

NEW

S600 Series Multi Channel Power Supply Tester



Configurable for Parallel Testing of 1 to 16 Devices

Key Features

- Maximum test throughput through parallel testing of multiple devices & outputs
- Ease of reconfiguration or expansion through front-loading, card-based instruments
- Built-in waveform digitizers on all instruments
- Space-saving design

Applications

Model S600 Multi-Channel Testers combine a wide range of configuration options with extremely fast test speeds to deliver the lowest unit-cost-of-test for high-volume power conversion devices such as AC-DC power supplies, adapters, chargers, LED power drivers, DC converters, and voltage regulator modules. S600s may be configured to efficiently test anything between a single supply with as many as 16 outputs, 16 separate single-output supplies or any combination of supplies and outputs between those two limits.



Model S670

Distributed Measurements the Key to Test Speed

The S600 Series exceeds traditional test system design that has a single measurement instrument shared by sequencing through each load channel. Now, a powerful measurement capability is built-in to each load so that all measurements are made much faster and at the same time as all other loads. Likewise, multiple unit input measurements can be made in the same manner through individual measurement cards with similar capability. In short, a dedicated measurement device is available for each and every source and load channel.

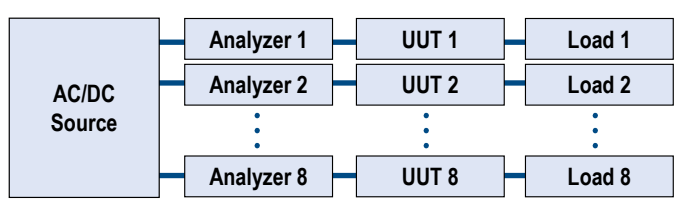


Figure 1(a) - Distributed Measurements: Diagrammatically illustrating how 8 single-output UUTs & a single AC/DC source would be connected with one 4300 chassis containing all loads & power analyzers. A second 4300 chassis would allow testing 16 UUTs in parallel.

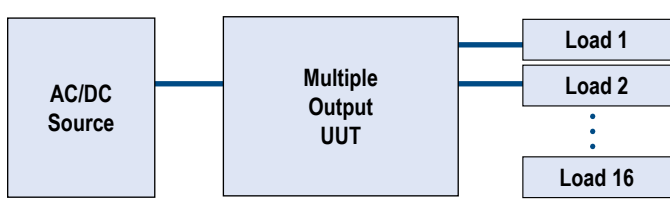


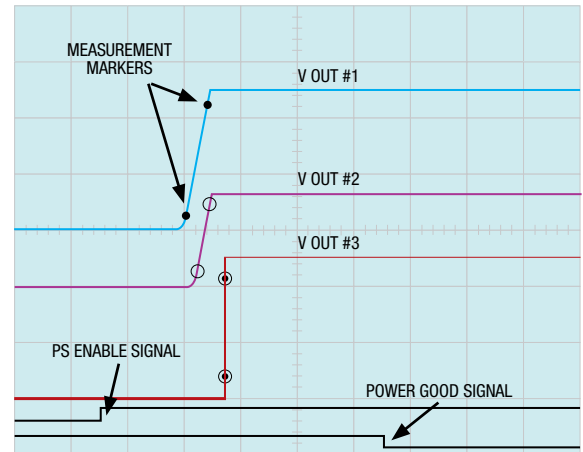
Figure 1(b) - Distributed Measurements: showing how a multi-output UUT & AC/DC source would be connected with one 4300 chassis. If UUT outputs and 8 or less, additional UUTs could be tested in parallel with addition of Power Analyzers.

Digital Loads with Advanced Measurement Capability

The core of the S600 utilizes modular 120V and 500V loads with 150, 300 and 600W ratings. For higher power loading, the S600 can now be configured with 120V and 600 V loads from 1 to 6 kW ratings. All loads contain a digital measurement system featuring 2 isolated channels of 1MS/sec digitizing capability.

For multiple output supplies, the S600 precisely measures the relationship between all analog and digital voltages / currents of each output simultaneously (Fig. 2).

