



CAPACITOR BANKS SINGLE LINE DIAGRAM

NOTES	
LEGEND	
REFERENCE DRAWING	DWG. No.
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-GCS-FBDCO-100-EL-SL-00
CALCULATION NOTE FOR CAPACITOR BANKS	BK-GCS-FBDCO-100-EL-CN-00
DATA SHEETS FOR CAPACITOR BANK	BK-GCS-FBDCO-100-EL-DT-00
KEY PLAN	

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(VENDOR TITLE BLOCK)=

LEGEND		
25	SYNCHRONIZING CHECK RELAY	 MOULDED CASE CIRCUIT BREAKER
27	UNDER VOLTAGE RELAY	 CONTACTOR (CONTACT OPEN IN THE UNOPERATED POSITION)(N.O.)
46	REVERSE PHASE OR PHASE BALANCE CURRENT RELAY	 SWITCH FUSE
47	PHASE SEQUENCE OR PHASE BALANCE VOLTAGE RELAY	 VOLTMETER SELECTOR SWITCH
49	THERMAL OVERLOAD RELAY	 AMMETER SELECTOR SWITCH
50	INSTANTANEOUS OVER CURRENT RELAY	 SELECTOR SWITCH
51	TIME DELAYED OVER CURRENT RELAY	 LED TYPE SIGNAL LAMP
50N	INSTANTANEOUS EARTH FAULT RELAY	 TRANSFORMER
51N	INVERSE TIME EARTH FAULT RELAY	 CURRENT TRANSFORMER
50d	INSTANTANEOUS EARTH FAULT RELAY (BY ZERO SEQUENCE CT)	 CABLE GLAND
51d	INSTANTANEOUS EARTH FAULT RELAY (BY ZERO SEQUENCE CT)	 CABLE SEALING END
59	OVER VOLTAGE RELAY	 POWER CABLE  CONTROL CABLE
63	LIQUID AND GAS PRESSURE RELAY	APFR AUTOMATIC POWER FACTOR REGULATOR
64	GROUND DETECTOR RELAY	 PHASE SEQUENCE OR PHASE BALANCE RELAY (47)
74	TRIP CIRCUIT SUPERVISION	 EARTHING SWITCH
86	LOCK OUT RELAY	 LIGHTNING ARRESTER OR SURGE ARRESTER
94	INTERTRIP RECEIVE RELAY	
	THERMAL OVERLOAD RELAY (49)	

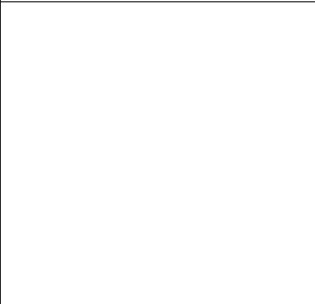
D01

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- NOTES
- 1- ALL EQUIPMENT RATING WILL BE FINALIZED BY VENDOR.
 - 2- INCOMING CABLE SIZE WILL BE ACCORDING TO CALCULATION NOTE FOR CABLE SIZING*(BK-GCS-PEDCO-120-EL-CN-0003)
 - 3- MOTOR WITH LSI FUNCTION INCLUDES:
FUNCTION "L": LONG TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "S": SHORT TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "I": INSTANTANEOUS, SETUP CURRENT & TIME DELAY
FUNCTION "G": GROUND
 - 4- VENDOR SHALL MODIFY THIS SINGLE LINE DIAGRAM ACCORDING TO IPS-M-EL-18(12)
 - 5- ALL SWITCH FUSES SHALL BE STRIKER PIN TYPE WITH FAULT MICRO SWITCH.
 - 6- SINCE THERE ARE VFD ON LV SWITCHGEAR, VENDOR SHALL CONSIDER ANY TECHNICAL REQUIREMENT FOR CAPACITORS SELECTION.
 - 7- ACCORDING TO ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANELS
* (BK-GCS-PEDCO-120-EL-DG-0002) 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 CUBICLE.
 - 8- ALL CAPACITORS SHALL BE PROVIDED WITH A DISCHARGE RESISTOR, CHARACTERISTICS OF WHICH SHALL BE SPECIFIED BY VENDOR. CAPACITORS MUST DISCHARGE TO RESIDUAL VOLTAGE LESS THAN 75V WITHIN 3 MINUTES.
 - 9- THE CAPACITOR BANK RATING POWER SHOULD BE CONSIDERED IN 400V/11kV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 440V/12kV.

