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RPS-6 Regulated Power Supply 6

(100mm wide (20E) EuroModule to supply ± 24V)

RPS-6 is a TWIN regulated, & current limited supply Delivering 2 separate 24V DC outputs. These outputs may be used separately or have both negative terminals joined or have the positive terminal of either supply connected to the negative terminal of the other or have both positive terminals joined.

Both outputs are limited to a nominal, two amperes (2A). Current limiting is controlled by a voltage fold back, and the full short circuit current will be maintained into a short circuit. This allows the supply to come up into a highly capacitive load. During the current limiting operation a red LED on the front panel will illuminate representing either supply 1 or Supply 2, which ever is in overload, normal operation is indicated by the green LED. Overload of either supply may continue indefinitely, however at elevated ambient temperatures, a continuous overload on both supplies simultaneously may exceed the thermal rating of the power stages causing breakdown, of these devices.

The mains power switch is a locking type, to prevent accidental operation of this switch. The mains fuse is contained in a SCC approved fuse holder, the fuse is held captive in the cap for easy removal. Fuse indication is provided by a neon lamp, connected directly across the mains fuse. The fuse is a 3A, 3AG style.

Hardware

This supply fits into a standard Euro card frame, occupying 100mm of frame width, the PCB side of the unit (left from the front), is a standard 220mm by 100mm Eurocard with an Industrial grade DIN 41612 Class 2 connector using rows a & b, in parallel & each connection uses 4 pins. The mains is connected via a standard IEC power plug, to a chassis mounted socket at the rear of the unit. The rear of the unit, and the right side is fabricated from a single piece of 1.6mm Aluminium. This side is 114mm wide and requires module guide rails, this extra width allows for a generously rated toroidal power transformer to be fitted.

The mains is connected via a standard IEC power plug, this allows for easy bench testing without dangerous power cords & adapters. While in service, the power is connected via an IEC connector, that is held captive in a special clamp, (provided separately) with 1m of power flex & 3 pin, Australian Standard power plug, this unit is held to the rear of the Euro card frame, by 4 screws tapping into the holes that would hold the 416 connectors. This clamp & cable can be supplied with any custom length of 3 core flex and/or plug to order.

Electrical:

The Mains, from the rear of the IEC socket, is connected to the smaller, of the two PCBs, that make up this module (RPS-6 part B). The connection is made to 90°, screw terminals (with clamping plates), there is a connection for Active, Neutral & Earth, plus a terminal marked "case", this is provided, to connect the mains Earth to the case, this connection may be removed, as racks are often connected to a technical earth, and this connection could connect the two separate "earths" together.

The power transformer, is wired for 240V as standard, however it can be connected for 240V, 220V or 110V to order. The electronics, is protected from mains spikes, by a Metal Oxide Varistor, capable of absorbing 20 joules, with transient current as high as 4,000 Amperes.

All mains connections, are covered by heat shrink tubing.

The two separate 25V secondary windings, are connected back to this board, for rectification, by bridge rectifiers, while the mains earth on this board, is connected to a screening track, to prevent creepage of the mains side of the board to the secondary, side of the board. The first filter capacitors, are also mounted on this board. The DC outputs from this board, are sleeved with heat shrink tubing, and connected by red & black wires to the main board, for electronic filtering, current limiting and regulating.