

## Generator Interface Unit

During the initial stages of many construction projects, mains power is not available and generators are needed to supply the site for periods of months and sometimes years. Even at the early stages of a project, peak loads can be high (tower cranes, site offices, welfare facilities), which requires the provision of significant generated power, often in the range from 250kVA to 1000kVA.

If the site is supplied from a single, large generator, the fuel consumption remains high even when large loads are not being supplied, such as at night or at the weekends. In addition, when maintenance has to be carried out on the generator, or if the machine should fail, the site is left without power. One solution to this problem is to use a multiple of smaller generators feeding a Generator Interface Unit (GIU).

GIUs are free-standing, outdoor assemblies, derived from our tried and trusted range of Mains Distribution Assemblies (MDA). They act as the marshalling point for the supplies from multiple, smaller generators. The generators must be synchronised and require automatic control systems, which monitor the load, and start or stop the generators feeding the GIU in line with the fluctuating load. This on demand approach enables the number of running generators to be seamlessly matched to the load. Fuel consumption, noise and pollution are minimised, as the size of supply can be closely aligned to the load being supplied. Disruption caused by generator maintenance can also be eliminated, as the other generators in the farm can generally supply the load whilst one is being serviced.

To increase flexibility and on site safety, GIUs usually have segregated (Form 4) enclosures with each incomer housed in its own compartment. This enables individual generators to be connected or disconnected safely and without interrupting the supply.

GIUs usually incorporate a single, high current output MCCB, which feeds the first MDA on the project. Once mains power is available from the local DNO, the supply to the MDA can be moved from the GIU to the mains, with no impact on the installed site distribution system. Alternatively, if the site is to be supplied from generators for the entire project, the GIU can incorporate distribution switchgear and combine the functions of a GIU and MDA (see attached images of A7191678).

If the changeover between generators does not need to be seamless, GIUs can be configured to accept supplies from generators that are not synchronised and do not have automatic controls. In this arrangement, the incomers of the GIU are interlocked to ensure that only one generator is electrically connected to the bus bar at a time. This arrangement is less sophisticated than using automatically controlled generators but its simplicity and lower cost can be attractive.



GIU, 3200A Rating, 6 no. 800A Incomers with Individual Kilowatt Hour Meters (Doors Removed)



A7191678 - Combined GIU and MDA, 1600A Rated, Doors Open, Stand Extension Not Fitted



A7191678 - Combined GIU and MDA, 1600A Rated, Doors Closed, Stand Extension Not Fitted

If you are involved in a project where generators will be used to provide the initial temporary supply and you wish to discuss the specification of a Generator Interface Unit, please contact our Projects Team who will be pleased to be of assistance.