ITECH

YOUR POWER TESTING SOLUTION

IT-M3140

Programmable DC Power Supply

Your Power Testing Solution

IT-M3140

Programmable DC Power Supply

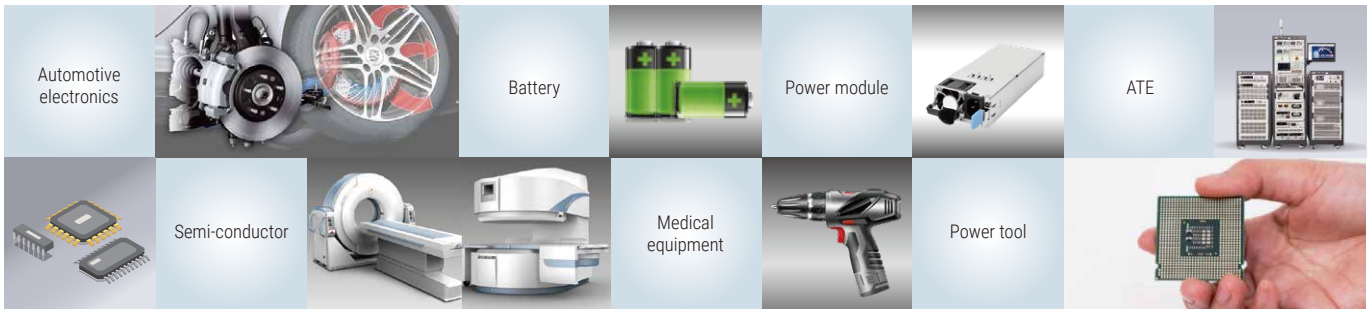
IT-M3140 Programmable DC Power Supply is specially designed for testing, production, R&D lab and ATE integration. It is only 2U half rack, but can output power up to 1850W and 3000W, and voltage output from 30V to 1200V. It has three output modes of constant voltage, constant current and constant power. Automatic wide-range output enables it to achieve a wider output voltage and current range at full power output, meeting a wider range of testing requirements and greatly saving equipment purchase costs.

Not only that, IT-M3140 is a DC power supply integrating high stability, fast response (<1ms), high-level protection functions and LIST programmable functions. This series is equipped with a standard USB/LAN interface, and can be used with ITECH's free PV3140 software to easily realize remote control and data storage, and is easy to integrate. IT-M3140 can be widely used in semiconductor device ATE, burn-in integration, testing and certification, power module and automotive electronics and other fields.

FEATURE

- Only 2U half rack, 1850W/3000W
- 30V-1200V, 150A
- Three output modes: CV/CC/CP
- CC/CV priority to avoid current overshoot
- Fast dynamic response: <1ms
- According to the voltage and current waveform output programmed by LIST,the rising and falling slopes are adjustable
- Fold back,UVP/OVP, UCP/OCP,OPP,OTP, inhibit protection,more secure and reliable
- The Sense protection circuit combined with software and hardware can effectively detect Sense reverse connection and missing connection, and protect the DUT
- Standard USB/LAN, optional RS232 & analog, GPIB, easy to integrate

