





# ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL


NOTES

ABBREVIATION

REFERENCE DRAWING	DRG. No.
ELECTRICAL LOAD LIST	BK-GCS-PEDCO-120-EL-LI-0001
EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0003

DOB	DEC.2024	FI	M.Pourdehbi	M.FAKHARIAN	M.MOHRSHAD	00.00
D07	AUG.2024	FI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00
D06	SEP.2023	FI	H.SHAHBA	M.FAKHARIAN	S.FARHANGPOUR	00.00
D05	MAY.2023	IFI	H.SHAHBA	M.FAKHARIAN	A.M.MOHRSHAD	00.00
D04	DEC.2022	IFI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00
D03	JUL.2022	IFI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00
D02	APR.2022	IFI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00
D01	MAR.2022	IFI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00
D00	JAN.2022	IFI	H.SHAHBA	M.FAKHARIAN	M.MOHRSHAD	00.00

REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.					
PROJECT NAME:							BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION				
PROJECT NO.:							971020				
EPC CONTRACTOR:							EPD/EPC CONTRACTOR (GC):				
  HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES							  PETROIRAN DEVELOPMENT COMPANY PEDCO				
DRAWING TITLE:							ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL				
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE CLASS	SERIAL NO.	SHEET REVISION
N.T.S	A3	BK-GCS-PEDCO-120-EL-DG-0001			01 OF 07	D08	053-073-9184	F	2	P	709040 01 OF 07 D08

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NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED											
APPROVED FOR CONSTRUCTION BY: DATE:											

(VENDOR TITLE BLOCK)\*\*

ITEM No.	SYMBOLS	DESCRIPTION	ITEM No.	SYMBOLS	DESCRIPTION
01		VOLTAGE TRANSFORMER	20		THERMO SWITCH
02		CURRENT TRANSFORMER	21		OPERATING MECHNISM
03		CURRENT TRANSFORMER (RING TYPE)	22		SIGNAL LAMP
04		CORE BLANCD C.T.	23		DRAW OUT UNIT
05		CIRCUIT BREAKER	24		AMMETER
06		NORMALLY OPEN / CLOSE CONTACT	25		VOLTMETER
07		LIMIT SWITCH	26		AMMETER SWITCH
08		DISCONNECTOR (ISOLATOR)	27		VOLTMETER SWITCH
09		CONTACTOR	28		BUS BAR
10		START/STOP PUSH BUTTON	29		OPERATING BY TURNING
11		EARTHING SWITCH	30		THREE POSITION LATCH TYPE SELECTOR SWITCH
12		THERMAL RELAY	31		LATCH
13		COIL	32		KILO WATT HOUR METER
14			33		RELAY (NUMBER IN THE SYMBOLS INDICATES)
15		TWO POLE MINIATURE CIRCUIT BREAKER	34		FUSE GENERAL SYMBOL
16		TWO POLE EARTH LEAKAGE MINIATURE CIRCUIT BREAKER	35		ELECTRICAL HEATER
17		THREE POSITION SELECTOR SWITCH	36		CABLE NUMBER INDICATION
18		CABLE GLAND	37		TESTING TERMINAL
19		TERMINAL	38		OPERATING BY ELECTRIC MOTOR

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- 3- THE BURDEN OF C.T. & V.T. SHOULD BE FINALIZED BY PANEL MANUFACTURE.

ABBREVIATION	
A	AMPERE
M	MOTOR
AS	AMMETER SWITCH
CT	CURRENT TRANSFORMER
Hz	HERTZ
IP	DEGREE OF PROTECTION BY ENCLOSURE
KA	KILO AMPERE
KV	KILO VOLT
KW	KILO WATT
MV	MEDIUM VOLTAGE
VS	VOLTMETER SWITCH
VI	VOLTAGE TRANSFORMER
KVA	KILOVOLT-AMPERE
KWH	KILOWATT-HOUR
VCB	VACUUM CIRCUIT BREAKER
TCS	TRIP COIL SUPERVISION
KVAR	KILOVAR
SWGR	SWITCH GEAR

REFERENCE DRAWING	DRG. No.
ELECTRICAL LOAD LIST	BK-GCS-PEDCO-120-EL-LI-0001
EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0003

