



Toase-ehe Park Sanati Gohar Ofoh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**



Document Title: PLC Layout Drawing

Document No.: EI027-HSE-VD – IN– DIG–008 - R0

Rev. R0

Page 1 of 42

STYRENE PARK OFFSITE

**Document Title:
PLC Layout Drawing**

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R0	05-02-2025	IFA	F.sh	M.O	A.M



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REVISION RECORD SHEET

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X							41	X						
2	X							42	X						
3	X							43							
4	X							44							
5	X							45							
6	X							46							
7	X							47							
8	X							48							
9	X							49							
10	X							50							
11	X							51							
12	X							52							
13	X							53							
14	X							54							
15	X							55							
16	X							56							
17	X							57							
18	X							58							
19	X							59							
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21	X							61							
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26	X							66							
27	X							67							
28	X							68							
29	X							69							
30	X							70							
31	X							71							
32	X							72							
33	X							73							
34	X							74							
35	X							75							
36	X							76							
37	X							77							
38	X							78							
39	X							79							
40	X							80							

Drawing List

No.	Drawing Title
1	DRAWING LIST 1
2	Outline Drawing
3	Inside Layout Drawing
4	POWER DISTRIBUTION DRAWING 1
5	POWER DISTRIBUTION DRAWING 2
6	POWER DISTRIBUTION DRAWING 3
7	POWER DISTRIBUTION DRAWING 4
8	PLC CONFIGURATION DRAWING 1
9	PLC I/O DRAWING 1
10	PLC I/O DRAWING 2
11	PLC I/O DRAWING 3
12	PLC I/O DRAWING 4
13	PLC I/O DRAWING 5
14	PLC I/O DRAWING 6
15	PLC I/O DRAWING 7
16	INTERNAL CIRCUIT DIAGRAM 1
17	INTERNAL CIRCUIT DIAGRAM 2
18	INTERNAL CIRCUIT DIAGRAM 3
19	INTERNAL CIRCUIT DIAGRAM 4
20	INTERNAL CIRCUIT DIAGRAM 5
21	INTERNAL CIRCUIT DIAGRAM 6
22	INTERNAL CIRCUIT DIAGRAM 7
23	INTERNAL CIRCUIT DIAGRAM 8
24	INTERNAL CIRCUIT DIAGRAM 9
25	INTERNAL CIRCUIT DIAGRAM 10
26	INTERNAL CIRCUIT DIAGRAM 11
27	INTERNAL CIRCUIT DIAGRAM 12
28	INTERNAL CIRCUIT DIAGRAM 13
29	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 1
30	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 2

No.	Drawing Title
31	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 3
32	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 4
33	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 5
34	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 6
35	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 7
36	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 8
37	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 9
38	TERMINAL ARRANGEMENT AND CABLE CONNECTION DIAGRAM 10
39	INTERNAL PARTS LIST 1
40	INTERNAL PARTS LIST 2
41	
42	
43	
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WIRE COLOR CODE (IEC 60757)

BK : BLACK
 BN : BROWN
 RD : RED
 OG : ORANGE
 GN : GREEN
 BU : DARK BLUE
 LB : LIGHT BLUE
 GY : GREY
 WH : WHITE
 GNYE : GREEN AND YELLOW
 SH : SCREENING METAL

IDENTIFICATION OF WIRING

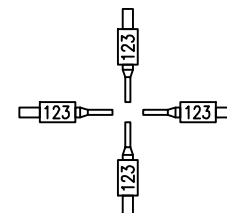
AC POWER CIRCUITS: BROWN (L) AND LIGHT BLUE (N)
 AC CONTROL CIRCUITS: BROWN (L) AND LIGHT BLUE (N)
 DC POWER CIRCUITS: DARK BLUE
 DC CONTROL CIRCUITS: DARK BLUE
 DRY CONTACT CIRCUITS: ORANGE
 PROTECTIVE EARTH: YELLOW/GREEN
 INSTRUMENT EARTH: GREEN
 INTRINSIC SAFETY EARCH: GREEN

MINIMUM CROSS SECTION OF CABLE AND WIRES

POWER CIRCUITS : $\leq 4.0\text{mm}^2$
 CONTROL CIRCUITS (DRY CONTACT) : 1.0mm^2
 CONTROL CIRCUITS : 1.0mm^2
 PLC/I/O CIRCUITS: 0.75mm^2
 ANALOG CIRCUITS: 0.75mm^2

WIRE TERMINAL & MARKER

ALL WIRING SHALL USE CRIMP TERMINALS
 THE SHAPE OF THE CRIMP TERMINAL SHALL BE SUITABLE FOR TERMINAL
 NO MORE THAN TWO WIRES CONNECTED TO ANY ONE TERMINAL
 ALL CONTROL CIRCUITS SHALL BE MARKED ON EACH END
 WITH PERMANENTLY-EMBOSSED WIRE MARKERS AS FOLLOWS:
 WHITE HEAT SHRINK TYPE WITH BLACK LETTERS



REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

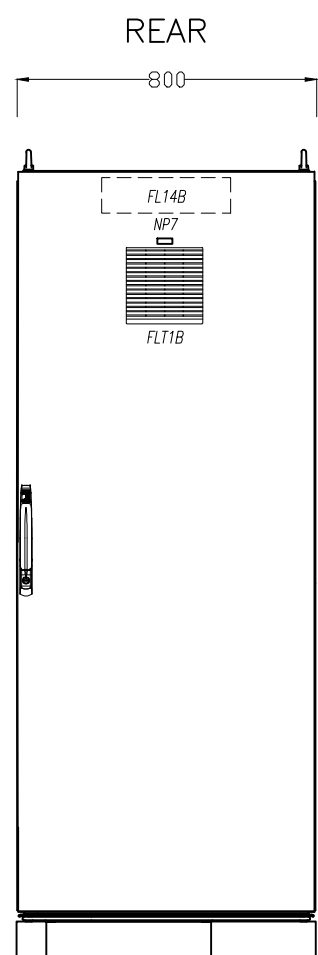
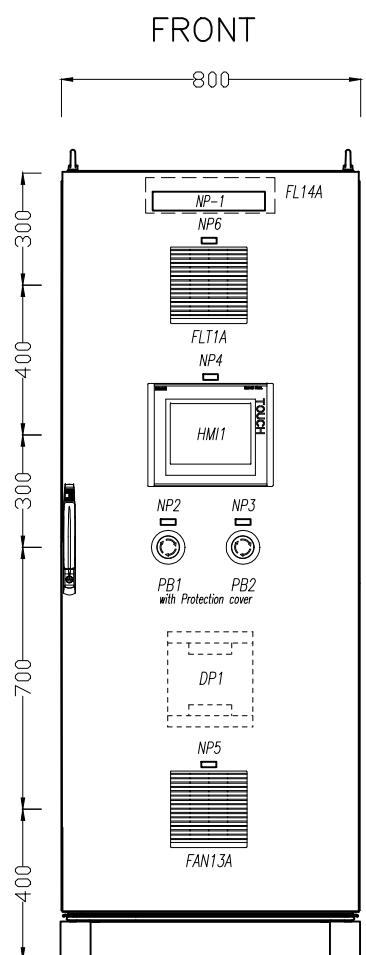
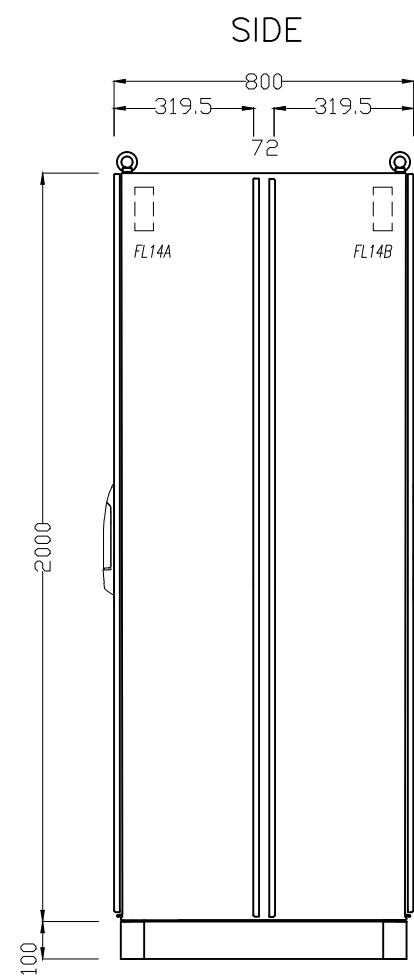
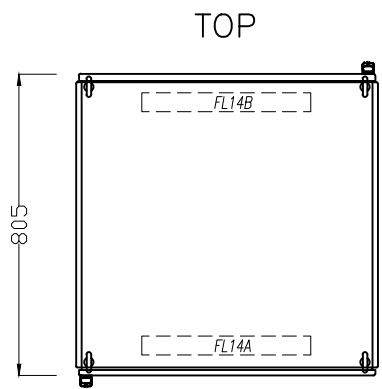
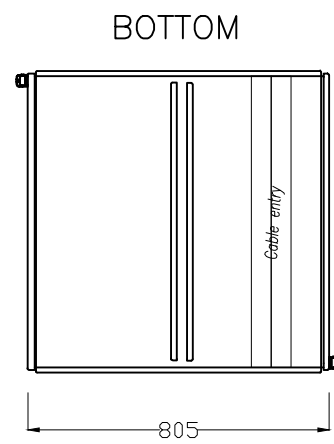
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008	RO	A3	NA	1 / 40



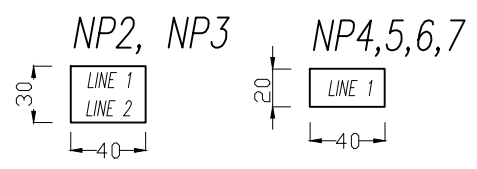
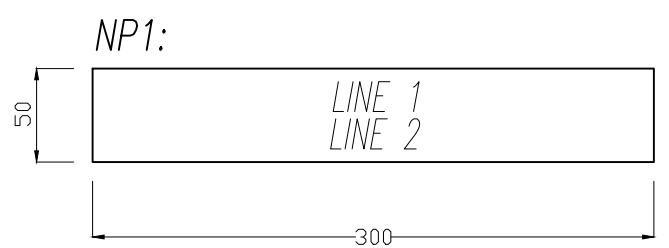
GENERAL NOTES

ENCLOSURE
 MODEL: RITTAL VX 8808.000/ VX 8108.245
 2nd mounting plate VX 5051.043 + 5051.045
 BASE: RITTAL VX 8660.003/ VX 8660.034
 Door Lock: RITTAL VX 8618.200/ TS 8611.180
 COLOR: CABINET: RAL 7035
 BASE: RAL 7022
 PRO.CLASS: IP54
 CABLE ENTRY: VX 8618.8111 x1 (REAR / Bottom)

FILTER: SK 3239.300 x2 (FLT1A/FLT1B)
 FAN: SK 3239.700 x1 (FAN13A)
 DOC. POCKET: SZ 2514.000 (A4) x1 (DP1)
 PANEL LIGHT: SZ 2500.310 x2 (FL14A/FL14B)

NAME PLATE
 MATERIAL: LAMINATED PLASTIC
 PLATE COLOR: WHITE
 LETTER COLOR: BLACK
 FIXING: SELF ADHESIVE

FRONT ← → REAR



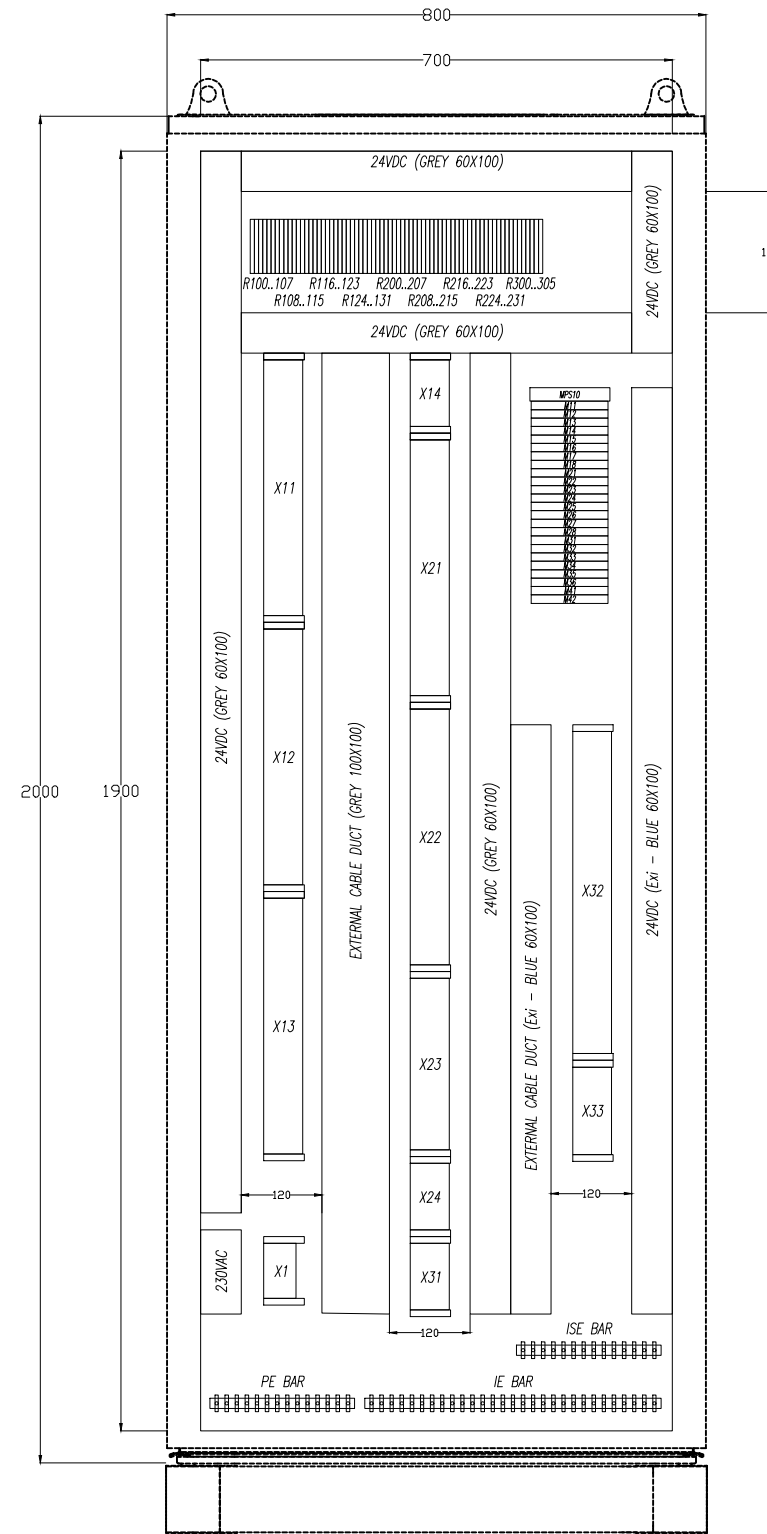
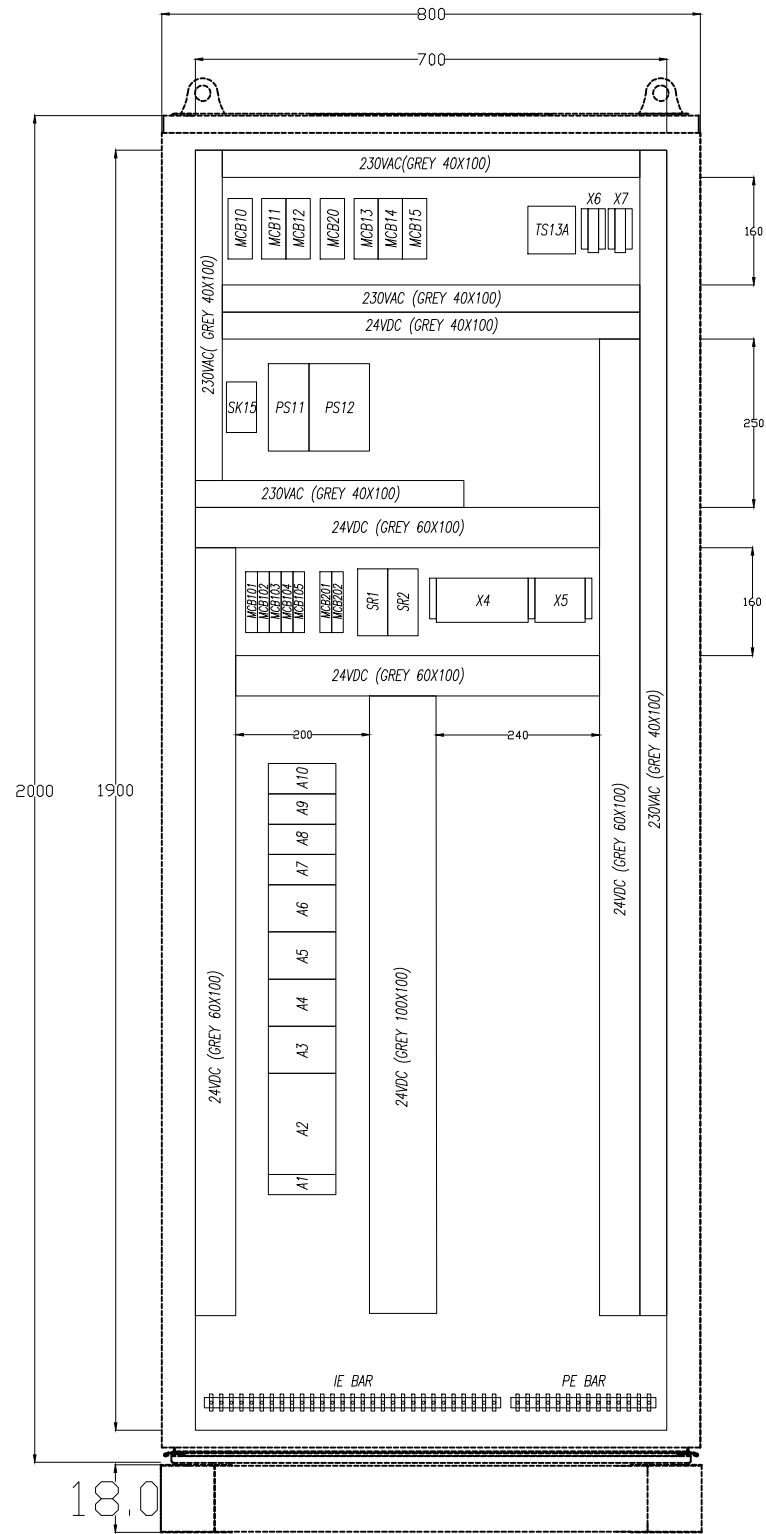
Name plate comment (1'st set)

TAG	Name Plate Description	
	LINE 1	LINE 2
NP-1	UCP-RU0001	REFRIGERATION PACKAGE
NP-2	EMERGENCY STOP	ESD-RU0001A-01
NP-3	EMERGENCY STOP	ESD-RU0001B-01
NP-4	HMI	
NP-5	FAN	
NP-6	FILTER	
NP-7	FILTER	
NP-8		
NP-9		
NP-10		