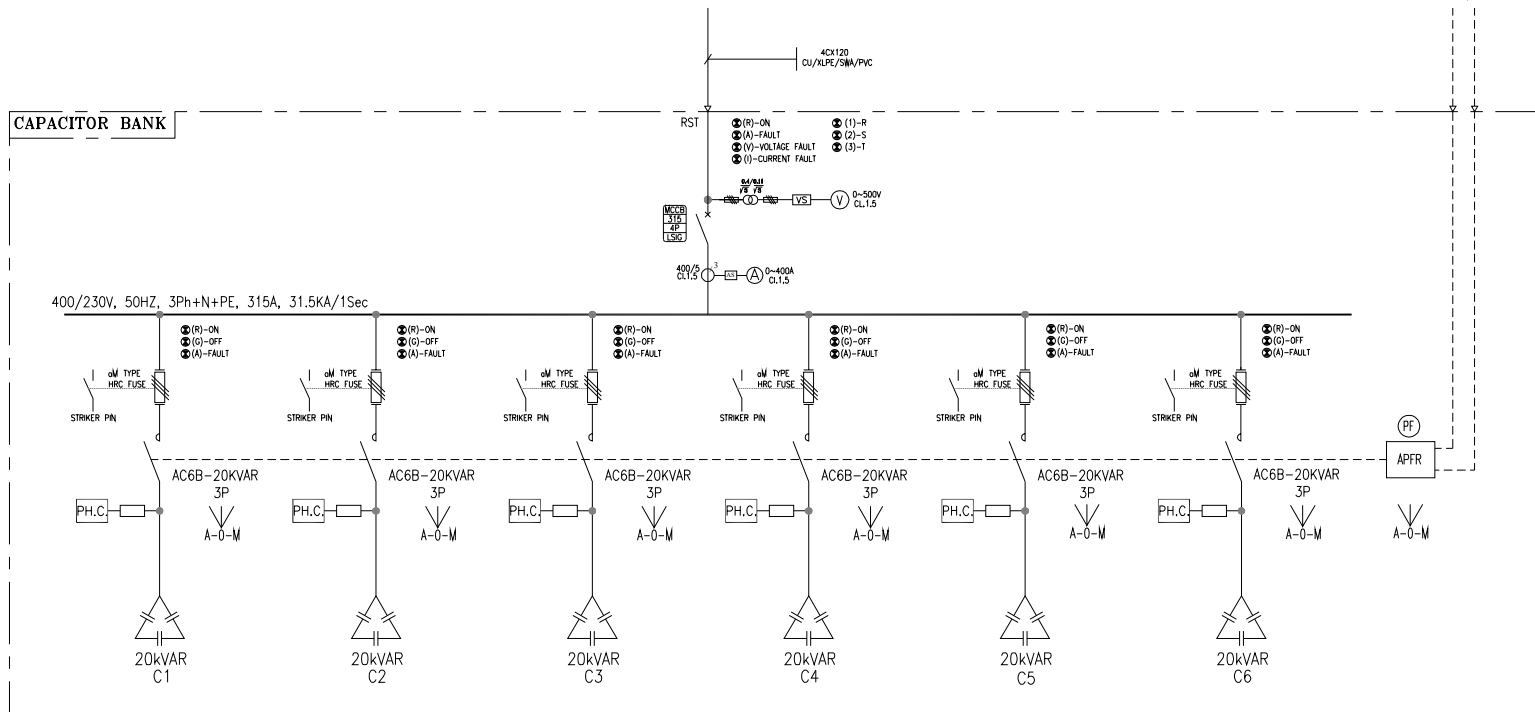
LEGEND	
REFERENCE DRAWING	DRG. No.
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-GCS-PEDCO-180-BL-BL-0001
CALCULATION NOTE FOR CAPACITOR BANKS	BK-GCS-PEDCO-180-EL-CN-0011
DATA SHEETS FOR CAPACITOR BANK	BK-GCS-PEDCO-180-BL-BF-0007

KEY PLAN



PROJECT NO. 071000		EPC CONTRACTOR (GC):		PETROIRAN DEVELOPMENT COMPANY	
EPC CONTRACTOR: BIRGAN ENERGY - DESIGN & INSPECTION COMPANY		EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY		CAPACITOR BANKS SINGLE LINE DIAGRAM	
DRAWING TITLE: CAPACITOR BANKS SINGLE LINE DIAGRAM		NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED		APPROVED FOR CONSTRUCTION BY: DATE:	
BUDGET RSP. LOCATION SIZE CLASS SERIAL NO. SHISBT REVISION		BUDGET RSP. LOCATION SIZE CLASS SERIAL NO. SHISBT REVISION		BUDGET RSP. LOCATION SIZE CLASS SERIAL NO. SHISBT REVISION	
NTU AS BK-GCS-PEDCO-180-BL-BL-0007 02 OF 04 D01		D03-073-0184 P 2 P 7000656 02 OF 04 D01			

