

**ALL FOR ONE FOR ALL**

**SENSORS WITH REDUCTION FACTOR 1**





## SENSOR WITH REDUCTION FACTOR 1

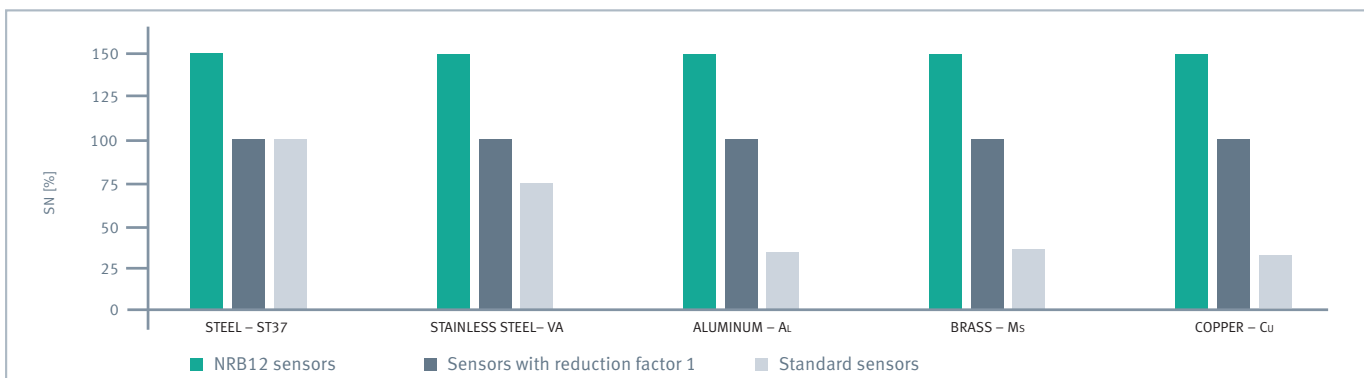
### OUR KNOW-HOW – YOUR BENEFIT

Are you planning to expand an existing plant? Looking for ways to adapt to new products quickly without needing to replace inductive proximity sensors? Do you have an application that requires objects made of different metals to be detected reliably? Using inductive sensors with reduction factor 1 keeps you flexible. With only a few sensor types required, you will reduce storage costs and increase production uptime.

