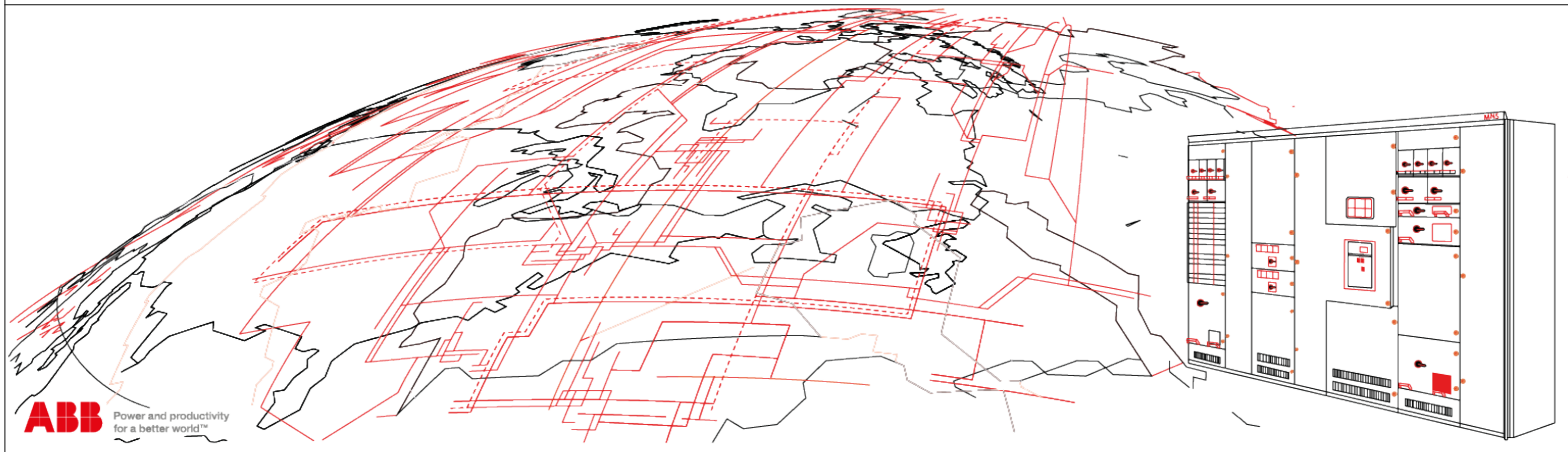







# Low Voltage Systems

Customer : RMG COPPER JSC  
Contract Number : -  
Project Description : TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA  
Switchgear Name : BE01-WC-002 400V LV MOTOR CONTROL CENTER






Dilovasi OSB 4.Kısım D-4009 No:11  
Dilovasi / Kocaeli / TURKEY

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For Approval <input type="checkbox"/> Approved For Construction <input checked="" type="checkbox"/> As Tested <input type="checkbox"/> As Build <input type="checkbox"/>				<b>Supplier</b> <b>ABB</b> ELEKTRİK SAN. A.Ş.		<b>Customer</b> RMG COPPER JSC		<b>End User</b> RMG COPPER JSC		<b>Project</b> TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-002 400V LV MOTOR CONTROL CENTER		<b>Title</b> Cover Sheet		<b>Drawing No.</b> 4TRD021001X9002		+ DOCUMENTS		SIZE	
R3V5 08.07.2021 Last Revision Date R0V0 01.02.2021 Creation Date				SCALE 1		DESIGNED BY : VINEETHA						<b>Project No.</b> K21001		PAGE No.		1			
Rev. Date Description SIGN						CHECKED BY : O.TOPAL								CONT.		2		REV.	
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ROV0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL														
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ														
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# TECHNICAL PARAMETERS



## SWITCHGEAR PARAMETERS

SYSTEM MNS	MNS 3.0
STANDARD	IEC61439-2
INTERNAL ARC TEST STANDARD	Not Applicable
SWITCHBOARD ARRANGEMENT	Single Front
MODULE CO-ORDINATION	TYPE-2, Icc= 65 kA, IE2
DIVERSITY FACTOR	Module Level
COLOUR (SWITCHGEAR)	RAL 7035
COLOUR (W-MODULES)	RAL 7035
DOOR LOCK	Double Bit Lock 5mm
INGRESS OF PROTECTION (EXTERNAL)	IP41
INGRESS OF PROTECTION (INTERNAL)	IP 2X (including IPXXB)
ROOF PLATE TYPE	Raised Roof

### INTERNAL FORM OF SEPERATION

WITHDRAWABLE MODULE COMPARTMENT	4b
PLUG-IN MODULE COMPARTMENT	2b
ACB/MCCB SECTION	4b
OTHER SECTION/COMPARTMENT	2b

### SWITCHGEAR DIMENSIONS

TOTAL SWITCHGEAR WIDTH [mm]	9840.0
SWITCHGEAR DEPTH [mm]	600.0
SWITCHGEAR HEIGHT [mm]	2200
SWITCHGEAR WEIGHT APPROX. [kg]	4093

## VOLTAGE PARAMETERS

EARTHING SYSTEM	IT
SERVICE OPERATIONAL VOLTAGE	Ue = 400VAC
SERVICE FREQUENCY	fn = 50 Hz
RATED INSULATION VOLTAGE	Ui = 1000VAC
RATED IMPULSE WITHSTAND VOLTAGE	Uimp = 8kV

## MAIN BUSBAR PARAMETERS

RATED CURRENT	Ie = 2000A
MAIN BUSBAR SIZE PER PHASE [mm]	2x60x10
RATED SHORT-TIME WITHSTAND CURRENT	Icw = 65 kA, 1s
RATED PEAK WITHSTAND CURRENT	Ipk = 165 kA <sup>③</sup>
MATERIAL	Tinned Cu.

## NEUTRAL BUSBAR PARAMETERS (HORIZONTAL)

NEUTRAL BUSBAR SIZE [mm]	NA
RATING OF NEUTRAL CONDUCTOR [%]	NA%
MATERIAL	NA

## PE BUSBAR PARAMETERS (HORIZONTAL)

PE BUSBAR SIZE [mm]	60x10 R3V5
MATERIAL	Tinned Cu.
<u>VERTICAL BARS IN POWER CABLE AREA</u>	
N / PEN BUSBAR SIZE [mm]	- R3V5
PE BUSBAR SIZE [mm]	40x5
PE BUSBAR SIZE IN RE-INFORCED [mm]	--

## DISTRIBUTION BUSBAR PARAMETERS

RATED CURRENT	Ie = 725.0A <sup>④</sup>
BUSBAR SIZE PER PHASE [mm]	50x30x5
RATED SHORT-TIME WITHSTAND CURRENT	Icw = 65 kA, 1s
RATED PEAK WITHSTAND CURRENT	Ipk = 143 kA
MATERIAL	Silver Plated Copper (Ag)

## ADDITIONAL TREATMENT ON COPPER BARS

MAIN BUSBAR	Tin Plated Copper <sup>②</sup>
PEN/N (HORIZONTAL)	Tin Plated Copper <sup>②</sup>
PE (HORIZONTAL)	Tin Plated Copper <sup>②</sup>
N-BAR (VERTICAL, IN CABLE COMPARTMENT)	Tin Plated Copper <sup>②</sup>
PE/PEN (VERTICAL, IN CABLE COMPARTMENT)	Tin Plated Copper <sup>②</sup>
CONNECTIONS BARS (SECTIONS)	Tin Plated Copper <sup>②</sup>
CONNECTIONS BARS (MODULES)	Tin Plated Copper <sup>②</sup>

## SERVICE CONDITIONS

ALTITUDE	< 2000 m.a.s.l
TEMPERATURE AVERAGE DURING 24HRS	35°C
TEMPERATURE RANGE	-5°...+40°
HUMIDITY	<=50%
POLLUTION DEGREE	3
OVERVOLTAGE CATAGORY	III
SEISMIC ZONE	Zone-I

## TERMINALS




CUSTOMER SIGNALS	PUSH-IN TYPE
CONTROL / AUXILIARY POWER SUPPLY	PUSH-IN TYPE
DRAWER INSIDE	PUSH-IN TYPE
DRAWER OUTSIDE	SCREW TYPE
CT-VT TERMINAL BLOCK SIZE	4mm²
SIGNAL TERMINAL BLOCK SIZE	2.5mm²
CONTROL TERMINAL BLOCK SIZE	2.5/4mm²

