

DIAM Series D5-3

three-phase system

AUGIER
energy

OCEM
AirfieldTechnology

DIAM 5

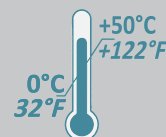
Advanced IGBT-Based Constant Current Regulator for AGL Systems

High-performance CCR designed for precise current regulation and optimized system operation

(dual stage **Power Module**)



20KVA
up to



CCR REGULATOR HIGH RELIABILITY AND EFFICIENCY

DIGITAL TECHNOLOGY

ADAPTABLE TO THE LOAD NO DEGRADATION OF THE POWER FACTOR

The new CCR regulators DIAM Series 5-3 are optimised static power supplies, controlled by power modules fully redesigned to maintain a constant output current, independent of load or power supply fluctuations. These appliances are specifically designed to power airport visual aids, in accordance with international regulations. They are highly flexible and can be adapted to different types of load: LED signals, halogen signals, electronic converters or combined systems.

Compliance:

IEC 61820-3-2 (CCR)

IEC

AENA (DIN/DSEYN/PPT/002-05/13)

AENA

ICAO Doc 9157 - A.D.M. Part 5

ICAO

ocem



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DIAM Series 5-3

**Advanced IGBT-Based Constant
Current Regulator for AGL Systems**
three-phase system

GENERAL INFORMATION - DIAM Series 5-3

DIAM Series 5-3 three-phase constant current regulators (URCC) are optimized static power supplies, whose control is ensured by fully dual-stage power modules (rectifier and inverter), designed to keep the output current level constant, regardless of power supply or load fluctuations. The architecture of the device is designed to ensure correct functioning even with non-linear or critical loads. No adaptation to the load is necessary.

The three-phase supply without neutral allows a balanced load distribution between the phases, with reduced input current values. This allows an optimisation of the dimensioning of the supply line (upstream disconnection/protection device and power supply cable).

The DIAM Series 5-3 regulators 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 structure is common to all models and is designed to host all the equipment provided.

All the DIAM Series 5-3 regulators are fully compatible with the FULL DIAM CCR series.



CHARACTERISTICS

- Degree of mechanical protection: IP20
- Operational temperature: 0°C and +50°C
- Tropicalised components (cards and transformers)
- Cooling by natural convection (up to 10 kVA) or forced ventilation (15 kVA and 20 kVA)
- 3-phase supply without neutral:
 - 380 V_{AC} -5% / +10%
 - 400 V_{AC} ±10%
 - 415 V_{AC} -10% / +5%
- Frequency: 45 - 66 Hz
- Automatic circuit breaker at the entrance
- Management of 8 brightness levels (from 1.8 A to 6.6 A)
- Surge protective device (3 levels)
- Open circuit protection
- Identification of capacitive loads
- Front USB connection for maintenance operations
- Burnt lamps detection (compatible with each way of the integrated circuit selector)
- Time meters

CONSTRUCTION DETAIL

The DIAM Series 5-3 regulators are the result of innovative advancements in the electronic architecture consolidated by previous series of regulators. The system is built on the basis of a power module with a dual-stage conversion system. The structure of the device, equipped with eyebolts and pivoting wheels, is divided into appropriately segregated compartments:

- at the front, the main board is located in the higher part, and at the bottom are the power and control boards, as well as electromechanical components and the power module;
- at the rear, the remote interface is located in the higher part, and at the bottom are the supply cable entry, the series circuit output and the attached cutout disconnectors (optional).

The main electronic board employs a powerful microprocessor with high capacity and clock frequency. The integrated 7" TFT LCD display allows immediate and intuitive interaction with the regulator's control functions.

A front USB socket allows to connect a setting laptop computer. The operation is possible even when the regulator is not powered. A lockable inspection cover protects the thermal-magnetic circuit breaker CB.

The remote control interface ModBUS supports all network connections (with or without redundancy), and complies with all market standards and with the other DIAM series.

The DIAM Series 5-3 regulators can be remote controlled and monitored through an electromechanical interface (multiwire): through contacts or with control power supply (from 20 to 60 V_{DC}).



