

# DCI PPS

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## LOAD BANKS



## FEATURES

- Unit range 200, 600 & 1000kW resistive
- 500kVAR reactive units
- Supply range 208-480 Vac 50/60 hz
- Air cooled compact design
- Load steps in 1kW increments
- User friendly interface
- Class1 instrumentation
- Remote control of single/multiple units
- Automatic/manual sharing multiple units
- Auto loading for repeat identical tests
- Automatic protection circuitry
- Data retrieval for laptop report generation
- Rugged 316 Stainless steel construction
- Integrated fork tube for ease of handling
- Optional certified lifting frame for offshore
- Phase rotation selector
- Designed & manufactured in Australia



## Construction

The Load Banks are constructed from 2mm zinc-treated plated steel and 316 stainless steel for off shore application. All panels and mainframe are power coated. Elements are fully supported through there entire length. The main body is mounted on a galvanized steel frame giving extra support. The units have three standard features to optimize mobility. Wheels for workshop applications and fork tubes for site work.



## 1000 kW unit

In the last few years the term duty of care has become something every company has had to deal with. With this in mind PPS has made this unit with the protection of the operator in mind. A thermal blanket and air gap have been built into the Load Bank to minimize the outside wall from been over heated, which could cause burns if accidentally touched. The outside temperature of any panel on the load bank has been designed so as not to be more than moderately above ambient temperature. External panels on the load bank remain touch safe at full duty with a 45°C ambient temperature. Other features include lockable handles on all doors and key handles on doors to the elements and fans.

## Finish

All zinc steel units are under coated before power coating. Stainless steel units are 316 stainless. All bolts are stainless steel and hinges are brass with stainless pins. All floor pans have drain holes to remove excess water, for ease of cleaning. Powder coating is used in preference to marine painting because of the lack of colour distortion. Powder coat also has a higher temperature tolerance. We have a range of units manufactured in stainless steel, this being the preferred construction of our units, which are to be used in an offshore environment.



## Cooling fans

Cooling fans are horizontally mounted. The fans are a cast aluminum construction and deliver 2800L/sec at 250pa. Fans are constructed to IP56. The extra airflow across the elements reduces the elements core temperature and in doing so increases their life expectancy and reduces excess heat.

# Resistors

Load resistors are stainless steel finned, incoloy sheath type, and fully moisture sealed and constructed to IP65. Resistors are made with a cooling section which minimizes heat transfer to cable terminations. Resistor connections are made using copper buss bar and cables are arranged to minimize strain on terminals. All resistors are fully supported to alleviate vibration fatigue and early failure.



## Simple Controls

# PPS Controller

The PPS controller allows multiple units to be controlled from the one unit. Every unit has a master and slave switch that allows each unit to operate as a stand-alone unit or control multiple units.

The controller does not require batteries as it takes its power source from the supply it is testing or external supplies if voltage being tested is outside its range. An internal/external selector switch is used when the supply being tested is outside the voltage/freq range of the cooling fans. Any operator errors are corrected by way of instruction in the viewing window. Analog meters are used to monitor the stability of the power source under test. The PPS controller utilizes contactors to step kW loads from 1 to 1000 kW in one kW steps. The controller uses the latest microprocessor technology to control the switching of contactors. This micro allows the controller a higher degree of flexibility and can control up to 250 units from the one station. The power analyzer that we recommend has multi function capabilities that is not limited to the one unit. The microprocessor has multi function fail-safes and can be customized to client specifications. The power analyzer has a data logger

# Termination

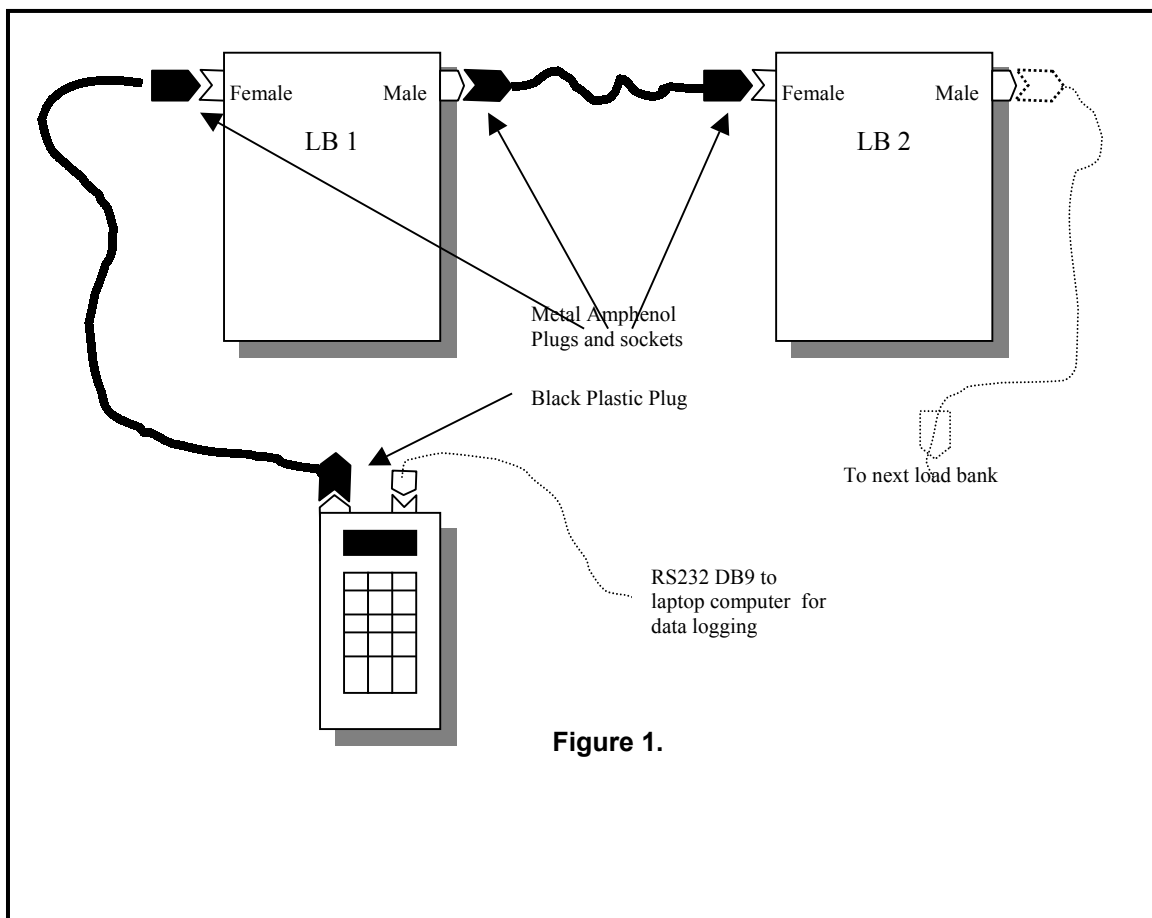
The Loan Bank allows easy termination of test cables through a rubber flap in the bottom of the unit. The door can be then shut and locked preventing any access to live terminals by unauthorized personnel. There is a second set of cable termination tags at the front of the unit, which can be used to connect a smaller unit in series or to connect a PPS reactive load bank.