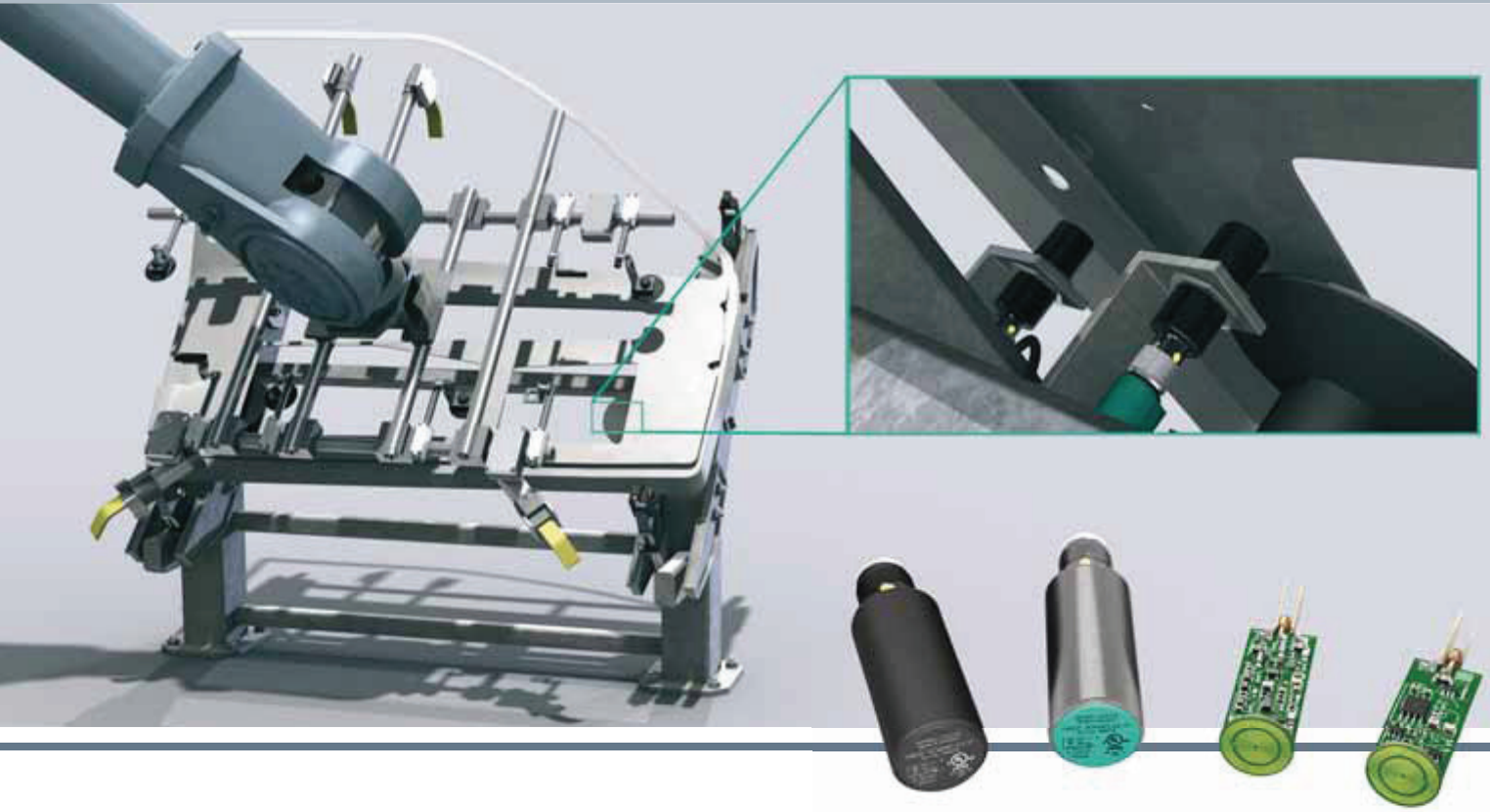
### R-1-SENSOR HIGHLIGHTS

- The same operating distance for all metals
- Maximum operating distances of 2 mm ... 75 mm
- Resistance to electromagnetic fields
- Weld-field immune (optional)
- Comprehensive selection of industry-standard housings and sizes, including cylindrical and cubic style
- Extremely durable and robust

THE IDEAL SENSOR IS EQUALLY SUITED FOR ALL APPLICATIONS.



Operating distances: NRB12 sensors, sensors with reduction factor 1 and standard sensors



## NRB12 SENSOR

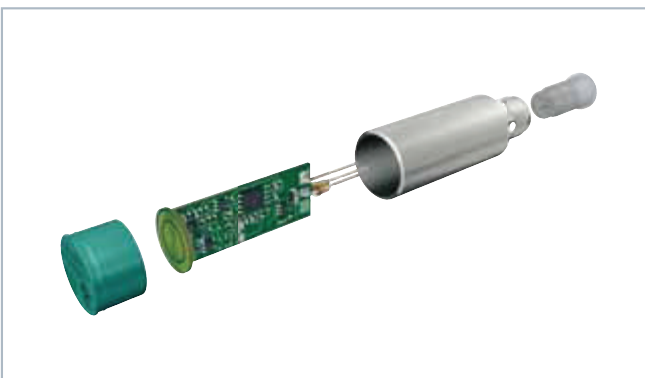
### OPERATION

The main component of sensors with reduction factor 1 is the printed coil system. It consists of a transmitter and receiver coil. The downstream oscillator analyzes the coupling of the two coils. The optimum coupling setting between the transmitter and receiver coil guarantees maximum operating distances and material-independent detection of all metals. The output signal of the oscillator is amplified and transmitted to an output signal.

### NRB12 SENSOR HIGHLIGHTS

- **Operating distance of 12 mm**
- Unique: maximum operating distances due to new oscillator circuitry
- High mechanical stability ensured by printed coils
- No more disruptions caused by interferences such as mechanical stress, temperature, EMC, etc.
- Highest reproducibility due to new mechanics

THE NEW TECHNOLOGY OF THE NRB12 INDUCTIVE PROXIMITY SENSOR ENABLES PREVIOUSLY UNATTAINABLE OPERATING DISTANCES.



The printed coils are soldered to the main circuit board. The coil is then encapsulated in a stainless steel housing.



This application illustrates the long operating distance

# THE STANDARD SENSORS WITH REDUCTION FACTOR 1



## SUITABLE FOR ALL APPLICATIONS

Pepperl+Fuchs offers a complete portfolio of sensors with reduction factor 1. The cylindrical sensors are available with thread diameters of 6.5 to 30 mm and operating distances of 2 to 30 mm. The cubic sensors have dimensions of 40 x 40 mm or 80 x 80 mm and operating distances of 20 to 75 mm. Flexible and robust, our reduction factor 1 sensors are suitable for every application.

