

A powerful answer to the SPAD puzzle



Category 'B' SPADs (Signals Passed At Danger) are the result of drivers passing signals when no aspect is showing. A national 650V UPS project was started to ensure that signal lamps and points remain operational should the power supply be interrupted.

Thirteen sites situated were identified across the country where there have been problems maintaining a continuous power supply to signals or where a SPAD could cause major problems. Each signal installation has a 650V supply provided from the local electricity company through a step up transformer with a standby generator, which starts should the power fail for longer than a few seconds.

During normal operation, the UPS was designed to protect the signalling system from transient power disturbances such as spikes, surges, sags and other mains supply problems. It also would deliver uninterruptible power should the supply fail, supporting the signalling supply for a minimum of ten minutes at full load, to bridge the gap between mains failure and generator changeover. One of the sites chosen was Dorchester South on Southern Zone where there are two traction power supplies, one electricity company supply, a standby generator and solid state interlocking – an ideal location for extensive testing.

on365 has developed a unique solution that includes not only the UPS but also all the other necessary equipment needed to ensure the integrity and reliability of SSPs (Signal Supply Points). The installation at Dorchester South consisted of a complete REB (relocatable equipment building) housing a 40kVA/40kW 650VAC UPS, battery, switchgear, transformers, air conditioning and remote monitoring. Individually, all are based on standard, proven technology and are considered 'best of breed' in their class. This philosophy was very important in achieving the goal of a low risk, fully functional "Plug & Play" solution up to 160kW, single phase.

The trial at Dorchester South proved to be very successful with total power failures being successfully handled and potential negative effects from over seventy voltage fluctuations eliminated. Overall there was a 50% reduction in the number of Category 'B' SPADs and Railtrack is confident that, with a UPS installed at each of the identified sites, they will not occur in future as a result of power supply interruptions.

According to Keith Watson, Principal Asset Manager for Railtrack HQ Asset Management Group: "We have not lost any power to signalling at Dorchester South despite the fact that the incoming supply has been variable due to difficult operating conditions caused by the weather."

Founded in 1984, originally as Universal Power Systems Ltd, on365 is an independent company specialising in the implementation and operation of the complete physical infrastructure of business IT and communication systems. This covers everything from power to cooling and can ultimately be a total datacentre build.

Providing total packaged solutions from concept to after-sales service, on365 has steadily grown to the position of market leader in this field, with an established reputation for innovative power protection design, supply and application. Expansion has been achieved through a commitment to providing customers with the highest level and quality of service.

on365 has the people and the tools to understand both the technical and practical issues involved for your business, its people and its IT infrastructure requirements. This understanding extends beyond taking care of design, safety, principles of operation, future growth and after-sales services. More importantly, it looks at value and basic business principles such as 'return on investment' to ensure that the customer is furnished with a complete solution for their current business needs. Wasting expenditure worrying about the tomorrow's possible growth is practically eliminated by designing on-line expansion facilities, without the need for system downtime.