Figure 2 - Multi Output/Multi UUT Monotonicity & Timing including Digital Logic



Digital Power Analyzer

A single plug-in card contains the Digital Power Analyzer which is used to measure key parameters on individual channel input conditions when multiple UUTs are sharing the same AC or DC source. This capability allows measurement of critical input-to-output conditions such as efficiency (Fig. 3).

Figure 3 - A key core instrument of the S600 Multi-Channel Test System is the Model 4301 Digital Power Analyzer.



Ease of Expansion or Reconfiguration

The front-loading, card-based design of both the Modular Loads and Power Analyzer make reconfiguration for another type of device to be tested, a straight forward matter. (Fig. 4).



Figure 4 - Front loading, card-based design makes removal & reconfiguration easy

Advanced AC/DC Source

An advanced AC/DC Power Source, the Model 9420, is now available for the S600 Series. With power ratings of 4, 8 or 12 kW and programmable single, split or 3-phase output, this versatile source can also program power line disturbances as well as measure Energy Star low currents (Fig. 5).

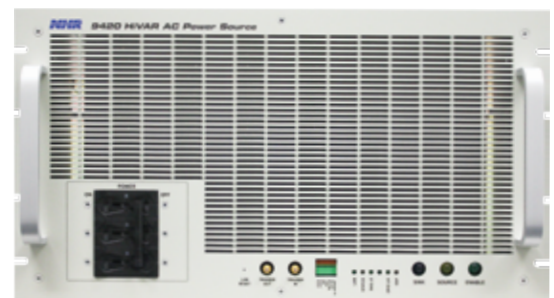


Figure 5 - Model 9420-4 AC/DC Power Source

emPower® Test Executive

A comprehensive test executive is provided with the S600 Series for the rapid development of test sequences, full interactive (manual) control and display of all measurements and waveforms. Included is a comprehensive library of production-ready Test Routines (Fig. 6) and test report templates.

| General Tests | Dynamic Tests (continued) | Output Control | Measurements (continued) |
|----------------------------------|------------------------------|-------------------------------|-------------------------------------|
| Output Accuracy | Worst-Case Dynamic Transient | Single Digital (Out) Control | RMS (AC or DC Coupled) |
| Output Adjustment | Over/Under-Shoot | Byte/Word Digital Control | Frequency Spectrum |
| Output Trim | Settling/Recovery Voltage | Over-Voltage Driver | Voltage Waveform Capture & Analysis |
| RMS Noise/Ripple | Settling/Recovery Time | Over-Temperature Driver | Current Waveform Capture & Analysis |
| Operator Data Entry | Production Tests | Regulation Tests | Digital State |
| Visual Confirmation (Acceptance) | Efficiency | Line Regulation | Time at Event |
| Operator Workflow Instructions | Average Efficiency | Load Regulation | Measurement at Event |
| Power Fail Signaling | Over-Current Protection | Cross-Channel Load Regulation | Timing Tests |
| Power Good Signal | High-Accuracy OC Protection | Output Regulation (V, I, P) | Rise/Fall Time |
| P/S ON Signal | Over-Voltage Protection | Measurements | Turn-On/Off Time |
| Multi-Measure | Under-Voltage Protection | Voltage/Current/Power | Hold-Up Time |
| Monotonicity | High-Accuracy OV Protection | Mean | Transient Recovery Time |
| Dynamic Tests | Over-Power Protection | DC Peak (+ & -) | Overshoot/Undershoot Width |
| Single Load Transient | High-Accuracy OP Protection | AC Peak (Min/Max) | |
| Multi-Output Load Transient | Short Circuit Recovery | Peak-Peak | |

Figure 6 - S600 emPower Production Ready Test Routines

Compact Cabinet Choices

The S600 Series of testers come in 3 standard sizes of cabinets that are determined by the quantity and size of selected power/measurement stimulus (see configurator on last page). Once the necessary instruments are selected, the illustrations below show how they may be configured within each of the cabinets.



