

D5463 Constant current regulators for aviation use.

Constant current regulators are used to provide a regulated, adjustable constant ac current to airport lighting circuits using incandescent lamps. The regulator automatically compensates for changes in voltage and in load resistance to always provide a constant current. The D5463 current regulator provides an isolated regulated current from a step up transformer. True rms current feedback provides constant ac current over a wide load range of load resistances. Safety features including no current release and undervoltage shutdown are standard.

General description.

The D5463 series regulators are single-phase fully controlled, thyristor regulators which comprise the following major power elements:

(1) Stepup power transformer

This single phase transformer steps up, isolates and provides the high voltage output to the field circuit. The transformer is constructed and tested to AS2374-1982 (Power Transformers).

(2) SCR control bridge

The SCR control bridge switches the ac supply to the step up transformer. The SCR bridge is surge protected and rated at 200% of the input current.

(3) Input inductor

The input inductor provides fault current limiting and provides smoothing of the ac current waveform.

(4) Shutdown contactor

The shutdown contactor is controlled by the phase regulation circuits and is used to provide positive switching of the primary voltage to the stepup transformer.

Control of the regulator output is achieved through phase control of the thyristors in the AC control circuit. The output ac current is sampled by true rms amplifier circuits via an isolation current transformer. The ac current signal is converted to dc and compared with a reference which is selectable in up to 6 stages.

The D5463 regulator range is available in 19" rack, indoor floor or outdoor pad mounted cabinets. Cabinets are available in a number of finishes and materials.

AC current regulators

Standard Features

- True rms constant current operation.
- Current regulation $< \pm 1.5\%$,
- AC 2 pole isolator
- Isolated high accuracy ammeter.
- Low input voltage shutdown
- Undercurrent shutdown
- Up to 6 independent stage of operation
- Phase control with high noise immunity
- Remote control facilities.
- Soft start all ranges.
- Single circuit board, easily replaceable.

Each stage corresponds to a separate lamp brilliance level and each stage can be separately adjusted.

Regulator Control facilities

The regulator is provided with robust control switches for Mode and Level

The Mode switch allows selection of Local/OFF/Remote modes.

The Level switch selects the Local level of brilliance (up to 6 levels may be selected)

Regulator indication

The regulator is provided with long life replaceable neon lamps to indicate AC supply available and Regulator selected.

Regulator protection.

The regulator is provided with standard facilities of primary AC active fuse and Neutral link and AC output fuses in both poles (regulator <4.5KVA capacity)

MANUFACTURED BY

M. Brodribb
PTY. LTD.

68 - 72 CAPE ST, HEIDELBERG, VIC, 3084
AUSTRALIA.

PHONE + 61 3 9457 3701, FAX +61 3 9458 2973

Internet: www.brodribb.com.au

Regulator alarms

The regulator is provided with back indication of local/remote selection by the local mode switch as standard.

Remote control

The regulator can be simply configured to be controlled by external voltage free contacts for regulator selection and for brilliance control

Regulator Construction

The regulator is can be provided in a number of different cabinet styles.

Standard configurations are as follows

Regulator capacity

<2.5KVA

600mm High 19" rack 350mm Deep (may also be wall mounted)

3.5 - 5.5KVA

900mm H x 600mm W x 450mm D floor mounted single door cabinet c/w lifting eye-bolts.

5.5 – 7KVA

1400mm H x 600mm W x 450mm D floor mounted single door cabinet c/w lifting eyes. 7– 10KVA

1600mm H x 600mm W x 600mm D floor mounted single door cabinet c/w lifting eyes.

All cabinets are IP 33 rated indoor drip proof steel construction, provided with lockable doors and finished in Storm Grey (N42) powdercoat paint. Other finishes and colours are available on request.

Optional features.

A wide range of optional features are available: These include:

- Internally mounted output circuit selectors
- Current transducer back indication to show delivered output current on remote meters
- Photo electric cell interface
- Input voltage and current metering
- Run time indicator
- Earth fault detection - (provided by third party supplier)
- Stage selected Led display

The D5463 range of regulators can be provided as stand alone or dual or triple configuration units to save floor space and cost.

Intelligent control option.

The D5463 regulator can be provided with an intelligent control option which carries out automatic error checking of the regulator and supervisory control using an inbuilt Programmable Logic Control with SCADA interface. An optional Man Machine Interface screen displays regulator parameters and status to the operator and allows parameter setting directly via the screen.

This facility can be combined with a SCADA interface using an RS323 control port on the PLC to provide remote setting and control by digital link or by modem

D5463 regulator performance specification.

- (1) Input voltage: 100V/110V/120V/ 220V/240V/380V/415V/440V +/-10% 50/60Hz. (Specify input)
- (2) Input phases : 1 phase
- (3) Full load continuous output current range 0.5— 7A any channel.
- (4) Output capacity 2.5KVA, 3 KVA, 4.5KVA, 5 KVA, 6KVA 7 KVA 10KVA (other ranges on request)
- (5) Current regulation at fixed load +/-1.5%
- (6) Allowable input voltage variation +/- 10%
- (7) Output load variation permissible 10% - 100% of rated load.
- (7) Temperature derating (above 40 degrees C): derate 2%/degree C above 40 degrees C ambient.
- (8) Efficiency at full load: >80% <3KW, >85% >3KW
- (9) Cooling: Natural convection
- (10) Applicable Standards:
AS 3000
AS 1044

