



4301

Telecom Test Systems



AE Techron's **4301 Series** Telecom Test Systems have been specially designed for EMC testing of network telecommunications equipment and are the best systems available for producing the waveforms required for transient voltage measurements as described in GR-1089 Section 10 and ATIS-0600315.2022.

The 4301 includes a SDG2042X Function/Arbitrary Waveform Generator, which comes pre-programmed and integrated into the 4301 system. Together, the 4301 with Siglent AWG provide a complete solution for GR-1089 Section 10/ATIS-0600315.2022 testing.

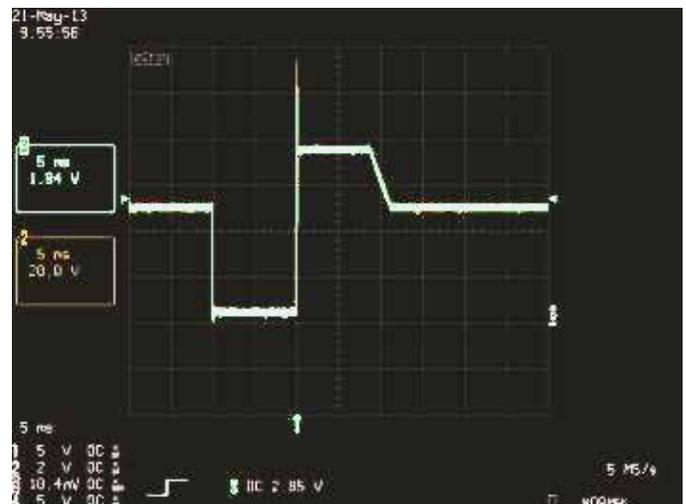
The 4301 system is available in four standard configurations and is capable of slew rates of up to 60 V/ μ sec. In its largest configuration (model 4301-240), the 4301 system can provide up to 240A of DC at \pm 50VDC and can provide pulses of up to 800 amps at voltages of up to \pm 100V. The system has a voltage gain of 20 and can accept input voltages of up to \pm 10V.

Lower power versions of the 4301 amplifier solution are available for users with lower current requirements: 4301-180 (180A), 4301-120 (120A) and 4301-60 (60A).

Features

- Complete solution for GR-1089 Section 10 and ATIS-0600315.2022 DC Voltage Variations and Transients Testing.
- Siglent SDG2042X Function/Arbitrary Waveform Generator comes pre-programmed and integrated into the 4301 system.
- Slew rates up to 60 V/ μ sec.
- Up to 240A DC at +50VDC or -50VDC (4301-240 configuration).
- Can provide pulses of up to 800 amps at voltages of up to \pm 100V (4301-240 configuration).
- Four selectable compensation settings: Adjustable compensation allows the system to maintain a 50V/2 μ sec rise-time over a wide range of current outputs.

4301 System Combined Waveform Output



Specifications

4301-60

Maximum Continuous DC Current (± 50 VDC): 60A
Maximum Pulse DC Current (up to ± 100 VDC): 200A

Voltage Gain: 20

Maximum Input Voltage: ± 10 V, unbalanced

Compensation Setting (for current required at system output),

Setting 0 (off): 0 to 6A;

Setting 1: 6 to 12A

Setting 2: 12 to 50A

Setting 3: 50 to 60A

Current Monitor Output: 20A output = 1V monitor output

Voltage Monitor Output: 20V output = 1V monitor output

Required AC Mains, three-phase, 47-60 Hz, five-conductor wiring ($\pm 10\%$),

208 VAC: 30A AC service;

400 VAC: 15A AC service

Dimensions (HxWxD): 27 x 34 x 22.5 in. (68.6 x 86.4 x 57.2 cm)

Net Weight: 307 lbs. (139 kg)

Shipping Weight: 458 lbs. (208 kg)

4301-120

Maximum Continuous DC Current (± 50 VDC): 120A

Maximum Pulse DC Current (up to ± 100 VDC): 400A

Voltage Gain: 20

Maximum Input Voltage: ± 10 V, unbalanced

Compensation Setting (for current required at system output),

Setting 0 (off): 0 to 12A;

