Honeywell

Installation Instructions for the **RDS80004 Series High Speed Railwheel Sensor**

ISSUE B
50014824

⚠ 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.

NOTICE

PREVIOUS RAILWHEEL SENSORS
RDS80004 replaces the 926FS30, RDS80001 and RDS80003 Series sensors previously produced by Honeywell. The manner in which the sensor is used and the application in which it is used may affect function of the sensor. Correct function in the end user's application is, therefore, the sole responsibility of the buyer.

GENERAL DESCRIPTION

The RDS80004 railwheel sensors are 2 wire dc inductive proximity sensors. The sensor output current is proportional to the applied voltage and is designed to operate at a nominal 16 Vdc with a 1 kOhm load. This will result in an output of 8 mA when no wheel is detected and 2 mA when a wheel is detected. The sensor is available in both high and low frequency versions.

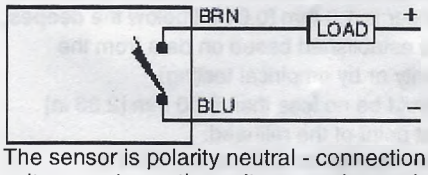
These installation instructions modified by deviation MA/022/06.

TECHNICAL INFORMATION

Parameter	Specification
Rated voltage range	10 Vdc to 30 Vdc
Output current (unsensed)	See Figure 1.
Output current (sensed)	See Figure 2.
Maximum output current	20 mA
Operating temperature range	-40 °C to 80 °C [-40 °F to 176 °F]
Storage temperature range	-40 °C to 85 °C [-40 °F to 185 °F]
Weight	820 g
Termination	6 m [2 x 0,75 mm²] polyurethane cable
Sensing distance S_n @ 20 °C [Target – 90 x 50 x 1 mm St37 steel]*	26,5 mm [1.04 in]
Variation in S_n @20 °C	±4%
Variation in S_n over temperature range	±10%
Maximum switching frequency	>400 Hz
Maximum cable capacitance	1 µF

*The sensing distance of 26,5 mm [1.04 in] 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 [1.38 in] as a result of railhead bias. Important: please refer to the "Mounting to Rail" section in these instructions.

WIRING DIAGRAM



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

OUTPUT CURRENT

Figure 1
RDS80004 Series output current with no target present

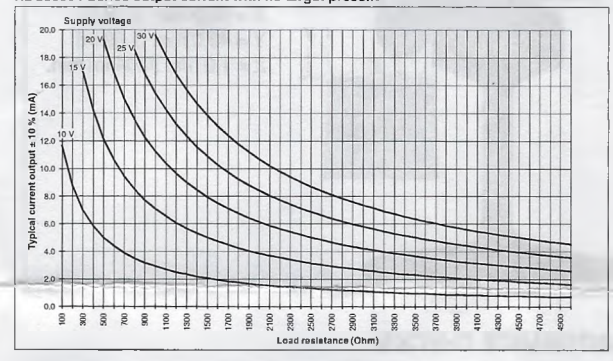
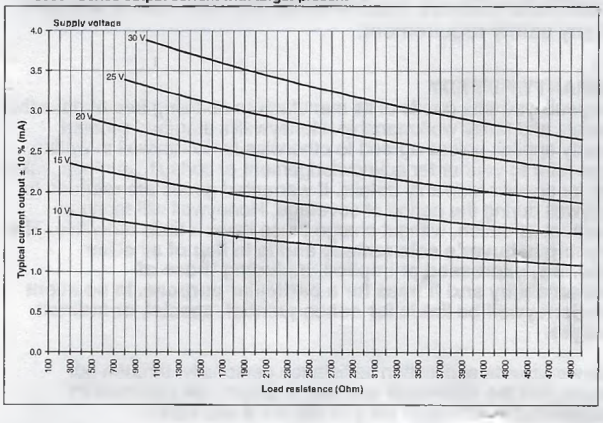


Figure 2
RDS80004 Series output current with target present



ORDER GUIDE

Catalog Listing	Description
RDS80004-L	Low–160 kHz ±10% oscillation frequency
RDS80004-H	High–220 kHz ±10% oscillation frequency

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 defense).

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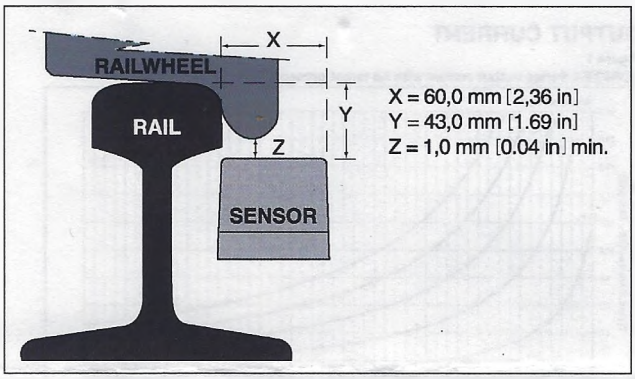
MOUNTING TO RAIL

The distance from the rail (X) and height below the rail (Y) will vary according to the track/wheel interface standard which applies to your application. Dimensions shown are recommended for UIC60 rail profile. (See Figure 3.)

- The sensor should be positioned as shown (Z), so that the top face of the sensor is 1,0 mm [0.04 in] below the deepest flange (this can be established based on data from the relevant rail authority or by empirical testing).
- Dimension (X) should be no less than 60,0 mm [2.36 in] 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.

FIGURE 3



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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

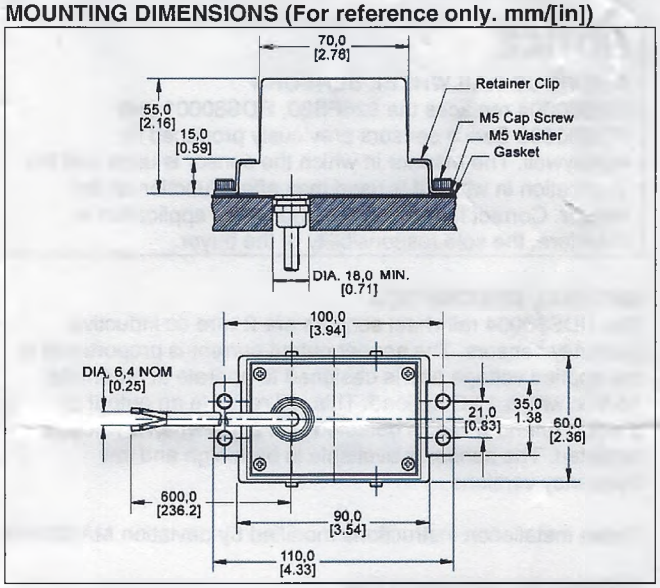
MOUNTING DISTANCE BETWEEN SENSORS

Recommended minimum distance corresponds to mounting the sensors as close as the mounting brackets (sold separately) will allow.

Sensor Oscillating Frequency	Distance Between Sensor Center Lines*
High-High (220 kHz)	>250,0 mm [9.84 in]
Low-Low (160 kHz)	>250,0 mm [9.84 in]
High-Low or Low-High	>125,0 mm [4.92 in]

*Mounting sensors with different oscillating frequencies at the minimum separation distance of 125,0 mm [4.92 in] provides an overlapping of signals as well as railwheel passes.

MOUNTING DIMENSIONS (For reference only. mm/[in])



SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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