

## Dockside Distribution Assemblies, 50Hz and 60Hz

When electrical distribution equipment is permanently installed in exposed dockside locations, many factors have to be taken into account, some of which are more common than others...

On a recent dockside project, there was a requirement for enclosures to be of heavy duty construction with an ingress rating of IP56. They also had to be fabricated from grade 316L stainless steel and have colour coded metalwork for easy identification of 50Hz and 60Hz supplies. Some final Dockside Connection Units (DCU) had to incorporate twin 320A sockets (one for each supply frequency) with cam push-pull mechanisms to assist with plug insertion and withdrawal. The sockets also had to be provided with monitored earth protection, which performs the dual functions of electrical interlocking and ensuring the remote equipment is always effectively earthed. In addition to these "normal" dockside requirements, the tops of the different types of DCU also had to incorporate spikes to make them a less attractive nesting site for the local seagull population, which is not such a common requirement!

Another unusual feature of these units was that neither 320A socket incorporated an earth pin. Instead, a separate 500A single-pole connector was incorporated for each socket, to provide an earth connection to the remote equipment being supplied. To ensure the remote equipment is always effectively earthed, an SELV pilot-earth loop circuit is incorporated, which comprises of a pilot cable running from the pilot pin of the 320A socket via a suitable plug to the remote equipment and returning via the associated 500A single pole "earth" connector. An Earth Continuity Monitor will only enable the supply MCCB to be closed when (i) a suitable plug is inserted into the 320A socket, (ii) the 500A single-pole earth connector for that circuit is mated, and (iii) the pilot-earth loop impedance is less than 0.5 ohms. If the pilot earth loop impedance should rise, whether due to a gradual deterioration of the earth or because either connector is withdrawn, the supply MCCB will open automatically. Pilot core protection is also provided.

If you would like to discuss equipment for a dockside project, please contact our Projects Department who will be please to assist.



Dockside Connection Unit, Part No. A7292487



Dockside Connection Unit, Part No. A7292488



Plug-in Protective Conductor, interlocked with respective socket



SDB 630A 50Hz Part No. A7292485



SDB 630A 60Hz Part No. A7292483

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

E: [sales@blakley.co.uk](mailto:sales@blakley.co.uk) W: [www.blakley.co.uk](http://www.blakley.co.uk)

South: 1 Thomas Road, Optima Park, Crayford, Kent DA1 4QX

North: Suite 38, Pure Offices, Turnberry Park Road, Morley, Leeds LS27 7LE

T: 0333 188 0284

T: 0333 188 0285