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TECHNICAL, FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS*To be competed by the bidder and submitted with the documents.***SPECIFICATION FOR 20 KVA Online UPS**

No	Item	Description	Minimum Technical Specification Required	Bidders Response (Yes/No)	If "NO" Bidders remark	Document Reference (Document and page no)
1	Make	Specify	(Specify here)			
2	Model	Specify	(Specify here)			
3	Country of Origin	Specify	(Specify here)			
4	Country of Manufacture	Specify	(Specify here)			
5	Input	Phase	3 Phase with Neutral	Yes/No		
		Nominal voltage [V]	390 - 410 VAC (3Ph+N) or Better	Yes/No		
		Input frequency	45-55/54-66Hz	Yes/No		
		Input Power Factor (kw/kva)	>=0.99	Yes/No		
		Input Supply Protection	Shall supply 63A input breaker or better	Yes/No		
		Converter technology	IGBT high frequency	Yes/No		
6	Output	Phase	3 Phase with Neutral	Yes/No		
		Nominal power [kVA]*	20	Yes/No		
		Nominal active power [kW]*	20	Yes/No		
		Output Power Factor*	1 (Unity)	Yes/No		

		Current THD at full Non-linear load (THDI%)*	≤ 1.5 % @ 100% Non-Linear Load or better	Yes/No		
		Current THD at full linear load (THDI%)*	≤1 % @ 100% Linear Load or better	Yes/No		
		Output frequency	At 50hz or 60Hz	Yes/No		
		Nominal voltage [V]	385-414 VAC (Ph-Ph) and 220-240 VAC (Ph+N) or Better	Yes/No		
		Nominal frequency [Hz]	50 Hz or 60Hz	Yes/No		
		Waveform	Pure Sine Wave	Yes/No		
		Static stability	± 0.5%	Yes/No		
		Overload	Load 103-110% last 60 Min, 111-125% last 10min, 126-150% 60S, 151-200% 0.5S	Yes/No		
		Current Crest Ratio	3:1 max	Yes/No		
		Transfer Time	Zero	Yes/No		
7	Efficiency	AC Mode	>90% or better	Yes/No		
		ECO Mode	>95% or better	Yes/No		
		Battery Mode	>90% or better	Yes/No		
8	Battery	Make/Brand* Model	Bidders may propose either batteries of the same brand as the UPS system or other branded batteries recommended by the UPS manufacturer. In all cases, the proposed batteries must be fully compatible with the supplied UPS hardware. If batteries are not from the same brand of UPS, a letter from the UPS manufacturer confirming the compatibility of the proposed batteries with the UPS system must be attached to the bid	Yes/No		
				Yes/No		

		Battery Type	Valve Regulated Lead Acid (VRLA)	Yes/No		
		Battery Service	Sealed Maintenance Free	Yes/No		
		Backup time	Minimum 30 minutes @ per 60% load	Yes/No		
		Battery arrangement in the UPS	In built Batteries only			
		Battery Calculation	Manufacturer certified battery calculation need to be attached	Yes/No		
		Transfer Time	0 ms	Yes/No		
		Recharge Time	90% charge in 9 hrs	Yes/No		
		Charging Current	1A -6A adjustable	Yes/No		
		Battery Design Lifetime	10 years or higher (manufacturer confirmation should be attached) maximum Temperature 25 °C	Yes/No		
9	Remote Communication	Remote Monitoring	SNMP Connectivity	Yes/No		
		Supported Communication Protocols	SNMP /USB Port/RJ45 Connector/Ethernet network agent with TCP/IP protocol , HTTP and SNMP	Yes/No		
		Monitoring and Management (all components required should be supplied by supplier)	Intelligent self-diagnostics	Yes/No		
			Automatic battery test function	Yes/No		
			Monitor availability of Input power	Yes/No		
Monitor availability of Output power	Yes/No					
10	Environment	Audible Alarm	Should have audible alarm for critical indications (Low Battery, Inverter Overload etc...)	Yes/No		
		Display Pannel	Touch vertical screen graphic display / Should have LCD for display the status and warnings	Yes/No		
		Caster	Should have caster for easy movements and Should have lockable wheels	Yes/No		
		Weight	Specify	Yes/No		
		Dimensions	Specify	Yes/No		
		Standards Compliances	EN 60240 Accreditation or better	Yes/No		