Setting 1: 12 to 24A

Setting 2: 24 to 100A

Setting 3: 100 to 120A

Current Monitor Output: 40A output = 1V monitor output

Voltage Monitor Output: 20V output = 1V monitor output

Required AC Mains, three-phase, 47-60 Hz, five-conductor wiring ($\pm 10\%$),

208 VAC: 60A AC service;

400 VAC: 30A AC service

Dimensions (HxWxD): 40 x 22 x 31.5 in. (125 x 55.9 x 80 cm)

Net Weight: 454 lbs. (206 kg)

Shipping Weight: 589 lbs. (267 kg)

4301-180

Maximum Continuous DC Current (± 50 VDC): 180A

Maximum Pulse DC Current (up to ± 100 VDC): 600A

Voltage Gain: 20

Maximum Input Voltage: ± 10 V, unbalanced

Compensation Setting (for current required at system output),

Setting 0 (off): 0 to 18A;

Setting 1: 18 to 36A

Setting 2: 36 to 150A

Setting 3: 150 to 180A

Current Monitor Output: 60A output = 1V monitor output

Voltage Monitor Output: 20V output = 1V monitor output

Required AC Mains, three-phase, 47-60 Hz, five-conductor wiring ($\pm 10\%$),

208 VAC: 90A AC service;

400 VAC: 45A AC service

Dimensions (HxWxD): 74 x 22 x 31.5 in. (188 x 55.9 x 80 cm)

Net Weight: 697 lbs. (316 kg)

Shipping Weight: 897 lbs. (407 kg)

4301-240

Maximum Continuous DC Current (± 50 VDC): 240A

Maximum Pulse DC Current (up to ± 100 VDC): 800A

Voltage Gain: 20

Maximum Input Voltage: ± 10 V, unbalanced

Compensation Setting (for current required at system output),

Setting 0 (off): 0 to 24A;

Setting 1: 24 to 50A

Setting 2: 50 to 200A

Setting 3: 200 to 240A

Current Monitor Output: 80A output = 1V monitor output

Voltage Monitor Output: 20V output = 1V monitor output

Required AC Mains, three-phase, 47-60 Hz, five-conductor wiring ($\pm 10\%$),

208 VAC: 120A AC service;

400 VAC: 60A AC service

Dimensions (HxWxD): 74 x 22 x 31.5 in. (188 x 55.9 x 80 cm)

Net Weight: 850 lbs. (386 kg)

Shipping Weight: 1050 lbs. (476 kg)

Note: Dimensions and weights are subject to change.

Common Data (all models)

Indicators and Controls

The unit's indicators and controls are located on the 4301 amplifier modules. The 4301 models contain between one and four amplifier modules.

LED Displays: Indicators for Run, Ready, Standby, and Stop status, and Fault conditions in the output stage.

LCD Display: Can be user-configured for up to four simultaneous displays reporting one, two, or all four of the following: Voltage Peak, Voltage RMS, Current Peak and Current RMS. When the amplifier module is in a Fault condition, the LCD Display lists the type of fault condition and gives suggested corrective action.

Navigation Buttons: The Navigation Buttons provide four arrow keys to allow navigation through the various LCD display options.

Soft Touch Switches: Soft touch switches allow the selection of Run (Enable), Stop and Reset functions.

Compensation Setting: A four-position rotary control allows the selection of optimum compensation settings according to the total current required at the system output.

Compensation LEDs: When the amplifier module is receiving AC power, the colored LED associated with the selected Compensation setting will be lit.

Inputs and Outputs

The unit's inputs and outputs are located on the cabinet's front panel.

Signal Input: A BNC connector accepts input from an arbitrary waveform generator.

Current Monitor Output: A BNC connector provides scaled voltage output for current monitoring.

Voltage Monitor Output: A BNC connector provides scaled voltage output for voltage monitoring.

Signal Output: 250A Pin Plug connectors (or optional Anderson SB350 connectors) provide signal output to the equipment under test.

AWG: A Siglent SDG2042X Function/Arbitrary Waveform Generator is integrated into the 4301 system. The AWG comes pre-programmed with the required test waveforms and is mounted securely within the 4301 cabinet. A USB port located

next to the AWG on the system front panel allows communication with the AWG through a user-supplied computer for programming updates when needed.

