

ELECTRICAL TYPICAL SCHEMATIC
DIAGRAMS FOR LV PANEL



NOTES	

LEGEND	

REFERENCE DRAWING	ERC. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	IRK-003-PIEDCO-120-BL-BL-0002
CONTROL LOGIC DIAGRAM FOR LV INCOMBES & BUS TIE	IRK-003-PIEDCO-120-BL-BL-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	IRK-003-PIEDCO-120-BL-BL-0001

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KEY PLAN	

DO6	MAY.2025	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO5	JAN.2025	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO4	NOV.2022	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO3	JUL.2022	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO2	MAY.2022	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO1	APR.2022	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
DO0	DIST.0001	PI	R.SHADEBA	E.FARSAHAN	A.K.MOHEBBI	** **													
REV.	DATE	P.O.I.F	PREP.	CHK.	APP.	AUT.													
PROJECT NAME:							ايرل و كليه شيع اين خطه و حق القابض متعلق به شركت ملي صنايع پتروشيمي ايران												
PROJECT NO.:							THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS												
EPC CONTRACTOR:			EPC CONTRACTOR (GC):				BINAQ OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION												
 HIRSAN ENERGY - DESIGN & INSPECTION COMPANIES			 PETROIRAN DEVELOPMENT COMPANY																
DRAWING TITLE:							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED												
ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL							APPROVED FOR CONSTRUCTION BY: DATE:												
SCALE	SIZE	DRAWING NO.		SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION							
NWS	A3	IRK-003-PIEDCO-120-BL-BL-0002		01 OF 16	DO6	003-073-0104	P	2	P	700041	01 OF 16	DO6							

(VENDOR TITLE BLOCK)**

INDEX SHEET

SHEET No.	DESCRIPTION	D00	D01	D02	D03	D04	D05	D06
01	COVER SHEET	✓	✓	✓	✓	✓	✓	✓
02	INDEX SHEET	✓	✓	✓	✓	✓	✓	✓
03	ABBREVIATION & NOTES	✓	✓	✓	✓	✓		
04	SYMBOL & LEGEND (1/2)	✓	✓	✓	✓			
05	SYMBOL & LEGEND (2/2)	✓	✓	✓	✓	✓		
06	F1: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 1<63A FEEDERS.	✓	✓	✓	✓			
07	F2: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 63A=<100A FEEDERS.	✓	✓	✓	✓			
08	F3: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 100A=<100 FEEDERS.	✓	✓	✓	✓			
09	F4: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 1<63A FEEDERS.	✓	✓	✓	✓			
10	F5: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 63A=<100A FEEDERS.	✓	✓	✓	✓			
11	F6: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 100A=<100 FEEDERS.	✓	✓	✓	✓			
12	F7: SIMPLE 2-POLE MCCB FEEDER FOR FEEDING SINGLE PHASE LOADS (PH+N OR 2-PH)	✓	✓	✓	✓			
13	M1: DIRECT ON LINE MOTOR STARTER FEEDERS FOR $0.4kW \leq P < 4kW$	✓	✓	✓	✓	✓	✓	✓
14	M2: DIRECT ON LINE MOTOR STARTER FEEDERS FOR $4kW \leq P < 18.5kW$	✓	✓	✓	✓	✓	✓	✓
15	M3: DIRECT ON LINE MOTOR STARTER FEEDERS FOR $18.5kW \leq P < 30kW$	✓	✓	✓	✓	✓	✓	✓
16	M4: DIRECT ON LINE MOTOR STARTER FEEDERS FOR $30kW \leq P$ & HAZARDOUS AREA	✓	✓	✓	✓	✓	✓	✓
17	IN1: INCOMING 1 FROM DISTRIBUTION TRANSFORMER						X	X
18	C01: COUPLING 1						X	X
19	IN2: INCOMING 2 FROM DISTRIBUTION TRANSFORMER						X	X
20	C02: COUPLING 2						X	X
21	IN3: INCOMING FROM DIESEL GENERATOR						X	X
22	INCOMING 1 (CB1)						X	X
23	INCOMING 2 (CB2)						X	X
24	COUPLING 1 (BT1)						X	X
25	COUPLING 1 (BT1)						X	X
26	COUPLING 1 (BT1)						X	X
27	COUPLING 1 (BT1)						X	X
28	COUPLING 2 (BT2)						X	X
29	COUPLING 2 (BT2)						X	X
30	INCOMING 3 (CB3)						X	X

