

Magnetic Receiver (MR) WP2 K11, FDX49P Redesign for railroad applications

The Magnetic Receiver WP2 K11 manufactured by Integra can be replaced with a fully compatible redesign.

The Magnetic Receiver (MR) is used for the automated switching of the voltage level in potentially cross-border rail traffic. The switching is triggered by a direct signal provided by the train's internal energy storage and transmitted via the MR to the subsequent switching logic.

Functions:

A permanent magnet positioned in the track bed, whose magnetic field activates bistable special relays in the MR when passed over, triggers the voltage changeover. After detection of the magnetic switching signal by the MR, the relay coils are energized by a voltage pulse and the switching mechanism is reset to its initial position.

The bistable circuit ensures that even slowly responding systems can detect this process. The MR is equipped with two bistable special relays. These are arranged together with special ferrite cores, which orient the magnetic field in such a way that the N-S polarity of the magnets in the track bed can reliably influence the switching function. Each of these relays has one connection contact on the outside of the housing. The south pole of the permanent magnet is detected via contact 7, while the north pole is detected via contact 1.

The internal electronics are fully encapsulated in a certified potting compound in accordance with UL94-V0, thus completely protected from weather and harsh operating conditions.

The housing is also made of a plastic material compliant with UL94-V0. Certificates are available on request.

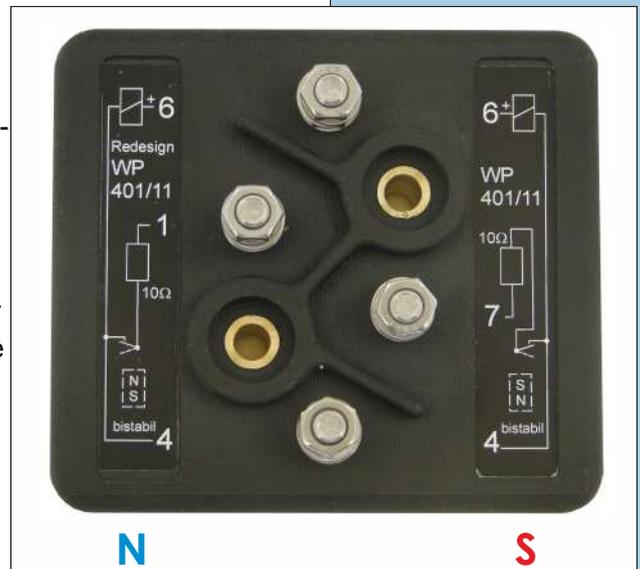
The magnet installed in the track bed provides a magnetic field of 8.5 gauss. The nominal distance between the MR and the magnet required to trigger the switching function is 19.5 cm. The magnetic field strength decreases inversely proportional to the third power of the distance. Therefore, a field strength of approximately 14 gauss at the MR must still reliably trigger switching when the MR moves across the field at a speed of 125 mph (56 m/s).

The Magnetic Receiver is designed for a nominal supply voltage of 72 V between contacts 6-4, 7-4, and 1-4. The receiver operates as a detector with external series resistors within an overall circuit. Proper operation is ensured within a voltage range of 48 V to 105 V and within a temperature range of -40°C to +80°C. The switching contacts are made of gold-plated cobalt and are rated for a switching current of 1 A.

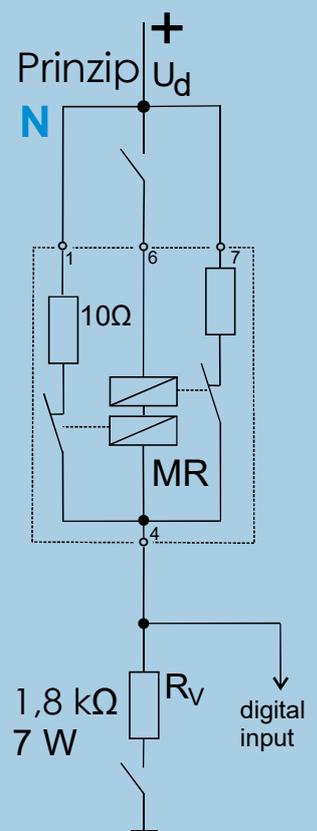
A 10 Ω (1 W) resistor is connected in series with the contacts.

Available upon request:

Types WP2 K12;-K13;-K14;-K15;-K16;-K17;-K18, and WP2 K19.



N Permanent Magnet S



Technical data:	WP2 K11
Design	: 102 x 91 x 46 mm
Connection	: 4 X M6, clamp, non-magnetic!, 2 NC bistable contacts (N + S)
Mounting	: 2 x M6 x 35, non-magnetic!
Supply	: nom. 72 max.105 VDC, range 48-105 with Rv 1,8 kΩ
Switching sensitivity	: 14 G on edge of housing
Contact current	: max.1A

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DIE ENTWICKLER

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