



MAGELLAN POWER CASE STUDY

BHP Locomotive Charger



BHP currently operate a motive power fleet in the Pilbara with 182 locomotives based on the EMD / Progress Rail SD70ACe design with both standard and /LC 'low clearance' and later /Lci 'low clearance international' models.

BHP had recently installed a new servicing workshop for its locomotives which required battery chargers to charge and discharge the batteries used by the vehicles. Magellan Power were engaged to design and manufacture portable industrial battery chargers for ease of use in this application.

Client
BHP

Date
October 2018

Location
Pilbara Region, Western Australia

Product
Emergency Trolley Charger



Client Requirement

Mining locomotives have large batteries that are rarely needed for heavy discharge situations during service.

The locomotives are air start and as such they do not load them at starting.

The idea is to discharge and charge the batteries within a 10-12 hrs per service cycle.



Magellan Solution

The solution designed by Magellan Power is a trolley charger (essentially a Magellan MCR11 charger) but housed in a transportable trolley enclosure. The MCR11 charger is robust and designed for dusty and hazardous environments, which perfectly suits the Pilbara mining environment. The trolley enclosure has been carefully designed with inflated wheels to hold the weight of the equipment for the MCR11 charger (transformer, inductor, capacitor, diode, relay boards, breakers, fuses, etc).

The trolley charger rating and the trolley load bank rating were carefully designed to meet the client requirements. To be able to meet the client requirement to charge and discharge the batteries within 10-12hrs, the charger was provided with auto-boost to charge the batteries faster than normal without damaging them. The load bank was also carefully calculated to discharge the batteries and complete the capacity discharge test within the specified time

- For easy connection trolley chargers are provided with a Clipsal plug for input connection and Anderson connector for load and battery connection.
- With the trolley charger the customer can complete the capacity test on their batteries, and charge and discharge their batteries within 10-12hrs.