NOTES	
LEGEND	
REFERENCE DRAWING	DWG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK-039-PEDCO-185-BB-BL-0000
CONTROL LOGIC DIAGRAM FOR LV INCOMERS & BUS TIE	BK-039-PEDCO-185-BB-BL-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-039-PEDCO-185-BL-BL-0001
KEY PLAN	

[illegible]

1 – ABBREVIATIONS

Q:	MAIN SWITCHING DEVICE	PE:	PROTECTING EARTH
K1:	MAIN CONTACTOR	SP:	SPRING CHARGED CONTACT
MPCB:	MOTOR PROTECTION CIRCUIT BREAKER	SP:	STOP P/B
MCCB:	MOULDED CASE CIRCUIT BREAKER	ST:	START P/B
MCB:	MINIATURE CIRCUIT BREAKER	CBT:	COMMON CIRCUIT BREAKER TRIP
KA:	AUXILIARY RELAY NO.#	CBR:	COMMON CIRCUIT READY
TC:	TRIP COIL OF CIRCUIT BREAKER (SHUNT TRIP)	CBF:	COMMON CIRCUIT FAULT
CB:	CIRCUIT BREAKER	CCB:	CIRCUIT BREAKER CLOSING COIL
CC:	CLOSE COMMAND	OCB:	CIRCUIT BREAKER OPENING COIL
OC:	OPEN COMMAND	DG:	DIESEL GENERATOR
P/B:	PUSH BUTTON	BT:	BUS TIE
PBC:	PUSH BUTTON CLOSE	CF:	CIRCUIT BREAKER FAULT
MST:	MANUAL SYNCHRON TRANSFER	CBR:	CIRCUIT BREAKER READY
AT:	ATOUMATIC TRANSFER	MAT:	MANUAL ASYNCHRON TRANSFER
DGCB:	DIESEL GENERATOR CIRCUIT BREAKER	MT:	MANUAL TRANSFER
ESD:	EMERGENCY SHUT DOWN	DGCP:	DIESEL GENERATOR CONTROL PANEL
MOF:	MAKE ON FAULT	LCS:	LOCAL CONTROL STATION
BOF:	BREAK ON FAULT	IRP:	INTERPOSING RELAY PANEL

2 – CATEGORY DESCRIPTION

- ALL SWITCH FUSES SHALL BE EQUIPPED WITH STRIKER PIN.
- LV NON MOTOR TYPE FEEDERS INCLUDE 400A & ABOVE SHALL BE ACB INSTEAD OF MCCB.
- START COMMAND FROM DCS & STOP COMMAND FROM ESD & DCS HAVE BEEN CONSIDERED FOR MOTOR TYPE FEEDER. IF THERE ARE NOT, THESE FACILITIES SHALL BE DELETED.
- CONTROL CIRCUIT VOLTAGE FOR INCOMINGS & COUPLERS IS 110 VDC WHICH WILL BE SUPPLIED BY NEW CHARGER SYSTEM INSTALLED IN SWITCHGEAR ROOM.
- 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.
- EMERGENCY STOP & START PUSH BUTTON SHALL BE CONSIDERED ON INCOMINGS & BUS–TIES.
- HEATER/S IN EACH CUBICLE WILL BE PROTECTED BY A MINIATURE CIRCUIT BREAKER AND AN EARTH LEAKAGE PROTECTION DEVICE OR RESIDUAL CIRCUIT BREAKER OF 30MA SENSITIVITY,THE HEATERS WILL BE FED BY INTERNAL SUPPLY WITH REDUNDANCY CIRCUIT THAT FEEDING THE HEATERS IN ONE SECTION OF THE SWITCHGEAR WILL BE FED FROM THE OPPOSITE SECTION OF THE BUS BAR.
- SWITCH–FUSE COMBINATION UNITS SHALL COMPLY WITH SUITABLE FOR UNINTERRUPTED DUTY, UTILIZATION CATEGORY AC–23
- FOR FEEDER WITH TYPE M3&M4, CURRENT AND VOLTAGE FAULT SHALL BE CONSIDERED SEPARATELY BY VENDOR.
- MICROPROCESSOR TYPE PROTECTIVE RELAYS SHALL BE EQUIPPED WITH RS 485 TO SEND SIGNALS BY SERIAL LINK

