

Loop power supply with optional HART® diagnosis RN221N



R 1936.-
11-35 pcs.

 Complete product information:
www.e-direct.endress.com/rn221n

- Loop power supply, wide range power supply, flexible power source
- Bi-directional HART® transmission with SMART transmitters
- Optional HART® diagnosis

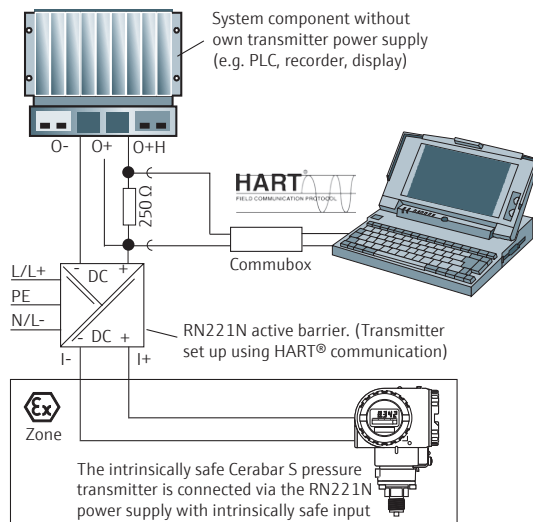
i Specs at a glance:

- **Approval:**
ATEX II (1) GD [EEEx ia] IIC
- **HART® signal:**
Bidirectional
- **Diagnosis:**
Via HART® status bit or NE43
- **Relay output:**
Optional for HART® diagnostics

Application The RN221N power supply is used for the galvanic isolation of 4 to 20 mA signal current circuits. It can also be applied for the intrinsically safe operation of 2-wire transmitters and to remove earth loops. The unit offers a sensor monitoring function as an option which monitors the HART® signal or the current loop for faults. The status of the measuring point is reported over an alarm relay.

Function The RN221N active barrier supplies sensors with auxiliary energy and transmits the measuring signal to the output. The optional, intrinsically safe input circuit, conforms to the requirements for ignition classification ATEX II (1) GD.

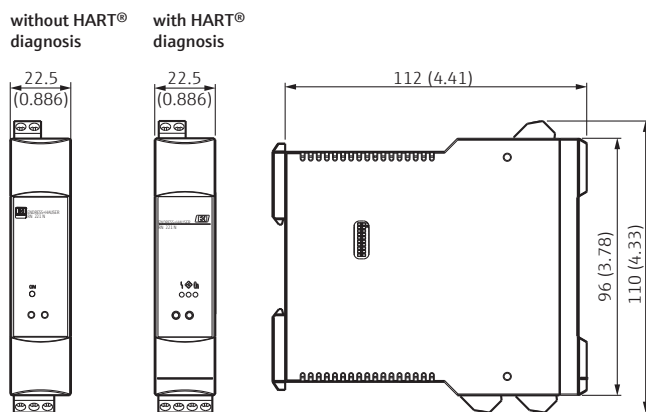
Application example



Technical data

Input		Performance characteristics	
Number of inputs	1	Linearity	≤0.15 %
Power requirement	16.7 V ±0.2 V (at I = 20 mA)	Load influence	≤0.1 %
Open circuit voltage	26 V ±5 %	Operating conditions	
Short circuit current	≤40 mA	Ambient temperature	-20 to +50 °C (-4 to 122 °F)
Internal resistance	328 Ω	Storage temperature	-20 to +70 °C (-4 to 158 °F)
Over range	10 %	Climatic class	To EN 60 654-1 Class B2
Reference conditions	Calibration temperature at 25 °C (77 °F)	Ingress protection	IP 20
Ambient temperature influence	≤0.1 % in range 0 to 50 °C (32 to 122 °F) ≤0.2 %/10 K in range -20 to 0 °C (-4 to 32 °F)	EMC	Immunity to EN 61326, Class A
Intrinsically safe input option		Mechanical construction	
Open circuit voltage	27.3 V	Dimens. (W×H×D)	22.5 × 96 × 112 (0.89" × 3.78" × 4.33") for top hat DIN rail to EN 50 022-35
Short circuit current	87.6 mA	Housing	PC/ABS, UL 940
Power consumption	597 mW	Terminals	Keyed plug-on screw terminals, core size 2.5 mm ² solid, or strands with ferrules; front mounted communication socket for 2 mm (0.79") jack plugs
Capacitance	86 nF [EEx ia] IIC 683 nF [EEx ia] IIB, [EEx ia] IIA	Display and operating level	
Inductance	5.2 mH [EEx ia] IIC 18.9 mH [EEx ia] IIB, [EEx ia] IIA	Display elements	LED yellow in series to current output: Illuminates, when output current circuit is closed
Output		LED current	> 2 mA
Number	1	Remote communication	HART® communication: Communication signals are transmitted bi-directionally. Communication resistance: Resistance for HART® communication 250 Ω built in. Please take note of voltage drop!
Open circuit voltage	24 V ± 10 %	Approvals	
Over range	10 %	Ex approval	ATEX II (1) GD [EEx ia] IIC
Load (impedance)	0 to 700 Ω (without communication resistance)		
Galvanic isolation	To all other current circuits		
Relay output	Optional 250 V AC/30 V DC, 3-A normally open/normally closed		
Power supply			
Power supply	20 to 250 V DC/AC, 50/60 Hz		
Power consumption	Without HART® diagnosis max. 2.5 W with HART® diagnosis max. 5.0 W		
Current requirement	(Input current limitation) $I_{max} / I_n < 15$		
Electrical safety	To EN 61 010-1, protection Class I, over voltage category II, over current protection at installation (fuse) ≤10 A		