CAPACITOR BANK



SHEET THICKNESS	2 mm
COLOR	RAL 7032
ACCESSIBILITY	FRONT
INC CONNECTION	BOTTOM
OUT CONNECTIONS	BOTTOM
INSTALLATION TYPE	FREE STANDING
ENCLOSURE DEGREE OF PROTECTION	IP42

D01

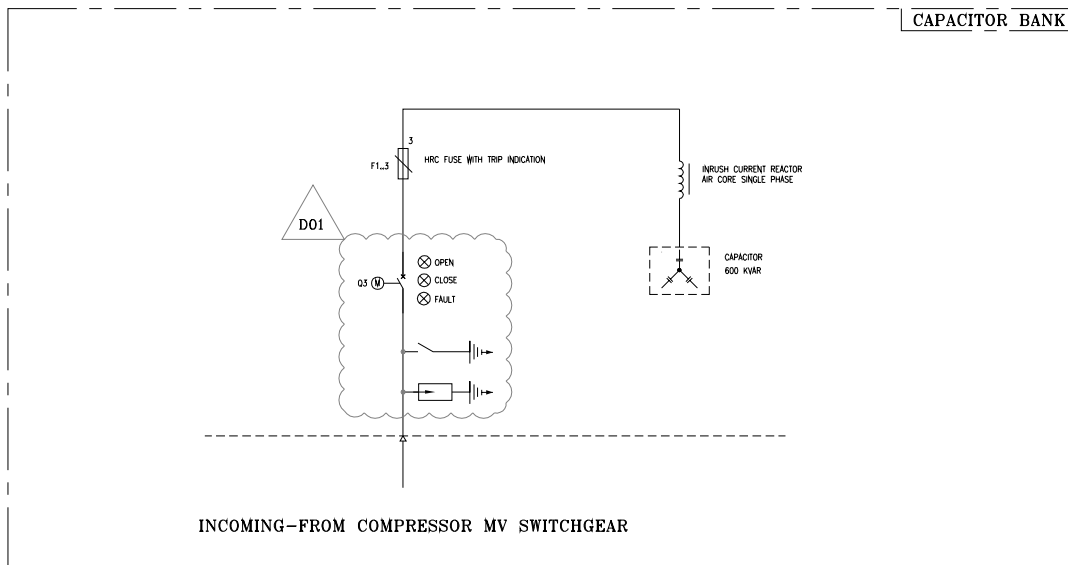
- 1- ALL EQUIPMENT RATING WILL BE FINIALIZED BY VENDOR.
- 2- INCOMING CABLE SIZE WILL BE ACCORDING TO
"CALCULATION USE FOR CABLE SIZING"(8K-CCS-PCDDO-120-EL-04-0003)
- 3- MCCC WITH LS FUNCTION INCLUDING:
FUNCTION 1*: LONG TIME DELAY, SETPOINT CURRENT & TIME DELAY
FUNCTION 2*: SHORT TIME DELAY, SETPOINT CURRENT & TIME DELAY
FUNCTION 3*: INSTANTANEOUS, SETPOINT CURRENT & TIME DELAY
FUNCTION 4*: GROUND
- 4- VENDOR SHALL MODIFY THIS SINGLE LINE WGRAL ACCORDING TO
IP-SH-UL-EL-180121
- 5- ALL SWITCH FUSES SHALL BE STAMPED PIN TYPE, WITH FAULT MICRO SWITCH
ON THE SAME SIDE OF THE IP SWITCHING CENTER, VENDOR SHALL CONSIDER ANY
TECHNICAL SPECIFICATIONS FOR CABLE SELECTION
- 6- ACCORDING TO ELECTRICAL FUNCTIONAL SCHEMATIC DIAGRAMS FOR LV PANELS
(8K-CCS-PCDDO-120-EL-04-0002) CONTROL
CIRCUIT VOLTAGE FOR OUTGOING IS 230 VAC, WHICH VENDOR SHALL CABLE ONE
CIRCUIT FOR EACH CABLE, AND PROVIDE EACH CABLE WITH CABLE ONE
ISOLATED DRY TYPE TRANSFORMER SHALL BE CONSIDERED BY VENDOR
THEREFORE VENDOR SHALL CONSIDER ONE ISOLATED DRY
TYPE TRANSFORMER FOR EACH CABLE
- 7- ALL CAPACITORS SHALL BE PROVIDED WITH A DISCHARGE RESISTOR,
CHARACTERISTICS OF WHICH SHALL BE SPECIFIED BY VENDOR. CAPACITORS
MUST DISCHARGE TO RESIDUAL VOLTAGE LESS THAN 170V WITHIN 5 MINUTES.
THE CAPACITOR BANK RATING SHOULD BE CONSIDERED TO BE
400V/11kV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 400V/12kV.

