

Features

- **Compliant with IEC 61000-4-5 Surge Waveform Requirements**
 - 1.2/50, 8/20 μ s Combination Wave
 - 10/700, 5/320 μ s Combination (Telecom) Wave
- **Peak Surge Output Voltage Level Adjustable from 200V to 4000V for each Waveform**
- **Can be Operated via Front Panel Interface or via Remote PC through Fiber Optic Interface using TransWare-645™ software**
- **Voltage (1000x1) and Current (100x1) Monitor Ports located on front panel.**
- **Internal Power Line CDN (up to 16 Amps); External Power Line CDNs Available with Current Ratings up to 100 Amps**
- **Three-Year Warranty**

Description

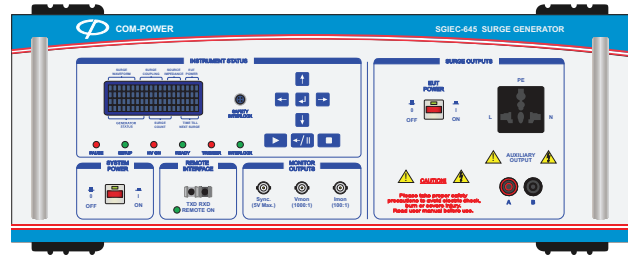
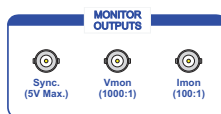
The SGIEC-645 is a state of the art, compliance level Surge Generator designed for IEC 61000-4-5 surge immunity testing. It is capable of generating both the 1.2/50, 8/20 μ s combination wave, and also the 10/700, 5/320 μ s combination (telecom) wave. Output levels are adjustable from 200V to 4 kV in one volt increments.

Surges can be applied to single-phase AC or DC power lines (up to 16A) using the integral, internal Coupling/Decoupling Network (CDN).

Using the auxiliary (A/B) output terminals and available external CDNs, surges can also be applied to:

- unshielded, unsymmetrical interconnection (data) lines (1.2/50, 8/20 μ s waveform)
- unshielded, indoor symmetrical interconnection (telecom) lines (1.2/50, 8/20 μ s waveform)
- unshielded, outdoor symmetrical communication (telecom) lines (10/700, 5/320 μ s waveform)
- shielded lines (1.2/50, 8/20 μ s waveform - no CDN req.'d)
- single-phase and three-phase power lines at current levels up to 32 or 100 Amps

The SGIEC-645 Surge Generator is equipped with voltage (Vmon [1000x1]) and current (Imon [100x1]) monitor ports for verification of peak voltage/current output levels. Also, the synch output port connects to the external trigger input of the oscilloscope.



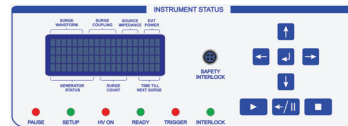
User Interfaces & Features

In addition to full, front panel operability, the SGIEC-645 can also be remotely controlled by PC using the TransWare-645™ software, OTA-232 Optical Transceiver Adapter and fiber optic interface cable.

Using the TransWare-645™ software, the user can create custom test sequences with the easy-to-use sequence wizard or apply surges on an individual basis.

The TransWare-645™ software automatically generates a sequence-specific test report which lists the parameters for each surge, in the order they are applied. Using the logging functions, the user can enter notes and/or EUT observations in real time while the test is running. The entries are automatically 'time-stamped' and are automatically integrated into the test report, with respect to the most recent surge event.

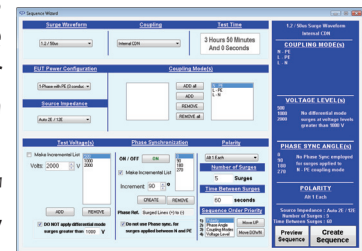
The SGIEC-645 Surge Generator is also able to be controlled locally using the control keypad and the easy-to-read backlit display on the front panel.



The safety interlock port can optionally be connected to an external switch, which will automatically disable the surge generator output when the switch contacts open.

