

ANTICORROSION CONTROL UNIT

CONFIGURABLE ELECTRONIC ANODIC PROTECTION
RAC 1.3 MODULE

Technical description, components, operation, use
and precautions for users of structures protected by
Rustless technology.



THE RUSTLESS ANTICORROSION CONTROL UNIT

The Anticorrosion Control Unit manages and controls the Rustless system. Powered at 230 V, it generates and distributes a very low-intensity potential that stabilises the electrochemical balance of the metal structure and halts the corrosion process.

It is modular: the number of control units and configurable RAC electronic modules adapts to the size and condition of each structure, whether exposed, buried or submerged.

Industrial

Naval and marine

Civil construction

Machinery and equipment



Anticorrosion Control Unit installed in an industrial environment.

RUSTLESS SYSTEM COMPONENTS



1 Anticorrosion Control Unit

Control and power supply unit of the system.



2 RAC Module

Configurable electronic module that manages anodic protection.



3 Distribution Circuit

Conduits and cabling that carry the potential along the structure.



4 Junction Box

Technical interface between the circuit and the structure.

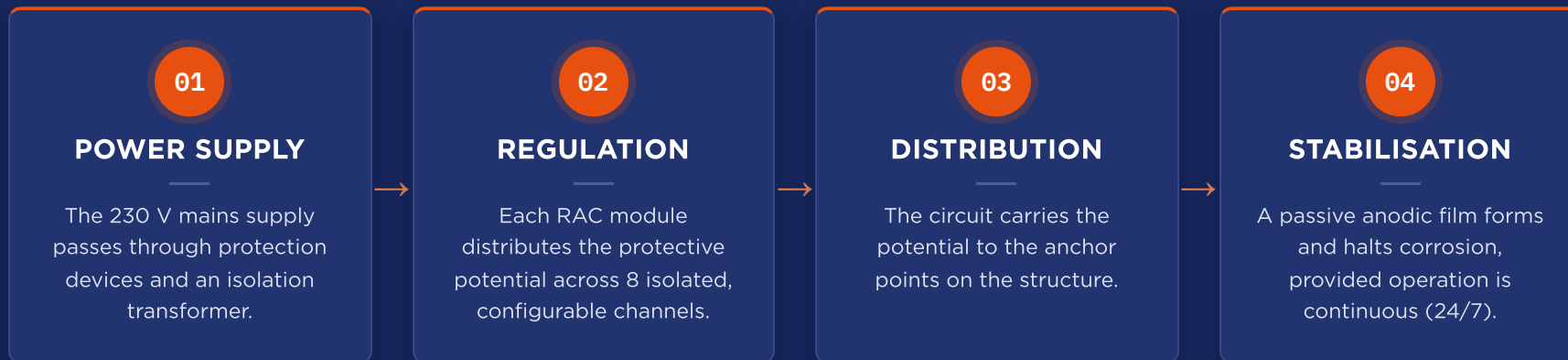


5 Anchor Point

Connection to the metal that stabilises the electrochemical potential.

CONTROLLED ANODIC PROTECTION

The Control Unit continuously applies controlled, very low-intensity microcurrents to the structure through the anchor points. The metal is kept in a stable electrochemical state that halts corrosion and extends service life, even on structures already affected, without interfering with other associated electronic components.



CONTROL UNIT TECHNICAL DATA

MAINS CONNECTION

Supply voltage	230 V
Frequency	50 Hz / 60 Hz
Current type	Alternating (AC)
Configuration	Single-phase
Required current capacity	5 A

ENCLOSURE

Material	High-impact polystyrene, ABS latch, hinged lid
Protection rating	IP66 • IK10
Dimensions (H × W × D)	500 × 400 × 200 mm

Note: dimensions are indicative. Enclosure size varies with the number of RAC modules installed and the type of power supply — mains or stand-alone photovoltaic system.



Front view with safety signage and “Unit Active” indicator.

RAC 1.3 ANTICORROSION MODULE

Fully resin-encapsulated, with no exposed terminals or components.