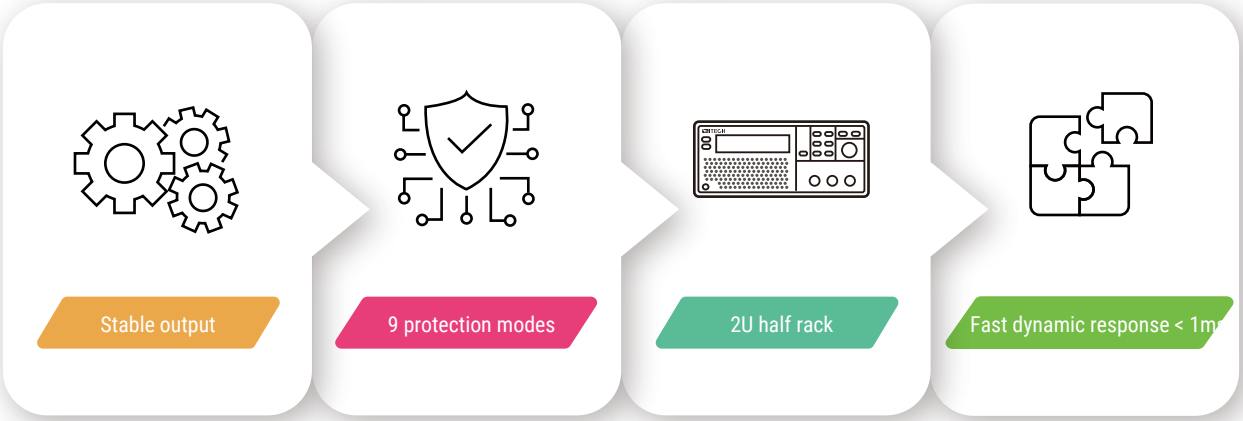
APPLICATION



01 IT-M3140 Series Programmable DC Power Supply

Model	Parameter Specifications (3000W)	Model	Parameter Specifications (1850W)
IT-M3141	30V/150A/3000W	IT-M3131E	30V/150A/1850W
IT-M3142	80V/80A/3000W	IT-M3132E	80V/80A/1850W
IT-M3143	150V/40A/3000W	IT-M3133E	150V/40A/1850W
IT-M3144	300V/20A/3000W	IT-M3134E	300V/20A/1850W
IT-M3145	600V/10A/3000W	IT-M3135E	600V/10A/1850W
IT-M3146	1000V/6A/3000W	IT-M3136E	1000V/6A/1850W
IT-M3147	1200V/5A/3000W	IT-M3137E	1200V/5A/1850W

Size: 2U half rack
AC input range (single-phase: L, N, PE) : A. 110Vac±10%, power down to 1500W B. 192Vac~264Vac, full power output of all models

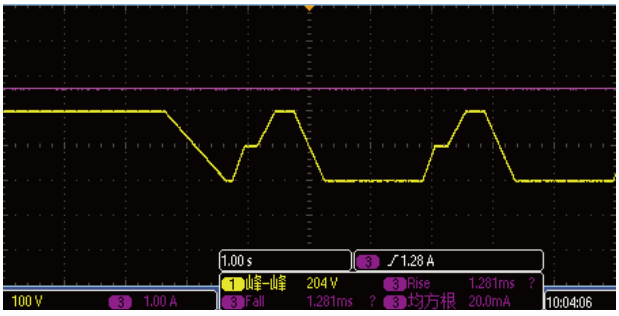


Optional accessories

Description	Model	
Rack mounting kit	IT-E158A	For 2 units installed side by side in ITECH standard cabinet
	IT-E158B	For 2 units installed side by side in non-ITECH cabinet
	IT-E158C	For single unit installed in ITECH standard cabinet
	IT-E158D	For single unit installed in non-ITECH cabinet
Communication interfaces	IT-E176	GPIB communication card
	IT-E177	RS232 & Analog card

LIST mode simulates various power supply disturbance waveforms

IT-M3140 series provides LIST programming mode. In this mode, users can generate arbitrary DC voltage disturbance waveforms, such as instantaneous voltage drop or voltage rise slowly, by setting parameters such as working steps (max100 steps), output voltage/current per step, single step duration (0.001s-3600s), rising and falling slopes, etc., to fully verify the anti-interference performance of DC loads. It is suitable for testing products such as DC-DC power modules, motor drivers, and battery-powered household appliances.