## PROTOCOLS OF COMMUNICATIONS

IED (INTELLIGENT ELECTRONIC DEVICE)	-
ETHERNET SWITCH	IEC 61850
MCCB	Modbus RTU
MOTOR CONTROLLER	Modbus RTU
PROTOCOL CONVERTOR	Modbus RTU to Ethernet IP

## CONNECTIONS

INCOMING	CABLE	TOP
OUTGOING	CABLE	TOP
BOTTOM PLATES	YES	
CABLE GLANDS	NO	

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# TECHNICAL PARAMETERS



## CABLE COLOURS, CROSS SECTIONS AND TYPES

### CABLE TYPES

Control circuit	H07Z-K (450/750V, halogen-free single core, harmonised, for wiring in control cabinets, acc. to EN 50525-2-31)
Power circuit	NSHXAFÖ (1.3/3kV, Flame retardance, Hologen free, Self-exitinguishing)
Maximum operating temperature	90° Celcius
Halogen-free	YES
Tin Coating	NO

### MAIN CIRCUIT

L1 - BK<sup>①</sup>  
L2 - BK<sup>①</sup>  
L3 - BK<sup>①</sup>  
N - BK <sup>①</sup>  
PE - GNYE

## MISCELLENEOUS ELECTRICAL INFORMATION

SURGE ARRESTORS	NO
SPACE HEATER	YES
THERMOSTAT	YES
PANEL LAMP	YES
POWER SOCKET	NO

## INSTRUMENT SIZE

WITHDRAWABLE MODULE	48x48mm
DC2BB MODULE	72x72mm

### AC AUXILIARY CIRCUITS

AUXILIARY VOLTAGE 1 (L, N, PE) 230VAC	BK, BK, GNYE	min. 1.5 mm <sup>2</sup>
AUXILIARY VOLTAGE 2 (L, N, PE) 230VAC	BK, BK, GNYE	min. 1.5 mm <sup>2</sup>

### DC AUXILIARY CIRCUITS

AUXILIARY VOLTAGE 1 (L+, L-) 24VDC	RD, WH	min. 1.5 mm <sup>2</sup>
AUXILIARY VOLTAGE 2	N/A	N/A
CT SECONDARY SIDE	L - BK	min. 2.5 mm <sup>2</sup>
VT SECONDARY SIDE	L - BK	min. 2.5 mm <sup>2</sup>
POTENTIAL FREE SIGNALS	L - BK	min. 1.5 mm <sup>2</sup>

\* Cross-Section of wires mentioned here are for general use.  
Higher Cross-Section of wires shall be used according to current requirment.

### INTERCONNECTION CABLES

CUBICLE TO CUBICLE (L, N) 230V AC	BK	2.5 mm <sup>2</sup>
CUBICLE TO CUBICLE (+, -) 24V DC	RD, WH	4 mm <sup>2</sup>
MODULE TO MODULE (L, N) 230V AC	BK	2.5 mm <sup>2</sup>
MODULE TO MODULE (+, -) 24V DC	RD, WH	4 mm <sup>2</sup>
HEATER AND LIHGTING	BK	2.5 mm <sup>2</sup>

## COMMUNICATION CABLE

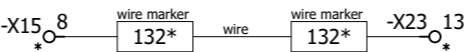
PROFIBUS DP	N/A
MODBUS RTU	BELDEN 9841NH (BU,WH)
MODBUS TCP/IP	CAT6 RJ45 CABLE
IEC61850	N/A

## LABELING

MIMIC DIAGRAM	N/A
ENGRAVED LABELS FIXATION	CLENCHED (RIVET)
SWITCHGEAR MAIN TECHNICAL LABEL	PAPER LABEL
ENGRAVED LANGUAGE 1	ENGLISH
ENGRAVED LANGUAGE 2	N/A
LABEL WILL BE BLACK LETTER WHITE BACKGROUND	

## WIRE MARKER

MOUNTING TYPE  
MARKER TYPE  
COLOUR



\*wire marker text will be black colour according to control schematic.

SLEEVE TYPE  
KG1  
YELLOW

### COLOUR LEGEND - ACC. IEC 60757



BK Black	BN Brown	RD Red	OG Orange
YE Yellow	GN Green	BU Light blue	VT Violet
GY Grey	WH White	PK Pink	GD Gold
SR Silver	TQ Turquoise	GNYE Green-yellow	TR Transparent
DB Dark blue			

### NOTES:





- Power cable shall be in black color while at both ends colored heat shrinkable tube (L1-BN, L2-BK, L3-GY, N-BU) shall be provided.
- Coloured label will be provided at regular intervals for phase identification.
- According to standard MNS busbar system there are constant values for Icp. For example 4x40x10 Icp value is 176kA, 4x60x10 Icp value is 220kA
- This rating just indicates the MCC column minimum rating. DC2BB cubicle distribution busbar rating varies according to CB Rating.

## ADDITIONAL REQUIREMENT

STEEL BASE FRAME	NO
REAR C PROFILES ANTIMAGNETICS	false
REAR WALL ANTIMAGNETICS	false
MAXIMUM SHIPPING SECTION LENGTH	

For Approval <input type="checkbox"/> Approved For Construction <input checked="" type="checkbox"/>		As Tested <input type="checkbox"/> As Build <input type="checkbox"/>		<b>Supplier</b> <b>ABB</b> ELEKTRİK SAN. A.Ş.		<b>Customer</b> RMG COPPER JSC		<b>End User</b> RMG COPPER JSC		<b>Project</b> TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-002 400V LV MOTOR CONTROL CENTER		<b>Title</b> Technical Data Sheet		<b>Drawing No.</b> 4TRD021001T9002		+DOCUMENTS		SIZE A3													
R3V5	27.05.2021	Last Revision Date		SCALE 1		DESIGNED BY : VINEETHA								<b>Project No.</b> K21001		PAGE No.		4													
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Rev.	Date	Description				APPROVED BY : O.YILMAZ										REV.															
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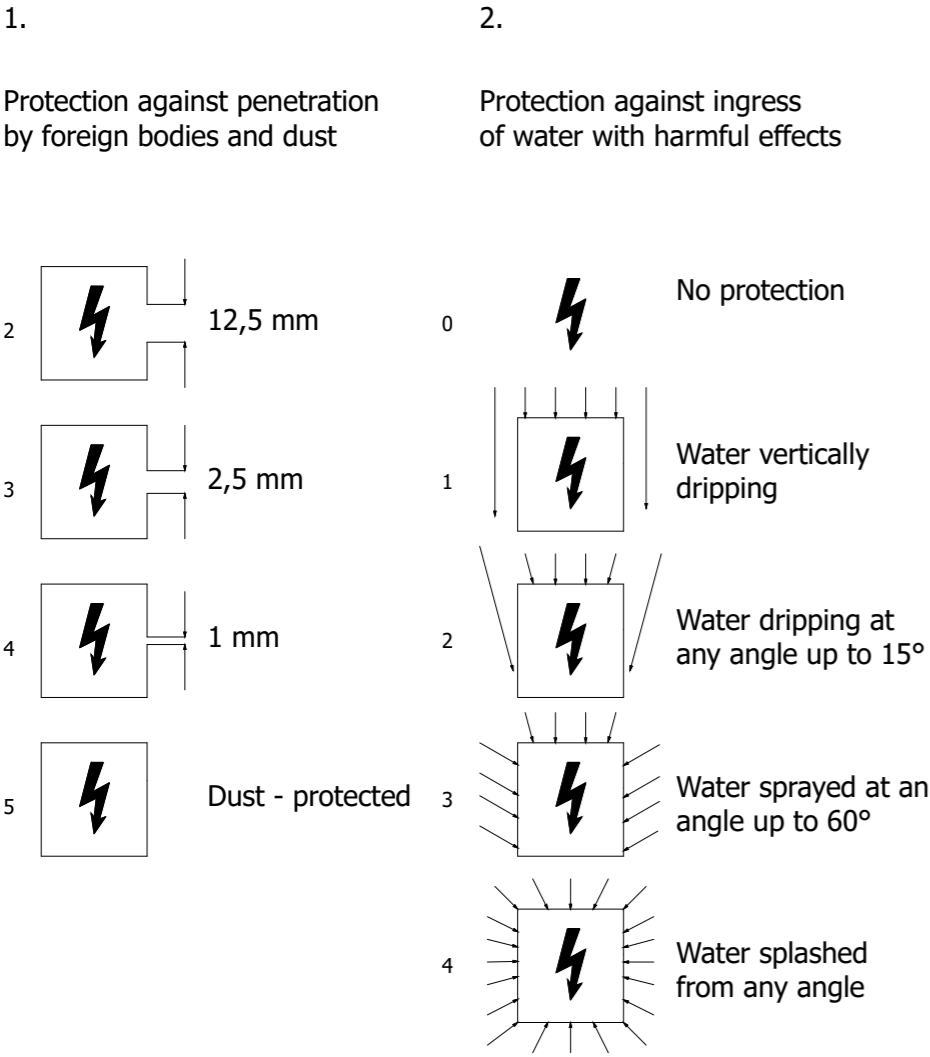
ACB	Air Circuit Breaker
ATS	Automatic Transfer Switch
BA	Busbar Arrangement
CCA	Control Cable Area
CT	Current Transformer
DBB	Distribution BusBar
DCS	Distributed Control System
DC2BB	Direct Connection to BusBar
DTM	Device Type Manager
EDS	Electronic Data Sheets
EOL	Electronic Overload
ELDS	Electrification Business Line, Distribution Solution
FBP	Field Bus Plug
GA	General Arrangement
GPS	Global Positioning System
GSD File	GeräteStammDaten
HGF	Halogen-Free
HMI	Human Machine Interface
I/O	Input/Output
IIP	Ingress of Protection
Icc	Rated conditional-short circuit current
LED	Light-Emitting Diode
LVS	Low Voltage System
MBB	Main BusBar
MCB	Miniature Circuit Breaker
MCC	Motor Control Center
MCCB	Moulded-Case Circuit Breaker
MCT	Measuring Current Transformer
MNS	Das Modulare Niederspannungs-schaltanlagen-Sy
NS	NonStandard
OLE	Object Linking and Embedding
OPC	OLE for Process Control
PCA	Power Cable Area
PCS	Process Control System
PCT	Protection Current Transformer
PLC	Programmable Logic Controller
PMU	Power Monitoring Unit
RCU	Remote Control Unit
SCADA	Supervisory Control And Data Acquisition
SNTP	Simple Network Time Protocol
TOL	Thermal OverLoad relay
UMC	Universal Motor Controller
UPS	Uninterruptible Power Supply
UTC	Coordinated Universal Time
VSD	Variable Speed Drive
VT	Voltage Transformer