3– VENDOR SHALL CONSIDER "CONTROL LOGIC DIAGRAM FOR LV INCOMERS AND BUS TIE"

(BK–GCS–PEDCO–120–EL–LD–0001)" & "LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM



(BK–GCS–PEDCO–120–EL–SL–0002)" AS REFERENCES FOR METERING & SCHEMATIC DIAGRAM OF INCOMINGS.

NOTES

LEGEND

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK–GCS–PEDCO–120–EL–SL–0002
CONTROL LOGIC DIAGRAM FOR LV INCOMERS & BUS TIE	BK–GCS–PEDCO–120–EL–LD–0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK–GCS–PEDCO–120–EL–SL–0001

KEY PLAN

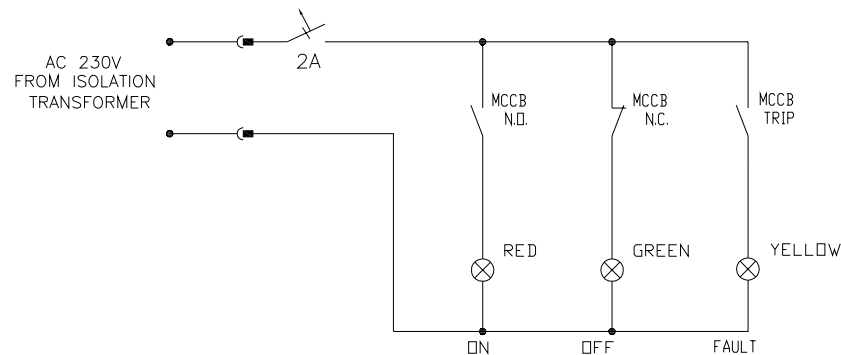
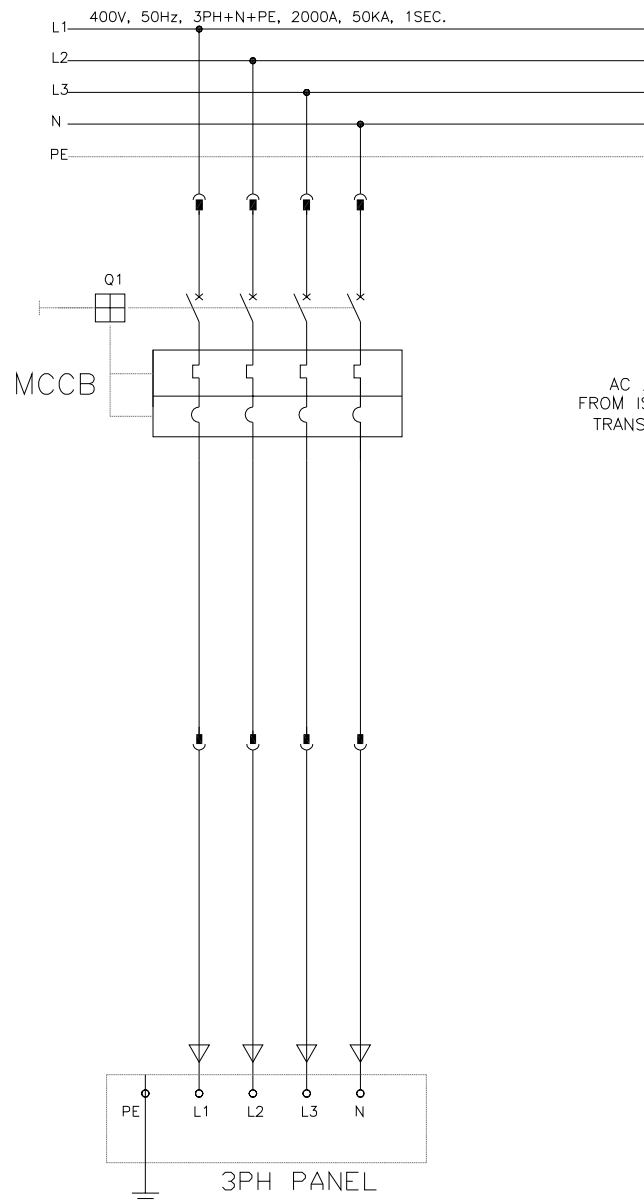
DOE	MAY.2025	PI	U.SHAHBA	U.FARSAHAN	A.K.MOHSEN	**																										
DO6	JAN.2025	IFI	U.SHAHBA	U.FARSAHAN	U.MOHSEN	**																										
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DO6	JUL.2022	IFI	U.SHAHBA	U.FARSAHAN	U.MOHSEN	**																										
DO2	MAY.2022	IFI	U.SHAHBA	U.FARSAHAN	U.MOHSEN	**	***	*****	REV. 01	2023-05-05	REV. 01	2023-05-05	REV. 01	2023-05-05	REV. 01	2023-05-05	REV. 01	2023-05-05	REV. 01													
DO1	APR.2022	IFI	U.SHAHBA	U.FARSAHAN	U.MOHSEN	**																										
DDO	DIST.0001	IFI	U.SHAHBA	U.FARSAHAN	U.MOHSEN	**																										
REV.	DATE	P.O.L.F.	PREP.	CHK.	APP.	AUT.																										
PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION							اخر و كليه نسخ اين نقشه و جزاهاى مشابه به تركه على مناطق ذات غير جنوب ميدان																									
PROJECT NO.: 971020							THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS																									
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GO):			BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION																										
 HIRAN ENERGY – DESIGN & INSPECTION COMPANIES			 PETROIRAN DEVELOPMENT COMPANY			DATE SCALE DRAWING BY CHECKED BY PROJECT ENG.																										
DRAWING TITLE:							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED																									
ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL							APPROVED FOR CONSTRUCTION BY: DATE:																									
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.		SHEET		REVISION																	
NW	A3	BK–GCS–PEDCO–120–EL–DG–0002			03 OF 16	DO6	003-073-0104	P	2	P	700041		03 OF 16		DO6																	