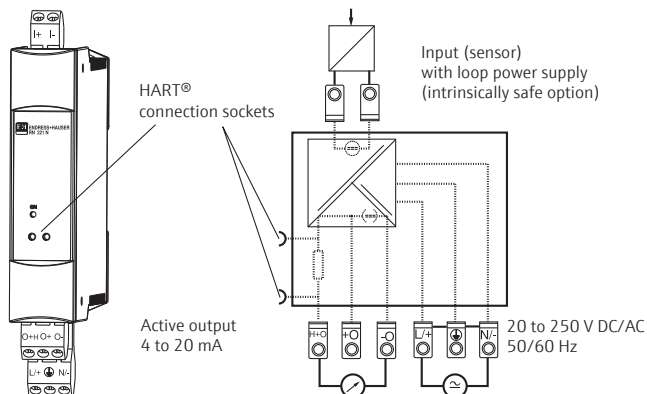
Dimensions in mm (inches)



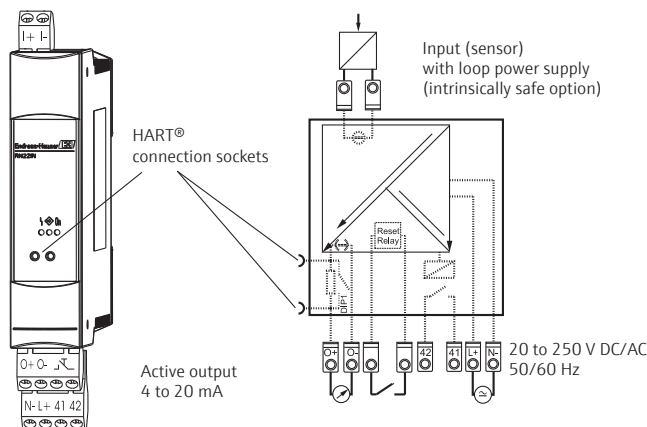
Installation according to instruction manual.

Electrical connection

RN221N without HART® diagnosis



RN221N with HART® diagnosis



Price table

Active barrier RN221N		Order no.	Price/pcs. in R		
Power Supply; Diagnostics	Approval		1 to 3	4 to 10	11 to 35
Standard	Non-hazardous area	RN221N-A1	2200.-	2046.-	1936.-
	ATEX II (1)GD (Ex ia) IIC	RN221N-B1	2363.-	2197.-	2079.-
HART® status monitoring and relay	Non-hazardous area	RN221N-A3	3501.-	3256.-	3081.-
	ATEX II (1)GD (Ex ia) IIC	RN221N-B3	3663.-	3407.-	3224.-

Accessories	Order no.	Price/pcs. in R
Protective housing IP 66 for max. 2 RTA421 (182 × 180 × 165 mm)	52010132	1251.83

Prices are applicable for South Africa until 30/06/2020, in Rand (R) per unit, net excluding value added tax (VAT), cost of packing and dispatch. Endress+Hauser retains the right to change or modify pricing at any time. The terms of sales and delivery of Endress+Hauser are applicable. Current prices and delivery times can be verified prior to ordering on www.e-direct.endress.com.

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