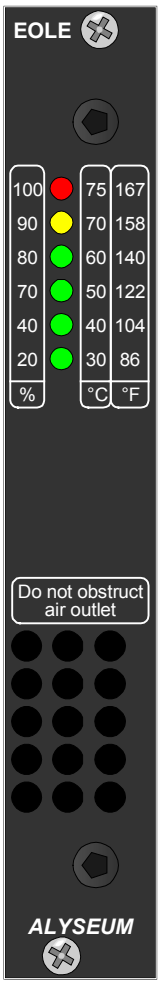
ALYSEUM - EOLE - User's manual 1.0.

1. Introduction



Not every Eurorack is installed in a 20°C / 68°F air-conditioned studio!

EOLE is a 4HP module that ventilates, regulates and monitors your precious modules against excessive temperatures.

EOLE is recommended for hot ambient temperatures and more if you using vacuum tube and power-hungry modules, as the internal temperature of your Eurorack can rise dangerously and reduce the lifespan of all your modules.

Ventilate :

The vast majority of Eurorack units are airtight and often made of insulating materials such as wood.

And, many musicians, for obvious aesthetic reasons, obstruct spaces without modules, trapping the air and preventing natural convection of the warm air produced by your modules and their internal power supply. In many cases ventilation is essential!

Regulate :

EOLE stabilizes the temperature in your Eurorack by varying the fan speed.

Temperature control improves the stability of certain modules, such as analogue VCOs.

Monitor :

Some of the electronic components and capacitors used in your modules have absolute operating temperatures that must not exceed 75°C / 167°F!

Exceeding this temperature will shorten the life of the components and ultimately the module.

EOLE will warn you when this fatal temperature is reached by flashing all its LEDs.

Please note that there is no shutdown mechanism to prevent unexpected interruption of a performance or session.

What's more :

EOLE has linear fan speed control and passive filters to prevent noise feedback in your Eurorack power supplies.

EOLE uses only the -12V rail, relieving the increasingly busy +12V rail.

Important - *Wichtig - Importanti - belangrijk - Ważne – Σημαντικό*

EOLE is not an air conditioner for your Eurorack,

EOLE is not an auto-tune for your analogue VCOs modules and the like.

EOLE is not a fan to cool you down or a vacum cleaner or ……. ☺

Hardware

1.1. Package content

- One EOLE module with Eurorack compliant front panel.
- One plastic bag containing two M3 screws + two nylon washers and one 10/16 pins power ribbon cable.
- Warranty & user manual access card.

1.2. Specifications

- Temperature sensor precision: +/-2°C
- Front panel width: 20 mm (4HP), **maximum depth: 60 mm**
- Air flow: between 0.5 and 5 CFM (Cubic Feet per Minute)
- Acoustic noise at full speed: 28 dB(A)
- Power requirement at 30°C, 2 LED ON and the fan at 20% : 0mA @ +12V / 15mA @ -12V.
- Power requirement at 80°C, All LED ON and Fan at 100% : 0mA @ +12V / 130mA @ -12V.
- EOLE is fully protected against reverse ribbon cable insertion.

1.3. Installation

Carefully choose a stable location for your Eurorack, avoiding vibrations, dust, heat sources, humidity or rain.

EOLE can only be used in a Eurorack synthesizer with an A-100 power supply.

During the entire installation procedure, always switch off your Eurorack.

Make sure that the red band on the flat power supply cable is correctly positioned at -12 volts.

Where to install the EOLE in your Eurorack :

Thanks to its 2-inlet radial fan, EOLE can be installed anywhere in your Eurorack. If you have several rows of modules, always place the EOLE in the top row to ensure better cooling efficiency.

Always close openings with blanking panels.

Rest assured that closing the entire front panel will not prevent the free circulation of forced air. In fact, the large number of small openings, such as jacks, partitions between each module, switches and potentiometers .... will ensure even air circulation from all your modules.

IMPORTANT :

1. Do not obstruct the air outlet on the front of the EOLE!
2. During installation, ensure that no cables touch the fan blades, otherwise the fan will stop working!
3. During installation, pay attention to the temperature sensor on the underside of the board.

2. Use.

2.1. Initialization Sequence.

1. Turn ON your Eurorack case.
2. Sequentially, the 6 LEDs flash one by one at full intensity.
3. The fan runs at full speed for 2 seconds to clean the blades.
4. EOLE module is ready!

2.2. Operations

No operation is required for EOLE to work.

The 6 LEDs inform you of the temperature according to the table below

LED	Fan speed	Celsius temperature	Fahrenheit temperature	Alert
Red	100%	80 °C	176 °F	All 6 LEDs flashing
		75 °C	167 °F	
Yellow	90%	70 °C	158 °F	
4th Green	80%	60 °C	140 °F	
3th Green	70%	50 °C	122 °F	
2th Green	40%	40 °C	104 °F	
1er Green	20%	30 °C	86 °F	
1st Green at 50%	10%	25 °C	77 °F	
1st Green at 50% blinking	Stopped	Below 25 °C	Below 77 °F	

NB : Intermediate steps between two displayed temperatures are indicated by the top LED lighting up at 50%, so you can see the intermediate temperatures every 5°C / 9°F on the scale.

2.3. A few things you should know ...

Heat dissipation :

The heat dissipation of your Eurorack depends on the total consumption of all the modules installed and the power supply, if internal.

Most of the electrical energy supplied to the modules is converted into heat and is mainly dissipated at the rear of the modules.

Thermal runaway:

In extreme cases, if heat is not removed efficiently, the temperature of the device will rise, which tends to further increase energy consumption, creating a positive feedback loop.

Thermal stress on semiconductors :

Semiconductor devices are made up of different materials with different coefficients of thermal expansion, which expand or contract when heated or cooled.

These different coefficients are supported within an Operating Temperature Range.

Exceeding these maximal leads to cracking, delaminating and deformation, affecting mechanical and electrical properties and reduce component life.

Electronic and passives components are always specified:

- The ideal temperature for semiconductors, capacitors and resistor in terms of performance and lifetime is 25°C.
- Absolute Maximum rating temperature: Extreme temperature for safe operation.

Exemple of specification:

Absolute Maximum Ratings	
Voltage Between V_{CC} and V_{EE} Pins	24V
Voltage Between V_{CC} and GND Pins	+18V
Voltage Between V_{EE} and GND Pins	-6.5V
Current Into V_{EE} Pin	±50mA
Voltage Between Control and GND Pins	±6V
Voltage to Gate and Trigger Input Pins	V_{EE} to V_{CC}
Operating Temperature Range	- 25°C to 75°C

3. MISCELLANEOUS

3.1. Disclaimer.

The contents of this manual are subject to change without notice.

Brand names may be used and we hereby declare that we are using the name for the benefit of the brand owner, without any intention of infringement.

3.2. Warranty and repair.

ALYSEUM warrants to the original purchaser that each of these products is free from defects in materials and workmanship for a period of two years from the date of purchase.

This warranty does not apply to products which have been repaired or modified by anyone other than ***ALYSEUM***, or which have been subjected to electrostatic discharge, moisture, improper installation or use.

ALYSEUM assumes no responsibility for such occurrences under the terms of this warranty.

Before taking any action, please consult your dealer for further details or visit our support page at http://www.alyseum.com/support .