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

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY PEDCO

DRAWING TITLE: ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL

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SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE CLASS	SERIAL NO.	SHEET	REVISION
N.T.S	A5	BK-GCS-PEDCO-120-EL-DG-0001	02 OF 07	D08	068-073-9184	F	2	P	709040	02 OF 07 D08

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(VENDOR TITLE BLOCK)\*\*

ITEM No.	SYMBOLS	DESCRIPTION	ITEM No.	SYMBOLS	DESCRIPTION
39		LIGHTING ARRESTER OR SURGE ARRESTER	58	(50)	INSTANTANEOUS OVER CURRENT RELAY
40	AT	AMMETER TRANSDUCER	59	(51)	AC TIME OVER CURRENT RELAY
41	VT	VOLT TRANSDUCER	60	(50G)	SENSITIVE EARTH FAULT RELAY
42	KWT	KILO WATT TRANSDUCER	61	(50N)	INSTANTANEOUS EARTH FAULT RELAY
43	KVART	KILO VAR TRANSDUCER	62	(51N)	AC INVERSE TIME EARTH FAULT RELAY
44	CosφT	POWER FACTOR TRANSDUCER	63	(74TCS)	TRIP COIL SUPERVISION RELAY
45	Cosφ	POWER FACTOR METER	64	(86)	LOCK OUT RELAY
46	W	WATT METER	65	(66)	TOO FREQUENT START RELAY
47	var	VAR METER	66	(49R)	WINDING OVER TEMPERATURE RELAY
48	CC	CLOSING COIL	67	(49CR)	LOCKED ROTOR RELAY
49	CO	SHUNT TRIP	68	(86T)	INTERTRIP RECEIVE RELAY
50	RS	AUXILIARY RELAY	69	(26)	OIL Thermal Device OR Winding Thermal Device
51	XF	AUXILIARY RELAY	70	(63P)	Pressure Switch Detecto
52	(27)	UNDER VOLTAGE RELAY	71	(71)	Liquid Switch
53	(27M)	INDUCED VOLTAGE RELAY	72		
54	(33)	POSITION SWITCH	73		
55	(38)	BEARING PROTECTIVE DEVICE	74		
56	(46)	REVERSE-PHASE OR PHASE- BALANCE CURRENT RELAY	75		
57	(49)	MACHINE THERMAL RELAY	76		

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

**PROJECT NO.:** 971020

**EPC CONTRACTOR:** HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES

**EPD/EPC CONTRACTOR (GC):** PETROIRAN DEVELOPMENT COMPANY

**DRAWING TITLE:** ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.
N.T.S	A5	BK-GCS-PEDCO-120-EL-DG-0001	03 OF 07	D08

