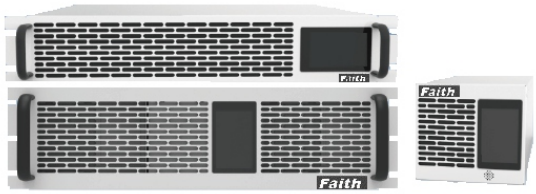
FTDM series

Modular bidirectional test power supply



Summary

FTDM series modular bi-directional test power supply adopts the latest optimized modular design and advanced control algorithm to realize multi device parallel connection. The power level of parallel system covers 6kW~1MW. With LCD local monitoring and BMS system remote dispatching functions, excellent load adaptability and grid adaptability. The independent air duct design enables it to effectively cope with various complex application environments, and the system operation is safer and more reliable, with stronger economic and environmental adaptability. Realize intelligent forward and reverse operation and seamless switching, which can meet the application scene of two-way energy transformation. Meanwhile, the product has off/on grid switching function, and the switching time does not exceed 10ms.

FTDM series is widely used in new energy vehicle motors, electronic control testing, power battery pack charging and discharging testing, power electronics testing and other fields.

Characteristic

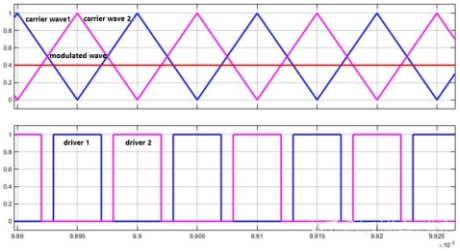
- Ultra high power density, up to 3U/60kW;
- Intelligent forward and reverse operation, seamless switching between DC power supply and feedback load;
- Integrated off grid and on grid switching function;
- Soft switch design,low loss and high efficiency;
- Power factor > 0.99;
- High dynamic response,with a full load switching time as low as 10ms;
- Equipped with output programmable function,capable of simulating various power supply and load characteristic curves;
- Modular design,easy to maintain,supporting parallel expansion;
- Wide working temperature range -20℃ to 45℃;
- The output voltage has a wide range,high accuracy, and fast dynamic response;
- DSP design to achieve fully digital control;
- Touch screen operation control,simple and intuitive;
- Adopting interleaved parallel technology to reduce ripple current;
- Multi dimensional intelligent fan regulation technology,reducing power consumption and noise.

Application fields

- Charging pile testing and aging;
- Production and development of energy storage converter (PCS) and microgrid equipment;
- Test of motor system and electronic control system;
- Test of power battery and energy storage equipment.

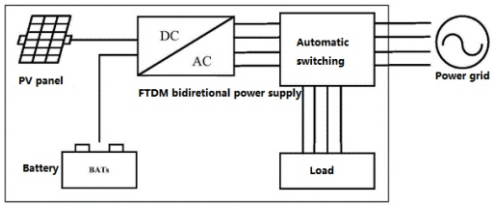
Adopt interleaving technology

FTDM series adopts interleaving technology, which can improve the change frequency of current and voltage at input and output terminals, and reduce the current and voltage ripple.



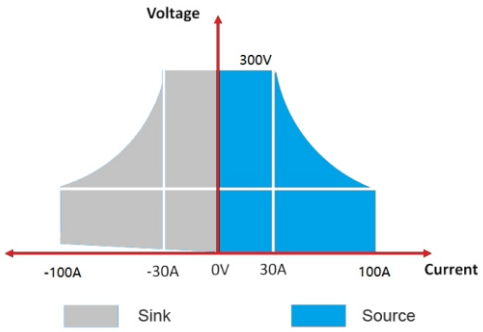
Off/On grid automatic switching

The FTDM series integrates off grid and on grid switching circuits, which can achieve automatic off grid and on grid switching function.



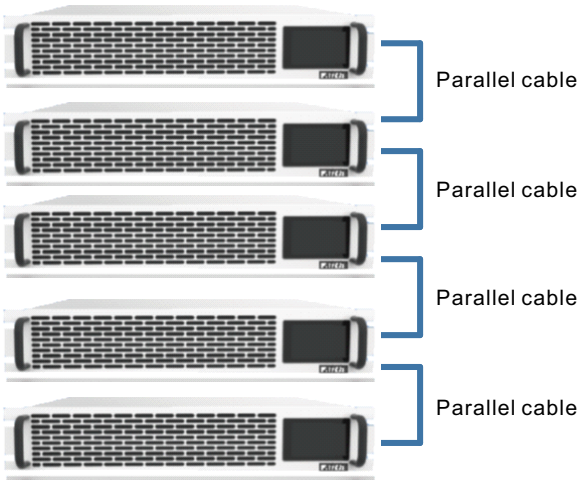
Seamless switching between DC power supply and feedback load

Realize current mode conversion between source and load, so as to carry out fast and continuous seamless switching between output and absorption current, effectively avoid voltage or current overshoot, which is widely used for testing energy storage equipment such as batteries, battery packages, and battery protection boards.



Multiple device paralleling

FTDM series uses advanced control algorithm to realize parallel connection of multiple devices, and the power level of parallel system can cover 1MW, greatly expanding the application output range of power supply. The parallel operation function can not only automatically equalize the load between power supplies, maintain the consistency of output values, but also ensure the consistency of output slope curve or waveform. For the host in parallel, the power screen displays total voltage, current and power values. Each slave automatically shares the current and calculates the sum.



