

## Installation instructions for RDS80001/RDS80002 Series High speed railwheel sensors

# PK XP-4061

Issue 1

### ⚠ WARNING

#### PERSONAL INJURY

- DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### General description

The RDS80001 and RDS80002 railwheel sensors are 2 wire dc inductive proximity sensors. There are 2 types of output available.

RDS80001 - Sensor output current proportional to applied voltage. Designed to operate at a nominal 16 Vdc with a 1 kOhm load, which will result in an output of 8 mA with no wheel detected and 2 mA when a wheel is detected.

RDS80002 - Sensor output current is limited to 2/8 mA within sensor to allow use of voltage overdrive to counter interconnecting cable losses (10 km +) and still maintain 2/8 mA output without field adjustment.

Both types are available in both high and low frequency versions.

### Technical information

	RDS80001	RDS80002
Supply voltage range	10 to 30 Vdc	
Output current (unsensed)	See Figure 1	10mA
Output current (sensed)	See Figure 2	2mA
Maximum output current	20mA	10mA
Operating temperature range	-40 °C to 80 °C	
Storage temperature range	-40 °C to 85 °C	
Weight	820 grams	
Termination	6 m [2 x 0,75 mm <sup>2</sup> ] polyurethane cable	
[1] Sensing distance S <sub>n</sub> @ 20 °C [Target – 90x50x1 mm St37 steel]	26,5 mm ± 4 %	
Variation in S <sub>n</sub> over temperature range	± 10 %	
Maximum switching frequency	> 400 Hz	

- [1] The sensing distance of 26,5 mm refers to the distance achieved with a standard steel plate target. When installed on track this can be extended to a maximum of 35 mm as a result of railhead bias.

**Important please refer to “mounting to rail”.**

### Available listings

Catalogue Listing	Oscillation Frequency
RDS80001-L	160 kHz ± 10 %
RDS80001-H	230 kHz ± 10 %
RDS80002-L	160 kHz ± 10 %
RDS80002-H	230 kHz ± 10 %

### Output current

Figure 1

RDS80001 Series output current with no target present

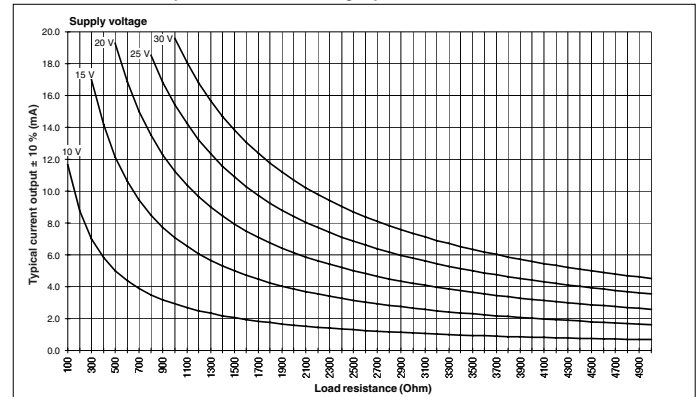
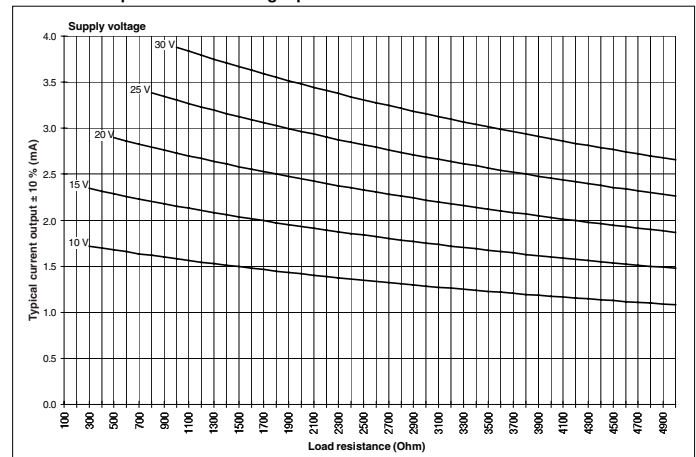


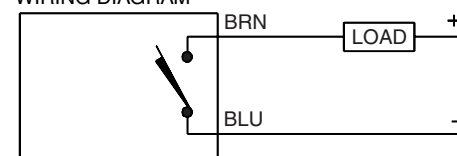
Figure 2

RDS80001 output current with target present



### Wiring details

WIRING DIAGRAM



The sensor is polarity neutral - connection of both positive voltage and negative voltage can be made to either leadwire. For RDS80001 ensure that the load limits the maximum output current to 20 mA at all times.

