

# Anodizing Rectifier

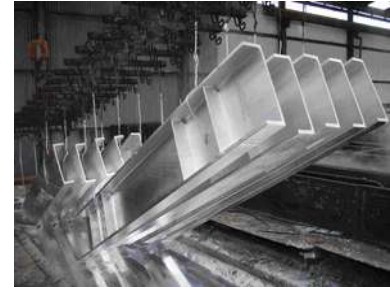
## 6V till 230V / 50A till 25.000A



[www.germarel.de](http://www.germarel.de)



20V - 24V - 30V - 60V - 130V - 230V / 50 A - 25.000 A



*Anodizing Solutions*



*Anodizing Solutions*



*Automation Control*



*Plating Rectifier*

- Easy Monitoring, Output Voltage Controlling and Current from Screen
- Short Circuit, Overload, Over Voltage & Over Temperature Protection
- High Frequency Switchmode or 6 Pulse or 12 Pulse Technology
- Wide Input Voltage Range for Rural Areas & 50 Hz or & 60Hz Input
- Small Footprint, Easy Maintenance & Robust & Anti Rust Cabinet
- Warning LEDs and Dry Contac or Siren or Modbust as Optional
- Easy Give Service and Updates and 20 Years Life Time Design
- Micro Chip Controlled, Fast and Precisely, Efficient Control
- 2 Years Warranty & 10 Years Spare Part Availability
- Perfect DC Supply for Industrial Solutions
- Adjustable 0.1V and 1Amper Sensitivity
- Constant Voltage or Current Option
- High Efficiency up to 91%
- Logs for Basic Problems
- Optional: Outdoor External Screen
- Optional: Stand Alone or With Wheel
- Optional Dry Contact & Modbus & GSM / GPRS Control
- Optional: Fresh Air Cooling or Oil Cooling or Water Cooling
- Optional: Engineering for Your Application for Better Solution
- Optional: Project & Client Oriented New Designs & Factory Design
- Optional: IP20 till IP65, Indoor or with Airconditioner & Cabinet or Container
- Optional: Anodizing & Electrolysis & Plating & Coloring & Static Painting : Water Treatment & Chemical Nickel & Galvanizing & Chemical



<http://www.germarel-platingrectifier.de/anodizing-rectifier.html>

# Technical Advantages of REC-GER Industrial Rectifier

10V - 12V - 20V – 24V – 30V – 60V – 100V - 230 / 50 Amper – 25.000 Amper

REC-GER series anodizing rectifiers are developed for plating high capacity metal industry used in rectifiers use a recipe system, which allows you to keep a record of the work that has been done before, and with just a simple click, you can use the same recipe in order to define the paint thickness.

This feature makes sure that you end up with a standardized product as well as making the process as easy as possible for your operator. ... and designed for both individual for your electrical vehicles or industrial use. User friendly control panel and easy operating system is very practical to connect, control. Since the plating rectifier is electrically smart micro chips controlled plating operation is very safe, easy and extends your lead acid battery life. Day-off charging function enables the battery fully charged when it is not used and increase the life time of the battery.

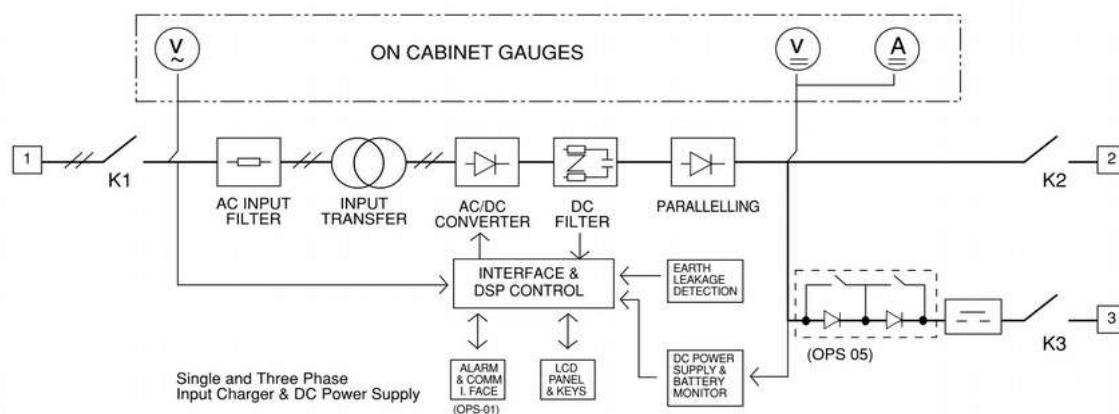
There is no need for any adjustments with Plug and play function and charging starts automatically when the battery is connected.