For Approval <input type="checkbox"/> As Tested <input type="checkbox"/> Approved For Construction <input checked="" type="checkbox"/> As Build <input type="checkbox"/>				<b>Supplier</b>  ELEKTRİK SAN. A.Ş.		<b>Customer</b> RMG COPPER JSC 		<b>End User</b> RMG COPPER JSC 		<b>Project</b> TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-002 400V LV MOTOR CONTROL CENTER		<b>Title</b> List of Abbreviation		<b>Drawing No.</b> 4TRD021001T9002		+DOCUMENTS SIZE A3	
R3V5 19.05.2021 Last Revision Date ROV0 01.02.2021 Creation Date Rev. Date Description SIGN				SCALE 1		DESIGNED BY : VINEETHA CHECKED BY : O.TOPAL APPROVED BY : O.YILMAZ						<b>Project No.</b> K21001		PAGE No. 5 CONT. 6		 REV.	

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IP legends

acc. IEC 60529



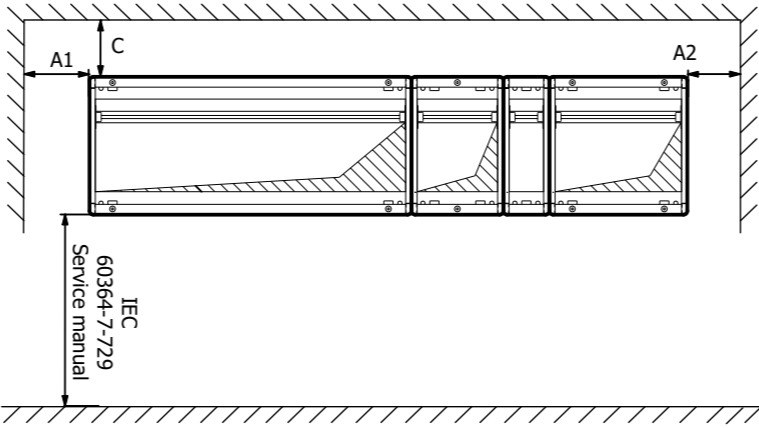
Additional letter

Protection against access hazardous parts with:

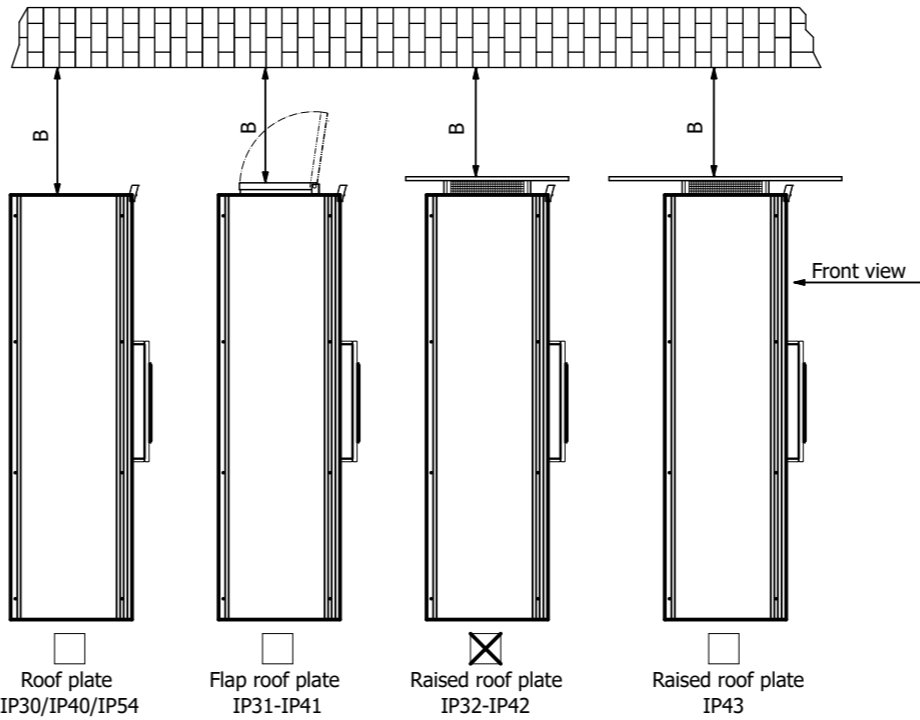
- A Back of the hand > 50 mm diameter
- B Finger/tool > 12.5 diameter, 80 mm length
- C Tool/Wire > 2.5 diameter, 100 mm length
- D Tool/Wire > 1.0 mm diameter, 100 mm length

