



OPERATING MANUAL

for

AC LOAD BANK

type

HAC415-30

issue 1

Serial number M36506

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INTRODUCTION

The load bank **HAC415-30** is designed for testing 415 volt, three phase, 50 or 60 Hz UPS up to 32.5KW and also 240V single phase 50 hz 10.8 Kw or **240V single phase 50Hz 32.5KW***

The unit comprises of force cooled, high powered resistor channels which provide pre-set load channels via panel mounted switches.

Safety features panel mounted circuit breaker protection, fan motor protection and auto shutoff in the event of a mains interruption.

The load bank is force cooled by a single phase mains powered fan which is connected to the load circuit on L1 to neutral

The load bank is fitted with a 63A 5 pin BS4343 socket also **power lock Neutral***

The case is designed for indoor use and protected to IP21.

The unit is supplied with a carrying handles and castors for easy movement.

*** For single phase 30KW use make sure the blue Power lock (Neutral) is connected using cable provided.**

SAFETY CONSIDERATIONS

- 1.The load bank is designed for indoor use but can be operated outdoors providing it is not subject to driving rain, sea spray or snow.
- 2.The unit should only be operated by competent electrical engineers who are completely familiar with the operation and specification of the load bank.
- 3.The equipment is designed for AC operation only and therefore should not be used on DC loads such as batteries.
- 4.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 when operating at high voltages.
- 5.When in use the load bank should be cordoned off using safety barriers.
- 6.The load bank should only be operated in an area with adequate ventilation.
- 7.Care should be taken as to the exhaust air outlet will be hot.
- 8.During operation the load bank should not be covered or positioned to restrict air flow
- 9.Caution – some metal surfaces will be hot during operation
- 10.At the end of any test the fans should be kept running for 5 minutes on no load to remove the residual heat from the load bank case.

CONNECTION PROCEDURE

- A.Ensure the power source to be tested is compatible with the load bank operating voltage.
- B.Ensure the power source is de-energised.
- C.Do not attempt to operate the load bank above the maximum operating voltage.
- D.Check all panel mounted control switches are in the OFF position.
- E.Connect an appropriate power cable to the panel mounted socket. Five wire connection for three phase operation and 3 wire connection for single phase operation
- F.Ensure the power cables are correctly insulated to prevent any possibility of electric shock.
- G.Connect the power cable to the UPS or generator under test, ensuring the correct phase connections.

- H.Ensure the earth is connected correctly.
- I.A separate earth stud connection is supplied

OPERATING INSTRUCTIONS

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

- 1.Ensure all panels are in place on the load bank.
- 2.Ensure all panel mounted switches are in the OFF position.
- 3.Energise the power source from the UPS or generator.
- 4.Switch on the three phase panel mounted circuit breaker.
- 5.The load bank fan should rotate.
- 6.For three phase tests check the fan motor rotates in the correct direction and the air exhaust is expelled from the opposite end to the control panel.
- 7.If the fan rotates incorrectly the phase connections must be changed as follows ;
 - a)Isolate the power source from the UPS or Generator.
 - b)Change any two line connections at the power source.
 - c)Continue the operating procedure from 1 above.
- 8.Select the required load using the panel mounted switches.
- 9.Do not exceed the maximum rating of the load bank.
- 10.At the end of the test, switch OFF all the panel mounted load switches.
- 11.Leave the fans running (off load) for five minutes to cool the resistor elements.
- 12.When the resistors have cooled, switch off the panel mounted three phase circuit breaker and isolate the power source.
- 13.Remove the power circuit plug.
- 14.DO NOT remove the power circuit plug with the load circuit energised.
- 15.Disconnect the power cable from the power source.

SPECIFICATION

Type ref	HAC415-30
Max operating voltage	415V three phase 50, 240V single phase 50 Hz
Max current rating	45A per phase
Max power rating	32.5 KW three phase, 10.8KW single phase or 32.5KW* single phase
Resistor tolerance	+/-5%
Case size	1100mm long 560mm wide 780mm high
Weight	50KG

TYPICAL PERFORMANCE TABLE

Channel	1 Ph Watts	3 Ph Watts	1 Ph Watts*
Fan + Blance	185	550	550
1	500	1500	1500
2	1000	3000	3000
3	1000	3000	3000
4	1000	3000	3000
5	1000	3000	3000
6	2000	6000	6000
7	2000	6000	6000
8	2000	6000	6000
Total	10685	32050	32050

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 terminal are undamaged.
- 3) Check the fan rotates freely without obstruction.
- 4) Check internal wiring for lose connections or damage.

FAULT FINDING PROCEDURES

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

FAN COOLING NOT OPERATIONAL

- Check the power source is available.
- Check the internal motor protection unit.
- Check the interconnecting cable connections.
- Check the fan motor operates.
- Check for air blockage.
- Check fan blades are secure to motor shaft.

LOAD BANK DOES NOT PROVIDE SUFFICIENT LOAD CURRENT

- Check the power source is at the required voltage.
- Check the required current channels have been selected.
- Compare the current values with the specification table.
- Identify individual current channels for reduced output.

Any faults not corrected by carrying out the above procedures may require the internal wiring or components of the load bank to be inspected for damage.

Note: Isolate the load bank from any power source before removing any covers.

Testing the load bank with the covers removed is not recommended as high voltages can be present on power resistors or terminals.

Repair or replacement should be carried out by the manufacturer.