

RN Series

Reliable signal processing
and conditioning



Power, condition, isolate and protect your analog signal loop

The RN Series interface, signal processing and conditioning modules power the foundation of your analog measurement instruments loop and intrinsic safety infrastructure



Perfectly aligned

with Endress+Hauser instruments



Fit-for-purpose

Focus on essential features



Easy operation

User-centric features
e.g. easily accessible front HART® taps



Simple selection

Low variant complexity

-70%

Saves space

in the control cabinet
(2 channels on 12.5 mm)

RNB22
Power supply
24 V / 2,5 A



RN22

Active barrier/
signal doubler
24 V DC
(1-/2-ch.)

RNO22

Output isolating
amplifier
24 V DC
(1-/2-ch.)



T-connector
24 V DC +
failure signal

No wiring, fast commissioning:
T-connector to power the RN
Series modules

RNF22

Feed-in & error
message module

RLN22

NAMUR
Isolating amplifier
24 V DC
(1-/2-ch.)

Intrinsically safe, SIL-certified interface components



About the RN Series

The RN Series interface modules power the foundation of measurement instrument loops and safety instrumented systems built on the widely used analog process control infrastructure.

The intrinsically safe signal processing and conditioning devices (up to SIL 2 (SC 3) in accordance with IEC 61508) ensure reliable power supply and safe operations in hazardous areas, establishing a trusted signal link between field instruments and the process control level.

Smart power

Smart functions such as NAMUR signal conversion, line fault monitoring, galvanic signal isolation, signal doubling, output signal amplification with bidirectional HART® transparency give operators control and flexibility in systems of any scale, protecting assets and safeguarding data signal integrity in the process.





→ Application examples

- Safely power and separate your 2- and 4-wire devices in hazardous areas (galvanic isolation)
- Double your measurement instrument signal to feed a display or a data manager (open a second channel for the process optimization domain without affecting the traditional automation system)
- Safely actuate your active components (control valves, pumps) in hazardous areas
- Monitor system faults (wire breaks, short circuits)
- Establish redundant power supply with intelligent error diagnostics
- Enhance basic switching instruments with NAMUR capabilities
- Translate NAMUR signals into switching signals

RNB22 system power supply unit



Features and benefits

- Safe and reliable, single-phase output in the power range up to 100 W
- Smart system function monitoring for fault prevention for high system availability
- Powerful reserve capacity for lower power ranges
- Transient surge protection, short-circuit proof, no-load proof
- Tool-free installation, suited for vertical or horizontal mounting

Applications

- High-efficiency 24 VDC / 2.5 A power supply with low power dissipation
- Parallel mode with RNF22 for redundancy
- Suited for decentralized applications or remote cabinets
- Compact housing efficient use of space in control cabinets
- Low heat dissipation, no lateral clearance required
- Ambient temperature range: -25 to 70 °C (-13 to 158 °F)

RNF22 power feed-in and error message module



Features and benefits

- Safe and reliable 24 V DC interface power supply, single or redundant
- Intelligent diagnostics built-in: power supply failure or fuse error
- Quick and easy wiring with plug-in terminals
- Compact housing: 17.5 mm (0.69 in) for efficient use of space in control cabinets

Applications

- Power and error message module for safe and reliable operations in hazardous areas
- Single or redundant 24 V DC supply voltage, up to 3.75 A supply current
- Relay output for error message
- Group error evaluation of connected NAMUR isolating amplifiers (RLN22)
- Activation/deactivation of group error detection via DIP switch
- Ambient temperature range: -20 to 60 °C (-4 to 140 °F)

RN22 active barrier, power supply, analog signal doubler



Features and benefits

- Intrinsically safe interface device suited for use in safety instrumented systems up to SIL 2 (SC 3) in accordance with IEC 61508
- Quick and easy wiring with screw or push-in terminals or power supply via power rail T-connector
- Easy access to frontside HART® connection taps
- Compact housing: up to two channels on 12.5 mm (0.49 in) for efficient use of space in control cabinets