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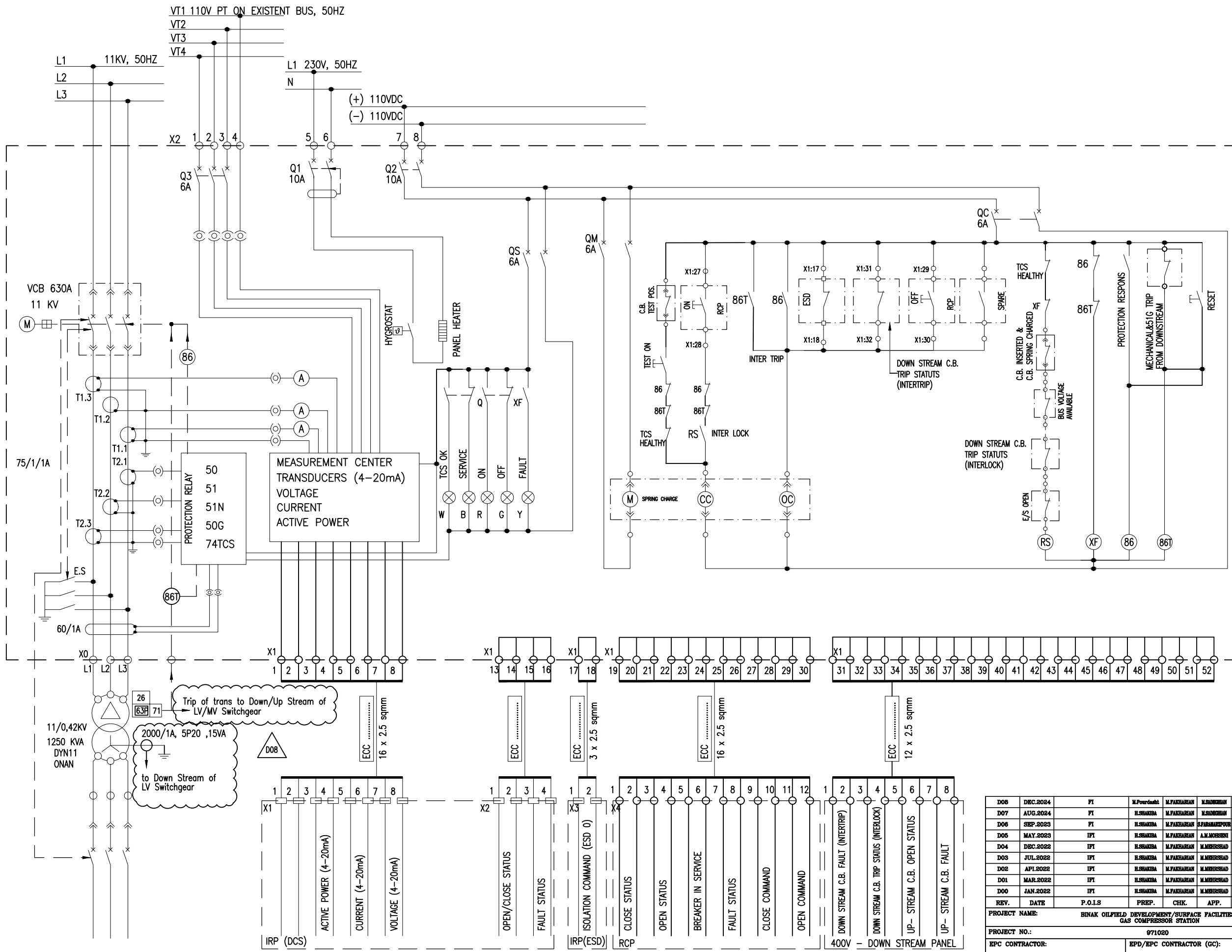
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DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

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BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
068-073-9184	F	2	P	709040	03 OF 07	D08

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  - 9- CIRCUIT BREAKERS STATUS SHALL BE SENT TO BOTH DCS AND RCP.
  - 10- PROTECTIVE RELAYS AND MEASURING UNIT SHALL BE EQUIPPED WITH RS 485 TO SEND SIGNALS BY SERIAL LINK.
  - 11- MOTOR RTD SIGNALS WELL BE SENT TO UCP.

**ABBREVIATION**

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EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0009

LV TRANSFORMER OUTGOING: TYPE C2

REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.
D08	DEC.2024	FI	M.Pourdeh	M.PAKHARIAN	M.SOROSHIAN	00.00
D07	AUG.2024	FI	ELSHAKBA	M.PAKHARIAN	M.SOROSHIAN	00.00
D06	SEP.2023	FI	ELSHAKBA	M.PAKHARIAN	S.FARHANGPOUR	00.00
D05	MAY.2023	IFI	ELSHAKBA	M.PAKHARIAN	A.M.MOHRANI	00.00
D04	DEC.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MEHRSHAD	00.00
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D02	APR.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MEHRSHAD	00.00
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PROJECT NO.: 971020

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N.T.S	A5	BK-GCS-PEDCO-120-EL-DG-0001	04 OF 07	D08	068-078-9184	F	2	P	709040 04 OF 07 D08

