

# 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  $\mu$ 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.

## 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.

## 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  $\mu$ A. For testing the power consumption of devices in standby mode, The FT8331 is capable of measuring 0.1 $\mu$ A current resolution, can easily achieve  $\mu$ A level standby current testing.

## Characteristic

- Voltage range: 6V/15V/20V;
- Current range: 1A/2A/3A/5A;
- Voltage precision up to 0.01%F.S.;
- Dual range current, automatic switching;
- $\mu$ A level measurement, capable of static power consumption testing;
- Small size, high integration, 3U/24CH;
- Voltage temperature drift coefficient less than 25ppm/ $^{\circ}$ C;
- 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.

## 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.

Distribution in the UK & Ireland



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## Static power consumption testing

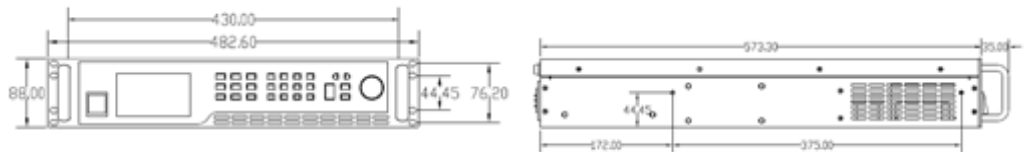
FT8331 has high-precision voltage and current measurement. Two current ranges with current accuracy up to 1 $\mu$ A. The FT8331 provides power supply for the tested product, which can visually test the static power consumption of the tested product in standby mode and screen out unqualified products.

## Fault simulation function(only for A series)

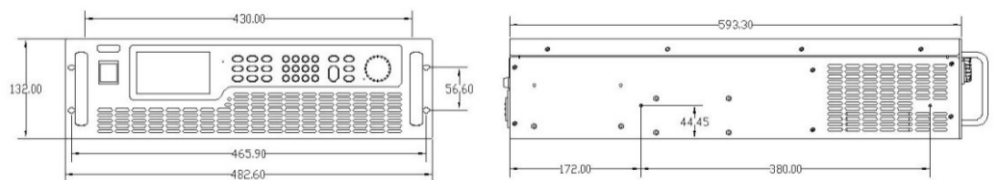
A device has at most 24 independent output simulator channels, each channel has built-in positive and negative short circuit, positive and negative circuit break, polarity reverse connection and other functions. It can be directly controlled by the upper computer software, eliminating the external matrix 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 model	E series model	Specification	Height	Note	
4CH	FT833104A-6-1	FT833104E-6-1	6V/1A/6W, 4 Channels	2U	Only the A-Series has fault simulation	
	FT833104A-6-2	FT833104E-6-2	6V/2A/12W, 4 Channels			
	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-15-2	FT833104E-15-2	15V/2A/30W, 4 Channels			
	FT833104A-15-3	FT833104E-15-3	15V/3A/45W, 4 Channels			
8CH	FT833108A-20-1	FT833104E-20-1	20V/1A/20W, 4 Channels	2U		
	FT833108A-20-3	FT833104E-20-3	20V/3A/60W, 4 Channels			
	FT833108A-6-1	FT833108E-6-1	6V/1A/6W, 8 Channels			2U
	FT833108A-6-2	FT833108E-6-2	6V/2A/12W, 8 Channels			
	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-15-2	FT833108E-15-2	15V/2A/30W, 8 Channels				
FT833108A-15-3	FT833108E-15-3	15V/3A/45W, 8 Channels				
12CH	FT833108A-20-1	FT833108E-20-1	20V/1A/20W, 8 Channels	2U		
	FT833108A-20-3	FT833108E-20-3	20V/3A/60W, 8 Channels			
	FT833112A-6-1	FT833112E-6-1	6V/1A/6W, 12 channels			2U
	FT833112A-6-2	FT833112E-6-2	6V/2A/12W, 12 channels			
	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-15-2	FT833112E-15-2	15V/2A/30W, 12 channels				
FT833112A-15-3	FT833112E-15-3	15V/3A/45W, 12 channels				
12CH	FT833112A-20-1	FT833112E-20-1	20V/1A/20W, 12 channels	2U		
	FT833112A-20-3	FT833112E-20-3	20V/3A/60W, 12 channels			

Table-2 3U model

Channels	A series model	E series model	Specification	Height	Note	
16CH	FT833116A-6-1	FT833116E-6-1	6V/1A/6W, 16 channels	3U	Only the A-Series has fault simulation	
	FT833116A-6-2	FT833116E-6-2	6V/2A/12W, 16 channels			
	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-15-2	FT833116E-15-2	15V/2A/30W, 16 channels			
18CH	FT833116A-20-1	FT833116E-20-1	20V/1A/20W, 16 channels	3U		
	FT833118A-6-1	FT833118E-6-1	6V/1A/6W, 18 Channels			3U
	FT833118A-6-2	FT833118E-6-2	6V/2A/12W, 18 channels			
	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			
24CH	FT833118A-15-2	FT833118E-15-2	15V/2A/30W, 18 channels	3U		
	FT833118A-20-1	FT833118E-20-1	20V/1A/20W, 18 channels			
	FT833124A-6-1	FT833124E-6-1	6V/1A/6W, 24 Channels			3U
	FT833124A-6-2	FT833124E-6-2	6V/2A/12W, 24 channels			
	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-15-2	FT833124E-15-2	15V/2A/30W, 24 channels				
24CH	FT833124A-20-1	FT833124E-20-1	20V/1A/20W, 24 channels	3U		

## 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-6-2	FT833124A-6-3	FT833124A-6-5	FT833124A-15-1	FT833124A-15-2	FT833124A-20-1	
Voltage	±6V	±6V	±6V	±6V	±15V	±15V	±20V	
Current	1A	2A	3A	5A	1A	2A	1A	
Power	6W	12W	18W	30W	15W	30W	20W	
Input resistance	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	
Channel numbers	24CH	24CH	24CH	24CH	24CH	24CH	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/ °C						
Current parameters(two ranges)								
Range 1	Output range	0~1A	0~2A	0~3A	0~5A	0~1A	0~2A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Range 2	Output range	0~1mA	0~2mA	0~3mA	0~5mA	0~1mA	0~2mA	0~1mA
	Measurement precision	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient	50ppm/ °C							
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°C						
	Storage temperature	-25°C~60°C						
	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-6-2	FT833124E-6-3	FT833124E-6-5	FT833124E-15-1	FT833124E-15-2	FT833124E-20-1	
Voltage	6V	6V	6V	6V	15V	15V	20V	
Current	1A	2A	3A	5A	1A	2A	1A	
Power	6W	12W	18W	30W	15W	30W	20W	
Input resistance	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	
Channel numbers	24CH	24CH	24CH	24CH	24CH	24CH	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/ °C						
Current parameters(two ranges)								
Range 1	Output range	0~1A	0~2A	0~3A	0~5A	0~1A	0~2A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Range 2	Output range	0~1mA	0~2mA	0~3mA	0~5mA	0~1mA	0~2mA	0~1mA
	Measurement precision	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient	50ppm/ °C							
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°C						
	Storage temperature	-25°C~60°C						
	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						

Distribution in the UK & Ireland



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