(VENDOR TITLE BLOCK)**

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	MOULDED CASE CIRCUIT BREAKER(3 POLE) WITH OVERLOAD /OVER CURRENT RELAY(MCCB)		UNDER VOLTAGE RELAY		INVERSE TIME EARTH FAULT RELAY
	MOULDED CASE CIRCUIT BREAKER(4 POLE) WITH OVERLOAD /OVER CURRENT RELAY(MCCB)		PHASE SEQUENCE RELAY		MOTOR PROTECTION RELAY
	MOTORIZED AIR CIRCUIT BREAKER(4 POLE) WITHOUT OVERLOAD /OVER CURRENT RELAY(ACB)		MOTOR		
	MOTORIZED AIR CIRCUIT BREAKER(3 POLE) WITH OVERLOAD /OVER CURRENT & INSTANTANEOUS EARTH FAULT CURRENT RELAY TIME DELAY EARTH FAULT CURRENT RELAY		THERMAL OVER LOAD RELAY		
	ELECTROMAGNETIC ACTUATOR RELEASE TIMED RELAY (ACTUATE INSTANTLY, RESETS AFTER # SECONDS)		INSTANTANEOUS OVER CURRENT RELAY		
	ELECTROMAGNETIC ACTUATOR PICK-UP TIMED RELAY (ACTUATE AFTER #SECONDS, RESETS INSTANTLY)		INVERSE TIME OVER CURRENT RELAY		
	NO & NC CONTACT ON DELAY		UNDER VOLTAGE RELAY		
	EMERGENCY STOP		SYNCHRON CHECK RELAY		
	DELAY ON BY # SECOND		RESTRICTED EARTH FAULT RELAY		
	DELAY OFF BY # SECOND		LOCKOUT RELAY		
	GLAND		SIGNAL LAMP (R-RED, G-GREEN, W-WHITE, Y-YELLOW)		
	WITHDRAW		PROTECTION LOGIC SIGNAL MECHANICAL INTERCONNECTION		
	OPERATING COIL OF ELECTROMAGNETIC ACTUATOR		NORMALLY OPEN CONTACT		
	BIMETAL		PHASE CONTROL RELAY		

