

 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 CAPACITOR BANK							شماره صفحه: ۱ از ۹
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	PEDCO	120	EL	DT	0007	D02

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR CAPACITOR BANK

نگهداشت و افزایش تولید میدان نفتی بینک

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

Class:1

Client Doc. Number: F0Z-709024

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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REVISION RECORD SHEET

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4	X	X	X		
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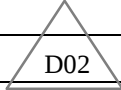
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	BK	GCS	PEDCO	120	EL	DT	0007		D02

DATA SHEETS FOR MV CAPACITOR BANK OF GAS COMPRESSOR

Item	Description	Purchaser Requirement	Manufacturer Data
1- General Information			
1.1	Quantity	1 Set for Each Gas Compressor (Note 1)	
1.2	Tag Numbers	CB01~ CB03	
1.3	Applicable Standards	IEC 60831 IPS-M-EL-181(2) IPS-M-EL-144(4)	
1.4	Manufacturer's Name	By Vendor	
2- Environmental Conditions			
2.1	Location	Binak Oilfield in Busheher Province	
2.2	Hazardous Area Classification	Safe	
2.3	Max. Outdoor Ambient Temperature	52°C	
2.4	Minimum Indoor Ambient Temp.	5°C	
2.5	Maximum Indoor Relative Humidity	100%	
2.6	Altitude (Above Sea Level)	12.5 m	
2.7	Seismic Factor	Zone 3	
2.8	Installation	Indoor	
3- Electrical Data			
3.1	System Voltage	11KV AC ±10%	
3.2	System Frequency	50 Hz ±5%	
3.3	No. of Phases	3	
3.4	Control Voltage	230 VAC	
3.5	Space Heater Voltage	230 VAC	
3.6	Bus-Bar Rated Current	630A	
3.7	Short Time Withstand Current	25 kA, 1 Sec.	
3.8	Bus-Bars Material	Heat Shrink Copper	
3.9	Bus-Bars Joints	Silver Plated	
4- Enclosure Data			
4.1	Enclosure Type	Cabinet Mounted Capacitor	
4.2	Degree of Protection	IP 42	
4.3	Cable Entry	Bottom (by Cable Gland)	
4.4	Type & Size of Power Cable	According to "BK-GCS-PEDCO- 120-EL-CN-0003" (3C×95 mm ² CU/XLPE/SWA/PVC)	

 NISOC	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	0007	D02	

DATA SHEETS FOR MV CAPACITOR BANK OF GAS COMPRESSOR			
Item	Description	Purchaser Requirement	Manufacturer Data
4.5	Control Cable	2×(5C×2.5 mm2) for Current & Voltage Sample	
4.6	Material	Painted Sheet Steel	
4.7	Color	RAL 7032	
4.8	Dimensions (HxWxD)	By Vendor	
4.9	Sheet Steel Thickness (Body/Frame)	2mm/2.5mm	
4.10	Weight	By Vendor	
5- Capacitors			
5.1	Capacitor Manufacturer/Model No.	By Vendor	
5.2	Rating of Each Capacitor Bank	360 KVAR	
5.3	Capacitor Bank Rated Current	By Vendor	
5.4	Capacitor Bank Rated Voltage	12 KV	
5.5	Capacitor Bank Connection Type	Star	
5.6	Capacitor Bank Rated Capacitance (μF)	By Vendor	
5.7	Capacitance Variation (μF/°C)	By Vendor	
5.8	Capacitor Unit Rated Voltage	By Vendor	
5.9	Capacitor Unit Temp. Category	-5/D	
5.10	Capacitor Unit Insulating medium	By Vendor	
5.11	Capacitor Unit Electrode Material	By Vendor	
5.12	Capacitor Unit Dielectric Material	By Vendor	
5.13	Capacitor Unit Case Material	Aluminum	
5.14	Capacitor Unit Discharge Resistor (Ω)	By Vendor	
5.15	Capacitor Unit Discharge time (to 75V)	<10 Minutes	
6- Control Unit (Regulator)			
6.1	Manufacturer / Type	By Vendor	
6.2	Mode of Operation	Automatic & Manual	
6.3	Number of Steps	By Vendor	
6.4	Selector Switch	Auto/Off/Manual Selector Switch For Each Step	
7- Fuses			
7.1	Manufacturer / type	By Vendor	
7.2	Rated Voltage	11 KV	
7.3	Service Voltage	11 KV±10%	
7.4	Rated Frequency	50Hz±5%	