Wall distances

Floor View

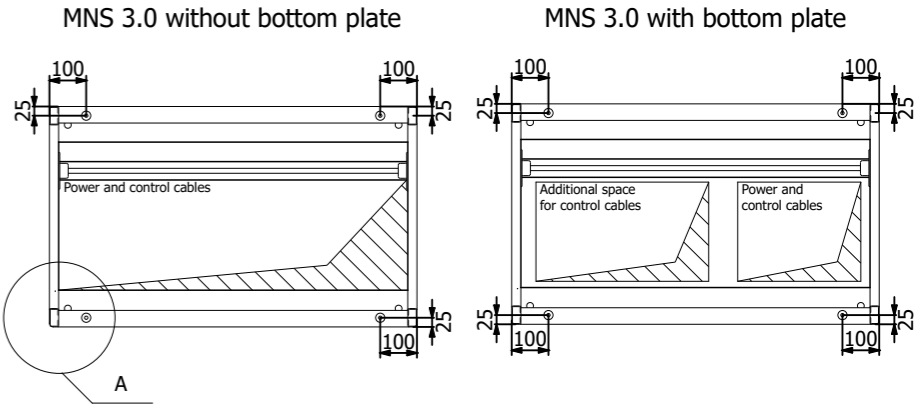


Side view

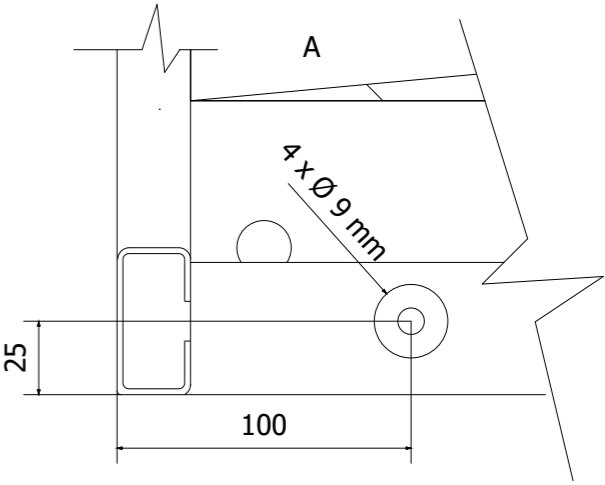


Internal protection	A1 (right mounted doors)	A1 (left mounted doors)	A2	B (Section to ceiling)	C (Section to back wall)
IP30-IP40	100 mm	170 mm	170 mm	500 mm	105 mm
IP54	100 mm	170 mm	170 mm	500 mm	105 mm
Raised roof plate (RRP)					
IP31-IP41	135 mm	170 mm	170 mm	500 mm	205 mm
IP32-IP42	135 mm	170 mm	170 mm	500 mm	205 mm
IP43	400 mm	400 mm	400 mm	500 mm	405 mm
Flap roof plate					
IP31-IP41	100 mm	170 mm	170 mm	500 mm	105 mm
IP32-IP42	100 mm	170 mm	170 mm	500 mm	105 mm
IP43	100 mm	170 mm	170 mm	500 mm	105 mm

Bottom plates



Anchor hole



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Rev.	Date
	DESCRIPTION
	SIGN

Supplier	Customer
ABB ELEKTRİK SAN. A.Ş.	RMG COPPER JSC
DESIGNED BY : VINEETHA	
CHECKED BY : O.TOPAL	
APPROVED BY : O.YILMAZ	

End User	Project
RMG COPPER JSC	TREL-DEU-RMG MOTOR CONTROL CENTRE
	MNS-GEORGIA
	BE01-WC-002
	400V LV MOTOR CONTROL CENTER

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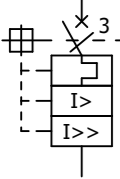
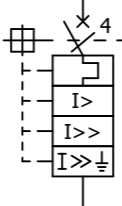
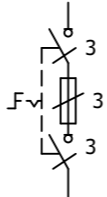
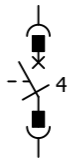
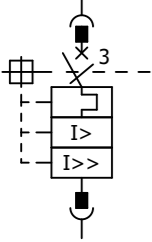
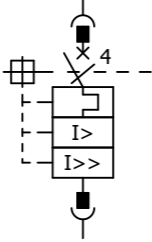
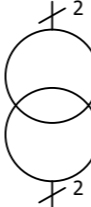
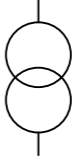
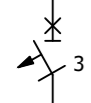

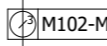
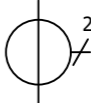


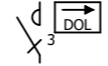

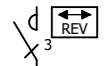





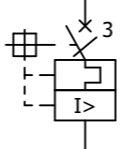












End User	Project
RMG COPPER JSC	TREL-DEU-RMG MOTOR CONTROL CENTRE
	MNS-GEORGIA
	BE01-WC-002
	400V LV MOTOR CONTROL CENTER




Title	Drawing No.
Legend Sheet	4TRD021001T9002
	Project No.
	K21001

+DOCUMENTS	SIZE
PAGE No.	A3
CONT.	REV.

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A.Ş.</td><td colspan="2">Customer RMG COPPER JSC</td><td colspan="2">End User RMG COPPER JSC</td><td colspan="2">Project TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-002 400V LV MOTOR CONTROL CENTER</td><td colspan="2">Title Position Coding of MNS 3.0</td><td colspan="2">Drawing No. 4TRD021001T9002</td><td colspan="2">+DOCUMENTS</td><td colspan="2">SIZE A3</td></tr><tr><td>R3V5</td><td>19.05.2021</td><td>Last Revision Date</td><td></td><td rowspan="3">SCALE 1</td><td rowspan="3">DESIGNED BY : VINEETHA CHECKED BY : O.TOPAL APPROVED BY : O.YILMAZ</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3">Project No. K21001</td><td rowspan="3">PAGE No. 7</td><td rowspan="3">CONT. 8</td><td rowspan="3">REV.</td><td rowspan="3"></td><td rowspan="3"></td></tr><tr><td>Rev.</td><td>Date</td><td>Creation Date</td><td>SIGN</td></tr><tr><td></td><td></td><td>Description</td><td></td></tr></table></div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div></div></div></div></div>																mm	E	alphabetical classification		MNS IS	2200 mm		A	A	2000 mm	72 E	B	A	1			B	2	68 E	C	A	3			B	4	1800 mm	64 E	D	A	5			B	6	60 E	E	A	7			B	8	1600 mm	56 E	F	A	9			B	10	52 E	G	A	11			B	12	1400 mm	48 E	H	A	13			B	14	44 E	J	A	15			B	16	1200 mm	40 E	K	A	17			B	18	36 E	L	A	19			B	20	1000 mm	32 E	M	A	21			B	22	28 E	N	A	23			B	24	800 mm	24 E	P	A	25			B	26	20 E	Q	A	27			B	28	600 mm	16 E	R	A	29			B	30	12 E	S	A	31			B	32	400 mm	8 E	T	A	33			B	34	4 E	U	A	35			B	36	200 mm	0 E	W			0 mm					Quantity	Module size	Location in section	4	8E/4	BA01, BA02, FA01, FA02	4	8E/2	DA01, DA03, HA01, HA03	1	16E	KA01	1	24E	PA01	Mode	Position of switch			Mechanical / Electrical Status	8E/4 and 8E/2	4E...24E	Designation	1			ON position I	ON position-Main and control circuits are closed. 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## SYMBOL OVERVIEW

	Fixed Circuit Breaker three-pole (L-S-I characteristic)		Fixed Circuit Breaker four-pole (L-S-I-G characteristic)		Fixed Switch Disconnecter with fuse element three-pole		Withdrawable Switch Disconnecter four-pole
	Withdrawable Circuit Breaker three-pole (L-S-I characteristic)		Withdrawable Circuit Breaker four-pole (L-S-I characteristic)		Control Power Transformer (MKT)		Potential Transformer
	Power Circuit Breaker three-pole		Motor Operator of Circuit Breaker		Motor/Heater Control Unit (with Modbus-RTU communication)		Bar or Cable Type Current Transformer
	Analog Ammeter		Analog Voltmeter		Motor Direct On Line Starter without reversing motion		Motor Direct On Line Starter without reversing motion, Heavy Duty
	Motor Direct On Line Starter with reversing motion		Toroidal Transformer		Miniature circuit-breaker (Double Pole)		Miniature circuit-breaker (Four Pole)
	KORC Current Transformer		Earth Leakage Relay		Fixed Circuit Breaker three-pole (L-I characteristic)		Voltmeter Selector switch
	Ammeter Selector switch		Residual Current Monitor		Power Contactor four-pole		Miniature circuit-breaker (Three Pole)
	Motor Star-Delta Starter		Power Terminal / Cable Connection Unit		Male and Female Pin		Thermal Over Load Relay
	Motor Control Unit (with Profibus DP communication)		Network Analyzer		Numerical Feeder Protection Relay		

