

Digital Block Controller (DiBloC)



Park Signalling has developed a Digital Block Controller to allow a section of single line railway to be controlled without the need for end to end cabling or on-board equipment. The product shares many of the same operational and safety concepts with traditional electric key token machines which have been in operation on railways around the world for many years. DiBloC is designed to communicate digitally (optionally wirelessly) through IP based systems, and include provision for TPWS.

How the system works

Possession of a physical token gives a driver authority to enter a particular section of line. Where token machines normally protect single line sections between passing loops; there is only one token and so its possession signifies the line is clear; DiBloC machines allow two or more trains to travel over a section of single line, one after the other. A stationary DiBloC machine is positioned at both ends of the section and they both have a bank of identical tokens locked inside them. The machines communicate and ensure only one token can be released at any time, thus ensuring the safety of the section. The first train removes a token from a machine, travels the line and replaces it in the second machine. Another train can now subsequently remove a token from either machine to travel the line.

Up to six DiBloC machines can be added to a system to work as auxiliary units – for example to allow trains to easily join and leave the section at an intermediate siding. The physical token can be used to unlock ground frames as well as operate other equipment.

Applications and benefits

The application is for low traffic sections of single line railway. Benefits include:

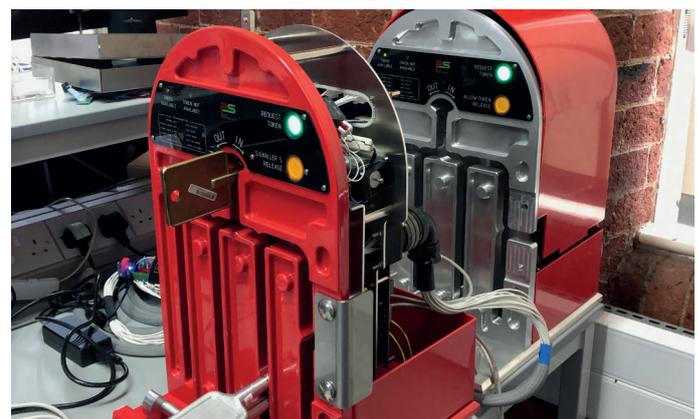
- Exceptionally low system cost including installation
- Simplicity of operation
- Low maintenance, high reliability
- Optionally; no signaller operation – reduced staffing requirements
- No on-board equipment – compatible with all rolling stock
- Single line staff/token principles are well understood

Features

- IP connectivity with two redundant connections
- Physical key compatibility with existing key token machine equipment such as ground frame locks
- Ability to work in sets of 2-6 units
- Ability to operate TPWS and/or single throw/starting signals
- No on-board equipment – compatibility with all rolling stock



Figure 1: a DiBloC machine



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