FT8331 series

Battery cell simulating power supply

Summary

The FT8331 series is a high-precision, multi-channel, single quadrant programmable battery simulator. The voltage precision up to 0.01%F.S.,support μ A-level current measurement, with up to 24 channels on a single machine, and channels isolated from each other, facilitating the use of multiple channels in series.The simulator supports power mode, static power consumption testing function, charging mode, battery simulation, sequence testing, pulse function, and various fault simulations(only for A series), which can not only meet the requirements of BMS testing, but also meet the ATE testing of consumer electronics products.The built-in upper computer software is easy to operate and flexible to use. Supports single channel programming operations, multi-channel editing operations, and multi process programming operations.

The FT8331 series adopts a standard 19 inch chassis, with a height of 3U, and provides LAN, RS485, and CAN communication interfaces for easy integration into research and development and automated testing platforms, and can also be used separately.

Characteristic

- Voltage range: 6V/15V/20V;
- Current range: 1A/3A/5A;
- Voltage precision up to 0.01%F.S.;
- Dual range current, automatic switching;
- uA level measurement, capable of static power consumption testing;
- Small size, high integration,3U/24CH;
- Voltage temperature drift coefficient less than 25ppm/℃;
- Unique fault simulation function, simulating battery disconnection, short circuit, reverse connection etc(only for A series);
- Equipped with various functions such as charging testing, battery simulation, SOC simulation, pulse function etc;
- Isolation between channels, capable of using multiple channels in series or parallel;
- Professional testing software that supports data reporting and analysis;
- Built in LAN, RS485 and CAN control interface;
- Support SCPI and Modbus protocol;
- USB interface supports file import, export and screenshot functions;
- 4.3 inch high-definition LCD screen, supporting local/remote control.

Various battery testing function

FT8331 series have variety battery simulation functions for power mode, battery simulation, battery charging test, fault simulation etc. Realize one device for multiple purposes, simplify test equipment and optimize test process. The user can also set the curve of cell parameters (SOC, voltage, capacity, internal resistance and other parameters fitting) to simulate the battery output for testing the products to be inspected.

Application fields

- BMS (battery management system) testing;
- CMS (capacity management system) testing;
- Consumer electronics testing such as earphones, phones, tablets, e-cigarettes etc;
- Production testing of electric tool products;
- Power supply testing for other types of electronic products.

Ultra high accuracy

The FT8331 series has high accuracy and a voltage accuracy of 0.01% F.S. The voltage resolution is as low as 0.1mV, and the current resolution is as low as 0.1 μA. For testing the power consumption of devices in standby mode, The FT8331 is capable of measuring 0.1μA current resolution, can easily achieve uA level standby current testing.

Static power consumption testing

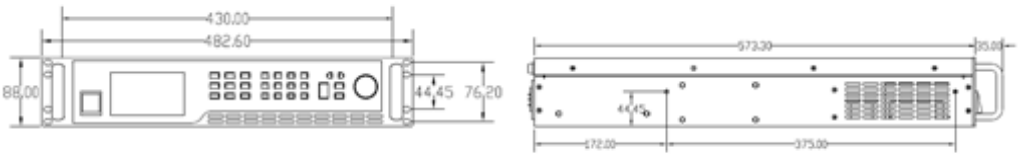
FT8331 has high-precision voltage and current measurement. Two current ranges with current accuracy up to 1μA. The FT8331 provides power supply for the tested product, which can visually test the static power consumption of the tested product in standby mode and screen out unqualified products.

Fault simulation function(only for A series)

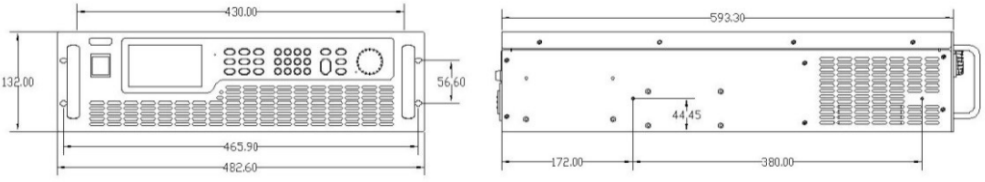
A device has at most 24 independent output simulator channels, each channel has built-in positive and negative short circuit, positive and negative circuit break, polarity reverse connection and other functions. It can be directly controlled by the upper computer software, eliminating the external matrix switch parts that simulate battery failure, saving more space and valuable investment for users.

