

Safe Positioning for Working Platforms

Robust RFID System Provides Reliable Signal

At a Glance

- Robust RFID technology, for applications up to SIL 2/PL d
- Compact housing for tight installation conditions, with degree of protection (IP67)
- Long range and stable signal, even in metal-heavy environments



The Application

Maintenance and assembly work on lifting platforms can take place in the immediate vicinity of danger zones. An example of this is work on railroad trains near an overhead line. For the safety of the workers, it has to be ensured that the platform can only be extended when the line in the respective segment is de-energized. This is ensured by a multistage safety system that compares the voltage status of the overhead line with the position of the working platform. The working platform can only be extended if the segments match. In other applications, it may be a matter of limiting the maximum working height of the platform in accordance with safety requirements.

The Goal

The location of the working platform has to be determined automatically and absolutely reliably. This is to be done by a noncontact RFID system. The system has to be easy to install despite a difficult environment and fulfill its function even in adverse conditions. It has to have a sufficiently large range and generate a stable signal despite many massive metal parts in the detection area. Dirt, dust, and oil must not impair the function.



The Solution

An RFID read/write head type F190-B40 is mounted on the working platform. It reads the information from a tag mounted on the rail at high speed and provides position information. The safe control compares whether the overhead contact line in this segment is de-energized.

The compact UHF read head has a high transmission power and a correspondingly long range of up to six meters, which ensures reliable detection of the tags. The tags can be glued on, screwed on, or fastened with rivets. They work without further precautions on metal as well as on nonmetallic surfaces. They are encased in UV-resistant plastic and are therefore suitable for permanent outdoor use.

The Benefits

The system can be used in safe applications up to SIL 2/PL d. The read/write head is housed in an extremely robust IP67 cast housing. With its compact dimensions, it is suitable for particularly confined installation conditions. It has an integrated multiprotocol interface for industrial Ethernet and does not require an external evaluation unit.

In addition to the standard tag, other variants are available to optimally adapt the system to the respective application. Pepperl+Fuchs will also create the security concept for the application if required. The RFID devices are designed according to international standards (ISO18000-63, ISO 15693) and therefore ensure a high level of investment security without binding a proprietary system.

Technical Features

- High transmission power of 1,000 mW ERP
- Rugged IP67 cast housing
- High reading speed
- Compact housing design (114 × 112 × 63 mm)
- Integrated, automatically switchable antenna polarization
- RFID tag can be mounted directly on metal
- Safe solution up to SIL 2/PL d
- Tailor-made safety concept for every application

