

Tunnel Mains Distribution Assembly, 800A

Although standard Mains Distribution Assemblies (MDA) are commonly used on tunnel projects, we often produce variations of our standard products in order to meet specific customer requirements. A recent example was the design and manufacture of an 800A MDA, where the basic enclosure, bus bar system and general layout were based on our B6 series of MDA but a number of project specific features were also incorporated.

The assembly incorporated an incoming auto mains failure arrangement based on the Schneider Transferpac changeover system, utilising 2 no. NS800N 800A 4P MCCBs mechanically and electrically interlocked to prevent simultaneous closure of the two incomers (mains and generator). The changeover controller included generator start-up and load shedding functionality.

The two incoming supplies were connected via 2 x single-pole Powersafe panel mounted drains per phase, neutral and earth, each rated at 500A. The Powersafe connectors enable the assembly to be relocated quickly and safely. The connectors were fitted to a non-ferrous gland plate.

Each incoming supply incorporated 5 x test sockets and a multi-function meter with kWhr function was also connected to the mains supply. The sockets enable a range of installation tests to be carried out without the need to remove shield plates. A set of test sockets was also provided for each outgoing MCCB / RCD. The primary purpose of these sockets was to enable the RCDs to be tested with a dedicated RCD test set, without the need to remove shield plates in order to gain access to terminals, etc.

On the distribution side, a series of outgoing MCCB / variable RCDs were fitted, in current ratings of up to 400A. The MCCBs incorporated electronic trips, which can be set in a range between 36% and 100% of the nominal rating. Two 250A MCCBs supplied integral contactors each controlled by an Earth Continuity Monitoring (ECM) device. These two ways can be used to supply Victor Mining sockets, which require electrical interlocking (provision is made for the sockets to be retrofitted on site). Standard glanded connections can also be made to the 250A circuits, and provision is made for the ECM devices to be by-passed in this configuration (the external ON / OFF controls can still be utilised in by-pass mode). To feed loads rated up to 63A (single or three-phase), an 8 way TP MCB pan assembly was fitted into a segregated compartment. The pan was supplied via a 160A 4P MCCB / RCD fitted in to the main enclosure.

Lastly, to make the assembly as conspicuous as possible in a tunnel environment, the enclosure was provided with a bright, white, painted finish.

If you would like to discuss specialist distribution equipment for a tunnel project, please contact the Blakley Projects team, who will be pleased to be of assistance.



Part number A7085064, doors open, shield plates in-situ



Incoming auto changeover arrangement, shield plate removed



Incoming single pole connectors, 2 no. per phase, neutral and earth, mains & generator



Main enclosure plus end boxes for (i) optional Victor sockets and (ii) a pan assembly