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	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	EL	DT	0007	D02	

DATA SHEETS FOR MV CAPACITOR BANK OF GAS COMPRESSOR			
Item	Description	Purchaser Requirement	Manufacturer Data
8- Contactors			
8.1	Manufacturer / Type	By Vendor	
8.2	Rated Voltage	12 KV AC	
8.3	Service Voltage	11 KV AC	
9- Incoming Circuit Breaker			
9.1	Manufacturer / Type	By Vendor	
9.2	Type	VCS & HRC Fuse, Fixed Type	
9.3	Rated Current	630A	
9.4	Rated Short Circuit Breaking Current	25 KA	
9.5	Rated Insulation Voltage	12 KV AC	
9.6	Service Voltage	11 KV	
9.7	Internal Protections	49, 50, 51	
9.8	Voltage Protection	110 DC	
9.9	Trip and Status aux. switches	Yes	
10- Voltmeter with Selector Switch			
10.1	Manufacturer / Type	By Vendor	
10.2	Operating Range	0 -12 KV	
10.3	Accuracy Class	1.5	
11- Accessories			
11.1	Panel Lighting & Space Heater with Thermostat	Yes	
11.2	Door Key	Yes	
11.3	Gland Plate	Yes	
11.4	Terminal Lugs	Yes	
11.5	Commissioning spare parts	Yes	
11.6	Two year operation spare parts	Yes	
11.7	Routine test	Witnessed and Report	
11.8	Type test certificate	Certificate	

Note 1: According to “Existent MV Switchgear Expansion Single Line Diagram (BK-GCS-PEDCO-120-EL-SL-0003)”, there is one individual capacitor bank on each of 3 gas compressors.

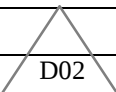
 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
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	BK	GCS	PEDCO	120	EL	DT	0007	D02	

DATA SHEETS FOR LV CAPACITOR BANK OF GCS-400-NSWG			
Item	Description	Purchaser Requirement	Manufacturer Data
1- General Information			
1.1	Quantity	1 Set for Each LV Switchgear (Note 2)	
1.2	Tag Numbers	CB01 & CB02	
1.3	Applicable Standards	IEC 60831 IPS-M-EL-181(2) IPS-M-EL-143(3)	
1.4	Manufacturer's Name	By Vendor	
2- Environmental Conditions			
2.1	Location	Binak Oilfield in Busheher Province	
2.2	Hazardous Area Classification	Safe	
2.3	Max. Outdoor Ambient Temperature	52°C	
2.4	Minimum Indoor Ambient Temp.	5°C	
2.5	Maximum Indoor Relative Humidity	100%	
2.6	Altitude (Above Sea Level)	12.5 m	
2.7	Seismic Factor	Zone 3	
2.8	Installation	Indoor	
3- Electrical Data			
3.1	System Voltage	400V AC ±10%	
3.2	System Frequency	50 Hz ±5%	
3.3	No. of Phases	3	
3.4	Control Voltage	230 VAC	
3.5	Space Heater Voltage	230 VAC	
3.6	Bus-Bar Rated Current	315A	
3.7	Short Time Withstand Current	50 kA, 1 Sec.	D02
3.8	Bus-Bars Material	Heat Shrink Copper	
3.9	Bus-Bars Joints	Silver Plated	
4- Enclosure Data			
4.1	Enclosure Type	Free Standing/Fixed Type / Front Access	
4.2	Degree of Protection	IP 42	
4.3	Cable Entry	Bottom (by Cable Gland)	
4.4	Type & Size of Power Cable	According to "BK-GCS-PEDCO-120-EL-CN-0003" (4C×120 mm ² CU/XLPE/SWA/PVC)	

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	BK	GCS	PEDCO	120	EL	DT	0007	D02	

