BLAKLEY ELECTRICS

CASE STUDY
DATA SHEET

Power Cluster Plus with Eco-Tx (for Zero Off Load Losses)

Power Cluster Plus assemblies are a professional, efficient and economic way of providing multiple voltage power outlets for the long term maintenance of power stations, car plants, railway repair sheds, aircraft hangars, food processing plants, fabrication yards and many other industrial locations. A Power Cluster Plus is a factory built assembly comprising of a robust, purpose built enclosure, housing the necessary switchgear, transformers and socket outlets required for an installation. No electrical assembly activity is carried out on site, just the connection of a single mains voltage feed to complete the installation.

The Blakley Projects Team were recently involved on a large Energy from Waste project where there was a requirement for 70 no. Power Cluster Plus assemblies. 65 no. were to be installed indoors but because of the installation environment they needed an overall ingress rating of IP55. 5 no. of the assemblies were for installation outdoors and these needed an ingress rating of IP66. In addition, the external enclosures had to be fabricated from grade 316L stainless steel due to the corrosive atmosphere. The stainless steel enclosures had a painted finish to match the other assemblies.

All of the Power Cluster Plus assemblies were to the same electrical specification and incorporated a 63A 4P main isolator. Each assembly was fitted with a 32A, 3P+N+E, 400V, IP66, switched and interlocked socket to BS EN 60309-2, which was protected by a 32A TP MCB / 30mA 4P RCCB combination. Also fitted was a 16A SP Type “D” MCB feeding a 3kVA, 230:110CTE, continuously rated transformer providing a Reduced Low Voltage supply. The transformer supplied a 32A, 2P+E, 110V, IP66, switched and interlocked socket to BS EN 60309-2, which was protected by a 32A DP MCB.

Power Cluster Plus, part no. A7293251 with ECO-Tx feature to eliminate off load losses

Power Cluster Plus, part no. A7293251 with ECO-Tx feature and interlocked socket outlets for use by ordinary persons

Eco-Tx

The Power Clusters incorporate our Eco-Tx feature, which interlocks the supply to the primary winding of the transformer with the 32A 110V socket, so that the transformer winding is only energised when a plug is inserted into the socket and the socket switch is in the ON position. To remove the plug, the switch has to be in the OFF position and the primary winding is then completely isolated, eliminating off-load losses from the transformer core when not in use. The off load losses of the 3kVA transformer are a modest 74W, which equals 1.77kWHr per day, or 646kWHr per year per transformer. Multiply that by 70 transformers and the total would be an astonishing 45,223kWHr per annum, whether or not the windings are in active use! The Eco-Tx feature requires the incorporation of a switched and interlocked socket, which also increases safety if the assemblies are used by ordinary persons. The incorporation of the Eco-Tx feature clearly has huge potential for minimising running costs and eliminating unnecessary emissions over the lifetime of the product.

If you have a requirement for Power Cluster Plus assemblies with the Eco-Tx feature, please contact our Projects Team who would be pleased to discuss options.

Experts in **high performance** power and lighting products
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