

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATA SHEETS FOR UPS							شماره صفحه ۱ از ۹	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	EL	DT	0001	D03	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR UPS

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	Client Approval
D03	May.2023	AFC	H.Shakiba	M.Fakharian	A.M.Mohseni	
D02	Jul.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D01	Apr.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D00	Dec.2021	IFC	H.Shakiba	M.Fakharian	M.Mehrshad	

Class: 1

Client Doc. Number: F0Z-709018

Status:

IDC: Inter-Discipline Check
 IFC: Issued For Comment
 IFA: Issued For Approval
 AFD: Approved For Design
 AFC: Approved For Construction
 AFP: Approved For Purchase
 AFQ: Approved For Quotation
 IFI: Issued For Information
 AB-R: As-Built for Client Review
 AB-A: As-Built –Approved

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATA SHEETS FOR UPS <table border="1"> <tr> <td>پروژه</td> <td>بسته کاری</td> <td>صادر کننده</td> <td>تسهیلات</td> <td>رشته</td> <td>نوع مدرک</td> <td>سریال</td> <td>نسخه</td> </tr> <tr> <td>BK</td> <td>GCS</td> <td>PEDCO</td> <td>120</td> <td>EL</td> <td>DT</td> <td>0001</td> <td>D03</td> </tr> </table>	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	GCS	PEDCO	120	EL	DT	0001	D03	شماره صفحه: ۲ از ۹
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BK	GCS	PEDCO	120	EL	DT	0001	D03											

REVISION RECORD SHEET

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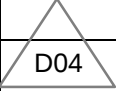
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	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
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	BK	GCS	PEDCO	120	EL	DT	0001	D03	

TECHNICAL DATA FOR AC-UPS IN GCS		
Vendor's Name:	Location	Binak Oilfield in Bushehr Province
Tag No.(s): GCS-110-UPS-001, GCS-110-UPS-002	Min. Design Temperature	-5°C
App. Document(s):	Max. Design Temperature	+52°C
Reference Documents: 01- " Electrical System Design Criteria ", Doc. No.: " BK-GNRAL-PEDCO-000-EL-DC-0001 " 02- "Specification for UPS System", Doc. No.: " BK-GNRAL-PEDCO-000-EL-SP-0003 " 03- " Calculation Note For UPS System Doc. No.: " BK-GCS-PEDCO-120-EL-CN-0004 " 04- " UPS Single Line Diagram ", Doc. No.: " BK-GCS-PEDCO-120-EL-SL-0005 "	Max. Sun Temperature	+85°C
	Max. Relative Humidity	85%
	Mean Sea Level	12.5 m Above Sea Level
	Seismic Acceleration	0.3g
	Hazardous Area classification	Safe Area
	Atmosphere	Tropical & Dusty Hot Atmosphere

Item	Description	Required	Vendor Data
GENERAL			
1	Applicable Code & Standard	IEC 62040,IPS-M-EL-176(2),IPS-E-EL-100(1)	
2	Electromagnetic Compatibility	As per IEC 62040-2	
3	Service	110 VAC UPS Control Room requirements	
4	Installation	Indoor	D04
5	Rated Input (Note 2)	380/400/440VAC±10%, 3 phases, 3 wires , f=50Hz ±5%	
6	Rated Output	110 VAC ± 1%	
7	Rated Power	40 kVA	
8	Country of Origin	By Vendor	
9	Cold Start Facility	Required	
10	No. of UPS	Double (Note 1)	
MECHANICAL CHARACTERISTIC			
11	Noise Level (in accordance with ISO7779) The Sound Pressure Level Measured at 1m Distance From the UPS	60dBA	
12	Permissive Max. Temp. Rise	By Vendor	
13	Enclosure Construction	Sheet Steel with min. Thickness 2mm	
14	Degree of Protection (IEC 60529)	IP42	

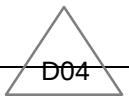
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Item	Description	Required	Vendor Data
15	Type of Cooling	Natural	
16	Dimension	By Vendor	
17	Weight	By Vendor	
18	Panel mounting	Floor Mounted	
19	Access	Front Access	
20	MTBF (at 20°C (68°F))	≥140,000Hr	
21	MTTR	≤ 2Hr	
22	Finish Color	RAL 7032	
LOAD CHARACTERISTICS			
23	Load Consumption	40KVA	
24	Load Description	Instrument, PLC, DCS, Work Stations, Printers	
25	Rated Current	By Vendor	
26	Power Factor Range	0.8-1 lag	
27	Grounding System	IT	
AC INPUT			
28	Voltage & Variation	400 V ±10%, 3 phase 4 wire (Note 2)	
29	Frequency & Variation	50Hz ± 5%	
30	Grounding System	IT	
31	Short Circuit Current on System	16 kA, 1Sec	
32	Short Circuit Capability	By Vendor	
33	Rated Input Current	By Vendor	
34	THDi for Input Current	< 5%	
35	Input Power Factor (La g)	> 0.85	
CHARGER			
36	Rated Current (A)	By Vendor	
37	Rated Input Voltage	400 V + 15%, - 20%, 3 phase 4 wire	
38	Rated Output Voltage	110 V AC Shall be finalized by Vendor	
39	No. Of Charger	2 Set (100%)	

