

High Current RCD & Monitored Earth Protected Socket Assemblies

We manufacture a standard range of socket outlet assemblies rated up to 63A, incorporating 30mA RCD and Monitored Earth (ME) protection. Socket assemblies with ME protection are usually used to supply portable or transportable mains voltage equipment, installed in locations where there is a high risk of physical damage to trailing cables and equipment. At the heart of the monitored earth protection system is an Earth Continuity Monitor (ECM), which monitors an ELV loop circuit comprising of the earth conductor and a pilot wire, which extends from the socket to the remote appliance. Unless the pilot-earth loop circuit is complete and the impedance is beneath a pre-set threshold, mains power cannot be applied to the circuit. In addition, if the impedance of the pilot-earth loop rises above the pre-set threshold, the supply will be automatically isolated.

For applications above 63A we manufacture non-standard socket assemblies with RCD and Monitored Earth protection, which can be used in a wide range of challenging environments including tunnels, quarries, dockyards and aircraft hangars, to name but a few.

Alongside is an image of an assembly fitted with a 125A socket to BS EN 60309-2. The assembly is to be installed in a tunnel and incorporates variable RCD protection (adjustable from 30mA to 30A), overcurrent protection via an MCCB and ME protection. The ME protection provides optional pilot core protection, which requires a diode to be placed in the remote appliance. Should there be a short circuit in the ELV pilot-earth loop, which could be due to a cable being damaged, the supply will be isolated as the pilot-earth loop may not extend to the appliance, which means the appliance may not be effectively earthed. Assemblies in tunnels are also at risk of physical damage and the socket assembly is housed within a protective crash frame.

Also alongside is the image of an assembly rated at 200A fitted with a Marechal Decontactor socket to BS EN 60309-1. This type of socket is widely used in military aircraft hangars, usually in ratings of up to 125A. However, this particular installation required a socket with a rating of 200A, which we were able to provide. The assembly also incorporates variable RCD protection and pilot core protection. Both assemblies illustrated also incorporate a diode reversal switch, which allows pilot core protection to be provided whether the diode in the appliance is connected anode or cathode to earth.

If you would like to discuss an application that requires monitored earth and RCD protection, please contact the Blakley Projects team, who will be pleased to be of assistance.



Part no. A7340250, 125A socket with RCD and monitored earth protection mounted within a crash frame.



Part no. A7340144, 200A socket with RCD and monitored earth protection housed in a wall mounting enclosure