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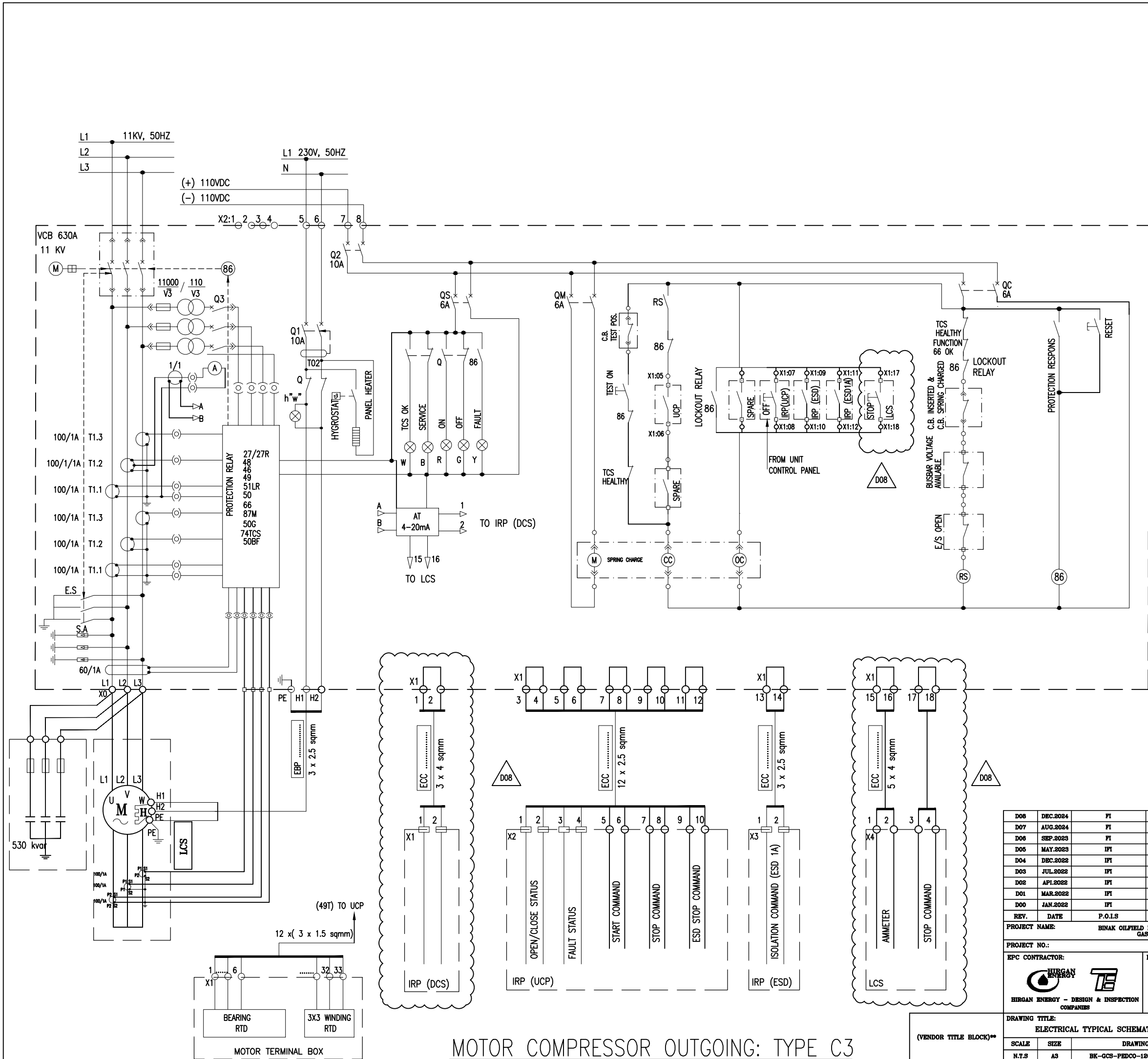
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BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION	BY:	DATE:



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  - 2- PANEL HEATER SHOULD BE INSTALLED IN SUITABLE POSITION.
  - 3- THE BURDEN OF C.T. & V.T. SHOULD BE FINALIZED BY PANEL MANUFACTURE.
  - 4- IN THE CASE OF MECHANICAL TRIP OF TRANSFORMER, SIGNAL RELAY 86 SHALL BE SENT TO DOWNSTREAM. IN OTHER WORDS VCB & ACB SHALL BE TRIPPED.
  - 5- FOR FIRE WATER PUMP WHICH WILL BE FED FROM, 11/3.3 KV TRANSFORMER, A VOLTMETER SHALL BE CONSIDERED ON 3.3 SWITCHGEAR.
  - 6- VOLTAGE & CURRENT SAMPLE FOR CAPACITOR BANKS OF COMPRESSORS SHALL BE CONSIDERED BY VENDOR.
  - 7- SUPPLY VOLTAGE 230 VAC FOR CIRCUIT LIGHTING, SOCKET, SHALL BE CONSIDERED SEPARATELY MCB BY VENDOR. ALSO SUPPLY VOLTAGE 110 VDC FOR CIRCUIT METERING AND PROTECTION, MOTOR SPRING CHARGE, CLOSE AND OPEN COIL, INDICATION, SHALL BE CONSIDERED SEPARATELY MCB BY VENDOR.
  - 8- CAPACITIVE VOLTAGE INDICATOR SHALL BE CONSIDERED FOR MV FEEDERS.
  - 9- CIRCUIT BREAKERS STATUS SHALL BE SENT TO BOTH DCS AND RCP.
  - 10- PROTECTIVE RELAYS AND MEASURING UNIT SHALL BE EQUIPPED WITH RS 485 TO SEND SIGNALS BY SERIAL LINK.
  - 11- MOTOR RTD SIGNALS WILL BE SENT TO UCP.

**ABBREVIATION**

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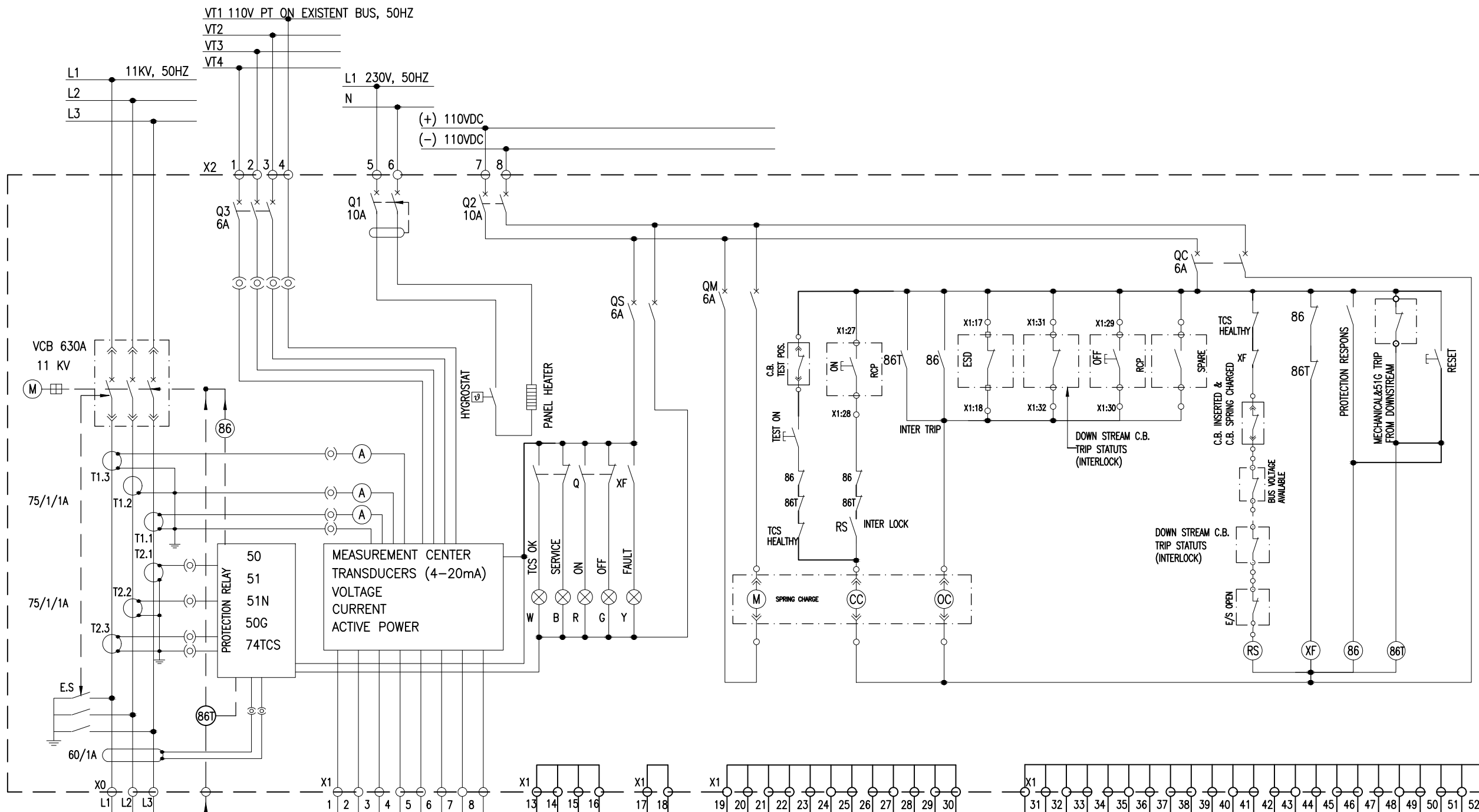
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REV.	DESCRIPTION	CHECKED	DATE	BY	DATE	BY	DATE