11	Confirmation of Availability of Spare Parts	Spare availability	All the models quoted in the Bid shall have a spare parts availability for minimum 10 years (shall not be discontinued) from the date of Bid opening. Letter from Manufacturer confirming this must be submitted	Yes/No		
12	Warranty	UPS Unit	5 Years comprehensive warranty from the Manufacture (Letter from manufacturer need to attached)	Yes/No		
		Battery	5 Years comprehensive warranty	Yes/No		
13	Maintenance and Services	Please refer page no.49		Yes/No		
14	Data	Casters	Should have casters for easy movements and Should have lockable wheels	Yes/No		
		Product Brochures	Original manufacturer certified product brochure of the UPS & battery should be along with offer	Yes/No		
15	Manufacturer Authorization	Manufacturer Authorization letter for UPS System	Needed from UPS manufacturer as per attached format	Yes/No		
16	Certification	Manufacture - UPS	ISO 9001,ISO 14001,ISO 45001	Yes/No		
		Manufacture - Battery	ISO 9001,ISO 14001,ISO 45001, ISO 50001	Yes/No		
17	Bidders Qualification	Experience	05 Year Experience for quoted brand in Sri Lanka (Proof needed be attached)	Yes/No		
18	Scope of Work	The wiring for the input and output connectivity should be three phase compatible and shall be complied with international standards.		Yes/No		
		Feeder Cables				

Armoured copper feeder cables shall be used. Feeder cable for input current should be laid from existing building Power DB to the UPS DB with necessary PVC covering materials	Yes/No	
Feeder cable should be 16MM 4 Core Cable + 16mm Earth Cable (Approx 25M)	Yes/No	
UPS Power DB:		
UPS DB should be a four row 12 Way DB with :	Yes/No	
Neutral Bar	Yes/No	
Earth Bar	Yes/No	
1 x 63 A 4 Pole RCCB 100mA	Yes/No	
1 x 63 A 4 Pole MCB		
1 x 63 A 4 Pole MCB		
Internal Wiring & Panel Termination	Yes/No	
UPS input & Output Wiring		
UPS Input cable should be 16MM 4 Core Cable + 16mm Earth Cable (Approx 10M) laid from UPS DB to UPS with necessary Cable Conduits and accessories	Yes/No	
If cabling done by third-party vender under sub contract, full details of the subcontractor shall be submitted ,(company,staff details, qualifications, etc.....)	Yes/No	
Input Power cable from UPS DB to UPS must be terminated with necessary cable lugs and accessories	Yes/No	
UPS Output cable should be 16MM 4 Core Cable (Approx 10M) laid from UPS Output Terminals to UPS DB with necessary Cable Conduits and accessories	Yes/No	
UPS Output Power cable from UPS Output terminals to UPS DB must be terminated at UPS end with necessary Cable Lugs and accessories	Yes/No	
Installation and Configuration		

	Supply, Delivery and Installation of all UPS and accessories must be done by the bidder	Yes/No	
	Configuration fo SNMP Monitoring	Yes/No	
	Configuration fo Email Monitoring	Yes/No	
	Bidder must include all necessary components and accessories to ensure above scope is successfully completed	Yes/No	

Name of the BidderSignature

Company Stamp :.....

Date :.....

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TECHNICAL, FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

To be completed by the bidder and submitted with the documents.

SPECIFICATION FOR 15 KVA Online UPS

No	Item	Description	Minimum Technical Specification Required	Bidders Respons (Yes/No)	If "NO" Bidder's remark	Document Reference (Document and page no)
1	Make	Specify	(Specify here)			
2	Model	Specify	(Specify here)			
3	Country of Origin	Specify	(Specify here)			
4	Country of Manufacture	Specify	(Specify here)			
5	Input	Phase	3 Phase With Neutral	Yes/No		
		Nominal voltage [V]	390 - 410 VAC (3Ph+N) or Better	Yes/No		
		Input frequency	45-55/54-66Hz	Yes/No		
		Input Power Factor (kw/kva)	≥ 0.99	Yes/No		
		Current THD at full linear load (THDI%)*	$\leq 1.5\%$ @ 100% Linear Load or better	Yes/No		
		Input Supply Protection	Shall supply 63A input breaker or better	Yes/No		
		Converter technology	IGBT high frequency	Yes/No		
6	Output	Phase	3 Phase with Neutral	Yes/No		
		Nominal power [kVA]*	15	Yes/No		