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	2 / 40

FRONT

REAR



NOTE : ALL PARTS (EXCEPT DUCTS & EARTH BARS) MOUNTED ON NS35 DIN RAIL

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

CLIENT: _____ CONSULTING ENGINEER: _____

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PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

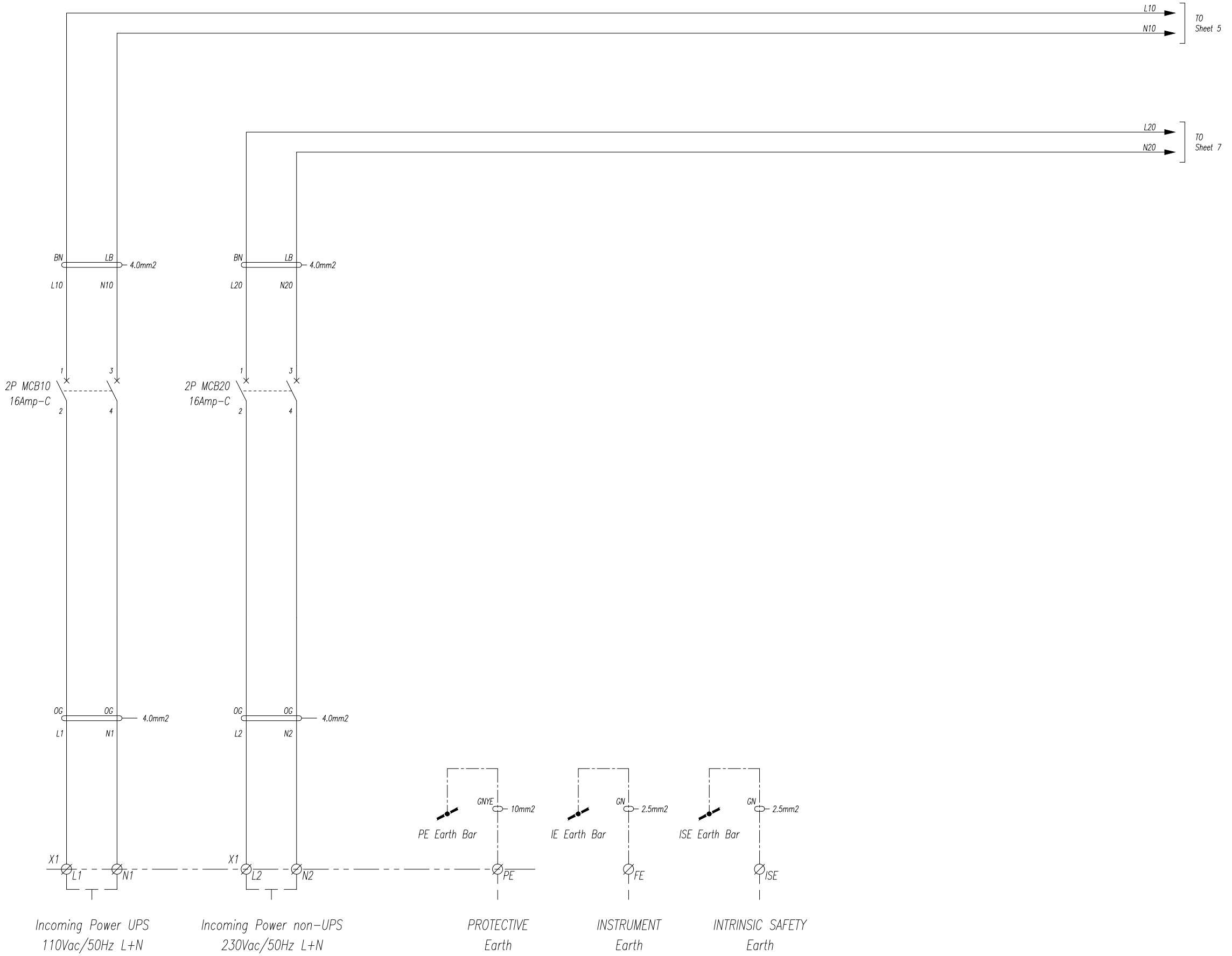
DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	3 / 40

WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter



REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

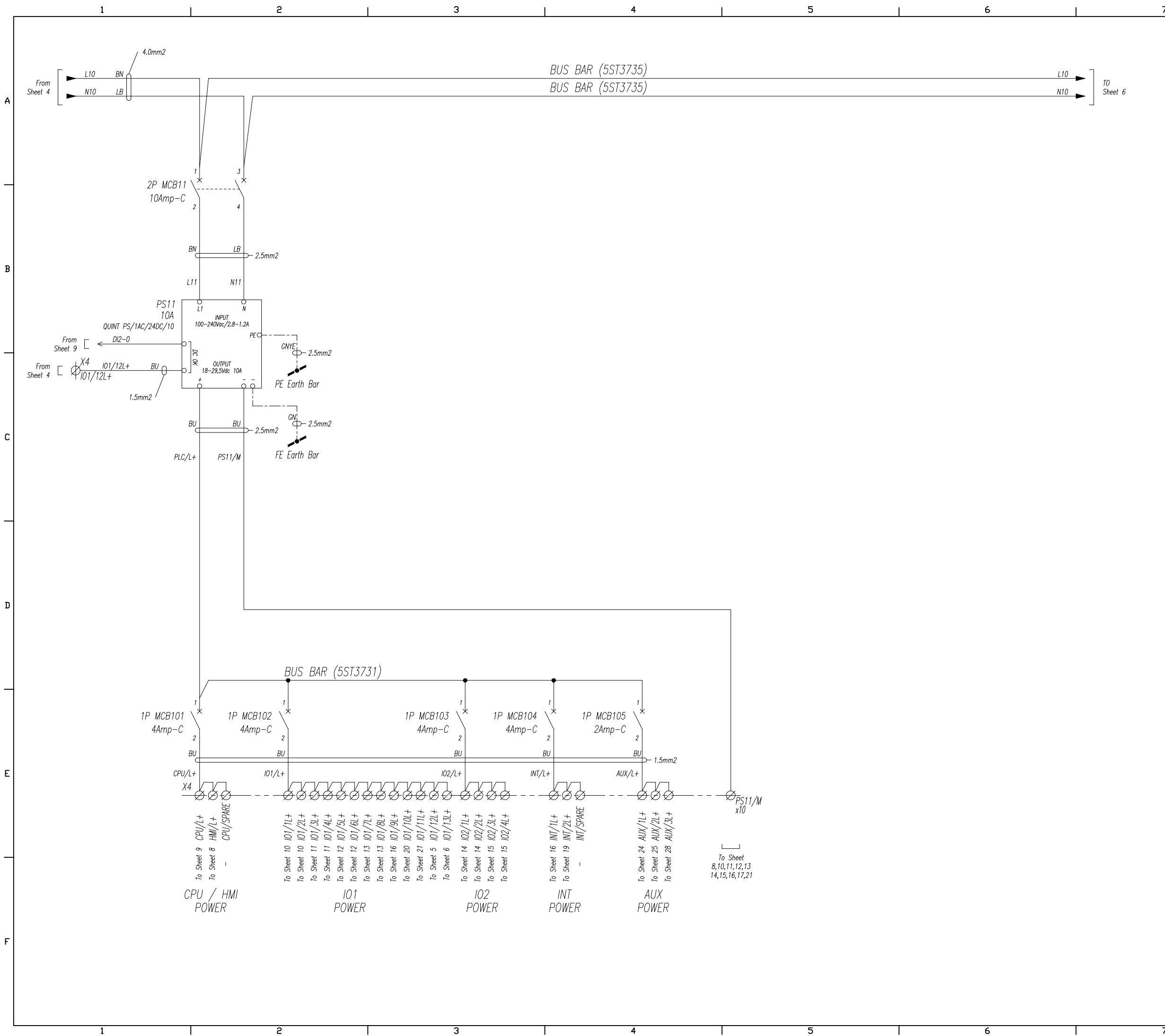
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	4 / 40



GENERAL NOTES

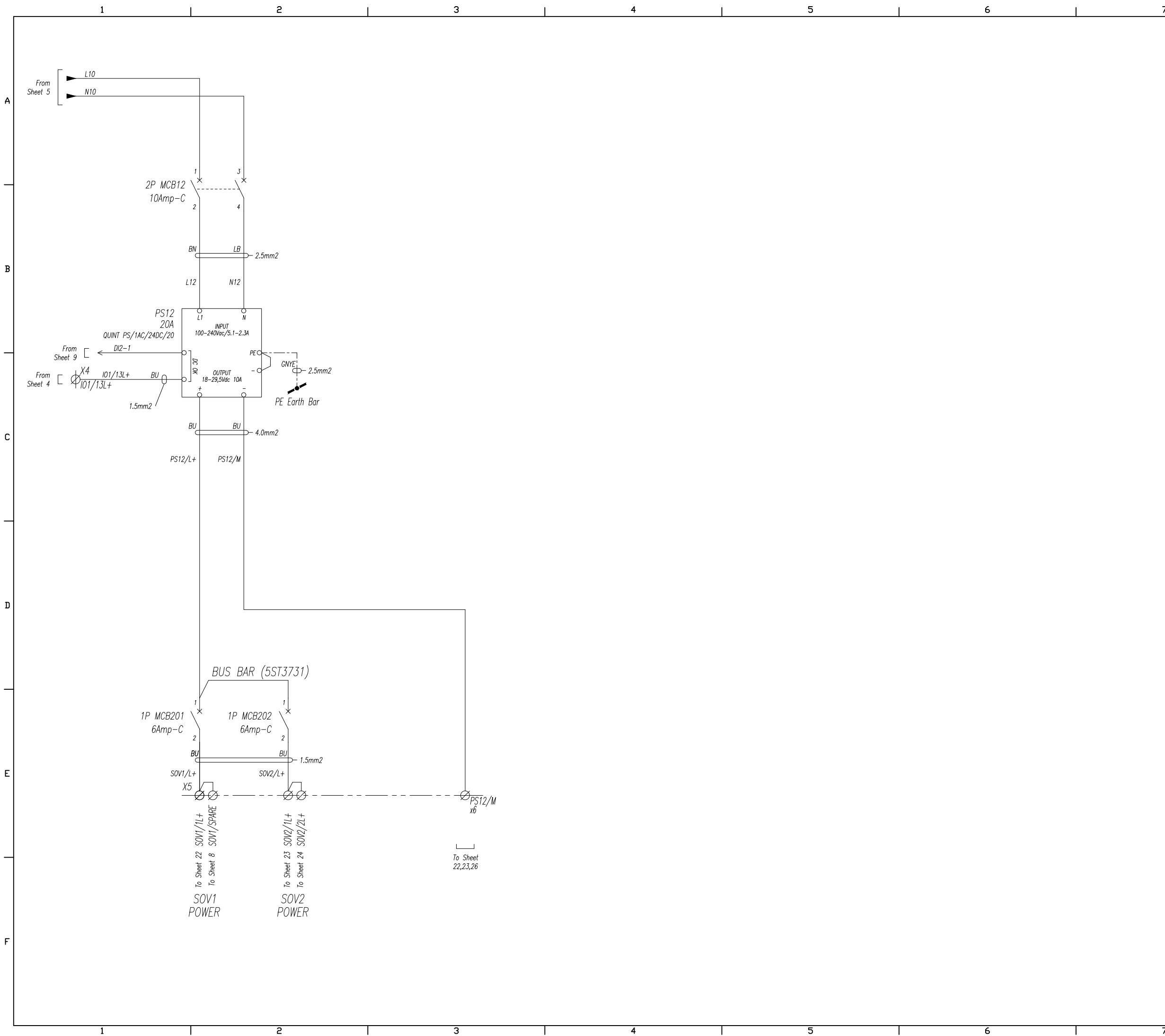
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VENDOR:					
PROJECT: PR200					
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EI027-HSE-VD-IN-DIG-008		RO	A3	NA	5 / 40



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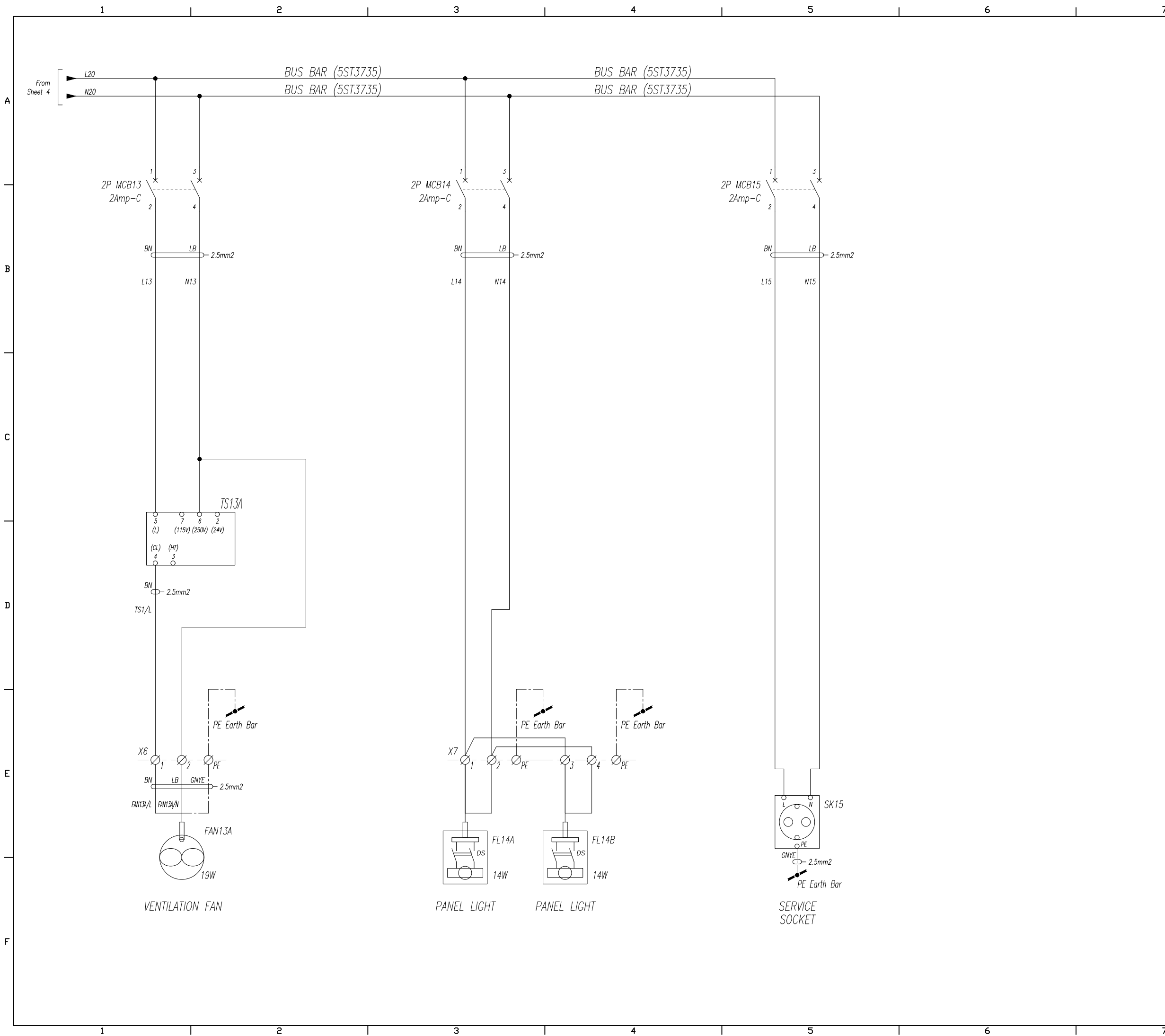
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VENDOR: _____

PROJECT: **PR200**

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EI027-HSE-VD-IN-DIG-008	RO	A3	NA	6 / 40



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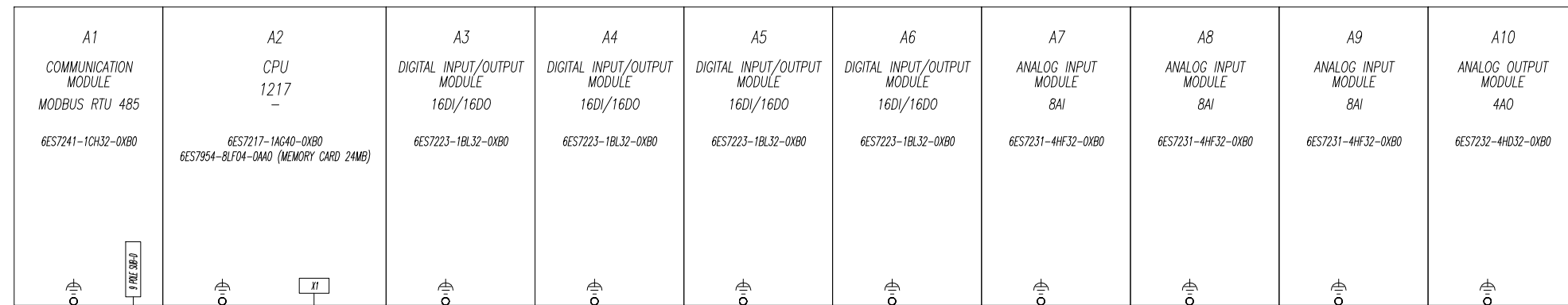
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PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

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EI027-HSE-VD-IN-DIG-008	RO	A3	NA	7 / 40

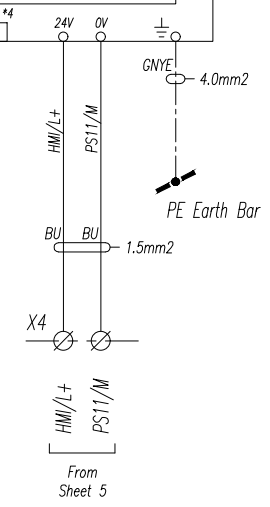
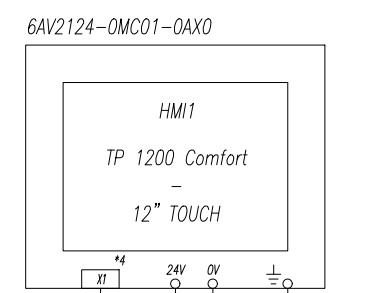


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MODBUS RTU
FROM DCS
9 POLE D-SUB SOCKET