## MAXIMUM OPERATING DISTANCE

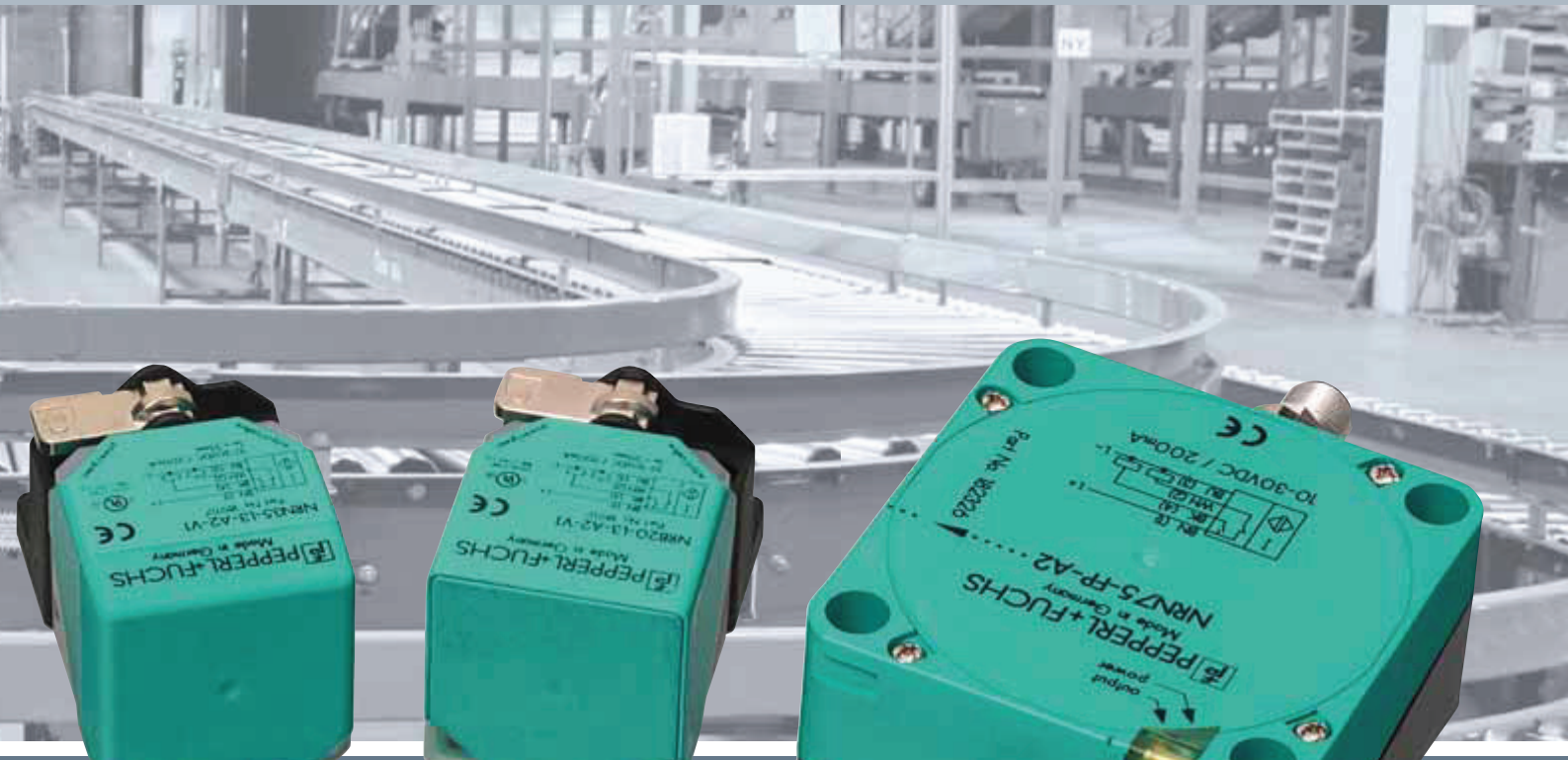
A highly efficient oscillator, combined with air-core coils ensures the greatest possible operating distances. Another advantage is the ease of installation. The variety of flush and non-flush designs available reduces adjustment and commissioning time.

