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PINTSCH
Safety for Rail

Level crossing technology.

Safe. Reliable. Capable.

FSP

PINTSCH-type train detection system

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Applications

The **FSP** PINTSCH-type train detection system consists of an induction loop installed in the track and the **ESD** (single-loop detector) module and is used for detection of trains at level-crossing control system strike-in and strike-out points, or as a train approach indicator (ANM) at signal cabins (interlocking towers).

Functional principle

The ESD module consists of an oscillator and a detector system which, together with the induction loop in the track, form a resonant circuit. A resonant circuit frequency of between 22 kHz and 35 kHz, generally around 27 kHz, is set up, depending on the specific dimensions of the track loop. Changes in the electromagnetic field of the induction loop are recognised and evaluated by the ESD detector system.

Features:

- Great reliability
- Robust structure (to withstand ballast-tamping machines)
- Maintenance-free
- Immune to eddy-current braking systems
- Trains can stop and reverse at FSP
- Cascade-configuration of multiple FSP modules possible
- No twisted star quad cable necessary on rail route
- Reset button on ESD for local initialisation
- Diagnosis-capability

ISO 9001:2008 BUREAU VERITAS Certification

088 027 815-000 (12.13 en)

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Structure

The induction loop is installed as a "figure of 8" along a length of
2 x 6 sleeper spaces in the track. Our train detection systems are correspondingly generally installed with a length of approx. 6.9 m (length can be varied between 6.3 m and 8.5 m in exceptional cases). The cables are installed in a cable conduit at the rail foot using rail foot clamps. This keeps the loop cable at a defined distance from the iron mass of the track, on the one hand, and protects the induction loops against damage in case of permanent-way works (e.g. ballast-tamping machines), on the other hand. The ESD evaluation module is installed in an SKV20 cable distribution box with ground base in the immediate vicinity of the induction loop.

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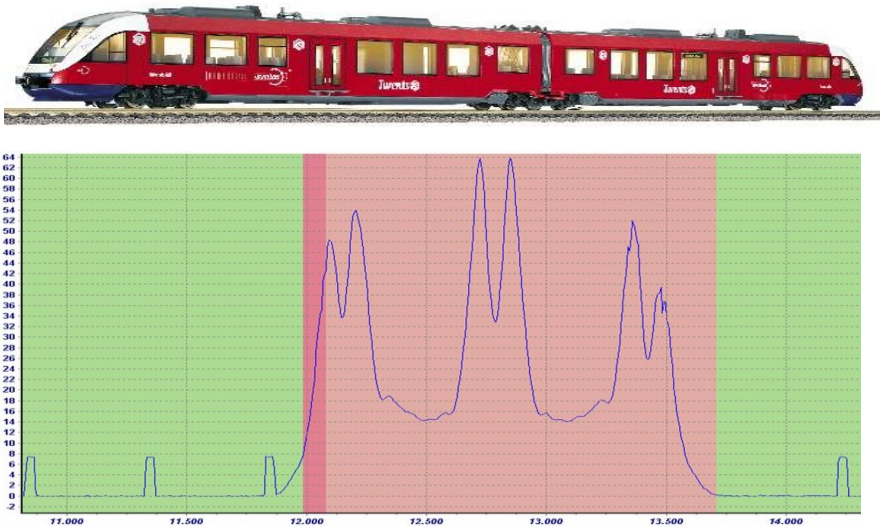
Setting variant

A range of settings can be performed on the ESD module using an eight-pole code switch. In addition to the configuration of various free-signal and occupied-signal thresholds for use as strike-in or strike-out points, the position of the ESD‘s output signal in rest position and in case of fault can be set. It is also possible to superimpose on the output signal a test pulse which displays correct functioning or failure of the ESD module to the evaluating signalling system.

ESD module in the cable distribution box



FSP evaluation module as strike-in/strike-out criterion for an RBÜT-type level-crossing control system

Train occupation and vacating

The metal masses of the rail vehicles cause a change in the electromagnetic field above the train detection system; this increases the frequency of the resonant circuit. These changes are detected by the evaluation system on the EDS (see illustration, top). An "Occupied" signal is transmitted to the level-crossing control system or the signal cabin (interlocking tower) when the "Occupied signal" threshold is exceeded, and vice versa, a "Not occupied" signal when the "Not occupied" signal threshold is undercut.

FSP evaluation unit as a train approach indicator in the signal cabin

Lineside wiring

The wiring on the rail line from the ESD to the control unit is an important advantage of this system. The FSP makes it possible to dispense with the use of twisted star quad cables, a cored signal cable is sufficient. This generates a significant savings potential, particularly in the actuation distance of control and safety systems

Subject to technical changes

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