

PEI – Integrated Electronic Pedal

The purpose of the Integrated Electronic Pedal (PEI) is to detect the axles of rolling stock in transit with a Safety Integrity Level (SIL) of 4, ensuring the highest level of safety for railway systems.

PEI can be provided in two configurations:

- **uni-directional**, where axle detection is dependent on the train direction
- **bi-directional**, where axle detection is independent of from the train direction

PEI's output can be configured on site as follows:

- **traditional configuration:**
 - o **voltage output mode**, where PEI internally generates the required voltage to drive signalling control relays
 - o **internal relays output mode**, where PEI uses internal relays to switch an external voltage supplied by the signalling system to drive signalling control relays
- **advanced configuration:**
 - o PEI is equipped with LAN and/or optical fiber interface, connected to an external actuator and it communicates its state via a SIL4 Master-Slave communication protocol.

PEI is composed of two elements:

- **WDD** (Wheel Double Detector) installed directly on the rail using a mechanical vise compatible with UNI60, UNI50, and UNI46 rail profiles. This unit contains two sensors for axle detection. WDD is provided in multiple configurations:
 - o **uni-directional** with a 5-meter cable length
 - o **uni-directional** with a 30-meter cable length, which can be shortened on site
 - o **bi-directional** with a 5-meter cable length
 - o **bi-directional** with a 30-meter cable length, which can be shortened on site
- **UG** (Junction Unit) SIL4-compliant control unit designed to detect the axles of rolling stock in transit from the elaboration of WDD signals. It communicates its operational status to the railway signalling system depending on the configuration, which is achieved via dip-switches, enabling the available output. UG case is suitable for outdoor installation and must be positioned at a minimum distance of 1.5 meters from the rail.



PEI product is compliant with the following specifications:

- RFI DT ST SCCS SR IS 04 051 B
- RFI DT STSCCS ST IS 00 032 A
- RFI DT STSCCS ST IS 04 033 A



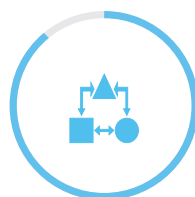
SAFETY

PEI product has a safety architecture that ensures a SIL4 safety integrity level, according to Cenelec EN 50126, EN 50128, EN 50129 and EN 50159 regulations.



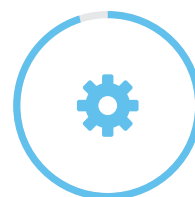
ADVANTAGES

PEI allows the replacement of the currently used P70 and SILEC pedals without new cable installation, where possible.



VERSATILITY

PEI is equipped with multiple output ports, which can be configured on site to drive signalling control relays. In the case of the advanced configuration, PEI installation can be done by using optical fiber to improve availability.



CONFIGURABILITY

PEI configuration is achieved via dip-switches, without using software tool. It is equipped with a vise compatible with UNI60, UNI50, and UNI46 rail profiles.