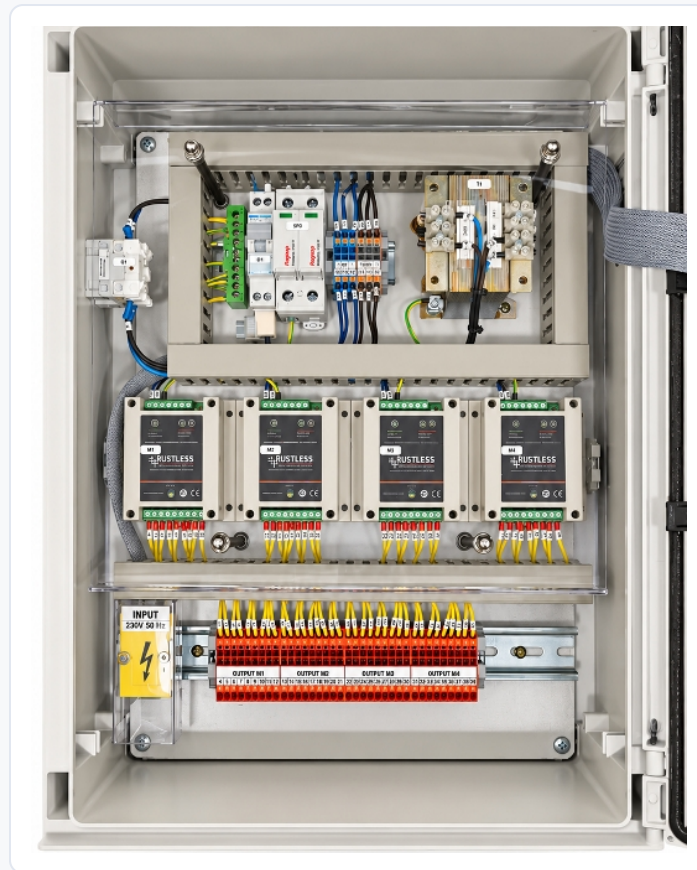
Operating voltage	90 – 305 V
Rated consumption	± 2.25 W
Output isolation voltage	5,200 Vac
Number of channels	8
Output power per channel	± 0.18 W
RAC protection rating	IP20 · PCB with conformal coating
Compressive strength	4,000 psi
Tensile strength	3,000 – 6,200 psi
Izod impact	0.3 – 0.6 ft·lb/in · 4.1 – 8.3 kgf/cm
Barcol hardness	≥ 10

Anchor point cabling: halogen-free electrical cable, 3 × 1.5 mm² or 3 × 1.0 mm².

ENCLOSURE INTERIOR

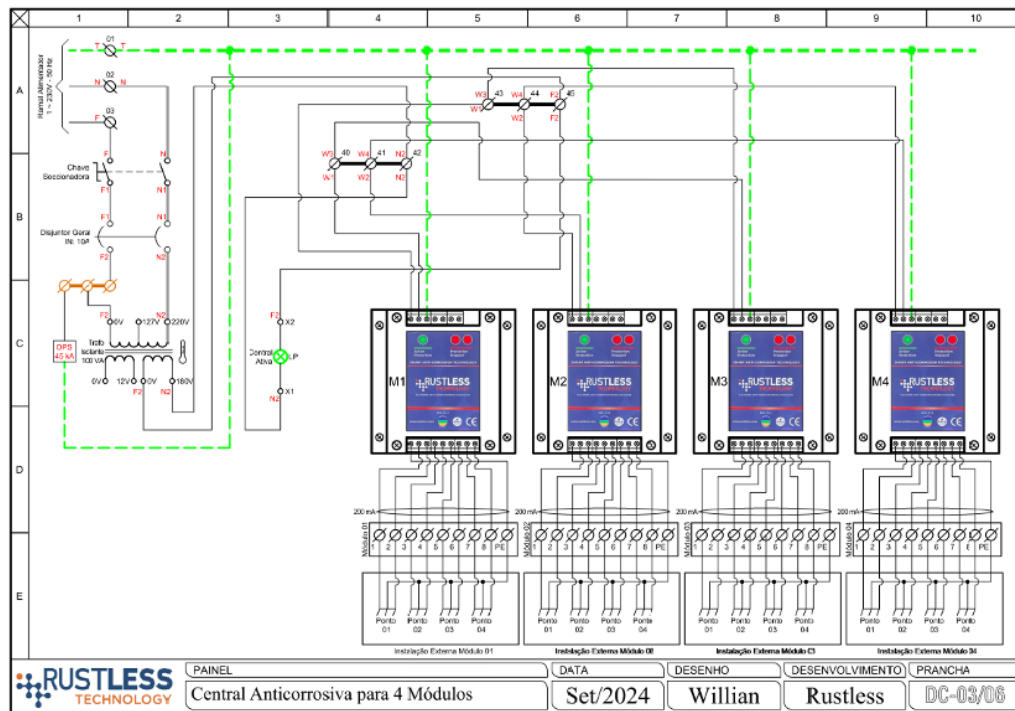
Reference configuration with 4 modules (M1 to M4)

