

ExTVA-500-UC Power supply

DB0102

Technical Datasheet

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- Loop power supply, wide range power supply, flexible power source
- Bi-directional HART® transmission
- Communication sockets for HART® sensor setting up
- EMC/NAMUR NE21
- Compact side by side housing
- optional with [EEx ia] IIC intrinsically safe input



Application

The RN 221N barrier with power supply is used for the galvanic isolation of 4 to 20mA signal current circuits. It is also applied for intrinsically safe operation of 2-wire transmitters and to remove earth loops.

Function

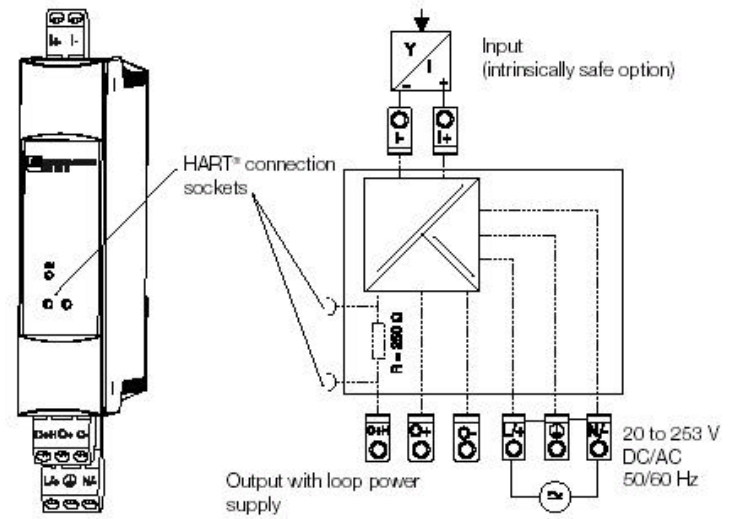
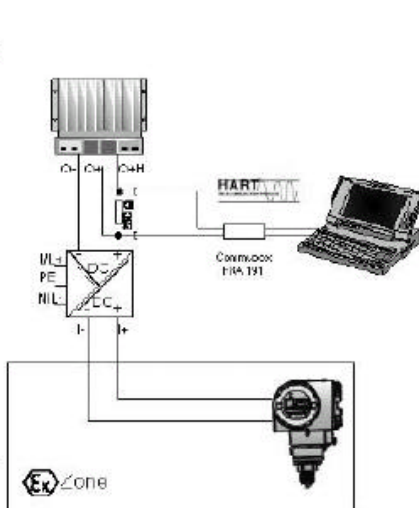
The active barrier RN221N supplies the sensor with auxiliary energy and transmits the measuring signal to the output. Bi-directional HART communication is possible with SMART transmitters. The optional, intrinsically safe input circuit, conforms to the requirements for ignition classification intrinsic safety (i).

Application Example Electrical Connection

System component without own transmitter power supply (e.g. PLC, recorder, display)

RN 221N active barrier. (Transmitter set up using HART communication)

The intrinsically safe Cerabar S pressure transmitter is connected via the RN 221N power supply with intrinsically safe input



Technical Data**Input**

Number of inputs:	1
Power requirement:	16.7 V ± 0.2 V (at I = 20 mA)
Open circuit voltage:	26 V ± 5 %
Short circuit current:	= 32 mA
Internal resistance:	328 Ohm
Over range:	10 %

Intrinsically safe input [1] option

Open circuit voltage:	27.3 V
Short circuit current:	84.1 mA
Power consumption:	576 mW
Capacitance:	86 nF [Ex ia] IIC 683 nF [Ex ia] IIB, [Ex ia] IIA
Inductance:	5.5 mH [Ex ia] IIC 20 mH [Ex ia] IIB, [Ex ia] IIA

Certification

Ex-protection:	ATEX II (1) GD [Ex ia] IIC
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Output

Number:	1
Open circuit voltage:	24 V ± 10 %
Over range:	10 %
Load (impedance):	0 to 700 W (without communication resistance)
Galvanic isolation:	To all other current circuits

Power supply

Power supply:	20 to 253 V DC/AC, 50/60 Hz
Power consumption:	Max. 2.4 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

Accuracy

Reference conditions:	Calibration temperature at 25 °C
Linearity:	= 0.15 %
Load influence:	= 0.1 %
Ambient temperature influence:	= 0.1% in range 0 °C to 50 °C = 0.2 %/10 K in range -20°C to 0°C

Ambient conditions

Ambient temperature:	-20 to +50 °C
Storage temperature:	-20 to +70 °C
Climatic class:	To EN 60 654-1 Class B2
Ingress protection:	IP 20
EMC Immunity:	To EN 61 326, Class A

Mechanical construction

Dimensions:	B x H x T (mm): 22.5 x 96 x 112 for top hat DIN rail to EN 50 022-35
Housing:	PC/ABS, UL 94V0
Terminals:	Keyed plug-on screw terminals, core size 2.5 mm ² solid, or strands with ferrules; Front mounted communication socket for 2 mm jack plugs

Display and operating level

Display elements:	LED yellow in series to current output; Illuminates, when output current circuit is closed LED current > 2 mA
Remote communication:	HART® communication: Communication signals are transmitted bi-directionally. Communication resistance: Resistance for HART® communication 250 W built in. Please take note of voltage drop!

Warranty: Should an instrument break down during the warranty period you will receive a new instrument.

Dispatch: 48-hour dispatch service.