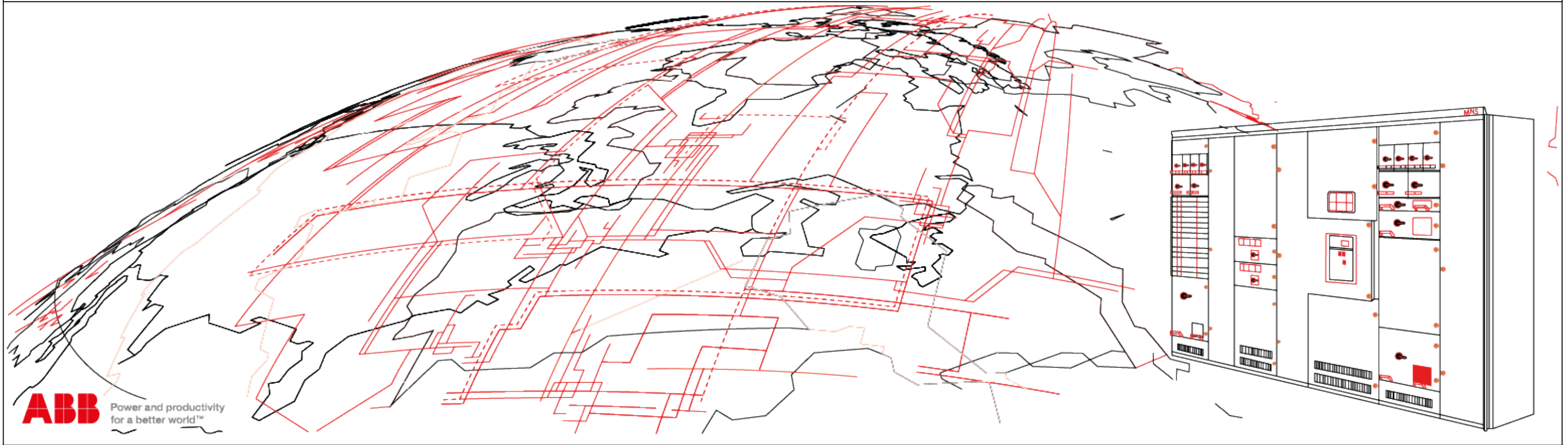




Elektrik Sanayi A.Ş.

# Low Voltage Systems

Customer : RMG COPPER JSC  
Contract Number : -  
Project Description : TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA  
Switchgear Name : BE01-WC-006 400V LV MOTOR CONTROL CENTER








Phone:(+90) 262 326 1500  
Fax: (+90) 262 724 9058

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

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R3V5	19.05.2021	Last Revision Date		SCALE 1	DESIGNED BY : VINEETHA CHECKED BY : O.TOPAL APPROVED BY : O.YILMAZ							Project No. K21001		PAGE No.	1		
R0V0	01.02.2021	Creation Date												CONT.	2		REV.
Rev.	Date	Description	SIGN														
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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= 50 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
<u>INTERNAL FORM OF SEPERATION</u>	
WITHDRAWABLE MODULE COMPARTMENT	4b
PLUG-IN MODULE COMPARTMENT	2b
ACB/MCCB SECTION	4b
OTHER SECTION/COMPARTMENT	2b
<u>SWITCHGEAR DIMENSIONS</u>	
TOTAL SWITCHGEAR WIDTH [mm]	4440.0
SWITCHGEAR DEPTH [mm]	600.0
SWITCHGEAR HEIGHT [mm]	2200
SWITCHGEAR WEIGHT APPROX. [kg]	1772

## VOLTAGE PARAMETERS

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

## MAIN BUSBAR PARAMETERS

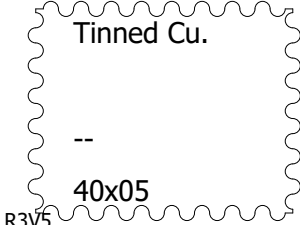
RATED CURRENT	Ie = 1000A
MAIN BUSBAR SIZE PER PHASE [mm]	2x30x10/50
RATED SHORT-TIME WITHSTAND CURRENT	Icw = 28 kA, 1s
RATED PEAK WITHSTAND CURRENT	Ipk = 105 kA <sup>③</sup>
MATERIAL	Tinned Cu.

## NEUTRAL BUSBAR PARAMETERS (HORIZONTAL)

NEUTRAL BUSBAR SIZE [mm]	2x30x10
RATING OF NEUTRAL CONDUCTOR [%]	50%
MATERIAL	Tinned Cu.