REFERENCE DRAWING	DRG. No.
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	EK-00S-PEDCO-120-EL-SL-0001
CALCULATION NOTE FOR CAPACITOR BANKS	EK-00S-PEDCO-120-EL-CN-0011
DATA SHEETS FOR CAPACITOR BANK	EK-00S-PEDCO-120-EL-DT-0007

اصل و کلیه نسخ این نقشه و حق اقتباس متعلق به شرکت ملی مناطق نفت خیز جنوب می باشد.

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SHEET THICKNESS	2 mm
COLOR	RAL 7032
ACCESSIBILITY	FRONT
INC CONNECTION	BOTTOM
OUT CONNECTIONS	BOTTOM
INSTALLATION TYPE	FREE STANDING
ENCLOSURE DEGREE OF PROTECTION	IP42

Notes

- 1- ALL EQUIPMENT RATING WILL BE FINALIZED BY VENDOR.
- 2- INCOMING CABLE SIZE WILL BE ACCORDING TO
"CALCULATION NOTE FOR CABLE SIZING"(8K-05-CAP-120-EL-CA-0003)
- 3- MCCB WITH LS FUNCTION INCLUDING:
FUNCTION 1ST: LONG TIME DELAY, SET CURRENT & TIME DELAY
FUNCTION 2ND: SHORT TIME DELAY, SET CURRENT & TIME DELAY
FUNCTION 3RD: INSTANTANEOUS, SET CURRENT & TIME DELAY
FUNCTION 4TH: GROUND
VENDOR SHALL MODIFY THIS SINGLE LINE AGRAM ACCORDING TO
IPS-4-EL-18(102)
- 4- ALL SWITCH FUSES SHALL BE STRIKER PIN WITH FAULT MISCRO SWITCH.
- 5- SINCE THERE ARE VFD ON LV1 SWITCHGEAR, VENDOR SHALL CONSIDER ANY
TECHNICAL REQUIREMENT FOR CAPACITORS SELECTION.
- 6- ACCORDING TO ELECTRICAL TYPICAL, SCHEMATIC DIAGRAMS FOR LV PANELS
"(8K-05-CAP-120-EL-DG-0002) CONTROL
FOR CAPACITORS 330 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.
VENDOR SHALL PROVIDE ONE ISOLATED DRY TYPE TRANSFORMER FOR
TYPE TRANSFORMER FOR CAPACITOR CUBICLE.
- 7- ALL CAPACITORS SHALL BE PROVIDED WITH A DISCHARGE RESISTOR,
CHARACTERISTICS OF WHICH SHALL BE SPECIFIED BY VENDOR. CAPACITORS
MUST DISCHARGE TO RESIDUAL VOLTAGE LESS THAN 75V WITHIN 5 MINUTES.
THE CAPACITOR BANK RATING POWER SHOULD BE CONSIDERED IN
400V/11KV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 440V/12KV.

LEGEND	
REFERENCE DRAWING	DRG. No.
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-GCP-PEDCO-120-EJ-SL-0001
CALCULATION NOTE FOR CAPACITOR BANKS	BK-GCP-PEDCO-120-EJ-CN-0011
DATA SHEETS FOR CAPACITOR BANK	BK-CGP-PEDCO-120-EJ-DT-0007

KEY PLAN

DOI	JUL-2002	IPA	ALBAHRA	A.ELHAMAN	A.MOHAMED	00	00	0000000000	00	00	000	000	00	00	000	000
DOO	FEB-2002	IPC	ALBAHRA	A.ELHAMAN	A.MOHAMED	00	00		00	00	000	000	00	00	000	000
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.										
PROJECT NAME: BINAQ OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION																
PRODUCT NO.: 971020																
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):			BINAQ OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION										
						 PETROIRAN DEVELOPMENT COMPANY										
BIRGAN ENERGY - DESIGN & INSPECTION COMPANY			PEDCO													
DATE SCALE DRAWING BY CHECKED BY PROJECT ENG.																
DRAWING TITLE: CAPACITOR BANKS SINGLE LINE DIAGRAM																
NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED																
APPROVED FOR CONSTRUCTION BY: DATE:																
SCALE	SHEET	DRAWING NO.				SHEET NO.	REV.	BUDGET	RSR	LOCATION	STATUS	CLASS	SERIAL NO.	SHEET	REVISION	
N7S	AS	BK-003-PRD-120-BU-SU-0007				04 OF 04		003-073-0164	P	2	P		700605	04 OF 04	00	