

# ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL

[illegible][illegible]

(VENDOR TITLE BLOCK)\*\*

# INDEX SHEET

SHEET No.	DESCRIPTION	D00	D01	D02	D03	D04	D05
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 I<63A FEEDERS.	✓	✓	✓	✓		
07	F2: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 63A=Δ<100A FEEDERS.	✓	✓	✓	✓		
08	F3: SIMPLE 4-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 100A=Δ FEEDERS.	✓	✓	✓	✓		
09	F4: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR I<63A FEEDERS.	✓	✓	✓	✓		
10	F5: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 63A=Δ<100A FEEDERS.	✓	✓	✓	✓		
11	F6: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 100A=Δ 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 ≤ P < 4kW	✓	✓	✓	✓	✓	
14	M2: DIRECT ON LINE MOTOR STARTER FEEDERS FOR 4kW ≤ P < 18.5kW	✓	✓	✓	✓	✓	
15	M3: DIRECT ON LINE MOTOR STARTER FEEDERS FOR 18.5kW ≤ P < 30kW	✓	✓	✓	✓	✓	
16	M4: DIRECT ON LINE MOTOR STARTER FEEDERS FOR 30kW ≤ P & AND HAZARDOUS AREA	✓	✓	✓	✓	✓	
17	IN1: INCOMING 1 FROM DISTRIBUTION TRANSFORMER	✓	✓	✓	✓		
18	CO1: COUPLING 1	✓	✓	✓	✓		
19	IN2: INCOMING 2 FROM DISTRIBUTION TRANSFORMER	✓	✓	✓	✓		
20	CO2: COUPLING 2	✓	✓	✓	✓		
21	IN3: INCOMING FROM DIESEL GENERATOR	✓	✓	✓	✓		
22	INCOMING 1 (CB1)	✓	✓	✓	✓		
23	INCOMING 2 (CB2)	✓	✓	✓	✓		
24	COUPLING 1 (BT1)	✓	✓	✓	✓		
25	COUPLING 1 (BT1)	✓	✓	✓	✓		
26	COUPLING 1 (BT1)	✓	✓	✓	✓		
27	COUPLING 1 (BT1)	✓	✓	✓	✓		
28	COUPLING 2 (BT2)	✓	✓	✓	✓		
29	COUPLING 2 (BT2)	✓	✓	✓	✓		
30	INCOMING 3 (CB3)			✓	✓		

NOTES	
LEGEND	
REFERENCE DRAWING	DESC. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	SK-029-PE000-100-BL-01-0000
CONTROL LOGIC DIAGRAM FOR LV INCOMERS & BUS TIES	SK-029-PE000-100-BL-02-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	SK-029-PE000-100-BL-03-0001
KEY PLAN	

[illegible]

Q:	MAIN SWITCHING DEVICE
K1	MAIN CONTACTOR
MPCB:	MOTOR PROTECTION CIRCUIT BREAKER
MCCB:	MOULDED CASE CIRCUIT BREAKER
MCB:	MINIATURE CIRCUIT BREAKER
KA:	AUXILIARY RELAY NO.#
TC:	TRIP COIL OF CIRCUIT BREAKER (SHUNT TRIP)
CB:	CIRCUIT BREAKER
CC:	CLOSE COMMAND
OC:	OPEN COMMAND
P/B:	PUSH BUTTON
PBC:	PUSH BUTTON CLOSE
MST:	MANUAL SYNCHRON TRANSFER
AT:	ATOUMATIC TRANSFER
DGCB:	DIESEL GENERATOR CIRCUIT BREAKER
ESD:	EMERGENCY SHUT DOWN
MOF:	MAKE ON FAULT
BOF:	BREAK ON FAULT

PE:	PROTECTING EARTH
SP:	SPRING CHARGED CONTACT
SP:	STOP P/B
ST:	START P/B
CBT:	COMMON CIRCUIT BREAKER TRIP
CBR:	COMMON CIRCUIT READY
CBF:	COMMON CIRCUIT FAULT
CCB:	CIRCUIT BREAKER CLOSING COIL
OCB:	CIRCUIT BREAKER OPENING COIL
DG:	DIESEL GENERATOR
BT:	BUS TIE
CF:	CIRCUIT BREAKER FAULT
CBR:	CIRCUIT BREAKER READY
MAT:	MANUAL ASYNCHRON TRANSFER
MT:	MANUAL TRANSFER
DGCP:	DIESEL GENERATOR CONTROL PANEL
LCS:	LOCAL CONTROL STATION
IRP:	INTERPOSING RELAY PANEL






