HTU Rack UPS

High Temperature Rack Mount 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 peak conversion efficiency of 88% and an overload capacity of 300% for 20 seconds.

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.

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
- $13V_{DC}$ 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

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Product Specifications

Model	HTUR1K	HTUR 1.5K	HTUR2K	HTUR3K	HTUR4K	HTUR5K
Continuous Output Power	1000W	1500W	2000W	3000W	4000W	5000W
Starts Motor	1HP	1.5HP	2HP	3HP	4HP	5HP
Surge Rating (20s)	3000W	4500W	6000W	9000W	12000W	15000W
Nominal Input Voltage	$12V_{DC}$ / $24V_{DC}$ / $48V_{DC}$			$24V_{DC}$ /$48V_{DC}$		
Minimum Start Voltage	$10V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
Low Battery Alarm	$11.5V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
Low Battery Trip	$10.5V_{DC}$ / $11.0V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
High Voltage Alarm & Fault	$16.0V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
High DC Input Recovery	$15.5V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
Low Battery Voltage Recovery	$13.0V_{DC}$ (*2 for $24V_{DC}$, *4 for $48V_{DC}$)					
Idle Consumption – Search Mode	< 25W When power saver on					
Output Waveform	Pure Sine wave / Identical to input in bypass mode					
Output Frequency	50/60Hz ± 0.3Hz					
Nominal Efficiency	> 88% (peak)					
Line Mode Efficiency	> 95%					
Output Power Factor	0.9 – 1.0					
Nominal Output Voltage	$100V_{AC}$/$110V_{AC}$/$120V_{AC}$ (RMS) OR $220V_{AC}$/$230V_{AC}$/$240V_{AC}$ (RMS)					
Voltage Regulation	± 10% RMS					
Output Short Circuit Protection	YES, Current limiting function (fault after 1s)					
Transfer Time	4 - 10ms max.					
Total Harmonic Distortion	< 10%					
Charger Input Voltage Range	Narrow: 100 – $135V_{AC}$ / 194 – $243V_{AC}$ Wide: 90 – $135V_{AC}$ / 164 – $243V_{AC}$					
Charger Input Frequency Range	Narrow 47 – 55Hz ± 0.3Hz @ 50 Hz OR 57 – 65Hz ± 0.3Hz @ 60Hz Wide: 43Hz ± 0.3Hz plus @50/60Hz					
Charger Output Voltage	Depends on battery type					
Charger Breaker Rating	10A	10A	10A	20A	20A	30A
Maximum Charge Rate	15 – 105A ± 5A (depending on model; see table below)					
Overcharge Protection Shutdown	$15.7V_{DC}$ for 12V (x2 for $24V_{DC}$, x4 for $48V_{DC}$)					

Battery Type	Fast (V_{DC})	Float (V_{DC})
Gel U.S.A	14.0	13.7
A.G.M 1	14.1	13.4

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A.G.M 2	14.6			13.7		
Sealed Lead Acid	14.4			13.6		
Gel Euro	14.4			13.8		
Open Lead Acid	14.8			13.3		
Calcium	15.1			13.6		
Desulphation	15.5 for 4 hours					
Lithium Iron	13.5			13.5		
Remote Control	Yes (Optional)					
Input Voltage Waveform	Sine wave (Grid or Generator)					
Nominal Voltage	$110/120V_{AC}$			$230V_{AC}$		
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%		
Max. Input AC Voltage	$150V_{AC}$			$270V_{AC}$		
Nominal Bypass Input Frequency	50/60Hz (Auto sensing)					
Low Frequency Trip	Narrow: 47Hz ± 0.3Hz @ 50Hz OR 57Hz ± 0.3Hz @ 60Hz Wide: 40Hz ± 0.3Hz @50/60Hz					
Low Frequency Re-engage	Narrow: 48Hz ± 0.3Hz @ 50Hz OR 58Hz ± 0.3Hz @ 60Hz Wide: 45Hz ± 0.3Hz @50/60Hz					
High Frequency Trip	Narrow: 55Hz ± 0.3Hz @ 50Hz OR 65Hz ± 0.3Hz @ 60Hz Wide: No upper limit for 50/60Hz					
High Frequency Re-engage	Narrow: 54Hz ± 0.3Hz @ 50Hz OR 64Hz ± 0.3Hz @ 60Hz Wide: No upper limit for 50/60Hz					
Output Short Circuit Protection	Circuit breaker					
Input Breaker Rating	10A	15A	20A	30A	30A	40A
Transfer Switch Rating	30A for UL & TUV			40A for UL		
Max. Bypass Current	30A			40A		
Input AC Voltage Range (AVR)	90 – 140V ± 4%			154 – 253V ± 4%		
Stabilised Output Voltage (AVR)	$110/120V_{AC}$ ± 10% (rms)			$230V_{AC}$ ± 10% (rms)		
Nominal Voltage (AVR)	$110V_{AC}$	$120V_{AC}$	$220V_{AC}$	$230V_{AC}$	$240V_{AC}$	
A – Line Low Loss N/W (Battery)	84/72	92/78	168/143	176/150	183/156	
B – Line Low Comeback	89/77	97/83	178/153	186/160	193/166	

