

Site Power Clusters, Providing Plug-in 400V and 110V Supplies



Part Number A7191739 - Front and rear views showing 400V and 110V equipment

Although 110V Reduced Low Voltage remains the predominant on-site voltage to supply temporary lighting and portable power tools on UK construction sites, plug-in 400V power is also widely used across many sites to supply items of mobile plant such as welding sets, mortar silos, dewatering pumps and other items of heavy plant. Following discussions with a client on a recent project, it was identified that there would be many benefits if the 110V and 400V outlets could be combined into a single Site Power Cluster, fed from a common supply cable with a cross section of up to 16mm².

The Site Power Cluster is a factory built and tested assembly housed in a robust, non-vented enclosure providing protection to IP44. Enclosures incorporate type tested lifting handles and hinged gasketed covers with quick release fasteners protect all switchgear. The canopy extends to the front and rear to provide additional mechanical protection to the sockets and enclosures have a bolting down facility. The assembly is fitted with a set of incoming 16mm² terminals, which feeds a 63A, 4P switch to control the following equipment.

400V Equipment

Fitted with a 32A TP MCB / 4P 30mA RCCB combination, which feeds a 32A 400V 5P switched and interlocked socket outlet to BS EN 60309-2. The interlock prevents insertion or withdrawal of the 400V plug on-load. Also fitted with a 16A triple-pole type "D" MCB which supplies and protects an integral 10kVA three-phase transformer with a voltage ratio of 400:110V. The star point of the secondary is connected to earth and the transformer provides a 110V Reduced Low Voltage output as defined in BS7671.

110V Equipment

The secondary side of the transformer supplies 4 no. 16A double-pole and 2 no. 32A double-pole Type "C" MCBs, each feeding a 16A or 32A, 2P+E, 110V socket to BS EN 60309-2. Also fitted on the secondary with 2 no. 10A double-pole MCB / RCCB combinations, each feeding a hard wired lighting supply point. A 10A rated MCB / RCD combination is required to protect semi-permanent lighting circuits, which are not adequately protected by MCBs alone, primarily due to the high earth fault loop impedance of longer RLV circuits and the low line to earth voltage (a maximum of 63.5V).

The 400V and 110V equipment is fitted to opposite sides of the assembly.

If you would like to discuss a Site Power Cluster for a construction project, please contact the Blakley Sales or Project Teams who would be pleased to be of assistance.