

Troubleshooting

Q PSU present LED not lit.
A Check mains supply ok.
A Check thermistor ok.

Q Battery Present LED not lit.
A Check battery wiring/fuses

Q Battery low LED lit.
A Battery is low, disconnected, or has failed battery test.

Q Battery Low LED flashing
A Battery is charging normal operation.

Q Battery Low LED is out
A Battery is charged

Q Charger status contacts have not changed state (initial power up)
A Thermistor fault

Q Battery test button has been pressed no battery test has occurred
A Is battery low flashing (unit only test batteries when charged)

Safety instructions

The PSU must be reliably connected to earth.
A label showing the protective earth symbol (IEC415 No.5017) should be affixed adjacent to the system earth terminal.
A suitable primary disconnect device shall be provided by the end use application.
The secondary outputs are considered for connection to SELV circuits only.
The maximum leakage current of the final equipment should not exceed 3.5mA under normal operating conditions.

Installation

The unit should be installed to allow adequate airflow through the unit.
Do not cover the ventilation slots in the unit cover.

Vxl Power Limited
Station Road, North Hykeham, Lincoln, LN6-3QY, UK
Tel: +44 (0)1522 500511 Fax: +44 (0)1522 500515 Mail: mail@vxipower.com

www.vxipower.com

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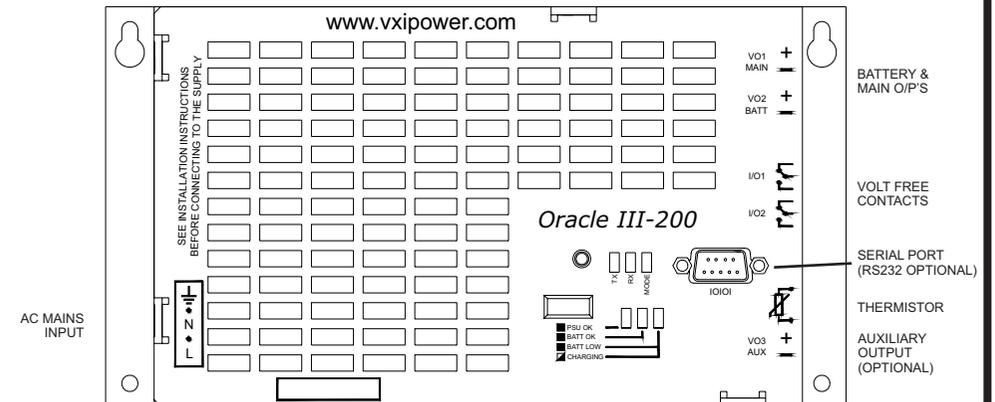
INSTALLATION MANUAL ORACLE III 200W BATTERY BACKED PSU/CHARGER (Inc. RS232 derivatives with manual battery test button)

Introduction

This application note is intended for use by installers, or by new customers evaluating sample units. It is a guide to the main functionality of the Oracle 200W unit, and demonstrates the main features.

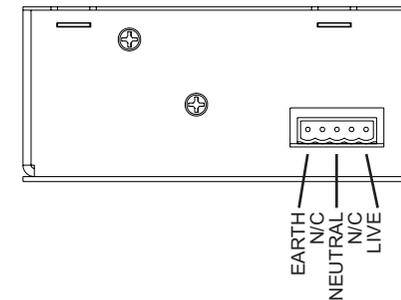
Connection sequence

When connecting unit ensure all other connections are made before connecting the battery. Only then should AC be applied to the unit.



AC Mains Input

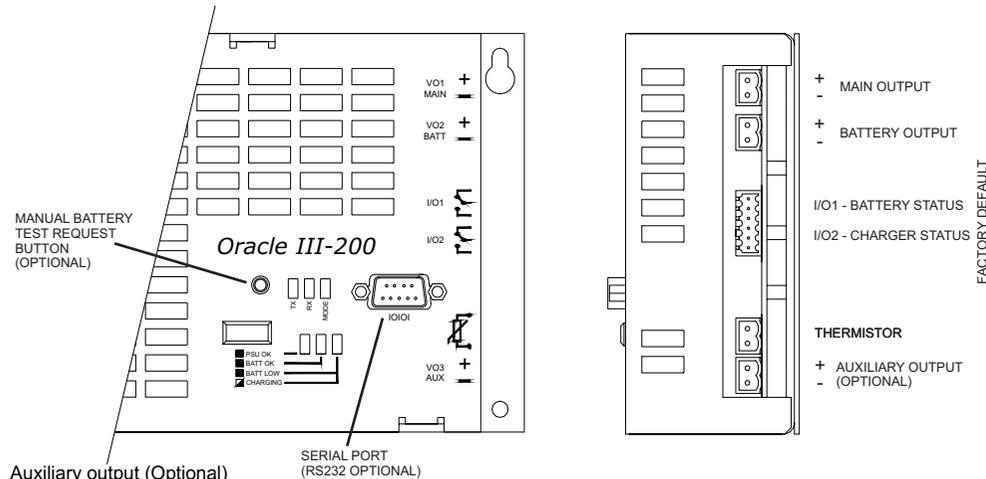
Mains input is via a 5 way Weidmuller Klippon connector.
The unit is auto-ranging over the input range 85-264V AC RMS, 50/60Hz.