NOTES	
LEGEND	
REFERENCE DRAWING	DWG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK-029-FIBD00-180-BL-SB-000
CONTROL LOGIC DIAGRAM FOR LV INCOMBES & BUS TIES	BK-029-FIBD00-180-BL-LG-000
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-029-FIBD00-180-BL-SB-000
KEY PLAN	

[illegible]



F1: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR I<63A FEEDERS.

NOTES

LEGEND

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	SK-CGF-PEDCO-120-BL-BL-0002
CONTROL LOGIC DIAGRAM FOR LV INCOMBES & BUS TIE	SK-CGF-PEDCO-120-BL-BL-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	SK-CGF-PEDCO-120-BL-BL-0001

KEY PLAN

REV.	DATE	DESCRIPTION	CHECKED	BY	DATE	BY	DATE
D06	MAY.2025	PI	U.SHAHBA	U.FARSHAN	A.K.MOHEBI	**	
D05	JAN.2025	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	
D04	NOV.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	
D03	JUL.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	
D02	MAY.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	
D01	APR.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	
D00	DIST.2021	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**	

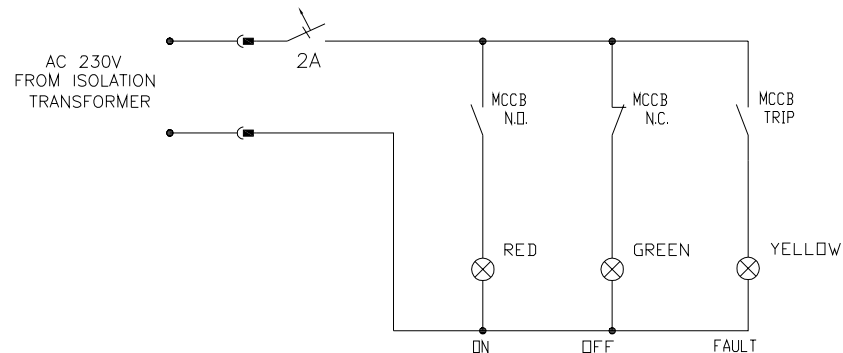
PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION

PROJECT NO.: 971020

DATE	SCALE	DRAWN BY	CHECKED BY	PROJECT ENG.

