



**OPERATING & MAINTENANCE
MANUAL**

for

TYPE HAC240-14

Serial Number

M36224

PowerBank

ISSUE 1

CONTENTS

| | |
|--------------------------|---|
| INTRODUCTION | |
| Description | 2 |
| SAFETY CONSIDERATIONS | 2 |
| CONNECTION PROCEDURES | 2 |
| LOAD BANK OPERATION | 2 |
| SPECIFICATION | |
| General | 3 |
| Specification notes | 3 |
| MAINTENANCE PROCEDURES | 4 |
| FAULT FINDING PROCEDURES | |
| Fan cooling fault | 4 |
| Output load fault | 4 |
| Insufficient load fault. | 4 |

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INTRODUCTION

Description

The Hillstone **HAC240-14** load bank is designed to provide single phase power load testing of AC generators or UPS systems

The unit incorporating light weight, force cooled high power resistor elements.

Adjustment of the load current is provided by front panel switch selection.

The unit includes shrouded voltmeter and current sockets for direct measurement of the AC voltage and current via external multimeters.

The load bank incorporate several safety features including earth leakage protection, fan failure detection and contactor isolation which in the event of mains interruption will automatically terminate the test.

All units are light weight, robust, portable and come complete with mains cable swivel castors and carrying handles and include AC power cable.

The fan supply and the controls are powered from the power test source and therefore the unit does not require an external auxiliary mains supply.

SAFETY CONSIDERATIONS

1. The equipment is designed for use in a clean, dry, indoor environment and should only be operated by competent electrical engineers who are completely familiar with the operation and specification of the load bank.
2. Operators must ensure that interconnecting cables are correctly rated to carry the required load current and adequately insulated to prevent the possibility of electric shock
3. When in use the load bank should be cordoned off using safety barriers.
4. The load bank should only be operated in an area with adequate ventilation.
5. During operation the rear air exhaust outlet and outer case may be hot.
6. At the end of a test always run the cooling fan for 5 mins with zero load current to cool the resistor elements.
7. Operators working with electricity should not wear rings, jewellery or metal watch straps.
8. The HAC240-14 load bank is designed for use on AC only. The unit is not designed for use on DC.
9. Refer to the generator or UPS manufacturers operating instructions for additional safety precautions.
10. Ensure all personnel are familiar with the location of the nearest safety kit.
11. During operation the load bank should not be covered or positioned to restrict air flow

CONNECTION PROCEDURE

- A. Ensure the power source to be tested is compatible with the load bank operating voltage.
- B. Do not attempt to operate the load bank above the maximum operating voltage.
- C. Check the power source is isolated before connecting to the load bank.
- D. Check the power isolator circuit breaker is in the OFF position (DOWN)
- E. Check the control switch is in the OFF position (UP)
- F. If required, connect a digital multimeter (AC volts range) to the voltage sockets
- G. If required, connect a digital multimeter (AC mV range) to the shunt sockets
- H. Connect the power cable to the power source and earth where practical.
- I. Check the AC output cable connections are secure.

OPERATING INSTRUCTIONS

Operators should read the SAFETY CONSIDERATIONS and CONNECTION PROCEDURE before carrying out the following operating instructions

1. Ensure the power isolator is in the OFF position (DOWN)
2. Ensure all selector switches are in the OFF position (UP)
3. Turn on the power isolator circuit breaker and ensure the fan rotates correctly.
4. Switch on the appropriate load current channels to the required load current.
5. At the end of the test, switch off all the load current switches (UP).
6. Do not switch off the power isolator circuit breaker or the power source.
7. Ensure the fan is kept running for 5 mins to cool the resistor elements
8. When the resistor elements are cold, switch off the power isolator circuit breaker, switch off the power source and disconnect the cable from the power source.

Specification

| | |
|---------------------------------|---|
| Type ref. | HAC240-14 |
| Max current | 57 amps at 240V AC |
| Max power dissipated | 13720W |
| Switched steps | 1 x 340 watts 1 x 680 watts 1 x 1500 watts 4 x 2800 watts |
| Max operating voltage | 240 V single phase 50 / 60 Hz |
| Resistor tolerance | +/- 10% |
| Test voltage sockets | 4 mm shrouded (AC volts direct reading) |
| Test current sockets | 4 mm shrouded (AC amps 1mV = 1 amps) |
| Protection | Earth leakage protection Fan fail detection Isolation contactor Auto test stop on mains interruption Auxiliary control fuse |
| AC power cable set | 2.5 metres of twin & earth cable |
| Case size | 720 mm long x 330 mm wide x 425 mm high |
| Weight (approx.) | 27Kgs |
| Environmental protection rating | IP21 |
| Movement | Carrying handles and swivel castors |
| Operating temperature range | 0 – 30 deg C |
| Storage temperature range | 0 – 80 deg C |

Specification Notes

- 1) The maximum current is stated at the maximum operating voltage.
- 2) Units are designed for indoor use only in a clean, dry and well ventilated environment.
- 3) The HAC Series load banks are designed for generator and UPS testing on AC only. The unit must be operated on batteries or DC generators.
- 4) External digital multimeters are not supplied with the load bank.
- 5) Information in technical literature, quotations or data sheets are intended to be correct at the time of publication, however, Hillstone Products Ltd bears no responsibility for the accuracy of any information given.
- 6) We reserve the right to make detail changes to specification, components, dimensions or weights at the time of design or manufacture without prior notice.
- 7) All designs and software are the intellectual property of Hillstone Products Ltd.

MAINTENANCE PROCEDURES

The load bank should not require any special maintenance, however as with any electrical equipment periodic checks should be carried out to ensure the equipment is in a safe and satisfactory condition.

The following periodic checks are recommended;

- 1) Check the inlet and outlet grills are free from obstruction.
- 2) Check the controls and cables are undamaged.
- 3) Check the fan rotates freely without obstruction.
- 4) Check all interconnection cables are undamaged

FAULT FINDING PROCEDURES

The following fault finding procedure is intended to identify simple operational errors and has been categorised into four possible problem areas as follows;

FAN COOLING FAULT

- Check the power source is available.
- Check the power isolator circuit breaker is in the ON position (UP)
- Check the aux fuse.
- Check the fan motor operates and is free from obstructions

OUTPUT LOAD FAULT

- Check the selector switches are in the ON position (DOWN)
- Check the isolation contactor energises.

INSUFFICIENT LOAD FAULT

- Check the load source is at the required voltage.
- Check the expected load current against the spec.
- Check the operation of the controls.

Note:

Any identified faults should be reported to the manufacturer

Removing the covers is not recommended.

If any covers are removed to inspect internal components, the load bank must be isolated from the mains and battery

Testing the load bank with the covers removed is not recommended.

Repair or replacement should only be carried out by the manufacturer.