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## 1. Overview

- This High-Capacity Fan assembly is designed as a spares replacement for fans on existing GD and MV Delta installations. It must NOT be used on new installations.
- These High-Capacity Fan assemblies are used to cool Air Cooled Delta power modules with one fan required per each Delta module.

## 2. Warnings

**Operation of this equipment requires detailed installation and operation instructions provided in this manual; this information should be retained with this product.**

- All power supplies must be switched off and isolated before working on the equipment, failure to do so could result in death or serious injury.
- The fan modules are of IP00 construction and must be built into an enclosure or cabinet.
- This product has been designed to ensure that it is safe. However, misuse can result in injury or death.
- Local safety laws and regulations must always be observed.
- Personnel installing the fan assembly must be suitably trained and skilled.
- Ensure that access to rotating parts of fans is prevented.
- Air used to cool the product is unfiltered. Air ejected from the product may contain foreign particles. Air outlets should be arranged to deflect the air away from the eyes.
- The combined audible noise emitted by fans in an installation can be greater than 70dB(A), dependent on the air flow path.
- Measure the audible noise level in the installation.
- When the audible noise level exceeds 70dB(A), appropriate warning notices should be displayed.
- Replace all shrouds and close all doors before energizing the equipment.
- Connect this equipment to ground/earth using the ground terminal provided.
- The minimum size of the protective conductor must be in accordance with local safety regulations.

### 3. Specifications

#### 3.1 Electrical & Fan Specifications

Function	Specification
Input Voltage Range	575 - 600V AC RMS, Three Phase, $\pm 10\%$
Nominal Supply Frequency	60 Hz
Operating Current	1.55A
Starting Current	5.4A
Start Up Time	2 Seconds
Typical max. fan speed	3320 RPM
Typical Airflow Characteristics	Approximately 900 m <sup>3</sup> /hour (525 CFM) at a pressure of 900 Pa (3.7 In H <sub>2</sub> O)
Overall Efficiency	60.1%
Power Input	1300W

#### 3.2 Mechanical Specifications

Function	Specification
Weight	56.2 lbs. (25.5 kg)
Physical Dimensions approx..	Height 20" (502mm) x Width 9" (236mm) x Depth 17" (435mm)

