



## Indian Institute of Technology Kanpur STUDENTS' PLACEMENT OFFICE

Enquiry No: SPO/2017/UPS/02 **Enquiry Date: 2<sup>nd</sup> February 2017** 

Closing Date: 16<sup>th</sup> February 2017 (Latest by 4:00PM) Delivery Date: 28<sup>th</sup> February 2017

Sub: Quotation invited for the 10KVA UPS.

Parameter  1 UPS Ratings KVA / KW 2 Back-up 3 Battery Type /Make 4 UPS Model No. Offered 5 Input/Output Phases 6 Technology 7 Paralleling 8 Paralleling 8 Paralleling 9 Technology 10 Input voltage 11 Input Power Factor 11 Input Power Factor 12 Input Current THDI 15 Inverter Section 16 Technology 17 Paralleling 18 Input Current THDI 19 Set Requirement 19 Should not be more than 1.25 times 10 Input Voltage 11 UPS output Power factor 12 Input Current Thous Should not be more than 1.25 times 15 Inverter Section 16 Technology 17 UPS output Power factor 18 Output voltage rating 10 Liput voltage Microprocessor / DSP based PWM - IGBT based Technology 10 UPS output voltage rating 208/220/230/240 V - Selectable	SI No		10 KVA UPS		
Back-up One Hour Backup time  VRLA SMF of Amara Raja/Rocket/ Exide or eqv.  UPS Model No. Offered to be mentioned by vendor  Input/Output Phases Three Phase with ground/ Single Phase + N  True on line UPS with Double Conversion, VFI Technology  Paralleling Parallelable upto 4 units (Required for future expansion of load)  Rectifier Section  Technology Fully DSP Based Active Front End IGBT Rectifier.  Input voltage 110V~276V  Input Power Factor 0.99 @ full restive load  Input Current THDI <=5% with R full Load  Input Current THDI <=5% with R full Load  Inverter Section  Microprocessor / DSP based PWM - IGBT based Technology  Technology Microprocessor / DSP based PWM - IGBT based Technology  UPS output Power factor 10 KVA/9KW		Parameter	Required Parameter		
3 Battery Type / Make VRLA SMF of Amara Raja/Rocket/ Exide or eqv. 4 UPS Model No. Offered to be mentioned by vendor 5 Input/Output Phases Three Phase with ground/ Single Phase + N 6 Technology True on line UPS with Double Conversion, VFI Technology 7 Paralleling Parallelable upto 4 units (Required for future expansion of load) 8 Rectifier Section 9 Technology Fully DSP Based Active Front End IGBT Rectifier. 10 Input voltage 110V~276V 11 Input Power Factor 0.99 @ full restive load 12 Input frequency 45-55 Hz 13 Input Current THDI <=5% with R full Load 14 DG Set Requirement Should not be more than 1.25 times 15 Inverter Section 16 Technology Microprocessor / DSP based PWM - IGBT based Technology 17 UPS output Power factor 10 KVA/9KW	1	UPS Ratings KVA / KW	10 KVA /9 kw		
4 UPS Model No. Offered to be mentioned by vendor  5 Input/Output Phases Three Phase with ground/ Single Phase + N  6 Technology True on line UPS with Double Conversion, VFI Technology  7 Paralleling Parallelable upto 4 units (Required for future expansion of load)  8 Rectifier Section  9 Technology Fully DSP Based Active Front End IGBT Rectifier.  10 Input voltage 110V~276V  11 Input Power Factor 0.99 @ full restive load  12 Input frequency 45-55 Hz  13 Input Current THDI <=5% with R full Load  14 DG Set Requrement Should not be more than 1.25 times  15 Inverter Section  16 Technology Microprocessor / DSP based PWM - IGBT based Technology  17 UPS output Power factor 10 KVA/9KW	2	Back-up	One Hour Backup time		
Three Phase with ground/ Single Phase + N  True on line UPS with Double Conversion, VFI Technology  Paralleling  Parallelable upto 4 units (Required for future expansion of load)  Rectifier Section  Fully DSP Based Active Front End IGBT Rectifier.  Input voltage  Input Power Factor  Input Power Factor  Input frequency  45-55 Hz  Input Current THDI  DG Set Requrement  Should not be more than 1.25 times  Inverter Section  Microprocessor / DSP based PWM - IGBT based Technology  Technology  10 KVA/9KW	3	Battery Type /Make			
True on line UPS with Double Conversion, VFI Technology  Paralleling  Parallelable upto 4 units (Required for future expansion of load)  Rectifier Section  Fully DSP Based Active Front End IGBT Rectifier.  Input voltage  110V~276V  Input Power Factor  12 Input frequency  45-55 Hz  13 Input Current THDI  14 DG Set Requrement  Should not be more than 1.25 times  Inverter Section  Microprocessor / DSP based PWM - IGBT based Technology  17 UPS output Power factor  10 KVA/9KW	4	UPS Model No. Offered	to be mentioned by vendor		
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Rectifier Section  Parametring expansion of load)  Rectifier Section  Fully DSP Based Active Front End IGBT Rectifier.  Input voltage 110V~276V  Input Power Factor 0.99 @ full restive load  Input frequency 45-55 Hz  Input Current THDI <=5% with R full Load  DG Set Requrement Should not be more than 1.25 times  Inverter Section  Microprocessor / DSP based PWM - IGBT based Technology  Technology 10 KVA/9KW	6	Technology			
Fully DSP Based Active Front End IGBT Rectifier.  10 Input voltage 110V~276V  11 Input Power Factor 0.99 @ full restive load  12 Input frequency 45-55 Hz  13 Input Current THDI <=5% with R full Load  14 DG Set Requrement Should not be more than 1.25 times  15 Inverter Section  16 Technology Microprocessor / DSP based PWM - IGBT based Technology  17 UPS output Power factor 10 KVA/9KW	7	Paralleling	Parallelable upto 4 units (Required for future expansion of load)		
10	8	Rectifier Section			
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based Technology  17 UPS output Power factor 10 KVA/9KW	15	Inverter Section			
	16	Technology			
18 Output voltage rating 208/220/230/240 V - Selectable	17	UPS output Power factor	10 KVA/9KW		
	18	Output voltage rating	208/220/230/240 V - Selectable		