Dimension drawing

Dimensional drawings for 2U models:



Dimensional drawings for 3U models:



Ordering information

Table-1 2U model

Channels	A series models	E series models	Specification	Height	Note
4CH	FT833104A-6-1	FT833104E-6-1	6V/1A/6W, 4 channels	2U	Only the A-Series has fault simulation
	FT833104A-6-3	FT833104E-6-3	6V/3A/18W, 4 channels		
	FT833104A-6-5	FT833104E-6-5	6V/5A/30W, 4 channels		
	FT833104A-15-1	FT833104E-15-1	15V/1A/15W, 4 channels		
	FT833104A-15-3	FT833104E-15-3	15V/3A/45W, 4 channels		
	FT833104A-15-5	FT833104E-15-5	15V/5A/75W, 4 channels		
	FT833104A-20-1	FT833104E-20-1	20V/1A/20W, 4 channels		
	FT833104A-20-3	FT833104E-20-3	20V/3A/60W, 4 channels		
8CH	FT833108A-6-1	FT833108E-6-1	6V/1A/6W, 8 channels	2U	
	FT833108A-6-3	FT833108E-6-3	6V/3A/18W, 8 channels		
	FT833108A-6-5	FT833108E-6-5	6V/5A/30W, 8 channels		
	FT833108A-15-1	FT833108E-15-1	15V/1A/15W, 8 channels		
	FT833108A-15-3	FT833108E-15-3	15V/3A/45W, 8 channels		
	FT833108A-15-5	FT833108E-15-5	15V/5A/75W, 8 channels		
	FT833108A-20-1	FT833108E-20-1	20V/1A/20W, 8 channels		
	FT833108A-20-3	FT833108E-20-3	20V/3A/60W, 8 channels		
12CH	FT833112A-6-1	FT833112E-6-1	6V/1A/6W, 12 channels	2U	
	FT833112A-6-3	FT833112E-6-3	6V/3A/18W,12 channels		
	FT833112A-6-5	FT833112E-6-5	6V/5A/30W,12 channels		
	FT833112A-15-1	FT833112E-15-1	15V/1A/15W,12 channels		
	FT833112A-15-3	FT833112E-15-3	15V/3A/45W,12 channels		
	FT833112A-15-5	FT833112E-15-5	15V/5A/75W,12 channels		
	FT833112A-20-1	FT833112E-20-1	20V/1A/20W,12 channels		
	FT833112A-20-3	FT833112E-20-3	20V/3A/60W,12 channels		

Table-2 3U model

Channels	A series models	E series models	Specification	Height	Note
16CH	FT833116A-6-1	FT833116E-6-1	6V/1A/6W, 16 channels	3U	Only the A-Series has fault simulation
	FT833116A-6-3	FT833116E-6-3	6V/3A/18W, 16 channels		
	FT833116A-6-5	FT833116E-6-5	6V/5A/30W, 16 channels		
	FT833116A-15-1	FT833116E-15-1	15V/1A/15W, 16 channels		
	FT833116A-15-3	FT833116E-15-3	15V/3A/45W, 16 channels		
	FT833116A-20-1	FT833116E-20-1	20V/1A/20W, 16 channels		
18CH	FT833118A-6-1	FT833118E-6-1	6V/1A/6W, 18 channels	3U	
	FT833118A-6-3	FT833118E-6-3	6V/3A/18W, 18 channels		
	FT833118A-6-5	FT833118E-6-5	6V/5A/30W, 18 channels		
	FT833118A-15-1	FT833118E-15-1	15V/1A/15W, 18 channels		
	FT833118A-15-3	FT833118E-15-3	15V/3A/45W, 18 channels		
	FT833118A-20-1	FT833118E-20-1	20V/1A/20W, 18 channels		
24CH	FT833124A-6-1	FT833124E-6-1	6V/1A/6W, 24 channels	3U	
	FT833124A-6-3	FT833124E-6-3	6V/3A/18W, 24 channels		
	FT833124A-6-5	FT833124E-6-5	6V/5A/30W, 24 channels		
	FT833124A-15-1	FT833124E-15-1	15V/1A/15W, 24 channels		
	FT833124A-15-3	FT833124E-15-3	15V/3A/45W, 24 channels		
	FT833124A-20-1	FT833124E-20-1	20V/1A/20W, 24 channels		

