

# ALIM8000 PPS

## Spécifications techniques



## SYSTEM 8 Programmable Power Supply (PPS)

L'alimentation programmable (PPS) est le module d'alimentation le plus ambitieux développé pour la gamme SYSTEM 8.

Plus de 35 ans d'excellence dans la conception et la fabrication du produits ont été appliqués à la fabrication de cette unité polyvalente pilotée par USB qui convient à divers scénarios de test et de mesure.

Du test de production de faible à moyen volume aux tâches prédictives/correctives et de dépannage de PCB.

Tous les canaux PPS sont isolés et ont les mêmes capacités.

En fonctionnement normal, chaque voie est totalement indépendante et isolée. Cela équivaut à avoir des alimentations à sortie unique séparées. La polarité de sortie peut même être inversée dans le logiciel, éliminant ainsi le besoin d'échanger les câbles pour fournir des tensions négatives.

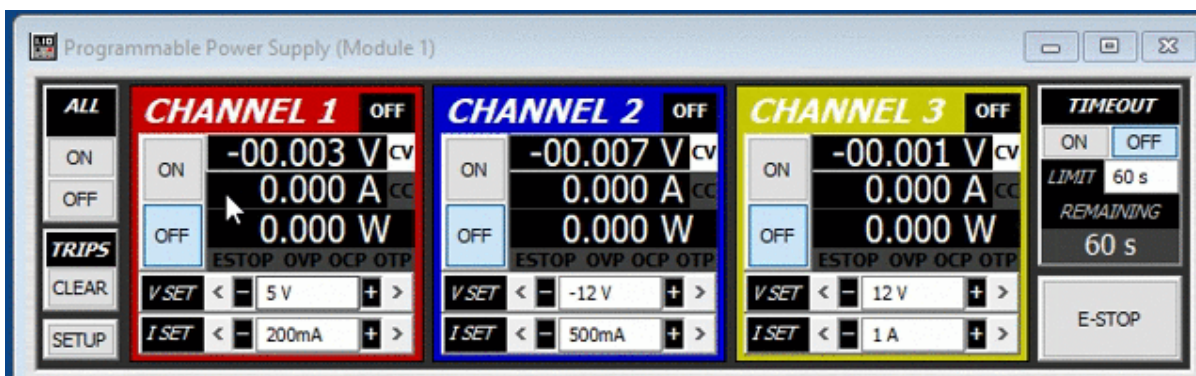
En fonctionnement de groupe, les canaux peuvent être placés facilement dans des groupes arbitraires pour un contrôle multi canal.

N'importe quel nombre de canaux peut être ajouté à un groupe, et jusqu'à 3 groupes indépendants peuvent être configurés et contrôlés. Les canaux groupés restent isolés mais travaillent pour atteindre un objectif commun, notamment :

- Suivi de tension isolé – Les canaux sont réglés sur la limite de tension du groupe mais ont un contrôle de courant indépendant. Cela peut être utilisé pour générer des tensions bipolaires de suivi ou des tensions unipolaires de suivi par rapport à différentes masses.
- Séquençage de l'alimentation – Les canaux répondent à une commande Marche/Arrêt de groupe.
- Cumul de tension – Lorsque des tensions supérieures à 40 V sont requises, ou des canaux à courants plus élevés (8 A MAX), ils peuvent être câblés en série en externe. La tension définie du groupe sera divisée également entre tous les membres du groupe pour utiliser efficacement la puissance disponible de chaque canal et la limite de courant du groupe sera appliquée à tous les membres de manière égale.
- Parallèle – Lorsque des courants supérieurs à 8 A sont nécessaires, les canaux peuvent être câblés en parallèle en externe. La limite de courant définie du groupe sera divisée également entre tous les membres du groupe pour utiliser efficacement l'enveloppe de puissance de chaque canal et la limite de tension du groupe sera appliquée à tous les membres de manière égale.

