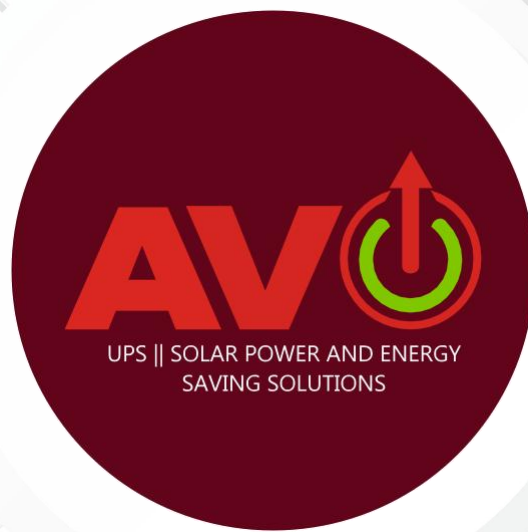


SWITCHING **AVO** ELECTRO
POWER LIMITED



— P O W E R —

PRODUCTS

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SWITCHING AVO ELECTRO POWER LIMITED

Switching **AVO**, India's leading power solutions provider is a truly technology and innovation-driven Indian company. With a journey that began with a humble beginning in 1989 from Kolkata, Pan India presence since 2005, **AVO** is a leading manufacturer and solution provider of intelligent power backup and Solar products engineered to be energy efficient and environment-friendly.

AVO is reaching millions of people around the world with innovative and affordable power solutions for a sustainable future.

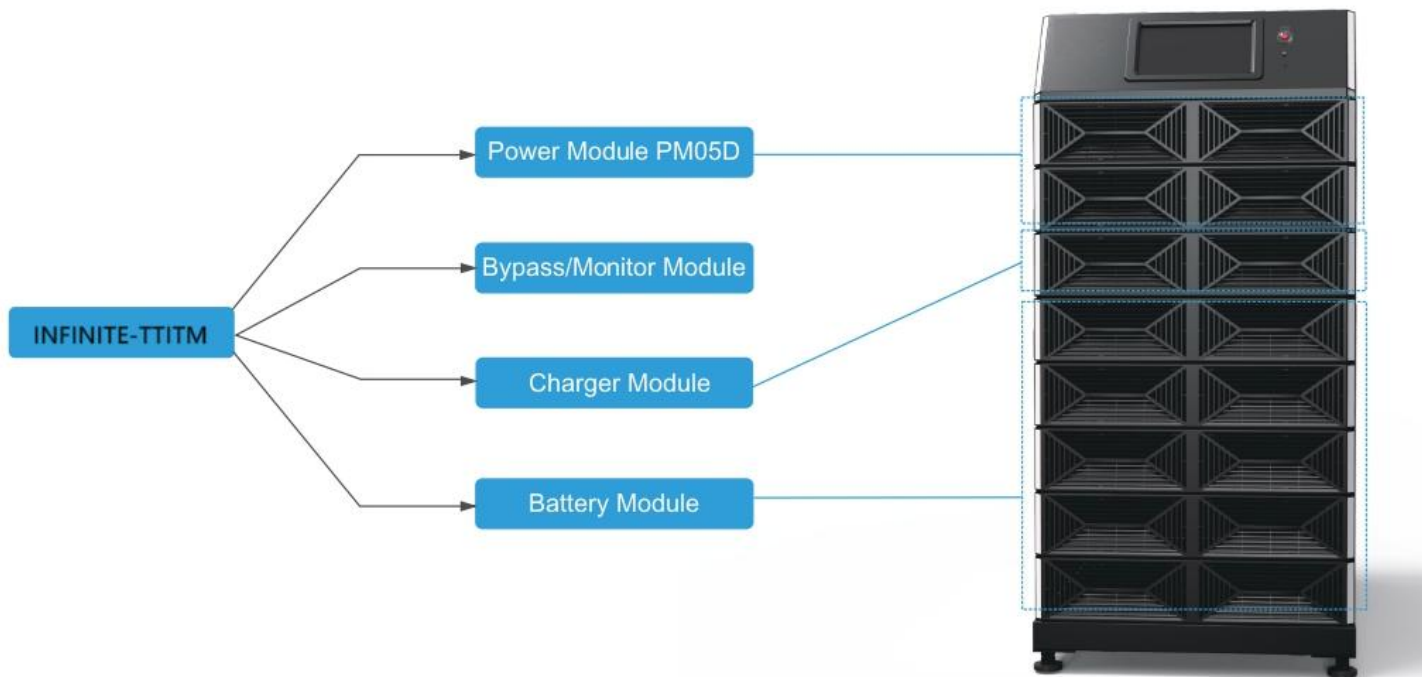
We at **AVO** manufacture a wide range of power solution products- Online UPS (1KVA -1.5 MW), Inverter, Servo Voltage Stabilizer, lithium ion battery, Smart Solutions and Solar Inverter conforming to International standards such as UL/CE and RoHS compliance. In the solar rooftop sector, we have installed over 50 MW of solar power plants.