		Nominal active power [kW]*	15	Yes/No		
		Output Power Factor*	1 (Unity)	Yes/No		
		Current THD at full non-linear load (THDI%)*	≤ 1.5 % @ 100% Non-Linear Load or better	Yes/No		
		Current THD at full linear load (THDI%)*	≤ 1% @ 100% Linear Load or better	Yes/No		
		Output frequency	At 50hz or 60Hz	Yes/No		
		Nominal voltage [V]	385-414 VAC (Ph-Ph) and 220-240 VAC (Ph+N) or Better	Yes/No		
		Nominal frequency [Hz]	50 Hz or 60Hz	Yes/No		
		Waveform	Pure Sine Wave	Yes/No		
		Static stability	± 0.5%	Yes/No		
		Overload	Load 103-110% last 60 Min, 111-125% last 10min, 126-150% 60S, 151-200% 0.5S	Yes/No		
		Current Crest Ratio	3:1 max	Yes/No		
		Transfer Time	Zero	Yes/No		
7	Efficiency	AC Mode	>90% or better	Yes/No		
		ECO Mode	>95% or better	Yes/No		
		Battery Mode	>90% or better	Yes/No		
8	Battery	Make/Brand* Model	Bidders may propose either batteries of the same brand as the UPS system or other branded batteries recommended by the UPS manufacturer. In all cases, the proposed batteries must be fully compatible with the supplied UPS hardware. If batteries are not from the same brand of UPS, a letter from the UPS manufacturer confirming the compatibility of the	Yes/No		

		proposed batteries with the UPS system must be attached to the bid			
			Yes/No		
	Battery Type	Valve Regulated Lead Acid (VRLA)	Yes/No		
	Battery Service	Sealed Maintenance Free	Yes/No		
	Backup time	Minimum 25 minutes @ per 60% load	Yes/No		
	Battery arrangement in the UPS	In built Batteries only			
	Battery Calculation	Manufacturer certified battery calculation need to be attached	Yes/No		
	Transfer Time	0 ms	Yes/No		
	Recharge Time	90% charge in 9 hrs	Yes/No		
	Charging Current	1A -6A adjustable	Yes/No		
	Battery Design Lifetime	10 years or higher (manufacturer confirmation should be attached)maximum Temperature 25 °C	Yes/No		
9	Remote Communication	Remote Monitoring	SNMP Connectivity	Yes/No	
		Supported Communication Protocols	SNMP /USB Port/RJ45 Connector/Ethernet network agent with TCP/IP protocol , HTTP and SNMP	Yes/No	
		Monitoring and Management (all components required should be supplied by supplier)	Intelligent self-diagnostics	Yes/No	
			Automatic battery test function	Yes/No	
			Monitor availability of Input power	Yes/No	
			Monitor availability of Output power	Yes/No	
10	Environment	Audible Alarm	Should have audible alarm for critical indications (Low Battery, Inverter Overload etc...)	Yes/No	
		Display Pannel	Touch vertical screen graphic display / Should have LCD for display the status and warnings	Yes/No	

		Caster	Should have caster for easy movements and Should have lockable wheels	Yes/No		
		Weight	(Specify)	Yes/No		
		Dimensions	(Specify)	Yes/No		
		Standards Compliances	EN 60240 Accreditation or better	Yes/No		
11	Confirmation of Availability of Spare Parts	Spare availability	All the models quoted in the Bid shall have a spare parts availability for minimum 10 years (shall not be discontinued) from the date of Bid opening. Letter from Manufacturer confirming this must be submitted	Yes/No		
12	Warranty	UPS Unit	5 Years comprehensive warranty from the Manufacture (Letter from manufacturer need to attached)	Yes/No		
		Battery	5 Years comprehensive warranty	Yes/No		
13	Maintenance and Services	Please refer page no.49		Yes/No		
14	Data	Castors	Should have casters for easy movements and Should have lockable wheels	Yes/No		
		Product Brochures	Original manufacturer certified product brochure of the UPS & battery should be along with offer	Yes/No		
15	Manufacturer Authorization	Manufacturer Authorization letter for UPS System	Needed from UPS manufacturer as per attached format	Yes/No		
16	Certification	Manufacture - UPS	ISO 9001,ISO 14001,ISO 45001	Yes/No		
		Manufacture - Battery	ISO 9001,ISO 14001, ISO 45001, ISO 50001	Yes/No		
17	Bidders Qualification	Experience	05 Year Experience for quoted brand in Sri Lanka (Proof needed be attached)	Yes/No		
18	Scope of Work	The wiring for the input and output connectivity should be three phase compatible and shall be complied with international standards.		Yes/No		
		Feeder Cables				

