



SURGE SIMULATOR MODULES

KeyTek ECAT® Model E501B



Plug-in combination wave surge simulator to produce the combination waves required by IEC 6100-4-5, ANSI/IEEE C62.41 Cat. B and UL 1449 (8/98) at 3kA

ELECTRICAL

Open-Circuit Voltage	1.2/50µs, 200V - 6.6kV -5 +10% in 1 volt steps
Short-Circuit Current	8/20µs, 100A - 3.3kA -0 +10% with 2 ohm effective source impedance. With a 12 ohm effective source impedance, the peak short-circuit current = open-circuit voltage ÷ 12
Rise Time Tolerance	±30% for voltage; ±20% for current
Duration Tolerance	±20%
Note: When used with a three-phase coupler/decoupler, the voltage waveform durations may be reduced when coupling with multiple lines to PE.	
Surge Repetition Rate	1 shot/12 seconds
Line Sync Accuracy	±15° with optional coupler/decoupler
Minimum System Requirements	E100 Series control center with blank plug-in module (if no other half-width module is ordered)
Options	E501B-VI - adds voltage and current monitoring

KeyTek ECAT® Model E502B



Plug-in module to produce the telecommunications surge wave required by IEC 61000-4-5, FCC Part 68 and ITU Rec K.17, K.20, and K.21 (formerly CCITT)

ELECTRICAL

Open-Circuit Voltage	10/700µs and 0.5/700µs, 200V - 6.6kV ±10% in 1 volt steps. 10/700µs waveform meets both IEC and FCC Part 68 9/720µs requirements. Tighter tolerances for front time and duration ensure compliance with both requirements
Short-Circuit Current	Open-circuit voltage ÷ 15 with 0 ohm effective source impedance; open-circuit voltage ÷ 40 with 25 ohm effective source impedance. Tolerance is -0/+10%
Front time tolerance	Voltage: 7.0µs to 11.7µs Current: 5.0µs ±30%
Duration	Voltage: 576µs to 840µs Current: 320µs ±20%
Surge Repetition Rate	1 shot/18 seconds
Minimum System Requirements	E100 Series control center with blank plug-in module (if no other half-width module is ordered)
Options	E502B-VI - adds voltage and current monitoring

KeyTek ECAT® Model E503



Plug-in module to produce the ring waves specified by ANSI/IEEE C62.41 Cat. A and B, and various UL standards, including UL 864

WAVEFORMS

Voltage Rise Time	0.5µs ±30%
Ringing Frequency	100kHz ±20%, 40% decay per peak
Open-Circuit Voltage	200V - 6.6kV ± 10%
Short-Circuit Current	Selectable at 200A max. or 500A max., when the open-circuit voltage is set to 6.0kV. (Actual short-circuit current at other voltage settings will be open-circuit voltage ÷ 30 when 200A is selected and open-circuit voltage ÷ 12 when 500A is selected.)
Surge Repetition Rate	1 shot/9 seconds
Line Sync accuracy	±15° with optional coupler/decoupler
Minimum System Requirements	E100 Series control center with blank plug-in module (if no other half-width module is ordered)
Options	E503-VI - adds voltage and current monitoring

KeyTek ECAT® Model E504A



Plug-in module to produce the combination wave required by UL 1449 (some devices must also be tested using the E501A surge module)

WAVEFORMS

Open-Circuit Voltage	1.2/50µs, 0 - 6.6kV ±5% in 1 volt steps
Short-Circuit Current	8/20µs, selectable at 125A, 500A and 750A ±10% when the open-circuit voltage is set to 6.0kV. (Actual short-circuit current = open-circuit voltage ÷ 48 when 125A is selected; open-circuit voltage ÷ 12 when 500A is selected, and open-circuit voltage ÷ 8 when 750A is selected.)
Front Time Tolerance	±30% for voltage; ±20% for current
Duration Tolerance	±20% (Note: When used with an AC mains coupler /decoupler, open-circuit voltage wave durations may be significantly reduced when certain coupling modes are selected.)
Surge Repetition Rate	1 shot/12 seconds
Line Sync Accuracy	±15° with optional AC mains: coupler/decoupler
Minimum System Requirements	E100 series control center
Options	E504A-VI - adds voltage and current monitoring