For Approval <input type="checkbox"/> Approved For Construction <input checked="" type="checkbox"/> As Tested <input type="checkbox"/> As Build <input type="checkbox"/>				<b>Supplier</b>  ELEKTRİK SAN. A.Ş.		<b>Customer</b> RMG COPPER JSC 		<b>End User</b> RMG COPPER JSC 		<b>Project</b> TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-002 400V LV MOTOR CONTROL CENTER		<b>Title</b> Symbol Overview		<b>Drawing No.</b> 4TRD021001T9002		+DOCUMENTS PAGE No. 8		SIZE A3	
R3V5 19.05.2021 Last Revision Date R0V0 01.02.2021 Creation Date Rev. Date Description SIGN				SCALE 1 DESIGNED BY : VINEETHA CHECKED BY : O.TOPAL APPROVED BY : O.YILMAZ										<b>Project No.</b> K21001		CONT. 9 REV.			
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A							A
B							B
C							C
D							D
E							E
F							F

Manufacturers Name and Type

ABB MNS 3.0

Manufacturers Serial Number

4TRS021001X9002

Switchgear Tag Number

BE01-WC-002

Switchgear Title

400V LV MOTOR CONTROL CENTER

System Rated Voltage and Phases

400 VAC, ~3P+PE

System Wires and Frequency

3, 50 Hz

Rated Power Widtstand Voltage

2,2kV

Rated Lightening Imp. Withstand Voltage

8 kV

Rated Fault Current

65 kA

Rated RMS Short-Circuit Current, (s)

65 kA ,1s

Rated Peak Short-Circuit Current

165 kA

Busbar Rating

2000A

Protection Class

IP41

Year of Manufacture

2021

Standard

IEC61439-2

Purchaser's Name

RMG COPPER JSC

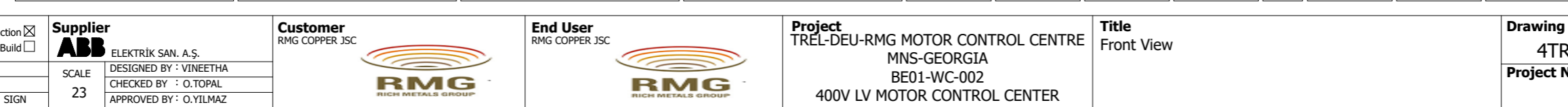
Order Item No




K21001

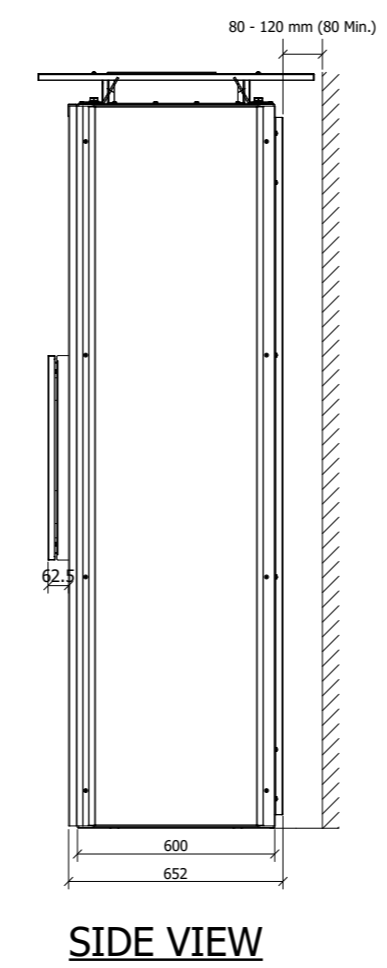
ABB ELEKTRİK SANAYİ A.Ş.





Alçak Gerilim Sistemleri

Dilovasi OSB, 4.Kısım, D-4009 Sk. 41455, Kocaeli/TURKEY

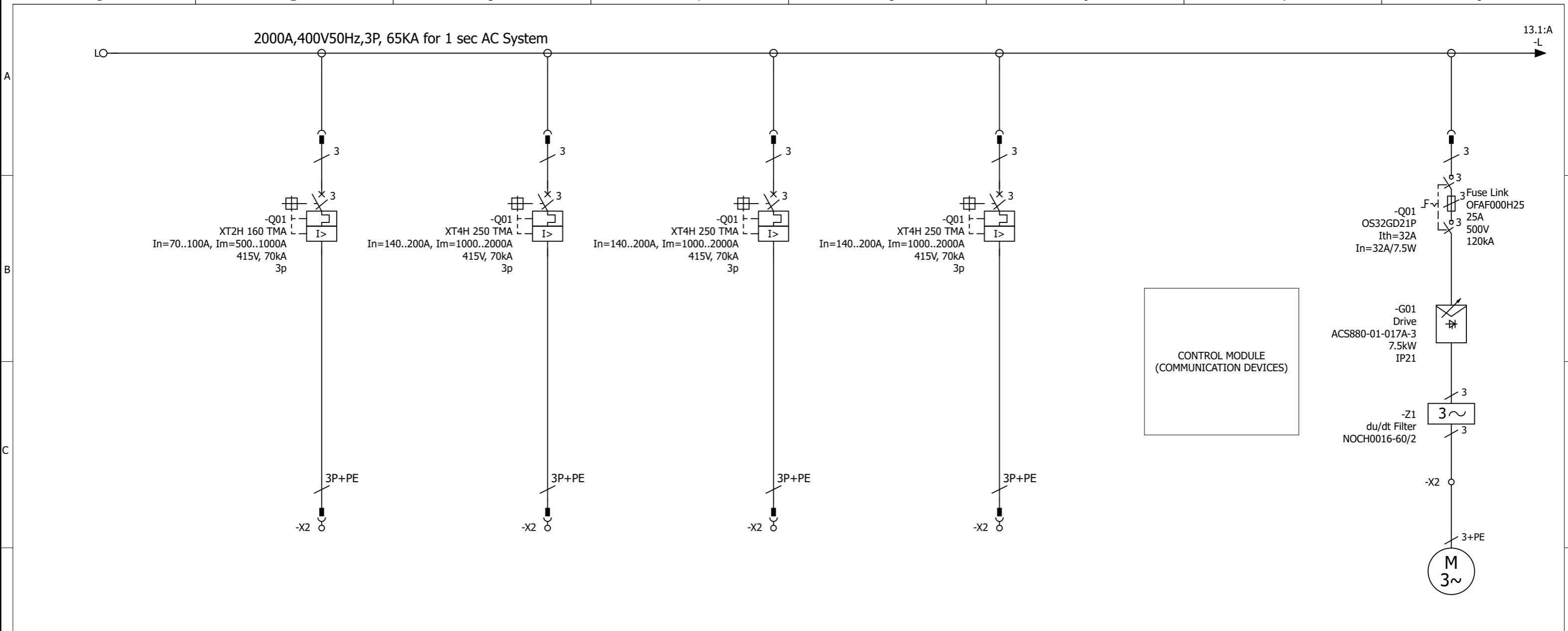
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R3V5	08.07.2021	Last Revision Date		SCALE 23	DESIGNED BY : VINEETHA								PAGE No.		10				
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL								CONT.		11	REV.			
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ														
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R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL								CONT.		+SL/12		REV.		
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ														
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Module No.	K2602_ED_100A_Icu_70kA_XT2H_160_TMA_84A_6E_3P_WM	K2603_ED_200A_Icu_70kA_XT2H_250_TMA_160A_8E_3P_WM	K2603_ED_200A_Icu_70kA_XT2H_250_TMA_160A_8E_3P_WM	K2603_ED_200A_Icu_70kA_XT2H_250_TMA_160A_8E_3P_WM	K2552_CONTROL PLUG-IN MODULE_FOR COMMUNICATION COMPONENTS_16E	K2706_VFD-du_dt Filter_7.5kW_OS32G_32A_ACS 880_16E
Control Diagram	K21001K8602	K21001K8603	K21001K8603	K21001K8603	K21001K8552	K21001K8701
Customer Control Diagram	ED	ED	ED	ED	CM	VFD
Line No	1	2	3	4	5	6
Power (kW)	-	-	-	-	-	7.5
Voltage (V)	400	400	400	400	400	400
Current (A)	-	-	-	-	-	15.5
Cable Cross Section mm²	-	-	-	-	-	-
Incoming / Outgoing	TOP	TOP	TOP	TOP	TOP	TOP
Tag No	-	-	-	-	-	ZF01_PU003_MAO1
Description	REAGENT MCC BE01-WC-005	ACTIVE FILTER-1	ACTIVE FILTER-2	ACTIVE FILTER-3	CONTROL MODULE FOR COMMUNICATION DEVICES	SCAVENGER CONCENTRAE PUMP
Location	+N001.HC01	+N001.KA01	+N001.MA01	+N001.PA01	+N001.RA01	+N002.BA01

For Approval ☐ As Tested

Approved For Construction ☒ As Build

Rev.

