

# HTU UPS

## Outdoor High Temperature UPS



The HTU UPS is a durable, high operating temperature UPS, ideal for outdoor applications. It is a combination of an inverter, battery charger and AC transfer switch in one complete system with a peak conversion efficiency of 88%. It has an overload capacity of 300% for 20sec to support tools and equipment longer.

The HTU features power factor corrected, sophisticated multi-stage charging and pure sine wave output with a high surge capacity, meeting power needs of inductive loads without exceeding equipment limitations. The customizable battery priority switch is designed to extract maximum power from the batteries.

When AC utility power is lost the transfer relay is de-energised and the load is automatically transferred to the UPS output, conversely, once the utility power is restored and voltage is within the UPS range, the relay is re-energised and the load is automatically connect to utility power.

### Key features include:

- High ambient operating temperature (up to 65°C)
- Failsafe alarm - dry contact relay, RS232 and SNMP optional
- Dual port operation to allow local and remote monitoring
- 4 – step intelligent battery charging, power factor correction
- 13V<sub>DC</sub> battery recovery point
- 8 pre-set battery types & desulphation for flat batteries
- Powerful charge rate – up to 110A selectable 0 – 100%
- 15s delay before transfer when utility power is restored
- Auto restart when batteries depleted
- Low quiescent current, power saving mode
- High overload capacity 300% rated
- 4 – 10ms transfer time
- Cooling fan
- Rack mount or Wall mount

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**Product Specifications**

Model	HTU1K	HTU1.5K	HTU2K	HTU3K	HTU4K	HTU5K	HTU6K*
Nominal AC Input Voltage	100 - 110 - 120VAC rms / 220 - 230 - 240VAC rms						
Nominal AC Input Frequency	50Hz or 60Hz (Auto detect)						
AC Input Waveform	Sine wave (Grid or Generator)						
Max Input AC Voltage	150VAC / 270VAC						
Continuous Output Power	1000W	1500W	2000W	3000W	4000W	5000W	6000W
Surge Rating (20s)	3000W	4500W	6000W	9000W	12000W	15000W	18000W
Starts Motor	1HP	1.5HP	2HP	3HP	4HP	5HP	6HP
Nominal Output Voltage	100 - 110 - 120VAC rms / 220 - 230 - 240VAC rms						
Output Frequency	50/60Hz ± 0.3Hz						
Output Waveform	Pure Sine wave / Identical to input in bypass mode						
Nominal Efficiency	> 88% (Peak)						
Line Mode Efficiency	> 95%						
Output Power Factor	0.9 – 1.0						
Voltage Regulation	± 10% rms						
Transfer Time	4 – 10ms max.						
THD	< 10%						
Nominal DC Input Voltage	12VDC / 24VDC (48VDC is also available for 1.5KW 230VAC Rack mount model)		24V <sub>DC</sub> / 48V <sub>DC</sub>	48V <sub>DC</sub>			
Minimum Start Voltage	10.0VDC (*2 for 24VDC, *4 for 48VDC)						
Low Battery Alarm	11.5VDC (*2 for 24VDC, *4 for 48VDC)						
Low Battery Trip	10.5VDC / 11.0VDC (*2 for 24VDC, *4 for 48VDC)						
High Voltage Alarm & Fault	16.0VDC (*2 for 24VDC, *4 for 48VDC)						
High DC Input Recovery	15.5VDC (*2 for 24VDC, *4 for 48VDC)						
Low Battery Voltage Recover	13.0VDC (*2 for 24VDC, *4 for 48VDC)						
Idle Consumption-Search Mode	< 25W when Power Saver On						
Charge Input Voltage Range	Narrow: 100 – 135V <sub>AC</sub> / 194 – 243V <sub>AC</sub> Wide: 90 – 135V <sub>AC</sub> / 164 – 243V <sub>AC</sub>						
Charge Input Frequency Range	Narrow 47 – 55Hz ± 0.3Hz @ 50 Hz OR 57 – 65Hz ± 0.3Hz @ 60Hz Wide: 43Hz ± 0.3Hz plus @50/60Hz						
Output Voltage (Depends on Battery Type)	Gel U.S.A Fast 14.0VDC , Float 13.7VDC						
	A.G.M 1 Fast 14.1VDC , Float 13.4VDC						
	A.G.M 2 Fast 14.6VDC , Float 13.7VDC						
	Sealed Lead Acid Fast 14.4VDC , Float 13.6VDC						
	Gel EURO Fast 14.4VDC , Float 13.8VDC						
	Open Lead Acid Fast 14.8VDC , Float 13.3VDC						
	Calcium Fast 15.1VDC , Float 13.6VDC						
Charger Breaker Rating	Desulphation 15.5VDC for 4hrs						
	Lithium Iron Fast 13.5 VDC , Float 13.5 VDC						
	10A	10A	10A	20A	20A	30A	30A
	Maximum Charge Rate 15 – 60A ± 5A (depending on models)						
	Overcharge Protection Shutdown 15.7V for 12V <sub>DC</sub> (x2 for 24V <sub>DC</sub> , x4 for 48V <sub>DC</sub> )						
	Low Voltage Trip 80V/90V ± 4% / 184V/154V ± 4%						
	Low Voltage Re-engage 90V/100V ± 4% / 194V/164V ± 4%						
High Voltage Trip 140V ± 4% / 253V ± 4%							
High Voltage Re-engage 135V ± 4% / 243V ± 4%							

