

# Technical Information

## Easy Analog RNB130

### Primary switched-mode power supply



#### Your benefits

- Small housing, 35 mm (1.38") width
- High availability
- Wide range input - can be used world-wide
- Power reserve (Power Boost)
- Power supply without wiring:  
Supply via DIN rail bus connector

#### Application

- Voltage supply for Easy Analog family units
- Space saving DIN rail mounting as per IEC 60715
- Voltage supply for sensors

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## Function and system design

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### Measuring principle

Primary switched-mode power supply  
Input: 100-240 V AC  
Output: 24 V DC connection, max. 30 V in the event of a fault  
Connection to monophased a.c. networks or to two phase conductors of three-phase supply networks (TN-, TT- or IT-networks as per VDE 0100 T 300/IEC 364-3) with 100-240 V AC nominal voltage

## Output

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### Output data

Nominal output voltage $U_N$	24 V DC
Tolerance	$\pm 1\%$
Output current during convection cooling and nominal values POWER BOOST $I_{BOOST}$ -25 to +40 °C (-13 to +104 °F) Nennausgangsstrom $I_N$ -25 to +50 °C (-13 to 122 °F)	2 A ( $U_{OUT} = 24$ V) 1,5 A ( $U_{OUT} = 24$ V)
Derating	2.5% per K from +60 °C (1.4% per °F from +140 °F)
Short-circuit current limit	7 A
Startup of capacitive loads	unrestricted
System deviation on Static load change 10-90% Dynamic load change 10-90% Input voltage change $\pm 10\%$	typ. < 1% typ. < 3% typ. < 0.1%
Maximum power dissipation no load / nominal load	2.5 W / 12 W
Level of efficiency (typical)	> 84% (at 230 V AC and at nominal values)
Response time $U_{OUT}$ (10 - 90%)	typ. < 2 ms
Residual ripple/switching peaks (20 MHz)	< 100 mV <sub>SS</sub> (at nominal values)
Can be connected in parallel	To increase redundancy and power
Internal surge protection	Yes, limited to 30 V DC, approximately
Resistance to return supply	30 V DC

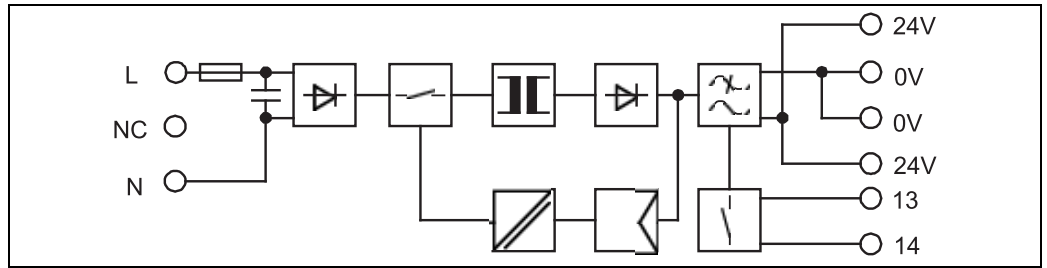
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### Signal Output Data

