

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

Function and system design

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

Output data

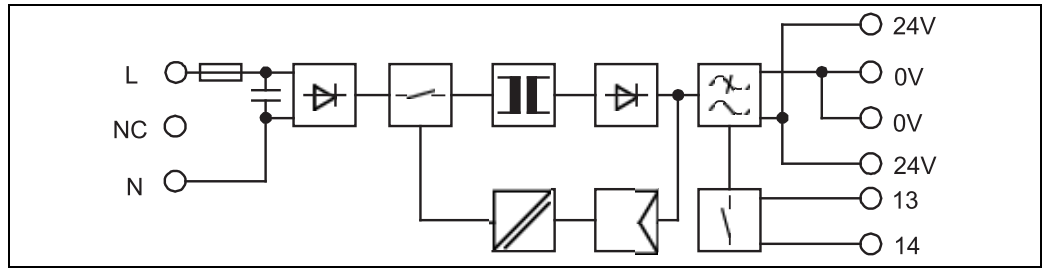
Nominal output voltage U_N	24 V DC
Tolerance	$\pm 1\%$
Output current during convection cooling and nominal values POWER BOOST I_{BOOST} -25 to +40 °C (-13 to +104 °F) Nennausgangsstrom I_N -25 to +50 °C (-13 to 122 °F)	2 A ($U_{OUT} = 24$ V) 1,5 A ($U_{OUT} = 24$ V)
Derating	2.5% per K from +60 °C (1.4% 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 _{SS} (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

Signal Output Data

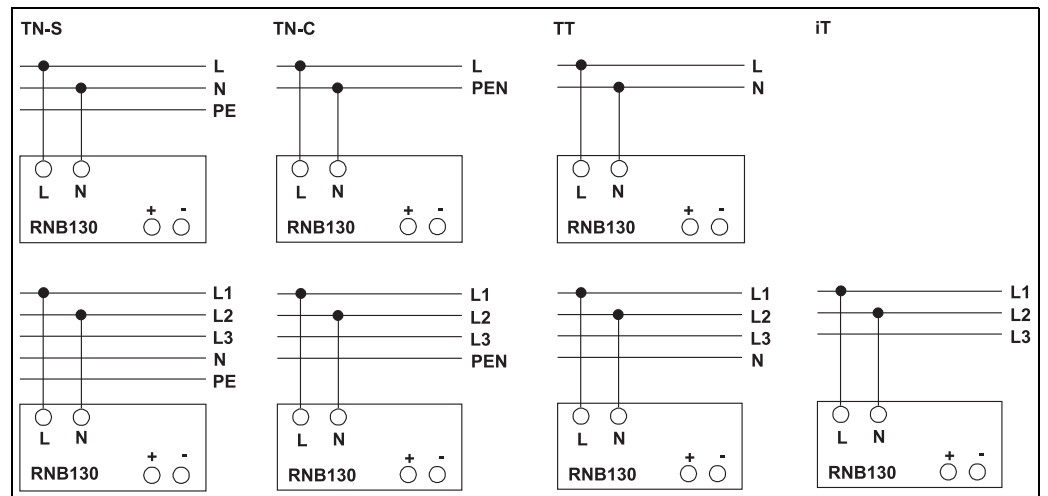
DC OK (electrically isolated) $U_{OUT} > 21.5$ V DC $\hat{=}$ contact closed: max. 30 V AC/DC; max. 1 A
LED ($U_{OUT} > 21.5$ V DC $\hat{=}$ green LED permanently on)

Power supply

Electrical connection



Terminal assignment RNB130



Types of supply networks 100-240 V AC

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

Installation

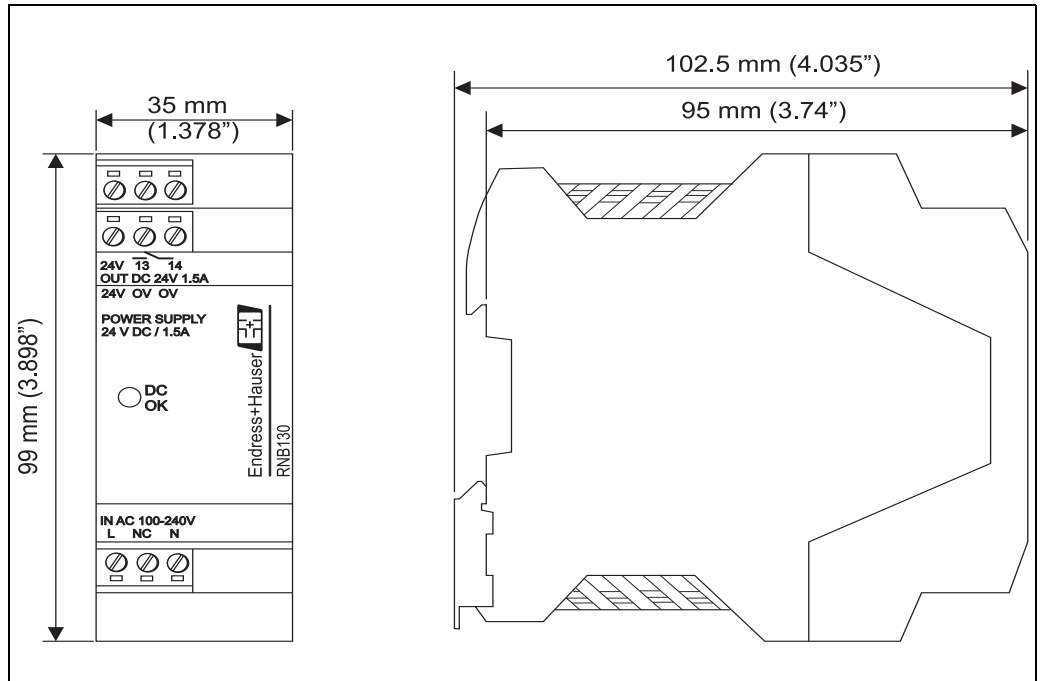
Installation notes	Horizontal installation (input terminals at bottom of unit) to NS 35 DIN rail as per IEC 60715. Can be mounted with spacing: <ul style="list-style-type: none">- vertical ≥ 5 cm (2")- horizontal 0 cm (0")
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Environment

Ambient temperature limits	-25 °C to +70 °C (-13 to +158 °F) (> +60 °C / 140 °F Derating)
Storage temperature	-40 °C to +85 °C (-40 to 185 °F)
Humidity	up to 95% at +25 °C (77 °F), no condensation
Climate class	3K3 (as per IEC 60721)
Degree of protection	IP20
Protection class	II (in closed control cabinets)
Shock resistance	as per IEC 68-2-27: 30 g, all space directions
Vibration resistance	as per IEC 68-2-6: < 15 Hz, amplitude ± 2.5 mm / 15 - 150 Hz, 2.3 g
Electromagnetic compatibility (EMC)	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 ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
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.

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
Ordering information

Ordering information

Detailed ordering information is available from the following sources:

- In the Product Configurator on the Endress+Hauser website: 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

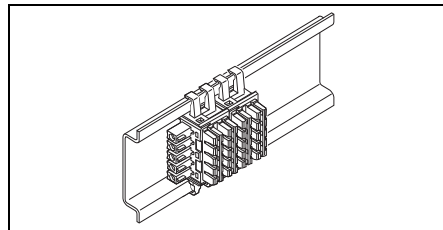


Product Configurator - the tool for individual product configuration

- 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

Accessories

DIN rail bus connector (order no. 51009864)



Mounting of the DIN rail bus connector

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)

www.addresses.endress.com