The anodizing rectifier consists of economic, environment-friendly, and reliable DC power supplies that use the resonant converter technology, operating at high frequencies. They have a high input power factor along with very low output voltage ripples. The plating rectifiers are used extensively for the metal sector and as customized for the clients needs.

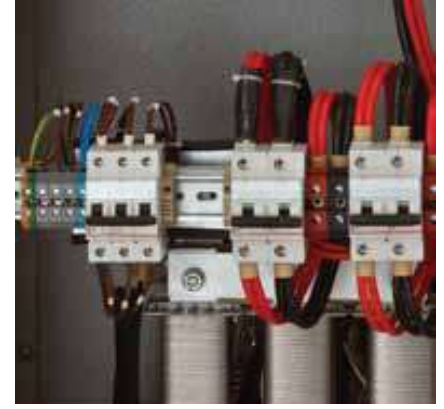
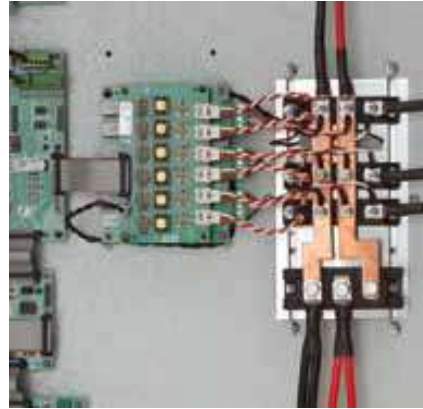
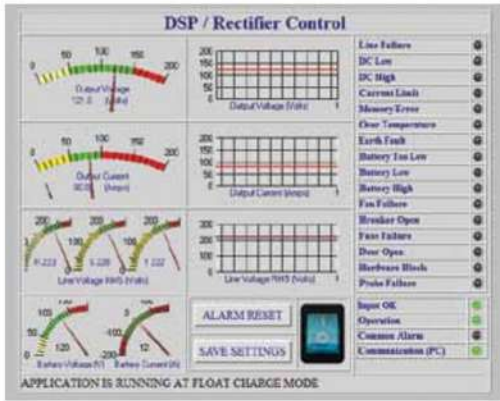
We as Germarel, give our clients to work with us collaborative to write software together. That means how many ramps our clients want with what kind of voltage and current control let us to make our connection with our client help us and our client to produce best machines end best products.

## Easy Installation in you anodizing facilities:

- \* Ease of Maintenance for the power electronic parts
- \* Operator Panel, PC or PLC control Profi - Bus
- \* DP Comprehensive Error Diagnostics, Logging
- \* User-Friendly Design for technicians
- \* Wide Program Options, customisable
- \* Functional Control Panel Options
- \* Smart Bug Tracking System
- \* Superior Protection Against User Errors
- \* Easy to supply spare parts
- \* Environmental design
- \* Energy-saving system
- \* Different line voltage selector
- \* Perfect for chemical reaction



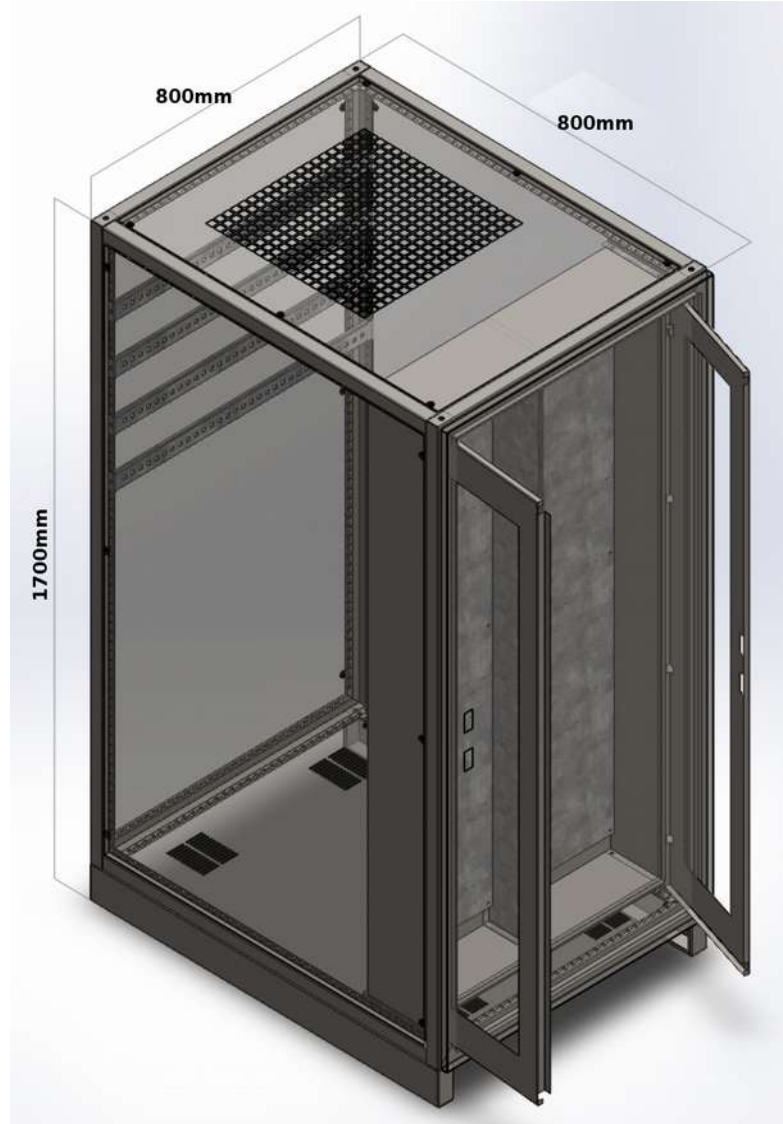
# Technical Advantages of REC-GER Industrial Rectifier



