ITECH

YOUR POWER TESTING SOLUTION

IT7900

Regenerative Grid Simulator (HV)

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Your Power Testing Solution

IT7900 Regenerative Grid Simulator (HV)

Voltage Up to 700 VL-N，1050 VL-N

IT7900 series represents a new generation of programmable, full four-quadrant grid simulators that can also be used as fourquadrant power amplifiers for testing all kinds of grid-connected products. Examples include PCS, energy storage systems,micro-grids, BOBC (V2X) and power related hardware loop simulation (PHiL). With the energy regenerative function, it provides 100% current absorption and feeds back to the grid through the device, saving power and cooling costs.
IT7900 series is a high-voltage series with voltage up to 700 VL-N, even up to 1050 VL-N. The power can be easily extended to 900 kVA by parallel operation. Also, it has touch-screen, concise UI interface, and powerful arbitrary waveform editing function that can simulate a variety of grid disturbance waveforms. It is good choice for test and R&D labs.

Features

- Voltage up to 700 VL-N，1050 VL-N
- 16Hz~100Hz
- Used as regenerative grid simulator, four-quadrant source
- CV/Current Limit/Power Limit
- AC, AC+DC output capability
- Three-phase output capability
- Programmable Output Impedance，power impedance simulation
- LVRT /Phase Jump/Frequency variation /Harmonic Injection
- Touch screen; AC power meter and digital oscilloscope
- Harmonic and interharmonic waveform synthesis*2
- LIST/SWEEP simulate grid disturbances
- Voltage and current harmonics measurement, up to 50 times.*1
- Front USB interface, support data and waveform import and export
- Relay Ctrl output for electrical isolation between DUT and grid simulator.
- Built-in USB/CAN/LAN/LXI compliant LAN interface/DigitalIO,optional GPIB /RS232

*1 Voltage and current harmonic analysis, Voltage harmonic simulation
*2 Coming soon

Applications

Photovoltaic
Grid-connected inverters,
power conditioning systems

Electric Vehicle
Vehicle chargers, AC charging piles, EV power supply, bidirectionalvehicle chargers (V2X)

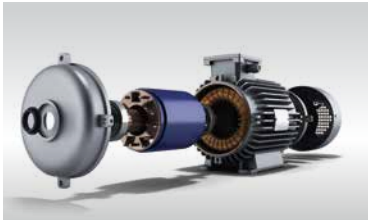
Energy Storage
PCS energy storage converter,
home PV energy storage device

Research Institute
AC-DC Power Adapter, EMC Test

Power Electronics
Transformer, AC fan,UPS, AC motor



Electric Transportation
PV Energy Storage



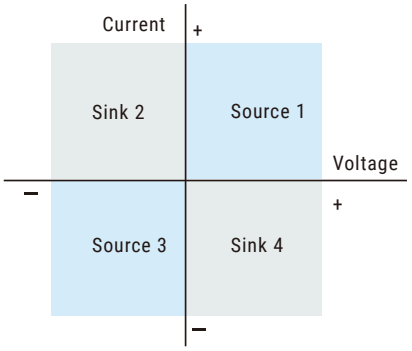
Model	Output Voltage Vac		Output Amps	Output Power	Phase	Height
	V L-N	V L-L	Phs	Pac		
IT7990-700-90	700V	1200V	90A	90kVA	3Φ	27U
IT79180-700-180	700V	1200V	180A	180kVA	3Φ	27U*2
IT79270-700-270	700V	1200V	270A	270kVA	3Φ	27U*3
IT79360-700-360	700V	1200V	360A	360kVA	3Φ	27U*4
IT79450-700-450	700V	1200V	450A	450kVA	3Φ	27U*5
IT79540-700-540	700V	1200V	540A	540kVA	3Φ	27U*6
IT79630-700-630	700V	1200V	630A	630kVA	3Φ	27U*7
IT79720-700-720	700V	1200V	720A	720kVA	3Φ	27U*8
IT79810-700-810	700V	1200V	810A	810kVA	3Φ	27U*9
IT79900-700-900	700V	1200V	900A	900kVA	3Φ	27U*10
IT79135-1050-90	1050V	1818V	90A	135kVA	3Φ	37U
IT79270-1050-180	1050V	1818V	180A	270kVA	3Φ	37U*2
IT79405-1050-270	1050V	1818V	270A	405kVA	3Φ	37U*3
IT79540-1050-360	1050V	1818V	360A	540kVA	3Φ	37U*4
IT79675-1050-450	1050V	1818V	450A	675kVA	3Φ	37U*5
IT79810-1050-540	1050V	1818V	540A	810kVA	3Φ	37U*6

*For higher power, please call for availability
*Above specifications are subject to change without prior notice

