

# SPECIAL PROJECT

## Site Power Cluster Providing 110V, 230V and 400V Supplies

The wider use on UK construction sites of plug-in 400V and 230V equipment, working alongside plug-in 110V powertools and 110V temporary lighting, has seen an increasing demand for Site Power Clusters, which provide all three voltages from a single TP&N supply.

### 230V / 400V Equipment

The assembly shown alongside has an incoming set of 16mm<sup>2</sup> terminals, which feed a 4P mains isolator with a nominal rating of 100A, mounted to the rear of the enclosure. The isolator feeds a 32A TP MCB / RCCB combination, which supplies a 32A 400V 5P IP67 socket and a 16A SP MCB / RCCB combination, which supplies a 16A 230V 3P IP67 socket. The isolator also supplies a 16A TP Type "D" MCB, which feeds an integral 10kVA, 400:110V, three-phase transformer providing a Reduced Low Voltage supply. All 230V and 400V equipment is fitted to the rear of the enclosure.

Fitted to the front of the enclosure and fed from the transformer secondary is an array of 110V supplies, including socket outlets to supply portable power tools and time clock controlled hard wired lighting outlets.

The 16A and 32A 110V sockets are individually protected by double-pole MCBs and they are also group protected by a 300mA 4P 110V RCCB, which ensures the 5 second disconnection time for 110V circuits is met. Without the incorporation of a medium sensitivity RCD to protect 110V sockets, there is a significant risk that line to earth faults will not be cleared, with the consequent risk of fire.

The assembly is also fitted with two 16A, hard wired, 4 core lighting circuits. These 4 way lighting connection points are individually protected by 16A, double-pole, 30mA, 110V RCBOs with the switched live pole of each connection point controlled by a 110V time clock / contactor. The time clock has near field communication, and the settings can be downloaded from an easy to use phone App. An override switch is also provided, allowing the lights to be switched ON at any time. The contactor has normally closed contacts, so that if the control circuit MCB operates, the system fails safe i.e. the lights will remain permanently ON. The lighting outlets supply our Flori-67/4P 4 core plug-in lighting system, which allows an unswitched supply to be provided for emergency lights, enabling all lights to be turned OFF without discharging the integral batteries within emergency fittings.

Site Power Clusters with other combinations of mains and RLV sockets can be provided. The incorporation of hard wired lighting circuits is optional. They can be 3 core and do not need to be controlled by integral time clocks and contactors.

If you would like to discuss a Site Power Cluster, please contact the Blakley Sales team who will be pleased to be of assistance.



S171159 - Front and Rear Views



S171159 - Front View

## THE POWER PROFESSIONALS

SP92 - 03/22

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