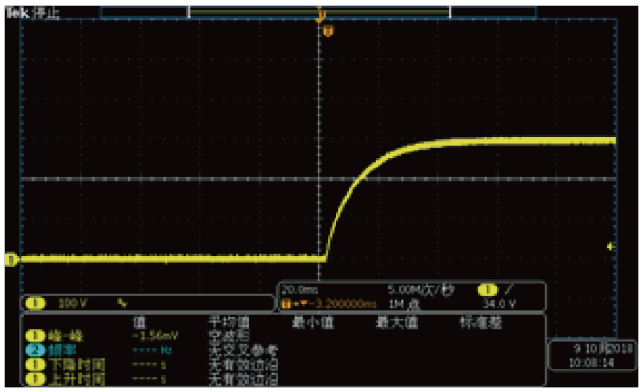


Your Power Testing Solution

IT-M3140 Series Programmable DC Power Supply

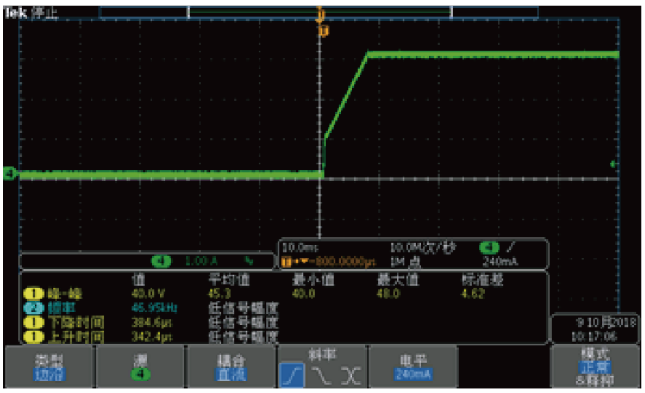
CC/CV priority function to effectively suppress current overshoot

The IT-M3140 series has a CC/CV priority function to help users solve a variety of demanding problems in long-term test applications. By changing the CC/CV priority and loop speed settings, users can obtain voltage high speed mode or current no overshoot mode, making the test more flexible, since it is suitable for current-sensitive laser testing, and can also meet the application scenario of rapid voltage dips.



Start-up inrush current over current range, high-speed build-up voltage electric

CV Priority

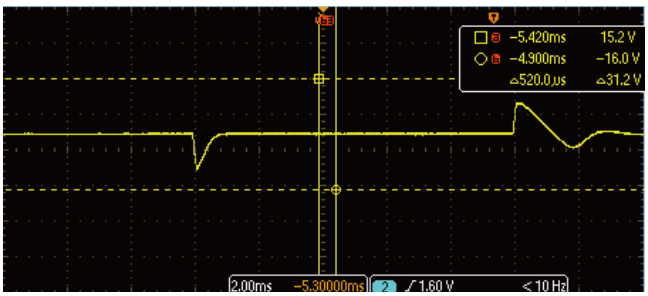


Seamless battery charging and discharging at high speed with no overshoot switching

CC Priority

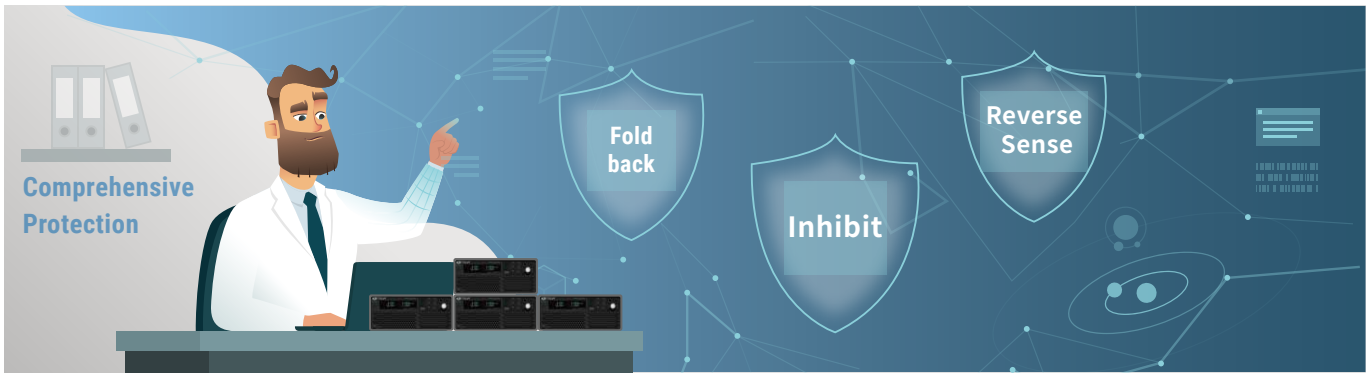
Fast dynamic response < 1ms

IT-M3140 series has high speed dynamic response characteristics, when the external load fluctuations, the power supply can quickly restore stability within <1ms, thus makes the test more reliable.



