

6 Channel 25Amp APS Power Distribution Unit – Rackmount/Portable

Engineer and Consultant Specifications V2.02

General Description

The APS Power Distribution Unit (the Product) shall be a microprocessor controlled 3-phase input to six single-phase 25Amp output circuits, designed for rack-mounting or portable use. The microprocessor shall control the power-on sequence of each output circuit at power start-up to ensure minimal disruption to minimise tripping upstream MCB and RCD devices due to inrush current and earth leakage overloads. Power Distribution Units that switch all output circuits on simultaneously at power start-up or require manual intervention, will not be acceptable.

Power Requirements

The Product shall be designed to operate from a nominal 230V AC 3-phase plus Neutral and earth power supply, with a nominal frequency of 50Hz. The Product must be able to operate without loss in performance, between 190-260V AC and a frequency range between 45-65Hz.

The Product shall be capable of working with single-phase supply or 3-phase with any phase rotation order. The failure of any two of the three phases shall not stop the operation of the Product on the remaining phase.

Control Requirements

5-pin XLR input and thru connectors shall be provided on the front panel to allow the remote control of the Product by any of the following control signals: DMX512 (1990), DMX512-A (E1-11), RDM (E1-20) or voltage free contact closure (GPI).

The operating mode and preferences shall be set using a full-colour TFT touchscreen Graphical User Interface (GUI) and shall be stored in non-volatile memory, to be recalled automatically to the last operating state once disrupted power has been reconnected to the Product. Units that use battery-backed memory will not be accepted.

A voltage free contact closure General Purpose Output (GPO) shall be provided that is activated when all outputs are enabled, to allow a feedback to third-party control systems that the Product has fully energised and all outputs are active.

Standard Features

The GUI shall be easy to use and provide the following information as a minimum:

- > Real Time display of input voltage, current and frequency per input supply phase
- > DMX512 and GPI status indicators
- > Low and high voltage limits per input supply phase
- > Timing parameters for power-on staggered starts
- > Manual control override
- > Software upgrades via SD card
- > Help menus
- > Owner information screen (locked)



The GUI shall be lockable with a PIN code to prevent accidental or unauthorised changing of the Product's parameters.

Each output circuit shall be protected by a single-phase 25Amp "C" curve Type A Residual Current Breaker with Over current protection (RCBO). Units that use RCBOs that are Type AC or not approved for use by the relevant electrical authorities shall not be accepted.

The Product shall provide a "staggered start" of all outputs to prevent overloading or nuisance tripping of supply switch gear. The Product shall provide the facility to cascade multiple Products when connected so that the switch-on of each output is sequential across the multiple Products, that is, the second Product will not commence its start-up sequence until the first has finished its start-up procedure.

The Product shall use electromechanical devices to switch the power. Devices using semiconductors, such as Triacs or SCRs, to control the output shall not be accepted.

The control circuits shall be energised to coincide with the zero-cross of the AC waveform to minimise inrush current.

The Product will not apply power to the loads if the voltage and/or frequency are not stable to ensure that generators have stabilised before a load is applied. The Product shall have maximum and minimum voltages that can be preset to prevent activation of the outputs if the voltage is out of range. This shall prevent power being applied if a Neutral is faulty or a phase/Neutral miswire occurs.

Construction

The Product shall be designed for use with 19" racking systems, flight cases and open portable frames. The chassis must be constructed from zinc-coated steel and finished in durable powder-coat paint. Overall dimensions must not exceed 483mm wide by 132mm high by 300mm deep and 11kgs in weight.

The front panel shall contain the GUI, input and thru control connectors and the RCBOs. Two front panel mounted handles must be provided to allow for carrying the unit or withdrawing the unit from 19" racks and to also provide extra protection to the RCBOs and the GUI.

Insert appropriate rear connector option:
(refer page 2)

Insert appropriate rear connector option:

The rear panel shall house the six paired 3-pin 20A and 15A Australian output load connectors and the input power cable and gland.

The Product shall be an APS Power Distribution Unit from LSC Control Systems, model number APS6/25A.

The rear panel shall house the output load and the input power cage-clamp style screw terminals.

The Product shall be an APS Power Distribution Unit from LSC Control Systems, model number APS6/25T.