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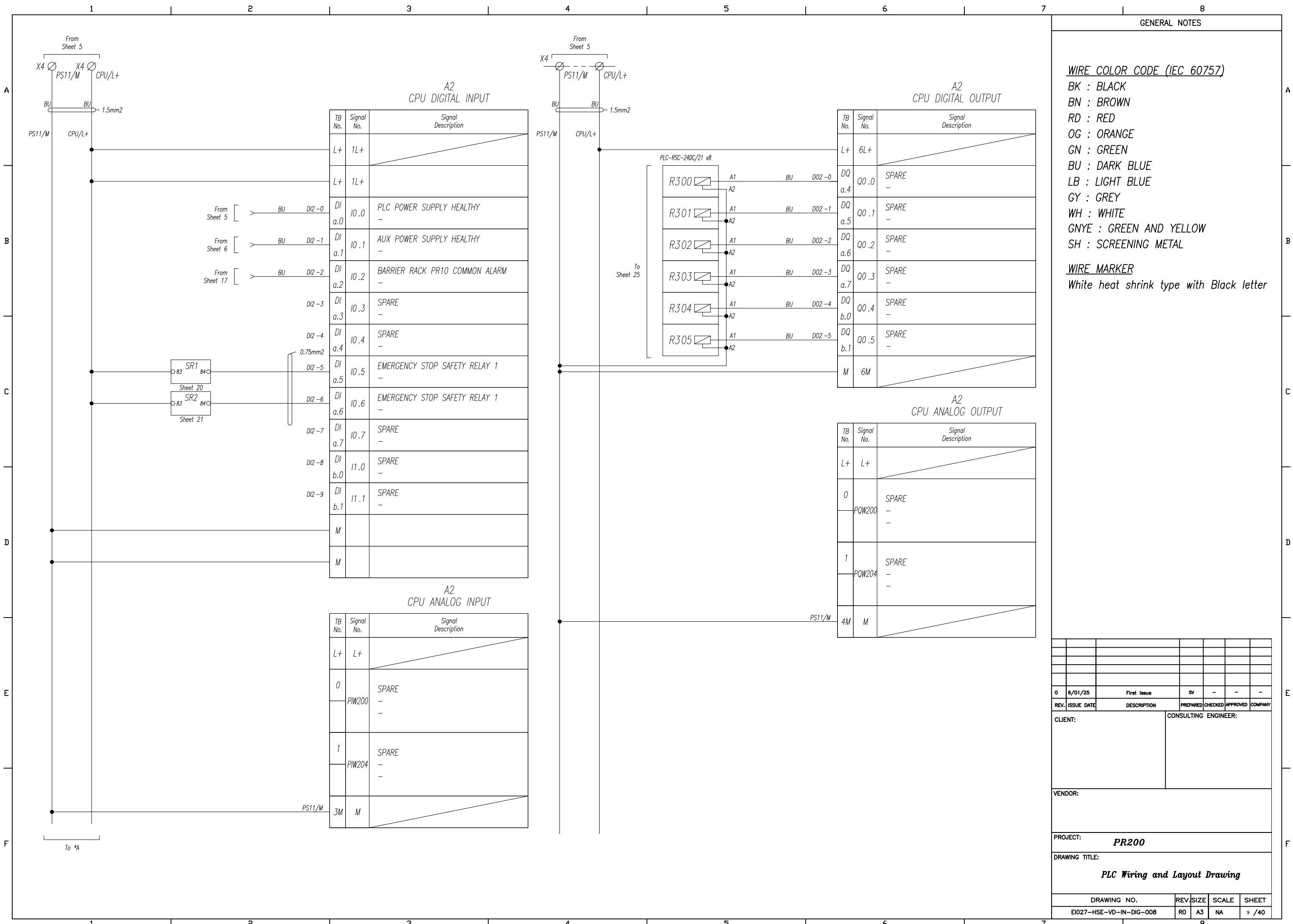
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PLC Wiring and Layout Drawing

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	8 / 40



**A2
CPU DIGITAL INPUT**

TB No.	Signal No.	Signal Description
L+	1L+	
L+	1L+	
DI a.0	10.0	PLC POWER SUPPLY HEALTHY
DI a.1	10.1	AUX POWER SUPPLY HEALTHY
DI a.2	10.2	BARRIER RACK PR10 COMMON ALARM
DI a.3	10.3	SPARE
DI a.4	10.4	SPARE
DI a.5	10.5	EMERGENCY STOP SAFETY RELAY 1
DI a.6	10.6	EMERGENCY STOP SAFETY RELAY 1
DI a.7	10.7	SPARE
DI b.0	11.0	SPARE
DI b.1	11.1	SPARE
M		
M		

**A2
CPU ANALOG INPUT**

TB No.	Signal No.	Signal Description
L+	L+	
0	PIW200	SPARE
1	PIW204	SPARE
3M	M	

**A2
CPU DIGITAL OUTPUT**

TB No.	Signal No.	Signal Description
L+	6L+	
DQ a.4	Q0.0	SPARE
DQ a.5	Q0.1	SPARE
DQ a.6	Q0.2	SPARE
DQ a.7	Q0.3	SPARE
DQ b.0	Q0.4	SPARE
DQ b.1	Q0.5	SPARE
M	6M	

**A2
CPU ANALOG OUTPUT**

TB No.	Signal No.	Signal Description
L+	L+	
0	PQW200	SPARE
1	PQW204	SPARE
4M	M	

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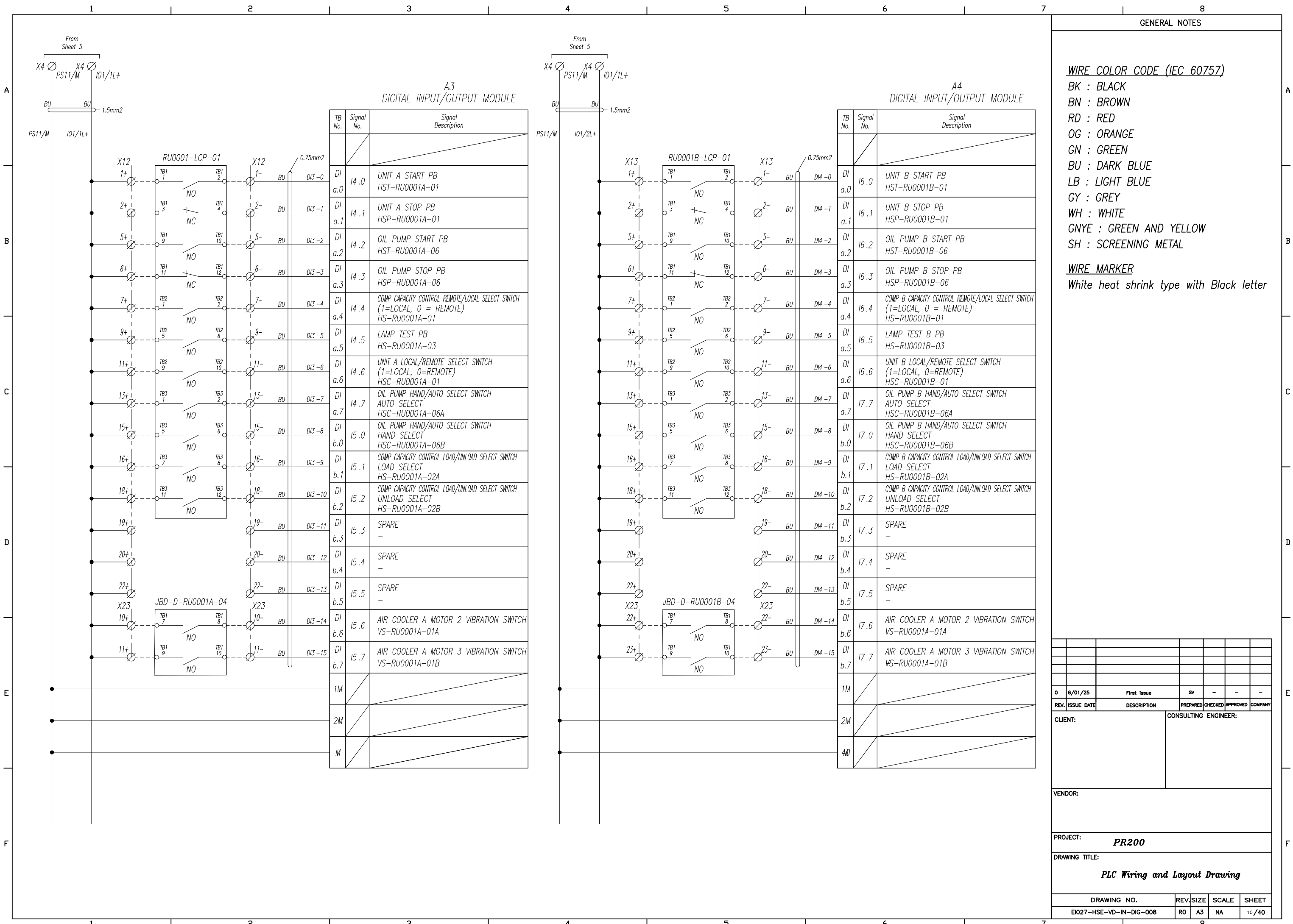
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DRAWING NO.	REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008	R0	A3	NA	9 / 40



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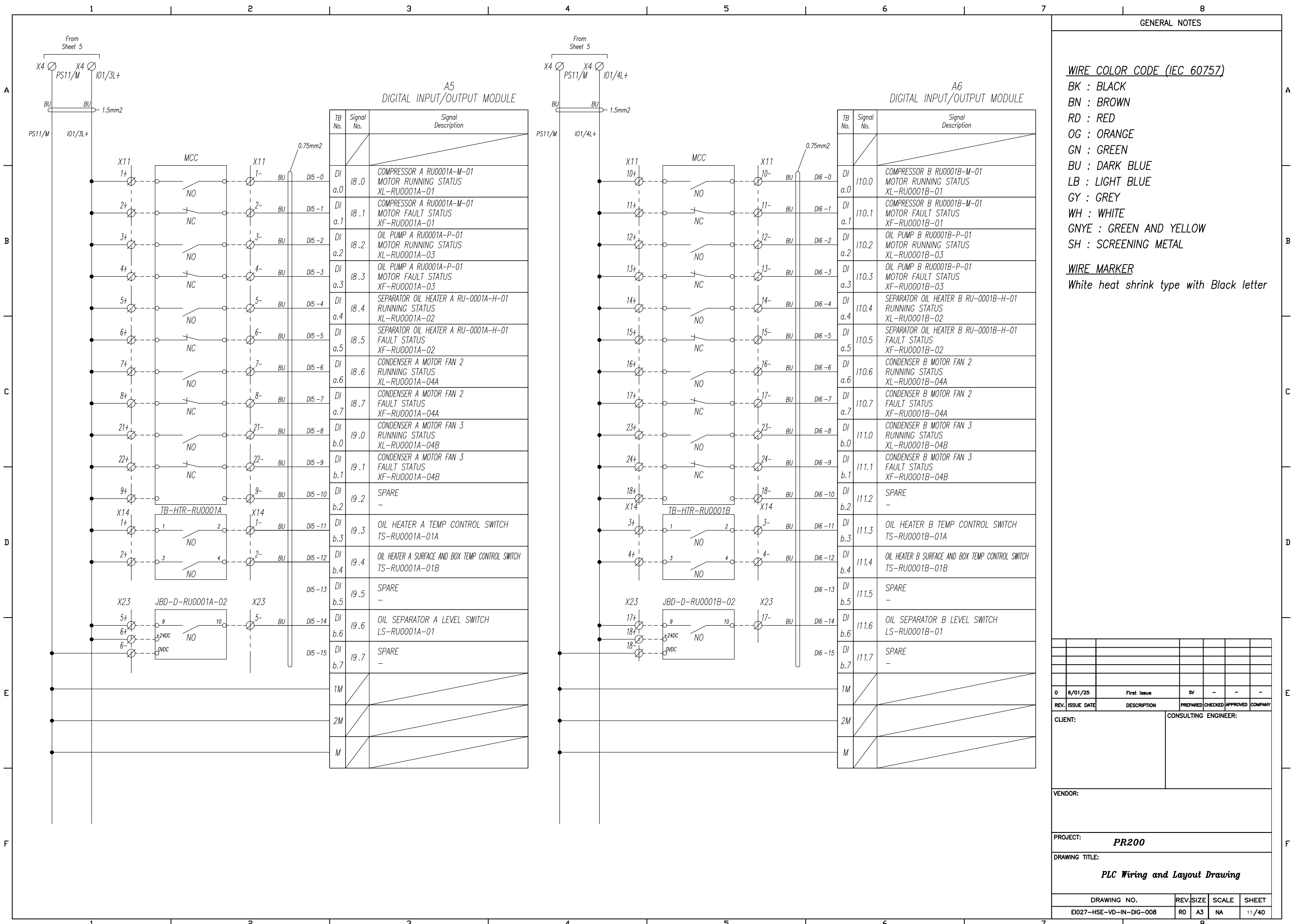
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EI027-HSE-VD-IN-DIG-008	RO	A3	NA	10/40



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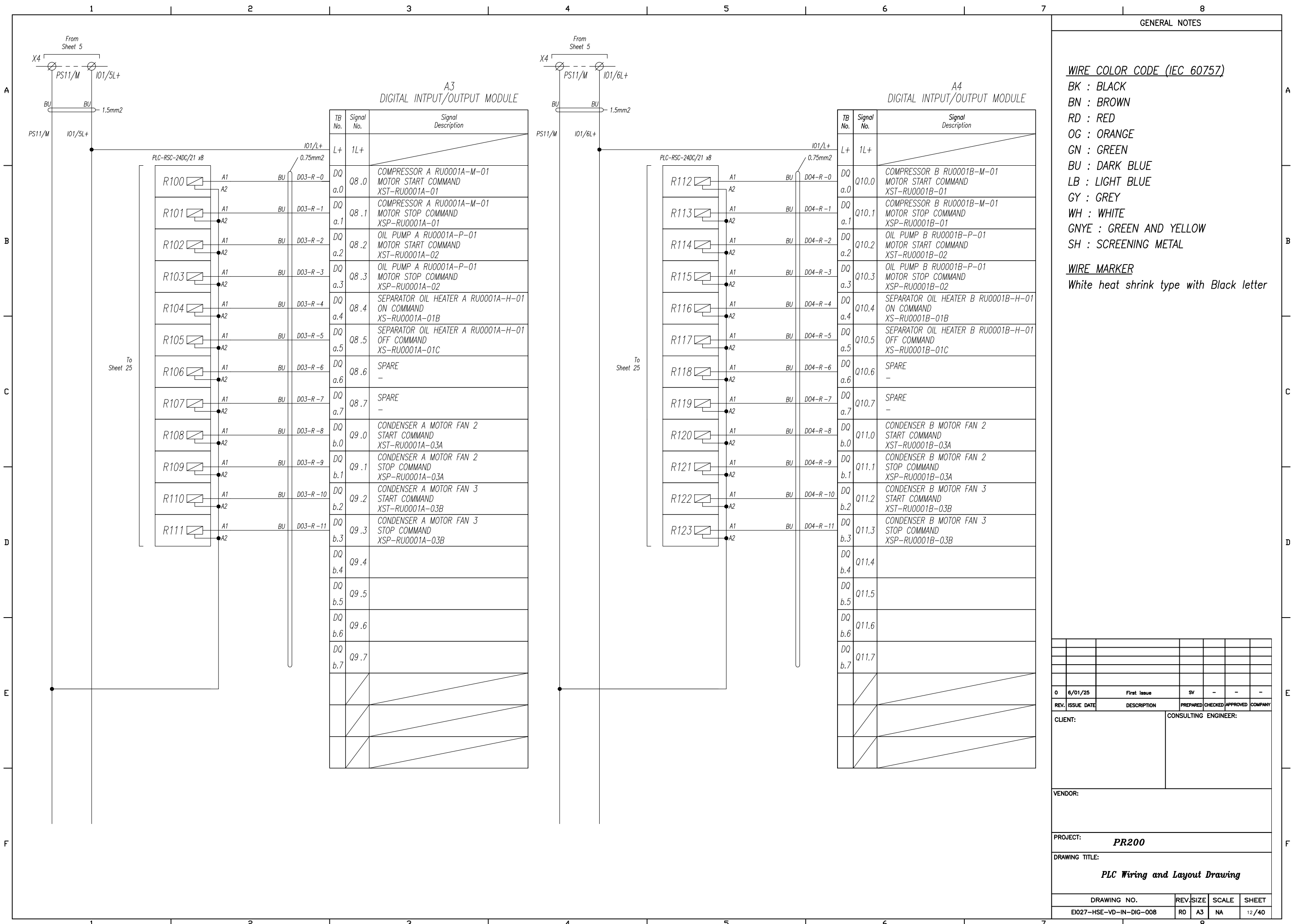
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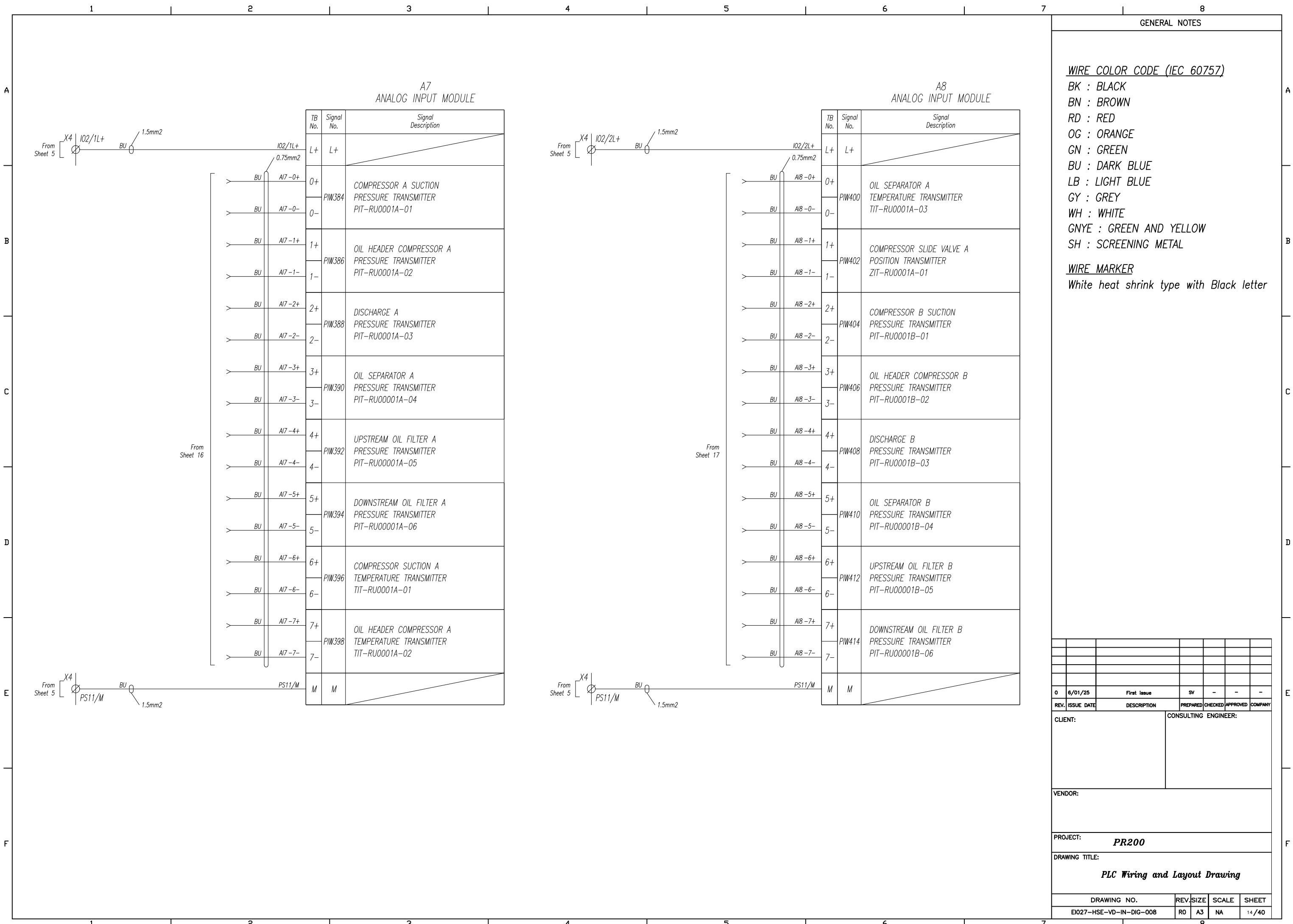
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DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	12/40