Options

SB350 Outputs Option: Anderson SB350 output connectors can be substituted for the standard 250A Pin Plug connectors.

Protection

Fault: The Fault LED on an amplifier module will light and the error message "Warning! Output Device Fault" will be displayed on the LCD screen if the module's output stage stops operating. If this happens, contact AE TECHRON for servicing information.

AC Under/Over Voltage Protection: If the AC line voltage rises or drops more than 10% of the nominal operating voltage, the system will be forced to Standby and the error message "Warning! Overvoltage" will be displayed on the LCD screen of the amplifier module(s).

Over Current: Each amplifier module contains breaker protection on both the unit's main power supply and the low-voltage supplies. The 4301 system provides a Main Power breaker switch and an Auxiliary Power breaker switch located inside the cabinet rear door.

Over Temperature: Each amplifier module contains separate output transistor, heat-sink and transformer temperature monitoring and protection circuits.

Physical Characteristics

Cabinet: Welded steel cabinet with a textured black, powder-coat finish.

Main Power: A main power switch located on the system front panel controls the main power supply to the system.

Operating Temperature: 10°C to 50°C (50°F to 122°F), Maximum Output Power de-rated above 30°C (86°F.)

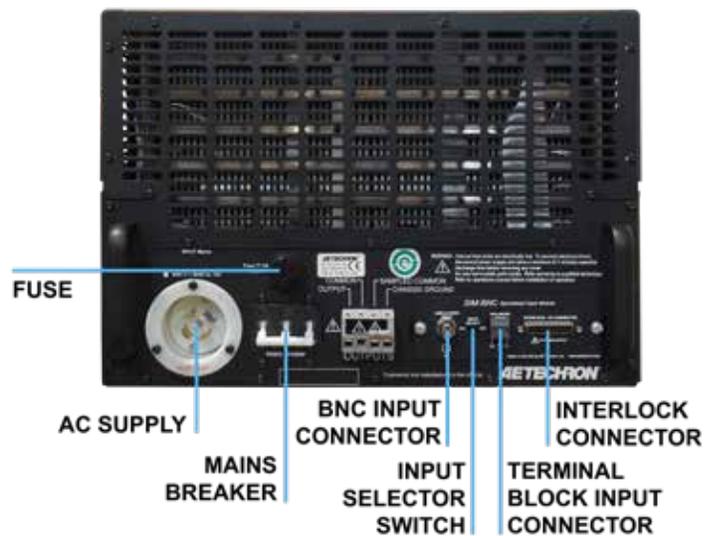
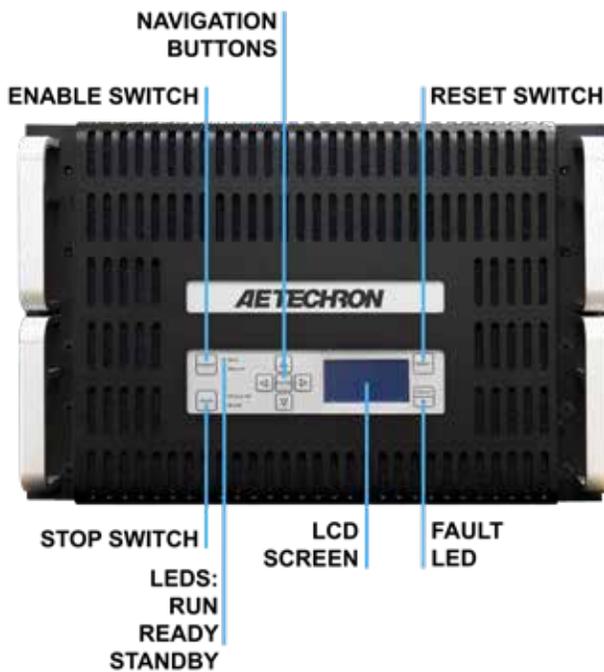
Humidity: 70% or less, non-condensing.

Cooling: The 4301 system amplifier modules employ forced air-cooling from front to back through removable filters via six 100 ft³/min. fans per unit. No space is required between rack-mounted modules. Provide room at the cabinet back to allow for proper airflow.

Cabinet Panels



Amplifier Module Front & Back Panels



AE Techron Sales Representative