ADVANCED SOLAR POWER SIMULATOR

High Performance Solar Array Simulation Power Supply

Performance. Reliance. Brilliance.

The Elgar™ Advanced Solar Power Simulator (ASPS) features either two independent, isolated 600W channels or a single 1200W channel. Industry leading 2µsecond shunt switching recovery time provides the best power transfer for fast PWM shunt switching satellite PCDU's.

- **2-Channels x 600W**
- **1-Channel x 1200W**
- **40 V to 220 V**
- **2.72A to 20A**

Advanced Features

- 2 independent, isolated 600W channels or 1 1200W channel in 1U
- 2µ second shunt switching recovery
- Peak Power Tracking
- Primary and secondary over voltage and over current
- Output electronic circuit breaker
- Built in fault data recorder
- Power On Self-Test
- Active power factor correction (PFC)
- Color touch panel monitoring
- Standard LAN interface
- Full remote control via AMETEK SAS software or SCPI commands

Control via AMETEK SAS Software or via SCPI Commands Over Ethernet

The ASPS is Digital Signal Processor (DSP) controlled and can be operated using SCPI commands via the Ethernet control interface or using the AMETEK SAS software. The channels can be monitored from the intuitive, easy-to-use, front panel touchscreen.

The touchscreen includes a Monitor Mode, Output Programming Parameters, Output relay monitoring, Fault messaging, Configuration, and System Settings. The Monitor Mode provides readback voltage, current and relay state. It also shows the state of the channel by changing the background color of the tile; gray for idle state, green for conducting state, blue for shunted state and red for fault state.

APPLICATIONS

- **Works with S3R, S4R, Direct connection, and Peak Power Trackers**
- **ECLIPSE Simulation: Store up to 32 IV curves and up to 32 segments**
- **SAFETY: Primary and secondary SAS overvoltage/overcurrent protection**
- **Extremely fast (10µS) electronic circuit breaker (ECB) for SAS OV or OC protections**

AMETEK®

PROGRAMMABLE POWER

9250 Brown Deer Road • San Diego, CA 92121 • USA

sales.ppd@ametek.com • +1 858-450-0085

programmablepower.com

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ASPS

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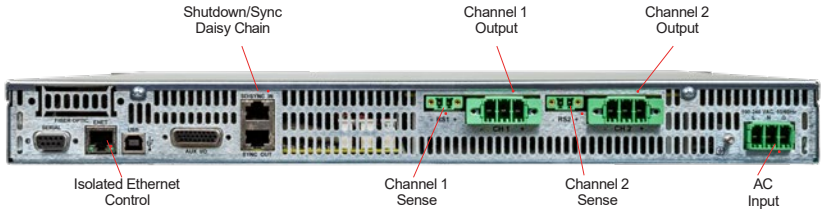

ASPS GENERAL SPECIFICATIONS

Rated Output Voltage Voc	V	40 - 220 (5V increments)
Rated Output Current Isc	A	2.72 – 20.0
Rated Output Power	W	600 or 1200
Voltage Ripple RMS(1) (20Hz-300kHz)	mV	≤ 0.02% of Vocmax
Voltage noise p-p(2) (20Hz-20MHz)	mV	≤ 0.2% of Vocmax
Current Ripple RMS(3) (20Hz-300kHz)	mA	≤ 0.04% of Iscmax
Current noise p-p(4) (20Hz-20MHz)	mA	≤ 0.4% of Iscmax
Remote sense compensation	V	5

(1) Voltage ripple RMS is measured directly across the output terminals (ungrounded, or either terminal grounded) with 100nF in parallel with the meter.
(2) Voltage noise PK-PK is measured directly across the output terminals (ungrounded, or either terminal grounded) with 100nF in parallel with the oscilloscope probe.
(3) Current ripple RMS is measured using a 3Ω non inductive load resistor with output terminals ungrounded, or either terminal grounded.
(4) Current noise PK-PK is measured using a 3Ω non inductive load resistor with output terminals ungrounded, or either terminal grounded.

OUTPUT TRANSIENT SPECIFICATIONS

	Rated Power	
MODEL	**600W**	**1200W**
Shunt Switching Recovery Time (5)	≤2.0µS	≤2.5µS
Series Switching Recovery Time (6)	≤100µS	≤100µS
MPPT Tracking Speed (7)	200Hz	200Hz

(5) Output recovery to within 10% of Isc when shunting and 10% of operating current when releasing the shunt into the load.
(6) 10V or 10% voltage overshoot whichever is greater.
(7) Sweep amplitude 3% of Isc, triangle wave.

PROGRAMMING & READBACK (front panel or remote digital Interface)

Voltage Output Programming Accuracy	+/- 0.05% +0.05% of Vocmax	
Current Output Programming Accuracy	+/- 0.08% + 0.08% of Iscmax	
Overvoltage Programming Accuracy	± 0.25% of Vocmax	
Overcurrent Programming Accuracy	± 0.25% of Iscmax	
Voltage Output Programming Resolution	0.012% of Vocmax	
Current Output Programming Resolution	0.012% of Iscmax	
Overvoltage Programming Resolution	0.012% of Vocmax	
Overcurrent Programming Resolution	0.012% of Iscmax	
Voltage Output Readback Accuracy	+/- 0.05% + 0.05% of Vocmax	
Current Output Readback Accuracy	+/- 0.1% + 0.1% of Iscmax	
Voltage Output Readback Resolution	0.012% of Vocmax	
Current Output Readback Resolution	0.012% of Iscmax	
Overvoltage Response Time	$t = 420\,\mu s * \ln\left(\frac{V_P - V_O}{V_P - V_{LIM}}\right)$	VLIM = voltage limit VO = initial voltage VP = final voltage
Overcurrent Response Time	$t = 420\,\mu s * \ln\left(\frac{I_P - I_O}{I_P - I_{LIM}}\right)$	ILIM = current limit IO = initial current IP = final current

AC INPUT SPECIFICATIONS

2x 600 W Per Channel or 1x 1200 W Per Channel. Total 1200 W In a Chassis.	
Input Voltage, Operating Range	1 Phase, 2 Wire + Gnd, Operating Range 90V-264 VAC
Input Frequency Range	47 Hz - 63 Hz
Power Factor	98% (single phase 220VA)
Efficiency (Typical)	80%

- **Maximize rack space utilization with leading SAS power density in a 1U chassis**
- **Fastest shunt switching recovery time on the market**
- Quickly see the channels state and readbacks with intuitive color touchscreen

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