

Stackable Constant Current Regulator (SCR)



SCR REGULATOR
COMPACT
STACKABLE
LOW MAINTENANCE
DIGITAL TECHNOLOGY
ADAPTABLE TO THE LOAD

The CCRs DIAM3100 are optimized static power supplies, controlled by SCR (Thyristors), designed to maintain a constant output current, independent of load or supply power fluctuations.

These devices are specially designed for supplying airport visual aids, in compliance with all international standards.

Equipped with great flexibility, they may be adapted to different types of load, LED signals, halogen signals, electronic converters or combined systems.

Compliance:

Aerodrome design manual, part 5 **ICAO**

61822, Edition 2.0 **IEC**

DIN/DNYM/PPT/002-05/13 **AENA**

ocem



GENERALITY - DIAM3100

The single-phase/two-phase constant current regulator units of the DIAM3100 series are optimized static power supplies, whose control is ensured by thyristors (SCR), capable of maintaining constant the output step current independently from the load fluctuations and the supply voltage.

The DIAM3100 power supplies are stackable to optimize the floor space.

CONSTRUCTION DETAIL

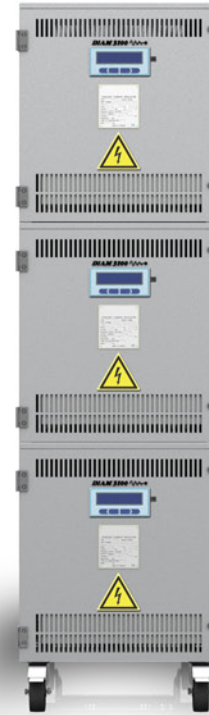
The DIAM3100 power supplies are characterized by an innovative electronic architecture. The system is built around electronic boards using a powerful DSP processor, associated with a CAN bus connecting sub-assembly and boards, allowing fast and efficient computing and processing capabilities.

A front panel USB socket allows connection to laptop computer used for setup. The operation is possible even when the device is powered off.

Remote control interface supports all network connections (with or without redundancy), and complies with all market standards. The power transformer is equipped with a series of taps that allow adapting the output power from the regulator unit to the real load, with consecutive reductions amounting to 1/8 of the nominal power.

The HMI user interface is composed by a polyester membrane keyboard equipped with buttons and a dot-matrix display screens to display messages, alarms and parameters.

The DIAM3100 power supplies can be remote controlled and monitored through electromechanical interface (multiwire): through contacts or with control power supply (from 20 to 60 V_{DC} or 120 V_{AC}).



FEATURES

- Degree of mechanical protection: IP21
- Operational temperature: IEC/AENA -20° - +55°C
- Tropicalized components (cards and transformers)
- Supply: IEC 220 V - 240 V or 380 V - 415 V $\pm 10\%$,
- Frequency: 45 - 66 Hz
- Performance: >90% nominal
- Power factor: >90% nominal
- Surge protective device (3 levels)
- Open circuit protection
- Identification of capacitive loads
- Burnt lamps detection (compatible with each way of the integrated circuit selector)
- Time meters
- USB interface connection for configuration and maintenance through the software ALIZE (supplied)
- Swivel castors and lifting rings

OPTIONAL DEVICES

- Earth fault detector, two thresholds
- Electromechanical interface for power and control: IEC, AENA (rectangular connectors 2x16), circular connectors SORIAU
- Power and control bus (single or double): ModBus RS485, Ethernet, LonWorks
- 4 - 20 mA Current Loop remote control (to send output current, output power and insulation values).
- LV circuit breaker
- LV lightning arrester
- CUT-OUT output disconnector
- Integrated circuit selector (from 2 to 6 ways)

HOW TO ORDER

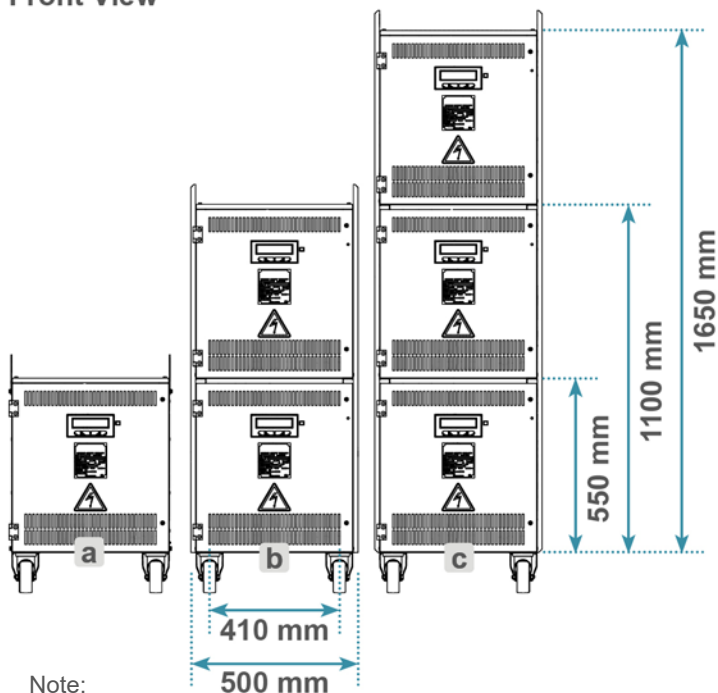
example: D31 - IEC 5 - 40 05 - F 6 2 A - ICS2 - S2 - DTxxxx	
Reference standards¹: IEC = IEC (61822, Edition 2.0) (■) AEN = AENA (DIN/DNYM/PPT/002-05/13) (▲)	
Nb. of steps (brightness - from 1,5 to 6,6 A): from 1 = 1 nb. of steps to 8 = 8 nb. of steps	
Supply voltage¹: 22 = 220 V _{AC} 23 = 230 V _{AC} 24 = 240 V _{AC} 38 = 380 V _{AC} 40 = 400 V _{AC} 41 = 415 V _{AC}	
Nominal power: 01 = 1,0 kVA 02 = 2,5 kVA 05 = 5,0 kVA 06 = 6,5 kVA	
(Wired) remote control¹: 0 = not present (■) E = Dry contacts (auxiliary internal supply V _{DC}) (■) F = Dry contacts (auxiliary external supply V _{DC}) (■) I = 32 Pins terminal (■ ▲)	
Communication network (default: 1): 1 = RS485 (x1) 5 = RS485 + Ethernet 2 = RS485 (x2) 6 = Ethernet (x2) 3 = LonTalk (x1) 7 = RS485 + LonTalk 4 = Ethernet (x1) 8 = LonTalk + Ethernet	
Protection systems¹ (sum of the figures): 0 = None (■ ▲) 1 = Input discharger ILA (■ ▲) 2 = Thermal-magnetic circuit breaker CB (■ ▲) 4 = Earth fault detector EFD (■ ▲)	
CUT-OUT output disconnector¹: 0 = None (■) A = Disconnector SIMALT2 (with jumper, 3 positions) (■) D = Disconnector SCC (with handle, 3 positions - on the back) (■ ▲)	
Options²: ICSx = Selector ICS wit x output (max. 6) (■ ▲) ³	
Stacked setting up S2 = 2 CCR (■ ▲) - ICS possible (connected to lower CCR) S3 = 3 CCR (■ ▲) - ICS not possible	
Particular equipments⁴: DTxxxx = Specifications project identification code	