9 protection modes to enhance test security

To further enhance the reliability and safety of product testing, the IT-M3140 series offers nine protection modes. In the traditional over / under voltage, over / under current, over power protection on the basis of the additional Fold back, Inhibit and Sense reverse connection protection function, so that not only can effectively reduce the power mode switching instantaneous overshoot, while avoiding the sense wrong connection or leakage caused by test abnormalities. With the Inhibit output ban / interlock function, making the test more secure and reliable.



Specification

		IT-M3141 | IT-M3131E	IT-M3142 | IT-M3132E
Rated Output Value	Voltage	0～30V	0～80V
	Current	0～150A	0～80A
	Power	0～3000W | 0～1850W	0～3000W | 0～1850W
Power Regulation (%of Output+Offset)	Voltage	≤0.005%+2mV	0.001%+5mV
	Current	≤50mA	≤30mA
Power Regulation (%of Output+Offset)	Voltage	≤0.005%+2mV	0.004%+5mV
	Current	≤70mA	≤40mA
Setup Resolution	Voltage	1mV	10mV
	Current	10mA	10mA
	Power	0.1W	0.1W
Readback Resolution	Voltage	1mV	10mV
	Current	10mA	10mA
Setting Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.
Readback Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.
Ripple（20hz-20Mhz）	Voltage	typical value≤70mV(MAX: ≤70mV)	typical value≤140mV(MAX: ≤140mV)
	Current	typical value≤150mA(MAX: ≤150mA)	typical value≤80mA(MAX: ≤80mA)
Setting Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃
Readback Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃
Time（mS）	Voltage	≤60mS	≤60mS
Time（mS）	Voltage	≤150mS	≤150mS
Time（mS）	Voltage	≤2S	≤2S
Time（mS）	Voltage	≤200mS	≤200mS
Dynamic Mode	Voltage	≤1mS	≤1mS
AC Input	Voltage	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)
	Frequency	47-63Hz	47-63Hz
Setup Stability-30min (%of Output +Offset)	Voltage	0.01%+1mV	0.01%+8mV
	Current	0.03%+50mA	0.04%+20mA
Setup Stability-8h (%of Output +Offset)	Voltage	0.01%+2mV	0.01%+10mV
	Current	0.03%+55mA	0.04%+25mA
Readback Stability-30min (%of Output +Offset)	Voltage	0.01%+1mV	0.01%+8mV
	Current	0.03%+50mA	0.04%+20mA
Readback Stability-8h (%of Output +Offset)	Voltage	0.01%+2mV	0.01%+10mV
	Current	0.03%+55mA	0.04%+25mA
Efficienc		90%	91%
Remote Sense Compensation Voltage		≤3V	≤3V
Command Response Time		5ms	5ms
Power Factor		0.99	0.99
Maximum Input Current		20A | 18A	20A | 18A
Maximum Input Apparent Power		3700VA | 2300VA	3700VA | 2300VA
Isolation(output to ground)		600VDC	600VDC
Isolation(input to ground)		2200VDC	2200VDC
Dimension(mm)		255W*530D*109H	255W*530D*109H
Net.Weight		（8±1）kg	（8±1）kg