Communication Interface



# Technical Advantages of REC-GER Industrial Rectifier



# Technical Advantages of REC-GER

|                                      |  |
|--------------------------------------|--|
| Products                             | <input checked="" type="checkbox"/> REC- GER Anodizing <input type="checkbox"/> REC- GER Plating <input type="checkbox"/> REC- GER Electrolysis <input type="checkbox"/> REC- GER Industrial   |
| Usage Area                           | <input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Marine  |
| Power Watt                           | <input type="checkbox"/> 0.8PF <input checked="" type="checkbox"/> 0.95PF <input type="checkbox"/> 1.0PF   |
| <b>INPUT</b>                         |  |
| Input Voltage                        | <input type="checkbox"/> 220V <input type="checkbox"/> 380V <input checked="" type="checkbox"/> 400V <input type="checkbox"/> 415V <input type="checkbox"/> 440V <input type="checkbox"/> 480V   |
| Input Voltage Range                  | <input checked="" type="checkbox"/> -%10 / +%10 (%100Load) <input type="checkbox"/> -%15 / +%10 (%90Load) <input type="checkbox"/> -%20 / +%10 (%85Load) <input type="checkbox"/> 170V – 520V Input  |
| Input Isolation Transformer          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |
| Input P.F. & Cable Connection        | At Full Load >0.90 & <input checked="" type="checkbox"/> Bottom Cable Connection <input type="checkbox"/> Top Cable Connection <input type="checkbox"/> Backside Cable Connection  |
| Input Frequency                      | <input checked="" type="checkbox"/> 50 HZ <input checked="" type="checkbox"/> 60 HZ "44Hz - 66Hz"  |
| Input Connection                     | <input checked="" type="checkbox"/> STAR 3P+N+PE <input type="checkbox"/> Delta 3P+PE  |
| Input Connection                     | <input type="checkbox"/> Dual Input <input checked="" type="checkbox"/> Single Input   |
| Input Frequency Range                | Wide Input Frequency Range "45Hz - 66Hz"   |
| Technology                           | <input checked="" type="checkbox"/> 6Pulse <input type="checkbox"/> 12 Pulse <input type="checkbox"/> Switch Mode Technology   |
| Rectifier & Harmonic Distortion THDI | <input type="checkbox"/> %2 <input type="checkbox"/> %3 <input checked="" type="checkbox"/> %7 <input type="checkbox"/> %11 <input type="checkbox"/> %30   |
| <b>OUTPUT</b>                        |  |
| Output Voltage                       | <input type="checkbox"/> 10V <input checked="" type="checkbox"/> 20V <input type="checkbox"/> 30V <input type="checkbox"/> 110V <input type="checkbox"/> 180V <input type="checkbox"/> 230V  |
| Output Cable Connection              | <input checked="" type="checkbox"/> Left Side Bus Bar <input type="checkbox"/> Front Side Bus Bar <input type="checkbox"/> Backside Cable Connection   |
| Output Filter                        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |
| Output Current                       | <input type="checkbox"/> 500Amper <input checked="" type="checkbox"/> 3000Amper <input type="checkbox"/> 10.000Amper   |
| Output Connection                    | <input checked="" type="checkbox"/> 1 x "+" & 1 x "-" <input type="checkbox"/> Bi-Polar "+" & - / - & + "  |
| Output Voltage Limiting              | 0V & %100V / 0.1 Volt Sensitive  |
| Recovery & Auto Start                | 1% Back to Band <40ms "410V – 420V" & Auto Start Adjustable From Screen  |
| Efficiency                           | <input checked="" type="checkbox"/> Till %90 for Solutions <input type="checkbox"/> Till %92 <input type="checkbox"/> >%95   |
| Ripple                               | < %4 for 6 Pulse & <%1 for 12 Pulse & %0.1 for Switch Mode   |
| Current Limiting                     | I now x %10 = front panel 1A till 100% selectable  |
