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TECHNICAL PRODUCT INFORMATION

Test & measurement instruments

- high - quality
- moderate prices
- excellent precision

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High efficient power regeneration

Battery discharge test

8 operation modes

Independent control of multiple channels



IT-M3300 regenerative DC electronic load can not only simulate various load characteristics, but also can feed back electrical energy to the local grid instead of heat. With high power density design, it can provide up to 800W power absorption with tiny body of only 1U half-rack. Flexible modular architecture supporting synchronous control of up to 256 channels. At the same time, it has high-precision setting and measurement, and has made a number of safety designs for the test. It is suitable for test applications such as various types of battery discharge, multi-channel power supply, and semiconductor aging.

Feature

- 1U half rack, high power density
- Utilizes third-generation SiC power devices for efficient energy recovery
- High efficient power regeneration
- 8 operating modes: CC/CV/CP/CR/CV+CC/CC+CR/CV+CR/CV+CC+CP+CR
- Supports synchronous control of up to 256 channels with proportional tracking function
- High-speed measurement, keep 10 times / s update rate even connecting 16 stand-alone units
- Adjustable current rise/fall time
- List programming
- Various protection such as OCP/UCP/OVP/UVP/OPP, over heat protection, grid fault protection and fault storage, foldback, Power-off protection, sense abnormal protection
- Temperature measurement function, over temperature protection
- Automatic detection of power grid state to realize reliable grid connection
- Precharge function to prevent overshoot of DC loading current
- Anti-reverse protection function by optional IT-E118
- Five optional interfaces, supporting RS232, CAN, LAN, GPIB, USB_TMC, USB_VCP, RS485, analog and IO

Model	Voltage	Current	Power	Model	Voltage	Current	Power
IT-M3312	60V	30A	200W	IT-M3314	300V	6A	200W
IT-M3322	60V	30A	400W	IT-M3324	300V	6A	400W
IT-M3332	60V	30A	800W	IT-M3334	300V	6A	800W
IT-M3313	150V	12A	200W	IT-M3315	600V	3A	200W
IT-M3323	150V	12A	400W	IT-M3325	600V	3A	400W
IT-M3333	150V	12A	800W	IT-M3335	600V	3A	800W

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Your Power Testing Solution

IT-M3300 Regenerative DC Electronic Load

Specification

IT-M3312			IT-M3322	IT-M3332
			Load Parameters	
Rated Input Value (0°C-40°C)	Input Voltage	0~60V	0~60V	0~60V
	Input Current	0~30A	0~30A	0~30A
	Input Power	0~200W	0~400W	0~800W
	MOV	0.6V at 30A	0.6V at 30A	0.6V at 30A
CC Mode	Current Range	0~30A	0~30A	0~30A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
CV Mode	Voltage Range	0~60V	0~60V	0~60V
	Resolution	1mV	1mV	1mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
CR Mode	Resistance Range	0.04~600Ω	0.04~600Ω	0.04~600Ω
	Resolution	min 0.001Ω	min 0.001Ω	min 0.001Ω
	Accuracy	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)
CP Mode	Power Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
Dynamic	Rising speed	1ms	1ms	1ms
			Input Value Readback	
Current Readback	Range	0~30A	0~30A	0~30A
	Resolution	1mA	1mA	1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
Voltage Readback	Range	0~60V	0~60V	0~60V
	Resolution	1mV	1mV	1mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
Resistance Readback	Range	0.04~600Ω	0.04~600Ω	0.04~600Ω
	Resolution	min 0.001Ω	min 0.001Ω	min 0.001Ω
	Accuracy	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)	(1/Rmin) *2% : (0.04~60Ω) ; (1/Rmin) *5% : (60~600Ω)
Power Readback	Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
			Input protection	
OCP		31A	31A	31A
OVP		61V	61V	61V
OPP		210W	410W	810W
			Short Circuit Test	
Current		33A	33A	33A
			AC parameter	
Voltage range		100VAC~240VAC (±10%)	100VAC~240VAC (±10%)	100VAC~240VAC (±10%)
Frequency range		47Hz~63Hz	47Hz~63Hz	47Hz~63Hz
Max.Current (rms)		1Aac (AC220)	2Aac (AC220)	4Aac (AC220)
			DUT Temperature Measure	
Measure Range		-20----120°C	-20----120°C	-20----120°C
Accuracy		±1°C	±1°C	±1°C
Resolution		0.1°C	0.1°C	0.1°C
			Efficiency	
Max. efficiency (Full Load Power with Max. Input voltage)		86%	86%	86%
			Mechanical Parameters	
Dimension (D*W*H)		450mm*214mm*43.5mm	450mm*214mm*43.5mm	450mm*214mm*43.5mm
Net Weight		5kg	5kg	5kg