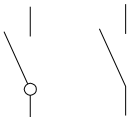

















- ALL SWITCH FUSES SHALL BE EQUIPPED WITH STRIKER PIN.
- LV NON MOTOR TYPE FEEDERS INCLUDE 400A & ABOVE SHALL BE ACB INSTEAD OF MCCB.
- START COMMAND FROM DCS & STOP COMMAND FROM ESD & DCS HAVE BEEN CONSIDERED FOR MOTOR TYPE FEEDER. IF THERE ARE NOT, THESE FACILITIES SHALL BE DELETED.
- CONTROL CIRCUIT 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

D06	JAN.2023	IFI	M.PHILLIPS	M.PAKHARVAN	M.MOHEBBAZI
D04	NOV.2022	IFI	M.PHILLIPS	M.PAKHARVAN	M.MOHEBBAZI
D08	JUL.2022	IFI	M.PHILLIPS	M.PAKHARVAN	M.MOHEBBAZI



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

[illegible]



SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	PUSH BUTTON, NORMALLY OPEN CONTACT		VOLTAGE SELECTOR SWITCH
	PUSH BUTTON, NORMALLY CLOSE CONTACT		AMMETER SELECTOR SWITCH
	NORMALLY CLOSE CONTACT		SWITCHING DEVICE (GENERAL SYMBOL)
	LAMP (FOR LIGHTING)		
	SOCKET		CONTACTOR (CONTACT OPEN IN THE UNOPERATED POSITION)
	SPACE HEATER		AND LOGIC
	TRANSFORMER		OR LOGIC
			NOT LOGIC
	INDUCTOR, REACTOR, SPRING		FUSE GENERAL SYMBOL
	CURRENT TRANSFORMER		MINIATURE CIRCUIT BREAKER (MCB)
	TRANSDUCER 4-20mA I: CURRENT V: VOLTAGE P: ACTIVE POWER Q: REACTIVE POWER		TERMINALS OF SWITCHGEAR
			VOLTMETER
	EARTH		AMMETER

NOTES	
LEGEND	
REFERENCE DRAWING	DWG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK-CGF-PEDCO-120-BL-EL-0002
CONTROL LOGIC DIAGRAM FOR LV INCOMBES & BUS TIE	BK-CGF-PEDCO-120-BL-LD-0001
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	BK-CGF-PEDCO-120-BL-EL-0001
KEY PLAN	

D06	JAN.2023	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **									
D04	NOV.2022	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **									
D05	JUL.2022	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **									
D02	MAY.2022	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **	***	*****	REV. 01	2022-05-05	REV. 01	2022-05-05			
D01	APR.2022	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **	REV.	DESCRIPTION	BY	DATE	BY	DATE			
D00	DIST.0001	IFI	U.SHAHBA	U.FARSAHAN	U.AGHASAD	** **			CHECKED		REV. APPR.				
REV.	DATE	P.O.I.F	PREP.	CHK.	APP.	AUT.	اصل و کاپی این نقشه و جزو اسناد مشترک به شرکت ملی صنایع پتروشیمی می باشد.								
PROJECT NAME:															
PROJECT NO.:															
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):												
 HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES			 PETROIRAN DEVELOPMENT COMPANY												
BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED								
DATE															
SCALE															
DRAWING BY															
CHECKED BY							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED								
PROJECT ENG.															
DRAWING TITLE:							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED								
ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL															
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION		
NW1	A3	BK-CGF-PEDCO-120-BL-DG-0002			06 OF 16	DD6	003-073-0104	P	2	P	700041	06 OF 16	DD6		

(VENDOR TITLE BLOCK)\*\*



LEGEND

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCO SINGLE LINE DIAGRAM	SK-003-P2000-120-21-26-000
CONTROL LOGIC DIAGRAM FOR LV INCOMERS & BUS TIE	SK-003-P2000-120-21-12-000
ELECTRICAL OVERALL SINGLE LINE DIAGRAM	SK-003-P2000-120-21-26-000

### KEY PLAN

و کلیه نسخ این نقشه و حق انحصاری معلق به شرکت ملی مناطق نفت گزین جنوب می باشد.

THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH  
THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF  
N.I.S.O.C./ FIELDS

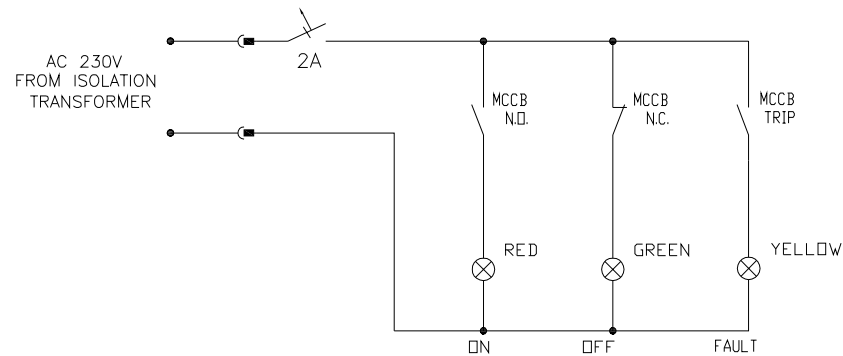
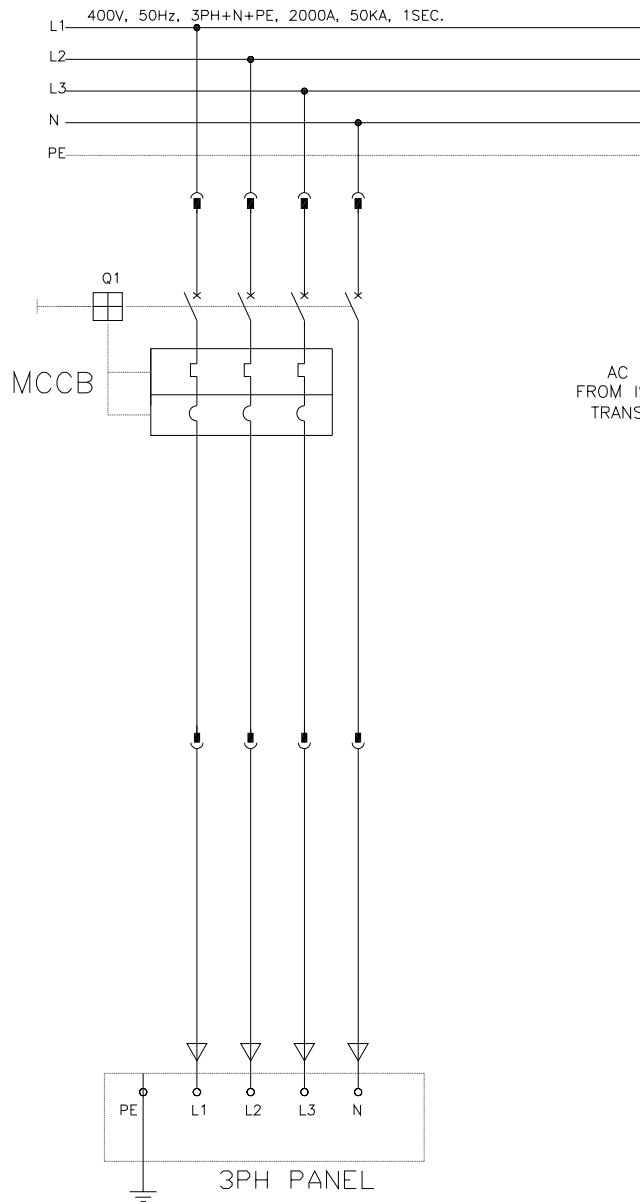
DRAWING TITLE:										NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED									
ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL										APPROVED FOR CONSTRUCTION									
										BY: DATE:									
SCALE	SIZE	DRAWING NO.				SHEET	NO.	REV.	BUDGET	REQ.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISED			
NYS	A8	BK-G33-PEDCO-120-EE-DG-0002				06	16	000	03-073-9184	F	E	P	700041	06	07	16	000		

