consumption	3.75 A
Protection against reverse polarity and overvoltage	Yes, decoupled via diodes
Fuse (replaceable)	5 A, slow-blow 250 V <sub>AC</sub>

### Terminals

Terminal design	Cable design	Cable cross-section
<b>Screw terminals</b> Tightening torque: minimum 0.5 Nm/maximum 0.6 Nm	Rigid or flexible (Stripping length = 7 mm (0.28 in))	0.2 to 2.5 mm <sup>2</sup> (24 to 14 AWG)
	Flexible with wire end ferrules (with or without plastic ferrule)	0.25 to 2.5 mm <sup>2</sup> (24 to 14 AWG)
<b>Push-in spring terminals</b>	Rigid or flexible (Stripping length = 10 mm (0.39 in))	0.2 to 2.5 mm <sup>2</sup> (24 to 14 AWG)
	Flexible with wire end ferrules (with or without plastic ferrule)	0.25 to 2.5 mm <sup>2</sup> (24 to 14 AWG)

## Mounting

### Mounting location

The device is designed for installation on 35 mm (1.38 in) DIN rails in accordance with IEC 60715 (TH35).

The device's housing provides basic insulation from neighboring devices for 300 Veff. If several devices are installed side by side, this must be taken into consideration and additional insulation must be provided if necessary. If the adjacent device also offers basic insulation, no additional insulation is required.

#### NOTICE

- ▶ When using in hazardous areas, the limit values of the certificates and approvals must be observed.

### Installing a DIN rail device

The device can be installed in any position (horizontal or vertical) on the DIN rail without lateral clearance from neighboring devices. No tools are required for installation. The use of end brackets (type "WEW 35/1" or equivalent) on the DIN rail is recommended to fix the device.

## Environment

### Important ambient conditions

Ambient temperature range	-20 to 60 °C (-4 to 140 °F)	Storage temperature	-40 to 80 °C (-40 to 176 °F)
Degree of protection	IP 20	Overvoltage category	II
Pollution degree	2	Humidity	5 to 95 % No condensation
Altitude	≤ 2 000 m (6 562 ft)		

### Electromagnetic compatibility (EMC)

Interference immunity as per EN 61000-6-2

Interference emission as per EN 61000-6-4

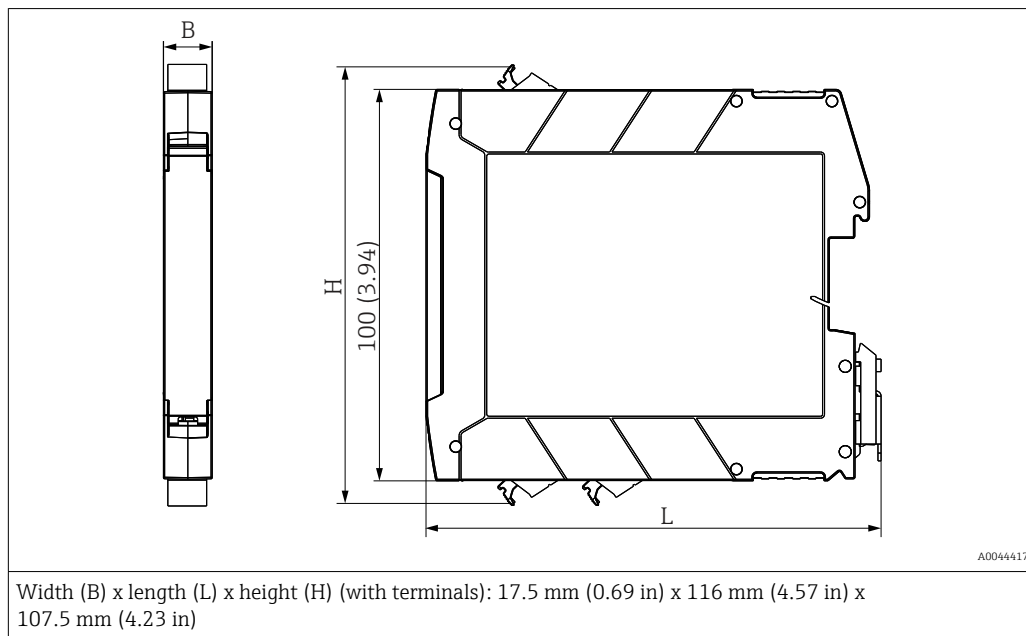
General requirements: EN 61326-1

## Mechanical construction

### Design, dimensions

Dimensions in mm (in)

*Terminal housing for mounting on DIN rail*



### Weight

Device with terminals (values rounded up):

Approx. 120 g (4.23 oz)

### Color

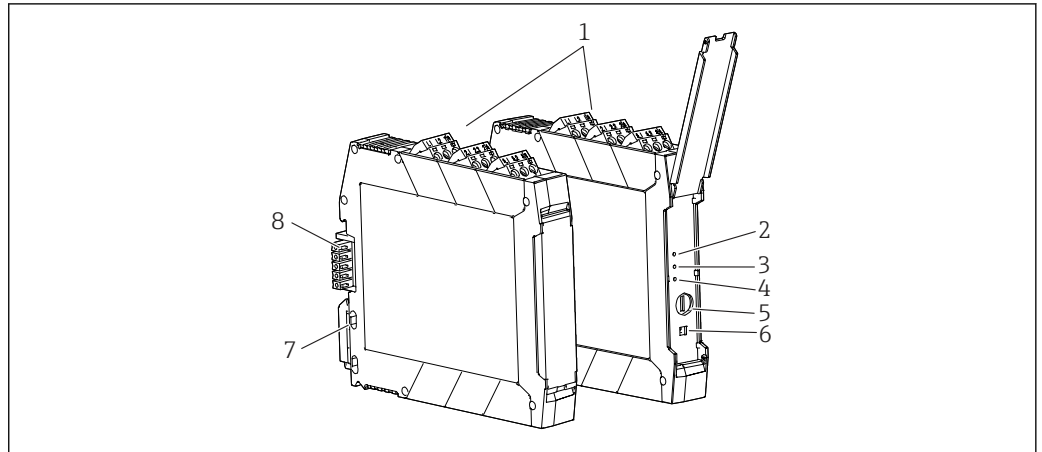
Light gray

### Materials

All the materials used are RoHS-compliant.

