

KNIGHT SERIES



PF0.8 Online UPS

1KVA-10KVA

Applications:



Server



POS



ATM



Computer

Reliable UPS Solution

Knight Series is specifically designed for operation in poor power areas. Built-in internal battery and extend battery connector in tower model, user can extend autonomy time via plug and play battery design. The Reliable design is ideal for Banking, ATM, and other business critical application.

GENERAL FEATURES

- True double-conversion
- Microprocessor control optimizes reliability
- Input power factor correction ≥ 0.99
- Output power factor 0.8
- Wide input voltage (110V–300V)
- Converter mode available
- ECO mode for energy saving
- Generator compatible
- SNMP Function operate with USB or RS-232 synchronizingly
- Comprehensive LCD Display for access & setting

TECHNICAL SPECIFICATIONS

MODEL	KN-1101-TS	KN-1102-TS	KN-1103-TS
PHASE	Single phase with ground		
CAPACITY	1000 VA / 800W	2000 VA / 1600W	3000 VA / 2400 W
INPUT			
Voltage Range	Low Line Transfer	160 VAC / 140 VAC / 120 VAC / 110 VAC \pm 5 % (Based on load percentage 100%- 80 % / 80 %- 70 % / 70- 60 % / 60 %- 0)	
	Low Line Comeback	168 VAC / 148 VAC / 128VAC / 118 VAC \pm 5 % (Based on load percentage 100%- 80 % / 80 %- 70 % / 70- 60 % / 60 %- 0)	
	High Line Transfer	300 VAC \pm 5 % or 150 VAC \pm 5 %	
	High Line Comeback	290 VAC \pm 5 % or 145 VAC \pm 5 %	
Frequency Range	40Hz ~ 70 Hz		
Power Factor	\geq 0.99 @ Nominal Voltage (100% Last)		
OUTPUT			
Nominal Voltage	200/208/220/230/240VAC		
AC Voltage Regulation	\pm 1%		
Frequency Range(Synchronized Range)	47~ 53 Hz or 57 ~ 63 Hz		
Frequency Range(Batt. Mode)	50 Hz \pm 0.25 Hz or 60Hz \pm 0.3 Hz		
Current Crest Ratio	3:1		
Harmonic Distortion	\leq 3 % THD (Linear Load), \leq 6 % THD (Non-linear Load)		
Transfer Time	AC mode to Battery mode Inverter to Bypass	Zero 4 ms (Typical)	
Waveform (Batt. Mode)	Pure Sinewave		
EFFICIENCY			
Line Mode	88%	90%	91%
Battery Mode	93%	85%	96%
ECO Mode	87%	88%	89%
BATTERY			
Battery Type	12V / 7 Ah	12V / 7 Ah	12 V / 9 AH
Numbers	3	6	6
Typical Recharge Time	4 hours recover to 90% capacity		
Charging Current (max.)	1.0 A	1.0 A	1.0 A
Charging Voltage	41.0 VDC \pm 1%	82.1 VDC \pm 1%	82.1 VDC \pm 1%
INDICATORS			
LCD Display	Last level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators		
ALARM			
Battery Mode	Sounding every 4 seconds		
Low Battery	Sounding every second		
Overload	Sounding twice every second		
Fault	Continuously sounding		
AC INPUT & OUTPUT CONNECTORS			
AC Input Connector	1 x IEC 320 C14	1 x IEC 320 C14	1 x IEC 320 C20
AC Output Connector	4 x IEC 320 C13	8 x IEC 320 C13	6 x IEC 320 C13 / 1 x TB
STANDARDS			
Safety / EMC	IEC 62040-1 (safety) / IEC-62040-2 (EMC) / CE		
PHYSICAL			
Dimension, D x W x H(mm)	UPS Unit: 397 (D) x 145 (W) x 220 (H) Battery Pack: 397 (D) x 145 (W) x 220 (H)	UPS Unit: 419 (D) x 190 (W) x 318 (H) Battery Pack: 535 (D) x 190 (W) x 318 (H)	UPS Unit: 419 (D) x 190 (W) x 318 (H) Battery Pack: 535 (D) x 190 (W) x 318 (H)
Net Weight (kgs)	UPS Unit:13 Battery Pack:18	UPS Unit:26 Battery Pack:49.4	UPS Unit:28 Battery Pack:67.5
ENVIRONMENT			
Operation Humidity	20-90% RH @ 0-40°C (non-condensing)		
Noise Level	Less than 50 dBA @ 1 Meter		
MANAGEMENT			
Smart RS-232 / USB	Supports Windows 2000/2003/XP/Vista/2008/7/8/10, Linux and MAC		
Optional SNMP	Power management from SNMP manager and web browser		

