

**Łukasz John, Artur Dłużniewski: Lightning Protection of Stationary Railway Facilities.  
Part 1. External Protection – General Design Principles**

The article outlines problems of designing an external lightning protection system installed on buildings of railway facilities, in which electric and electronic devices can be installed. The protection consists in equipping the facility with an external lightning protection system, also including radio installations located outside the building. A comprehensive protection should cover all electronic devices installed inside the facility, both related to the power supply and the signal transmission. Stationary railway facilities are listed as an example. The most important source of electromagnetic disturbances in the form of lightning and the potential fire hazard that may occur during lightning discharge are described. The components of the external lightning protection system and the principles of its selection are presented. The method of designing the external lightning protection system is described based on the current standards. The issues of protection of facilities against fires resulting from lightning are also taken into consideration.

**Keywords:** lightning protection, surge current, source of disturbances, lightning discharge in the facility, railway facility subjected to protection