

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 | < 67 | A |
| | Apparent power | | < 35 | 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) | 180 | A |
| | | Crest Factor | 3 | |
| | | Peak (1phase) | 540 | A |
| | | RMS (3phase/multichannel/reverse) | 60 | A |
| | | Peak (3phase/multichannel/reverse) | 180 | A |
| | Output power | Per Phase/Per Channel | 10k | VA |
| | | Max. Power (reverse phase) | 20k | VA |
| | | Max. Power (1phase/3phase) | 30k | 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) | 180 | A |
| | | RMS (3phase/multichannel/reverse) | 60 | 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 | -60 ~ 60 | Adc |
| | | 1phase | -180 ~ 180 | Adc |
| | Resolution | | 0.01 | A |
| | Accuracy | | < 0.3%+0.3% F.S | |
| | Temperature coefficient | | < 200ppm/C° F.S | |
| | Max. power | | | |
| | Phase power | Per Phase | 10k | W |
| Max. power (reverse phase) | Max. Power (reverse phase) | 20k | W | |
| Total power | Max. Power (1phase/multichannel) | 30k | 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 | < 0.5 | 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 |
| <p>*1 200-240V, 3 phase AC input, power is 60% of the rated.</p> <p>*2 According 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.</p> <p>*3 When loopSpeed Low is low, it can better complied DUT' s characteristics ; When LoopSpeed is High, the dynamic response time is faster.</p> <p>All the above parameters are subject to change without prior notice from ITECH.</p> | | |