

Constant Current Regulator (IGBT)



20kVA
up to



**IGBT REGULATOR
LOW MAINTENANCE
DIGITAL TECHNOLOGY
ADAPTABLE TO THE LOAD
SINUSOIDAL CURRENTS
LOW HARMONIC EMISSION
NO DEGRADATION OF THE
POWER FACTOR**

The CCRs DIAM4200 are optimized static power supplies, controlled by IGBTs (insulated gate bipolar transistors), 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.

Certification or compliance:

Aerodrome design manual, part 5 **ICAO**

61822, Edition 2.0 and 61820-3-2 **IEC**

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

FAA/AC 150/5345-10H **FAA**

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GENERALITY - DIAM4200

The single-phase/two-phase constant current regulator units (URCC) of the DIAM4200 series are optimized static power supplies, whose control is ensured by insulated gate bipolar transistors (IGBT), capable of maintaining constant the output step current independently from the load fluctuations and the supply voltage.

The DIAM4200 power supplies can supply different nominal output power levels, from a minimum of 2,5 kVA to a maximum of 20 kVA, depending on the model. The basic frame is dimensioned to host all the equipment provided up to a power of 15 kVA. For the version 20 kVA is foreseen the additional installation of a fixed module above the basic frame.

CONSTRUCTION DETAIL

The DIAM4200 power supplies are characterized by an innovative evolution of well tested electronic architecture. The system is built around electronic boards using a powerful DSP processor, having 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 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 DIAM4200 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 $\pm 10\%$
- LV circuit breaker
- Frequency: 45 - 66 Hz
- Performance: >90% nominal
- Power factor: >97% typical
- 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
- Swivel castors and lifting rings

OPTIONAL DEVICES

- Earth fault detector, two thresholds
- Electromechanical interface for power and control: IEC, AENA (rectangular connectors 2x16-pin), 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 disconnecter
- Integrated circuit selector (from 2 to 6 ways)

HOW TO ORDER

example: D42 -IEC5-4005-E67A-ICS2-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: 02 = 2,5 kVA 10 = 10 kVA 05 = 5,0 kVA 15 = 15 kVA 07 = 7,5 kVA 20 = 20 kVA	
Remote control (multiwire)¹: 0 = not present (■) E = Dry contacts IEC/AENA std (auxiliary internal supply V _{DC}) (■) F = Dry contacts IEC/AENA std (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 = LV Circuit breaker CB (mandatory) (■▲) 4 = Earth fault detector EFD (■▲)	
CUT-OUT output disconnecter¹: 0 = None (■) A ¹ = Disconnecter SIMALT3 (with jumper, 3 positions) (■) D = Disconnecter SCC (with handle, 3 positions) (■)	
Options²: FRD = Front door (■▲) - mandatory for AENA ICSx = Selector ICS wit x output (max. 6) (■▲)	
Particular equipments³: DTxxxx = Specifications project identification code	

¹ Always check the compatibility of the options with the selected reference standard; ² Any additional codes identify the options integrated in the device (if no option is available, this field is absent); ³ 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)