## Indian Institute of Technology Kanpur STUDENTS' PLACEMENT OFFICE

19 Output voltage regulation ± 1% - 100% linear load condition  20 Output Frequency ± 0.5 hz or better(free running mode)  21 Overload Capacity ≤100 - 110% for 5 minutes  210 - 110% for 5 minutes  2110 - 130% for 1 min  22 Output harmonic distortion (Ph/N) 23 THD maximum for a 100% linear load.  23 THD maximum for 100% non linear load.  24 Crest Factor 3:1 minimum  25 Battery  26 Type /Make VRLA SMF of Amara Raja/Rocket/ Exide or eqv.  27 Battery Placement Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc  28 Battery AH rating & Quantity 12V*24Nos.  29 End of Battery discharge Voltage for battery calculation 30 Bypass  31 Automatic integral bypass The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter Less than 55 dB @ 1 metre  34 Output wave form Pure sine wave  35 Display and control Input AC Current Input AC Current Input AC Current Input AC Current Input AC Grequency Output AC current Output frequency / voltage  Output AC current Output frequency / voltage			
21 Overload Capacity  ≥100-110% for 5 minutes ≥110-130% for 1 min  22 Output harmonic distortion (Ph/N)  23 (Ph/N)  24 Crest Factor  25 Battery  26 Type /Make  27 Battery Placement  28 Battery Placement  29 End of Battery discharge Voltage for battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  31 Acoustical Noise @ 1 Meter  32 General  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36 And Metered parameters  Metered parameters  ≥100-110% for 5 minutes ≥110-130% for 1 min  2% THD maximum for a 100% linear load.  2% THO land form the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer of the crit	19	Output voltage regulation	± 1% - 100% linear load condition
21 Overload Capacity  22 Output harmonic distortion (Ph/N)  23 (Ph/N)  24 Crest Factor  25 Battery  26 Type /Make  27 Battery Placement  28 Battery AH rating & Quantity  29 End of Battery calculation  30 Bypass  31 Automatic integral bypass  31 Acoustical Noise @ 1 Meter  32 General  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36 (Ph/N)  27 Sw THD maximum for a 100% linear load.  28 Sattery  29 VRLA SMF of Amara Raja/Rocket/ Exide or eqv.  21 Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc  28 Battery AH rating & Quantity  29 End of Battery discharge Voltage for battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  30 General  31 Acoustical Noise @ 1 Meter  32 Less than 55 dB @ 1 metre  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36 Input AC voltage  Input AC Current  Input AC requency  Output AC voltage  Output AC voltage  Output AC voltage  Output AC current	20	Output Frequency	± 0.5 hz or better(free running mode)
23 (Ph/N) 5% THD maximum for 100% non linear load.  24 Crest Factor 3:1 minimum  25 Battery  26 Type / Make VRLA SMF of Amara Raja/Rocket/ Exide or eqv.  27 Battery Placement Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc  28 Battery AH rating & Quantity 12V*24Nos.  29 End of Battery discharge Voltage for battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter Less than 55 dB @ 1 metre  34 Output wave form Pure sine wave  35 Display and control  36 Input AC voltage  Input AC current	21	Overload Capacity	
24   Crest Factor   3:1 minimum	22		2% THD maximum for a 100% linear load.
25 Battery  26 Type /Make  27 VRLA SMF of Amara Raja/Rocket/ Exide or eqv.  28 Battery Placement  29 End of Battery discharge Voltage for battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  31 Acoustical Noise @ 1 Meter  32 General  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36 Jana Metered parameters  Metered parameters  Metered parameters  Pure sine wave  Juput AC voltage  Input AC voltage  Output AC current  Input AC voltage  Output AC current  Output AC current  Output AC current  Output AC voltage  Output AC voltage  Output AC voltage  Output AC current	23	(Ph/N)	5% THD maximum for 100% non linear load.
27 Battery Placement  28 Battery AH rating & Quantity  29 End of Battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36 And Metered parameters  WYLA SMF of Amara Raja/Rocket/ Exide or eqv.  Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc  12V*24Nos.  1.7 to 1.75 V / cell  Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter  14 Less than 55 dB @ 1 metre  25 Pure sine wave  36 Input AC voltage  16 Input AC voltage  17 Input AC frequency  Output AC current  18 Input AC voltage  Output AC voltage  Output AC voltage  Output AC current	24	Crest Factor	3:1 minimum
27 Battery Placement Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc  28 Battery AH rating & Quantity 12V*24Nos.  29 End of Battery discharge Voltage for battery calculation 1.7 to 1.75 V / cell  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter Less than 55 dB @ 1 metre  34 Output wave form Pure sine wave  35 Display and control  36 Input AC voltage Input AC Current Input AC Current Input AC frequency Output AC voltage	25		Battery
28 Battery Placement	26	Type /Make	
29 End of Battery discharge Voltage for battery calculation  30 Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32 General  33 Acoustical Noise @ 1 Meter  34 Output wave form  35 Display and control  36  37  38  Metered parameters  Metered parameters  1.7 to 1.75 V / cell  1.7 to 1.75 V / cell	27	Battery Placement	provided for battery interconnections and
for battery calculation  Bypass  The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  General  Acoustical Noise @ 1 Meter  Cutput wave form  Display and control  Input AC voltage Input AC Current Input AC voltage Output AC voltage	28	Battery AH rating & Quantity	12V*24Nos.
The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  32  General  Acoustical Noise @ 1 Meter  40  Less than 55 dB @ 1 metre  Pure sine wave  Input AC voltage  Input AC Current  Input AC voltage  Output AC voltage	29		1.7 to 1.75 V / cell
Automatic integral bypass transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.  General  Acoustical Noise @ 1 Meter  Less than 55 dB @ 1 metre  Pure sine wave  Display and control  Input AC voltage  Input AC Current  Input AC frequency  Output AC voltage  Output AC voltage  Output AC voltage  Output AC voltage  Output AC current	30		Bypass
33 Acoustical Noise @ 1 Meter Less than 55 dB @ 1 metre  34 Output wave form Pure sine wave  35 Display and control  36 Input AC voltage Input AC Current Input AC frequency Output AC voltage Output AC current	31	Automatic integral bypass	transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions
34         Output wave form         Pure sine wave           35         Display and control           36         Input AC voltage           37         Input AC Current           38         Input AC frequency           39         Output AC voltage           40         Output AC current	32	General	
35   Display and control	33	Acoustical Noise @ 1 Meter	Less than 55 dB @ 1 metre
36 37 38 39 Metered parameters  Input AC Current Input AC frequency Output AC voltage Output AC current		Output wave form	Pure sine wave
37 38 Metered parameters  Metered parameters  Output AC voltage Output AC current		Display and control	
38 39 40  Input AC frequency Output AC voltage Output AC current	36		Input AC voltage
39 Output AC voltage 40 Output AC current			Input AC Current
Output AC voltage Output AC current	38	Metered parameters	Input AC frequency
			Output AC voltage
41 Output frequency / voltage			-
	41		Output frequency / voltage