DATA SHEETS FOR LV CAPACITOR BANK OF GCS-400-NSWG			
Item	Description	Purchaser Requirement	Manufacturer Data
4.5	Control Cable	2×(5C×2.5 mm ²) for Current & Voltage Sample	
4.6	Material	Painted Sheet Steel	
4.7	Color	RAL 7032	
4.8	Dimensions (HxWxD)	By Vendor	
4.9	Sheet Steel Thickness (Body/Frame)	2mm/2.5mm	
4.10	Weight	By Vendor	
5- Capacitors			
5.1	Capacitor Manufacturer/Model No.	By Vendor	
5.2	Rating of each Capacitor Bank	120Kvar = 1x20Kvar Fix + 5x20Kvar	
5.3	Capacitor Bank Rated Current	By Vendor	
5.4	Capacitor Bank Rated Voltage	440V	D02
5.5	Capacitor Bank Connection Type	Delta	
5.6	Capacitor Bank Rated Capacitance (μF)	By Vendor	
5.7	Capacitance Variation (μF/°C)	By Vendor	
5.8	Capacitor Unit Rated Voltage	By Vendor	
5.9	Capacitor Unit Temp. Category	-5/D	
5.10	Capacitor Unit Insulating medium	By Vendor	
5.11	Capacitor Unit Electrode Material	By Vendor	
5.12	Capacitor Unit Dielectric Material	By Vendor	
5.13	Capacitor Unit Case Material	Aluminum	
5.14	Capacitor Unit Discharge Resistor (Ω)	By Vendor	
5.15	Capacitor Unit Discharge time (to 75V)	<3 Minutes	
6- Control Unit (Regulator)			
6.1	Manufacturer / Type	By Vendor	
6.2	Mode of Operation	Automatic & Manual	
6.3	Number of Steps	5 Steps	
6.4	Selector Switch	Auto/Off/Manual Selector Switch For Each Step	
7- Fuses			
7.1	Manufacturer / type	By Vendor	
7.2	Rated Voltage	500V	
7.3	Service Voltage	400V±10%	
7.4	Rated Frequency	50Hz±5%	

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	BK	GCS	PEDCO	120	EL	DT	0007	D02	

DATA SHEETS FOR LV CAPACITOR BANK OF GCS-400-NSWG			
Item	Description	Purchaser Requirement	Manufacturer Data
8- Contactors			
8.1	Manufacturer / Type	By Vendor	
8.2	Rated Voltage	690V AC	
8.3	Service Voltage	400V AC	
8.4	Coil Voltage	230 VAC (Note 2)	
8.5	Duty	AC6-b	
9- Incoming Circuit Breaker			
9.1	Manufacturer / Type	By Vendor	
9.2	Type	MCCB, 4Pole, Fixed Type	
9.3	Rated Current	315A	
9.4	Rated Short Circuit Breaking Current	50 kA	
9.5	Rated Insulation Voltage	1000 VAC	
9.6	Service Voltage	400V	
9.7	Internal Protections	49, 50, 51	
9.8	Voltage Protection	230 VAC	
9.9	Trip and Status aux. switches	Yes	
10- Voltmeter with Selector Switch			
10.1	Manufacturer / Type	By Vendor	
10.2	Operating Range	0 -500V	
10.3	Accuracy Class	1.5	
11- Accessories			
11.1	Panel Lighting & Space Heater with Thermostat	Yes	
11.2	Door Key	Yes	
11.3	Gland Plate	Yes	
11.4	Terminal Lugs	Yes	
11.5	Commissioning spare parts	Yes	
11.6	Two year operation spare parts	Yes	
11.7	Routine test	Witnessed and Report	
11.8	Type test certificate	Certificat	

Note 1: According to "LV Switchgear/MCC Single Line Diagram (BK-GCS-PEDCO-120-EL-SL-0002)", there is a 120 KVAR capacitor bank on each GCS-400-NSWG-0001A & B.

Note 2: According to "Electrical Typical Schematic Diagrams For LV panel (BK-GCS-PEDCO-120-EL-DG-

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	BK	GCS	PEDCO	120	EL	DT	0007	D02

0002-D03): “Control circuit voltage for outgoing is 230 VAC which will be supplied for each LV cubicle. In other words for each LV cubicle one isolated dry type transformer shall be considered by vendor”. Therefore vendor shall consider one isolated dry type transformer for capacitor panel.