



CAPACITOR BANKS SINGLE LINE DIAGRAM



NOTES											
LEGEND											
REFERENCE DRAWING						DRG. No.					
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM						BK-GCS-PEDCO-120-EL-SL-0002					
EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM						BK-GCS-PEDCO-120-EL-SL-0003					
CALCULATION NOTE FOR CAPACITOR BANKS						BK-GCS-PEDCO-120-EL-CN-0011					
DATA SHEETS FOR CAPACITOR BANK						BK-GCS-PEDCO-120-EL-DT-0007					
KEY PLAN											
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D03	AUG.2024	APC	H.SHAKIBA	M.FAKHARIAN	M.SADEGHIAN								
D02	AUG.2023	APC	H.SHAKIBA	M.FAKHARIAN	A.M.MOHSSENI	** **	***	*****	** **	*** ****	** **		
D01	JUL.2022	IPA	H.SHAKIBA	M.FAKHARIAN	M.MEHRSHAD	** **	REV.	DESCRIPTION	BY	DATE	BY		
D00	FEB.2022	IPC	H.SHAKIBA	M.FAKHARIAN	M.MEHRSHAD	** **			CHECKED		REV. APPR.		
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.	اصل و کليه نسخ اين نقشه و حق اقتباس متعلق به شرکت ملی مناطق نفت خيز جنوب مي باشد.						
PROJECT NAME:						BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION							
PROJECT NO.:						971020							
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):			BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION							
 HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES			 PETROIRAN DEVELOPMENT COMPANY										
DATE		SCALE	DRAWING BY		CHECKED BY	PROJECT ENG.							
DRAWING TITLE:						NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED							
CAPACITOR BANKS SINGLE LINE DIAGRAM													
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NTS	A3	BK-GCS-PEDCO-120-EL-SL-0007			01 OF 04	D03	053-073-9184	F	2	P	709055	01 OF 04	D03

(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
50G	INSTANTANEOUS EARTH FAULT RELAY (BY ZERO SEQUENCE CT)	CABLE GLAND
51G	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)	

- NOTES
- 1- ALL EQUIPMENT REATING WILL BE FINALIZED BY VENDOR. THE SWITCHING DEVICES SHALL BE RATED FOR 1.5 TIMES OF RATED CURRENT.

2- INCOMING CABLE SIZE WILL BE ACCORDING TO "CALCULATION NOTE FOR CABLE SIZING"(BK-GCS-PEDCO-120-EL-CN-0003)

3- MCCB 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 IAGRAM ACCORDING TO IPS-M-EL-181(2)

5- ALL SWITCH FUSES SHALL BE STRIKER PIN TYPE WITH FAULT MICRO SWITCH.

6- 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.

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 3 MINUTES FOR LV CAPACITORS & 75V WITHIN 10 MINUTES FOR MV CAPACITORS

8- THE CAPACITOR BANK RATING POWER SHOULD BE CONSIDERED IN 400V/11KV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 440V/12KV.




9- SINCE THERE IS AIR INRUSH REACTOR FOR MV CAPACITOR BANK, THEREFORE VENDOR SHALL CALCULATE REQUIRED CAPACITY OF BANK.

10-LIGHTING, HEATER, THERMOSTAT & FAN SHALL BE CONSIDERED BY VENDOR IN CAPACITOR BANKS.

LEGEND

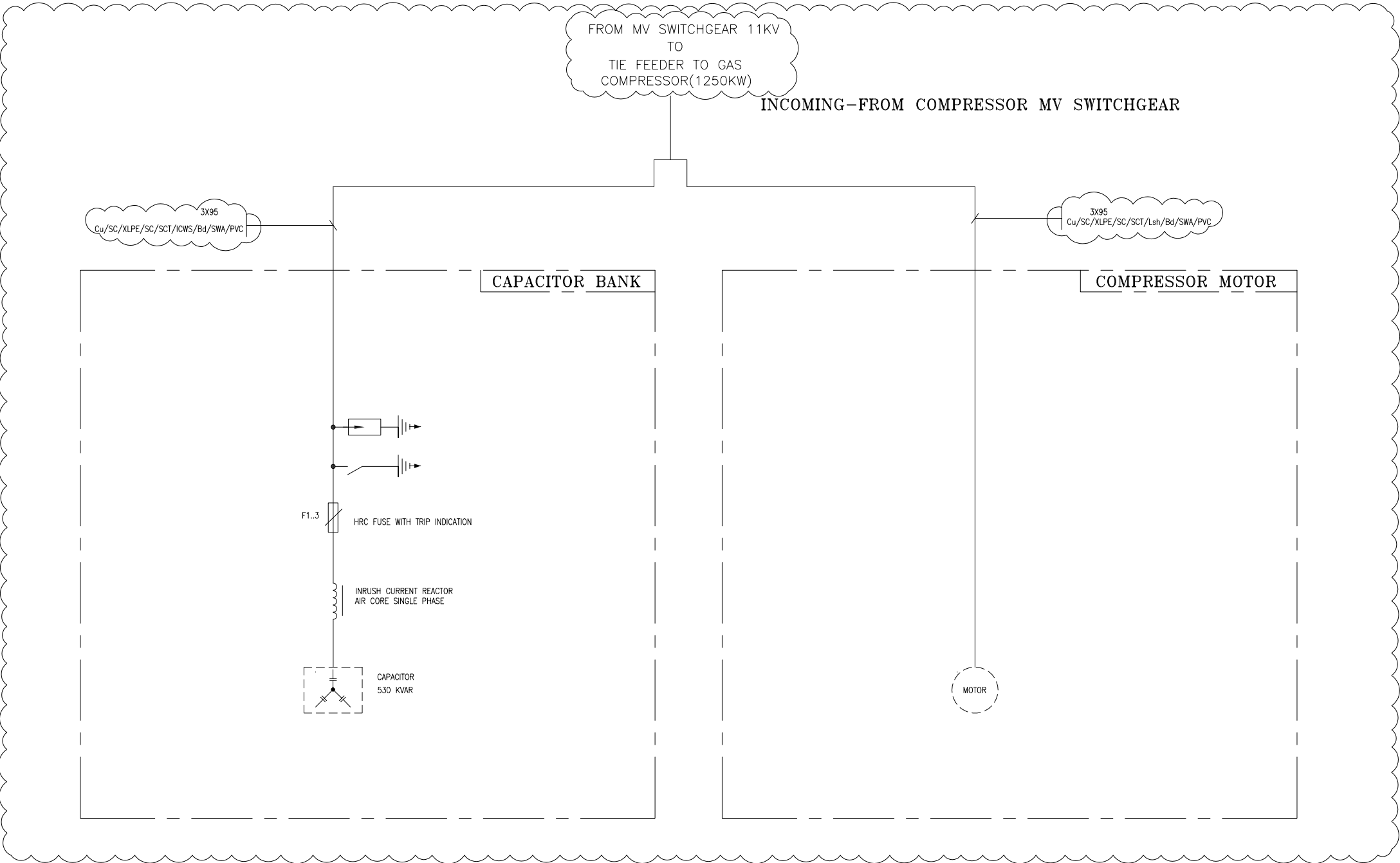
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KEY PLAN

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KEY PLAN

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

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