Optional information

Name	Model or Spec.	Description
Testing wire	FT8331-TL05A	5A testing wire/length 1.5 metre

Specification table-1

Model		FT833124A-6-1	FT833124A-6-3	FT833124A-6-5	FT833124A-15-1	FT833124A-15-3	FT833124A-20-1
Voltage		±6V			±15V		±20V
Current		1A	3A	5A	1A	3A	1A
Power		6W	18W	30W	15W	45W	20W
Input resistance		≥3GΩ					
Channel numbers		24CH					
Max series connection		The maximum series output voltage does not exceed 1000V, and the masters can be connected in series					
Voltage parameters	Output range	0~6.12V			0~15.3V		0~20.4V
	Output precision	0.5mV			1.5mV		2mV
	Resolution	0.1mV			0.1mV		0.1mV
	Measurement precision	0.5mV			1.5mV		2mV
	Resolution	0.1mV			0.1mV		0.1mV
	Rise time	≤1ms					
	Temperature coefficient	25ppm/ ℃					
Current parameters(two ranges)							
Range 1	Output range	0~1A	0~3A	0~5A	0~1A	0~3A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1.5mA	0.05%+0.5mA
	Resolution	0.1mA					
Range 2	Output range	0~100mA					
	Measurement precision	0.05%+500uA					
	Resolution	10uA					
Range 3	Output range	0~1mA					
	Measurement precision	0.05%+0.5uA					
	Resolution	0.1uA					
Temperature coefficient		50ppm/ ℃					
Other characteristics							
Wiring mode		PCB Welding terminal/ 4 wire system wiring					
Dimension		3U/19”					
Sampling speed		20Hz					
Communication interface		LAN、RS485、CAN					
Communication protocol		SCPI、Modbus、CAN-OPEN					
Transmission protocol		TCP/IP					
Fault simulation		Positive pole open circuit, negative pole open circuit, output short circuit, polarity reversal					
Input voltage		Single phase, 100~240Vac, 50/60Hz					
Environment characteristics	Operating temperature	0~40℃					
	Storage temperature	-25℃~60℃					
	Operating humidity	20%rh~85%rh (No condensation)					
	Storage humidity	＜90%rh (No condensation)					
	Using environment	altitude ＜2000m, only for indoor use					
	Dimension	590*430*132					
	Weigh	20kg					

Specification table-2

Model		FT833124E-6-1	FT833124E-6-3	FT833124E-6-5	FT833124E-15-1	FT833124E-15-3	FT833124E-20-1
Voltage		±6V			±15V		±20V
Current		1A	3A	5A	1A	3A	1A
Power		6W	18W	30W	15W	45W	20W
Input resistance		≥3GΩ					
Channel numbers		24CH					
Max series connection		The maximum series output voltage does not exceed 1000V, and the masters can be connected in series					
Voltage parameters	Output range	0~6.12V			0~15.3V		0~20.4V
	Output precision	0.5mV			1.5mV		2mV
	Resolution	0.1mV			0.1mV		0.1mV
	Measurement precision	0.5mV			1.5mV		2mV
	Resolution	0.1mV			0.1mV		0.1mV
	Rise time	≤1ms					
	Temperature coefficient	25ppm/℃					
Current parameters(two ranges)							
Range 1	Output range	0~1A	0~3A	0~5A	0~1A	0~3A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1.5mA	0.05%+0.5mA
	Resolution	0.1mA					
Range 2	Output range	0~100mA					
	Measurement precision	0.05%+500uA					
	Resolution	10uA					
Range 3	Output range	0~1mA					
	Measurement precision	0.05%+0.5uA					
	Resolution	0.1uA					
Temperature coefficient		50ppm/℃					
Other characteristics							
Wiring mode		PCB Welding terminal / 4 wire system wiring					
Dimension		3U/19”					
Sampling speed		20Hz					
Communication interface		LAN、RS485、CAN					
Communication protocol		SCPI、Modbus、CAN-OPEN					
Transmission protocol		TCP/IP					
Input voltage		Single phase, 100~240Vac, 50/60Hz					
Environment characteristics	Operating temperature	0~40℃					
	Storage temperature	-25℃~60℃					
	Operating humidity	20%rh~85%rh(No condensation)					
	Storage humidity	<90%rh(No condensation)					
	Using environment	altitude<2000m, only for indoor use					
	Dimension	590*430*132					
	Weigh	20kg					