| <b>COMMUNICATION</b>                 |  |
| Options                              | <input checked="" type="checkbox"/> RS232 Standard <input type="checkbox"/> RS485/ Modbus <input type="checkbox"/> Profibus <input type="checkbox"/> Dry Contact Card <input type="checkbox"/> External Screen <input type="checkbox"/> GPRS- GSM Control                        |
| Rectifier Control                    | PLC and Micro Controller   |
| Communication Alerts & Logging       | 500 Event Logs & 180 Parameters for Each Log "As Excel Sheet" "Optional Parallel"  |
| <b>STANDARDS</b>                     |  |
| Quality & Used Electrical Parts      | ISO 9001 - ISO 14001 - ISO 18001 & IGBT, Thyristor Europe & Electrical parts are made in Korea, Europe & Turkey  |
| Performance                          | EN62040 -3 (VFI-SS-111)  |
| EMC/LVD                              | EN62040 - 2 / EN62040 -1 EN60950 / VDE, DIN 41773 / ANSI-NEMA PE 5   |
| <b>GENERAL</b>                       |  |
| Storage & Running Temperature        | Standard +5°C~35°C & <input checked="" type="checkbox"/> 0°C~40°C <input type="checkbox"/> 0°C~45°C <input type="checkbox"/> -5°C~55°C <input type="checkbox"/> -10°C~40°C   |
| Electrical Protection                | Input Over & Low Frequency / Over & Low Voltage / Over Current / Over Temperature Protection Degradation   |
| Protection Class                     | <input checked="" type="checkbox"/> IP20 <input type="checkbox"/> IP21 <input type="checkbox"/> IP22 <input type="checkbox"/> IP33 <input type="checkbox"/> IP42 <input type="checkbox"/> IP55 <input type="checkbox"/> IP65   |
| Chassis & Humidity & Noise           | Anti-Static Anti Rust Coated Painting Protection & 0-98% & 50 Db Maximum   |
| Screen                               | Ramps & Time & Alarms & Logs <input type="checkbox"/> 2x16 <input checked="" type="checkbox"/> 4x20 <input type="checkbox"/> 320mmx240mm(Touchscreen) <input checked="" type="checkbox"/> External Screen  |
| Altitude                             | @40°C & after 1000Meter for each hundred meter %1 Loss <input checked="" type="checkbox"/> Till 1000m <input type="checkbox"/> Till 1500m <input type="checkbox"/> Till 2000m <input type="checkbox"/> > 2000m   |
| Cabinet Color                        | <input type="checkbox"/> Ral 7060 <input checked="" type="checkbox"/> Ral 7035 <input type="checkbox"/> Ral 7032 <input type="checkbox"/> Ral 7016 <input type="checkbox"/> Ral 1014 <input type="checkbox"/> Black  |
| Operation & Cooling                  | <input checked="" type="checkbox"/> Single <input type="checkbox"/> 2 Pieces Parallel Cooling for the Rectifier <input checked="" type="checkbox"/> Air <input type="checkbox"/> Outdoor <input type="checkbox"/> Water <input type="checkbox"/> AC <input type="checkbox"/> Oil |
| EPO (Emergency Power Off)            | <input checked="" type="checkbox"/> Standard for IP20 <input type="checkbox"/> Optional for Outdoor with external screen   |
| Certification                        | <input checked="" type="checkbox"/> Standard <input type="checkbox"/> SGS <input type="checkbox"/> SASO <input checked="" type="checkbox"/> IEC <input type="checkbox"/> BV Marine <input type="checkbox"/> BV General <input type="checkbox"/> Soncap                           |
| Vibration & Earthquake design        | <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Vibration Reduce <input type="checkbox"/> Seismic Standard <input type="checkbox"/> Seismic Customized   |
| Dimensions (WxDxH) (cm)              | <input checked="" type="checkbox"/> 120X160x200 / (1590kg) <input type="checkbox"/> 300x220x240 / (2960kg) <input type="checkbox"/> 360x220x240 / (3670kg) <input type="checkbox"/> 420x220x240 / (4880kg)   |

NOTE: CUSTOMIZED SOLUTIONS ARE POSSIBLE, PLEASE ASK FOR THE NEEDED SOLUTION

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