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**EPC CONTRACTOR:** HIRGAN ENERGY  
**EPD/EPC CONTRACTOR (GC):** PETROIRAN DEVELOPMENT COMPANY  
**DRAWING TITLE:** ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL  
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**BUDGET REF. LOCATION SIZE CLASS SERIAL NO. SHEET REVISION**  
 N.T.S AS BK-GCS-PEDCO-120-EL-DG-0001 05 OF 07 D08 068-078-9184 F 2 P 709040 05 OF 07 D08

MOTOR COMPRESSOR OUTGOING: TYPE C3

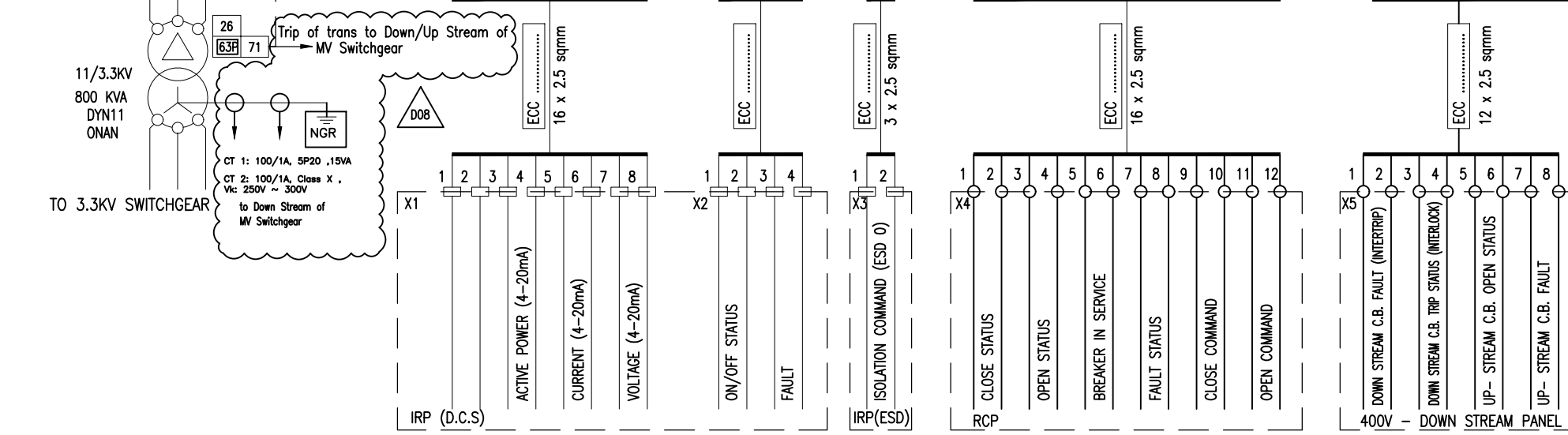


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D04	DEC.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D03	JUL.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D02	APR.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D01	MAR.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D00	JAN.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION						
PROJECT NO.: 971020						
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):			
DRAWING TITLE: ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL						
APPROVED FOR CONSTRUCTION BY: DATE:						
SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION
N.T.S	A5	BK-GCS-PEDCO-120-EL-DG-0001	06 OF 07	D08	065-073-9184	F 2 P
SHEET NO.			SERIAL NO.		DATE	
08 OF 07			709040		08 OF 07	