	Armoured copper feeder cables shall be used.			
	Feeder cable for input current should be laid from existing building Power DB to the UPS DB with necessary PVC covering materials	Yes/No		
	Feeder cable should be 16MM 4 Core Cable + 16mm Earth Cable (Approx 25M)	Yes/No		
UPS Power DB:				
	UPS DB should be a four row 12 Way DB with :	Yes/No		
	Neutral Bar	Yes/No		
	Earth Bar	Yes/No		
	1 x 63 A 4 Pole RCCB 100mA	Yes/No		
	1 x 63 A 4 Pole MCB			
	1 x 63 A 4 Pole MCB			
	Internal Wiring & Panel Termination	Yes/No		
UPS input & Output Wiring				
	UPS Input cable should be 16MM 4 Core Cable + 16mm Earth Cable (Approx 10M) laid from UPS DB to UPS with necessary Cable Conduits and accessories	Yes/No		
	If cabling done by third-party vender under sub contract, full details of the subcontractor shall be submitted ,(company,staff details, qualifications, etc.....)	Yes/No		
	Input Power cable from UPS DB to UPS must be terminated with necessary cable lugs and accessories	Yes/No		
	UPS Output cable should be 16MM 4 Core Cable (Approx 10M) laid from UPS Output Terminals to UPS DB with necessary Cable Conduits and	Yes/No		

	accessories			
	UPS Output Power cable from UPS Output terminals to UPS DB must be terminated at UPS end with necessary Cable Lugs and accessories	Yes/No		
	Installation and Configuration			
	Supply, Delivery and Installation of all UPS and accessories must be done by the bidder	Yes/No		
	Configuration fo SNMP Monitoring	Yes/No		
	Configuration fo Email Monitoring	Yes/No		
Bidder must include all necessary components and accessories to ensure above scope is successfully completed	Yes/No			

Name of the Bidder

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Signature

Company Stamp

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Date :.....

TECHNICAL, FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

To be completed by the bidder and submitted with the documents.

SPECIFICATION FOR 6 KVA Online UPS

No	Item	Description	Minimum Technical Specification Required	Bidders Respons (Yes/No)	Bidders remark
1	Make	Specify	(Specify here)		
2	Model	Specify	(Specify here)		
3	Country of Origin	Specify	(Specify here)		
4	Country of Manufacture	Specify	(Specify here)		
5	Input	Nominal voltage [V]	220-230-240	Yes/No	
		Input / Supply	184- 276	Yes/No	
		Input frequency	45-55/54-66Hz	Yes/No	
		Input Power Factor (kw/kva)	≥ 0.98 @100% load	Yes/No	
		Protection	Shall supply 40A input breaker or better	Yes/No	
		Converter technology	IGBT high frequency	Yes/No	
6	Output	Phase	1 Phase with Neutral	Yes/No	
		Nominal power [kVA]*	6	Yes/No	
		Nominal active power [kW]*	6	Yes/No	
		Output Power Factor*	1 (Unity)	Yes/No	
		Current THD at full Non-linear	<3% THD or Less		

		load (THDI%)*			
		Current THD at full linear load (THDI%)*	<1% THD or Less		
		Output frequency	At 50hz or 60Hz	Yes/No	
		Nominal voltage [V]	220-230-240	Yes/No	
		Nominal frequency [Hz]	50 / 60Hz	Yes/No	
		Waveform	Pure Sine Wave	Yes/No	
		Overload	Load 105-110%: last 10min, 110-130%: last 1min, 130-150%: last 200ms, ≥150% change to bypass immediately	Yes/No	
		Current Crest Ratio	3:1	Yes/No	
		Transfer Time	Zero	Yes/No	
7	Efficiency	AC Mode	>90% or better	Yes/No	
		ECO Mode	>95% or better	Yes/No	
		Battery Mode	>90% or better	Yes/No	
8	Battery	Make/Brand* Model	Bidders may propose either batteries of the same brand as the UPS system or other branded batteries recommended by the UPS manufacturer. In all cases, the proposed batteries must be fully compatible with the supplied UPS hardware. If batteries are not from the same brand of UPS, a letter from the UPS manufacturer confirming the compatibility of the proposed batteries with the UPS system must be attached to the bid	Yes/No	
		Battery Type	Valve Regulated Lead Acid (VRLA)	Yes/No	