Outstanding Features

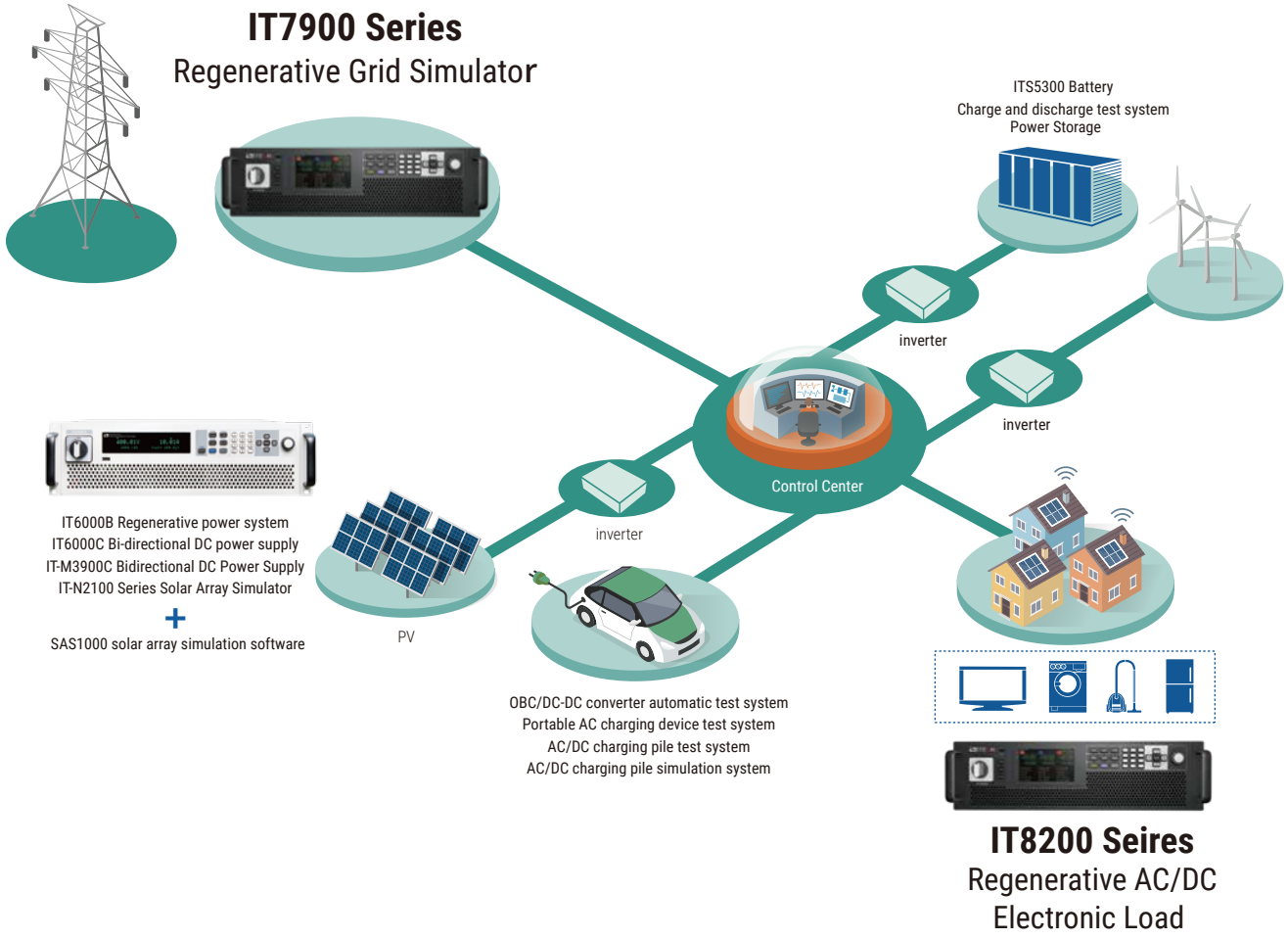
Regenerative 4-Quadrant AC Grid Simulator

The IT7900 series are four-quadrant grid simulators with 100% of current source and sink and 88% energy recovery capability. The power generated by the DUT can be fed back to the grid,rather than being dissipated as heat. Suitable for testing grid-connected products that inject energy into the grid, such as frequency changes, voltage transients and anti-island testing of grid-connected photovoltaic inverters.



Application： Mirco-grid test

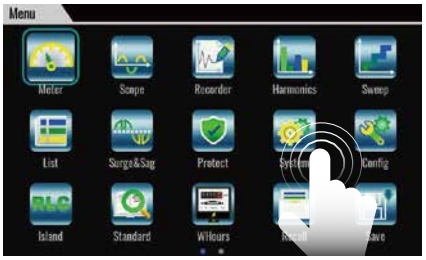
Microgrids can be viewed as small power systems, also a typical distributed power generation system, so equipment manufacturers and grid research labs need to establish simulation test. The IT7900 series not only meets the microgrid test requirements for phase angle jumps, LVRT, frequency variations, harmonic injection, etc., but also feeds power back into the AC grid, which meets the microgrid test requirements.