**A7
ANALOG INPUT MODULE**

TB No.	Signal No.	Signal Description
L+	L+	
0+	PIW384	COMPRESSOR A SUCTION PRESSURE TRANSMITTER PIT-RU0001A-01
0-		
1+	PIW386	OIL HEADER COMPRESSOR A PRESSURE TRANSMITTER PIT-RU0001A-02
1-		
2+	PIW388	DISCHARGE A PRESSURE TRANSMITTER PIT-RU0001A-03
2-		
3+	PIW390	OIL SEPARATOR A PRESSURE TRANSMITTER PIT-RU0001A-04
3-		
4+	PIW392	UPSTREAM OIL FILTER A PRESSURE TRANSMITTER PIT-RU0001A-05
4-		
5+	PIW394	DOWNSTREAM OIL FILTER A PRESSURE TRANSMITTER PIT-RU0001A-06
5-		
6+	PIW396	COMPRESSOR SUCTION A TEMPERATURE TRANSMITTER TIT-RU0001A-01
6-		
7+	PIW398	OIL HEADER COMPRESSOR A TEMPERATURE TRANSMITTER TIT-RU0001A-02
7-		
M	M	

**A8
ANALOG INPUT MODULE**

TB No.	Signal No.	Signal Description
L+	L+	
0+	PIW400	OIL SEPARATOR A TEMPERATURE TRANSMITTER TIT-RU0001A-03
0-		
1+	PIW402	COMPRESSOR SLIDE VALVE A POSITION TRANSMITTER ZIT-RU0001A-01
1-		
2+	PIW404	COMPRESSOR B SUCTION PRESSURE TRANSMITTER PIT-RU0001B-01
2-		
3+	PIW406	OIL HEADER COMPRESSOR B PRESSURE TRANSMITTER PIT-RU0001B-02
3-		
4+	PIW408	DISCHARGE B PRESSURE TRANSMITTER PIT-RU0001B-03
4-		
5+	PIW410	OIL SEPARATOR B PRESSURE TRANSMITTER PIT-RU0001B-04
5-		
6+	PIW412	UPSTREAM OIL FILTER B PRESSURE TRANSMITTER PIT-RU0001B-05
6-		
7+	PIW414	DOWNSTREAM OIL FILTER B PRESSURE TRANSMITTER PIT-RU0001B-06
7-		
M	M	

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- GN : GREEN
- BU : DARK BLUE
- LB : LIGHT BLUE
- GY : GREY
- WH : WHITE
- GNYE : GREEN AND YELLOW
- SH : SCREENING METAL

WIRE MARKER

White heat shrink type with Black letter

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First Issue	SV	-	-	-

CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	14/40

A9
ANALOG INPUT MODULE

TB No.	Signal No.	Signal Description
L+	L+	
0+	PIW416	COMPRESSOR SUCTION B TEMPERATURE TRANSMITTER TIT-RU0001B-01
0-		
1+	PIW418	OIL HEADER COMPRESSOR B TEMPERATURE TRANSMITTER TIT-RU0001B-02
1-		
2+	PIW420	OIL SEPARATOR B TEMPERATURE TRANSMITTER TIT-RU0001B-03
2-		
3+	PIW422	COMPRESSOR SLIDE VALVE B POSITION TRANSMITTER ZIT-RU0001B-01
3-		
4+	PIW424	CHILLER A LIQUID LEVEL TRANSMITTER LIT-RU0001A-01
4-		
5+	PIW426	CHILLER B LIQUID LEVEL TRANSMITTER LIT-RU0001B-01
5-		
6+	PIW428	COMPRESSOR A MOTOR AMPERAGE II-RU0001A-01
6-		
7+	PIW430	COMPRESSOR B MOTOR AMPERAGE II-RU0001B-01
7-		
M	M	

A10
ANALOG OUTPUT MODULE

TB No.	Signal No.	Signal Description
L+	L+	
0	PQW448	CHILLER A LEVEL CONTROL VALVE POSITION ORDER LV-RU0001A-01
0M		
1	PQW450	CHILLER B LEVEL CONTROL VALVE POSITION ORDER LV-RU0001B-01
1M		
2	PQW452	CONDENSER A VFD CONTROL - PIC-RU0001A-04
2M		
3	PQW454	CONDENSER B VFD CONTROL - PIC-RU0001B-04
3M		
M	M	

GENERAL NOTES

WIRE COLOR CODE (IEC 60757)
 BK : BLACK
 BN : BROWN
 RD : RED
 OG : ORANGE
 GN : GREEN
 BU : DARK BLUE
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 GY : GREY
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WIRE MARKER
 White heat shrink type with Black letter

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First Issue	SV	-	-	-

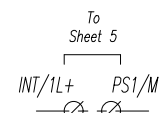
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE:
PLC Wiring and Layout Drawing

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	15/40



PR10
RAIL: UPR-3S

BU BU 1.5mm²

To
Sheet 14

0.75mm²

ERR OUTPUT
7 10

BU BU
1.5mm² 0.75mm²

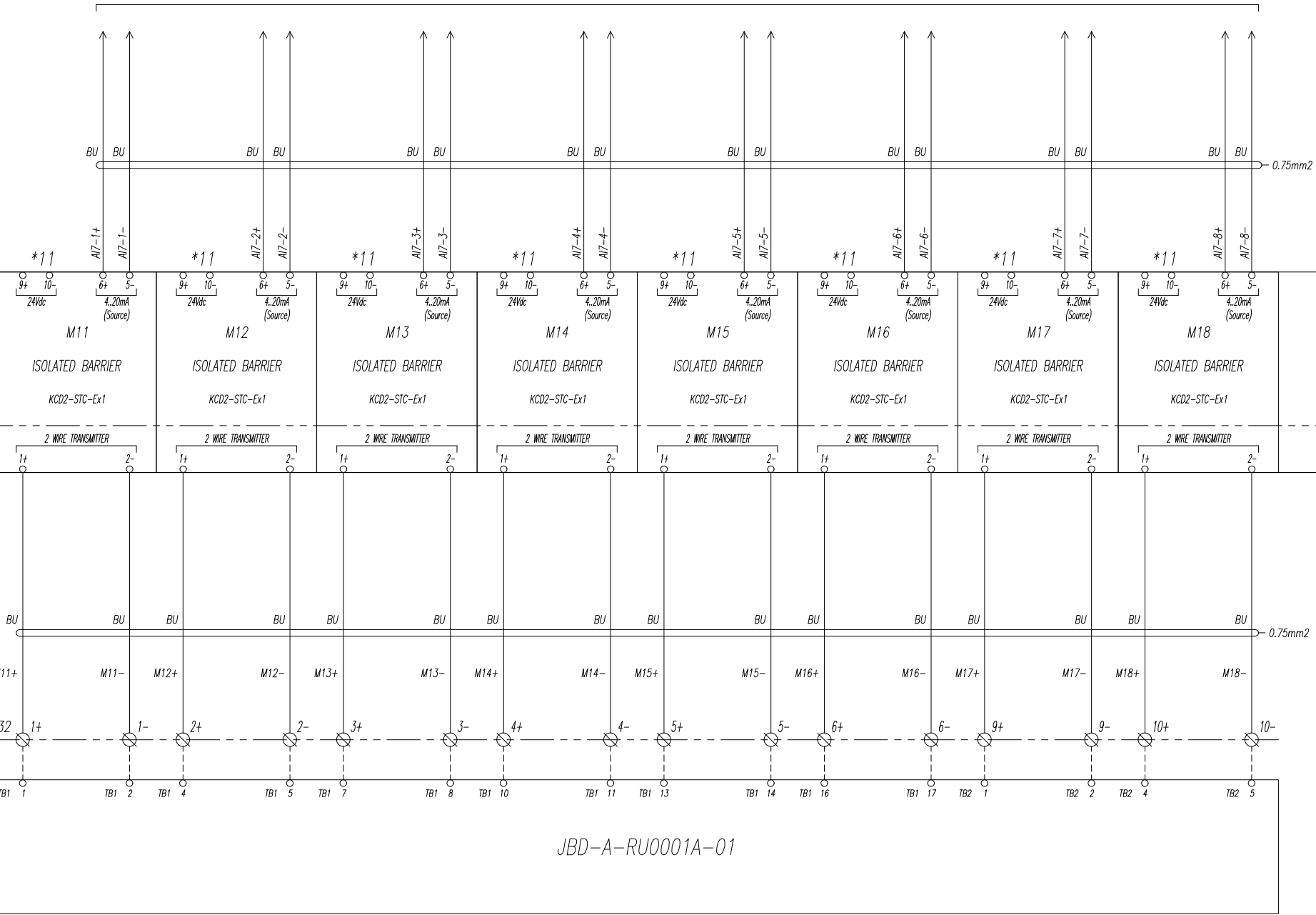
101/9L+

X4

101/9L+

From
Sheet 5

NON-IS CIRCUIT
IS CIRCUIT



JBD-A-RU0001A-01

COMPRESSOR SUCTION
PRESSURE TRANSMITTER
PIT-RU0001A-01

DISCHARGE
PRESSURE TRANSMITTER
PIT-RU0001A-03

UPSTREAM OIL FILTER
PRESSURE TRANSMITTER
PIT-RU00001A-05

COMPRESSOR SUCTION
TEMPERATURE TRANSMITTER
TIT-RU0001A-01

OIL HEADER COMPRESSOR
PRESSURE TRANSMITTER
PIT-RU0001A-02

OIL SEPARATOR
PRESSURE TRANSMITTER
PIT-RU00001A-04

DOWNSTREAM OIL FILTER
PRESSURE TRANSMITTER
PIT-RU00001A-06

OIL HEADER COMPRESSOR
TEMPERATURE TRANSMITTER
TIT-RU0001A-02

GENERAL NOTES

WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE:
PLC Wiring and Layout Drawing

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	16/40

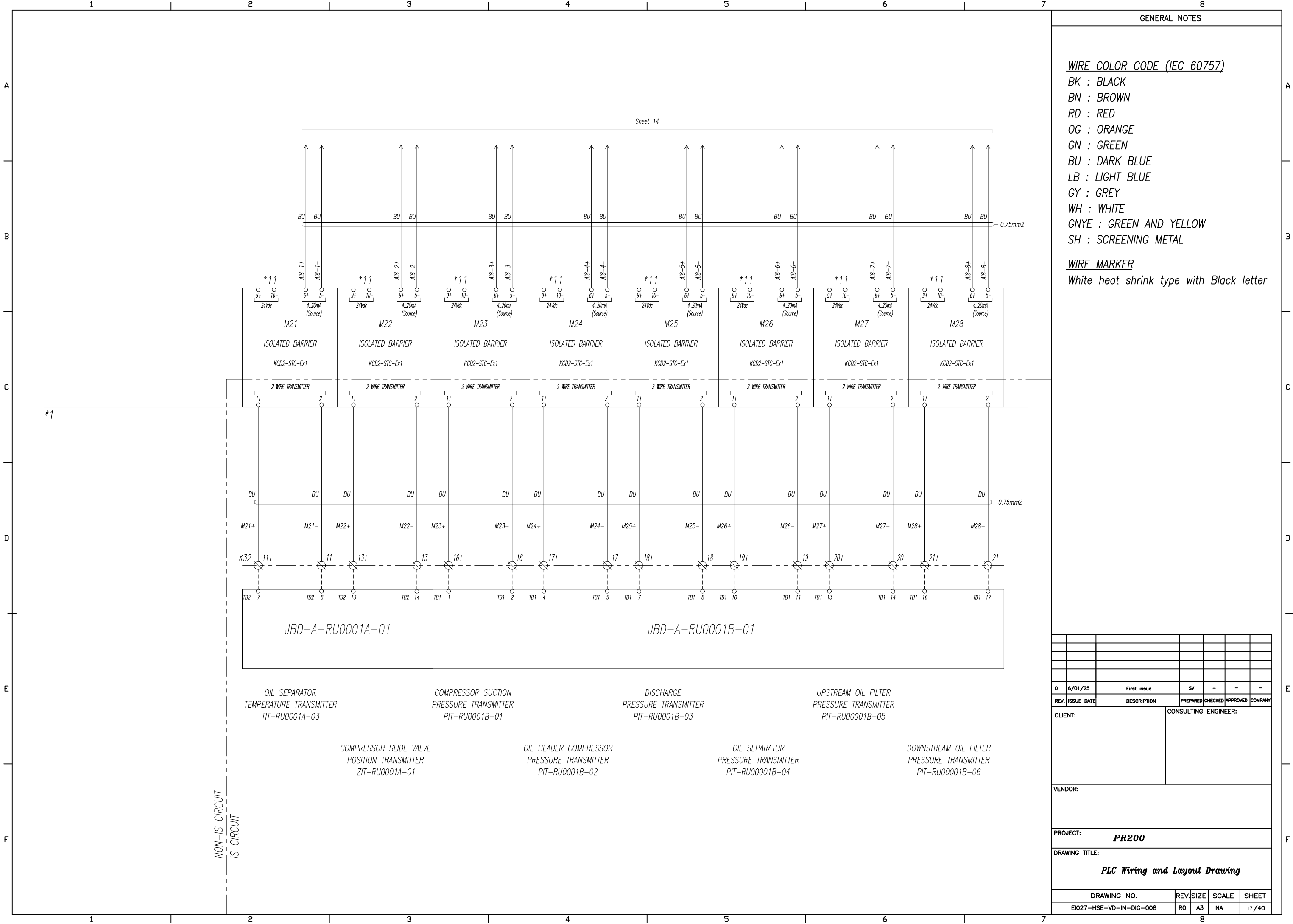
GENERAL NOTES

WIRE COLOR CODE (IEC 60757)

- BK : BLACK
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WIRE MARKER

White heat shrink type with Black letter



NON-IS CIRCUIT
IS CIRCUIT

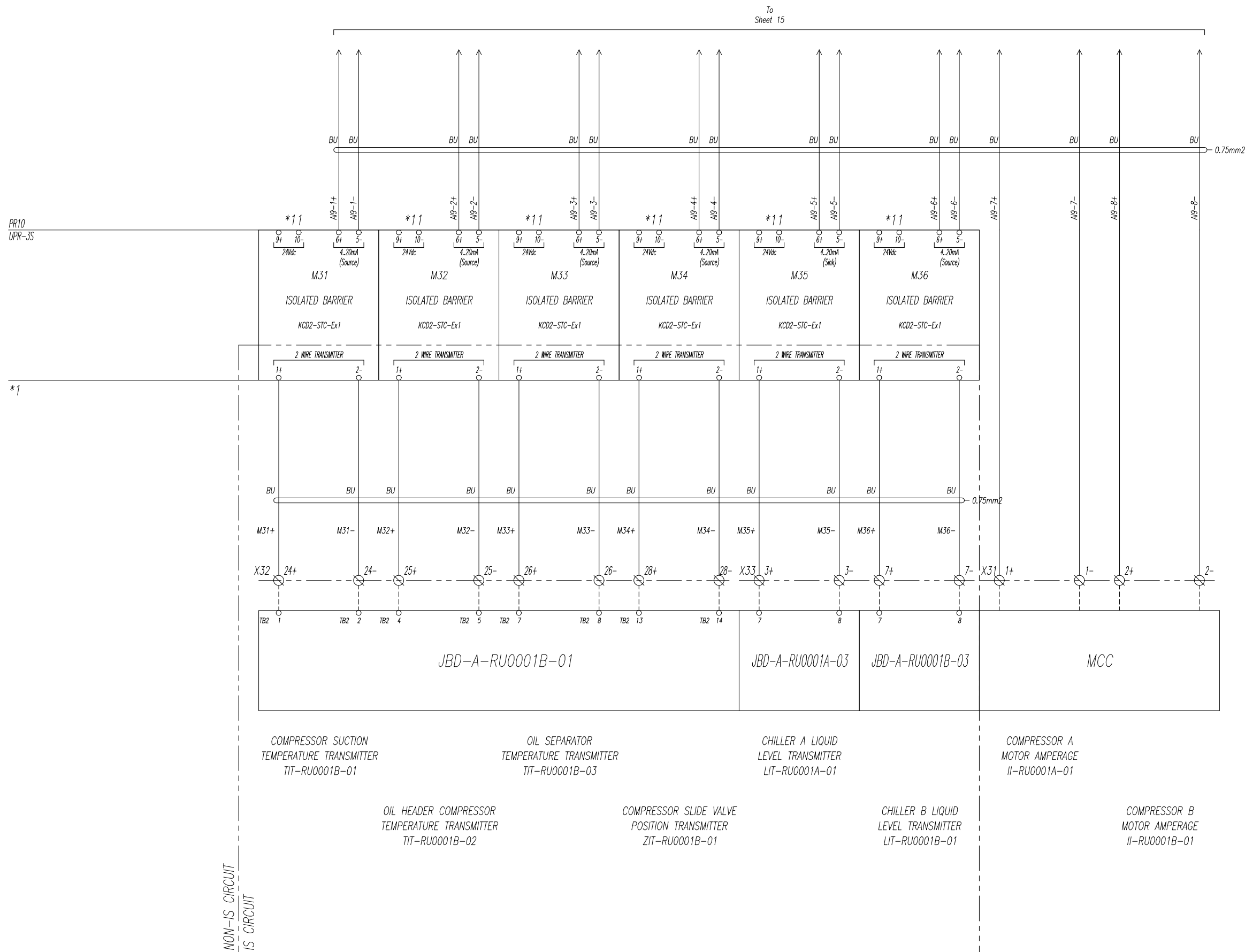
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REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	17/40

WIRE COLOR CODE (IEC 60757)

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- BU : DARK BLUE
- GB : GREEN BLUE
- WH : WHITE
- ANYE WHITE AND YELLOW
- ANYE SCREENING AND YELLOW
- SH : SCREENING METAL