*Load mode resistance accuracy range: lower limit $1/(1/R+(1/R)*0.05+0.004)$; upper limit $1/(1/R-(1/R)*0.05-0.004)$

*This information is subject to change without notice

Your Power Testing Solution

IT-M3300 Regenerative DC Electronic Load

Specification

		IT-M3313	IT-M3323	IT-M3333
		Load Parameters		
Rated Input Value (0°C~40°C)	Input Voltage	0~150V	0~150V	0~150V
	Input Current	0~12A	0~12A	0~12A
	Input Power	0~200W	0~400W	0~800W
	MOV	1.5V at 12A	1.5V at 12A	1.5V at 12A
CC Mode	Current Range	0~12A	0~12A	0~12A
	Resolution	1mA	1mA	1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
CV Mode	Voltage Range	0~150V	0~150V	0~150V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
CR Mode	Resistance Range	0.25~1500Ω	0.25~1500Ω	0.25~1500Ω
	Resolution	min 0.01Ω	min 0.01Ω	min 0.01Ω
	Accuracy	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)
CP Mode	Power Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
Dynamic	Rising speed	1ms	1ms	1ms
		Input Value Readback		
Current Readback	Range	0~12A	0~12A	0~12A
	Resolution	1mA	1mA	1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
Voltage Readback	Range	0~150V	0~150V	0~150V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
Resistance Readback	Range	0.25~1500Ω	0.25~1500Ω	0.25~1500Ω
	Resolution	0.01Ω	0.01Ω	0.01Ω
	Accuracy	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)	(1/Rmin) *2% : (0.25~100Ω) ; (1/Rmin) *5% : (100~1500Ω)
Power Readback	Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
		Input protection		
OCP		12.5A	12.5A	12.5A
OVP		155V	155V	155V
OPP		210W	410W	810W
		Short Circuit Test		
Current		13.2A	13.2A	13.2A
		AC parameter		
Voltage range		100VAC~240VAC (±10%)	100VAC~240VAC (±10%)	100VAC~240VAC (±10%)
Frequency range		47Hz~63Hz	47Hz~63Hz	47Hz~63Hz
Max.Current (rms)		1Aac (AC220)	2Aac (AC220)	4Aac (AC220)
		DUT Temperature Measure		
Measure Range		-20---120°C	-20---120°C	-20---120°C
Accuracy		±1°C	±1°C	±1°C
Resolution		0.1°C	0.1°C	0.1°C
		Efficiency		
Max. efficiency (Full Load Power with Max. Input voltage)		88%	88%	88%
		Mechanical Parameters		
Dimension (D*W*H)		450mm*214mm*43.5mm	450mm*214mm*43.5mm	450mm*214mm*43.5mm
Net Weight		5kg	5kg	5kg

*Load mode resistance accuracy range: lower limit $1/(1/R+(1/R)*0.05+0.004)$; upper limit $1/(1/R-(1/R)*0.05-0.004)$

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Your Power Testing Solution

IT-M3300 Regenerative DC Electronic Load

Specification

IT-M3314			IT-M3324	IT-M3334
			Load Parameters	
Rated Input Value (0°C-40°C)	Input Voltage	0~300V	0~300V	0~300V
	Input Current	0~6A	0~6A	0~6A
	Input Power	0~200W	0~400W	0~800W
	MOV	3V at 6A	3V at 6A	3V at 6A
CC Mode	Current Range	0~6A	0~6A	0~6A
	Resolution	1mA	1mA	1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
CV Mode	Voltage Range	0~300V	0~300V	0~300V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
CR Mode	Resistance Range	1~3000Ω	1~3000Ω	1~3000Ω
	Resolution	min 1Ω	min 1Ω	min 1Ω
	Accuracy	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)
CP Mode	Power Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
Dynamic	Rising speed	1ms	1ms	1ms
			Input Value Readback	
Current Readback	Range	0~6A	0~6A	0~6A
	Resolution	0.1mA	0.1mA	0.1mA
	Accuracy	<0.1%+0.1% FS	<0.1% I _{max} +0.1% I _{current}	<0.1%+0.1% FS
Voltage Readback	Range	0~300V	0~300V	0~300V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
Resistance Readback	Range	1~3000Ω	1~3000Ω	1~3000Ω
	Resolution	1Ω	1Ω	1Ω
	Accuracy	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)	(1/Rmin) *2% : (1~300Ω) ; (1/Rmin) *5% : (300~3000Ω)
Power Readback	Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
			Input protection	
OCP		6.2A	6.2A	6.2A
OVP		310V	310V	310V
OPP		210W	410W	810W
			Short Circuit Test	
Current		6.6A	6.6A	6.6A
			AC parameter	
Voltage range		100VAC~240VAC (±10%)	100VAC~240VAC (±10%)	100VAC~240VAC (±10%)
Frequency range		47Hz~63Hz	47Hz~63Hz	47Hz~63Hz
Max.Current (rms)		1Aac (AC220)	2Aac (AC220)	4Aac (AC220)
			DUT Temperature Measure	
Measure Range		-20----120°C	-20----120°C	-20----120°C
Accuracy		±1°C	±1°C	±1°C
Resolution		0.1°C	0.1°C	0.1°C
			Efficiency	
Max. efficiency (Full Load Power with Max. Input voltage)		88%	88%	88%
			Mechanical Parameters	
Dimension (D*W*H)		450mm*214mm*43.5mm	450mm*214mm*43.5mm	450mm*214mm*43.5mm
Net Weight		5kg	5kg	5kg

