COM-POWER CORPORATION

Surge Generator

Features

- Compliant with IEC 61000-4-5 Surge Waveform Requirements
 - \rightarrow 1.2/50, 8/20 µs Combination Wave
 - \rightarrow 10/700, 5/320 µs 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 auxilliary (A/B) output terminals and available external CDNs, surges can also be applied to:

- → unshielded, unsymmetrical interconnection (data) lines (1.2/50, 8/20 µs waveform)
- → unshielded, indoor symmetrical interconnection (telecom) lines (1.2/50, 8/20 µs waveform)
- → unshielded, outdoor symmetrical communication (telecom) lines (10/700, 5/320 µs waveform)
- → shielded lines (1.2/50, 8/20 µs waveform no CDN req.'d)
- \rightarrow 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 Transreceiver 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.

Distributed by: Reliant EMC LLC, +1 408 916 5750, info@reliantemc.com, www.reliantemc.com

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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 r (µs)	Duration - T_d (µs)	Short Circuit Current - I _{pk} (Amps)	Front Time - T r (µs)	Duration - T_d (µs)	
1.2/50 μs(2Ω) @ Aux. Output	V _{set} ±10%	0.84-1.56	40-60	V _{set} /2Ω ±10%	6.4-9.6	16-24	
1.2/50 μs (2Ω) @ Int. CDN Output	V _{set} ±10%	0.84-1.56	40-60	V _{set} /2Ω ±10%	6.4-9.6	16-24	
1.2/50 μs (12Ω) @ Int. CDN Output	V _{set} ±10%	0.84-1.56	25-60	V _{set} / 12Ω ±10%	1.75-3.25	17.5-32.5	
10/700 μs (40Ω) @ Aux. Output	V _{set} ±10%	7-13	560-840	V _{set} /40Ω ±10%	4-6	256-384	
NOTE 1: Set Voltage (V _{set}) adjustable NOTE 2: Voltage Overshoot/Undersho Current Overshoot/Undersho	from 200-4000 Vol pot for 1.2/50 µs Wa pot for 1.2/50 µs Wa	'ts, in 1V increme veform (2Ω) @ A veform (2Ω) @ A	nts. uxiliary Output <- uxiliary Output <-;	30% of V _{set} (in Volts) 30% of V _{set} / 2Ω = (in An	nps)		
Surge Polarity		Positive, Negative, Alternating					
Phase Synchronization w/AC Line		0-359° ±10% (adjustable in 1° increments) -or- Arbitrary					
Time Be	20-600 sec. (1.2/50 µs Waveform); 35-600 sec. (10/700 µs Waveform)						
Voltage Monitoring Port (V _{mon})		1000:1 ±10% (V _(actual) = V _(measured) * 1000)					
Current Monitoring Port (I _{mon})		100:1 ±10% (I _(actual) = V _{(measurefl} * 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 CONNECT	ORS						
[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					
Auxilliary 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 A	Forced Air (integral fan)				