WIRE MARKER

White heat shrink type with Black letter



*11: POWER SUPPLY FROM POWER RAIL

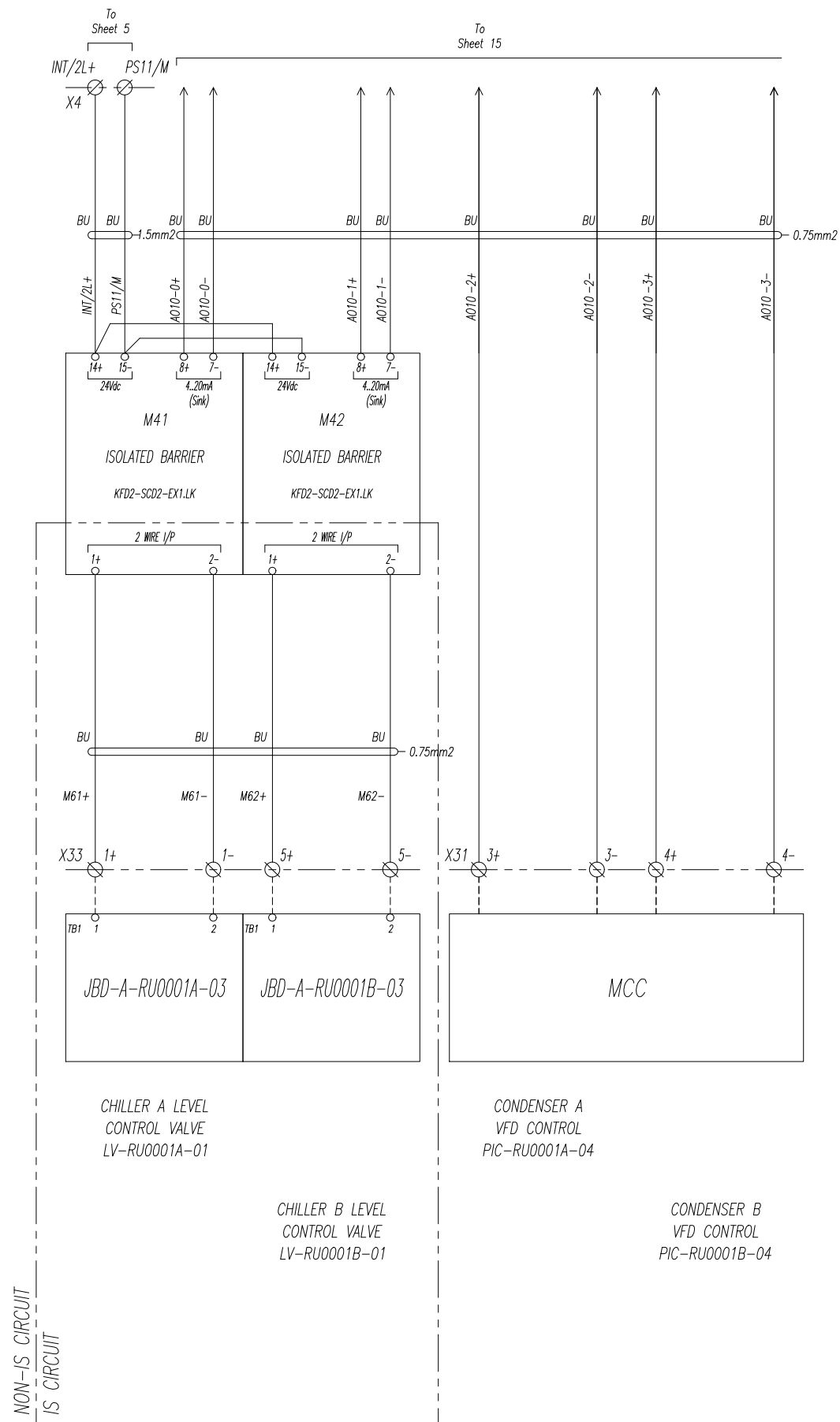
0	6/01/25	First Issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	18/40

WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter



REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First Issue	SV	-	-	-

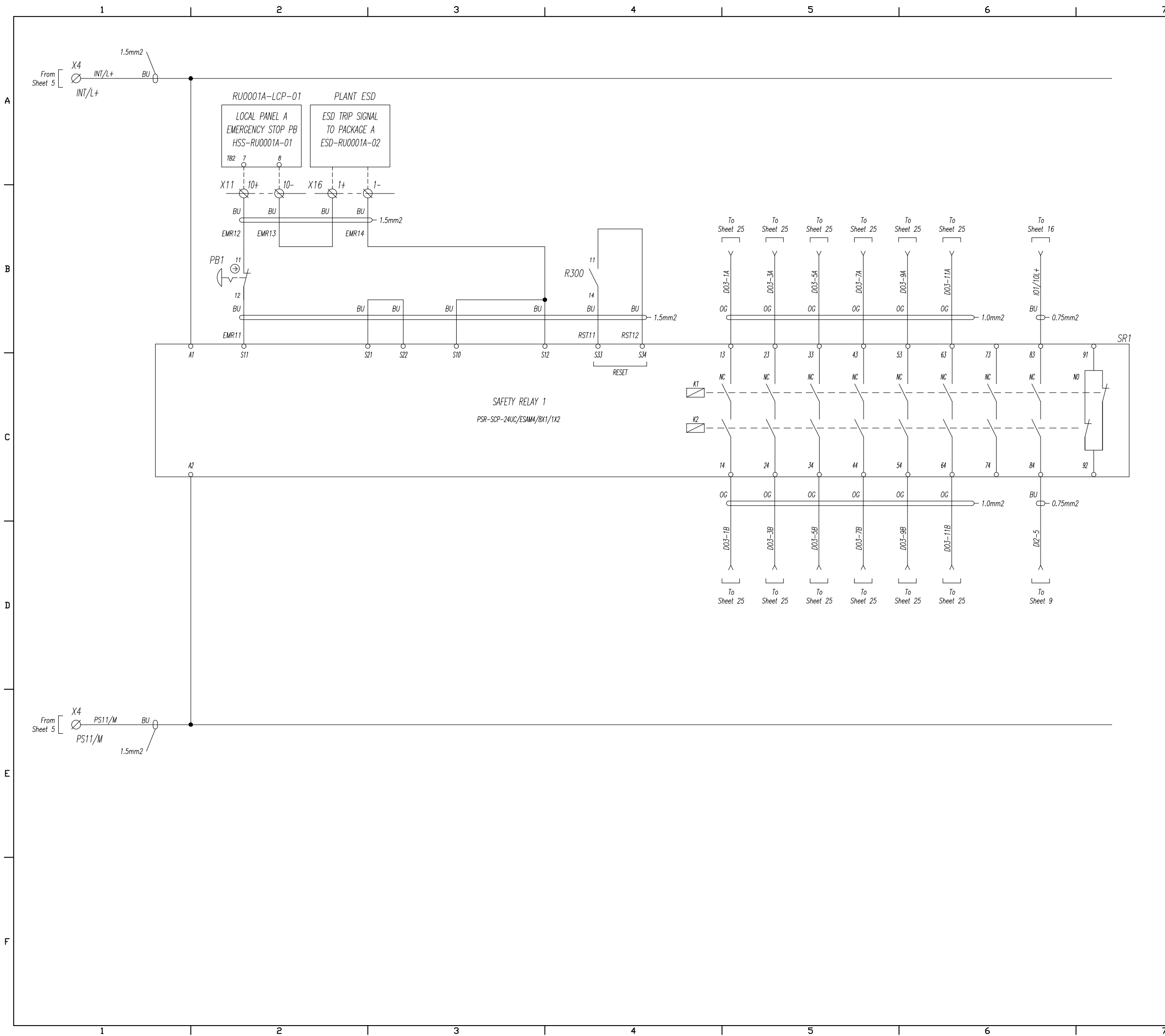
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008	R0	A3	NA	19/40



GENERAL NOTES

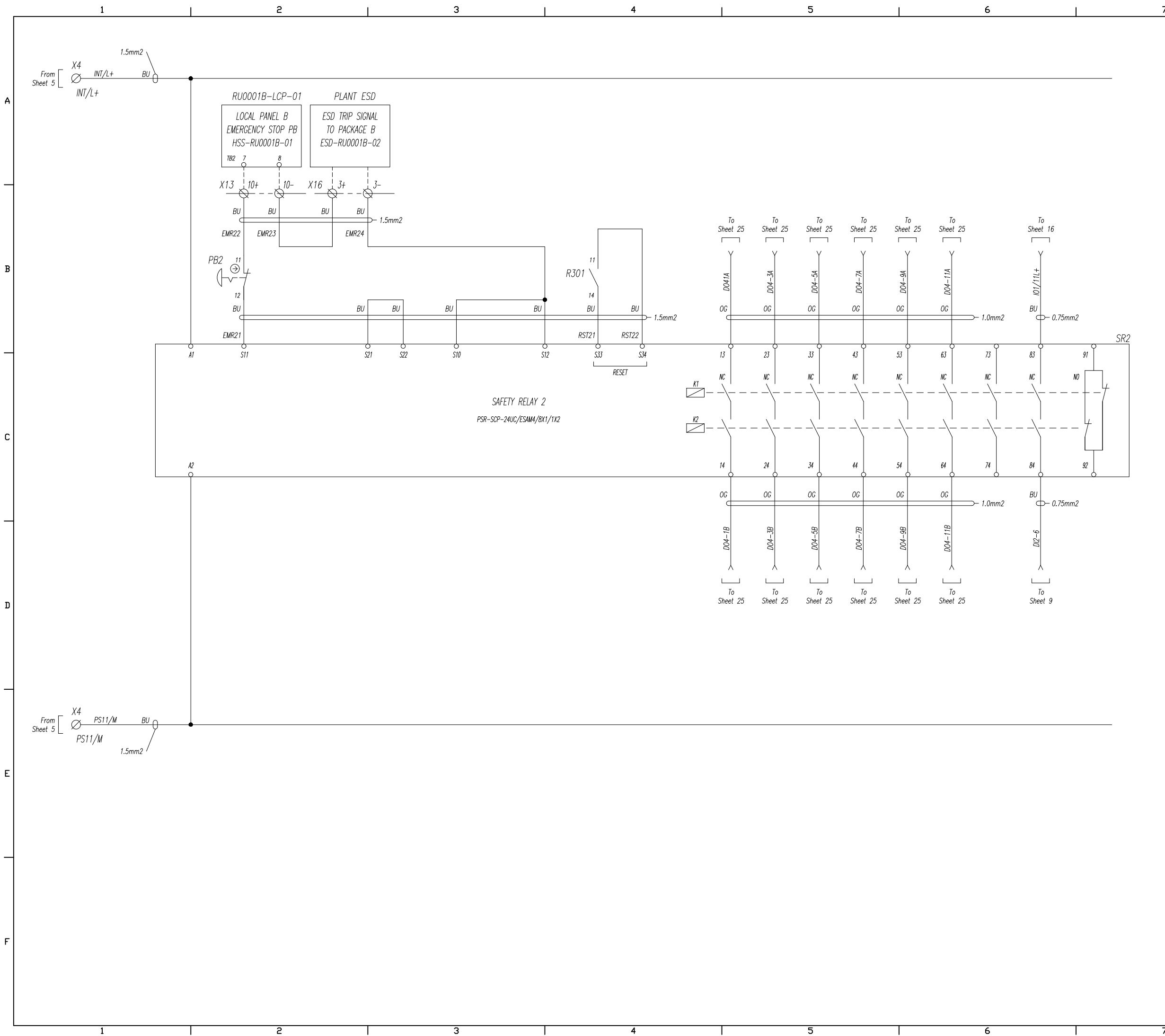
WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		R0	A3	NA	20/40



GENERAL NOTES

WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

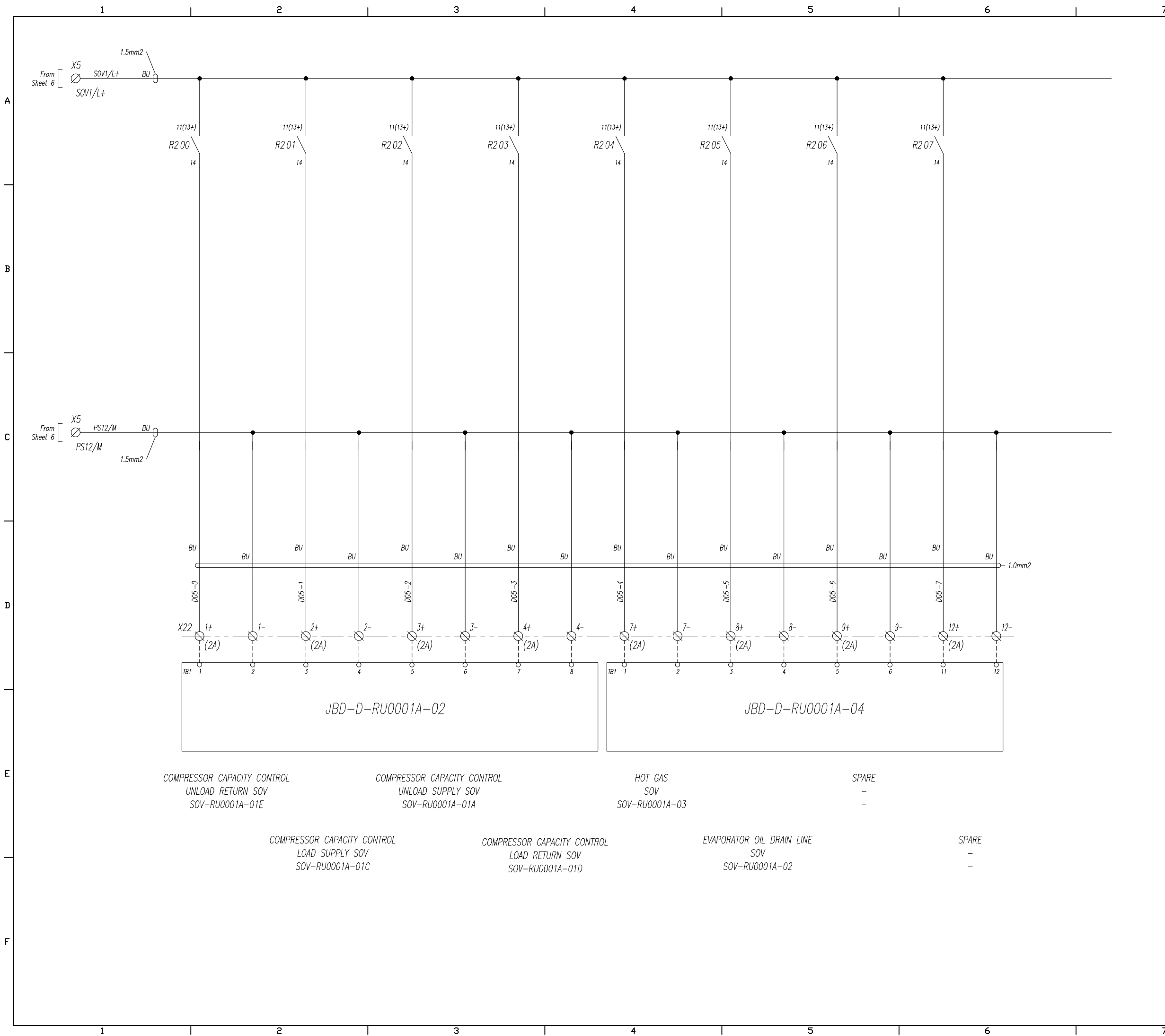
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	21/40



GENERAL NOTES

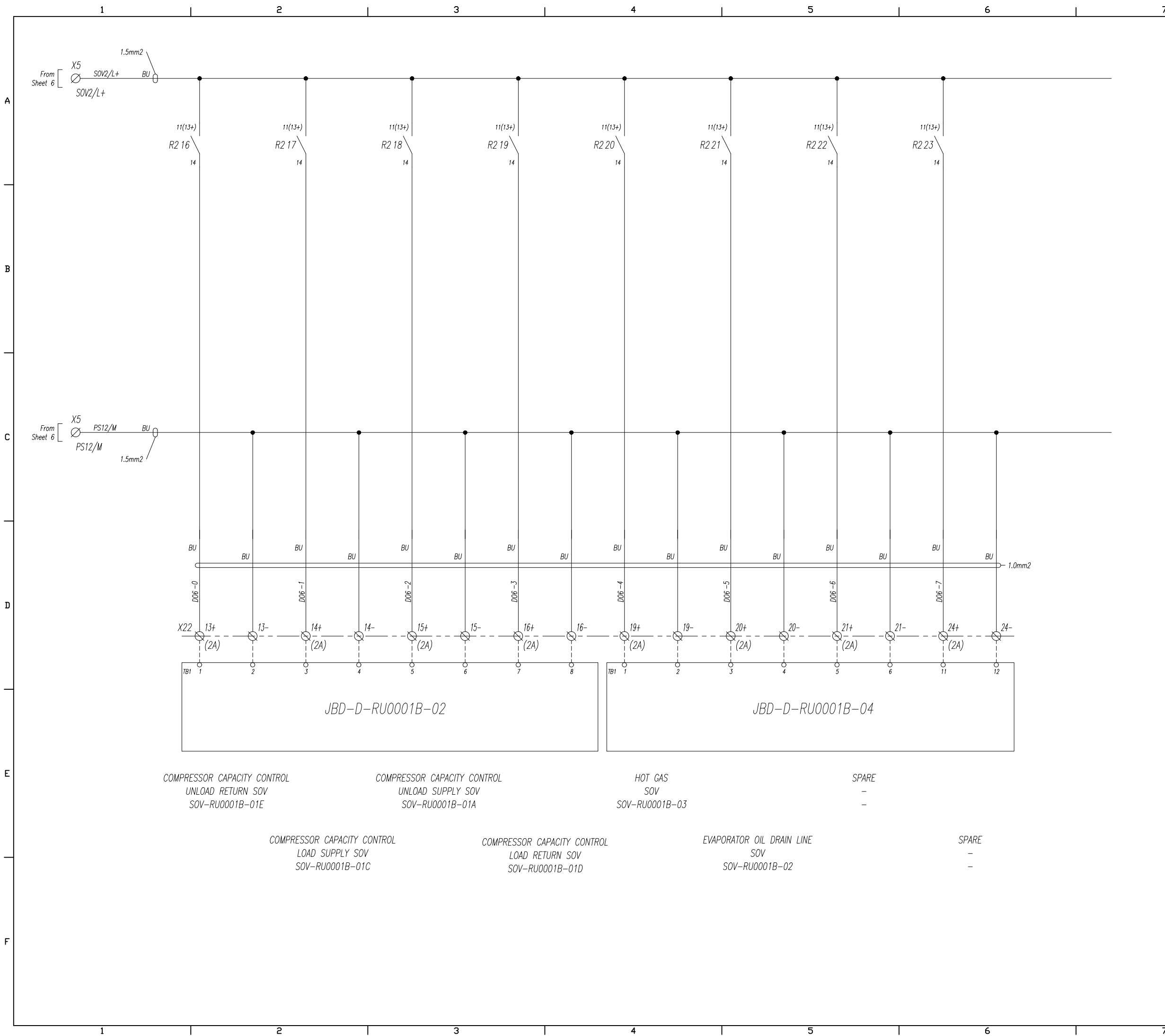
WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	22/40