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42	Audible Alarms	Required
43	ECO Mode / High Efficiency Mode	Required for improving Efficiency to upto 98%
44	Efficiency (Normal Mode)	upto 94% @ full load and battery fully charged.
45	Monitoring ON LAN	SNMP card to monitor UPS over LAN / WAN is required. Environmental Monitor Probe kit is required alongwith Web/SNMP Card to monitor Temperature of UPS Room through SNMP Software.
46	Warranty	As per OEM
47	Standard Ports required in UPS	Communication Ports (1) RS-232, (1) USB, (1) EPO - Emergency Power off contact required in UPS to switch off UPS remotely in event of emergency.
48	Other Communication Options	MODBUS Card , RELAY CARD
49	Certifications	RoHS EMC Compliance: IEC 62040-1 Quality: ISO 9001: 2000 and ISO 14001:1996

## **Terms & Condition:**

- 1. Quotation must be valid for 3 months.
- 2. Payment shall be made after delivery and satisfactory report from the user.
- 3. The rates and taxes, if any should be clearly specified.
- 4. Warranty & servicing should be properly mentioned in the quotation.
- 5. The indenter reserves the right to withhold the work order and change the specification without any notice.
- 6. The quotation should reach to Chair SPC, 109 Outreach building, IIT Kanpur ~ 208016 by 4PM on 16<sup>th</sup> February 2017.
- 7. The authorization certificate should be attached.

Sincerely Yours,

(Dr.Syam Nair) Chair, SPC