Applications

- 1- or 2-channel active barrier, power supply or signal doubler
- 0/4 to 20 mA analog signal transmission and galvanic isolation
- Intrinsic safety for operation in hazardous areas (Zone 2)
- Bidirectional HART® communication (transparent)
- 2- and 4-wire capability for instruments in hazardous areas (Zones 0/20)
- Ambient temperature range: -40 to 60 °C (-40 to 140 °F)

RLN22 NAMUR isolating amplifier



Features and benefits

- Safe and reliable switching operations: trust your critical applications
- Compact housing: up to 2-channels on 12.5 mm (0.49 in) for efficient use of space in control cabinets
- Installation in hazardous areas; Ex approval for Ex zone 2
- Up to SIL 2 in accordance with IEC 61508
- Quick and easy wiring and commissioning: plug-in terminals, power supply and group error message via DIN rail bus connector

Applications

- NAMUR isolating amplifier for the transmission of binary switching signals
- Input for proximity sensors, open contacts or contacts with resistive coupling elements
- Galvanic isolation (3-way)
- Line fault monitoring of input circuits or mechanical switching contacts
- Group error message via DIN rail bus connector
- Output-side relay contacts, direction of action (operating or quiescent current behavior) via DIP switch selection
- Ambient temperature range: -40 to 60 °C (-40 to 140 °F)

RNO22 output amplifier



Features and benefits

- Safe and reliable control of active components in hazardous areas
- Quick and easy wiring and commissioning: plug-in terminals, power supply via DIN rail bus connector
- Compact housing: up to 2 channels on 12.5 mm (0.49 in) for efficient use of space in control cabinets
- Accurate and reliable signal transmission
- Line break and short-circuit monitoring

Applications

- 1- or 2-channel output isolating amplifier
- Reliable control of active components such as control valves, current-to-pressure transducers
- Transmission and galvanic isolation of 0/4 to 20 mA signals
- Intrinsically safe [Ex-ia], installation in Ex Zone 2
- Suited for use in safety instrumented systems up to SIL 2 (SC 3) in accordance with IEC 61508
- Bidirectional transmission of digital HART communication signals
- Ambient temperature range: -40 to 70 °C (-40 to 158 °F)



For more information, please visit:

endress.com/rn-series



Quicklinks to products:

endress.com/rn22
endress.com/rln22
endress.com/rno22

endress.com/rnf22
endress.com/rnb22

Selection Guide

Application

Examples

2-wire (4 to 20 mA / HART®) instruments

Levelflex FMP51, Cerabar PMP71, ModuLine TM131,
Liquiline M CM42, Proline 200

4-wire (4 to 20 mA / HART®) instruments

Proline 300

Data managers

Memograph M RSG45
Ecograph T RSG35

Point level switches

Liquiphant FTL51, Liquipoint FTW31,
Soliswitch FTE20

Active components controlled via 4 to 20 mA / HART®

Control valves, actuators

Isolating amplifier / barrier





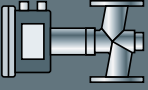


RN22 / RLN22 / RNO22

System power supply and isolating amplifier / barrier

RNB22 & RN22 / RLN22 / RNO22



Need help?
Contact us in your region!
www.endress.com/contact

	Interface	Function	1-ch	2-ch
	RN22 ¹	4 to 20 mA / HART® Isolating amplifier/barrier (active) Sensor supply	✓	✓
	RN22 ¹	4 to 20 mA / HART® Isolating barrier (passive) (alternative signal terminal assign)	✓	✓
	RN22-++3+	4 to 20 mA / HART® Isolating amplifier/barrier (active/passive) Signal doubler	✓	
	RLN22 ²	NAMUR isolating amplifier Signal line fault monitoring (break or short circuit)	✓	✓
	RNO22	4 to 20 mA / HART® Output isolation amplifier (active)	✓	✓
	RNB22	230V/110V AC to 24 V DC System power supply		
	RNF22	Feed-in & error message module for redundant power supply (incl. T-connector)		

