IT7800 High-power programmable AC/DC power supply

IT7800 provides AC/DC output, and can use AC+DC mode to test the offset simulation of DC voltage. The switching between single phase and three phases can simulate the voltage drop and unbalance of 3 phases. It can edit parameters such as voltage, frequency, phase and etc. It has AC measurement and analysis functions, and can be widely used for the product research and development, production, quality check in fields such as distributed energy, smart grid, new energy and etc.

1 Support single/three phase output, can simulate 3 phase output unbalance

2 Built-in single phase or three phase AC power meter

3 Can realize output modes of AC, DC, AC+DC, when it's AC+DC mode, it can realize the DC voltage offset simulation

4 Simulation of arbitrary waveforms output, supporting CSV files of waveforms importing

5 Built-in abundant data base of waveforms

6 Harmonic analysis

7 Harmonic simulation

8 Simulation and measurement of inter-harmonic harmonics

9 Controllable variation rate of voltage and frequency

10 Settable output waveform starting/stop phase angle

11 List mode can simulate city grid reproduction and transient power interruption

12 Support remote SENSE function to improve measurement accuracy.

Input parameters				
AC input	Wiring connection		3 phase 3wire + ground(PE)	
	Line voltage	RMS	(200 ~ 480) ±10% *1	V
	Line current	RMS	< 21	A
	Apparent power		< 7	kVA
	Frequency		45 ~ 65	Hz
	Power factor	typ	0.98	
Output parameters				
AC Output	Output voltage	V$_{LN}$ *2	0 ~ 350	V
		V$_{LL}$ (3phase)	0 ~ 606	V
		V$_{LL}$ (reverse)	0 ~ 700	V
	Output current	RMS (1phase)	90	A
		Crest Factor	3	
		Peak (1phase)	270	A
		RMS (3phase/multichannel/reverse)	30	A
		Peak (3phase/multichannel/reverse)	90	A
	Output power	Per Phase/Per Channel	2k	VA
		Max. Power (reverse phase)	4k	VA
		Max. Power (1phase/3phase)	6k	VA
	Voltage setting			
	Range	1phase/3phase/multichannel	0 ~ 350	V
		reverse	0 ~ 700	V
	Resolution		0.01	V
	Accuracy	16Hz ~ 500Hz	0.1%+0.1% F.S	
		500.01Hz ~ 2.4kHz	0.1%+(0.2%*kHz)F.S	
	Temperature coefficient		< 100ppm/C° F.S	

AC Output	DC Voltage Offset	typ	0.02	Vdc
	Current Limit setting			
	Range	RMS (1phase)	90	A
		RMS (3phase/multichannel/reverse）	30	A
	Resolution		0.01	A
	Accuracy	DC,16Hz ~ 150Hz	< 0.1% + 0.2% F.S.	
		150.01Hz ~ 500Hz	< 0.2% + 0.3% F.S.	
		500.01Hz ~ 2.4kHz	0.3%+(0.6%*kHz) F.S	
	Temperature coefficient		< 200ppm/C° F.S	
	Frequency			
	Range	Low *3	16 ~ 500	Hz
		High *3	16 ~ 2.4k	Hz
	Resolution		0.01	Hz
	Accuracy	16Hz ~ 500Hz	0.01%	
		500.01Hz ~ 2.4kHz	0.1%	
	waveform synthesizer	50/60Hz	up to 50	orders
	Phase			
	Range		0 ~ 360	°
	Resolution		0.1	°
DC输出 DC Output	**Voltage setting**			
	Range	1phase/multichannel	-495 ~ 495	Vdc
		reverse	-990 ~ 990	Vdc
	Resolution		0.01	V
	Accuracy		< 0.1%+0.1% F.S	
	Temperature coefficient		< 100ppm/C° F.S	
	Current setting			
	Range	multichannel/reverse	-30 ~ 30	Adc
		1phase	-90 ~ 90	Adc
	Resolution		0.01	A
	Accuracy		< 0.3%+0.3% F.S	
	Temperature coefficient		< 200ppm/C° F.S	
	Max. power			
	Phase power	Per Phase	2k	W
	Max. power (reverse phase)	Max. Power (reverse phase）	4k	W
	Total power	Max. Power (1phase/multichannel）	6k	W
Programmable impedance	**Range**		0Ω+200μH ~ 1Ω+1mH	
Voltage stability	**Line regulation**		< 0.05% F.S.	
	Load regulation	DC,16Hz ~ 500Hz	< 0.05% + 0.05% F.S.	
		500.01Hz ~ 2.4kHz	< 0.05% + (0.1%*kHz) F.S	
	THD	16Hz ~ 100Hz	< 0.5%	
		100.01Hz ~ 500Hz	< 1%	
		500.01Hz ~ 2.4kHz	<1%+(1%*kHz)	
	Voltage ripple	RMS	< 0.4	V
	Dynamic response	typ	200	us
Measurement parameter				
Voltage RMS	**Resolution**		0.01	V
	Accuracy	DC,16Hz ~ 500Hz	< 0.1%+0.1% F.S.	
		500.01Hz ~ 2.4kHz	< 0.1%+(0.2%*kHz) F.S	
	Temperature coefficient		< 100ppm/C° F.S.	
Current RMS	**Resolution**		0.01	A
	Accuracy	DC,16Hz ~ 150Hz	< 0.1% + 0.2% F.S.	
		150.01Hz ~ 500Hz	< 0.2% + 0.3% F.S.	
		500.01Hz ~ 2.4kHz	< 0.3% + (0.6%*kHz) F.S	
	Temperature coefficient		< 200ppm/C° F.S.	
Peak current	**Resolution**		0.01	A
	Accuracy	DC,16Hz ~ 500Hz	< 0.4% + 0.6% F.S.	
		500.01Hz ~ 2.4kHz	< 0.4% + (1.2%*kHz) F.S	
Output power	**Resolution**		0.001	kW
	Accuracy	DC,16Hz ~ 500Hz	< 0.4% +0.4% F.S.	
		500.01Hz ~ 2.4kHz	< 0.4% + <(0.8%*kHz) F.S	
Harmonic measurement	**Max.**	50/60Hz	up to 50	orders
Others				
Efficiency	**typ**		88%	

Protection		OVP, OCP, OPP, OTP, FAN,ECP,Sense
Working		0C°-50C°
Programming response time		2ms
Remote Sense Compensation Voltage		20V
Communication interface		Built-in USB/CAN/LAN/Digital IO interface, optional GPIB / Analog&RS232

*2According to the output frequency, the output voltage will be reduced, the rated voltage can be out within 1.4K, the maximum output voltage at 2KHz is 250.76Vrms and 2.4KHz is 208.97Vrms.

*3 When loopSpeed Low is low, it can better complied DUT's characteristics；When LoopSpeed is High, the dynamic response time is faster.

All the above parameters are subject to change without prior notice from ITECH.