*Derate to 80% of capacity in Frequency converter mode and to 80% when the output voltage is adjusted to 100/200/208VAC
Product specifications are subject to change without further notice



Backup Time Table for Knight Series

Model	Battery Bank	Backup Time with Load (Min)			
		25%	50%	75%	100%
KN-1101TS	Internal Battery 36V / 7Ah	29.41	15.55	8.46	5.85
	+ 1 BB-36/14T - 36V / 14 Ah	97.66	49.80	27.83	18.20
	+ 2 BB-36/14T - 36V / 28 Ah	155.41	78.56	46.20	31.70
	+ 3 BB-36/14T - 36V / 42 Ah	249.08	125.16	63.40	45.36
KN-1102TS	Internal Battery 72V / 7Ah	35.08	18.18	12.08	6.76
	+ 1 BB-72/14T - 72V / 14 Ah	113.41	57.50	28.35	20.00
	+ 2 BB-72/14T - 72V / 28 Ah	190.41	95.53	66.35	34.21
	+ 3 BB-72/14T - 72V / 42 Ah	261.08	131.13	56.15	45.68
KN-1103TS	Internal Battery 72V / 9Ah	25.08	13.18	8.50	5.45
	+ 1 BB-72/18T - 72V / 18 Ah	97.75	49.80	28.26	17.33
	+ 2 BB-72/18T - 72V / 36 Ah	140.41	71.46	45.40	30.16
	+ 3 BB-72/18T - 72V / 54 Ah	201.25	101.30	59.16	44.76