¹ available also with wide-range power supply: 24-230V AC/DC (RN42)

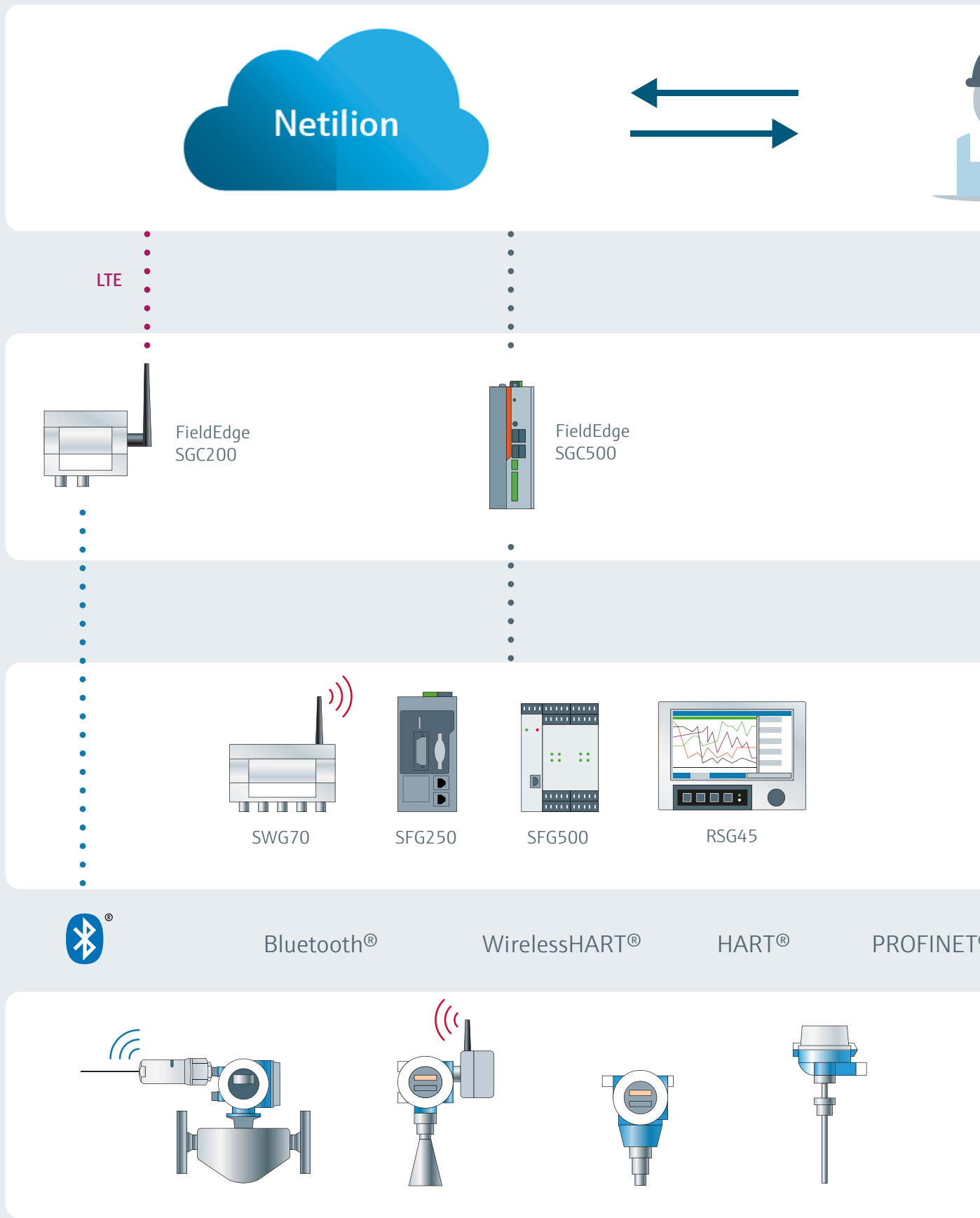
² available also with wide-range power supply: 24-230V AC/DC (RLN42)