19.05.2021

Last Revision Date

01.02.2021

Creation Date

01.02.2021

Description


SIGN

**Supplier**  
ABB  
ELEKTRİK SAN. A.Ş.


SCALE

1

**Customer**  
RMG COPPER JSC



**End User**  
RMG COPPER JSC



**Project**  
TREL-DEU-RMG MOTOR CONTROL CENTRE  
MNS-GEORGIA  
BE01-WC-002  
400V LV MOTOR CONTROL CENTER

**Title**  
Single Line Diagram

**Drawing No.**  
4TRD021001S9002

**Project No.**  
K21001

+SL

PAGE No.

CONT.

SIZE  
A3

12

13

REV.

1

2

3

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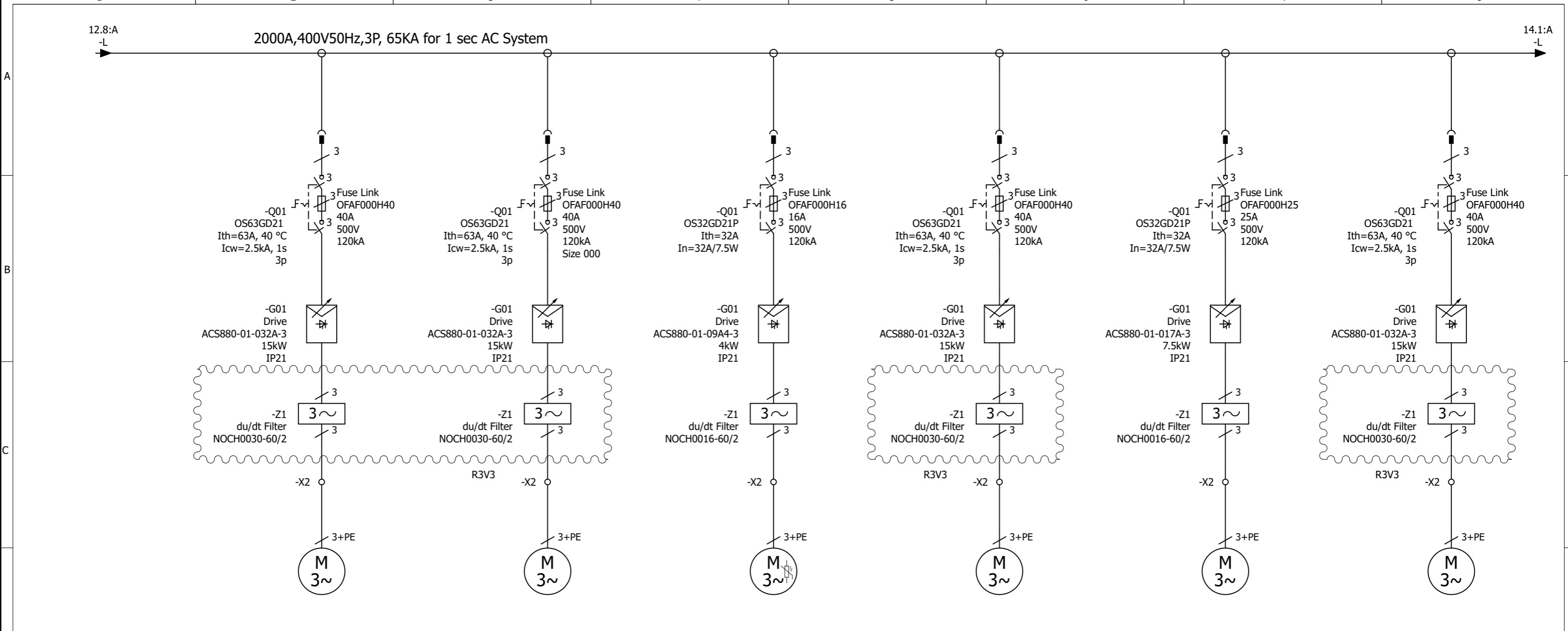
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8

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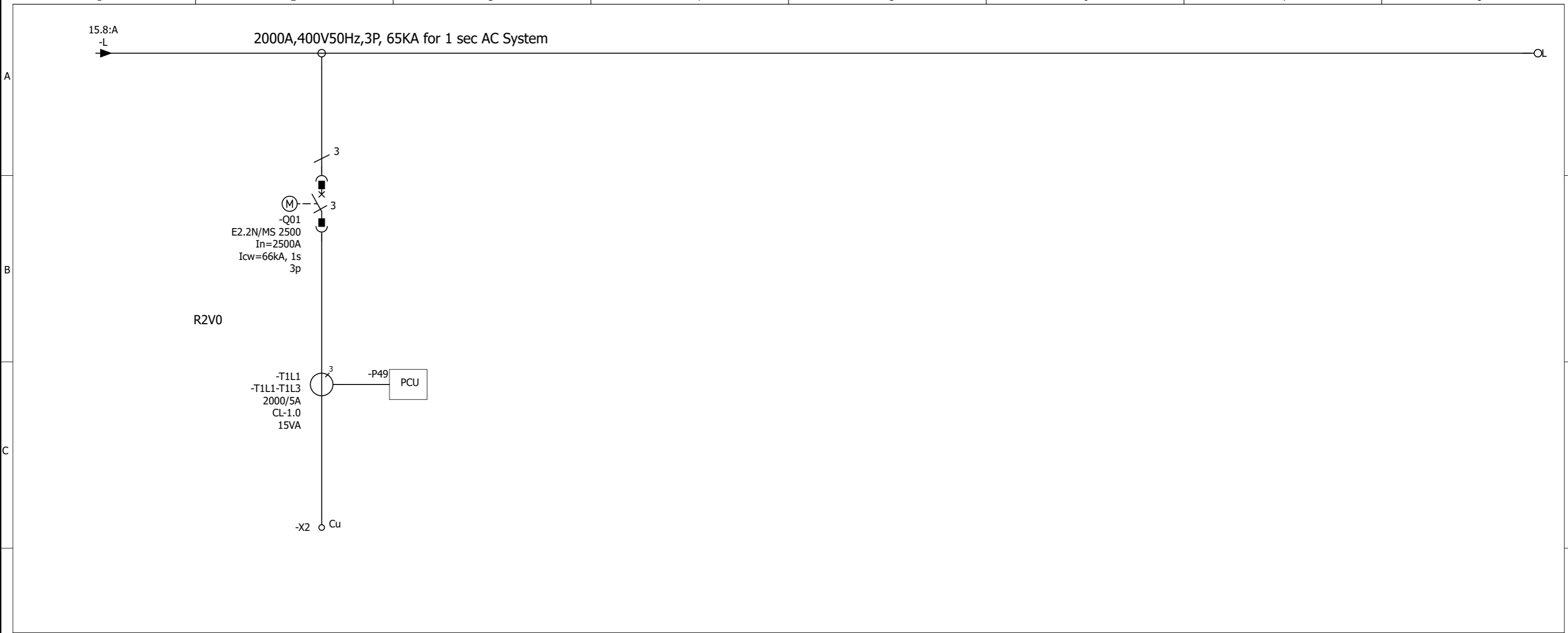