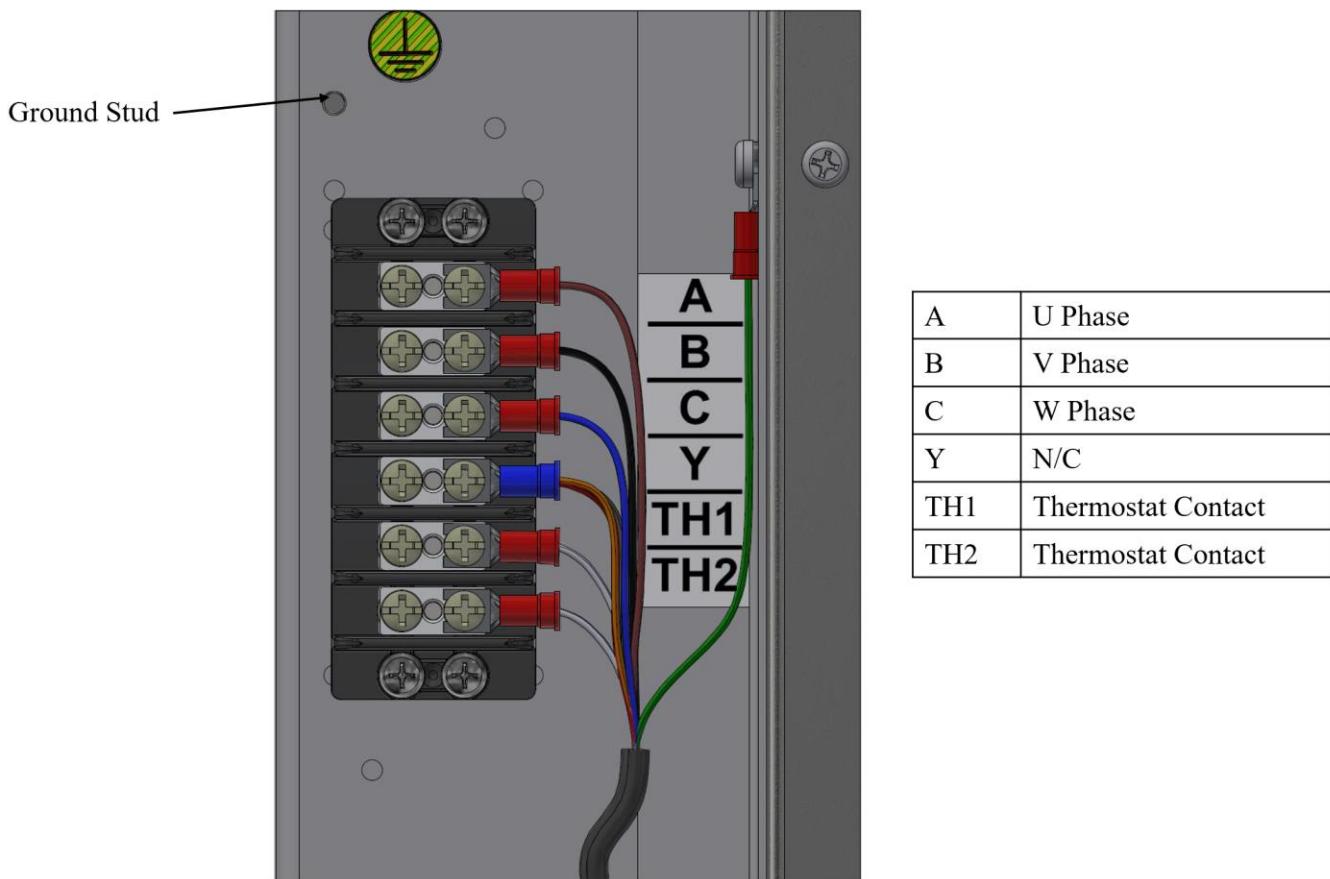
### 3.3 Environmental

Specification	Value
Ambient Temperature (Internal cabinet temperature) - Operating	32°F to 122°F (0 to 50°C)
Temperature – Storage or Transport	-13°F to 131°F ( -25 to +55°C)
Altitude – Storage	Up to 9842ft. (3000m) ASL
Altitude - Transport	Will withstand air transport
Vibration – Transport	IEC 60721-3-2:1997 Class 2M1, in transport packaging.
Humidity – Operating, Storage or Transport	5% to 95% RH, Non-condensing.
Cabinet air – Operating	Pollution Degree 2 as per IEC60664-1, UL 840 & CSA C22.2 No. 0.2-93 i.e. clean, free from dust, condensation and conductive or corrosive gases. Maximum chemicals 15ppm H <sub>2</sub> S, 25ppm NO <sub>2</sub> , 25ppm SO <sub>2</sub>

### 4. Electrical

- The fan assembly has a single 6 pos connector which is a Terminal Block.
- Wire Size Limits: 0.5 - 1.5mm<sup>2</sup> (20 - 16AWG).
- Use consolidating crimp for smaller wires.

- The function of each connection is given below:



**Fig 4.1. Connection Detail TB1**

#### 4.1 Protection

- Thermostat contacts are normally closed and must be wired to the control system to remove power if fan motor overheats and to provide warning indication. Fan re-start is automatic when the fan motor temperature falls below the reset temperature.
- The fan supply should be fused.

#### WARNING

Failure to comply with the above wiring instructions will result in damage to the equipment and present a safety hazard.

## 5. Mechanical Installation

### 5.1 Box Contents

The fan packing box contains one each of the following:

• High-Capacity Fan	AEF-HC-575-03
• Data Sheet	DTS-03246-ASY-A

### 5.2 Installation

- Remove the existing fan unit and retain all fixing bolts and brackets. Re-assemble as below:
- Locate the fan unit onto the upper cross members of the Delta mounting frame (refer to the Air-Cooled Delta manual T1689 for full installation details). Secure with 9/16" (M6 x 15mm) hexagon headed bolts with plain and spring washers. The fan mounting flange should sit flat against the underside of the two top cross members with the bolts screwing into the threaded inserts in the cross members.
- The fans are heavy and may be awkward to lift into place, each fan may be split into two pieces. The fan duct fitted first, the main body of the fan housing then being added by pushing horizontally into the location tabs at the rear of the assembly and fixing by the two M6 bolts at the front. Care must be taken to ensure that any wiring disconnected from the terminal block is correctly re-connected and not damaged during fan installation.
- Each fan has a choice of three air outlets - front, top or rear. These are selected by removing the appropriate cover and using this cover to block the unwanted outlet. To keep personnel from the main air and noise path it is recommended that the airflow outlet is through the top or rear of the drive enclosure.
- These fans are normally fitted at the top of the enclosure, outside of the normal accidental finger access range. If they are installed in a position where the fan is accessible, mechanical protection must be provided.
- The air outlet must not be obstructed and should preferably be ducted out of the control enclosure.
- The fan support bracket (attaching the base of the fan box to the upper rear cross member) must be refitted to the cubicle to provide support for the high-performance fan.
- Failure to fit this bracket may cause mechanical damage.
- Each bracket should be secured to the upper rear cross member with an M5 x 10mm pozi-headed Taptite screw.
- All cables connected to this product should mechanically restrained.

## 6. Commissioning

- If it is necessary to perform insulation tests on the converter cubicle, the fan assembly must only be tested at a maximum of 1000V AC.
- If the local safety regulations do not permit reliance on direct metal to metal contact to earth this unit, then the earthing connection TB1/9 must be used.
- When the system is being commissioned measure the level of audible noise emitted by the equipment and compare with the legal limits. If the levels are greater than 70dB(A) check all ducting to see if any improvements can be made to reduce the audible noise. If no improvements can be made ensure that the area in which the equipment is located is identified as a restricted area for which appropriate ear protection should be worn.

## 7. Contact Details for Sales, Service and Support

- Please refer to your local technical support center if you have any queries about this product.

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## 8. Document Revision History

Rev.	Date	Author	Changes
00	20 <sup>th</sup> May 2024	Mark Woods	Original Issue