Calibration

The SGIEC-645 Surge Generators are individually tuned and calibrated to meet IEC/EN 61000-4-5 requirements. The calibration data and certificate are provided, with NIST traceability. Recognized ISO 17025 accredited calibration is available upon request.



Specifications

All values are typical, unless specified.
All specifications are subject to change without notice.

SURGE OUTPUT WAVEFORM PARAMETERS						
Surge Waveform (Source Impedance) @ Output Port	OPEN CIRCUIT WAVEFORM			SHORT CIRCUIT WAVEFORM		
	Open Circuit Voltage - V_{pk} (Volts)	Front Time - T_f (μ s)	Duration - T_d (μ s)	Short Circuit Current - I_{pk} (Amps)	Front Time - T_f (μ s)	Duration - T_d (μ s)
1.2/50 μ s (2 Ω) @ Aux. Output	$V_{set} \pm 10\%$	0.84-1.56	40-60	$V_{set} / 2\Omega \pm 10\%$	6.4-9.6	16-24
1.2/50 μ s (2 Ω) @ Int. CDN Output	$V_{set} \pm 10\%$	0.84-1.56	40-60	$V_{set} / 2\Omega \pm 10\%$	6.4-9.6	16-24
1.2/50 μ s (12 Ω) @ Int. CDN Output	$V_{set} \pm 10\%$	0.84-1.56	25-60	$V_{set} / 12\Omega \pm 10\%$	1.75-3.25	17.5-32.5
10/700 μ s (40 Ω) @ Aux. Output	$V_{set} \pm 10\%$	7-13	560-840	$V_{set} / 40\Omega \pm 10\%$	4-6	256-384

NOTE 1: Set Voltage (V_{set}) adjustable from 200-4000 Volts, in 1V increments.
NOTE 2: Voltage Overshoot/Undershoot for 1.2/50 μ s Waveform (2 Ω) @ Auxiliary Output < 30% of V_{set} (in Volts)
Current Overshoot/Undershoot for 1.2/50 μ s Waveform (2 Ω) @ Auxiliary Output < 30% of $V_{set} / 2\Omega$ (in Amps)

Surge Polarity	Positive, Negative, Alternating
Phase Synchronization w/AC Line	0-359° $\pm 10\%$ (adjustable in 1° increments) -or- Arbitrary
Time Between Surges	20-600 sec. (1.2/50 μ s Waveform); 35-600 sec. (10/700 μ s Waveform)

MONITOR PORTS

Voltage Monitoring Port (V_{mon})	1000:1 $\pm 10\%$ ($V_{actual} = V_{measured} * 1000$)
Current Monitoring Port (I_{mon})	100:1 $\pm 10\%$ ($I_{actual} = V_{measured} * 100$) [0.01 Volts/Amp]
Sync Output Port	0-5 V _{DC}

ELECTRICAL

System Power Input	100-250 V _{AC} (rms), 50/60 Hz (300 VA Max.)
Fuse Type	5 Amps (T)
[Internal CDN] EUT Power Ratings	250 V _{AC} (rms) (maximum), 50/60 Hz (16A Max.) 100 V _{DC} (maximum) 16 Amps up to 48 V _{DC} , 10 Amps up to 100 V _{DC}

INPUT/OUTPUT CONNECTORS

[Internal CDN] EUT Power Input Port	ABB 216B6 16A IP44 Socket Inlet (mating connector provided)
[Internal CDN] EUT Power Output Port	Universal Multi-Configuration AC Socket
System Power Input Port	IEC C13 Receptacle
Safety Interlock Port	4-pin, 7mm Receptacle (mating push-pull plug provided)
Fiber Optic Port	Avago Duplex Latching POF jack
Auxiliary Surge Output Port Terminals	(2) 4mm (banana) safety sockets
Monitor Output Ports	(3) BNC-type (female)

MECHANICAL

Dimensions (H)x(W)x(D)	(4U) 7.75" x 19" x 26.7" (19.7 x 48.3 x 67.7 cm) (including front handles)
Weight	53.5 lbs. (24.3 kg)

ENVIRONMENTAL

Operating Temperature	40°F to 104°F (5°C to 40°C)
Cooling	Forced Air (integral fan)

Waveform Definitions