¹ Always check the compatibility of the options with the selected reference standard: (■) available only for D31-IEC version..., (▲) available only for D31-AEN version...; ² Any additional codes identify the options integrated in the device (if no option is available, this field is absent); ³ The Selector ICS is compatible only with single CCR or with stacked setting up S2; ⁴ Any code DTxxxx is assigned by the manufacturer to identify any design specifications implemented in the device (if no particular equipment is available, this field is absent).

In the example **D31 - IEC5-4005-F62A-ICS2-S2**: CCR module made up of 2 units model DIAM3100. The CCRs are compliant IEC 61822, 5 steps. Supply voltage 400 V_{AC}, nominal power 5.0 kVA. Wired remote control through standard dry contacts (with auxiliary external supply V_{DC}). Ethernet communication network (2 doors). Equipped with thermal-magnetic circuit breaker (CB). CUT-OUT disconnector SIMALT2 type with 3 positions jumper. 2 ways integrated circuit selector ICS (connected to lower CCR).

Included options: Tropicalization of electronic cards and of magnetic components; Output dischargers; Hour counter; Burnt lamps detection; Swivel castors; Lifting rings.

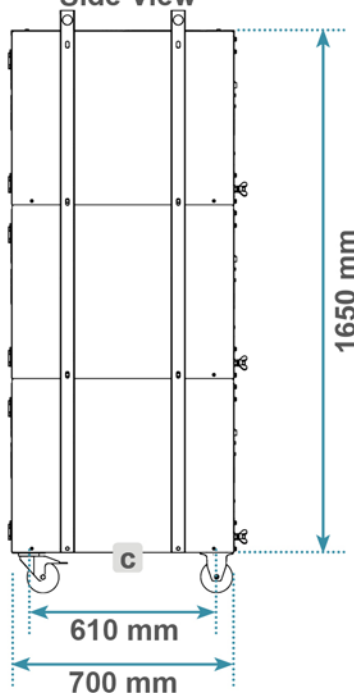
Front View



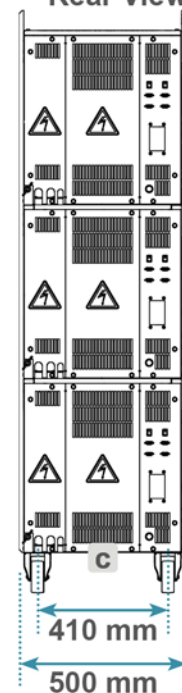
Note:

- a** single setting up
- b** two overlapping stage setting up
- c** three overlapping stage setting up

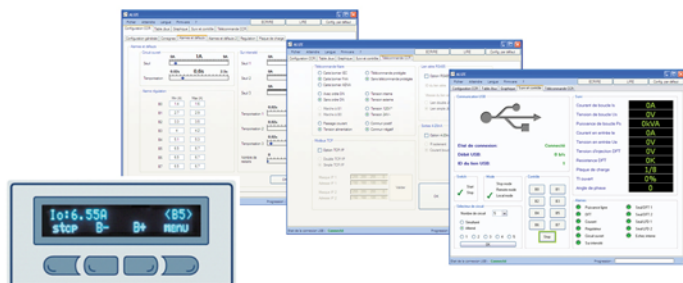
Side View



Rear View



INTERFACE AND SOFTWARE ALIZE



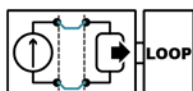
Note:

The user-friendly Windows-compatible diagnostic software allows viewing all parameters and waveforms from the CCR. It allows any modifications, software releases, complete operation tests, etc...

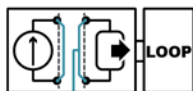


CUT-OUT DISCONNECTORS

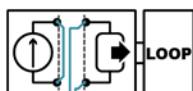
IN SERVICE



IN MAINTENANCE/SAFE CONDITION



ON MEASUREMENT



A

SIMALT2



D

SCC

The Manufacturer reserves the right to modify or update the technical parameters at any time without prior notice to Customer.