GENERAL NOTES

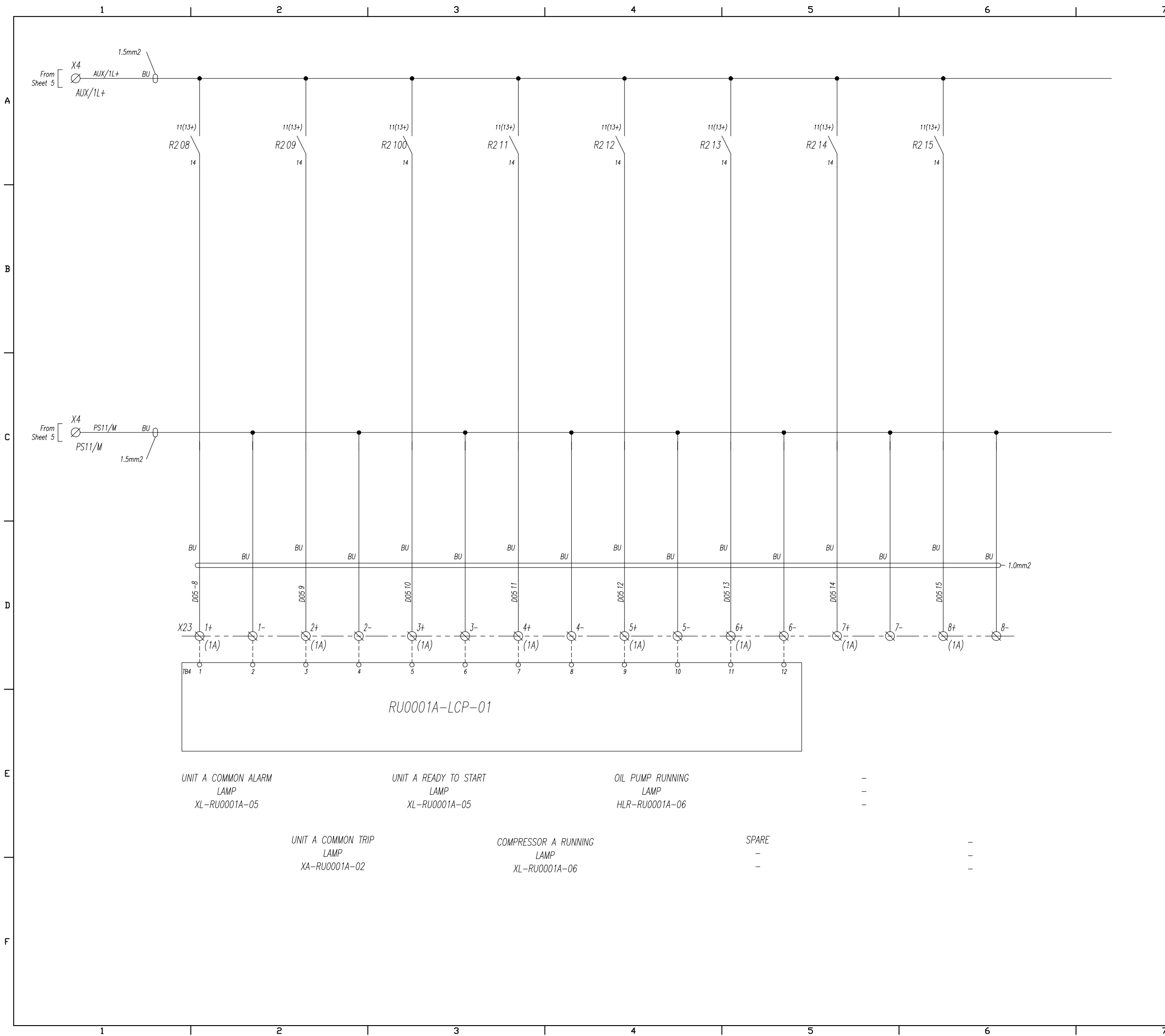
WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

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0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	23/40



GENERAL NOTES

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WIRE MARKER

White heat shrink type with Black letter

UNIT A COMMON ALARM
LAMP
XL-RU0001A-05

UNIT A READY TO START
LAMP
XL-RU0001A-05

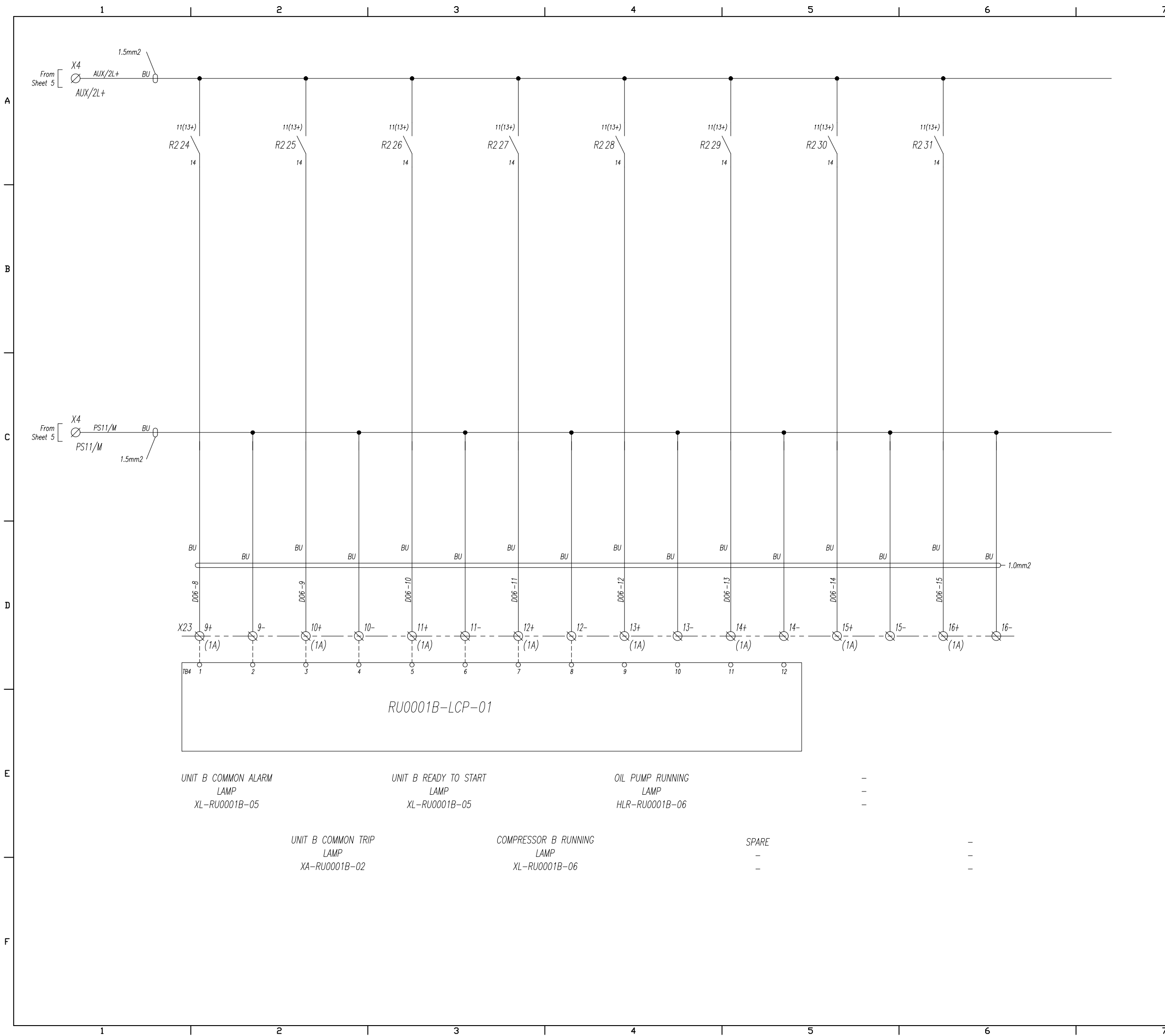
OIL PUMP RUNNING
LAMP
HLR-RU0001A-06

UNIT A COMMON TRIP
LAMP
XA-RU0001A-02

COMPRESSOR A RUNNING
LAMP
XL-RU0001A-06

SPARE
-
-

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	24/40



GENERAL NOTES

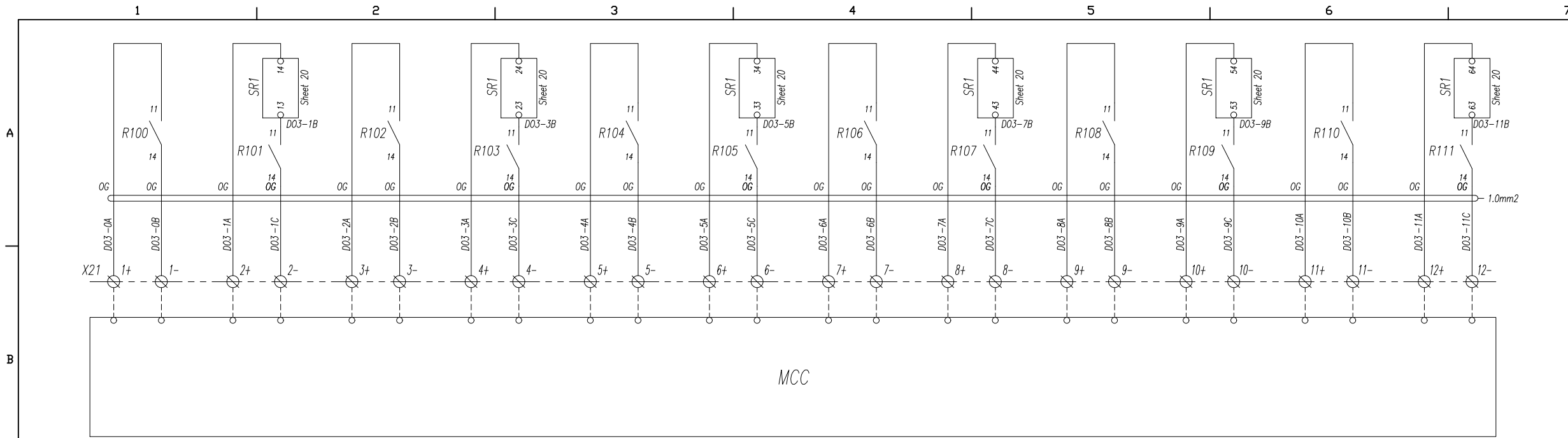
WIRE COLOR CODE (IEC 60757)

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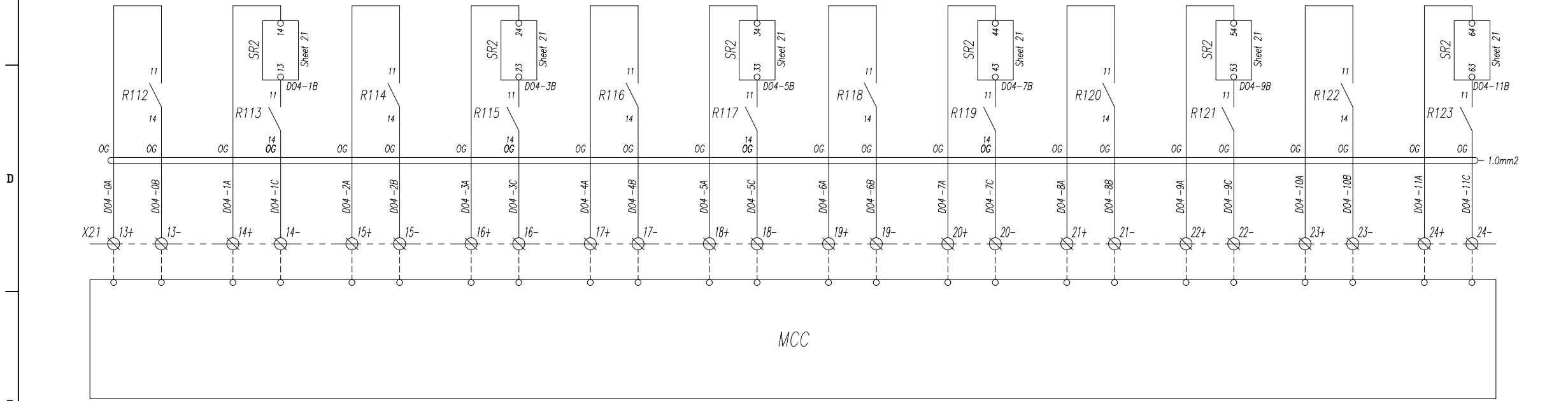
WIRE MARKER

White heat shrink type with Black letter

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	25/40



COMPRESSOR RU0001A-M-01 MOTOR START COMMAND XST-RU0001A-01 (Close pulse)	OIL PUMP RU0001A-P-01 MOTOR START COMMAND XST-RU0001A-02 (Close pulse)	SEPARATOR OIL HEATER RU0001A-H-01 ON COMMAND XS-RU0001A-01B (Close pulse)	SPARE -	CONDENSER MOTOR FAN 2 START COMMAND XST-RU0001A-03A (Close pulse)	CONDENSER MOTOR FAN 3 START COMMAND XST-RU0001A-03B (Close pulse)
COMPRESSOR RU0001A-M-01 MOTOR STOP COMMAND XSP-RU0001A-01 (Open pulse)	OIL PUMP RU0001A-P-01 MOTOR STOP COMMAND XSP-RU0001A-02 (Open pulse)	SEPARATOR OIL HEATER RU0001A-H-01 OFF COMMAND XS-RU0001A-01C (Open pulse)	SPARE -	CONDENSER MOTOR FAN 2 STOP COMMAND XSP-RU0001A-03A (Open pulse)	CONDENSER MOTOR FAN 3 STOP COMMAND XST-RU0001A-03B (Open pulse)



COMPRESSOR RU0001B-M-01 START COMMAND XST-RU0001B-01 (Close pulse)	OIL PUMP RU0001B-P-01 MOTOR START COMMAND XST-RU0001B-02 (Close pulse)	SEPARATOR OIL HEATER RU0001B-H-01 ON COMMAND XS-RU0001B-01B (Close pulse)	SPARE -	CONDENSER MOTOR FAN 2 START COMMAND XST-RU0001B-03A (Close pulse)	CONDENSER MOTOR FAN 3 START COMMAND XST-RU0001B-03B (Close pulse)
COMPRESSOR RU0001B-M-01 STOP COMMAND XSP-RU0001B-01 (Open pulse)	OIL PUMP RU0001B-P-01 MOTOR STOP COMMAND XSP-RU0001B-02 (Open pulse)	SEPARATOR OIL HEATER RU0001B-H-01 OFF COMMAND XS-RU0001B-01C (Open pulse)	SPARE -	CONDENSER MOTOR FAN 2 STOP COMMAND XSP-RU0001B-03A (Open pulse)	CONDENSER MOTOR FAN 3 STOP COMMAND XST-RU0001B-03B (Open pulse)

GENERAL NOTES

WIRE COLOR CODE (IEC 60757)
 BK : BLACK
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WIRE MARKER
 White heat shrink type with Black letter

0	6/01/25	First issue	SV	-	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
CLIENT:			CONSULTING ENGINEER:			
VENDOR:						
PROJECT: PR200						
DRAWING TITLE: PLC Wiring and Layout Drawing						
DRAWING NO. E1027-HSE-VD-IN-DIG-008		REV. RO	SIZE A3	SCALE NA	SHEET 26/40	

GENERAL NOTES

WIRE COLOR CODE (IEC 60757)

- BK : BLACK
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WIRE MARKER

White heat shrink type with Black letter

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First Issue	SV	-	-	-

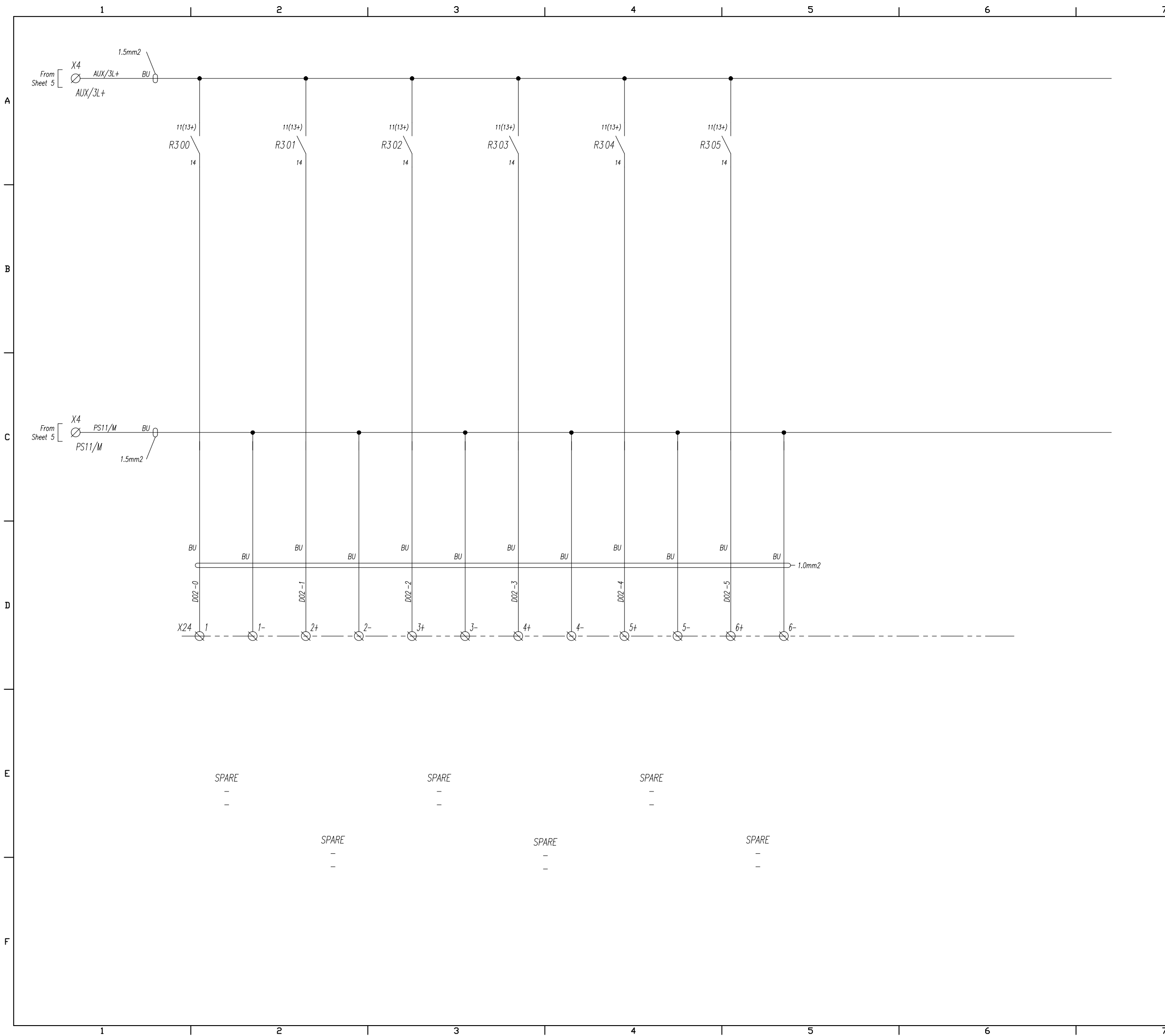
CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	27/40