TECHNICAL SPECIFICATIONS

MODEL	KN-1101RL	KN-1102RL	KN-1103RL	KN-1106RL	KN-1110RL
PHASE	Single phase with ground				
CAPACITY	1000 VA / 800W	2000 VA / 1600W	3000 VA / 2400 W	6000 VA / 4800 W	10000 VA / 8000 W
INPUT					
Nominal Voltage	200/208/220/230/240VAC				
Voltage Range	110-300 VAC ± 5%	110-300 VAC ± 5%	110-300 VAC ± 5%	110-300 VAC @50% Load 176-300 VAC @100% Load	
Frequency Range	40Hz ~ 70 Hz			46Hz ~ 54 Hz or 56Hz ~ 64 Hz	
Power Factor	≥ 0.99 @ Nominal Voltage (100% Last)				
OUTPUT					
Nominal Voltage	200/208/220/230/240VAC				
AC Voltage Regulation	± 3%			± 1%	
Frequency Range(Synchronized Range)	47~ 53Hz or 57 ~ 63Hz			46~ 54Hz or 56 ~ 64Hz	
Frequency Range(Batt. Mode)	50Hz ± 0.25Hz or 60Hz ± 0. Hz			50Hz ± 0.1Hz or 60Hz ± 0.1Hz	
Overload	100%~110%:audible warning , 110%~130%: UPS shut down in 30 seconds at battery mode or transfer to bypass when the utility is normal >130%:UPS shuts down immediately at battery mode or transfer to bypass mode when the utility is normal 3:1 (Max)			-	
Current Crest Ratio	3:1 (Max)				
Harmonic Distortion	≤ 3 % THD (Linear Load), ≤ 6 % THD (Non-linear Load)			≤ 3% THD (Linear Load), ≤ 5% THD (Non-linear Load)	
Transfer Time	AC mode to Battery mode	Zero		Zero	
	Inverter to Bypass	4 ms (Typical)			Zero
Waveform (Batt. Mode)	Pure Sinewave				
EFFICIENCY					
Line Mode	88%	90%	91%	90.3%	90.7%
Battery Mode	93%	95%	96%	95.0%	96.0%
ECO Mode	87%	88%	89%	88.0%	89.0%
BATTERY					
Battery Type	12V / 9 Ah	12V / 9 Ah	12V / 9 Ah	12 V / 9 AH	12 V / 9 AH
Numbers	3	6	6	20 pcs (16-20 pcs adjustable)*	
Typical Recharge Time	Depending on the capacity of external battery bank				
Charging Current (max.)	1.0/2.0/4.0/6.0A ± 10%			Default:1.0 A ± 10%, Max.:2.0A ± 10%	
Charging Voltage	41 VDC ± 1%	82.1 VDC ± 1%	82.1 VDC ± 1%	273 VDC ± 1% (Based on 20 pcs batteries)	
INDICATORS					
LCD Display	Last level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators				
ALARM					
Battery Mode	Sounding every 4 seconds				
Low Battery	Sounding every second				
Overload	Sounding twice every second				
Fault	Continuously sounding				
AC INPUT & OUTPUT CONNECTORS					
AC Input Connector	1 x IEC 320 C14			Terminal	
AC Output Connector	4 x IEC 320 C13			Terminal	
STANDARDS					
Safety / EMC	IEC 62040-1 (safety) / IEC-62040-2 (EMC) / CE				
PHYSICAL					
Dimension,D x W x H(mm)	Battery Pack: 410 (D) x 438 (W) x 88 (H)	UPS Unit: 410 (D) x 438 (W) x 88 (H) Battery Pack: 510 (D) x 438 (W) x 88 (H)	Battery Pack: 630 (D) x 438 (W) x 88 (H)	UPS Unit: 580 (D) x 438 (W) x 88 (H) Battery Pack: 580 (D) x 438 (W) x 131 (H)	UPS Unit: 668 (D) x 438 (W) x 88 (H) Battery Pack: 580 (D) x 438 (W) x 131 (H)
Net Weight (kgs)	UPS unit: 13 Battery Pack: 21.3	UPS unit: 8.3 Battery Pack: 28.7	UPS unit: 10 Battery Pack: 40.8	UPS unit: 15 Battery Pack: 48	UPS unit: 18 Battery Pack: 63
ENVIRONMENT					
Operation Humidity	20-90% RH @ 0-40°C (non-condensing)				
Noise Level	Less than 50 dBA @ 1 Meter			Less than 55dBA@1 Meter Less than 58dBA@1 Meter	
MANAGEMENT					
Smart RS-232 / USB	Supports Windows 2000/2003/XP/Vista/2008/7/8/10, Linux and MAC				
Optional SNMP	Power management from SNMP manager and web browser				

*Derate to 80% of capacity in Frequency converter mode and to 80% when the output voltage is adjusted to 100/200/208VAC
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Backup Time Table for Knight Series

	Battery Bank	Backup Time with Load (Min)			
		25 %	50 %	75 %	100%
KN-1101RL	+1 BB-36/09RT	60	31.0	17.0	12
	+1 BB-72/09RT	30.9	23.3	13.2	8.5
KN-1102RL	+2 BB-72/09RT	70.0	47.0	27.0	18.0
	+1 BB-72/09RT	27.0	13.2	8.5	5.3
KN-1103RL	+2 BB-72/09RT	58.0	27.0	18.0	11.0
	+1 BB-240/09RT	57	40.0	23.0	9.0
KN - 1106RL	+2 BB-240/09RT	120	57.0	48.0	40.0
	+1 BB-240/09RT	29.0	12.0	7.0	4.0
KN - 1110RL	+2 BB-240/09RT	64.0	46.0	31.0	17.0

