AVO
UPS || SOLAR POWER SOLUTIONS || ENERGY SAVING SOLUTIONS

SWITCHING AVO ELECTRO POWER LIMITED



AVO THP SERIES

10kVA ~ 20kVA (3:1 / 1:1)

KVAH SERIES

Features

- Advanced DSP and 3-level technology
- Output power factor 1.0
- Active power factor correction (APFC), input power factor up to 0.99
- High efficiency 95% (up to 98% in ECO mode)
- Advanced digital parallel technology
- 3:1 to 1:1 model settable
- Wide input voltage range (190 ~ 499 Vac) and frequency range (40 ~ 70 Hz)
- 50 / 60 Hz frequency auto sensing
- Two modes of frequency conversion: 50 Hz input / 60 Hz output or 60 Hz input / 50 Hz output
- Dual-input design, supporting independent bypass
- Flexible battery configuration (settable 16 - 20 pcs batteries)
- Digitally controlled charger
- High charging current available (Max. 10 A)
- Charging voltage and current configured by demands
- Linear derating in low voltage input reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic floating / equalizing charge control, charger dormancy control, increasing battery life by 50%
- Ability to switch on the UPS with batteries
- Settable delayed start time when mains power is restored, reducing the impact on power grid or generator
- Fan speed varies intelligently with temperature, reducing noise and extending its service life
- Equipped with self-aging function
- Compact internal layout, miniaturized the complete unit for small footprint
- LCD+LED display, multi-functional keys operation, friendly human-machine interface
- Powerful background software for parameters configuration
- Advanced multi-platform communications: RS232, USB, RS485, SNMP and dry contacts communication interfaces
- Effective software and hardware protection function, robust self-diagnostic function, and abundant event log for check

Available Options

- RS232 and smart card slot included
- Optional parallel function, battery temperature compensation, SNMP card, USB, RS485 card, dry contacts, EMD, and SMS alarms

Rear Panel

1. RS232
2. EPO
3. Parallel Port (optional)
4. USB (optional)
5. Temperature Detection (optional)
6. Intelligent Slot
7. Reserved: for manual bypass or battery breaker or outlets ect.
8. Fans
9. Bypass Breaker
10. Input Breaker
11. GND
12. Terminals and Cover

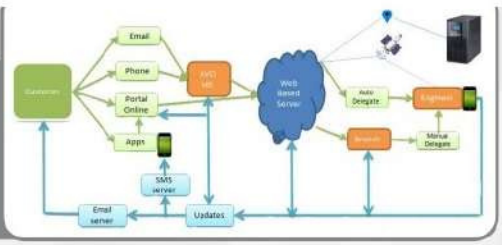


10 kVA (H) 15/20 kVA (H) 10 kVA (S)

MODEL	10KVAH-THP2010	15KVAH-THP2015	20KVAH-THP2020
Capacity	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW
INPUT			
Input wiring	Three-phase five-wire (3Φ + N + PE)		
Rated voltage	380 / 400 / 415 Vac		
Voltage range	190 ~ 305 Vac (linear derating between 50% and 100% load); 305 ~ 499 Vac (no derating)		
Rated frequency	50 / 60 Hz (auto-sensing)		
Frequency range	40 ~ 70 Hz		
Power factor	≥ 0.99		
Bypass voltage range	- 40% ~ +15% (settable)		
Total harmonic distortion (THDi)	≤ 5%		
OUTPUT			
Output wiring	Single-phase three-wire (1Φ + N + PE)		
Rated voltage	208 (PF=0.9) / 220 / 230 / 240 Vac		
Voltage regulation	± 1%		
Frequency	Synchronized to bypass in mains mode; 50 / 60 Hz ± 0.1% Hz in battery mode		
Waveform	Sinusoidal		
Power factor	1		
Total harmonic distortion (THDv)	≤ 1% (linear load); ≤ 3% (non-linear load)		
Crest factor	3:1		
Overload	105% ~ 110% for 60 min, 110% ~ 125% for10min,126% ~ 150% for 60s		
BATTERIES			
DC voltage	192 Vdc (192 ~ 240 Vdc settable)		
Number of battery	16 pcs (16 ~ 20 settable)		
Inbuilt battery (standard model)	12 V / 9 Ah×16	/	/
Charging current	Standard model: 1 A; Long time model: 5 A (default), 1 ~ 5 A settable; 10 A (optional, PF0.9)		
Recharge time	Standard model: 90% capacity restored in 8 hours; Long time model: depend on the capacity of battery		
SYSTEM			
Efficiency	≥ 94% at 100% load, ≥ 96% at 60% load, ≥ 98% in ECO mode		
Transfer time	0 ms		
Protections	Short-circuit, overload, overtemperature, battery low voltage, overvoltage, undervoltage and fan failure		
Max. number of parallel connections	4		
Communications	RS232 (standard), USB / RS485 / dry contacts / SNMP / battery temperature compensation (optional)		
Display	LCD + LED		
OTHERS			
Operating temperature	0℃ ~ 40℃		
Storage temperature	-25℃ ~ 55℃ (without battery)		
Relative humidity	0 ~ 95% (non-condensing)		
Altitude	≤ 1000 m, derating 1% for each additional 100 m		
IP rating	IP 20		
Noise level at 1 m	≤ 58 dB		
Dimensions (W × D × H) (mm)	191 × 495 × 711 (S) 191 × 495 × 350 (H)	191 × 495 × 515 (H)	
Packaged dimensions (W × D × H) (mm)	310 × 685 × 941 (S) 318 × 617 × 475 (H)	285 × 593 × 618 (H)	
Net weight (kg)	64 (S), 18.5 (H)	26.5 (H)	
Gross weight (kg)	72 (S), 20 (H)	28 (H)	

- S means standard model; H means long time model.
- All specifications are subject to change without notice.

AVO has developed state of the art and very customized web based e-CRM for all its service operations. The unique software allows the Clients to log the call themselves. The Best feature of the software is it automatically delegates the calls to the field engineers depending upon the database of engineers as per location & past records and subsequently tracks the engineer location and site location through GPS. Customers get automated mails on current progress and are also able to track the engineer who is going to attend the call. An SMS alert to update the call status is also sent to the customer.



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CIN : U31200WB2004PLC098363