GENERAL NOTES

WIRE COLOR CODE (IEC 60757)

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WIRE MARKER

White heat shrink type with Black letter

0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	28/40

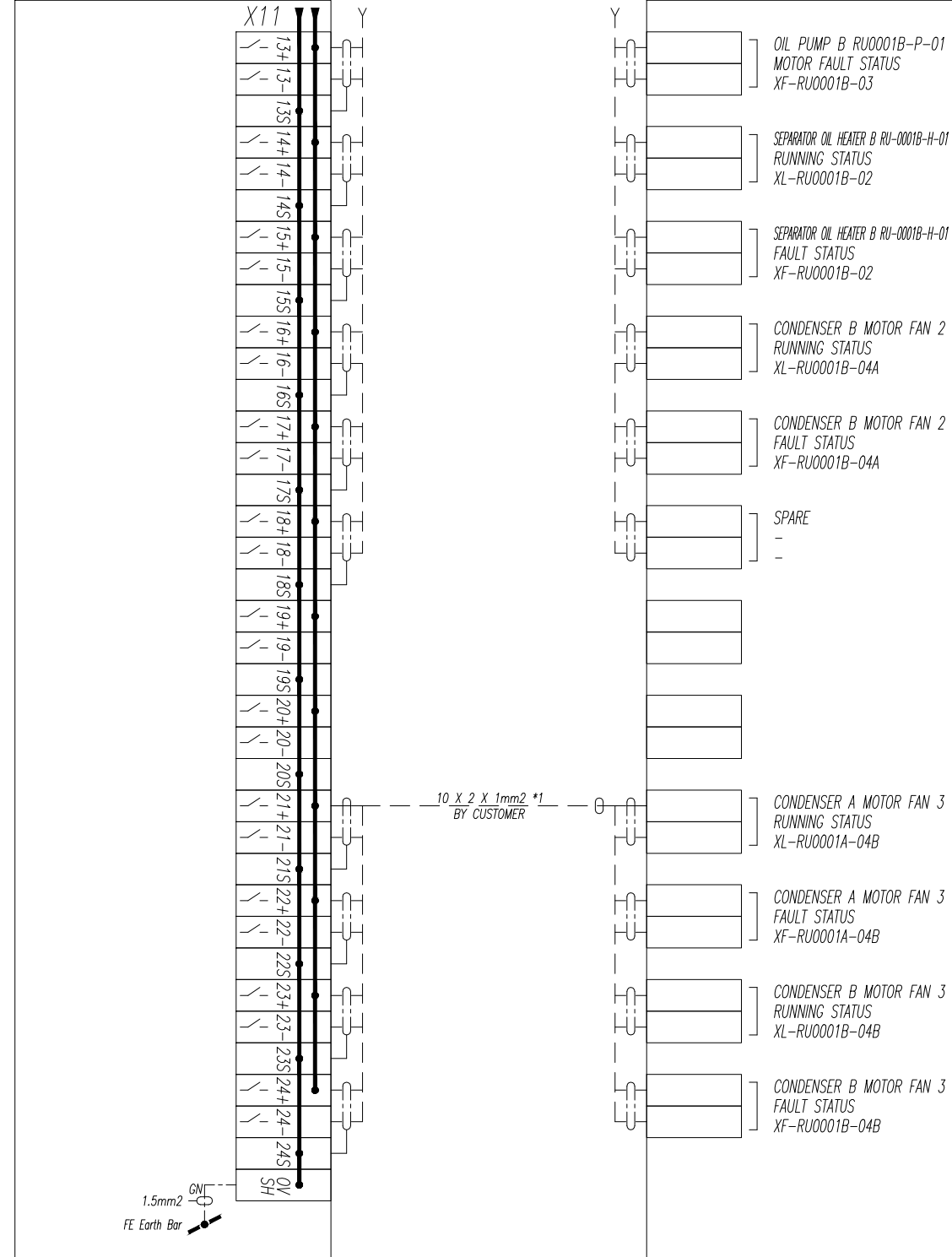
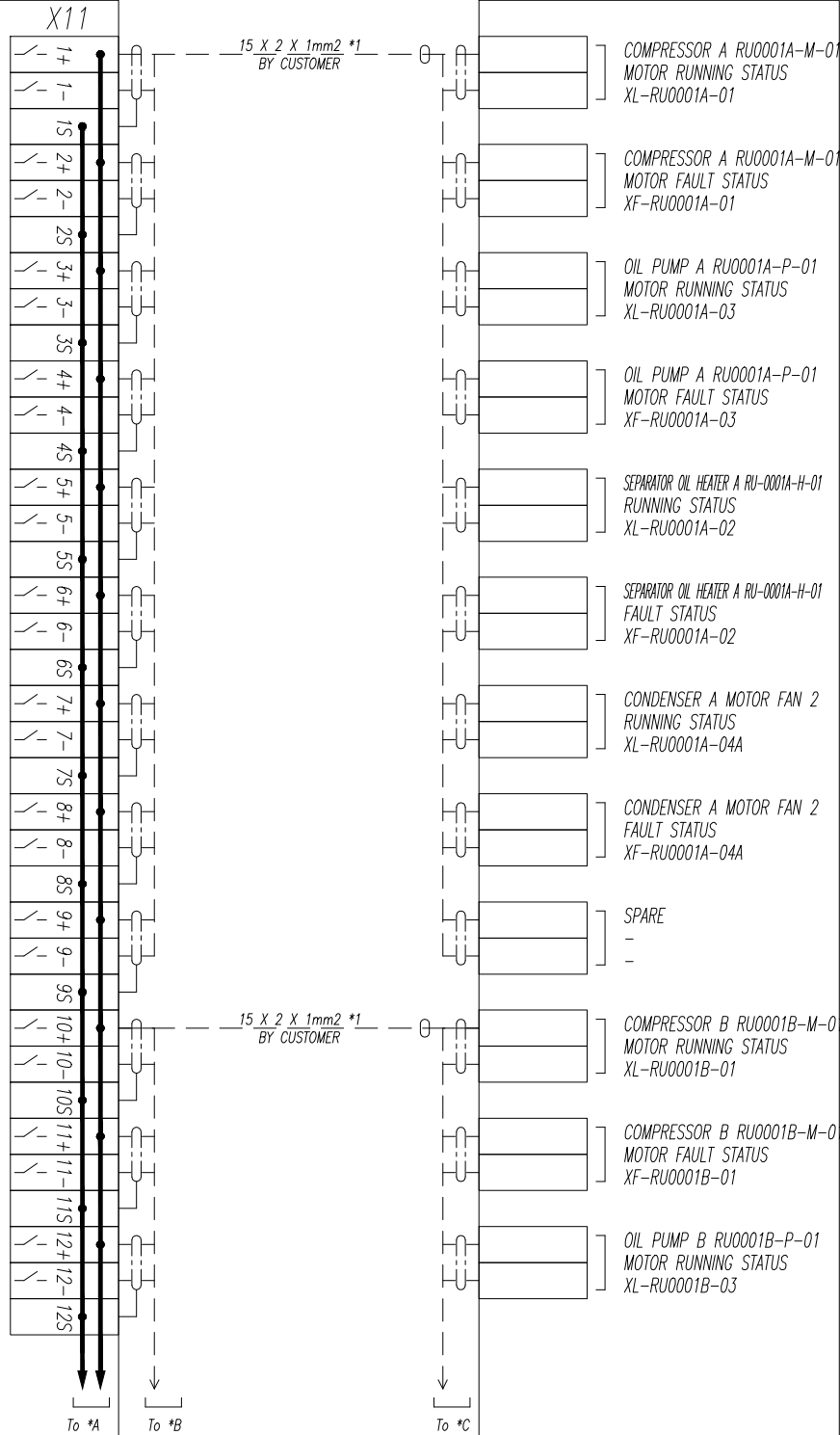
UCP-RU0001

MCC

UCP-RU0001

MCC

GENERAL NOTES



*1 : Estimated cable size, quantities and type for design

*1 : Estimated cable size, quantities and type for design

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
0	6/01/25	First issue	SV	-	-	-

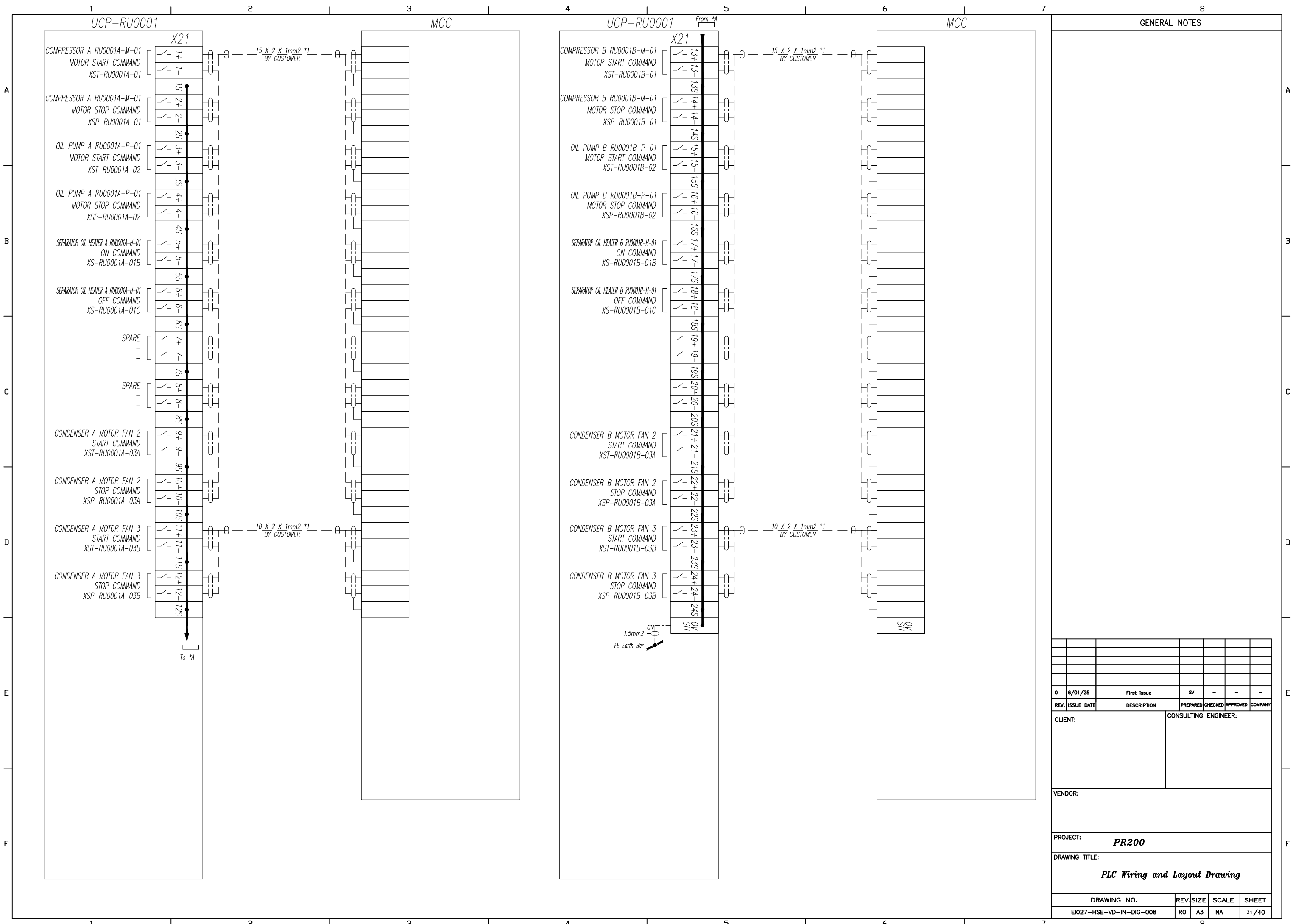
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VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	30/40



GENERAL NOTES

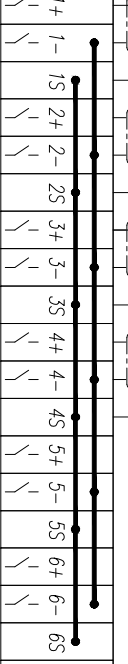
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REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		
VENDOR:					
PROJECT: PR200					
DRAWING TITLE: PLC Wiring and Layout Drawing					
DRAWING NO.		REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-IN-DIG-008		R0	A3	NA	31/40

UCP-RU0001

MCC

GENERAL NOTES

X31



CONDENSER A
VFD CONTROL
PIC-RU0001A-04

CONDENSER B
VFD CONTROL
PIC-RU0001B-04

1.5mm2
GN
FE Earth Bar

2 X 2 X 1mm2 *1
BY CUSTOMER

2 X 2 X 1mm2 *1
BY CUSTOMER

COMPRESSOR A MOTOR
CURRENT (0...***A/4...20mA)
II-RU0001A-01

COMPRESSOR B MOTOR
CURRENT (0...***A/4...20mA)
II-RU0001B-01

HS
/0

0	6/01/25	First issue	SV	-	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY

CLIENT: _____ CONSULTING ENGINEER: _____

VENDOR: _____

PROJECT: **PR200**

DRAWING TITLE:
PLC Wiring and Layout Drawing

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	32/40

*1 : Estimated cable size, quantities and type for design

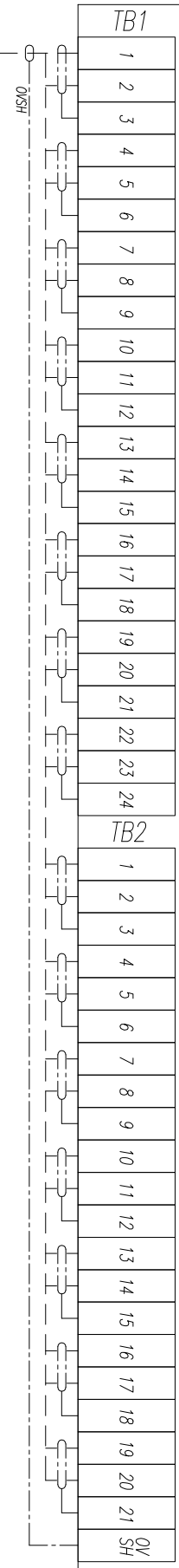
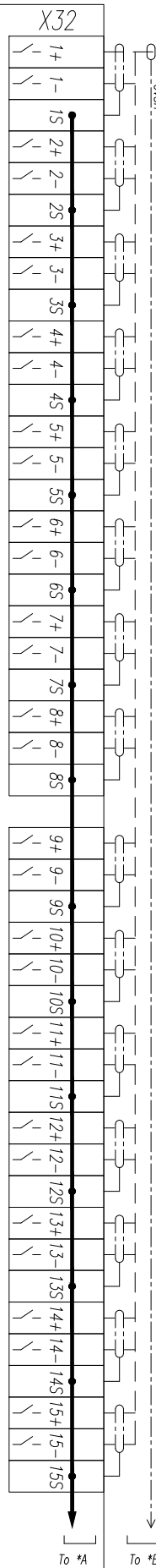
UCP-RU0001

JBD-A-RU0001A-01

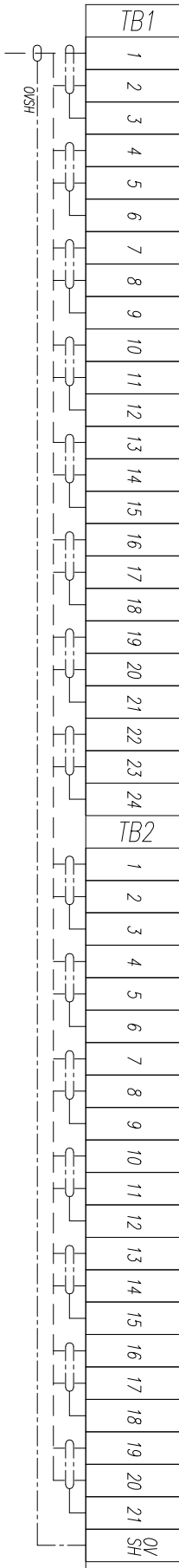
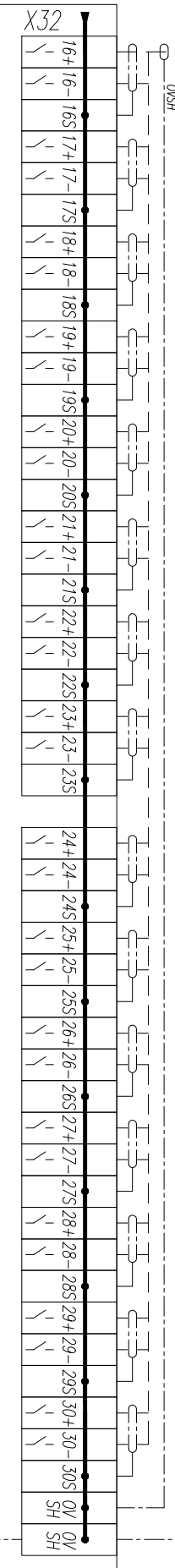
UCP-RU0001

JBD-A-RU0001B01

GENERAL NOTES



- 1 COMPRESSOR SUCTION PRESSURE TRANSMITTER PIT-RU0001A-01
- 2 OIL HEADER COMPRESSOR PRESSURE TRANSMITTER PIT-RU0001A-02
- 3 DISCHARGE PRESSURE TRANSMITTER PIT-RU0001A-03
- 4 OIL SEPARATOR PRESSURE TRANSMITTER PIT-RU0001A-04
- 5 UPSTREAM OIL FILTER PRESSURE TRANSMITTER PIT-RU0001A-05
- 6 DOWNSTREAM OIL FILTER PRESSURE TRANSMITTER PIT-RU0001A-06
- 7 COMPRESSOR SUCTION TEMPERATURE TRANSMITTER TIT-RU0001A-01
- 8 OIL HEADER COMPRESSOR TEMPERATURE TRANSMITTER TIT-RU0001A-02
- 9 OIL SEPARATOR TEMPERATURE TRANSMITTER TIT-RU0001A-03
- 10 COMPRESSOR SLIDE VALVE POSITION TRANSMITTER ZIT-RU0001A-01