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(Boost)					
C – Line 2nd Boost Threshold (Boost)	**	**	**	**	**
D – Line 2nd Boost Comeback (Boost)	**	**	**	**	**
E – Line 1st Boost Threshold (Boost)	99	108	198	207	216
F – Line 1st Boost Comeback (Normal)	103	112	205	215	225
G – Line Buck Comeback (Normal)	1189	128	235	246	256
H – Line Buck Threshold (Buck)	121	132	242	253	264
I – Line High Comeback (Buck)	127	139	253	266	278
J – Line High Loss (Battery)	132	144	263	276	288
Mount Type	Rack Mount				
Operating Temperature	-10 – 60°C				
Storage Temperature	-40 – 70°C				
Humidity	0 – 95% non-condensing				
Cooling	Forced air				
Dimensions W x D x H	485 x 380 x 132 mm				
Weight	16kg	17kg	20kg	24kg	35kg
Shipping Weight	18kg	19KG	22kg	26kg	37kg
Display	Status LEDs / Status LEDs & LCD				
Test Standards	EN60950-1L2006+A11:2009 EN55022:2006+A1:2007 EN61000-3-2:2006+A1:2009+A2:2009 EN61000-3-3:2008 EN55024:1998+A1:2001+A2:2003				
Standard Warranty	2 Years				

Charging Current

Model	Current (A)	Model	Current (A)
1kW $12V_{DC}$ $230V_{AC}$	35 ± 5A	1kW $12V_{DC}$ $110/120V_{AC}$	35 ± 5A
1kW $24V_{DC}$ $230V_{AC}$	20 ± 5A	1kW $24V_{DC}$ $110/120V_{AC}$	15 ± 5A
1.5kW $12V_{DC}$ $230V_{AC}$	45 ± 5A	1.5kW $12V_{DC}$ $110/120V_{AC}$	50 ± 5A
1.5kW $24V_{DC}$ $230V_{AC}$	25 ± 5A	1.5kW $24V_{DC}$ $110/120V_{AC}$	25 ± 5A
1.5kW $48V_{DC}$ $230V_{AC}$	15 ± 5A	---	---
2kW $12V_{DC}$ $230V_{AC}$	65 ± 5A	2kW $12V_{DC}$ $110/120V_{AC}$	70 ± 5A
2kW $24V_{DC}$ $230V_{AC}$	30 ± 5A	2kW $24V_{DC}$ $110/120V_{AC}$	30 ± 5A
2kW $48V_{DC}$ $230V_{AC}$	20 ± 5A	2kW $48V_{DC}$ $110/120V_{AC}$	20 ± 5A
3kW $12V_{DC}$ $230V_{AC}$	85 ± 5A	3kW $12V_{DC}$ $110/120V_{AC}$	95 ± 5A
3kW $24V_{DC}$ $230V_{AC}$	45 ± 5A	3kW $24V_{DC}$ $110/120V_{AC}$	40 ± 5A
3kW $48V_{DC}$ $230V_{AC}$	30 ± 5A	3kW $48V_{DC}$ $110/120V_{AC}$	30 ± 5A
4kW $24V_{DC}$ $230V_{AC}$	65 ± 5A	4kW $24V_{DC}$ $110/120V_{AC}$	50 ± 5A
4kW $48V_{DC}$ $230V_{AC}$	40 ± 5A	4kW $48V_{DC}$ $110/120V_{AC}$	40 ± 5A
5kW $24V_{DC}$ $230V_{AC}$	70 ± 5A	5kW $24V_{DC}$ $110/120V_{AC}$	50 ± 5A
5kW $48V_{DC}$ $230V_{AC}$	50 ± 5A	5kW $48V_{DC}$ $110/120V_{AC}$	40 ± 5A