S600 Configurator (See separate datasheets for complete specifications of individual instruments below)

| Physical | S650 | S670 | S680 | | |
|-------------------------|---|--------------|-------------|--|--|
| Common Equipment | Dell PowerEdge Server preconfigured w/ emPower Test Executive (1U), 4300 16-Slot Chassis (5U) & pass-through cable management slot (1U) | | | | |
| Overall Cabinet Height* | 30" | 49" | 61" | | |
| Instrument Space | 24.5" (14U) | 40.25" (23U) | 52.5" (30U) | | |

* includes 2" casters, 2 U reserved for internal wiring

| Power Analyzer Measurements | | | | | |
|---|--|------------------|----------------|-----------------|-------------|
| Voltage | 600VDC, 350VRMS, Vpk+, Vpk- | | | | |
| Current | 20ADC, 20ARMS, Ipk+, Ipk- | | | | |
| Power | Average, True, Apparent, Reactive, Power Factor | | | | |
| Frequency | 10 - 1000Hz | | | | |
| Waveform | Rise Time, Fall Time, Settling Time, Turn-On Time, Hold-Up Time, Time Event, THD | | | | |
| Timing | Trigger In, DIN State & Time | | | | |
| Record Length | 256K Points | | | | |
| Power Instrument Options | | | | | |
| AC/DC Sources | Power | Voltage | Current | Panel Ht./Slots | Phases |
| 5427 | 2.7 kVA/2 kW | 300 VRMS/424 VDC | 9 ARMS/9 ADC | 7"/4U | 1 |
| 9420-4 | 4 kW/10½ kVA | 350 VRMS/400 VDC | 30 ARMS/30 ADC | 10½"/6U | 1 |
| 9420-8 | 8 kW/21 kVA | 350 VRMS/400 VDC | 60 ARMS/60 ADC | 15¾"/9U | 1, Split |
| 9420-12 | 12 kW/32 kVA | 350 VRMS/400 VDC | 90 ARMS/90 ADC | 15¾"/9U | 1, Split, 3 |
| Modular DC Sources for 6- Slot S300 Chassis | | | | | |
| | Power | Voltage | Current | Panel Ht./Slots | |
| 6102 | 450W | 0 - 20VDC | 60A | 1 | |
| 6104 | 450W | 0 - 40VDC | 30A | 1 | |
| 6108 | 450W | 0 - 80VDC | 15A | 1 | |
| 6145 | 450W | 0 - 450VDC | 8A | 1 | |
| Modular Electronic Loads for 16-slot 4300 Chassis | | | | | |
| 4312-150 | 150W | 0.6 - 120VDC | 40A | 1 | |
| 4312-300 | 300W | 0.6 - 120VDC | 80A | 2 | |
| 4312-600 | 600W | 0.6 - 120VDC | 150A | 4 | |
| 4350-150 | 150W | 2.3 - 500VDC | 30A | 1 | |
| 4350-300 | 300W | 2.3 - 500VDC | 60A | 2 | |
| 4350-600 | 600W | 2.3 - 500VDC | 120A | 4 | |
| High-Power, High-Current Loads | | | | | |
| | Power | Voltage | Current | Panel Ht./Slots | |
| 4700-1 | 1kW | 1 - 120VDC | 200A | 5¼"/3U | |
| 4700-2 | 2kW | 1 - 120VDC | 400A | 5¼"/3U | |
| 4700-3 | 3kW | 1 - 120VDC | 600A | 10 ½"/6U | |
| 4700-6 | 6kW | 1 - 120VDC | 1200A | 10 ½"/6U | |
| High-Power, High-Voltage Loads | | | | | |
| 4760-1 | 1kW | 7 - 600V DC | 50A | 5¼"/3U | |
| 4760-2 | 2kW | 7 - 600V DC | 100A | 5¼"/3U | |
| 4760-3 | 3kW | 7 - 600V DC | 150A | 10 ½"/6U | |
| 4760-6 | 6kW | 7 - 600V DC | 300A | 10 ½"/6U | |