- 1 COMPRESSOR SUCTION PRESSURE TRANSMITTER PIT-RU0001B-01
- 2 OIL HEADER COMPRESSOR PRESSURE TRANSMITTER PIT-RU0001B-02
- 3 DISCHARGE PRESSURE TRANSMITTER PIT-RU0001B-03
- 4 OIL SEPARATOR PRESSURE TRANSMITTER PIT-RU0001B-04
- 5 UPSTREAM OIL FILTER PRESSURE TRANSMITTER PIT-RU0001B-05
- 6 DOWNSTREAM OIL FILTER PRESSURE TRANSMITTER PIT-RU0001B-06
- 7 COMPRESSOR SUCTION TEMPERATURE TRANSMITTER TIT-RU0001B-01
- 8 OIL HEADER COMPRESSOR TEMPERATURE TRANSMITTER TIT-RU0001B-02
- 9 OIL SEPARATOR TEMPERATURE TRANSMITTER TIT-RU0001B-03
- 10 COMPRESSOR SLIDE VALVE POSITION TRANSMITTER ZIT-RU0001B-01

*1 : Estimated cable size, quantities and type for design

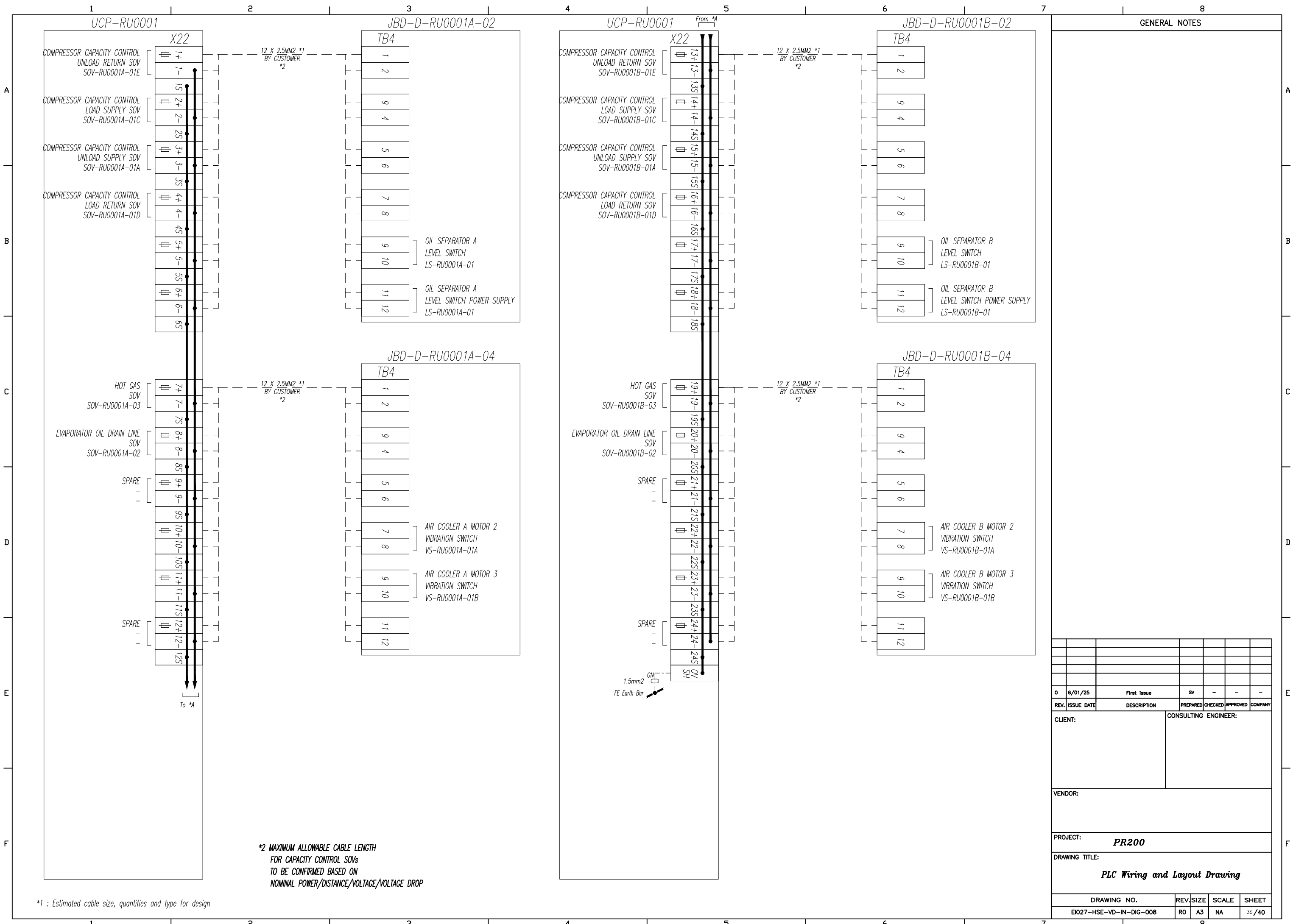
0	6/01/25	First issue	SV	-	-
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
CLIENT:			CONSULTING ENGINEER:		

VENDOR:

PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	33/40



GENERAL NOTES

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DRAWING NO.	REV.	SIZE	SCALE	SHEET		
EI027-HSE-VD-IN-DIG-008	RO	A3	NA	35/40		

*1 : Estimated cable size, quantities and type for design

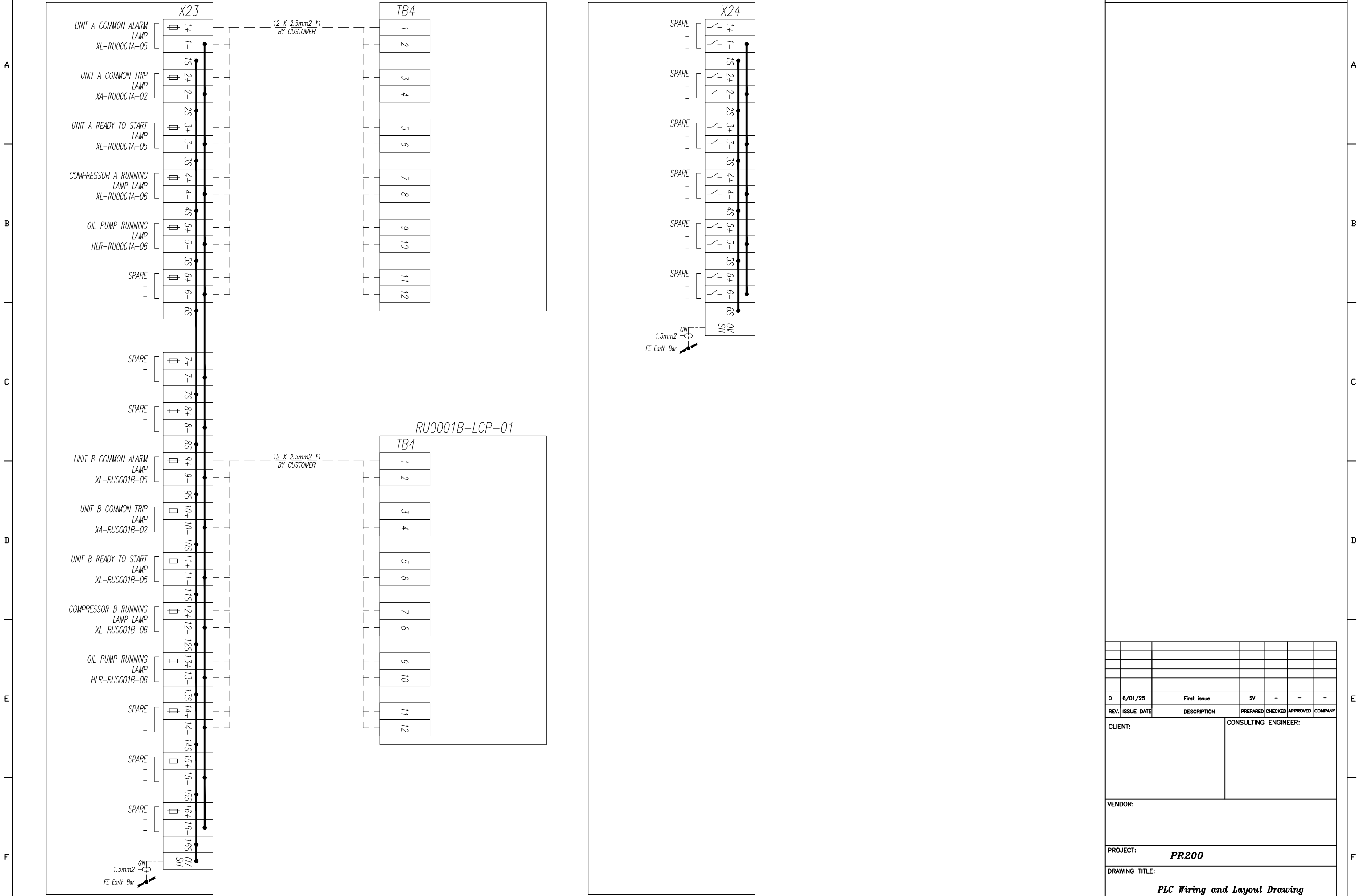
*2 MAXIMUM ALLOWABLE CABLE LENGTH FOR CAPACITY CONTROL SOVs TO BE CONFIRMED BASED ON NOMINAL POWER/DISTANCE/VOLTAGE/VOLTAGE DROP

1 UCP-RU0001

2 3 RU0001A-LCP-01

4 UCP-RU0001

8 GENERAL NOTES



*1 : Estimated cable size, quantities and type for design

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PROJECT: **PR200**

DRAWING TITLE: **PLC Wiring and Layout Drawing**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-IN-DIG-008	R0	A3	NA	38/40

NO.	TAG NO.	INSTRUMENT/PARTS NAME	SPEC/SERVICE	MANUFACTURER	MODEL/CODE	QTY.	REMARKS
1	MCB10, MCB20	MINIATURE CIRCUIT BREAKER	2P/400VAC/60VDC/10kA/16AT-C	SIEMENS	5SY4216-7	2	
2	MCB11, MCB12	MINIATURE CIRCUIT BREAKER	2P/400VAC/60VDC/10kA/10AT-C	SIEMENS	5SY4210-7	2	
3	MCB13...15	MINIATURE CIRCUIT BREAKER	2P/400VAC/60VDC/10kA/2AT-C	SIEMENS	5SY4202-7	3	
4	MCB201, MCB202	MINIATURE CIRCUIT BREAKER	1P/230VAC/60VDC/10kA/6AT-C	SIEMENS	5SY4106-7	2	
5	MCB101...104	MINIATURE CIRCUIT BREAKER	1P/230VAC/60VDC/10kA/4AT-C	SIEMENS	5SY4104-7	4	
6	MCB105	MINIATURE CIRCUIT BREAKER	1P/230VAC/60VDC/10kA/2AT-C	SIEMENS	5SY4102-7	1	
7	-	BUSBAR FOR MCB	10mm2/FOR 2P MCB	SIEMENS	5ST3735	-	
8	-	BUSBAR FOR MCB	10mm2/FOR 1P MCB	SIEMENS	5ST3731	-	
9	PS11	POWER SUPPLY	100-240VAC/24VDC 10A	PHOENIX CONTACT	QUINT PS/1AC/24DC/10	1	
10	PS12	POWER SUPPLY	100-240VAC/24VDC 20A	PHOENIX CONTACT	QUINT PS/1AC/24DC/20	1	
11	FAN13A	VENTILATION FAN	230VAC/50Hz/19W/87m3/h/204x204mm/RAL7035	RITTAL	SK 3239.700	1	
12	FLT1A, FLT1B	OUTLET FILTER	204x204mm/RAL7035	RITTAL	SK 3239.300	2	
13	TS13A	ENCLOSURE INTERNAL THERMOSTAT	230/115/60/48/24VAC _ 60/48/24VDC	RITTAL	SK 3110.000	1	
14	FL14A, FL14B	PANEL LIGHT	100-240V/14W/with DOOR SWITCH	RITTAL	SZ 2500.310	2	CABLE: SZ 2500.400
15	SK15	RECEPTACLE	250V/16A/CF Type	PHOENIX CONTACT	EO-CF-UT/LED/GN	1	
16	DP1	DOCUMENT POCKET	228x254x17 (A4)	RITTAL	SZ 2514.000	1	
17	PB1, PB2	EMERGENCY STOP PUSH BUTTON	2NC/220VAC_3A/24VDC_1.5A/MAINTAINED/RED/MASHROOM	OMRON	A22E-M-02	2	LABEL: A22Z-3466-1 PROTECTION COVER: A22Z-EG1
18	X1(L1,N1,L2,N2)	TERMINAL BLOCK	1000V/125A/GRAY/1.5-35.0mm2	PHOENIX CONTACT	UT 35	4	
19	X1(PE)	TERMINAL BLOCK	1000V/125A/GREEN-YELLOW/1.5-35.0mm2	PHOENIX CONTACT	UT 35-PE	1	
20	X1(FE,ISE)	TERMINAL BLOCK	1000V/125A/GREEN/1.5-35.0mm2	PHOENIX CONTACT	UT 35 GN	2	
21	X4,X5	TERMINAL BLOCK	500V/32A/GRAY/0.14-4.0mm2/4 COONECTION	PHOENIX CONTACT	UT 4-QUATTRO	34	END PLATE: D-UT 2.5/4-QUATTRO, BRIDGE: FBS **-6
22	X6,X7	TERMINAL BLOCK	500V/24A/GRAY/0.14-2.5mm2/4 CONNECTION	PHOENIX CONTACT	UT 2.5-QUATTRO	6	END PLATE: D-UT 2.5/4-QUATTRO, BRIDGE: FBS **-5
23	X6,X7 (PE)	TERMINAL BLOCK	8kV(surge voltage)/GREEN-YELLOW/0.14-2.5mm2	PHOENIX CONTACT	UT 2.5-PE	5	END PLATE: D-UT 2.5/10, BRIDGE: FBS **-5
24	X11..14, X21, X24, X31	TERMINAL BLOCK	400V/20A/GRAY/0.14-2.5mm2/KNIFE DISCONNECT	PHOENIX CONTACT	UT 2.5-MT	228	END PLATE: D-UT 2.5/4-TWIN, BRIDGE: FBS **-5
25	X11..14, X21, X24, X31, X32, X33 (FE)	TERMINAL BLOCK	1000V/24A/GREEN/0.14-0.25mm2	PHOENIX CONTACT	UT 2.5 GN	152	END PLATE: D-UT 2.5/10, BRIDGE: FBS **-5
26	X22, X23 (L+)	TERMINAL BLOCK	24VDC/6.3A/FUSE(5x20)/LED/BLACK/0.14-4.0mm2	PHOENIX CONTACT	UT 4-HESI LED24	40	BRIDGE: FBS **-6
27	X22, X23 (M)	TERMINAL BLOCK	1000V/41A/GRAY/0.14-4.0mm2	PHOENIX CONTACT	UT 4	40	END PLATE: D-UT 2.5/10, BRIDGE: FBS **-6
28	X22, X23 (FE)	TERMINAL BLOCK	1000V/41A/GREEN/0.14-4.0mm2	PHOENIX CONTACT	UT 4 GN	51	END PLATE: D-UT 2.5/10, BRIDGE: FBS **-6
29	X32, X33	TERMINAL BLOCK	400V/20A/BLUE/0.14-2.5mm2/KNIFE DISCONNECT	PHOENIX CONTACT	UT 2.5-MT BU	76	END PLATE: D-UT 2.5/4-TWIN, BRIDGE: FBS **-5
30	-	END TERMINAL BLOCK	MOUNTING END CLAMP FOR DIN RAIL	PHOENIX CONTACT	CLIPFIX 35	-	-
31	-	DIN RAIL	DIN RAIL NS 35	-	-	-	ESTIMATED LENGTH: 14m
32							
33	SR1, SR2	SAFETY RELAY	24VAC_DC/8X1/1X2	PHOENIX CONTACT	PSR-SCP-24UC/ESAM4/8X1/1X2	2	
34	R100..123, R208..215, R224..231 R300..305	RELAY	24VDC(Coil)/230VAC_3A/24VDC_2A/SPDT	PHOENIX CONTACT	PLC-RSC-24DC/21	46	BRIDGE: FBST 500-PLC RD/BU
35	R200..207, R216..223	SSR	24VDC(Coil)/3V..33VDC_2A	PHOENIX CONTACT	PLC-OSC-24DC/24DC/2	16	BRIDGE: FBST 500-PLC RD/BU

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DRAWING NO.		REV.	SIZE	SCALE	SHEET		
E1027-HSE-VD-IN-DIG-008		RO	A3	NA	39/40		

NO.	TAG NO.	INSTRUMENT/PARTS NAME	SPEC/SERVICE	MANUFACTURER	MODEL/CODE	QTY.	REMARKS
36	A1	PLC COMMUNICATION MODULE	MODBUS RTU 485	SIEMENS	6ES7241-1CH32-0XB0	1	
37	A2	PLC CPU MODULE	CPU1217C	SIEMENS	6ES7217-1AG40-0XB0	1	MEMORY CARD 24MB: 6ES7954-8LF04-0AA0
38	A3,A4,A5,A6	PLC DIGITAL INPUT/OUTPUT MODULE	DI16/DO16/24VDC/0,5A	SIEMENS	6ES7223-1BL32-0XB0	4	
39	A7,A8,A9	PLC ANALOGUE INPUT MODULE	A18/24VDC	SIEMENS	6ES7231-4HF32-0XB0	3	
40	A10	PLC ANALOGUE OUTPUT MODULE	A04/24VDC	SIEMENS	6ES7232-4HD32-0XB0	1	
41	HMI1	OPERATOR PANEL	TP1200-COMFORT /24VDC/12" COLOR	SIEMENS	6AV2124-0MC01-0AX0	1	
42	PR10	UNIVERSAL POWER RAIL	24VDC/4A	PEPPERL+FUCHS	UPR-3S	1	
43	MPS10	POWER FEEDER MODULE	20..30VDC/4A/W20mm	PEPPERL+FUCHS	KFD2-EB2	1	
44	M11..18, M21..28, M31..36	ISOLATED BARRIER	19..30VDC/W12.5mm/2W TRANSMITTER/HART	PEPPERL+FUCHS	KCD2-STC-EX1	22	
45	M41,42	ISOLATED BARRIER	19..30VDC/W20mm/IP CONVERTER/HART	PEPPERL+FUCHS	KFD2-SCD2-EX1.LK	2	
46	CAB1	INDUSTRIAL ETHERNET CABLE	INDUSTRIAL ETHERNET CABLE 3M WITH 2X RJ45 CONN.	SIEMENS	6XV1870-3QH30	1	
47							
48							
49							
50	-	CABINET ENCLOSURE MODEL	-	RITTAL	VX 8808.000/ VX 8108.245	1	
51	-	CABINET ENCLOSURE 2ND MOUNTING PLATE	-	RITTAL	VX 5051.043 / 5051.045	1	
52	-	CABINET ENCLOSURE BASE	-	RITTAL	VX 8660.003/ VX 8660.034	1	
53	-	CABINET ENCLOSURE DOOR LOCK	-	RITTAL	VX 8618.200/ TS 8611.180	1	
54	-	CABINET ENCLOSURE CABLE ENTRY	-	RITTAL	VX 8618.8111	1	
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E1027-HSE-VD-IN-DIG-008			RO	A3	NA	40/40	