Active Thermal Management

The trusted name in thermal protection

Parts list – before proceeding, check that you have received all of the following:

(1) Cool-stack IIIE main chassis
(1) Thermal probe
(1) Power supply
(1) Hardware bag
(2) 3' lengths of 3" tubing
(2) 3" outlet ports
(1) Front panel
(1) Rear chassis support

Installation of the Cool-stack IIIE™ rack-mount ventilator

The Cool-stack IIIE is a powerful 1U high ventilator, well suited for removing heated air from mid-size rack installations, whether enclosed or open. It features:

- Two-speed operation, with constant low-speed operation to remove stand-by heat; automatic change to full speed via thermal probe or external contact closure. (See note at "Alternate control methods".)
- Sufficient depth (18") to pull heated air from the back of a rack.
- Four large (120mm/4.7") high-quality fans for quiet ventilation.
- Ability to exhaust heated air through the front, rear or both for maximum installation flexibility.
- Rated for continuous operation

General description:

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The Cool-stack IIIE is an exhaust-mode ventilator. It is usually located at the top of a rack, where its four 120mm fans can pull heated air up from the equipment below and exhaust it through its front panel. It is extremely quiet at idle speed, and makes little noise at full speed. Constant low speed operation ("idle") can be defeated by moving a jumper on the internal pc board.

There are installations in which there is a door or other obstruction in front of the rack, making front exhaust impractical. The Cool-stack IIIE can then exhaust the hot air to the rear of the rack, using 3" tubing (supplied) connected to two ports located at the rear of the top cover. When these ports are in use, the depth of the equipment mounted just above the Cool-stack II cannot exceed 12".

IMPORTANT:

The use of a 2U or 3U vent panel near the bottom of the rack is highly recommended. It is necessary to allow fresh air to enter (preferably at a low level) if hot air is to be removed. If a door would block the vent panel, vent slots, holes, etc., should be provided low on the sides of the rack enclosure. A minimum opening of 8 square inches is recommended; 12 - 16 square inches is preferable.

Preparation:

- **If exhausting through the front panel**, no preparation of the Cool-stack IIIE is needed. Proceed to step 1 of the installation section.

- **If exhausting to the rear**, remove the front panel and top cover of the Cool-stack IIIE and, using adhesive tape, fasten the sheet of black plastic film supplied to the inside of the front panel at each end, blocking the openings as shown in figure 1.

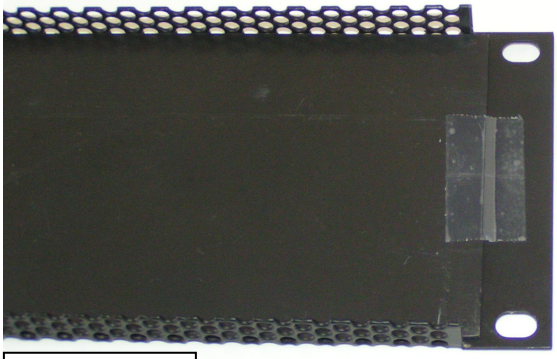

Figure 1

- Remove the blank-out panels from the top of the Cool-stack IIIE and replace them with the exhaust ports as shown in figure 2. (8-32

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Figure 2

- hardware is provided in the accessories box.) Proceed to step 1 of the installation section.

Installation:

1. Mount the Cool-stack IIIE at the top of the rack, or above a particularly hot piece of equipment, with the fans facing down.

2. Mount the rear support bar on the rear rack rails so that it supports the rear of the Cool-stack IIIE's chassis.

3. Plug the power supply into an AC outlet that is always energized (not "switched"). Do not connect the power supply to the Cool-stack IIIE yet.

4. Install the thermal probe. It should normally be fastened to the hottest part of the hottest component, usually the receiver or amplifier. It will switch the Cool-stack IIIE from "idle" or "off" (depending on internal jumper positions) to full speed at about 90 F (31C)**.** In installations with several pieces of heat-producing equipment, it may be preferable to position the thermal probe in the air above the highest heat producer where it can sense the combined heat of all of the equipment. ***Note that this arrangement will slow the response time of the Cool-stack IIIE, as the hot equipment will have to heat a column of air, which will then heat the thermal probe.***

5. Plug the thermal probe into the jack on the back of the Cool-stack IIIE. Plug the power supply connector into the "Power In" jack on the back of the Cool-stack IIIE. The fans will begin to turn at an idle speed. ***See step 7 if constant idle is not desired.***

ADD Figure 3 here – show jack labels

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6. The fans can be forced into full-speed operation by heating the thermal probe with a hair dryer, (do NOT use an open flame or a heat gun designed for use with heat-shrink tubing). ***(See below for more information on controlling the Cool-stack IIIE.)***

7. If constant operation at idle speed is not desired, remove the top cover of the Cool-stack IIIE and remove the small jumper block bridging the 2 pins at the header marked IDLE JMPR. Slip the jumper over either of the 2 pins for storage.

Completing the installation:

Verify that there is an opening for fresh air to enter the rack enclosure, preferably low and in the front.

If hot air is to be exhausted through the front panel of the Cool-stack IIIE, installation is complete. If heated air is being exhausted to the rear, connect the supplied lengths of tubing to the tubing ports now, using the clamps supplied. Position the tubing to direct the air to an area behind the rack, where it can dissipate.

Alternate control methods:

- The Cool-stack IIIE can be controlled by a switch or relay contact closure. A 2-conductor cable with a standard 1/8" (3.5mm) "mono" plug at one end (inserted into the thermal switch jack on the rear panel) is required. Shorting the leads will force the Cool-stack IIIE into full speed. When the leads are not connected together, the fans will either turn at idle speed or will stop, depending on the position of the jumper at “IDLE JMPR” (see step 7, above).

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