



KAC Series Bidirectional Grid Simulator

- General/Step/Gradient mode
- Superposition of harmonics/inter-harmonics
- Voltage flicker simulation
- Three-phase imbalance
- High/Low voltage ride through

Production Introduction

KAC Series is a high precision programmable grid simulator based on two-stage power conversion structure, with three-phase adjustable by each independently. It can simulate the disturbance from the grid such as voltage and frequency, as well as superposition of harmonics, low-voltage ride through, and flicker simulation. Ideal match for PV inverter, power conversion system, on-board charger, and wind power converter testing.

Product Advantages

- Support parallel operation;
- Voltage response time: $\leq 2\text{ms}$;
- Low THD $\leq 1\%$ (linear load);
- Complete safety protection: OVP/OC/OTP/OPP;
- Superior PF;
- High voltage/current precision;
- Standard communication interfaces: LAN/RS485.

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Specifications

Models	Rated Power [kVA]	Rated Current [A]	Rated Voltage [V]	Frequency [Hz]	Phase	Voltage Range [V]
KAC-75-345-33	75	113	220	40-70	3 ϕ 4W	5-345
KAC-150-345-33	150	227	220	40-70	3 ϕ 4W	5-345
KAC-300-345-33	300	454	220	40-70	3 ϕ 4W	5-345
KAC-600-345-33	600	908	220	40-70	3 ϕ 4W	5-345
KAC-1200-345-33	1200	1816	220	40-70	3 ϕ 4W	5-345
KAC-1500-345-33	1500	2272	220	40-70	3 ϕ 4W	5-345
KAC-400-690-33	400	606	400	40-70	3 ϕ 4W	5-345
KAC-800-690-33	800	1212	400	40-70	3 ϕ 4W	5-345
KAC-1200-690-33	1200	1816	400	40-70	3 ϕ 4W	5-345
KAC-1500-690-33	1500	2272	400	40-70	3 ϕ 4W	5-345

NOTE: Rated Current/Frequency can be customized.

Input Characteristics		Feedback Characteristics	
Phase	3 ϕ 3W - PE	Energy Recovery	Energy recovery is available in full power range.
Voltage	380V \pm 15%	THD	$\leq 3\%$
Frequency	50Hz \pm 5Hz	Power Factor	≥ 0.99

Functions	
Step Mode	Work step index: 100 sets. Voltage, frequency, and run time of each set can be edited.
Gradient Mode	Work step index: 100 sets. Voltage, frequency, and run time of each set can be edited.
Superposition of Harmonics	Each test can support 2-50 times of voltage harmonics superposition. Meet the NB/T32004-2018 standard.
Inter-harmonics	Inter-harmonics injection
Voltage Flicker	Meet the NB/T32004-2018 standard.
High/Low Voltage Ride Through	Available with multiple standards or customized standard.

Output Characteristics	
Waveform	Standard sinusoidal wave
Precision	$\pm 0.2\%$ FS (linear load)
Display resolution	0.1V
Load regulation	$\leq 2\%$ FS
THD	$\leq 1\%$ (linear load)
Response time	$\leq 2\text{ms}$ (10%-90%)
Precision	(Frequency changes at the same time.)
Display resolution	$\pm 0.5\%$ FS (linear load)
Frequency	0.1A
Display resolution	$\pm 0.01\text{Hz}$
Regulation step	0.01Hz
Regulation range	0-1

Communication & Interfaces		Safety & Ambient Conditions	
Touch Screen	LCD	Insulation Resistance	$\geq 20\text{M}\Omega$ (500VAC)
Remote Comms	RS485/LAN	Withstand Voltage	2000VAC (60s, no arcing/breakdown)
Others	Emergency stop/Fault signal	Protection Level	IP21 (indoor)
		Cooling	Fan cooling
		Ambient Temperature	$-10\sim 40^\circ\text{C}$
		Humidity	0-90%RH (Non-condensing at 25 $^\circ\text{C}$)
		Altitude	$\leq 2000\text{m}$

The amplitude, frequency, and position of each phase can be adjusted independently. Various operating modes: General/Step/Gradient/ Low voltage ride through/harmonics superposition etc.

Control Interface



Control Mode



Control Mode