Where installed in a system cabinet, the psu earth conductor should not be used as the overall system earth. Cabinets should have supplementary earth bonding in accordance with the installed equipment.

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Output/Signals



Auxiliary output (Optional)

An auxiliary output is provided for customer equipment. This is common 0V with the main and battery outputs.

Thermistor

A thermistor lead is supplied which must be used to ensure correct operation of the battery charger. The thermistor should be sited close to the batteries being charged.

A fault condition will occur if the thermistor is short or open circuit. (See troubleshooting).

Volt free contacts (factory defaults)

Two sets of VF contacts are provided which indicate fault conditions.

Charger status indicates loss of charger (mains failure or failure of PSU). It is also used to indicate a thermistor fault. Battery status is used to indicate a battery low or disconnected condition.

Battery Output

All Oracle units are battery backed, having a separate output to charge the batteries. In the event of a mains failure an internal diode back feeds the battery current to the main output. The battery output has a preset current limit.

Main output

Main output is derived from the power supply during normal operation, from the batteries during mains out. The main output has a preset current limit.

Start-up conditions

The unit runs a self-diagnostic after application of power, in which the input/output conditions are examined in order to give rise to relevant alarm indications. Allow circa 30 seconds for stabilisation after all connections are made and power applied.

Batteries

The charger is designed for VRLA batteries; please consult the factory for suitability of other types. Please ensure the battery/batteries installed are of the correct type. Use of non-specified batteries may result in false battery low alarms (in units with battery test).

External fusing for the batteries must be provided. There is no battery fuse internal to the unit.

Safety note: Please consult manufacturers data before using batteries. Avoid short circuit. Observe polarity.

Battery test (optional)

Initiation of battery test can be implemented either through software, or by pressing the test button on the side of the unit. The battery test will only initiate when the battery is in a sufficient state of charge to give a relevant result. See also "LED functions"

Under Voltage Lockout (UVLO)

Under Voltage Lock Out is a battery protection feature.

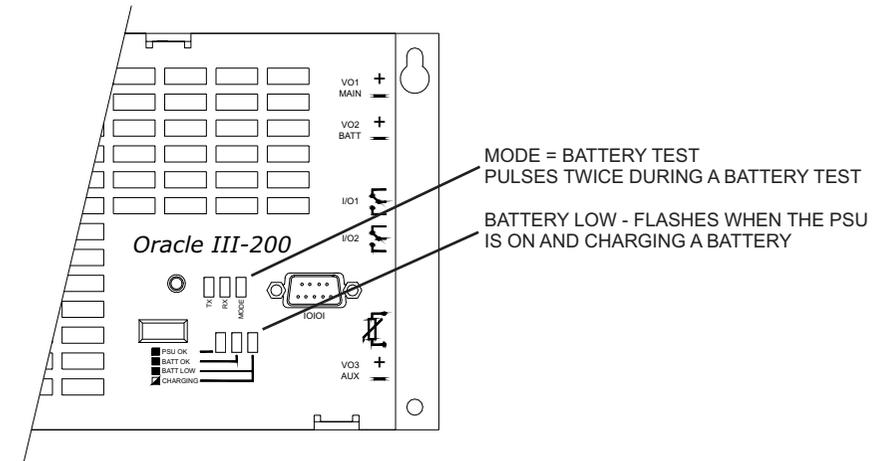
The unit constantly monitors battery voltage, and disconnects the battery at a predetermined (in software) voltage. This prevents deep discharge when running from batteries.

Temperature compensation

The unit provides temperature compensated charging.

The unit is supplied as standard with thermistor lead for remote sensing applications. This should be situated as near as practical to the battery/batteries.

LED / Volt free relay functions (factory defaults)



| VOLT FREE RELAY ACTIVE CONDITION | LED INDICATOR 'ON' CONDITION | MAINS OK | NO CHARGE AVAILABLE | CHARGER OVERTEMP | BATTERY THERM S/C | BATTERY THERM O/C | V01 OVP | V02 OVP | BATTERY CONNECTED | BATTERY LOW |
|----------------------------------|------------------------------|----------|---------------------|------------------|-------------------|-------------------|---------|---------|-------------------|-------------|
| PSU OK | PSU OK | Y | N | N | N | N | N | N | Y | N |
| | BATTERY OK | | | | | | | | | Y |
| | BATTERY LOW | | | | | | | | | Y |
| BATTERY FAULT | | | | | | | | | N | Y |

VOLT FREE ACTIVE STATES:
PSU OK, ACTIVE = CLOSED
BATTERY FAULT, ACTIVE = OPEN

EITHER CONDITION
CAUSES BATTERY
FAULT

Note: all other combinations of the PSU present conditions above will produce a fault.

For Volt Free Relay connection details see unit label

Serial Communications (Optional)

For units fitted with the serial comms option please see the applicable VXI application note for further information.