### Previous Railwheel Sensors

The RDS80001 is a direct replacement for the 926FS30 Series sensors previously produced by Honeywell.

926FS30 Series listing	RDS Equivalent
926FS30-060-Z911-H	RDS80001-H
926FS30-060-Z911-L	RDS80001-L

# RDS Series

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## Mounting to rail

Dimensions H and X, the height below the rail and distance from the rail, will vary according to the track/wheel interface standard which applies to your application. Please contact Honeywell for further details.

**For USA only:** X = 60,0 mm (2.36 in)  
H = 43,0 mm to 48,0 mm (1.69 in to 1.89 in)

## Nominal setting

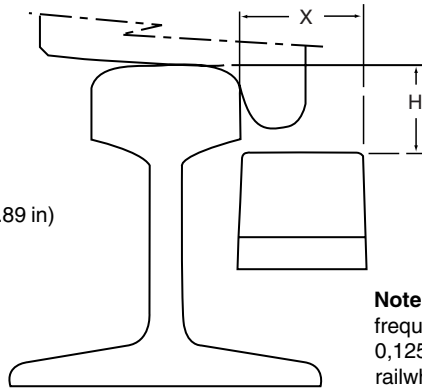
The sensor should be positioned such that the top face of the sensor is 1 mm below the deepest flange (this can be established based on data from the relevant rail authority or by empirical testing).

The sensor side face should be approx. 1–2 mm from the innermost point of the railhead.

If a sensor is to be mounted on a bend, it should be mounted on the inside of the bend.

## Maintenance checks

The setting of a sensor should be checked regularly based on the particular railways requirements, the wear rate of the rails and any safety requirement.



## Mounting distances

Between sensors of the same oscillating frequency (e.g. H-H and L-L) > 0,25 m between centrelines of sensors.

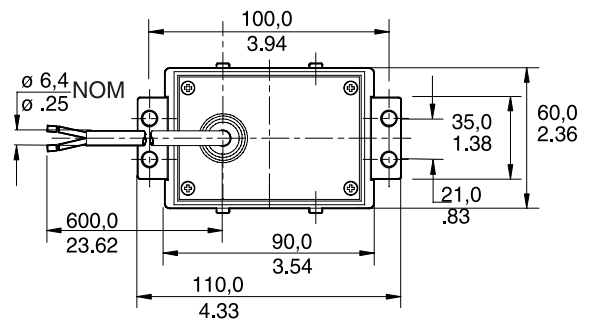
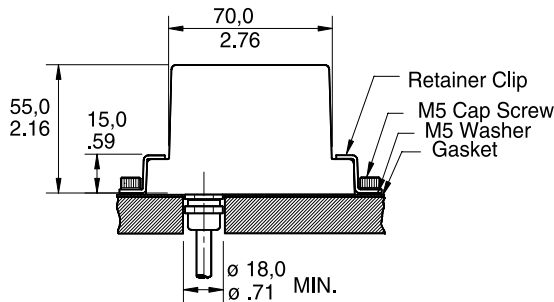
Between sensors of different oscillating frequencies (e.g. H-L) > 0,125 m between centrelines of sensors. This distance corresponds to mounting the sensors as close as the enclosed mounting brackets will allow.

**Note:** Mounting sensors with different oscillating frequencies at the minimum separation distance of 0,125 m provides an overlapping of signals as the railwheel passes.

## Mounting components supplied

- 2 Stainless steel retainer clips
- 4 M5 stainless steel cap screws with 4 mm hexagonal heads
- 4 M5 lock washers
- 1 Nitrile rubber gasket (to be installed under sensor as part of shock defence)

## Mounting dimensions in mm (inches) for reference only



## Warranty/remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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