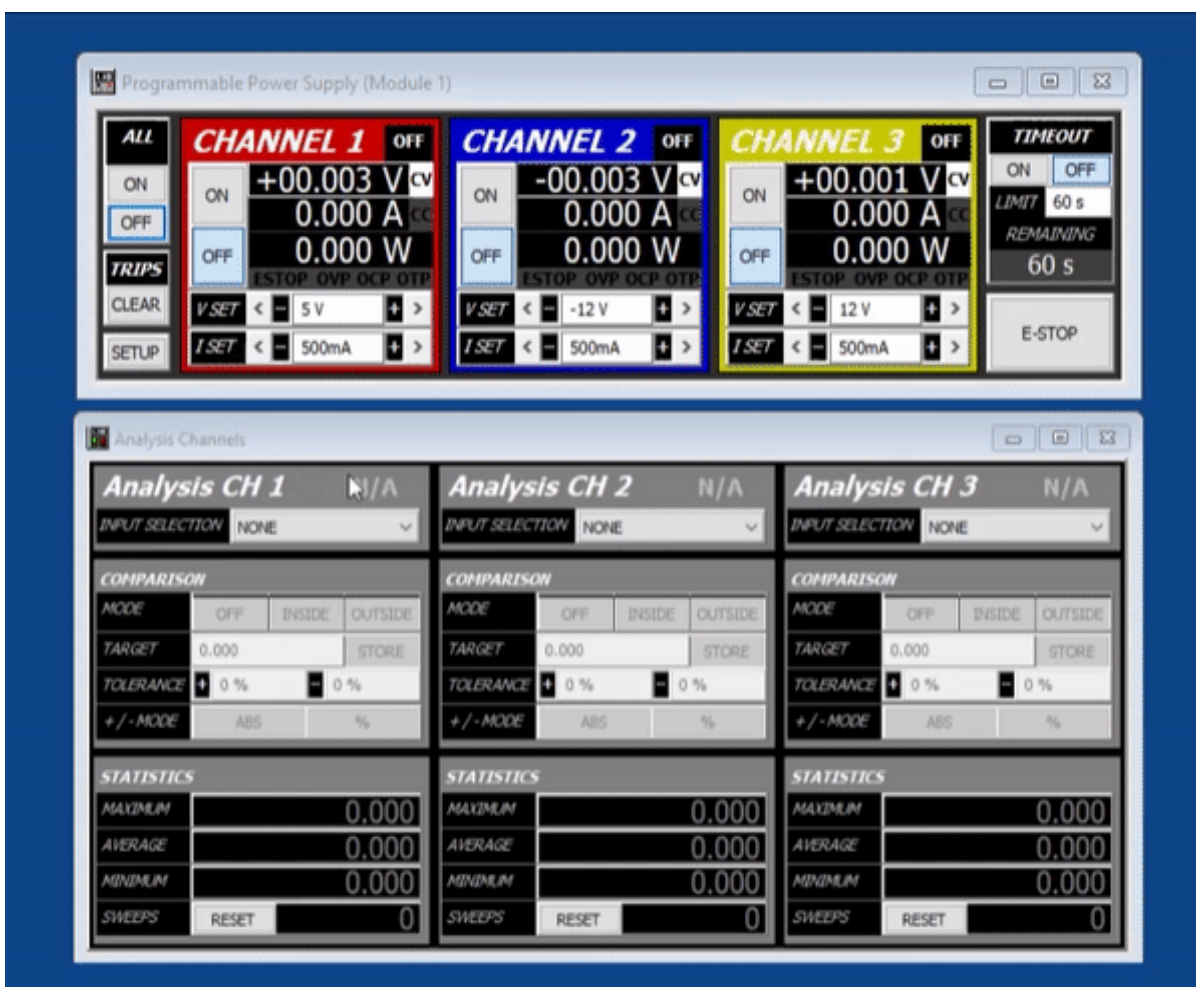
### 3 Channels fully independent

Each channel: 0 to 40VDC max, 0 to 8A max, 40W max.



### Voltage, Current and Power comparison (PASS/FAIL) results

Targets, comparisons and traceability available.