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Item	Description	Required	Vendor Data
40	Type of Rectifier	Constant Voltage Current Limiting Static Type Thyristor-Controlled Rectifier (12pulses)	
41	Voltage Ripple (rms)	$\pm 1\%$ of Nominal Voltage	
42	Voltage Regulation	$\pm 1\%$	
43	Voltage Drop (Charger Load)	By Vendor	
44	Voltage Drop (Battery Charger)	By Vendor	
45	Allowable Voltage Range	By Vendor	
46	Normal Float Charge Voltage	By Vendor	
47	Max Boost Charge Voltage	By Vendor	
48	Efficiency	$\geq 90\%$	
49	Maximum Heat Dissipation	By Vendor	
BATTERY			
50	Type of Batteries (IEC60623)	Nickel-Cadmium (SBM type)	
51	Capacity of battery bank (Ah)	1220 AH (Shall be finalized by Vendor)	D04
52	Backup Time	2hr	
53	Country of Origin/Company	Europe/SAFT or ALCAD	
54	Date of Manufacture	By Vendor	
55	Battery Internal Resistance	By Vendor	
56	No's Of Battery Cells For Each Bank	92 (Shall be finalized by Vendor)	
57	Battery House	Rack	
58	Type of Battery Rack/Cabinet	Wooden or Plastic /Epoxy Coated Steel Anti-Seismic	
59	No's. Of Battery Bank (100%)	2 Set	
60	Re-charging time to 90% Rated Capacity	8 Hours	
61	Battery Nominal Voltage Per Cell	1.2V	
62	Battery Final Voltage Per Cell	1.136 V/cell	
INVERTER			
63	Power Rating	40 kVA (Will be Finalized by Vendor)	D04
64	Output Voltage	110VAC	

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	BK	GCS	PEDCO	120	EL	DT	0001	D03	

Item	Description	Required	Vendor Data
65	Output Voltage Regulation	$\pm 1\%$ in Steady State	
66	Output Voltage Unbalance (At 100% Unbalanced Load)	$< 1\%$	
67	Output Frequency & Variation	50Hz $\pm 1\%$	
68	Output Frequency Regulation	$\pm 1\%$ in steady state	
69	Maximum V _{Out} Harmonic Distortions (THD %)	Max. 5% (for Linear & Nonlinear Loads)	
70	Rated Output Current (Amp)	By Vendor	
71	No. of Inverter (100%)	2 Set	
72	Type Of Inverter	True Online Double Conversion Technology pure Sine Wave IGBT Technology	
73	Transformer Base Technology	Required	
74	Fast Fuse Protection For IGBT Bridge	Required	
75	Max .Allowable Current	By Vendor	
76	Efficiency (Min)	$> 90\%$	
77	Maximum Heat Dissipation	By Vendor	
78	Type of Frequency Synchronizer	By Vendor	
79	High Crest Factor	Min 3:1	
BYPASS ISOLATING TRANSFORMER			
80	Type of Transformer	Double Wound Dry Type Air Cooled	
81	Input / Output Voltage	Input: 400 V Output: 110 V ac, 50 Hz	
82	Bypass Transformer KVA Rating	40 kVA	
83	Short Circuit Impedance	Less than 4%	
84	Stabilizer (Servo Control With Galvanic Isolation)	Required	
85	Stabilizer Short Circuit Capacity	At Least 1000% for 100ms	
86	Stabilizer Static Output Voltage Tolerance	Less than + 2% with V Mains +15%	
87	Stabilizer Short Circuit Impedance	Less Than 6%	
88	Stabilizer Phase Shift From Input to Output	Zero	
INVERTER/MAINS STATIC SWITCH			
89	Inverter Static Switch Type	Thyristor (S.R.V)	