(VENDOR TITLE BLOCK)\*\*









# NOTES

## LEGEND

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

## KEY PLAN

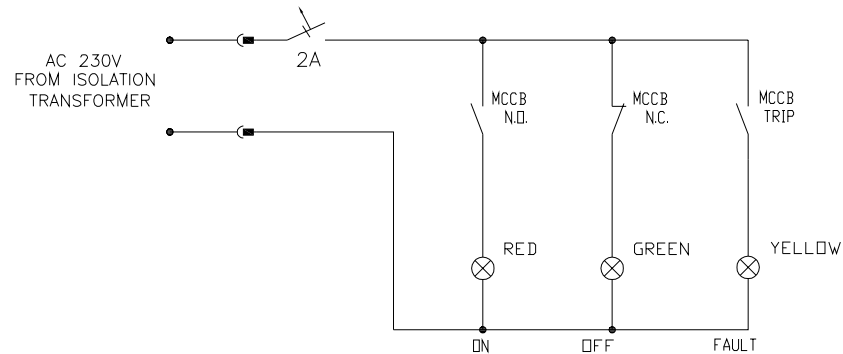
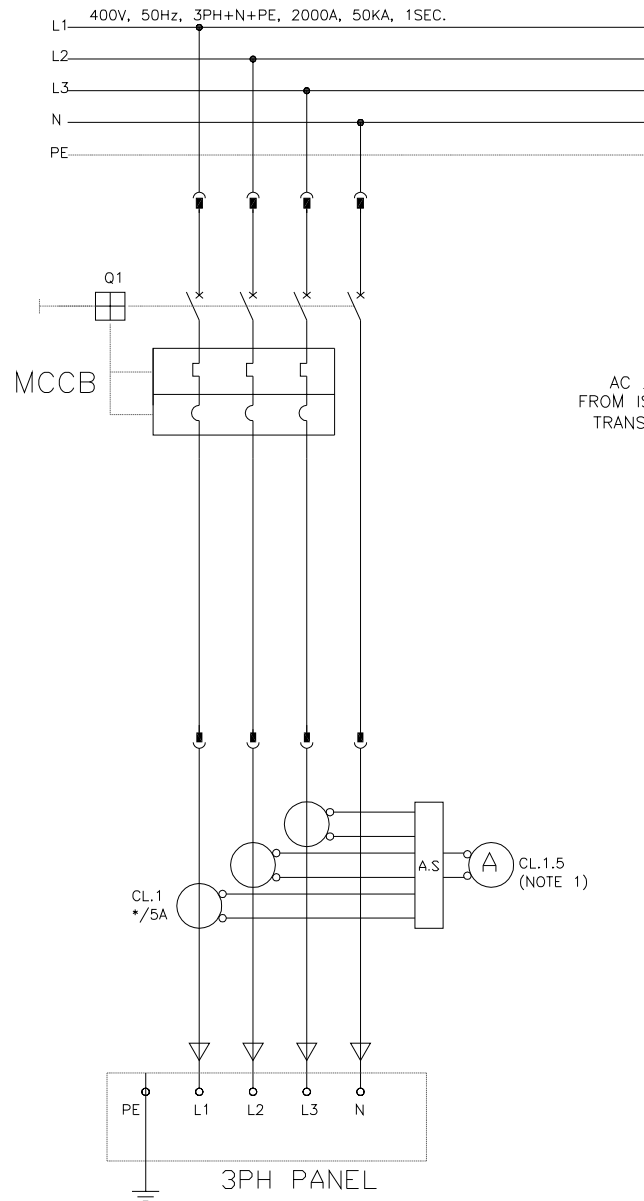
REV.	DATE	DESCRIPTION	CHECKED	BY	DATE	BY	DATE
DD6	JAN.2023	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA
DD4	NOV.2022	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA
DD5	JUL.2022	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA
DD2	MAY.2022	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA
DD1	APR.2022	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA
DD0	DIC.2021	IF1	U.SHAHBA	U.FARSIAN	U.SHAHBA	U.SHAHBA	U.SHAHBA

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION  
 PROJECT NO.: 971020  
 EPD/EPD CONTRACTOR (GO): PETROIRAN DEVELOPMENT COMPANY  
 HIRGAN ENERGY DESIGN & INSPECTION COMPANY

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NW	A3	SK-003-PEDCO-120-BL-BL-0002	09 OF 16	DD6	003-073-014	F	2	P	700041	09 OF 16	DD6

F4: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR I<63A FEEDERS.



F5: SIMPLE 3-POLE MCCB FEEDER WITH THERMAL/MAGNETIC TRIPS, FOR 63A<I<100A FEEDERS.

# NOTES

## LEGEND

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

## KEY PLAN

REV.	DATE	DESCRIPTION	BY	DATE	BY	DATE
DD6	JAN.2023	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **
DD4	NOV.2022	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **
DD5	JUL.2022	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **
DD2	MAY.2022	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **
DD1	APR.2022	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **
DD0	DEC.2021	IFP	U.SHAHBA	U.FARSIAN	U.SHAHBA	** **

