

SR No.	Minimum Functional and Technical Specifications	Description details	Compliance (Yes / No)
1	General Requirement		
1.1	The vendor shall provide Online Double conversion UPS system .Rectifier with IGBT based ,(2x160 KVA UPS System) modular Live Swappable UPS in (N+N) configuration without battery in Buyback mode.(Total Qty 4) . The UPS frame must be of minimum 160 KVA each.	N+N architecture (Total Quantity 4)	
1.2	The system must provide high quality power to protect sensitive equipment which minimum power is 160 kVA, 144 kW..		
2	Standard		
2.1	The system must comply with the following UPS standards:		
	Safety : EN / IEC 62040-1.		
	EMC Emission : EN / IEC 62040-2 class C3.		
	EMC Immunity : EN /IEC 62040-2 classes C2-C3.		
3	GLOBAL DESCRIPTION OF A STATIC UNINTERRUPTIBLE POWER SUPPLY		
	Each UPS must include the following sub-assemblies:		
	Rectifier - charger		
	Battery storage	Battery banks is already Available at site	
	Inverter		
	Isolation transformer embedded to the inverter		
	Automatic static by-pass		
	Maintenance manual by-pass built in the UPS (for redundant 1+1 and unitary UPS)		
3.1	General characteristics		
	<i>Environment</i>		
	Operating temperature range : from 0°C up to + 35°C		
	Storage temperature range : from -20°C up to + 70°C		
	Altitude, without derating : ≤1000m,		
	Maximum relative humidity : 95 % at room temperature, without condensation		
3.2	Each UPS module must comply with the following key technical specifications:		
	Apparent rated power minimum	160 kVA	

	Active rated power (Pn) minimum	144 kW
	Type of network (input/output)	Three-phase / Three-phase
	UPS classification	VFI - SS – 111
	Number of network inputs	Separate by-pass and rectifier network/ common
	Rated input voltage	380 - 400 - 415 V
	Rated input frequency	50 Hz
	Rated output voltage	380-400-415 V sinusoidale
	Rated output frequency	50 Hz
	Acoustic pressure measured with a rated load and at a distance of 1 m (according to ISO 3746)	<= 70 dBA
	Dimensions of a UPS module (WxDxH in mm)	≤ 1000*800*2000 mm
	Protection Index according to EN/IEC 60529-2	IP 20
	Isolation transformer	Integrated to the inverter (transformer based)
	Input neutral system	IT / TNS / TNC
	Output neutral system	IT / TNS / TNC
3.3	Rectifier	
	Rectifier bridge technology	IGBT
	Rated voltage	400 V - 3 Ph + N
	Voltage tolerance (without the use of batteries)	400V +/-15 %
	Frequency range	50 Hz
	Input power factor at full load (without additional filters)	≥ 0.99
	Input Harmonic distortion (THDi) at full load (without additional filters)	< 3.5 %
	Soft-start current ramping for generator compatibility (power walk-in)	50 A /sec
	Automatic restart delay (input voltage recover)	up to 3000 sec
3.4	Battery management	
	Avialbe battery quantity is 64 number for each UPS with bank	
	Ah – 150 VRLA type	
	Charging current	0,1 C10
	Floating voltage	Adjusted according to temperature
3.5	Battery backup	

	The UPS must be able to be connected to a two poles (+/-) energy accumulator which must guarantee a Data Centre standard backup life	Backup Time 30 Minutes on 50 % Load	
	It is a sealed lead-acid and maintenance-free battery (VRLA) / AGM technology / sealed lead-acid and maintenance-free battery (VRLA) , with a rated Design life of 3 years at 22°C		
3.6	IGBT inverter with integrated isolation transformer		
	Inverter technology	IGBT with integrated isolation transformer	
	Rated output voltage	3 x 400 V with / without neutral	
	Rated frequency	50 / 60 Hz	
	Frequency stability (in back-up mode)	50 Hz \pm 0,2 %	
	UPS rated apparent power minimum	160 kVA	
	Permanent active power available at 35 °C will minimum	144 kW	
	Output voltage stability in dynamic conditions for a variation between 0 and 100% and vice versa	Class 1 (VFI-SS-111)	
	Output voltage stability in static mode between 0 to 100% load	\pm 1 % Vn	
	Total output voltage distortion with a linear load at rated power	THDu (Ph / Ph) \leq 2.2 %	
	Total output voltage distortion - non-linear load	THDu (Ph / Ph) \leq 3.5 %	
	Short circuit current capacity while the auxiliary mains is absent	Up to 3.5In during 100 ms	
	Overload capacity for 10 minutes (Normal)	180kW	
	Overload capacity for 60 seconds (Normal)	216kW	
3.7	Automatic static bypass		
	The bypass ensures the system switches over to the auxiliary source without any interruption in power.		
	The auxiliary source branch (line) of each UPS module must be equipped with a « Thyristor » static switch sized for a permanent operation at full power. The control logic of the bypass must ensure a no break transfer in case of overload, inverter failure or downstream short circuit. If one of the fans stops, the bypass must continue to be cooled.		
	Switching time with inverter synchronized to the auxiliary source	No interruption	
	Overload capability: 1 hour 10 minutes 1 minute	110 % 125 % 150 %	

	Short circuit capability (without damaging the static switch)	4000 A peak/ 20 ms	
3.8	Manual maintenance bypass built in the UPS		
	It must be possible to switch the load from the bypass static switch to the manual bypass without power interruption, and vice versa		
3.9	Mechanical		
	The UPS will be cooled with forced ventilation		
	Maintenance operations will be done as per standard norms so that preventive replacement of components for preventive maintenance will be easy to shorten the mean time to repair		
	Dust filter & Rodent Mesh shall be provided with each UPS Frame		
	Built In Digital Energy Meter shall be provided to display kWh consumption at input & output.		
	Conformal Coating: Critical components like PCBs in UPS shall be conformal coated for protection against dust and other environmental harsh conditions.		
	Ingress Protection – EN/IEC 60529-2		
	Cable Entry: Bottom Cable Entry Provision shall be provided.		
4	Communication		
4.1	GS or GTS (Graphic Touch Screen)		
4.2	configurable voltage free contacts		
4.3	Modbus RTU/TCP ,IP interface		
4.4	WEB/SNMP interface for monitoring and shutdown options		
4.5	communication cards		
4.6	BMS card		
4.7	Remote monitoring option		
5	Warranty and CAMC		
5.1	AC/DC capacitor service life shall be minimum 10 years. If less than 10 years capacitors replacement cost must be considered in the final commercial offer		
5.2	2 years onsite warranty and after that 5 Years CAMC provided by OEM		
5.3	End of Sale should be >=10 Years of the product		
5.4	Bidder shall remove the old UPS and after that install and commission the new UPS		
5.5	Old UPS details are – Make- Socomec ,Model -DELPHYS MP elite -160 KVA , Qty-4		