

**Civil Aviation Regulatory commission (CARC) wants to purchase
Single-Phase Uninterruptable Power Supply (UPS) with the
following Technical Specifications:**

1. General requirements:

- Supplier shall **supply only** the following single-phase UPS systems to Amman Civil Airport:

Location	QTY	Capacity	1ph/1ph
Amman Civil Airport	8	6KVA	Single phase
Amman Civil Airport	9	3KVA	Single phase

- UPS systems shall operate as an active power control system, working in conjunction with the building electrical system to provide power conditioning and on-line power protection for the critical loads.
- UPS shall be online double conversion type.
- UPS shall contain a maintenance bypass switch and a display.
- UPS units shall have a battery self-test feature.
- All UPS systems shall comply with international standards IEC/EN 62040-1, IEC/EN 62040-2, IEC/EN 62040-3, EN 62040-4.
- Supplier should hold a high-quality maintenance and operation technical training course, the training shall cover but not restricted to: UPS theory, location of subassemblies, safety, battery considerations, maintenance troubleshooting, UPS operation and repair of the UPS system.
- Supplier shall provide syllabus for internal training, detailing training courses.
- After successful completion of the training course, the manufacturer shall issue official training certificates to the participants.
- Two separate offers (technical and financial includes sales tax) should be submitted.
- Battery calculation shall be attached within the technical offer.

2. Specification compliance sheet of UPS (≥6KVA):

General			Comply (Yes / No)	Comments
1	UPS Capacity	≥ 6 KVA		
2	Input / Output connection	1ph/1ph		
3	Type Topologies	True online double conversion technology		
4	Efficiency in double conversion mode	≥ Up to 93% in Online mode, 97% in ECO mode		
5	Architecture	Tower		
6	Inverter / rectifier topology	Transformer – free, IGBT with PWM		
7	Brand	Well-known brand, West Europe		
8	Control Switch (MCB/Fuse/Isolator)	• Input ON/OFF • Output ON/OFF • Battery • Maintenance Bypass Switch		
9	Protections	UPS shall trip on following faults: - Input AC Under/Over voltage - Output overload / Short circuit - DC Under/Over voltage - High temperature		
Input				
10	Rated voltage	220-240 VAC		
11	Frequency	50 HZ		
12	Input Frequency Range	45Hz-66Hz,		
13	Power factor	> 0.99 at full load		
Output				
14	Nominal voltage	220VAC with additional selectable range not exceed 240VAC		
15	Voltage Regulation	±2%		
16	Frequency	50 HZ		
17	Power factor	≥ 0.9		
18	(THDU%)	<3%		
19	Overload capability / Inverter	125% 1 minute; 150% 10 seconds		
20	Low harmonic	< 3%		

	distortion of the output With nonlinear loads			
21	Low harmonic distortion of the output with linear loads.	<1%		
Battery				
22	Type	Maintenance-free VRLA batteries (AGM)		
23	Soft start capability	Yes		
24	Backup time	(QTY = 4 UPS) 6-8 min. @ full load		
		(QTY = 4 UPS) 6-8 min. @ 50% load		
25	Date of production	≤ 6 Months		
26	Lifetime	≥ 5 years		
27	Battery Technology	Battery Management Technology		
28	Battery test	Automatic battery test		
Connectivity and function extensions				
29	Front panel	Graphical LCD		
30	SNMP Card	QTY = 2 SNMP Card. For Remote Monitoring		
Indications & Alarms				
31	Alarms (Audible for Trouble/fault)	- Mains fail - Charger fail - DC Under/Over voltage - Battery low/ discharging - Output overload - High temperature.		
Metering				
32	LCD Display	- Input/Mains voltage - Ups output voltage - UPS output current - Battery voltage - Charging/ discharging current.		
Environmental				
33	Operating temperature range	0 °C to 40 °C		
34	Audible noise at (1) meter	≤ 55 (dBA) at normal mode		
Standards and certifications				

35	Safety	IEC/EN 62040-1 / EN50091-1-1		
36	Electromagnetic compatibility (EMC)	IEC/EN 62040-2 / EN50091-2		
37	Approvals	CE, CB report (TUV)		
38	Performances and testing rules	IEC/EN 62040-3 / EN50091-3		
39	Environmental aspects	EN 62040-4		
40	WARRANTY	Two years		
41	The supplier should be a certified service center (provide the certificates)			
42	The supplier should have a trained engineer on the same UPS (provide the certificates)			
43	The supplier should be distributor for the UPS Brand in Jordan (provide the certificates)			
44	The supplier should Provide a List of References in Jordan (related to the offered UPS installation)			

3. Specification compliance sheet of (≥ 3 KVA) UPS:

General			Comply (Yes / No)	Comments
1	UPS Capacity	≥ 3 KVA		
2	Input / Output connection	1ph/1ph		
3	Type Topologies	True online double conversion technology		
4	Efficiency in double conversion mode	$\geq$ Up to 93% in Online mode, 97% in ECO mode		
5	Architecture	Tower		
6	Inverter / rectifier topology	Transformer – free, IGBT with PWM		
7	Brand	Well-known brand, West Europe		
8	Control Switch (MCB/Fuse/Isolator)	• Input ON/OFF • Output ON/OFF • Battery • Maintenance Bypass Switch		
9	Protections	UPS shall trip on following faults: - Input AC Under/Over voltage - Output overload / Short circuit - DC Under/Over voltage - High temperature		
Input				
10	Rated voltage	220-240 VAC		
11	Frequency	50 HZ		
12	Input Frequency Range	45Hz-66Hz,		
13	Power factor	> 0.99 at full load		
Output				
14	Nominal voltage	220VAC with additional selectable range not exceed 240VAC		
15	Voltage Regulation	$\pm 2\%$		
16	Frequency	50 HZ		
17	Power factor	≥ 0.9		
18	(THDU%)	$< 3\%$		
19	Overload capability / Inverter	125% 1 minute; 150% 10 seconds		
20	Low harmonic	$< 3\%$		

	distortion of the output With nonlinear loads			
21	Low harmonic distortion of the output with linear loads.	<1%		
Battery				
22	Type	Maintenance-free VRLA batteries (AGM)		
23	Soft start capability	Yes		
24	Backup time	QTY = 7 UPS 6-8 min. @ 50% load		
		QTY = 2 UPS @ full load		
25	Date of production	≤ 6 Months		
26	Lifetime	≥ 5 years		
27	Battery Technology	Battery Management Technology		
28	Battery test	Automatic battery test		
Connectivity and function extensions				
29	Front panel	Graphical LCD		
Indications & Alarms				
30	Alarms (Audible for Trouble/fault)	- Mains fail - Charger fail - DC Under/Over voltage - Battery low/ discharging - Output overload - High temperature.		
Metering				
31	LCD Display	- Input/Mains voltage - Ups output voltage - UPS output current - Battery voltage - Charging/ discharging current.		
Environmental				
32	Operating temperature range	0 °C to 40 °C		
34	Audible noise at (1) meter	≤ 55 (dBA) at normal mode		
Standards and certifications				
35	Safety	IEC/EN 62040-1 / EN50091-1-1		
36	Electromagnetic	IEC/EN 62040-2 / EN50091-2		

	compatibility (EMC)			
37	Approvals	CE, CB report (TUV)		
38	Performances and testing rules	IEC/EN 62040-3 / EN50091-3		
39	Environmental aspects	EN 62040-4		
40	WARRANTY	Two years		
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