

## Generator Connection & Changeover Assemblies

In recent times an increasing number of organisations have contacted us with concerns about the catastrophic effects that the loss of mains electricity has on their operations. This is often associated with an extreme weather event, which are clearly on the increase. Businesses are seeking to mitigate the risk either by installing a permanent stand-by generator or by providing the means to connect a temporary generator at short notice. Blakley Electrics has various products within its range, which can assist with delivering either solution.

In nearly all schemes of this type there is a requirement for a changeover switch, which enables an installation to be supplied safely from the mains or from a stand-by generator. The changeover can be achieved via a simple, manually operated switch or through the adoption of a more sophisticated automatic transfer switch (ATS).

Our standard ATS assemblies incorporate two 4P contactors which are electrically and mechanically interlocked to ensure that they cannot be closed simultaneously (they can both be open at the same time). The contactors are controlled by a Deep Sea controller, which monitors the mains and, if it detects the loss of supply (one or more phases), it opens the "mains" contactor, sends a start signal to the generator and closes the "generator" contactor after a pre-determined period to allow the generator output to stabilise. When it detects that mains power has been restored, the controller can shutdown the generator, open the generator contactor and close the mains contactor. The controller is fully programmable, as there may be a wish for some installations to be fed from the generator for an extended period to ensure the mains supply is stable. Please refer to data sheet DDS012 for details of standard ATS assemblies rated up to 400A (higher current assemblies can be supplied to order).

Manual changeover switches are also available, in current ratings of up to 800A and beyond. Switches are mechanically interlocked so that only one supply can feed the load at a time and they also incorporate an OFF position. Manual changeover switches are typically supplied in outdoor enclosures.

When an installation is to be provided with a plug-in generator connection point, to allow quick connection to a temporary generator, a Generator Connection Unit (GCU) is required. These incorporate single-pole drain connectors rated at 500A or 800A, which mate with suitable cable mounted single-pole source connectors fed from the generator. The drain connectors are mounted behind a hinged access door, which can be closed once the connectors are mated, to prevent unwanted interference. The GCU is fabricated from ferritic stainless steel and can be mounted on the outside of a building. The load side of the GCU has to be permanently cabled by the installer to a remote changeover switch. For additional safety, GCUs can also incorporate sequential single pole connectors (see image).

If you would like further information on changeover switches or Generator Connection Units, please contact the Blakley Projects team who will be pleased to be of assistance.



S070072 - Generator Connection Unit Door open giving access to powerlock connectors. Top panel also removed.



Optional sequential powerlocks where connectors must be connected / disconnected in sequence (earth is first in and last out)



S141468 - Manual Changeover Switch, 400A



S010164 - Automatic Transfer Switch, 400A