

630A Distribution Assembly for UK Armed Forces

Blakley Electrics have been the main supplier of outdoor distribution assemblies to the UK Armed Forces for the last 30 years. Many requirements can be met by in-service assemblies but there is still a need for non-standard equipment for project specific tasks.

A recent requirement was for a 630A, plug-in, outdoor distribution assembly that could be supplied from a single 320kVA generator (Supply A) or from 3 no. synchronised 80kVA generators (Supply B). On the outgoing side, the requirement was for 4 no. outgoing TP&N circuits comprising of 1 no. 63A multi-pin socket outlet and 3 no. sets of single pole connectors (SPC) each protected at 125A.

The enclosure was derived from our Reflex series of outdoor distribution assembly with controlled access to the plug-in incoming and outgoing connections (to prevent unauthorised interference). The enclosure provides protection to IP55 and incorporates a sub-frame, which allows incoming and outgoing cables to run along the surface as they may not be trenched.

Supply A is derived from a 320kVA generator and is connected via a set of 5 no. 800A SPCs, which feed a main 630A 4P MCCB. Supply B is provided by 3 no. 80kVA synchronised generators, each connected to the assembly by a set of SPCs rated at 400A. The three sets of 400A rated SPCs feed a second, 630A 4P MCCB via 3 no. 125A MCCBs.

To ensure supplies A and B do not feed the bus bar system at the same time, the two 630A MCCBs are key interlocked. The simple, effective interlock arrangement of two locks and one key ensures that only one incomer at a time can be closed (the key must be inserted into an MCCB to allow it to be closed and, once the MCCB is closed, the key is trapped and can only be released when the MCCB is in the open position).

On the distribution side, the assembly has four outgoing ways. One way is protected by a 63A MCCB with variable RCD and feeds a general purpose 63A multipin socket. Three outgoing ways each comprise of a 125A MCCB with monitored earth protection, each supplying a set of 5 no. 400A SPCs plus a separate auxiliary socket for the pilot return. Until the pilot-earth loop circuit is complete the associated 125A MCCB cannot be closed. RCD protection cannot be provided for these three outgoing circuits because the equipment they feed incorporate filters, which would cause an RCD to trip.

If you would like to discuss a requirement for a standard or non-standard, high current, outdoor distribution assembly, for a military or mercantile application, the Blakley team would be pleased to be of service.



A7085293 Free-standing, plug-in distribution assembly, which can be fed from 1 x 320kVA generator or 3 x 80kVA generators.



1 no. set of 800A SPCs feeding a 630A incoming MCCB



3 no. sets of 400A SPCs, each feeding a 125A incoming MCCB



2 no. Incoming compartments each with a 630A MCCB, which are key interlocked to prevent simultaneous closure.



A7085293 showing one incoming compartment and one distribution compartment with switchgear to protect outgoing outlets



3 no. outgoing sets of SPCs & 1 no. 63A 5P socket. The SPC circuits incorporate monitored earth protection and the multipin socket is protected by MCCB with variable RCD.

