



G5.SAS Solar Array Simulator Series

The G5.SAS series are unidirectional sources. It was developed specifically for testing inverters and simulating solar arrays and is suitable for use in laboratories and on test benches. The modular and finely graded G5.SAS series is characterized by highly dynamic response times and a wide current-voltage range with an auto-ranging factor 3. The power supplies feature especially low capacitance values in the output filter stage and switchable earth leakage resistors for adaptation to the insulation measurement of the DUT. The G5.SAS series is equipped with the powerful application software SASControl, which offers comfortable possibilities for the calculation of solar arrays. I-V curves are calculated with high accuracy in real time. REGATRON PV simulators: The market leader since 2005!

Device Types

Voltage V	Power kW	Current A	Height U	Order Code
0...500	18	0...108	4	G5.SAS.18.500.108
0...500	27	0...162	7	G5.SAS.27.500.162
0...500	36	0...216	7	G5.SAS.36.500.216
0...500	54	0...324	10	G5.SAS.54.500.324
0...1000	18	0...54	4	G5.SAS.18.1000.54
0...1000	36	0...108	7	G5.SAS.36.1000.108
0...1000	54	0...162	10	G5.SAS.54.1000.162
0...1500	27	0...54	7	G5.SAS.27.1500.54
0...1500	54	0...108	10	G5.SAS.54.1500.108

Modular and Easy Scalable Systems

The output of an individual power supply is in the range from 0...18 kW to 0...2000+ kW, up to 3000 VDC. The advantageous modularity of REGATRON power supply solutions allows the system to be easily adapted to ever changing test requirements. Not only is it possible to reconfigure between parallel, series,

and mixed operation, but also to expand the system with additional power supply units or to split it into smaller units.

Therefore, the purchase of a REGATRON power supply is a solid investment for the future.

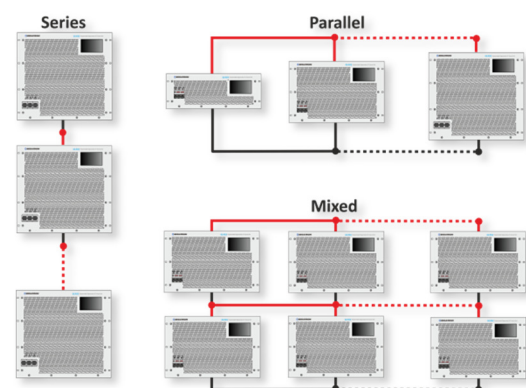


Figure 1: Modular concept for easy power and voltage increase by parallel, series, and mixed operation. The parallel configuration allows even an operation of different power levels, e.g., 18, 36, and 54 kW modules, in one system.

Whether for single devices or powerful multi-device master-slave systems, REGATRON also offers turnkey cabinet solutions or project specific system integration according to customer specifications.

Solar Array Simulation Features

The G5.SAS series features especially low capacitance values in the output filter stage, switchable earth leakage resistors, and the versatile application software SASControl. The powerful platform for R+D and testing of PV inverters fully complies with the efficiency measurement procedures for maximum power point tracking (MPPT) in inverters as described in EN 50530. Core of the application software SASControl is a versatile script programming system which allows the easy implementation of individual programming sequences. Report generation of measured data is also included. Rely on our many years of experience: REGATRON PV simulators are market leaders since 2005!

Features such as adjustable controller settings and the integrated powerful 8-channel digital scope assist the user to quickly and easily achieve optimal system behavior for a special application requirement. The G5.SAS series also offers the possibility to store, edit and recall any device configuration on board the power supply.

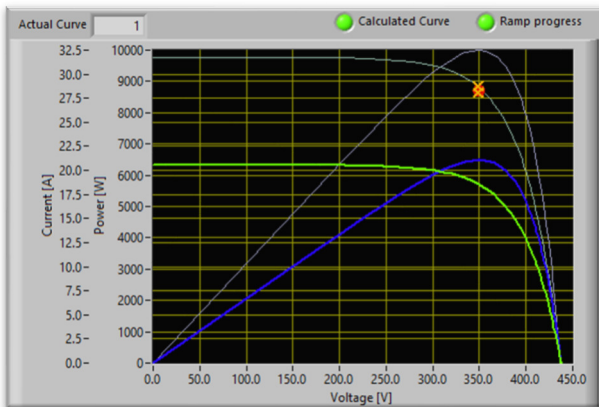


Figure 2: SASControl Live Viewer – always up to date.