Ordering information

Model	Range of output voltage	Current	Power	Remark
FTDM006-100-100	2.5～100Vdc	±100A	6kW	Isolation bidirectional/height 3U
FTDM018-100-300		±300A	18kW	
FTDM006-450-60	10～450Vdc	±60A	6kW	
FTDM018-450-180		±180A	18kW	
FTDM015-950-50	50～950Vdc	±50A	15kW	Isolation bidirectional/height 2U
FTDM030-950-100	50～950Vdc	±100A	30kW	Non isolated bidirectional (Energy storage converter)/height 3U
FTDM060-1000-88	680～1000Vdc	±88A	60kW	

Specification table-1

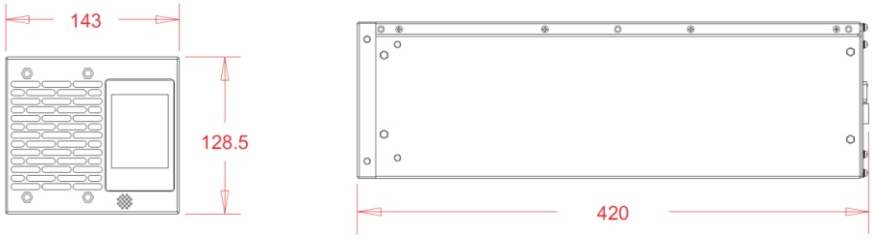
Model	FTDM006-100-100	FTDM006-450-60	FTDM018-100-300	FTDM018-450-180	FTDM015-950-50
Parameters at AC side					
Voltage system	Single phase 3-wire system	Single phase 3-wire system	3-phase 5-wire system	3-phase 5-wire system	3-phase 5-wire system
Rated voltage	220Vac±15%	220Vac±15%	380Vac±15%	380Vac±15%	380Vac±15%
Rated frequency	45~ 65Hz (Adaptive 50/60Hz power grid)				
Power factor	0.99				
Total harmonic distortion (THDi)	≤5%				⩽3%
Parameters at DC side					
Voltage range	2.5Vdc-100Vdc	10Vdc-450Vdc	2.5Vdc-100Vdc	10Vdc-450Vdc	50～950Vdc
Current range	±100A	±60A	±300A	±180A	±50A
Voltage accuracy	0.1%F.S.				
Current accuracy	0.1%F.S.				
Basic features					
AC/DC startup function	Has				
Forward and reverse switching time	⩽10ms				
Peak efficient	92%				93.50%
COMM. interface	CAN, RS485, LAN				
Dimension (H*W*D)	143*128.5*420mm		436*129*420mm		436*86*420mm
Weight (kg)	8kg		25kg		16kg
Environmental features					
Working temperature	-20℃~+45℃				
Storage temperature	-40℃~+70℃				
Working humidity	30%~90%rh (No condensation)				
Storage humidity	20%~ 95%rh (No condensation)				
Cooling mode	Forced air cooling				
Altitude	3000m				
Protection grade	IP20				
Noise	⩽70dB				
Safety features					
Safety specifications and standards	Refer to 18487.1				
Withstand voltage: input&output-PE	3535Vdc				
Withstand voltage: Sinput&output-CAN	2828Vdc				
Surge: input&output-PE	6kV				
EMC features	Refer to 33008.1				
Radiation	CLASS A				
ESD	Critical grade 3				
EFT	Critical grade 3				
RF immunity	Critical grade 3				

Specification table-2

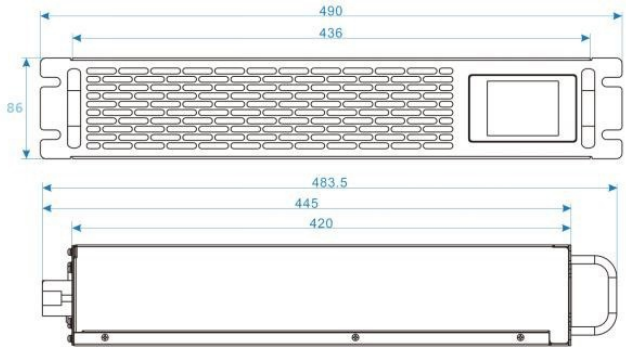
Model	FTDM030-950-100	FTDM060-1000-88
Parameters at AC side		
Voltage system	3-phase 5-wire system	
Rated voltage	380Vac±15%	
Rated frequency	50/60Hz	
Power factor	0.99	
Current range	±45A	±92A
Total harmonic distortion (THDi)	≤3%	
Parameters at DC side		
Voltage range	50Vdc-950Vdc	680Vdc-1000Vdc
Current range	±100A	±88A
Voltage accuracy	0.1%+0.1F.S.	
Current accuracy	0.1%+0.1F.S.	
Basic features		
AC/DC startup function	Has	
Forward and reverse switching time	≤10ms	
Peak efficient	95%	97%
COMM. interface	CAN, RS485, LAN	
Dimension (H*W*D)	129*436*470mm	
Weight (kg)	25kg	
Environmental features		
Working temperature	-20℃~+45℃	
Storage temperature	-40℃~+70℃	
Working humidity	30%~ 90%rh (No condensation)	
Storage humidity	20%~ 95%rh (No condensation)	
Cooling mode	Forced air cooling	
Altitude	3000m	
Protection grade	IP20	
Noise	≤70dB	
Safety features		
Safety specifications and standards	Refer to 18487.1	
Withstand voltageinput&output-PE	3535Vdc	
Withstand voltageinput&output-CAN	2828Vdc	
Surge: input&output-PE	6kV	
EMC features	Refer to 33008.1	
Radiation	CLASS A	
ESD	Critical grade 3	
EFT	Critical grade 3	
RF immunity	Critical grade 3	
MTBF	100000hrs	

Dimension drawing

6kW dimensions



15kW dimensions



30kW, 60kW dimensions