Low Frequency Trip	Narrow: 47 ± 0.3Hz for 50Hz, 57 ± 0.3Hz for 60Hz; Wide: 40 ± 0.3Hz for 50Hz/60Hz						
Low Frequency Re-engage	Narrow: 48 ± 0.3Hz for 50Hz, 58 ± 0.3Hz for 60Hz; Wide: 45 ± 0.3Hz for 50Hz/60Hz						
High Frequency Trip	Narrow: 55 ± 0.3Hz for 50Hz, 65 ± 0.3Hz for 60Hz; Wide: No up limit for 50Hz/60Hz						
High Frequency Re-engage	Narrow: 54 ± 0.3Hz for 50Hz, 64 ± 0.3Hz for 60Hz; Wide: No up limit for 50Hz/60Hz						
Input Short Circuit Protection	Yes, Current Limit Function (Fault after 1sec)						
Output Short Circuit Protection	Circuit Breaker						
Input Breaker Rating	10A	15A	20A	30A	30A	40A	40A
Transfer Switch Rating	30A for UL & TUV				40A for UL		
Max. Bypass Current	30A				40A		
Over-temperature Protection	≥ 105°C						
AVR Nominal Voltage	110VAC / 120VAC / 220VAC / 230VAC / 240VAC						
(A) Line Low loss N/W (On Battery)	84/72VAC / 92/78VAC / 168/143VAC / 176/150VAC / 183/156VAC						
(B) Line Low comeback N/W (Boost)	89/77VAC / 97/83VAC / 178/153VAC / 186/160VAC / 193/166VAC						
(C) Line 2nd boost threshold (Boost)	---						
(D) Line 2nd boost comeback (Boost)	---						
(E) Line 1st boost threshold (Boost)	99VAC / 108VAC / 198VAC / 207VAC / 216VAC						
(F) Line 1st boost comeback (Normal)	103VAC / 112VAC / 205VAC / 215VAC / 225VAC						
(G) Line buck comeback (Normal)	118VAC / 128VAC / 235VAC / 246VAC / 256VAC						
(H) Line buck threshold (Buck)	121VAC / 132VAC / 242VAC / 253VAC / 264VAC						
(I) Line high comeback (Buck)	127VAC / 139VAC / 253VAC / 266VAC / 278VAC						
(J) Line high loss (On Battery)	132VAC / 144VAC / 263VAC / 276VAC / 288VAC						
Storage Temperature	-40 ~ 70°C						
Operating Conditions	-10 ~ 60°C (70°C de-rated) ; 0 ~ 95% humidity (non-condensing)						
Cooling	Forced Air						
Display	Status LEDs / Status LEDs + LCD						
Test Standards	EN 60950-1:2006+A11:2009 EN 55022:2006+A1:2007, EN 61000-3-2:20056+A1:2009+A2:2009, EN 61000-3-3:2008, EN 55024:1998+A1:2001+A2:2003						
Standard Warranty	2 Year						