General Dynamic Data

rise/fall time	voltage 0...90%	150...200 μs
set-value step	current 0...90%	50...100 μs
response time load step	CV, recovery within 0.5% set value	100...150 μs

Accuracy

The G5.SAS series has an exceptional accuracy of <0.02% FS. There is even an additional high-resolution current measurement range from 0 to 10% FS.

Control Modes

- CV constant voltage
- CC constant current
- CP constant power
- Ri internal resistance simulation

Interfaces

Ethernet and USB

To connect with:

- G5.Control the operating and maintenance software
- AAP a variable-based function generator
- SASControl the application software for PV simulation
- API .NET programming, e.g., by LabView, Python, Matlab, or REST interface

I/O port

Interface featuring analog and digital signals used for set and actual values or operating states.

Insulation fault prevention YCD

To avoid an unintentional insulation fault triggering of the PV inverter, the YCD interface of the G5.SAS power supply allows to adapt the earth leakage resistance.

Grid Connection

The wide-band AC input accepts all common AC grid systems and has an active power factor correction.

- AC Grid 380...480 VAC ±10% at 50/60 Hz
- PF 0.99
- Efficiency 95...96%

Options

Software and Control

Time-Based Function Generator

The TFE time-based function generator allows programming either through G5.Control operating software, HMI touch display, or CANmp interface.

- Time-dependent functions $U = f(t)$, $I = f(t)$, $P = f(t)$: sine, triangle, or square as well as user-defined data points. Import and export through csv files supported
- Sweep function for current ripple modulation 0...10 kHz

HMI

The HMI built into the front panel allows comprehensive and convenient operation of the power supply via touch display.



Figure 3: Intuitive control by HMI touch display. Everything you need at a glance.

Environmental Conditions

Front-panel-mounted air filter (AirFilter), recommended for use in dusty environments.

User Safety

- Integrated safety relay (ISR) for increased emergency stop reliability supporting performance level PL c / PL e according to EN ISO 13849
- Discharge of AC filter (XCD), recommended for mobile use of the device. XCD ensures a discharge time of the AC filter <1 s required by EN 62477-1
- AC terminal protection cover (PAC.AC), recommended for use as tabletop unit

Rack-Integrated System Solutions

- Mobile rack solutions up to IP54
- Easy reconfiguration between parallel, series, and mixed operation



Figure 4: REGATRON's rack-integrated turn-key system solutions, e.g., 72 kW (left) and 162 kW (right) power levels. Various types of AC/DC connectors and cables allow for comfortable handling. Third-party product integration and numerous safety options are additional features.

Important Features of the G5.SAS Series

Technology

- Technologically advanced, fast switching, compact 19-inch power supplies
- High control dynamics in the 100...200 μ s range – even at higher power levels
- Wide current-voltage range with an auto-ranging factor 3
- CV, CC, CP, and Ri-Sim control modes
- Highly efficient, resulting in significant reduction of energy consumption and heat dissipation

System Capability

- Modular and easy scalable systems
- Parallel, series, and mixed operation with a digital high-speed bus
- Simple master-slave configuration with the operating software
- Easy rack mounting
- Optional safety features such as 2-channel safety interface and insulation monitoring
- Turn-key cabinet solutions or project-specific system integration according to customer specification

System Control and Options

- Operating software, extended analysis, parameterization options, and calibration
- Application software with visualization, programming, and data logger
- Powerful application programming interfaces (APIs)

For detailed technical information, contact your local sales partner or REGATRON.

Regatron AG
Feldmühlestrasse 50
9400 Rorschach
SWITZERLAND

sales@regatron.com
www.regatron.com

Regatron Inc.
100 Overlook Center, 2nd Floor
Princeton, NJ 08540
USA

inquiries@us.regatron.com
www.us.regatron.com

All product specifications and information herein are provisional and subject to change without notice.

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REGATRON DC & AC Power Supplies: Modular · Precisely Engineered · Technologically Advanced

NEW
DC Generation 5