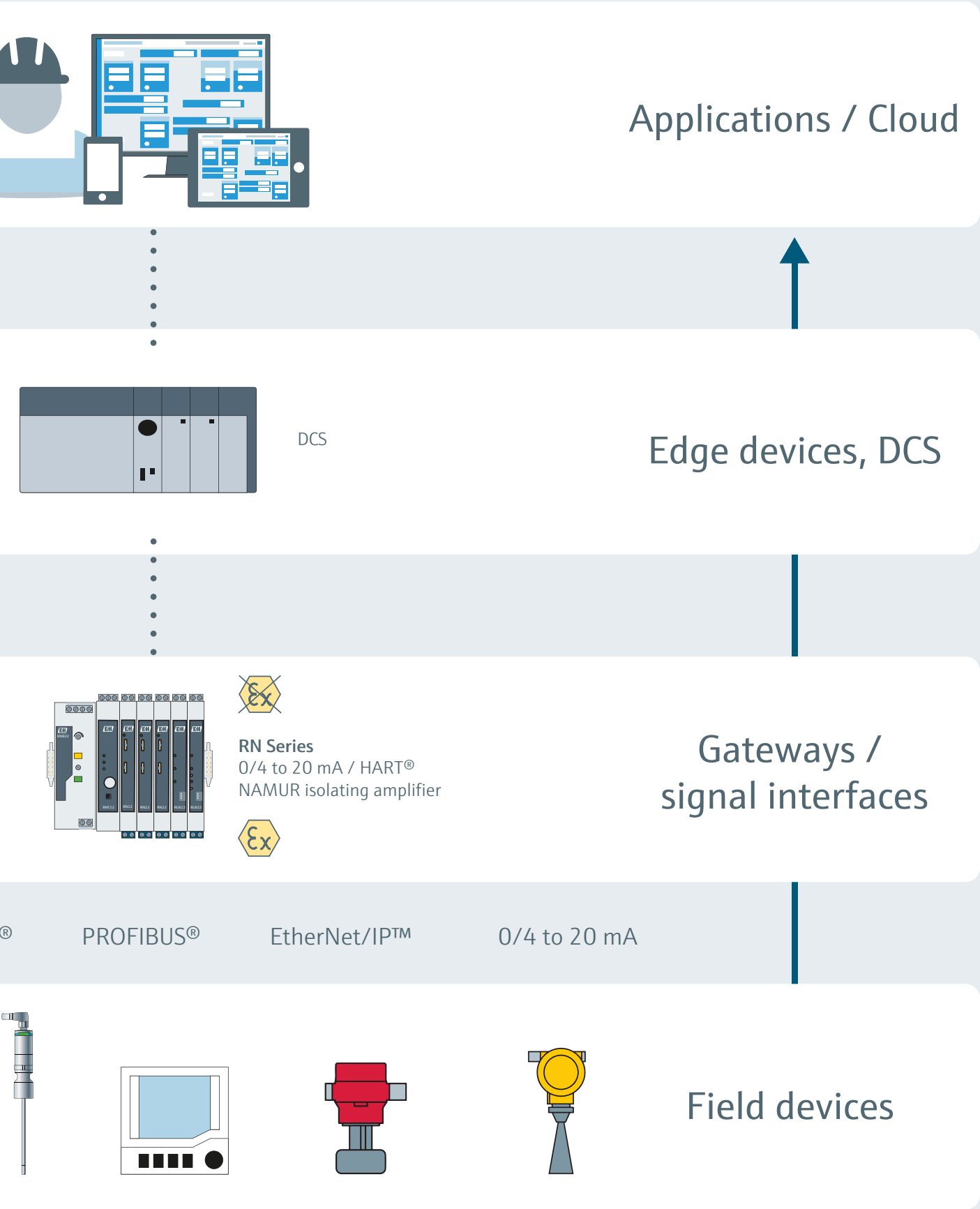


RN Series

Add power and safety to analog signal loops

Delivering process values without compromising safety





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