

SG 2024

Solid State Microwave Generator
2000 Watts @ 2450 MHz



The SG 2024 is a water-cooled, solid state, microwave generator with adjustable power up to 2000 W over 2400-2500 MHz frequency range. The SG 2024 is a remote, compact, microwave "head" with output on a standard WR340 waveguide aperture and is controlled and powered by the AC 1040, a separate, rack mountable unit. The AC 1040 contains the power supply with input from a 400V or 480V three phase line. An industrial connector brings DC power to the remote head, as well as all the signals necessary to monitor functionality. The AC 1040 provides user interface functionality, including status messages and parameter set up through the display, manual commands, and fieldbus port.

The SG 2024 microwave power generator, with the AC 1040 controller and power unit, provides exceptional control functionality, including precise power and frequency control, making it ideal for industrial applications. This state of the art microwave generator uses the most powerful high frequency transistors, enabling a breakthrough performance in modern

microwave heating technology, providing a stable output frequency, as well as control of output frequency between 2400-2500 MHz for tuning, if needed. The system can be controlled via manual commands using the front panel interface, or remotely through standardized PLC control signals or fieldbus. A USB interface is provided to allow upgrading of internal firmware or monitoring/controlling the microwave power supply from a standard Windows® based PC.

The SG 2024 includes a built-in circulator and passive load to withstand a reverse power condition and offers compensated monitor signals of the forward and reverse power. The SG 2024 microwave head is powered by the remote AC 1040 controller through a single connection, with related shielded conduit, and industrial plugs. The maximum distance between the two units is 2 m.

Product Features

- Coax output connector
- Smaller form factor with solid state design
- 2400-2500 MHz frequency tuning
- 19" rack mountable for easy integration of controller
- Remote and manual operation for easy setup, operation and troubleshooting

Embedded thresholds for the Reflected Power (RP) management:

- $RP < 1kW$: the generator can withstand this level of RP without time limitation
- $RP = 1kW$: the generator can withstand this level of RP for 60s (editable 0-60s), then shuts off automatically for protection
- $1kW < RP < 2kW$: the generator can withstand this level of RP for 5s (editable 0-60s), then shuts off automatically for protection
- $RP = 2 kW$ (full reflection): the generator can withstand this level of RP for 2 seconds then shuts off (not editable). Equipment cool down and restart time is 2 minutes.

In case of multiple ON-OFF processes with full reflection and to avoid thermal drift, it is mandatory to add an external circulator. With an external circulator, consecutive restart attempts with full reflection are allowed.



Key Benefits

- Rugged, reliable design ensures optimum power to the process
- Withstands reverse power conditions for optimum reliability
- Advanced high-frequency transistor design for precise power control and stability

Specifications

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| Output Power (with internal circulator) | 2000 W max, calibrated all over frequency range |
| Frequency, Nominal | 2450 MHz |
| Frequency Range, Adjustable | 2400 to 2500 MHz |
| P.A. Efficiency (excluding isolator) | Near 60% |
| Output Waveguide | WR340 size, flat flange R26 style |
| Input Power Range | <ul style="list-style-type: none"> • 3x400V or 3x480V, $\pm 10\%$ • Frequency 50/60 Hz |
| SG 2024 Microwave Head Height Base (flange side) Weight Cooling Type | <ul style="list-style-type: none"> • 464 mm (18.26") • 450 x 140 mm (17.70" x 5.51") • 20 kg / 44 lbs • Water/Glycol |
| AC 1040 Controller Height, Front Panel Width, Rack Width, Front Panel Length, Rack Weight Cooling Type | <ul style="list-style-type: none"> • 133 mm (3 U: 5.25") • 440 mm (17.32") • 483 mm (19.02") • 550.5 mm (21.65") • 20 kg / 44 lbs • Forced air |
| Working Ambient Temperature (max) | 40°C / 104° F |
| Front Panel SG 2024 | <ul style="list-style-type: none"> • In/out water adaptor, quick-lock type • 1 Multipoles socket for DC power, signals and bus |
| Front Panel AC 1040 | <ul style="list-style-type: none"> • LCD graphic display showing the main info to the user • 3 button keyboards and a rotating knob to scroll, select and adjust the various parameters • Main switch 0/1 |
| Rear Panel AC 1040 | <ul style="list-style-type: none"> • 1 Multipoles socket for main line supply • 1 Multipoles socket for DC power, signals and bus • 25 Pin D type connector for signals • USB port • Fieldbus interface with a connector depending on type of bus |
| Compliance | <ul style="list-style-type: none"> • Low Voltage Directive 2014/35/UE • EMC Directive 2014/30/UE (following norms): EN 61010-1: 2011-3, EN61000-6-4: 2007-11, EN61000-6-2: 2006-10, EN61000-4-3: 2007-04, EN61000-4-6: 2006-10 |