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Item	Description	Required	Vendor Data
90	Inverter Static Switch Rated Current (Continuous)	$\geq 105\%$ of Rated Output Current of UPS	
91	Inverter Over Load Capability on Static Switch	$>200\%$ For 100ms $>150\%$ For 1Min $>125\%$ For 10Min	
92	Transfer the Inverter Output Voltage	Below 90% of the Nominal Output Voltage Exceeds 110% of the Nominal Output Voltage	
93	Re-transfer of the Load From the Static Bypass to the Inverter	The inverter output voltage is within $\pm 5\%$ of the nominal output voltage for more than 3 seconds.	
94	Inverter/Mains Switching Transfer Time	1/5 Period Of a Cycle	
95	Mains Static Switch Type	Thyristor (S.C.R)	
96	Mains Static Switch Rated Current (Continuous)	200% of Rated Output Current of UPS	
97	Mains Over Load Capability on Static Switch	$>200\%$ For 100ms $>150\%$ For 1Min $>125\%$ For 10Min	
98	Requirements for EMC (IEC 62040-2)	Required	
99	An earth bar, with a suitable number of earthing bolts or screws	Required	
MANUAL BYPASS SWITCH			
100	Rated Current	110% Rated Output Current of UPS System	
101	Maintenance Bypass (Make Before Beak)	Required	
102	Over Load Capability	$> 1000\%$ For 100ms	
103	Allowable Over Current (1 Sec)	By Vendor	
AC DISTRIBUTION BOARD			
104	Protection Degree	IP42	
105	Feeder Quantity	According to "BK-GCS-PEDCO-120-EL-SL-0005"	
106	Incoming Type (IEC 60947)	MCCB, (Shall be finalized by vendor)	
ACCESSORIES & PROTECTION			
107	Incoming Cable	According to "BK-GCS-PEDCO-120-EL-CN-0003"	
108	Cable Type	CU/XLPE/SWA/PVC	
109	Earth Bar	Required	
110	Cable Entry and Accessories	Required	

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Item	Description	Required	Vendor Data
111	Current Limiting Device Setting	Required	
ALARMS			
112	AC input supply failure	Required	
113	Rectifier failure	Required	
114	DC voltage low/high	Required	
115	DC earth fault	Required	
116	Battery discharging	Required	
117	Battery disconnected	Required	
118	Inverter failure	Required	
119	Inverter over loaded	Required	
120	Inverter over temperature	Required	
121	AC output voltage low/high	Required	
122	Output frequency low/high	Required	
123	Ventilation failure & high temp	Required	
METERING DEVICE			
124	DC/AC Ammeter	Required	
125	DC/AC Voltmeter	Required	
126	Bypass/inverter/Load Frequency Meter	Required	
127	Remote Signals	Required	
128	Serial Communication Capability	RS 485	
129	Fixing Bolt & nuts	Required	
130	Lifting lug	Required	
131	On load break switch-fuse For Batteries	Required (For UPS DC Bus and Exd Type for Battery room)	
TESTS (FAT & SAT SHALL BE PERFORMED BY THE VENDOR)			
132	Visual Inspection & Dimensional Check	Required	
133	Performance and Function Test	Required	
134	Sequence, Operation and Logic Test	Required	
135	Dielectric Strength Test	Required	

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Item	Description	Required	Vendor Data
136	Output Voltage Wave Form and THD% Check	Required	
137	Charger Voltage Adjustment Test	Required	
138	Transfer Time Test	Required	
139	Output Regulation / Adjustments Test	Required	
140	Alarms Check	Required	
141	Autonomy Test	Required	
142	Overload /Short Circuit Test	Required	
143	Short Circuit test	Required	
Notes: - Other Tests shall be performed in Accordance with IEC60146 & IEC62040-3 - The Accuracy of all meters shall be better than 1.5%			
ACCESSORIES & SPECIAL TOOLS			
144	MIMIC Diagram With LED To Show Operation Condition	Required	
145	Hardware and Software for Communication Programming or Setting the CPU or MPU	Required	
146	Automatic battery test and failure alarm	Required	
147	Hot and Cold standby unlimited systems	Required	
148	IGBT technology	Required	
149	Low noise and heat rejection	Required	
150	Commissioning and two years spare parts	Required	

Notes:

- AC UPS should be of dual parallel active load share type, including 2x 100% charger, 2x 100% Inverter, 1x 100% bypass transformer-stabilizer (servo control with galvanic isolation), two Exd IIC T3 switch-fuse for batteries, 2x 100% battery bank (92 Cell), commissioning and two years spare parts.
- UPS shall be compatible with 380/400/440V AC options of input voltage.
- The UPS shall be provided with a standard RS485 connection facility. Where specified by the Principal, it shall be also possible to connect the UPS, via either a RS485 or fiber optic link to a DCS or SCADA system for selected analogue and digital data to be made available to a higher-level controller. The communication shall function utilizing standard MODBUS protocol (master/slave).
 - SNMP: Interface for remote monitoring and control via PC
 - PBM: Progress Battery Management (PBM) with temperature compensation
 - APM: Advanced Power Management (APM) - automated auto start of systems connected as a single system (APM) with an increase in load. Any combination of parallel, hot or cold standby
 - EPO: Emergency power off