\* 6KW UPS is only available in wall mount model.

**Maximum Charging Current**

Model	Current (A)	Model	Current (A)
1kW 12V <sub>DC</sub> 230V <sub>AC</sub>	35 ± 5A	1kW 12V <sub>DC</sub> 110/120V <sub>AC</sub>	35 ± 5A
1kW 24V <sub>DC</sub> 230V <sub>AC</sub>	20 ± 5A	1kW 24V <sub>DC</sub> 110/120V <sub>AC</sub>	15 ± 5A
1.5kW 12V <sub>DC</sub> 230V <sub>AC</sub>	45 ± 5A	1.5kW 12V <sub>DC</sub> 110/120V <sub>AC</sub>	50 ± 5A
1.5kW 24V <sub>DC</sub> 230V <sub>AC</sub>	25 ± 5A	1.5kW 24V <sub>DC</sub> 110/120V <sub>AC</sub>	25 ± 5A
1.5kW 48V <sub>DC</sub> 230V <sub>AC</sub>	15 ± 5A	---	---
2kW 24V <sub>DC</sub> 230V <sub>AC</sub>	30 ± 5A	2kW 24V <sub>DC</sub> 110/120V <sub>AC</sub>	30 ± 5A
2kW 48V <sub>DC</sub> 230V <sub>AC</sub>	20 ± 5A	2kW 48V <sub>DC</sub> 110/120V <sub>AC</sub>	20 ± 5A
3kW 48V <sub>DC</sub> 230V <sub>AC</sub>	30 ± 5A	3kW 48V <sub>DC</sub> 110/120V <sub>AC</sub>	30 ± 5A
4kW 48V <sub>DC</sub> 230V <sub>AC</sub>	40 ± 5A	4kW 48V <sub>DC</sub> 110/120V <sub>AC</sub>	40 ± 5A
5kW 48V <sub>DC</sub> 230V <sub>AC</sub>	50 ± 5A	5kW 48V <sub>DC</sub> 110/120V <sub>AC</sub>	40 ± 5A
6kW 48V <sub>DC</sub> 230V <sub>AC</sub>	60 ± 5A	6kW 48V <sub>DC</sub> 110/120V <sub>AC</sub>	60 ± 5A

**Physical Specifications**

Model	HTU1K	HTU1.5K	HTU2K	HTU3K	HTU4K	HTU5K	HTU6K*
	Rack Mount						
UPS Dimensions (L x W x H)	485 x 380 x 132 mm						---
UPS Weight	16 kg	17 kg	20 kg	24 kg	35 kg	45 kg	---
Shipping Dimensions (L x W x H)	500 x 400 x 150 mm						---
Shipping Weight	18 kg	19 kg	22 kg	26 kg	37 kg	47 kg	---
	Wall Mount						
UPS Dimensions (L x W x H)	382 x 218 x 179 mm		442 x 218 x 179 mm		598 x 218 x 179 mm		
UPS Weight	16 kg	17 kg	20 kg	24 kg	35 kg	45 kg	45 kg
Shipping Dimensions (L x W x H)	520 x 315 x 300 mm		580 x 315 x 300 mm		740 x 315 x 300 mm		
Shipping Weight	18 kg	19 kg	22 kg	26 kg	37 kg	47 kg	47 kg

\* 6KW UPS is only available in wall mount model.