		Battery Service	Sealed Maintenance Free		
		Backup time	Minimum 20 minutes @ per 60% load or Better	Yes/No	
		Battery Cut Off voltage	1.75V/cellmaximum Temperature 25 °C	Yes/No	
		Battery Calculation	Manufacturer certified battery calculation need to be attached	Yes/No	
		Battery bank	External Battery should keep in the same footage as UPS	Yes/No	
		Transfer Time	0 ms	Yes/No	
		Recharge Time	90% charge in 4 hrs or better	Yes/No	
		Charging Current	1A - 4A	Yes/No	
		Battery Design Lifetime	10 years or higher (manufacturer confirmation should be attached)	Yes/No	
9	Remote Communication	Remote Monitoring	SNMP Connectivity	Yes/No	
		Supported Communication Protocols	SNMP /USB Port/RJ45 Connector/Ethernet network agent with TCP/IP protocol , HTTP and SNMP	Yes/No	
		Monitoring and Management (all components required should be supplied by supplier)	Intelligent self-diagnostics	Yes/No	
			Automatic battery test function	Yes/No	
			Monitor availability of Input power	Yes/No	
Monitor availability of Output power	Yes/No				
10	Environment	Audible Alarm	Should have audible alarm for critical indications (Low Battery, Inverter Overload etc...)	Yes/No	
		Display Pannel	Should have LCD for display the status and warnings	Yes/No	
		Weight	(Specify here)		
		Dimensions	(Specify here)	Yes/No	

		Standards Compliances	EN 60240 Accreditation or better	Yes/No	
	Confirmation of Availability of Spare Parts	Spare availability	All the models quoted in the Bid shall have a spare parts availability for minimum 10 years (shall not be discontinued) from the date of Bid opening. Letter from Manufacturer confirming this must be submitted	Yes/No	
11	Warranty	UPS Unit	5 Years comprehensive warranty from the Manufacture (Letter from manufacturer need to attached)	Yes/No	
		Battery	5 Years comprehensive warranty	Yes/No	
12	Maintenance and Services	Please refer page no.49		Yes/No	
13	Data	Product Brochures	Original manufacturer certified product brochure of the UPS & battery should be along with offer	Yes/No	
14	Manufacturer Authorization	Manufacturer Authorization letter for UPS System	Needed from UPS manufacturer as per attached format	Yes/No	
15	Certification	Manufacture - UPS	ISO 9001,ISO 14001,ISO 45001	Yes/No	
		Manufacture - Battery	ISO 9001, ISO 14001, ISO 45001, ISO 50001	Yes/No	
16	Bidders Qualification	Experience	05 Year Experience for quoted brand in Sri Lanka (Proof needed be attached)	Yes/No	
17	Scope of work		The wiring for the input and output connectivity should be single phase compatible and shall be complied with international standards.	Yes/No	
			Feeder Cables		
			Armoured copper feeder cables shall be used. Feeder cable for input current should be laid from existing building Power DB to the UPS DB with necessary PVC covering materials	Yes/No	
			Feeder cable should be 6MM 2 Core Cable + 4mm Earth Cable (Approx 20M)	Yes/No	

UPS Power DB:		
UPS DB should be a single row 12 Way DB with :	Yes/No	
Neutral Bar	Yes/No	
Earth Bar	Yes/No	
1 x 40 A 2 Pole RCCB 100mA	Yes/No	
2 x 40 A 2 Pole MCB	Yes/No	
Internal Wiring & Panel Termination	Yes/No	
UPS input & Output Wiring		
UPS Input cable should be 6MM 2 Core Cable + 4mm Earth Cable (Approx 10M) laid from UPS DB to UPS with necessary Cable Conduits and accessories	Yes/No	
If cabling done by third-party vender under sub contract, full details of the sub contractor shall be submitted ,(company, staff details, qualifications, etc.....)	Yes/No	
Input Power cable from UPS DB to UPS must be terminated with necessary cable lugs and accessories	Yes/No	
UPS Output cable should be 6MM 2 Core Cable (Approx 10M) laid from UPS Output Terminals to UPS DB with necessary Cable Conduits and accessories	Yes/No	
UPS Output Power cable from UPS Output terminals to UPS DB must be terminated at UPS end with necessary Cable Lugs and accessories	Yes/No	
Installation and Configuration		
Supply, Delivery and Installation of all UPS and	Yes/No	

		accessories must be done by the bidder		
		Configuration fo SNMP Monitoring	Yes/No	
		Configuration fo Email Monitoring	Yes/No	
		Bidder must include all necessary components and accessories to ensure above scope is successfully completed	Yes/No	

Name of the Bidder

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Signature

Company Stamp

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Date :

DRAFT