



Indian Institute of Technology Kanpur

Samtel Centre for Display Technologies

Enquiry number: SCDT/2013-14/13

Date: September 16, 2013

Sealed Quotations (Technical & Commercial) are invited for the supply and installation of online UPS with the following specifications:

S No	Product Description	Qty
1	<ul style="list-style-type: none"> • Supply with installations online UPS with three years warranty capacity:10 KVA / 9 KW specification given in Annexure – I • SMF Battery Bank three year warranty for 30 min backup of 10 KVA /9KW ups on full load Please mention Battery nos , Make-Excide/ Quanta / Panasonic/ Numeric. 	01
2	<ul style="list-style-type: none"> • Supply with installations (Paralleling & Synchronising Process 40+40=80KVA) online UPS with three years warranty capacity:40 KVA / 36KW specification given in Annexure – II • SMF Battery Bank three year warranty for 30 min backup of 40 KVA /36KW UPS on full load Please mention Battery nos , Make-Excide/ Quanta / Panasonic/ Numeric. 	02

Note:

1. For the service of UPS, the vendor must have service support at Kanpur/ Lucknow with adequate service persons, spare & standby UPS Facilities.
2. UPS should be Warranted for Minimum 24 Month Replacement Warranty from the date of delivery where as the batteries should.

Annexure – ITECHNICAL SPECIFICATION FOR 10 KVA ONLINE UPS

UPS Capacity	10 KVA with built-in Galvanic Isolation
Technology	IGBT on the input and output with Digital Signal Processor controlled (Rectifier/Charger)
Rated Output	10 kVA / 9 kW The UPS system is compatible for 0.7 lagging to 0.9 leading PF loads without deration
Power factor at full load	>/= 0.99
Power factor at 50% load	>/= 0.98
Input(Rectifier) IGBT Based	
Voltage	380/400/415 V
Voltage tolerance	320-480V at rated load. Upto 240-480V at 50% load.
Frequency	50/60 Hz
Frequency tolerance	± 10%
Rectifier/Charger	
Type of rectifier used	IGBT based DSP controlled Rectifier.
Ripple voltage at full load	Typically 0.
Efficiency of rectifier	>/= 98%
Battery charger features:	1.Charging circuit constant Voltage Constant Current 2.Battery status monitoring facility Through LCD display at the front panel 3. Battery protection circuits MCCB provided in enclosure.
Output (Inverter) IGBT Based	Technology of inversion / IGBT based PWM design with DSP

(Guaranteed Continuous rated output power at rated output Voltage)	controlled.
Voltage	380/400/415 VAC, 3 phase, 4 wire, Settable.
Output voltage regulation	I) Balanced load - $\pm 1\%$ Unbalanced load - $\pm 3\%$ for 4 wire system
Output Frequency	50 Hz
	Output Frequency range - ± 0.5 Hz
OP Frequency synchronising range with Bypass	Selectable between 1Hz to 5Hz
Transient voltage regulation for 0 to 100% and vice versa	$\pm 2\%$
Recovery time	< 5 m.sec
Wave form	Sinusoidal
Crest Factor	3 : 1
Protection	Input Voltage , Output Voltage, Input frequency, Output Frequency, Battery Charging/ Discharging Level., Load Level, Input High/ Normal/ Low/ fail, Output overload, output short circuit, Output Fault etc.
Indication	Main On, Inverter On, Battery Low, Over Load etc.
Efficiency	Excluding transformer loss At Full load - $\geq 93.0\%$ At 75 % load - $\geq 93.5\%$ At 50% load - $\geq 93.5\%$ At 25% load - $\geq 90.5\%$
Battery:	12V Lead Acid Sealed Maintenance Free Batteries
Backup:	30 Min on full Load Battery (for 10KVA UPS 40 nos 26Ah batteries) VAH should be minimum 10000Ah)
Bypass / Remote Monitoring	Automatic Static Bypass Switch / SNMP Support
Required with Matching Battery Cabinets as per side position	
Important Note:- 1. Operating temperature 0 deg to 50 degree Centigrade, Alarm Indication, Main On , Inverter On/Off/ Faulty indication Battery Level Static Bypass On Load Level Over Temperature Audible Alarms, Mains failure, low Battery, Over Load. 2. UPS must be IGBT based rectifier/Inverter/IGBT/Charger. 3. Automatic phase sequencer should be at input side.	