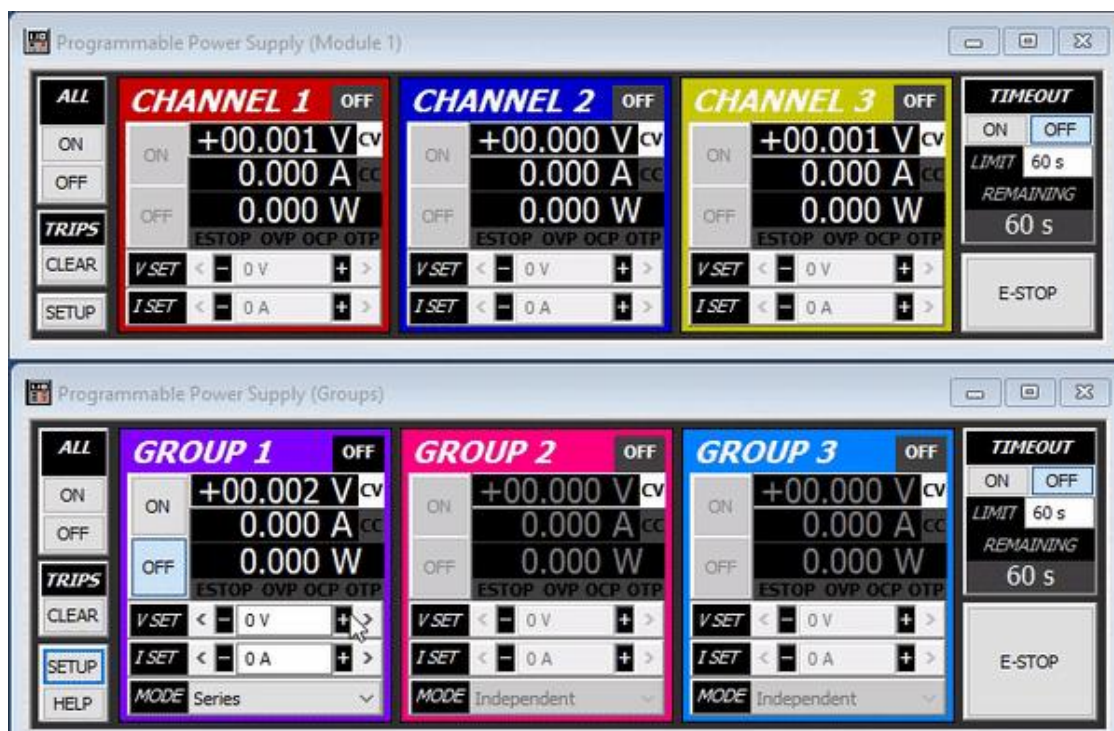
## Over Voltage and Over Current protection

Customisable, programmable and automatic voltage and current protections available.



## Series connection

Up to 120VDC max, up to 8A max, up to 120W max.



## Parallel connection

Up to 40VDC max, up to 24A max, up to 120W max.

The image displays two screenshots of a software interface for a Programmable Power Supply. The top screenshot, titled "Programmable Power Supply (Module 1)", shows three channels: CHANNEL 1 (red), CHANNEL 2 (blue), and CHANNEL 3 (yellow). Each channel has a status indicator (ON/OFF), voltage (V) and current (A) readouts, and power (W) readouts. Channel 1 is set to +00.002 V, 0.000 A, and 0.000 W. Channels 2 and 3 are set to +00.000 V, 0.000 A, and 0.000 W. The interface includes buttons for ON, OFF, TRIPS, CLEAR, and SETUP, along with V SET and I SET controls. A TIMEOUT section on the right shows a 5s limit and a 5s remaining time, with an E-STOP button.

The bottom screenshot, titled "Programmable Power Supply (Groups)", shows three groups: GROUP 1 (purple), GROUP 2 (pink), and GROUP 3 (blue). Each group has a status indicator (ON/OFF), voltage (V) and current (A) readouts, and power (W) readouts. Group 1 is set to +00.001 V, 0.000 A, and 0.000 W. Groups 2 and 3 are set to +00.000 V, 0.000 A, and 0.000 W. The interface includes buttons for ALL, ON, OFF, TRIPS, CLEAR, and SETUP, along with V SET and I SET controls. A MODE dropdown menu is visible for each group, with Group 1 set to "Parallel" and Groups 2 and 3 set to "Independent". A TIMEOUT section on the right shows a 5s limit and a 5s remaining time, with an E-STOP button.

## GENERAL SPECIFICATIONS (per module)

### Input requirements

+5V VDC	<800mA
90 to 264VAC 50/60Hz	2.4A@115VAC 1.2A@230VAC

### Physical characteristics

Dimensions	205.8mm X 148mm X 42.3mm
Connectivity	USB
Channels	3

### Operation

All channels are isolated and have equal capabilities. In normal operation each channel is fully independent and isolated. This is equivalent to having separate single output power supplies. In group operation channels can be placed into arbitrary groups for easy multichannel control. Any number of channels can be added to a group, and up to 3 independent groups can be created. Grouped channels remain isolated but work to achieve a common goal, these include:

4. Isolated Voltage Tracking – Channels are set equal to the group's voltage limit but have independent current control. This can be used to generate tracking bipolar voltages or tracking unipolar voltages relative to different grounds.
5. Power Sequencing – Channels respond to a group On/Off control.
6. Voltage Stacking – When voltages above 40V are required, or higher currents (8A MAX) channels can be externally wired in series. The group's set voltage will be divided equally between all members of the group to make efficient use of each channels power envelope and the group's current limit will be applied to all members equally.
7. Parallel – When currents above 8A are required channels can be externally wired in parallel. The group's set current limit will be divided equally between all members of the group to make efficient use of each channels power envelope and the group's voltage limit will be applied to all members equally.