## STAINLESS STEEL

## ONE SWITCHING DISTANCE FOR ALL METALS



DESIGN	6.5GM	6.5GM	8GM	8GM	12GM	12GM	18GM
OPERATING DISTANCE	2 mm flush	6 mm non-flush	2 mm flush	6 mm non-flush	4 mm flush	10 mm non-flush	8 mm flush/12 mm quasi flush
DESIGNATION	NRB2-6,5S50-E2-V3	NRN6-6,5S50-E2-V3	NRB2-8GS40-E2-V1	NRN6-8GS40-E2-V1	NRB4-12GS40-E2-V1	NRN10-12GS40-E2-V1	NRB8-18GS40-E2-V1 / NRB12-18GS40-E2-V1



## ONE TECHNOLOGY FOR ALL APPLICATIONS

## MAXIMUM ROBUSTNESS



18GM	30GM	30GM	Varikont L	Varikont L	Varikont L	FP	FP
15 mm non-flush	15 mm flush	30 mm non-flush	20 mm flush	35 mm non-flush	40 mm non-flush	50 mm flush	75 mm non-flush
NRN15-18GS40-E2-V1	NRB15-30GS50-E2-V1	NRN30-30GS50-E2-V1	NRB20-L3-A2-V1	NRN35-L3-A2-V1	NRN40-L3K-A2-V1	NRB50-FP-A2-P3-V1	NRN75-FP-A2-P3-V1

# THE WELD-RESISTANT SENSORS

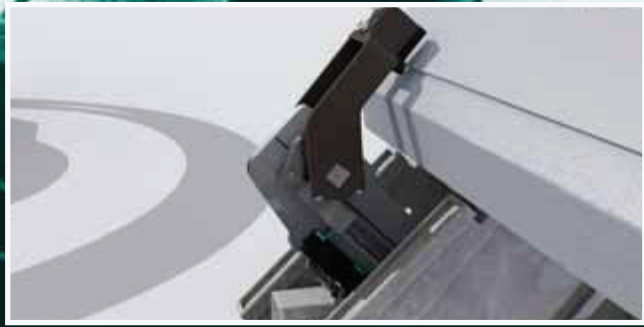


## HIGH RESISTANCE TO MAGNETIC FIELDS

## HIGH OPERATING DISTANCE



DESIGN	8GM	8GM	12GM	12GM	18GM	18GM	30GM
OPERATING DISTANCE	2 mm flush	6 mm non-flush	4 mm flush	10 mm non-flush	8 mm flush/12 mm quasi flush	15 mm non-flush	15 mm flush
DESIGNATION	NRB2-8GM40-E2-C-V1	NRN6-8GM40-E2-C-V1	NRB4-12GM40-E2-C-V1	NRN10-12GM40-E2-C-V1	NRB8-18GM50-E2-C-V1 / NRB12-18GM40-E2-C-V1	NRN15-18GM50-E2-C-V1	NRB15-30GM50-E2-C-V1



## EXTREMELY ROBUST

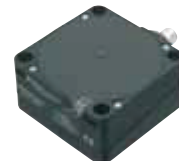
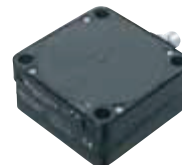
### HIGH RESISTANCE TO MAGNETIC FIELDS

The air-core coil system used in reduction factor 1 sensors makes them insensitive to interferences like those from frequency converters or strong magnetic fields created in welding.

### HIGH MECHANICAL WELDING RESISTANCE

Rough production environments like those in the automotive industry require sensors that are protected against metal shavings and weld splashes.

The cylindrical sensors feature a PTFE coated brass shell. The cubic sensors are made of metal or weld-resistant special plastic with a weld-resistant plastic sensor surface.



30GM

30 mm non-flush

NRN30-30GM50-E2-C-V1

Varikont L

20 mm flush

NRB20-L3-A2-C-V1

Varikont L

35 mm non-flush

NRN35-L3-A2-C-V1

Varikont L

40 mm non-flush

NRN40-L3K-A2-C-V1

FP

50 mm flush

NRB50-FP-A2-P3-C-V1

FP

75 mm non-flush

NRN75-FP-A2-P3-C-V1

# FACTORY AUTOMATION – SENSING YOUR NEEDS



Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

## Contact

Pepperl+Fuchs GmbH  
Lilienthalstraße 200  
68307 Mannheim · Germany  
Tel. +49 621 776-4411 · Fax +49 621 776-27-4411  
E-mail: [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)

## Worldwide Headquarters

Pepperl+Fuchs GmbH · Mannheim · Germany  
E-mail: [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)

## USA Headquarters

Pepperl+Fuchs Inc. · Twinsburg, OH · USA  
E-mail: [fa-info@us.pepperl-fuchs.com](mailto:fa-info@us.pepperl-fuchs.com)

## Asia Pacific Headquarters

Pepperl+Fuchs Pte Ltd · Singapore  
Company Registration No. 199003130E  
E-mail: [fa-info@sg.pepperl-fuchs.com](mailto:fa-info@sg.pepperl-fuchs.com)

[www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

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