Housing: polycarbonate (PC); flammability rating according to UL94: V-0

## Display and operating elements



A0042653

### 2 Display and operating elements

- 1 Plug-in screw or push-in terminal
- 2 Green LED "On1" power supply 1
- 3 Green LED "On2" power supply 2
- 4 Red LED "Err" error indication
- 5 Fuse
- 6 DIP switch
- 7 DIN rail clip for DIN rail mounting
- 8 DIN rail bus connector

### Local operation

#### Hardware settings / configuration

**i** Any device settings using the DIP switch must be made when the device is de-energized.

All DIP switches are set to the "II" position when the device is delivered from the factory.

The following settings are made via the DIP switches:

- Switch off error message when RNF22 Feed-In Module is only supplied by one power supply system (DIP 1)
- Switch on/off group error detection for connected devices (DIP 2)

DIP	I	II (factory setting)
1	Redundant operation	One power supply system
2	Group error message on	Group error message off

## Ordering information

Detailed ordering information is available from the nearest sales organization [www.addresses.endress.com](http://www.addresses.endress.com) or in the Product Configurator under [www.endress.com](http://www.endress.com):

1. Select the product using the filters and search field.
2. Open the product page.

The **Configuration** button opens the Product Configurator.

### **i** Product Configurator - the tool for individual product configuration

- Up-to-the-minute configuration data
- Depending on the device: Direct input of measuring point-specific information such as measuring range or operating language
- Automatic verification of exclusion criteria
- Automatic creation of the order code and its breakdown in PDF or Excel output format
- Ability to order directly in the Endress+Hauser Online Shop

## Accessories

Various accessories, which can be ordered with the device or subsequently from Endress+Hauser, are available for the device. Detailed information on the order code in question is available from your local Endress+Hauser sales center or on the product page of the Endress+Hauser website: [www.endress.com](http://www.endress.com).

Device-specific accessories	Type	Order code
	DIN rail bus connector 17.5 mm (x 1)	71505352
	System power supply	RNB22

Service-specific accessories	Accessories	Description
	Configurator	<p>Product Configurator - the tool for individual product configuration</p> <ul style="list-style-type: none"> <li>▪ Up-to-the-minute configuration data</li> <li>▪ Depending on the device: Direct input of measuring point-specific information such as measuring range or operating language</li> <li>▪ Automatic verification of exclusion criteria</li> <li>▪ Automatic creation of the order code and its breakdown in PDF or Excel output format</li> <li>▪ Ability to order directly in the Endress+Hauser Online Shop</li> </ul> <p>The Configurator is available on the Endress+Hauser website at: <a href="http://www.endress.com">www.endress.com</a>            -&gt; Click "Corporate" -&gt; Select your country -&gt; Click "Products" -&gt; Select the product using the filters and search field -&gt; Open product page -&gt; The "Configure" button to the right of the product image opens the Product Configurator.</p>
	W@M	<p>Life cycle management for your plant</p> <p>W@M offers assistance with a wide range of software applications over the entire process: from planning and procurement to the installation, commissioning and operation of the measuring devices. All the relevant information is available for every measuring device over the entire life cycle, such as the device status, device-specific documentation, spare parts etc.</p> <p>The application already contains the data of your Endress+Hauser device. Endress+Hauser also takes care of maintaining and updating the data records.</p> <p>W@M is available:            Via the Internet: <a href="http://www.endress.com/lifecyclemanagement">www.endress.com/lifecyclemanagement</a></p>


## Certificates and approvals

 For the approvals available, see the Configurator on the specific product page: [www.endress.com](http://www.endress.com) → (search for device name)

**CE mark** The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EC directives. The manufacturer confirms successful testing of the product by affixing to it the CE-mark.

## Documentation

The following document types are available in the Downloads section of the Endress+Hauser website ([www.endress.com/downloads](http://www.endress.com/downloads)):

 For an overview of the scope of the associated Technical Documentation, refer to the following:

- *W@M Device Viewer* ([www.endress.com/deviceviewer](http://www.endress.com/deviceviewer)): Enter the serial number from the nameplate
- *Endress+Hauser Operations App*: Enter the serial number from the nameplate or scan the matrix code on the nameplate



**Brief Operating Instructions (KA)****Guide that takes you quickly to the 1st measured value**

The Brief Operating Instructions contain all the essential information from incoming acceptance to initial commissioning.

**Operating Instructions (BA)****Your reference guide**

These Operating Instructions contain all the information that is required in various phases of the life cycle of the device: from product identification, incoming acceptance and storage, to mounting, connection, operation and commissioning through to troubleshooting, maintenance and disposal.

**Safety Instructions (XA)**

Depending on the approval, the following Safety Instructions (XA) are supplied with the device. They are an integral part of the Operating Instructions.



The nameplate indicates the Safety Instructions (XA) that are relevant to the device.

**Supplementary device-dependent documentation**

Additional documents are supplied depending on the device version ordered: Always comply strictly with the instructions in the supplementary documentation. The supplementary documentation is an integral part of the device documentation.

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[www.addresses.endress.com](http://www.addresses.endress.com)

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