Module No.	K2708_VFD-du_dt Filter_15kW_ OS63G_63A_ACS 880_28E	K2708_VFD-du_dt Filter_15kW_ OS63G_63A_ACS 880_28E	K2704_VFD-du_dt Filter_4kW_ OS32G_32A_ACS 880_16E	K2708_VFD-du_dt Filter_15kW_ OS63G_63A_ACS 880_28E	K2706_VFD-du_dt Filter_7.5kW_ OS32G_32A_ACS 880_16E	K2708_VFD-du_dt Filter_15kW_ OS63G_63A_ACS 880_28E
Control Diagram	K21001K8701	K21001K8701	K21001K8701	K21001K8701	K21001K8701	K21001K8701
Customer Control Diagram	VFD	VFD	VFD	VFD	VFD	VFD
Line No	7	8	9	10	11	12
Power (kW)	15	15	4	15	7.5	15
Voltage (V)	400	400	400	400	400	400
Current (A)	28.5	28.5	8.4	-	15.5	-
Cable Cross Section mm <sup>2</sup>	-	-	-	-	-	-
Incoming / Outgoing	TOP	TOP	TOP	TOP	TOP	TOP
Tag No	ZG03_PU108_MA01	ZG03_PU109_MA01	ZF02_RC001_MA01	AG35_PU001_MA01	ZF01_PU004_MA01	AG35_PU002_MA01
Description	HIG MILL FEED PUMP	HIG MILL FEED PUMP (STAND BY)	1ST CLEANER CONDITIONER AGITATOR	GLAND SEAL WATER PUMP	SCAVENGER CONCENTRAE PUMP (STAND BY)	GLAND SEAL WATER PUMP (STAND BY)
Location	+N002.FA01	+N002.NA01	+N003.JA01	+N003.NA01	+N004.JA01	+N004.NA01

<div>For Approval <input type="checkbox"/> As Tested <input type="checkbox"/></div> <div>Approved For Construction <input checked="" type="checkbox"/> As Build <input type="checkbox"/></div>				<div>Supplier</div> <div><div>ABB</div><div>ELEKTRİK SAN. A.Ş.</div></div>		<div>Customer</div> <div>RMG COPPER JSC</div>		<div>End User</div> <div>RMG COPPER JSC</div>		<div>Project</div> <div>TREL-DEU-RMG MOTOR CONTROL CENTRE</div> <div>MNS-GEORGIA</div> <div>BE01-WC-002</div> <div>400V LV MOTOR CONTROL CENTER</div>		<div>Title</div> <div>Single Line Diagram</div>		<div>Drawing No.</div> <div>4TRD021001S9002</div>		<div>+SL</div> <div>SIZE</div> <div>A3</div>	
R3V5	19.05.2021	Last Revision Date		SCALE 1	DESIGNED BY : VINEETHA		<div></div>		<div></div>		<div>Project No.</div> <div>K21001</div>		PAGE No.		14	<div></div>	
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL								CONT.		15		REV.
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ												

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R3V5	19.05.2021	Last Revision Date		<div>SCALE</div> <div>1</div>	DESIGNED BY : VINEETHA		<div></div>		<div></div>		<div>Project No.</div> <div>K21001</div>		PAGE No.		15	<div></div>	
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL								CONT.		16		REV.
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ												

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D	Module No.	K2502_INC_2500A_Icu_66kA_E2.2N_MS_3P_Icw_66kA_BBT_IOT_CABLE_2150A_DC2BB		D
	Control Diagram	R2V0	K21001K8502	
	Customer Control Diagram	INC		
	Line No	25		
	Power (kW)	-		
	Voltage (V)	400		
E	Current (A)	-		E
	Cable Cross Section mm²	4Rx1Cx240 mm2/Phase		
	Incoming / Outgoing	TOP		
	Tag No	-		
	Description	INCOMER FROM BE01-WB-001		
F	Location	+N019.AA01		F

For Approval ☐ As Tested

Approved For Construction ☒ As Build

Rev.

19.05.2021

Last Revision Date

01.02.2021

Creation Date

Description

SIGN

Supplier

ELEKTRİK SAN. A.Ş.

SCALE

1

DESIGNED BY : VINEETHA

CHECKED BY : O.TOPAL

APPROVED BY: O.YILMAZ

Customer

RMG COPPER JSC

End User

RMG COPPER JSC

Project

TREL-DEU-RMG MOTOR CONTROL CENTRE

MNS-GEORGIA

BE01-WC-002

400V LV MOTOR CONTROL CENTER

Title

Single Line Diagram

Drawing No.

4TRD021001S9002

Project No.

K21001

+SL

PAGE No.

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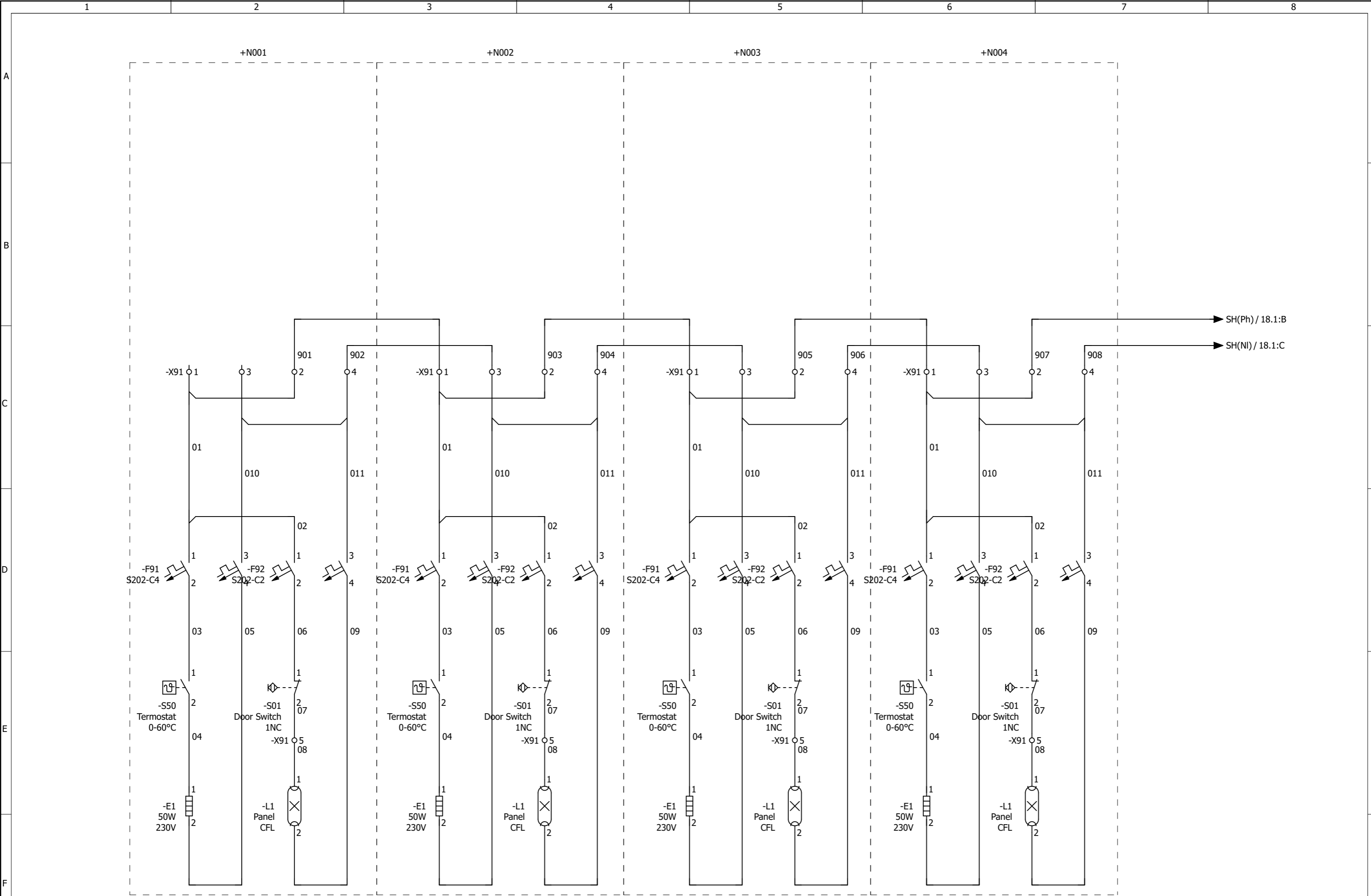
+Space Heater/17