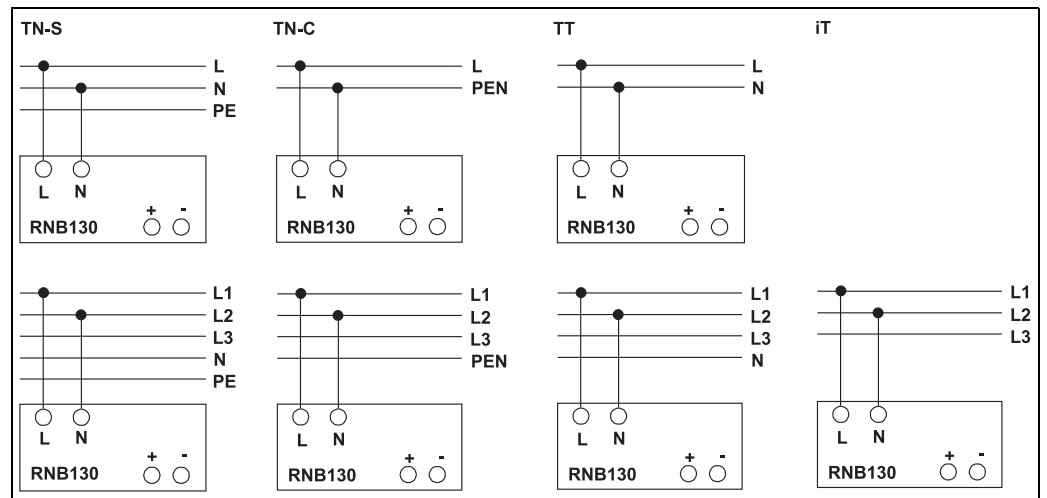
DC OK (electrically isolated)  $U_{OUT} > 21.5$  V DC  $\hat{=}$  contact closed: max. 30 V AC/DC; max. 1 A  
LED ( $U_{OUT} > 21.5$  V DC  $\hat{=}$  green LED permanently on)

# Power supply

## Electrical connection



Terminal assignment RNB130



Types of supply networks 100-240 V AC

<b>Supply voltage</b>	Nominal input voltage: 100 - 240 V AC (wide-range voltage input) Input voltage range: 85 - 264 V AC Frequency: 45 - 65 Hz
<b>Current consumption (for nominal values)</b>	approximately 0.75 A (120 V AC)/0.45 A (230 V AC)
<b>Inrush current limiting/<math>I^2t</math> (+25 °C / 77 °F)</b>	typ. < 15 A / < 0.6 A <sup>2</sup> s
<b>Mains buffering for a nominal load (typical)</b>	> 20 ms (120 V AC) / > 110 ms (230 V AC)
<b>Switch-on time after applying the mains voltage</b>	< 0.5 s
<b>Transient surge protection</b>	Varistor
<b>Input fuse, internal</b>	T3.15 AL250V (3.15 A) (device protection)
<b>Recommended fuse</b>	6 A, 10 A circuit breakers, characteristic B (IEC 60 898)

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## Installation

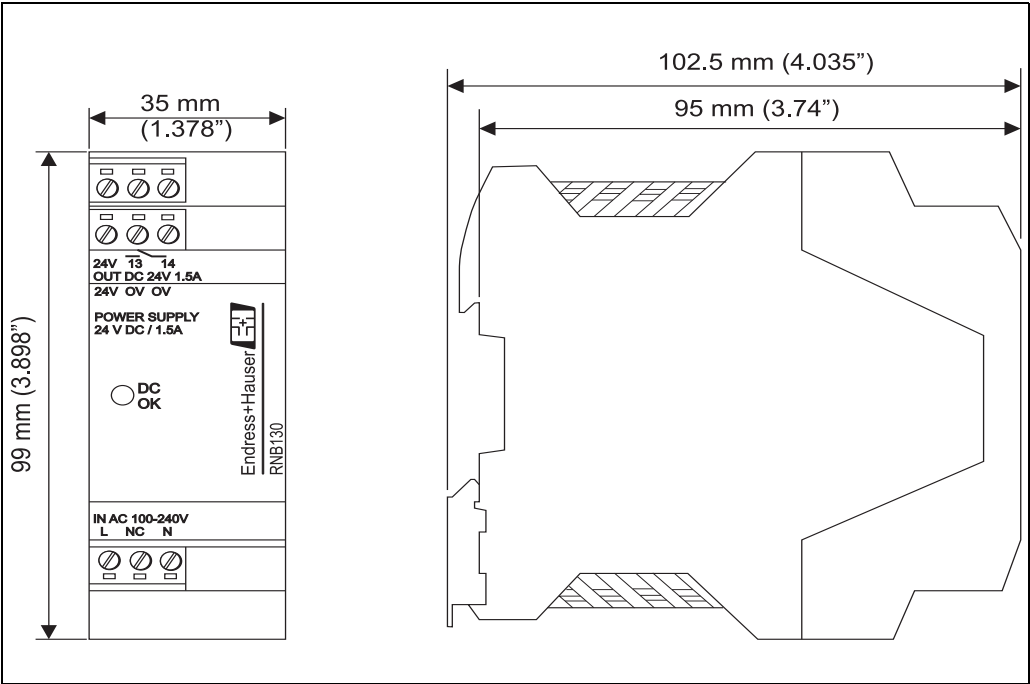
<b>Installation notes</b>	Horizontal installation (input terminals at bottom of unit) to NS 35 DIN rail as per IEC 60715.  Can be mounted with spacing: <ul style="list-style-type: none"><li>– vertical <math>\geq 5</math> cm (2")</li><li>– horizontal 0 cm (0")</li></ul>
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## Environment