Our presence is across all sectors, from BFSI, Government, Corporates, Healthcare, Hotels, Education, Railways, Education, Telecommunication, IT/ITES, Defence, Smart Infra, Oil and Gas Industry.

WE **P**OWER
INNOVATIONS
SEAMLESSLY

INFINITE

TTITM PLUS (1/1 or 3/1 Phase True Modular UPS)



AVO **INFINITE -TTITM** Series Modular UPS systems is Latest 3rd Gen Advanced DSP and 3-level technology true double conversion online UPS systems designed capacity Range 5- 90kVA .

TTITM offers Optimum Scalability of 5 KVA, 6 KVA, 10 KVA, 15 KVA & 20 KVA , addition to that, its offers Centralized Bypass, Isolated air flow,

TTITM offers flexible configuration of 1/1, 3/1 with its flexible configuration upto 60 kW and Addition to that Its also offer Single Phase input and 3 phase output TTITM Modular is No.1 modular technology, Online double conversion, N+X redundant, Hot-Swappable ,with latest IGBT 3rd Gen 3-level and full DSP control technology . TTITM is designed to protect any critical high-density computer and IT environment, whilst achieving maximum availability. To optimizing both the initial investment and the Total Cost of Ownership.

TTITM offers Multi protection features a wide operating temperature window and strong overload protection, all in a lightweight footprint , addition to that it offers default conformal coating technology that makes UPS operate in harsh environment for a long time & offers flexible battery Configuration with 7 LCD graphic display which makes user friendly human & machine interface. Its APFC Ensure > 0.95 input PF and iTHD < 5-7 % for maximum upstream source compatibility . TTITM Series offers with and without inbuilt isolation transformer upto 60 kW which reduces the floor space thus saving significant infrastructure cost & Low total cost of ownership is achieved by upto 94 % . and Ultra efficiency of 98 % in ECO Mode.

FEATURES AND PERFORMANCES

Rack-Design

- Modular design, compatible with a 19" standard rack cabinet, convenient to integrate with servers

High power density

- 5/6/10/15KVA & 20 kVA power module in Saving a great amount of space, easy for capacity expansion

Friendly interface

- 7" touch color LCD with graphic display, more information displayed for customer easier for customer to operate

Integrated solution for data center

- UPS can integrate with battery cabinet and PDU, offering an excellent choice for data center

Battery Optimization Group

- Battery optimization can be configured 32-40 from 10 KVA Module.

Intelligent charging management

- The system intelligently controls the whole process of charging and discharging · effectively improving shelf life time of the battery



Reliable, Competitive and Best TCO

- Minimize your power losses and cooling requirements with up to 1 power factor
- Industry-leading footprint which saves the real estate cost
- AC-AC efficiency > 92 % without IT results in marked energy cost savings
- Ultrahigh efficiency up to 98% in ECO Mode
- Flexy DC Configurable 144 VDC +/- 192 VDC - +/- 240 VDC The Best Optimization
- Flexible configuration The system can be configured to 1/1 and 3/1 without derating or hardware changing
- Smart sleep function - System can intelligently shutdown some power modules to increase total load rate, achieving higher efficiency

Application

All kinds of small and medium data center, network servers, control system, precision instruments and intelligent equipments.

- Financial institution



- Education, office and PC



- Military and government



- Communications



- Medical



- Power supply and manufacture



Friendly Interface

Provide graphical and text based information of alarms, status data, instructions that users can have more friendly and safer operation.