Easy-to-operate interface, abundant operation modes

Touch screen， built-in oscilloscope function

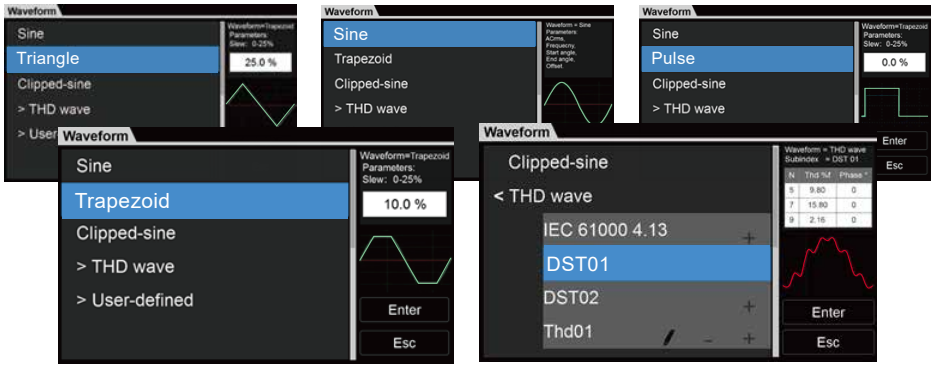
IT7900 series is equipped with innovative touch screen, simple and intuitive UI interface, and the keyboard knob design allows users to directly and quickly perform operations such as mode setting and waveform editing. The built-in digital oscilloscope function collects time-domain signals of voltage and current, phase relationship and performs waveform trigger functions. The oscilloscope sampling rate is up to 10us, and up to 6 oscilloscope curves can be displayed at the same time. Users can perform instantaneous analysis without an oscilloscope and save them in time.



Waveform editing functions for grid-connection regulations and power electronic disturbance test

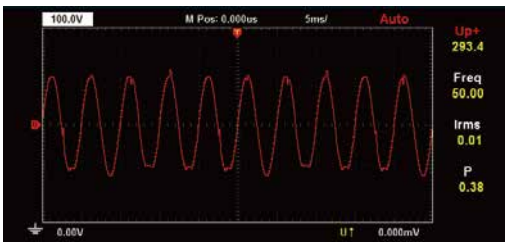
Built-in various type of waveforms

In addition to the basic sine wave, the IT7900 series offers a variety of built-in AC waveforms such as triangle, sawtooth, square, trapezoidal and clipped. Users can recall through the menu and display the selected waveform on the LCD screen. Combined with the device's sequence programming function, the continuous output of different waveforms can be combined to cope with complex power electronic disturbance tests.



Customized Waveform Functions

The IT7900 series provides a custom waveform editing function that allows users to optimize and improve DUT circuit design by importing real waveform data into the device to simulate the effects of real AC or DC power supply systems on DUT in different test environments.The IT7900 Custom Mode supports up to 1024 points of data import.



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		IT7990-700-90	
Input Parameters			
AC input	Wiring connection	3 phase 3wire + ground(PE)	
	Line voltage	RMS	(200～220V) ±10% *1 (380～480V) ±10%
	Line current	RMS	< 200A
	Apparent ower		< 104kVA
	Frequency range		45～65Hz
	Power factor	typ	0.98
Input Parameters			
AC output	Output voltage	VLN	0～700V
		VLL	0～1212V
	Output current	RMS (3phase)	90A
		Peak(3phase)	270A
	Output power	Max. Power(3phase)	90kVA
	Voltage setting		
	Range	0～700V(3phase)	
	Resolution	0.01V	
	Accuracy	＜0.1%+0.2% F.S.	
	Current setting		
	Range	RMS	90A
	Resolution	0.01A	
	Accuracy	＜0.2% + 0.3% F.S.	
	Frequency		
	Setting range	16～100Hz	
	Setting resolution	0.01Hz	
	Setting accuracy	0.01%	
	Waveform synthesis	50/60Hz	up to 50 orders
	Phase		
	Range setting	0～360°	
	Setting resolution	0.01°	
Voltage stability	**Voltage setting**		
	Line regulation	＜0.05% F.S.	
	Load regulation *2	＜0.1% + 0.1% F.S.	
	THD	＜1%	
	Voltage ripple	RMS	< 1.2V
	Dynamic response	typ	200μs
Voltage creepage		≥2 V/μs with full-scale programmed voltage step	
Output isolation		750Vac	
Measured parameters			
Voltage	Resolution	0.01V	
Effective value	Accuracy	＜0.1%+0.2% F.S.	
Current	Resolution	0.01A	
Effective value	Accuracy	＜0.2% + 0.3% F.S.	
Output power	Resolution	0.001kW	
	Accuracy	＜0.4% +0.6% F.S.	
Harmonics measurement	Analysis Limit	50/60Hz	up to 50 orders
Regenerative			
Maximum regenerative power		90kVA	
Output current THD		< 5%	
Other			
Efficiency		88%（typ）	
Protection		OVP, OCP, OPP, OTP, FAN, ECP, Sense	
Work temperature		0℃-50℃	
Programming response time		2ms	
Sense compensating voltage		20V	