<b>Ambient temperature limits</b>	-25 °C to +70 °C (-13 to +158 °F) (> +60 °C / 140 °F Derating)
<b>Storage temperature</b>	-40 °C to +85 °C (-40 to 185 °F)
<b>Humidity</b>	up to 95% at +25 °C (77 °F), no condensation
<b>Climate class</b>	3K3 (as per IEC 60721)
<b>Degree of protection</b>	IP20
<b>Protection class</b>	II (in closed control cabinets)
<b>Shock resistance</b>	as per IEC 68-2-27: 30 g, all space directions
<b>Vibration resistance</b>	as per IEC 68-2-6: < 15 Hz, amplitude $\pm 2.5$ mm / 15 - 150 Hz, 2.3 g
<b>Electromagnetic compatibility (EMC)</b>	CE conformity EMC to all relevant requirements of the IEC/EN 61000-6-series. For details, refer to the Declaration of Conformity. Maximum fluctuations during EMC-tests: < 1% of measuring span. Interference immunity to IEC/EN 61000-6-2, requirements for industrial areas Interference emission to IEC/EN 61000-6-4, electrical equipment Class B

# Mechanical construction

## Design, dimensions



Dimensions RNB130

**Weight** approximately 0.25 kg

**Material** Housing: Polyamide PA

## Connection data

Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	26
Conductor cross section AWG/kcmil max.	12
Stripping length	12 mm (0.47")
Screw thread	M3
Connection type	Screw connection

# Human interface

**Display elements** DC OK LED, green

# Certificates and approvals

**CE mark** The device complies with the legal requirements of the EC directives. Endress+Hauser confirms that the device has been successfully tested by affixing to it the CE mark.

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## Other standards and guidelines

IEC 60529: Degrees of protection through housing (IP code)

IEC 61010: Protection measures for electrical equipment for measurement, control, regulation and laboratory procedures

EN 61000-6-2: Generic Standards - Immunity for Industrial Environments

EN 61000-6-4: Generic Standards - Emission standard for industrial environments

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## Ordering information

Detailed ordering information is available from the following sources:

- In the Product Configurator on the Endress+Hauser website: [www.endress.com](http://www.endress.com) -> Click "Corporate" -> Select your country -> Click "Products" -> Select the product using the filters and search field -> Open product page -> The "Configure" button to the right of the product image opens the Product Configurator.
- From your Endress+Hauser Sales Center: [www.addresses.endress.com](http://www.addresses.endress.com)



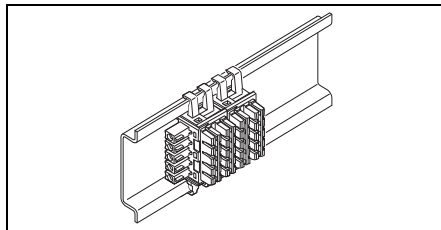
### Product Configurator - the tool for individual product configuration

- Up-to-the configuration
- 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

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## Accessories

### DIN rail bus connector (order no. 51009864)



Mounting of the DIN rail bus connector

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## Documentation

- Technical Information RNB110, RNB111 and RNB112 (TI116R/09/en)
- Technical Information RNB127 and RNB128 (TI117R/09/en)
- Technical Information RNB150 (TI118R/09/en)
- Technical Information RNB140 (TI119R/09/en)
- Operating Instructions RNB130 (BA210R/09/b4)
- Brochure "System Components" (FA016K/09/en)

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

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