Your Power Testing Solution

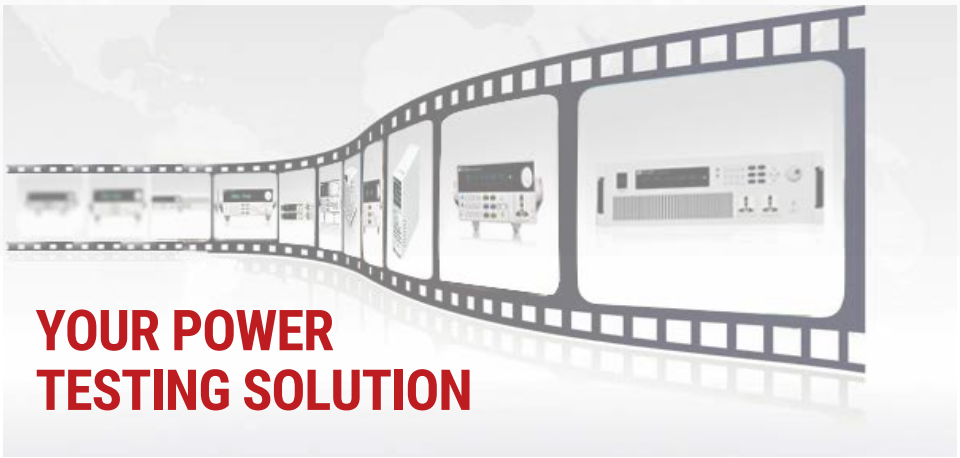
IT-M3140 Series Programmable DC Power Supply

Specification

		IT-M3143 | IT-M3133E	IT-M3144 | IT-M3134E
Rated Output Value	Voltage	0～150V	0～300V
	Current	0～40A	0～20A
	Power	0～3000W | 0～1850W	0～3000W | 0～1850W
Power Regulation (%of Output+Offset)	Voltage	0.001%+6mV	0.001%+10mV
	Current	≤20mA	≤8mA
Power Regulation (%of Output+Offset)	Voltage	0.004%+8mV	0.004%+20mV
	Current	≤35mA	≤10mA
Setup Resolution	Voltage	10mV	10mV
	Current	10mA	1mA
	Power	0.1W	0.1W
Readback Resolution	Voltage	10mV	10mV
	Current	10mA	1mA
Setting Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.
Readback Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.
Ripple（20hz-20Mhz）	Voltage	typical value≤150 mV(MAX: ≤150mV)	typical value≤300 mV(MAX: ≤300mV)
	Current	typical value≤40mA(MAX: ≤40mA)	typical value≤20mA(MAX: ≤20mA)
Setting Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃
Readback Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃
Time（mS）	Voltage	≤60mS	≤60mS
Time（mS）	Voltage	≤150mS	≤150mS
Time（mS）	Voltage	≤4S	≤5S
Time（mS）	Voltage	≤200mS	≤200mS
Dynamic Mode	Voltage	≤1mS	≤1mS
AC Input	Voltage	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)
	Frequency	47-63Hz	50/60Hz
Setup Stability-30min (%of Output +Offset)	Voltage	0.01%+16mV	0.01%+60mV
	Current	0.04%+10mA	0.04%+5mA
Setup Stability-8h (%of Output +Offset)	Voltage	0.01%+20mV	0.01%+75mV
	Current	0.04%+12mA	0.04%+6mA
Readback Stability-30min (%of Output +Offset)	Voltage	0.01%+16mV	0.01%+60mV
	Current	0.04%+10mA	0.04%+5mA
Readback Stability-8h (%of Output +Offset)	Voltage	0.01%+20mV	0.01%+75mV
	Current	0.04%+12mA	0.04%+6mA
Efficienc		91%	91%
Remote Sense Compensation Voltage		≤3V	≤3V
Command Response Time		5ms	5ms
Power Factor		0.99	0.99
Maximum Input Current		20A | 18A	20A | 18A
Maximum Input Apparent Power		3700VA | 2300VA	3700VA | 2300VA
Isolation(output to ground)		600VDC	600VDC
Isolation(input to ground)		2200VDC	2200VDC
Dimension(mm)		255W*530D*109H	255W*530D*109H
Net.Weight		（8±1）kg	（8±1）kg