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

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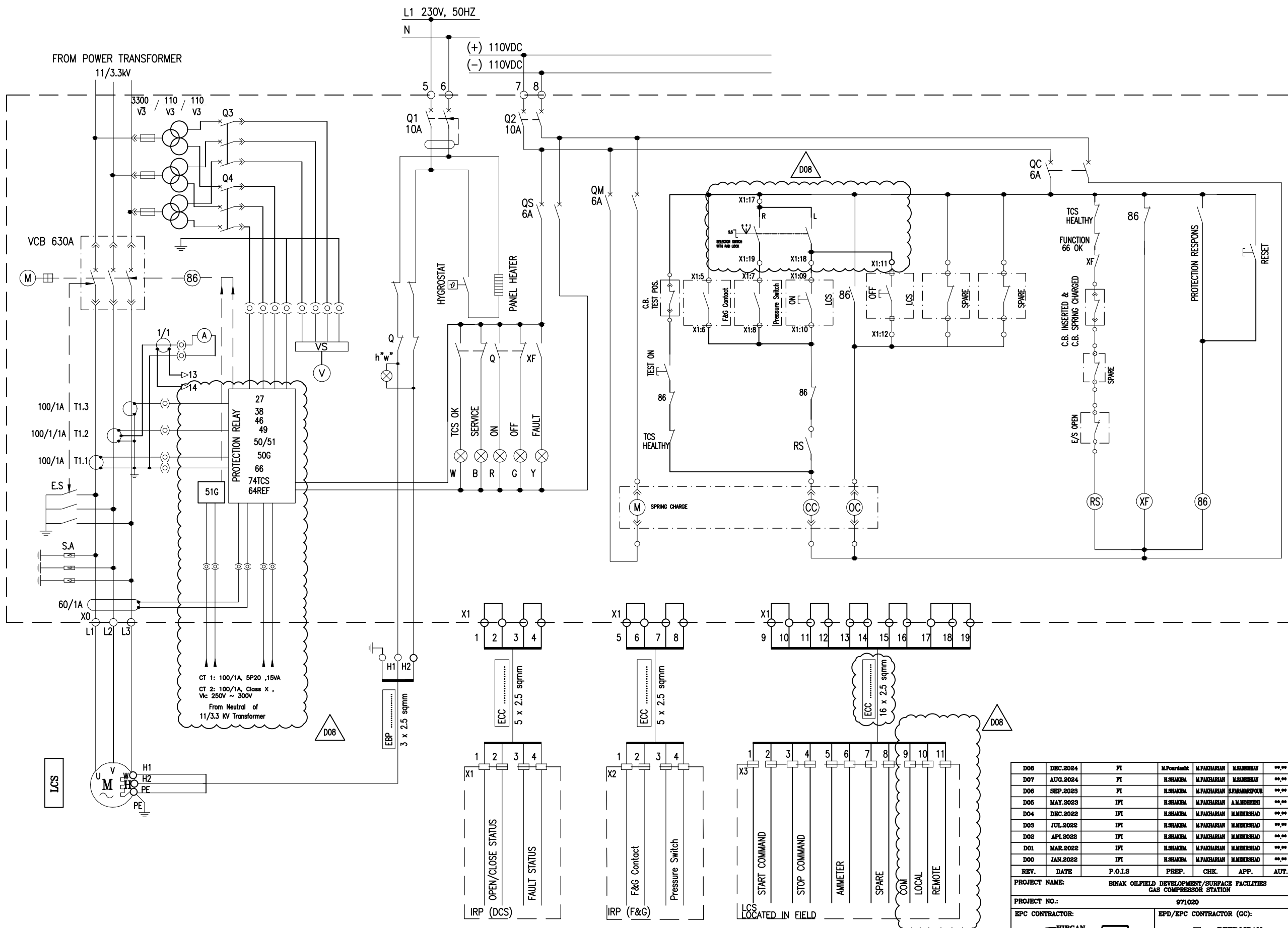
**BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION**