MODEL	TTITM9005	TTITM9010	TTITM9018	TTITM9020+
INFINITE - TTITM				
General Specifications				
UPS architecture (Cabinet)	5kVA ~20kVA	5kVA ~20kVA	6kVA ~24kVA	10 kVA-30 kVA
Apparent power (kVA)	5	5	6	10
Active power (kW)	5	5	5.4	10
Max Power Module	5 (5kW+ Redundancy)	5*2 (10kW+ Redundancy)	5.4*3 (16.2 kW+ Redundancy)	10*2 (20 kW+ Redundancy)
Frame Size	20 kVA	20 kVA	24 kVA	30 kVA
Technology	Advanced Dual-Core DSP Control Technology and 3-level technology VFI-SS-111			
Waveform	Sinusoidal			
UPS architecture	Modular and redundant UPS system			
INPUT				
Dual Input	Standard			
Input wiring	Single Phase Three -Wire (1Φ + N + PE) Three-phase five-wire (3Φ + N + PE)			
Input voltage	160 ~ 270 Vac 220/230/240 1PH (Without Derate) 380 / 400 / 415 Vac 3Ph+N			
Input frequency	40 ~ 70 Hz			
Input Rated frequency	50 / 60 Hz (auto-sensing)			
Input voltage range	304 ~ 467 Vac (no downgrading) / 160 ~ 270 Vac (linear downgrading between 40% ~ 100% load)			
Bypass voltage range	(-)25% ~ +25% (settable)			
THD Input Current	7% (100% rated load)			
Input power factor	± 0.95 (with rated load)			
OUTPUT				
Output wiring	Three-phase five-wire (3Φ + N + PE)			
Output voltage	220, 230, 240 1F			
Output voltage Regulation	±1% (with balance load) 1.5 % (unbalanced load)			
Output frequency	Synchronized with utility in mains mode, 50 / 60 Hz ± 0.1% in battery mode			
Efficiency	>92 % in online mode, 98% in ECO mode & upto 90% at Battery Mode			
Power Factor	1		0.9	1
Waveform	Sinusoidal			
Crest factor	3:1 Max			
Total Harmonic Distortion (THDv)	≤ 3% (linear load); ≤ 5% (non-linear load)			
Overload capacity	105% ~ 110% for 1 min, turn to bypass mode			
Bypass	Automatic and Maintenance Bypass			
Transfer Time	0 ms			
BATTERIES				
DC voltage	144 VDC(12 pcs)			
Autonomy expansion	Additional Battery Cabinets			
Battery series type/voltage	VRLA - AGM Lead-acid, Sealed Maintenance-free			
Number of Battery	12 pcs (Can be Parallel upto 4 Strings)			
Charging current (max.)	Upto 20% ^ Output Active power			
Battery Test	Automatic or Manual			
Recharge Time	Depend on the capacity of battery			

Battery Cold Start	Optional			
System Protection	Short-circuit, overload, over temperature, excessive low battery, over voltage, under voltage, fans failure			
Back feed Protection	Yes Inbuilt			
Self Safe Load Capacity Test (Self-agingmode)	Yes Inbuilt (Without adding External Load)			
SYSTEM COMMUNICATION AND MANAGEMENT				
Display	7 inches LCD colorful touch screen, friendly human & machine interface			
Communication ports	Standard configuration: RS232, USB, RS485, RJ45, Dry contacts,PDU (Optional configuration EPO ,SNMP,AS400 card)			
Alarms and signals	Configurable acoustic alarms and signals Utility abnormal,UPS abnormal, Battery Low, Overload, System Fault etc			
Remote management	Yes			
CONFORMITY				
EMI	EN62040-2 IEC/EN 62040-1 -1 IEC/EN 62040-2 (EMC Emission)			
EMS	IEC/EN 50091-1 IEC/EN 62040-3 (Performance & Design) IEC/EN 60950 (Safety) IEC/EN 61000-4 (EMC Emmunity) IEC/EN 50091-2 IEC/EN 60146 (Design & Manufacture)			
MECHANICAL FEATURES				
Dimensions (W x D x H) (mm)	600x 840x 1400 mm			
	443 x 580 x 131			
	486 x 697 x 575			
Net weight (kg) +/- 5%	PM : 7.5 kg	PM : 7.5 kg	PM : 7.5 kg	PM :7.5 kg
	Cabinet : 66.5 kg	Cabinet : 66.5 kg	Cabinet : 66.5 kg	Cabinet : 66.5 kg
AMBIENT CONDITIONS				
Operating Temperature (° C)	0°C ~ 40°C			
Storage Temperature (°C)	(-)40°C ~ 70°C (without battery)			
Relative Humidity (%)	0% ~ 95% (non-condensing)			
Altitude	≤ 1500 m; above 1000 m, downgrading 1% for each additional 1000m ~ 2000m			
Protection rating	IP20			
Noise at 1 mt from the unit (dBA)	55dB @ 100% load, 52dB @ 50% load			

* Product Speciosns are subject to change without prior notice

WE ARE REACHING MILLIONS OF PEOPLE
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AND **AFFORDABLE** POWER SOLUTIONS FOR
A **SUSTAINABLE** FUTURE.

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550+

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2

Manufacturing Units

1

Customer Experience Centers

1

Recycling unit

- ONLINE UPS ▪ DATA CENTRE SOLUTIONS
- VOLTAGE STABILIZERS ▪ ISOLATION TRANSFORMER
- ENERGY AUDIT ▪ INVERTER & TUBULAR BATTERIES
- LITHIUM & LEAD ACID BATTERY ▪ SOLAR & RENEWABLE ENERGY
- MAINTENANCE SERVICES

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