Specification

		IT-M3145 | IT-M3135E	IT-M3146 | IT-M3136E	IT-M3147 | IT-M3137E
Rated Output Value	Voltage	0～600V	0～1000V	0～1200V
	Current	0～10A	0～6A	0～5A
	Power	0～3000W | 0～1850W	0～3000W | 0～1850W	0～3000W | 0～1850W
Power Regulation (%of Output+Offset)	Voltage	0.001%+20mV	0.002%+20mV	0.002%+20mV
	Current	≤4mA	≤2mA	≤2mA
Power Regulation (%of Output+Offset)	Voltage	0.004%+30mV	0.005%+50mV	0.005%+50mV
	Current	≤7mA	≤4mA	≤4mA
Setup Resolution	Voltage	10mV	0.1V	0.1V
	Current	1mA	1mA	1mA
	Power	0.1W	0.1W	0.1W
Readback Resolution	Voltage	10mV	0.1V	0.1V
	Current	1mA	1mA	1mA
Setting Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.	≤0.5%F.S.
Readback Accuracy	Voltage	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.	≤0.03% + 0.02%F.S.
	Current	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.	≤0.1% + 0.1%F.S.
	Power	≤0.5%F.S.	≤0.5%F.S.	≤0.5%F.S.
Ripple（20hz-20Mhz）	Voltage	typical value≤600 mV(MAX: ≤600mV)	typical value≤1V(MAX: ≤1V)	typical value≤1V(MAX: ≤1V)
	Current	typical value≤10mA(MAX: ≤10mA)	typical value≤6mA(MAX: ≤6mA)	typical value≤6mA(MAX: ≤6mA)
Setting Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃	≤50PPM/℃
Readback Temperature Coefficient (%of Output+Offset)/℃	Current	≤20PPM/℃	≤20PPM/℃	≤20PPM/℃
	Voltage	≤50PPM/℃	≤50PPM/℃	≤50PPM/℃
Time（mS）	Voltage	≤60mS	≤60mS	≤60mS
Time（mS）	Voltage	≤150mS	≤150mS	≤150mS
Time（mS）	Voltage	≤5S	≤5S	≤5S
Time（mS）	Voltage	≤200mS	≤200mS	≤200mS
Dynamic Mode	Voltage	≤1mS	≤1mS	≤1mS
AC Input	Voltage	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)	220V±20%(3000W) | 220V±20%(1850W) 110V±10%(derating to 1500W) | 110V±10%(derating to 1500W)
	Frequency	47-63Hz	50/60Hz	50/60Hz
Setup Stability-30min (%of Output +Offset)	Voltage	0.01%+80mV	0.01%+60mV	0.01%+60mV
	Current	0.04%+2mA	0.04%+2mA	0.04%+1mA
Setup Stability-8h (%of Output +Offset)	Voltage	0.01%+100mV	0.01%+100mV	0.01%+100mV
	Current	0.04%+3mA	0.04%+3mA	0.04%+2mA
Readback Stability-30min (%of Output +Offset)	Voltage	0.01%+80mV	0.01%+60mV	0.01%+60mV
	Current	0.04%+2mA	0.04%+2mA	0.04%+1mA
Readback Stability-8h (%of Output +Offset)	Voltage	0.01%+100mV	0.01%+100mV	0.01%+100mV
	Current	0.04%+3mA	0.04%+3mA	0.04%+2mA
Efficienc		90%	91%	89%
Remote Sense Compensation Voltage		≤6V	≤6V	≤6V
Command Response Time		5ms	5ms	5ms
Power Factor		0.99	0.99	0.99
Maximum Input Current		20A | 18A	20A | 18A	20A | 18A
Maximum Input Apparent Power		3700VA | 2300VA	3700VA | 2300VA	3700VA | 2300VA
Isolation(output to ground)		600VDC	1000VDC	1000VDC
Isolation(input to ground)		2200VDC	2200VDC	2200VDC
Dimension(mm)		255W*530D*109H	255W*530D*109H	255W*530D*109H
Net.Weight		（8±1）kg	（8±1）kg	（8±1）kg



YOUR POWER TESTING SOLUTION

This information is subject to change without notice.For more information, please contact ITECH.

Taipei

Add: No.918, Zhongzheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan
Web: www.itechate.com
TEL: +886-3-6684333
E-mail: info@itechate.com

Factory I

Add: No.108, XiShanqiao Nanlu, Nanjing city, 210039, China
TEL: +86-25-52415098
Web: www.itechate.com

Factory II

Add: No.150, Yaonanlu, Meishan Cun, Nanjing city, 210039, China
TEL: +86-25-52415099
Web: www.itechate.com

ITECH Web

ITECH Facebook

ITECH LinkedIn