OPTIONAL DEVICES

- Earth fault detector, two thresholds
- Serial power and control bus (single or double): ModBus, RS485, Ethernet, LonWorks
- Electromechanical interface for power and control
- Status signalling system via dry contacts or bus
- Input discharger
- CUT-OUT output disconnector
- Integrated circuit selector (from 2 to 6 ways)

HOW TO ORDER

example: D5-3-IEC5-4005-066D-ICS4-Sxxx

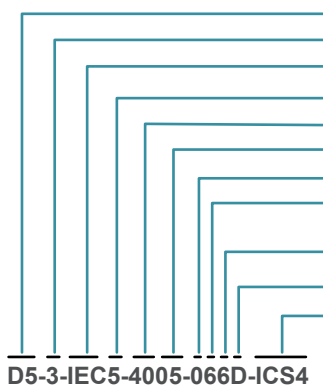
Model: 3 = 3-phase supply (■ ▲)	
Reference standards¹: IEC = IEC (61820-3-2) (■) AEN = AENA (DIN/DSEYN/PPT/002-05/13) (▲)	
Nb. of steps (brightness - from 1.8 to 6.6 A): from 1 = 1 nb. of steps to 8 = 8 nb. of steps	
3-phase supply voltage¹: 38 = 380 V _{AC} -5% / +10% 40 = 400 V _{AC} ±10% 41 = 415 V _{AC} -10% / +5%	
Nominal power: 02 = 2,5 kVA 10 = 10 kVA 05 = 5,0 kVA 15 = 15 kVA (con ventole) 07 = 7,5 kVA 20 = 20 kVA (con ventole)	
(Wired) remote control¹: 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 systems ¹(sum of the figures): 1 = Additional input discharger ID-M (with monitoring status) (■) 2 = Standard equipment (■): - Integrated input discharger (standard) - Thermal-magnetic circuit breaker CB (standard) 4 = Earth fault detector EFD (■ ▲)	
CUT-OUT output disconnector¹: 0 = None (■) A = Disconnector SIMALT4 (with jumper, 3 positions) (■) D = Disconnector SCC (with handle, 3 positions) (■ ▲) E = Disconnector SEB (removable handle and monitoring function) (■)	
Options²: ICSx = Selector ICS with x outputs (from 2 to max. 6)	
Special equipment³: Sxxx = 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 Sxxx code is assigned by the manufacturer to identify any design specifications implemented in the device (if no particular equipment is available, this field is absent).

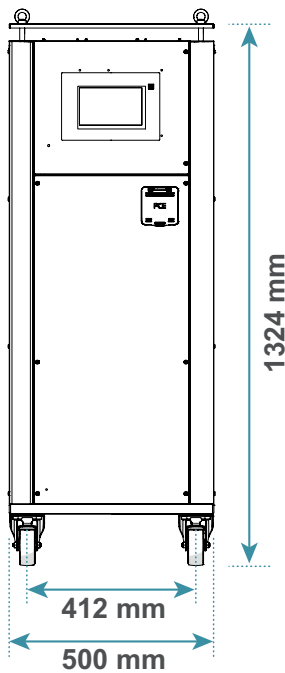
In the example:



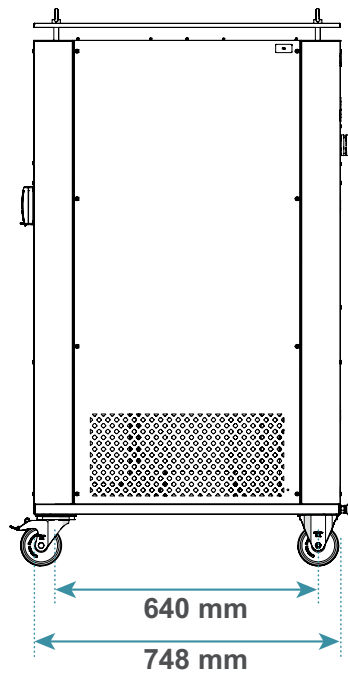
Code	Description
[D5 -]	▶ Regulator model DIAM Series 5
[- - 3]	▶ Three-phase Model
[IEC -]	▶ Compliant with standard IEC 61820-3-2
[- - 5]	▶ 5 regulating steps (2.8 - 3.4 - 4.1 - 5.2 - 6.6 A)
[40 -]	▶ 3-phase supply (without neutral), mains voltage 400 VAC ±10%
[- -05]	▶ Nominal power 5.0 kVA
[0 - -]	▶ Without wired remote control
[- 6 -]	▶ Dual Ethernet communication network (2 ports)
[- - 6 -]	▶ (sum of the figures, 2 + 4) Provided with standard equipment: thermal-magnetic circuit breaker CB and integrated input dischargers (without monitoring status) + earth fault detector (EFD)
[- - - D]	▶ CUT-OUT disconnector SCC type with 3 positions handle
[ICS4]	▶ 4-way integrated circuit selector (for P/N and order code, refer to the catalogue UC-PU-0366)