*Load mode resistance accuracy range: lower limit $1/(1/R+(1/R)*0.05+0.004)$; upper limit $1/(1/R-(1/R)*0.05-0.004)$

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Your Power Testing Solution

IT-M3300 Regenerative DC Electronic Load

Specification

		IT-M3315	IT-M3325	IT-M3335
		Load Parameters		
Rated Input Value (0°C-40°C)	Input Voltage	0~600V	0~600V	0~600V
	Input Current	0~3A	0~3A	0~3A
	Input Power	0~200W	0~400W	0~800W
	MOV	6V at 3A	6V at 3A	6V at 3A
CC Mode	Current Range	0~3A	0~3A	0~3A
	Resolution	1mA	1mA	1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
CV Mode	Voltage Range	0~600V	0~600V	0~600V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
CR Mode	Resistance Range	4~6000Ω	4~6000Ω	4~6000Ω
	Resolution	min 1Ω	min 1Ω	min 1Ω
	Accuracy	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)
CP Mode	Power Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
Dynamic	Rising speed	1ms	1ms	1ms
		Input Value Readback		
Current Readback	Range	0~3A	0~3A	0~3A
	Resolution	0.1mA	0.1mA	0.1mA
	Accuracy	<0.1%+0.1% FS	<0.1%+0.1% FS	<0.1%+0.1% FS
Voltage Readback	Range	0~600V	0~600V	0~600V
	Resolution	10mV	10mV	10mV
	Accuracy	0.03%+0.03% FS	0.03%+0.03% FS	0.03%+0.03% FS
Resistance Readback	Range	4~6000Ω	4~6000Ω	4~6000Ω
	Resolution	1Ω	1Ω	1Ω
	Accuracy	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)	(1/Rmin)*2%:(4~600Ω); (1/Rmin)*5%:(600~6000Ω)
Power Readback	Range	0~200W	0~400W	0~800W
	Resolution	0.1W	0.1W	0.1W
	Accuracy	1%+1% FS	0.5%+0.5% FS	0.3%+0.3% FS
		Input protection		
OCP		3.1A	3.1A	3.1A
OVP		610V	610V	610V
OPP		210W	410W	810W
		Short Circuit Test		
Current		3.3A	3.3A	3.3A
		AC parameter		
Voltage range		100VAC~240VAC (±10%)	100VAC~240VAC (±10%)	100VAC~240VAC (±10%)
Frequency range		47Hz~63Hz	47Hz~63Hz	47Hz~63Hz
Max.Current (rms)		1Aac (AC220)	2Aac (AC220)	4Aac (AC220)
		DUT Temperature Measure		
Measure Range		-20---120°C	-20---120°C	-20---120°C
Accuracy		±1°C	±1°C	±1°C
Resolution		0.1°C	0.1°C	0.1°C
		Efficiency		
Max. efficiency (Full Load Power with Max. Input voltage)		88%	88%	88%
		Mechanical Parameters		
Dimension (D*W*H)		450mm*214mm*43.5mm	450mm*214mm*43.5mm	450mm*214mm*43.5mm
Net Weight		5kg	5kg	5kg

*Load mode resistance accuracy range: lower limit $1/(1/R+(1/R)*0.05+0.004)$; upper limit $1/(1/R-(1/R)*0.05-0.004)$

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