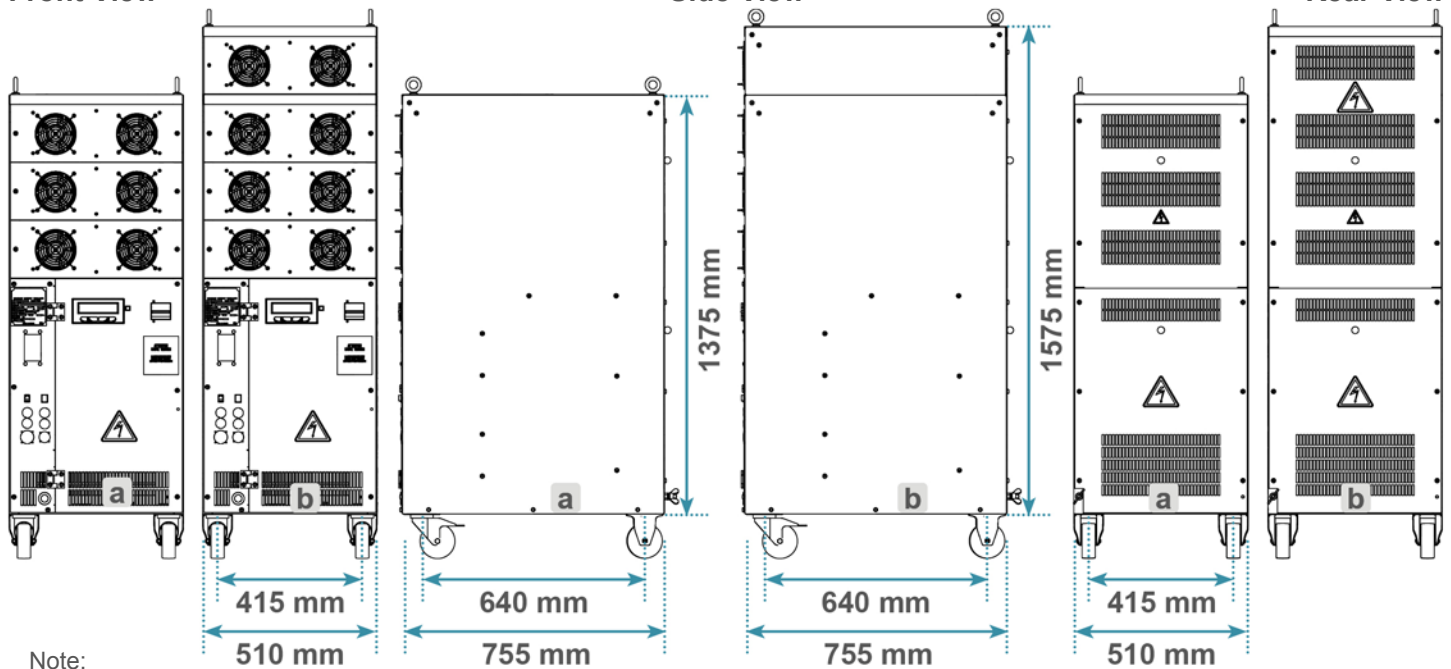
In the example **D42 -IEC5-4005-E67A-ICS2**: Regulator model DIAM4200, compliant IEC 61822, 5 steps. Supply voltage 400 V_{AC}, nominal power 5.0 kVA. Remote control multiwire through standard dry contacts (with auxiliary internal supply V_{DC}). Ethernet communication network (2 doors). Equipped with input dischargers (ILA), LV circuit breaker (CB) and earth fault detector (EFD). CUT-OUT disconnecter SIMALT3 type with 3 positions jumper. 2 ways integrated circuit selector.

Included options: Tropicalization of electronic cards and of magnetic components; Output dischargers; Hour counter; Burnt lamps detection; Swivel castors; Lifting rings; LV Circuit breaker CB (mandatory).

Front View

Side View

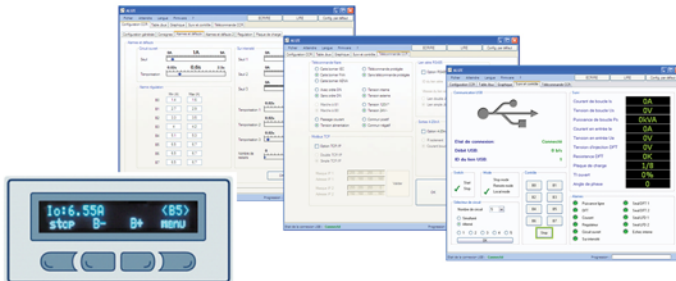
Rear View



Note:

- a** basic setting up (2.5 ÷ 15 kVA)
- b** setting up 20 kVA

INTERFACE AND SOFTWARE ALIZE



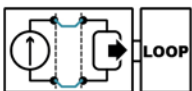
Note:

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...

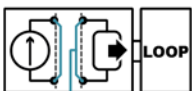


CUT-OUT DISCONNECTORS

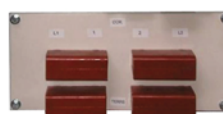
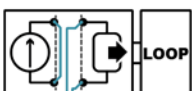
IN SERVICE



IN MAINTENANCE/SAFE CONDITION



ON MEASUREMENT



A
SIMALT3



D
SCC

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