Annexure – II

TECHNICAL SPECIFICATION FOR 40 KVA ONLINE UPS

UPS Capacity	40 KVA with Built Galvanic Isolation
Technology	IGBT on the input and output with Digital Signal Processor controlled (Rectifier/Charger)
Rated Output	40 kVA / 36 kW The UPS system is compatible for 0.7 lagging to 0.9 leading PF loads without deration
Power factor at full load	≥ 0.99
Power factor at 50% load	≥ 0.98
Input current THDi at full load	$\leq 3.0\%$
Input current THDi at 50% load	$\leq 6.0\%$
Input(Rectifier) IGBT Based	
Voltage	380/400/415 V
Voltage tolerance	320-480V at rated load. upto 240-480V at 50% load.
Frequency	50/60 Hz
Frequency tolerance	$\pm 10\%$
Rectifier/Charger	
Type of rectifier used	IGBT based DSP controlled Rectifier.
Ripple voltage at full load	Typically 0.

Efficiency of rectifier	>= 98%
Battery charger features:	1.Charging circuit constant Voltage Constant Current 2.Battery status monitoring facility Through LCD display at the front panel 3. Battery protection circuits MCCB provided in enclosure.
Output (Inverter) IGBT Based (Guaranteed Continuous rated output power at rated output Voltage)	Technology of inversion / IGBT based PWM design with DSP controlled.
Voltage	380/400/415 VAC, 3 phase, 4 wire, Settable.
Output voltage regulation	I) Balanced load - $\pm 1\%$ Unbalanced load - $\pm 3\%$ for 4 wire system
Output Frequency	50 Hz Output Frequency range - ± 0.5 Hz
OP Frequency synchronising range with Bypass	Selectable between 1Hz to 5Hz
Transient voltage regulation for 0 to 100% and vice versa	$\pm 2\%$
Recovery time	< 5 m.sec
Wave form	Sinusoidal
Crest Factor	3 : 1
Harmonic	Total Harmonic Distortion non – linear load-< 3% Total Harmonic Distortion 100% linear load- < 1%
Phase Displace	Balanced load - 120 ± 1 deg. Electrical 100 % Unbalanced load- 120 ± 2 deg. Electrical
Protection	Input Voltage , Output Voltage, Input frequency, Output Frequency, Battery Charging/ Discharging Level., Load Level, Input High/ Normal/ Low/ fail, Output overload, output short circuit, Output Fault etc.
Indication	Main On, Inverter On, Battery Low, Over Load etc.
Overall Efficiency	Excluding transformer loss At Full load - $\geq 93.0\%$ At 75 % load - $\geq 93.5\%$ At 50% load - $\geq 93.5\%$ At 25% load - $\geq 90.5\%$
Battery:	12V Lead Acid Sealed Maintenance Free Batteries SMF
Backup:	30 Min on full Load Battery (40KVA minimum 40nos 12V/75Ah batteries should be quoted).
Bypass / Remote Monitoring	Automatic Static Bypass Switch / SNMP Support
Required with Matching Battery Cabinets as per side position	
<p>Important Note:- Operating temperature 0 deg to 50 degree Centigrade, Alarm Indication, Main On , Inverter On/Off/ Faulty indication Battery Level Static Bypass On Load Level Over Temperature Audible Alarms, Mains failure, low Battery, Over Load.</p> <p>2. UPS must be IGBT based rectifier/inverter/IGBT/Charger.</p> <p>3. Automatic Phase sequencer should be at input side.</p>	

Terms and Conditions;

1. Your quotation shall contain Authorization Letter from Manufacture.
2. Quotation must be valid for 60 days.
3. Delivery period should not be more than 4 week.
4. Send complete details of the product(s)
5. IITK is exempted from excise/ customs duty
6. All process are to be FOR IIT Kanpur.
7. The institute reserves the right of accepting and rejecting any quotation without assigning any reason thereof.
8. Maximum education discount, if any should be offered.
9. Warranty should be for at least three years after installation (specify clearly).

10. List of clients and testimonials of services rendered. Those with record of after – sales services may be given preference.
11. Installation of same capacity or above capacity should be in IIT Kanpur.
12. Type test report of all desired specs of 40 kVA must be submitted along with technical bid.
13. . Product brochure must be attached along with technical compliance sheet.

Kindly send the quotation in sealed envelopes latest by September 23, 2013 to the following address;

Room No.305,
Samtel Centre for Display Technologies,
Indian Institute of Technology Kanpur-16
U.P., India