SIZE

A3

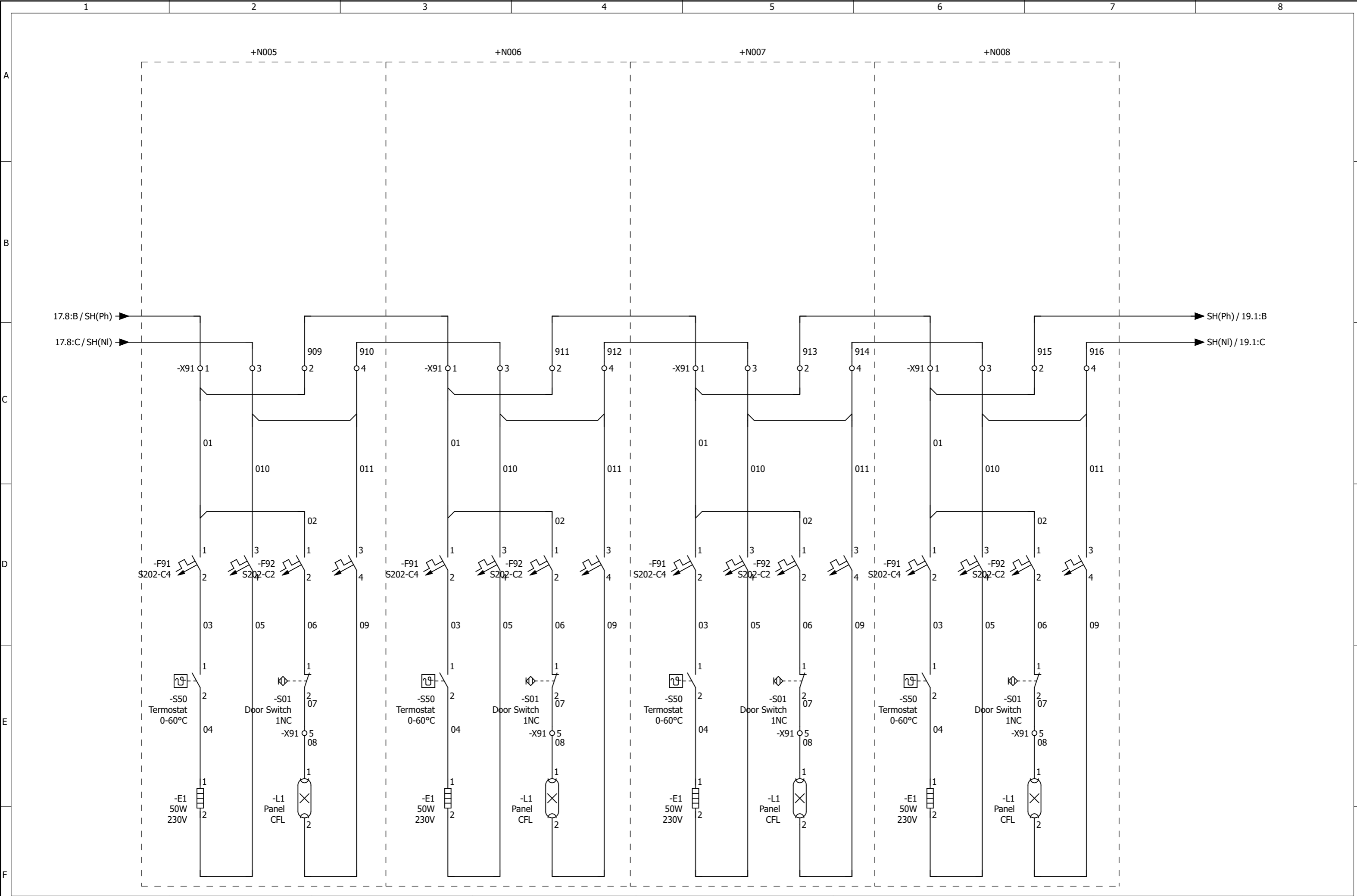
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R3V5	19.05.2021	Last Revision Date		SCALE 1	DESIGNED BY : VINEETHA								<div>Project No.</div> <div>K21001</div>	PAGE No. 17					
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL												CONT. 18		REV.
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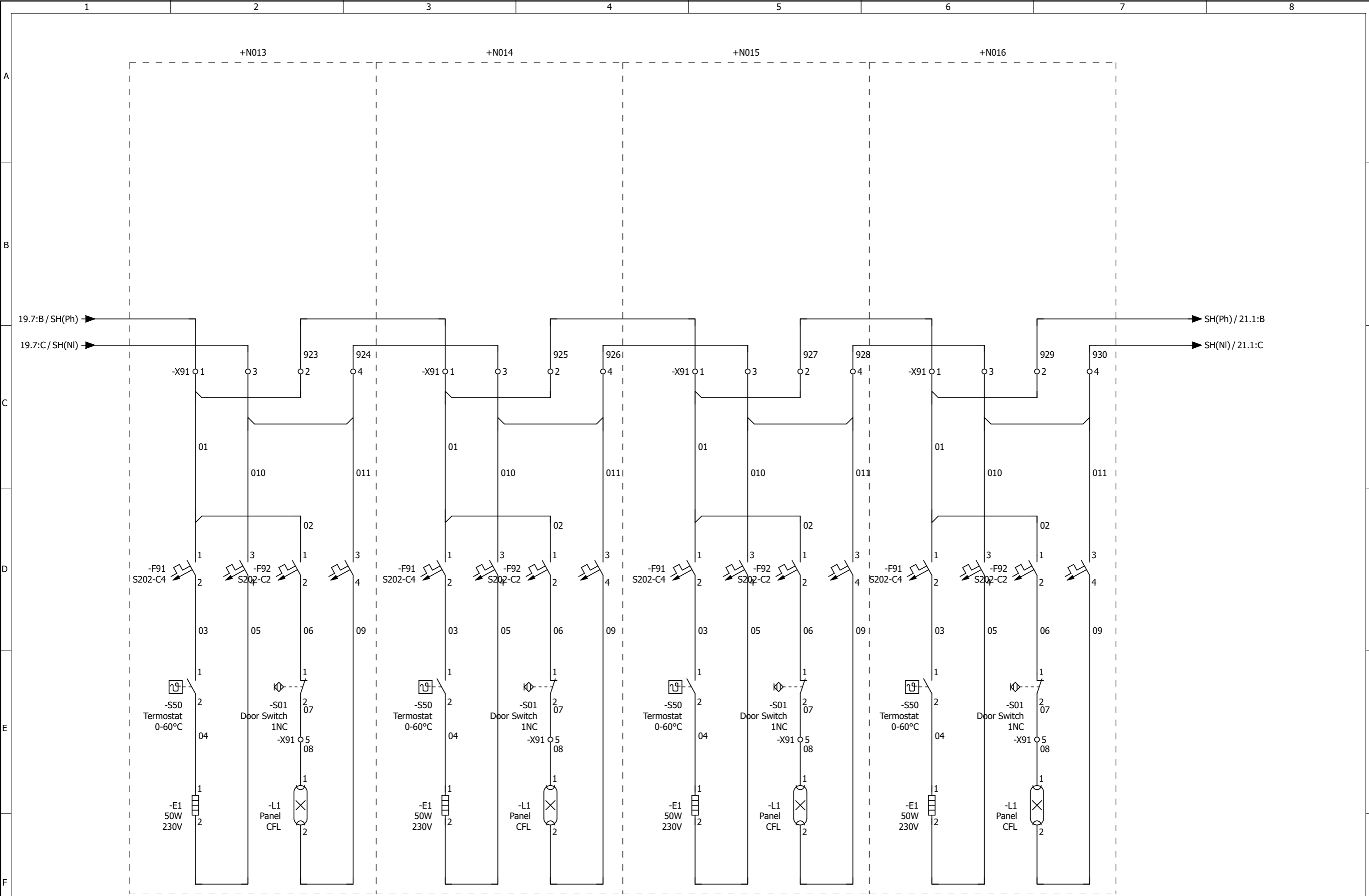
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


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R3V5	19.05.2021	Last Revision Date		SCALE 1	DESIGNED BY : VINEETHA									<b>Project No.</b> K21001		PAGE No.	18		
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL									CONT.	19	REV.			
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