Equipment included: Tropicalisation of electronic cards and of magnetic components; Output dischargers; Operating hour counter; Burnt lamps detection; Swivel castors; Lifting rings

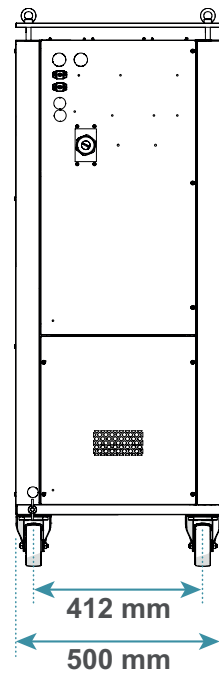
Front View



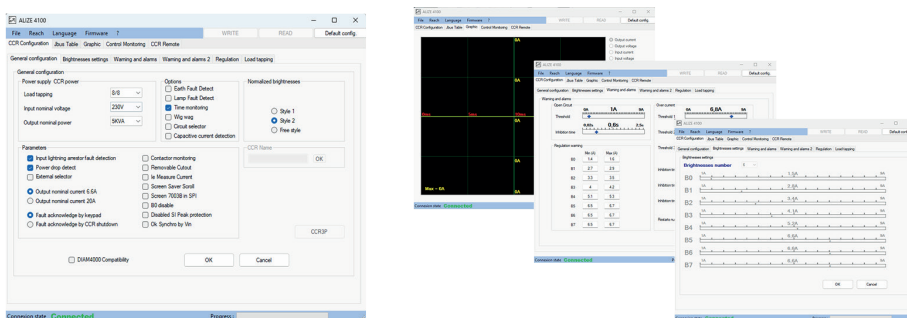
Side View



Rear View



ALIZE INTERFACE AND SOFTWARE

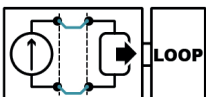


Note:

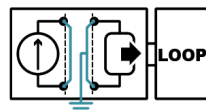
The user-friendly Windows-compatible diagnostic software allows you to see all parameters and waveforms from the CCR. It allows any modifications, software releases, complete operation tests, etc...

CUT-OUT DISCONNECTORS

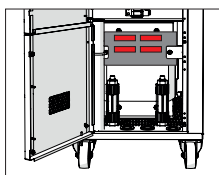
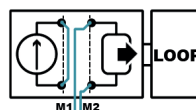
IN SERVICE



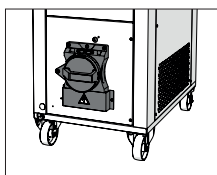
IN MAINTENANCE/SAFE CONDITION



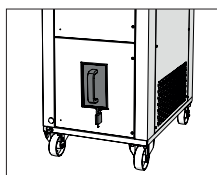
IN MEASUREMENT



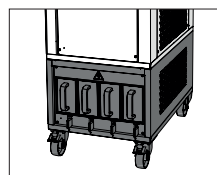
A
SIMALT4



D
SCC



E
SEB



ICS
(with SEB)

ICS standard version
(2-way up to max. 6-way)

LOCKABLE PROTECTIVE COVER



**PROTECTS THE THERMAL-
MAGNETIC CIRCUIT BREAKER CB**

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