which information can be retrieved at a later date or viewed while test is in progress. Again this unit can be customized to suit client specifications. There is a range of software that is available, which allows the information to be viewed in many different forms. The controller has a [RS-485 output] which a lap top computer can be connected. The power analyser also allows us to control the correct kW switching regardless of the incoming supply voltage

## Overview

The remote control unit allows up to 32 load banks to be daisy chained together, and controlled as if they were one unit or individually. The capacity of the load banks in the system can be different, with the remote control unit displaying the sum capacity of the system and any alarm conditions. The connection details are as follows in figure 1.



### System Mode:

This is the normal mode of operation from the main screen, with the total load available in the system displayed. On the request for a new load the remote control unit will share the load across the individual load banks in the system proportionally so each carries the same percentage of its full load. This allows each load bank in the system to operate at the same duty.

### Individual Update Mode:

In this mode each load bank in the system can be updated independently, fans can be stopped/started along with load adjustment.

### Remote Control Functions

FAN  
START

As the name suggests, this will start all the load bank fans in the system if in the system mode (main screen). Alternately if VIEW is pressed and then UPDATE the fans of a single load bank can be started.

FAN  
STOP

This button will stop all the load bank fans in the system if in the system mode (main screen). Alternately if VIEW is pressed and then UPDATE the fans of a single load bank can be stopped. If there is any load applied when fans are stopped either the system or individual load bank, load is removed.

VIEW

The VIEW button allows the operator to view the individual load banks in the system, scrolling through the system load banks by repeated VIEW presses and finally returning to the system mode (main screen). Independent load bank control is accessed through VIEW by pressing UPDATE. (See below)

UPDATE

The UPDATE button allows independent control of an individual load bank within the total system. This function is accessed via VIEW, on viewing the load bank that is to be updated press UPDATE. The load bank selected can now be controlled separate from the whole system. Once changes have been entered user is returned to VIEW to inspect changes that were requested

DUMP

**DUMP is the quickest method of dropping all loads. This can be activated both in system mode (main screen) and individually update mode (via VIEW-UPDATE). Load is removed but fans continue to run.**

AUTO  
LOAD

This feature operates similar to the AUTO LOAD function on the local control panel found on the load banks. This function is only available in the system mode and allows automatic load test execution. User is prompted for the following:

- Maximum load value required for the test of test
- Total time of test in minutes
- Number of stages (1 - 5)

The load is then applied according to the number of stages  
For example a 100kW max load, over 1minute with 4 stages:

Stage 1.	=	25kW for 5 seconds
Stage 2.	=	50Kw for 10 seconds
Stage 3.	=	75Kw for 15 seconds
Stage 4.	=	100Kw for 30 seconds

Time is always divided up to allow ½ the total time at full load. This function provides a repeatable load test that can be used as a standard for periodic testing.

**RESET**

RESET is used to correct a load selection or function and reset alarms, follow screen prompts. If communication is lost with system user must reset to reattempt connection.

**ENTER**

ENTER is used to for data selection, follow the screen prompts.

### **Data Retrieval**

On the top of the Remote Control Unit there is a DB9 female plug that provides an RS232 port for the connection of a laptop computer. This port connects to the RS485 Power Measurement ION network via an optically isolated 232/485 converter internal to the Remote Control Unit. DCI-PPS can supply a suitable portable computer and associated software to carry out detailed power analysis of the power source under test and generate quality load test reports.

## **Auto Load**

This function is available on all load banks; it has been developed to give a set test without operator assistance. It allows the Load Bank to perform a preset program over a given time. The data logger records the results and the results can be viewed at the end of the test in graph format and printed out to be presented to your client for their records.



To operate the auto load function, first press autoloader enter kW of unit, presses enter and the unit does the rest.

During the auto load test if the genset does not respond to the increased load, the unit will automatically shed load to 50% of the load and resume test.

All data is recorded and can be viewed on a printout. This feature is very useful if your clients require a set test, which can be duplicated exactly at a future date without operator error.