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

**FIRE WATER TRANSFORMER OUTGOING: TYPE C5**

(VENDOR TITLE BLOCK)\*\*



FIRE WATER PUMP: TYPE C6

- NOTES**
- 1- MAX. TWO WIRES SHOULD BE CONNECTED TO ONE TERMINAL.
  - 2- PANEL HEATER SHOULD BE INSTALLED IN SUITABLE POSITION.
  - 3- THE BURDEN OF C.T. & V.T. SHOULD BE FINALIZED BY PANEL MANUFACTURE.
  - 4- IN THE CASE OF MECHANICAL TRIP OF TRANSFORMER, SIGNAL RELAY 86 SHALL BE SENT TO DOWNSTREAM. IN OTHER WORDS VCB & ACB SHALL BE TRIPPED.
  - 5- FOR FIRE WATER PUMP WHICH WILL BE FED FROM, 11/3.3 KV TRANSFORMER, A VOLTMETER SHALL BE CONSIDERED ON 3.3 SWITCHGEAR.
  - 6- VOLTAGE & CURRENT SAMPLE FOR CAPACITOR BANKS OF COMPRESSORS SHALL BE CONSIDERED BY VENDOR.
  - 7- SUPPLY VOLTAGE 230 VAC FOR CIRCUIT LIGHTING, SOCKET, SHALL BE CONSIDERED SEPARATELY MCB BY VENDOR. ALSO SUPPLY VOLTAGE 110 VDC FOR CIRCUIT METERING AND PROTECTION, MOTOR SPRING CHARGE, CLOSE AND OPEN COIL, INDICATION, SHALL BE CONSIDERED SEPARATELY MCB BY VENDOR.
  - 8- CAPACITIVE VOLTAGE INDICATOR SHALL BE CONSIDERED FOR MV FEEDERS.
  - 9- CIRCUIT BREAKERS STATUS SHALL BE SENT TO BOTH DCS AND RCP.
  - 10- PROTECTIVE RELAYS AND MEASURING UNIT SHALL BE EQUIPPED WITH RS 485 TO SEND SIGNALS BY SERIAL LINK.
  - 11- MOTOR RTD SIGNALS WELL BE SENT TO UCP.

**ABBREVIATION**

A	AMPERE
M	MOTOR
AS	AMMETER SWITCH
CT	CURRENT TRANSFORMER
Hz	HERTZ
IP	DEGREE OF PROTECTION BY ENCLOSURE
KA	KILO AMPERE
KV	KILO VOLT
KW	KILO WATT
MV	MEDIUM VOLTAGE
VS	VOLTMETER SWITCH
VI	VOLTAGE TRANSFORMER
KVA	KILOVOLT-AMPERE
KWH	KILOWATT-HOUR
VCB	VACUUM CIRCUIT BREAKER
TCS	TRIP COIL SUPERVISION
KVAR	KILOVAR
SWGR	SWITCH GEAR

REFERENCE DRAWING	DRG. No.
ELECTRICAL LOAD LIST	BK-GCS-PEDCO-120-EL-LI-0001
EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0009

REV.	DATE	DESCRIPTION	BY	DATE	BY	DATE
D08	DEC.2024	PI	M.Pourdeh	M.PAKHARIAN	M.MOHRSHAD	00.00
D07	AUG.2024	PI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D06	SEP.2023	PI	ELSHAKBA	M.PAKHARIAN	S.FARHANGPOUR	00.00
D05	MAY.2023	IFI	ELSHAKBA	M.PAKHARIAN	A.M.MOHRSHAD	00.00
D04	DEC.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D03	JUL.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D02	APR.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D01	MAR.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00
D00	JAN.2022	IFI	ELSHAKBA	M.PAKHARIAN	M.MOHRSHAD	00.00

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

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY

DATE: 07 OF 07

SCALE: N.T.S

DRAWING NO.: BK-GCS-PEDCO-120-EL-DG-0001

SHEET NO.: 07 OF 07

REV.: D08

BUDGET REF.: 068-078-9184

SIZE CLASS: F

CLASS: 2

PROJECT: P

SERIAL NO.: 709040

SHEET: 07 OF 07

REVISION: D08

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION BY: DATE:

DATE: SCALE: DRAWING BY: CHECKED BY: PROJECT ENG.

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