Input	Terminals for the ~230 V supply branch (L, N, PE).
Protection	Isolator switch, C10 main circuit breaker and surge protection device (SPD 45 kA).
Isolation transformer	100 VA — primary 0 / 127 / 220 V; secondary 0 / 12 / 180 V.
RAC Modules	DIN-rail modules, each with 8 output channels and LED indication.
Outputs	Terminal strip per module (channels 1-8 + PE) for the distribution circuits.
Indication	“Unit Active” indicator light on the enclosure door.



Internal layout — Control Unit for 4 modules.

POWER AND CONTROL DIAGRAM



Drawing DC-03/06 · Sep 2024

READING THE OPERATING STATUS

CONTROL UNIT – EXTERIOR (DOOR)



Green light on

Control Unit on. **Keep operation continuous.**



Green light off

Control Unit off or without power.
Check the 230 V supply.



RAC 1.3 MODULE – INTERIOR



Green - Active Protection

System operating, balance active.
Keep operation continuous.



Red - Protection Stopped

One or two lights: temporary alert or critical fault.
Contact Rustless.



All lights off

Module inactive. **Contact Rustless.**



USE AND INSPECTION ROUTINE

24/7

The Control Unit must remain switched on at all times.

Interruption longer than 48 hours: notify Rustless for assessment and possible recalibration.
After long periods without power, check the Control Unit and module lights.

FORTNIGHTLY OR MONTHLY • USER

Visual inspection

Confirm that the Control Unit and modules show a green light. Check for loose cables, exposed connections or signs of failure. Confirm that conduits and anchor points are intact and connected to the structure.

WHENEVER IT OCCURS • USER

Fault log

Red light, power failure or burning smell: record it on the internal form and report it to Rustless with location, time, light status and person in charge, by email or through the Rustless Customer Portal.

PERIODIC INSPECTION • RUSTLESS

Technical maintenance

Visits by the Rustless technical team for monitoring and preventive and corrective maintenance, as per the commercial proposal or contract.

CLEANING, WORKS AND INTERVENTIONS

Anticorrosion Control Unit

- Do not direct water jets, steam or chemicals at the Control Unit — the internal electronics are sensitive to moisture.
- When cleaning the surrounding area, cover the Control Unit with waterproof protection.
- Contact with liquids: switch off the Control Unit and contact Rustless.

Distribution Circuits

- Do not cut, over-bend, pull or use the cables as a support.
- Protect the cables during cleaning or works to prevent damage and water ingress.
- Moving or replacing metal equipment: requires prior assessment by Rustless.

Anchor Points

- Do not remove, sand, paint or cover without Rustless authorisation.
- Avoid high-pressure jets on boxes and terminals.
- Welding or cutting nearby: switch off the Control Unit and inform Rustless.

WELDING — MANDATORY

Fully switch off the Control Unit connected to the structure before any welding.

Reactivate only after technical verification and confirmation by Rustless.

APPLICABLE STANDARDS

IEC 60364 Soldering of conductor terminations is prohibited.

IEC 60364-4-41 Protection against electric shock.

IEC 60445 Legible and indelible identification labels.

IEC 61439-1 Live parts protected by barriers (polycarbonate).

IEC 60529 · 62262 IP66 enclosure and IK10 impact resistance.

EN 50110 Electrical safety; up-to-date design documentation available for consultation.

IEC 60228 Internal wiring: 1.0 mm² power · 0.5 mm² control.

CE · RoHS RAC modules CE-marked and RoHS compliant.

RUSTLESS TECHNICAL SUPPORT

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Rustless Customer Portal: manage your system at app.rustless.com

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