*1 (200 to 220) ±10%, 60% of rated output power output

*2 Cabinets need to be tested in sense remote measurement mode.

* Above information is subject to change without notice

		IT79135-1050-90	
Input Parameters			
AC input	Wiring connection	3 phase 3wire + ground(PE)	
	Line voltage	RMS	(200～220V) ±10% *1 (380～480V) ±10%
	Line current	RMS	< 299A
	Apparent power		< 157kVA
	Frequency range		45～65Hz
	Power factor	typ	0.98
Input Parameters			
AC output	Output voltage	VLN	0～1050V
		VLL	0～1818V
	Output current	RMS (3phase)	90A
		Peak(3phase)	270A
	Output power	Max. Power（3phase）	135kVA
	Voltage setting		
	Range	0～1050V(3phase)	
	Resolution	0.1V	
	Accuracy	＜0.1%+0.2% F.S.	
	Current setting		
	Range	RMS	90A
	Resolution	0.01A	
	Accuracy	＜0.2% + 0.3% F.S.	
	Frequency		
	Setting range	16～100Hz	
	Setting resolution	0.01Hz	
	Setting accuracy	0.01%	
	Waveform synthesis	50/60Hz	up to 50 orders
	Phase		
	Range setting	0～360°	
	Setting resolution	0.01°	
Voltage stability	**Voltage setting**		
	Line regulation	＜0.05% F.S.	
	Load regulation *2	＜0.1% + 0.1% F.S.	
	THD	＜1%	
	Voltage ripple	RMS	< 1.8V
	Dynamic response	typ	200μs
Voltage creepage		≥2 V/μs with full-scale programmed voltage step	
Output isolation		1100Vac	
Measured parameters			
Voltage Effective value	Resolution	0.1V	
	Accuracy	＜0.1%+0.2% F.S.	
Current Effective value	Resolution	0.01A	
	Accuracy	＜0.2% + 0.3% F.S.	
Output power	Resolution	0.1kW	
	Accuracy	＜0.4% +0.6% F.S.	
Harmonics measurement	Analysis Limit	50/60Hz	up to 50 orders
Regenerative			
Maximum regenerative power		135kVA	
Output current THD		< 5%	
Other			
Efficiency		88%（typ）	
Protection		OVP, OCP, OPP, OTP, FAN, ECP, Sense	
Work temperature		0℃-50℃	
Programming response time		2ms	
Sense compensating voltage		20V	

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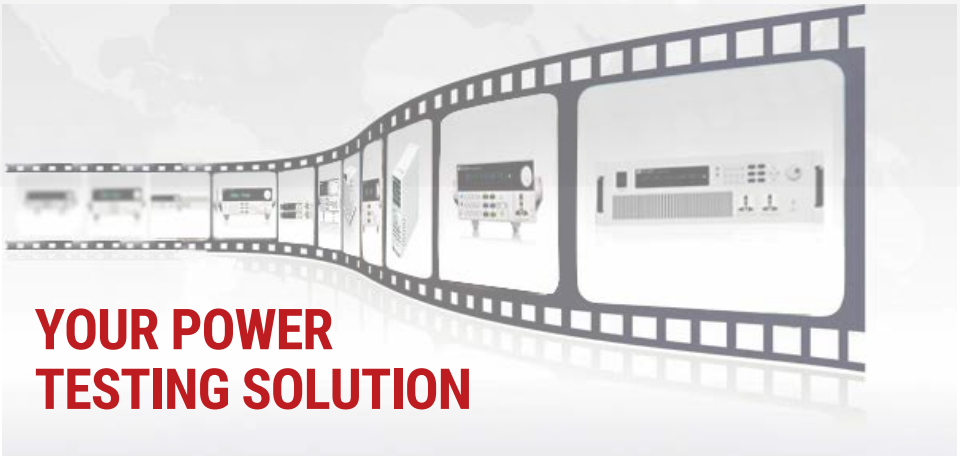

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