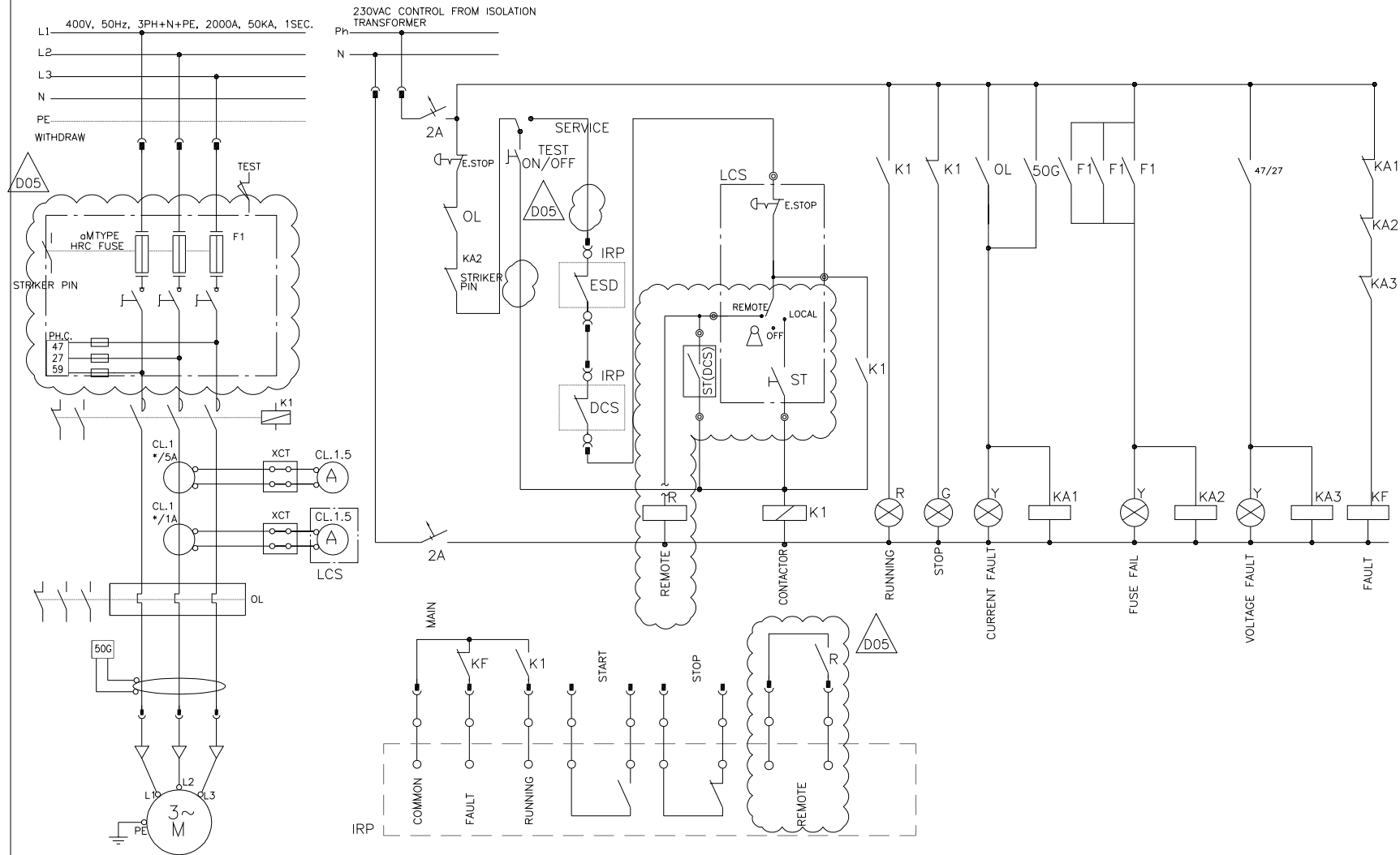
PROJECT NAME:	BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION
PROJECT NO.:	971020
EPC CONTRACTOR:	HIRAN ENERGY DESIGN & INSPECTION COMPANY
EPD/EPC CONTRACTOR (GO):	PETROIRAN DEVELOPMENT COMPANY
DRAWING TITLE:	ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL
SCALE:	AS
DRAWING NO.	BK-CGF-PEDCO-120-BL-DG-0002
SHEET NO.	10 OF 16
REV.	DD6
BUDGET REF.	003-073-0104
LOCATION	F
SIZE	2
CLASS	P
SERIAL NO.	700041
DATE	10 OF 16
REVISION	DD6

[illegible]

[illegible]







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

# NOTES

## LEGEND

REFERENCE DRAWING	FIG. No.
LV SWITCHGEAR/MOT SINGLE LINE DIAGRAM	SK-CGF-PEDCO-120-BL-BL-0002
CONTROL LOGIC DIAGRAM FOR LV INCOMBRES & 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	BY	DATE	BY	DATE
D05	JAN.2025	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA
D04	NOV.2022	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA
D03	JUL.2022	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA
D02	MAY.2022	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA
D01	APR.2022	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA
D00	DIST.0001	IF1	U/BAHARA	U/BAHARA	U/BAHARA	U/BAHARA

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

PROJECT NO.: 971020

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

DRAWING TITLE: ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANEL

SCALE	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NW	AS	16	OF 16	D05	003-073-014	P	2	P	700041

(VENDOR TITLE BLOCK)