## OUTPUT SPECIFICATIONS (per channel)

### Voltage / Current / Power Levels

Output Voltage Range	0V – 40V
Output Current Range	0A–8A
Output Power Limit	40W

### Performance

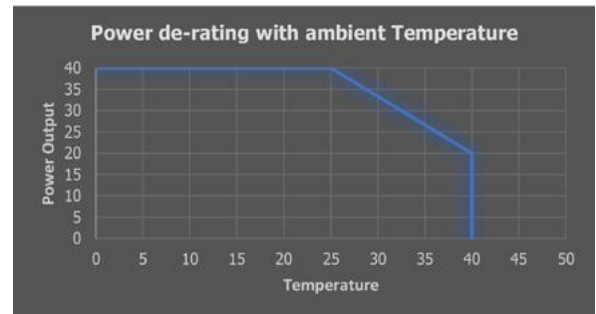
Ripple & Noise	< 150mV pk-pk 2
Load Regulation	< 0.15% using remote sense, 2% without 3
Line Regulation	< 0.2% 4
Transient Response	Approximately 50us for output to stabilise within 50mV 5

## Environmental

### Temperature Range

0 to 40°C

This unit must be installed in a fan-cooled enclosure, providing airflow through the module. For ambient temperatures above 25°C, maximum continuous output power must be de-rated. See graph below:



## Measure specifications

	Resolution	Accuracy
Voltage	1mV	< 0.2% 6
Current	1mA	< 0.5% 7

## Protection

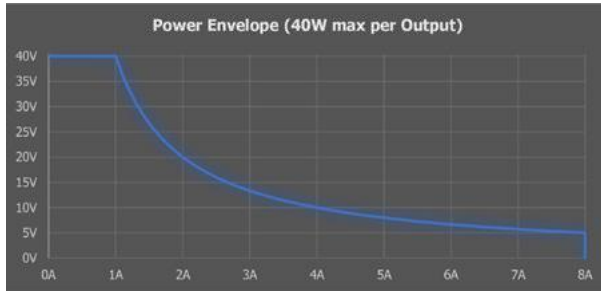
Isolation	300V peak to adjacent channel and earth.
Over Voltage (OVP)	User programmable trip 0V – 40.5V
Over Current (OCP)	User programmable trip 0A – 8.5A
Over Temperature (OTP)	Output trips off when over temperature. Not user programmable.

## Connections

Outputs	Insulated 4mm sockets compatible with shrouded plugs and leads. 19.05mm (0.75in) spacing for use with standard adapters and accessories.
Remote Sense	Insulated 2mm sockets compatible with shrouded plugs and leads.

### Additional info

Front panel RGB LED indication of output state including fault conditions and channel identification. The maximum current at a given voltage setting is limited by the power envelope (see graph below) which is set to give 1A @ 40V rising to 8A @ 5V under all AC supply conditions.



At lower output voltages the power is restricted by the maximum 8A hardware current limit.

The output architecture allows for channel polarity to be swapped internally to effectively provide negative voltages without changing any external wiring. This also provides backwards compatibility for cables created for the original VPS.

### NOTES

1. At line voltages between 90VAC - 110VAC, maximum continuous output power must be de-rated to 35W
2. Measured with HMO3002 oscilloscope (20MHz bandwidth limit, arithmetic average of 16). Max noise & ripple at 24V, 1.6A
3. Measured within output current range of 0A to 8A, at output voltages of 3.3V and 5V
4. Measured at 4V, 8A, at AC line voltages between 90 and 240VAC, 50Hz
5. Measured at 4V output, 200us load pulse from 4A to 8A. 500us to stabilise from 8A to 4A load change.
6. System8 reading compared with actual output reading, measured with a calibrated digital voltmeter, using Remote Sense connections. If no remote sense is used, accuracy is  $< 0.2\% + (0.15\% \times \text{load current})$
7. Measured within an output current range of 0.5A to 8A