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

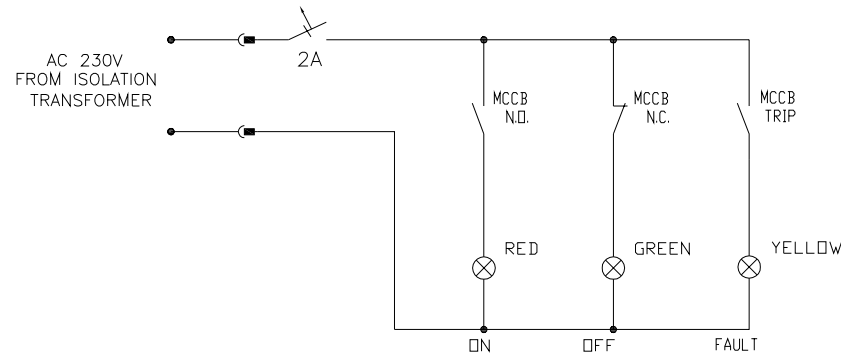
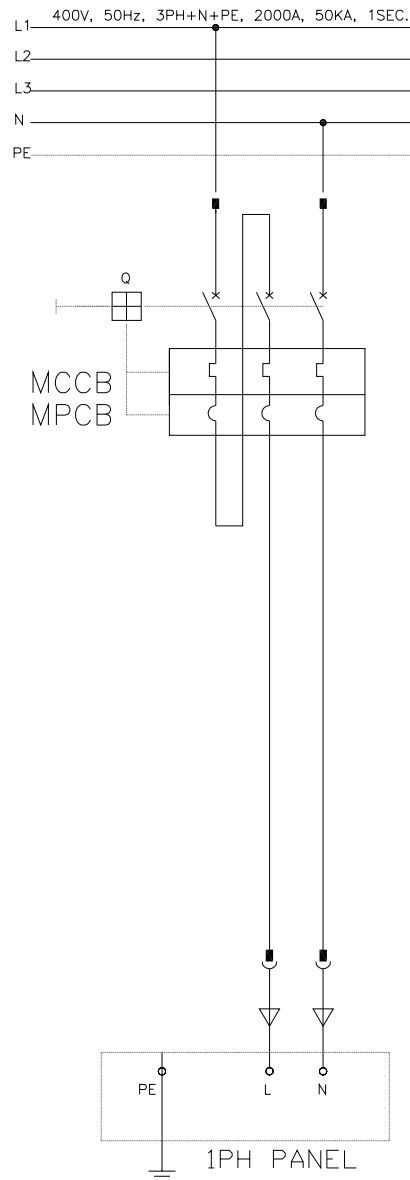
SCALE	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NW	AS	SK-CGF-PEDCO-120-BL-BL-0002	06 OF 16	D06	063-073-014	F	2	P	700041



(VENDOR TITLE BLOCK)**

[illegible]

[illegible]



NOTES

LEGEND

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	SK-003-PE000-100-BL-01-0000
CONTROL LOGIC DIAGRAM FOR LV INCOMBES & BUS TIE	SK-003-PE000-100-BL-02-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	SK-003-PE000-100-BL-03-0001

KEY PLAN

REV.	DATE	DESCRIPTION	BY	DATE	BY	DATE
006	MAY.2025	PI	U.SHAHBA	U.FARSHAN	A.K.MOHEBBI	**
005	JAN.2025	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
004	NOV.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
003	JUL.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
002	MAY.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
001	APR.2022	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
000	DIST.0001	IFI	U.SHAHBA	U.FARSHAN	U.SHAHBA	**
REV.	DATE	P.O.L.E	PREP.	CHK.	APP.	AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION

PROJECT NO.: 971020

EPD/EPC CONTRACTOR (GO): PETROIRAN DEVELOPMENT COMPANY

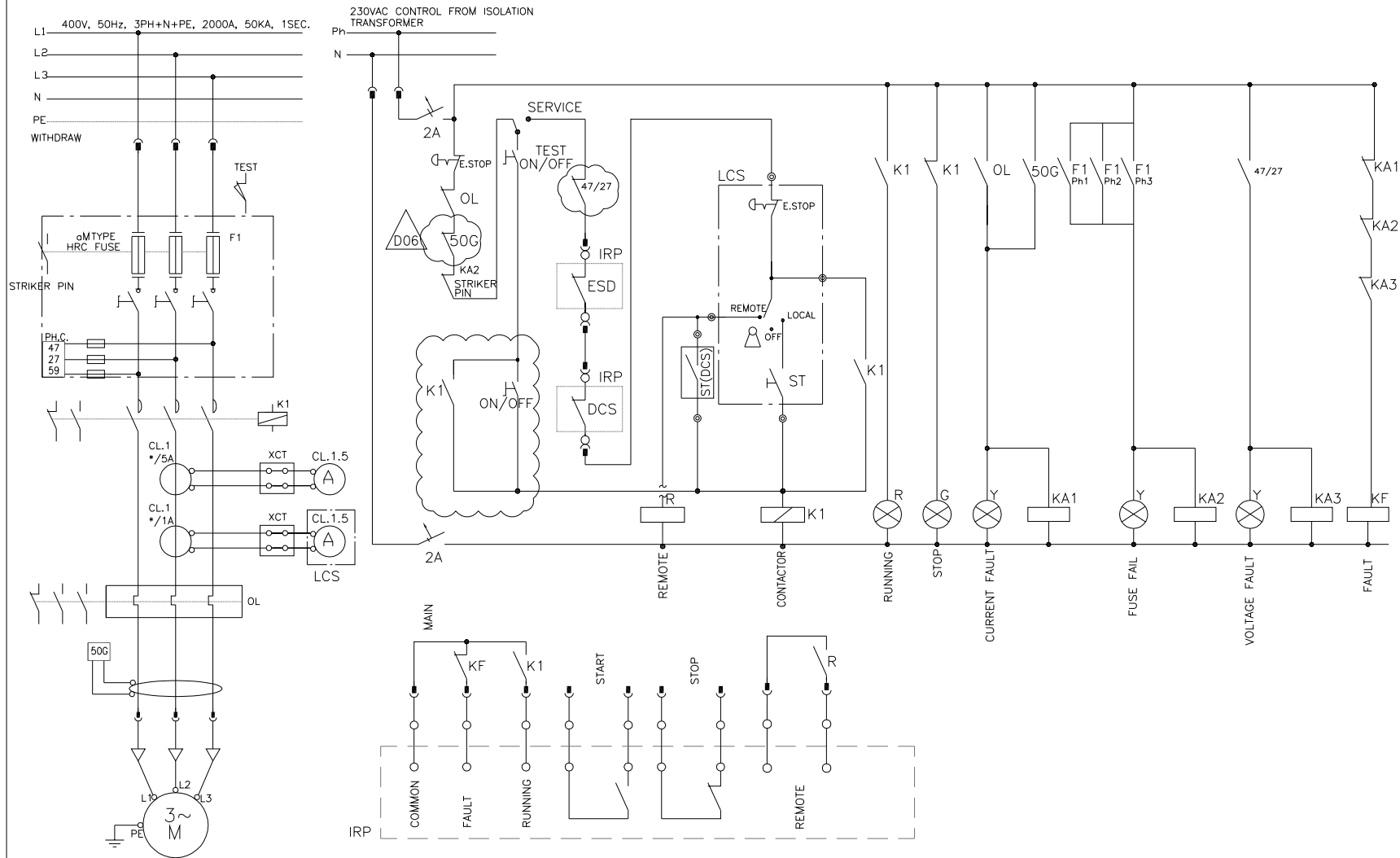
HIRAN ENERGY DESIGN & INSPECTION COMPANIES

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ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL				APPROVED FOR CONSTRUCTION				BY:	DATE:			
SCALE	SIZE	DRAWING NO.		SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NW	AS	BK-CSC-PE000-120-BL-DG-0002		12 OF 16	006	003-073-0104	F	2	P	700041	12 OF 16	006

F7: SIMPLE 2-POLE MCCB FEEDER FOR FEEDING SINGLE PHASE LOADS (PH+N OR 2-PH)



M3: DIRECT ON LINE MOTOR STARTER FEEDERS FOR $18.5kW \leq P < 30kW$
 (SWITCH FUSE + CONTACTOR + BIMETAL + R/L SIGNALING+ R/L AMMETER + (49, 50G & PHASE CONTROL)

NOTES

LEGEND

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LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	SK-CGF-PEDCO-120-BL-BL-0002
CONTROL LOGIC DIAGRAM FOR LV INCOMBUSTIBLE BUS TIE	SK-CGF-PEDCO-120-BL-BL-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	SK-CGF-PEDCO-120-BL-BL-0001

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D06	MAY.2025	PI	U/SHARBA	U/FAHARAN	A/K.MOHEBI	**
D05	JAN.2025	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**
D04	NOV.2022	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**
D03	JUL.2022	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**
D02	MAY.2022	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**
D01	APR.2022	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**
D00	DIST.2021	IFI	U/SHARBA	U/FAHARAN	U/SHARBA	**

REV.	DATE	P.O.L.H	PREP.	CHK.	APP.	AUT.
PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION						
PROJECT NO.: 971020						
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GO):			
HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES			PETROIRAN DEVELOPMENT COMPANY			
DRAWING TITLE: ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL						
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SCALE	SHEET	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION
NW	AS	SK-CGF-PEDCO-120-BL-BL-0002	16 OF 16	D06	003-073-014	P