## PE BUSBAR PARAMETERS (HORIZONTAL)

PE BUSBAR SIZE [mm]	30x10
MATERIAL	Tinned Cu.
<u>VERTICAL BARS IN POWER CABLE AREA</u>	
N / PEN BUSBAR SIZE [mm]	--
PE BUSBAR SIZE [mm]	40x05
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
PCU	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	

<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><div>RMG COPPER JSC</div><div></div></div>		<div>End User</div> <div><div>RMG COPPER JSC</div><div></div></div>		<div>Project</div> <div>TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-006 400V LV MOTOR CONTROL CENTER</div>		<div>Title</div> <div>Technical Data Sheet</div>		<div>Drawing No.</div> <div>4TRD021001T9006</div>		+DOCUMENTS		SIZE		A3	
<div>R3V513.07.2021Last Revision Date</div> <div>R0V001.02.2021Creation Date</div> <div>Rev.DateDescriptionSIGN</div>				<div>SCALE</div> <div>1</div>		<div>DESIGNED BY : VINEETHA</div> <div>CHECKED BY : O.TOPAL</div> <div>APPROVED BY : O.YILMAZ</div>						<div>Project No.</div> <div>K21001</div>		3							
														CONT.		4		REV.			

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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, Halogen free, Self-extinguishing)
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

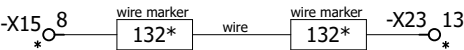
PROFIBUS DP	N/A
MODBUS RTU	BELDEN 9841NH (BU,WH)
MODBUS TCP/IP	CAT6 RJ45 CABLE
IEC61850	N/A

## 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"/>		<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-006 400V LV MOTOR CONTROL CENTER		<b>Title</b> Technical Data Sheet		<b>Drawing No.</b> 4TRD021001T9006		+DOCUMENTS		SIZE A3	
As Tested <input type="checkbox"/>		As Build <input type="checkbox"/>												Project No. K21001		PAGE No. 4			
R3V5 27.05.2021		Last Revision Date		SCALE 1		DESIGNED BY : VINEETHA										CONT. 5		REV.	
R0V0 01.02.2021		Creation Date				CHECKED BY : O.TOPAL													
Rev.		Date		Description		SIGN													
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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

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R3V5		19.05.2021		Last Revision Date										PAGE No.		5					
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Rev.		Date		Description		SIGN												REV.			

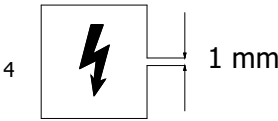
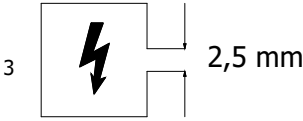
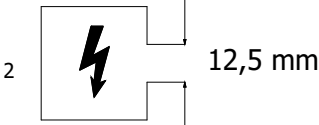
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## IP legends

acc. IEC 60529

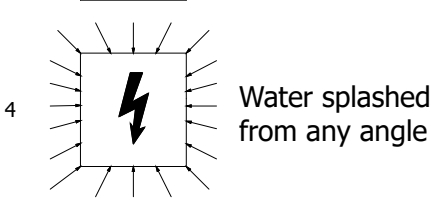
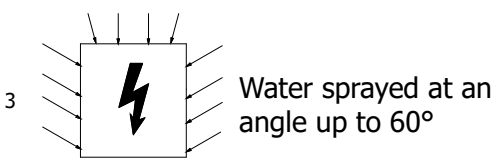
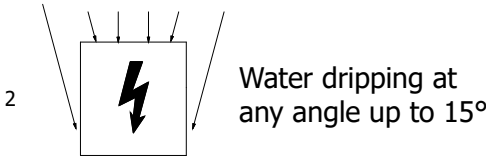
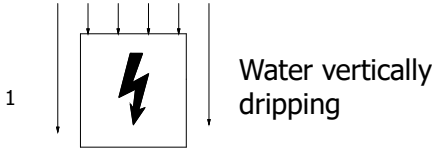
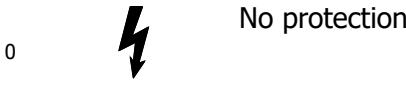
1.

Protection against penetration  
by foreign bodies and dust



2.

Protection against ingress  
of water with harmful effects



Additional letter

Protection against access  
hazardous parts with:

A Back of the hand > 50 mm diameter

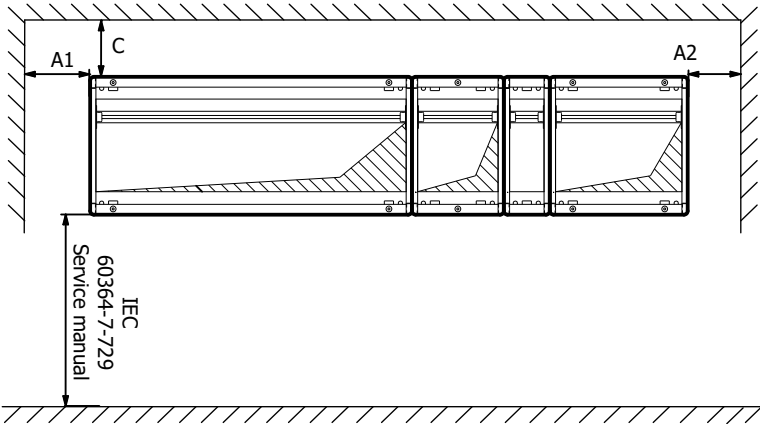
B Finger/tool > 12.5 diameter, 80 mm length

C Tool/Wire > 2.5 diameter, 100 mm length

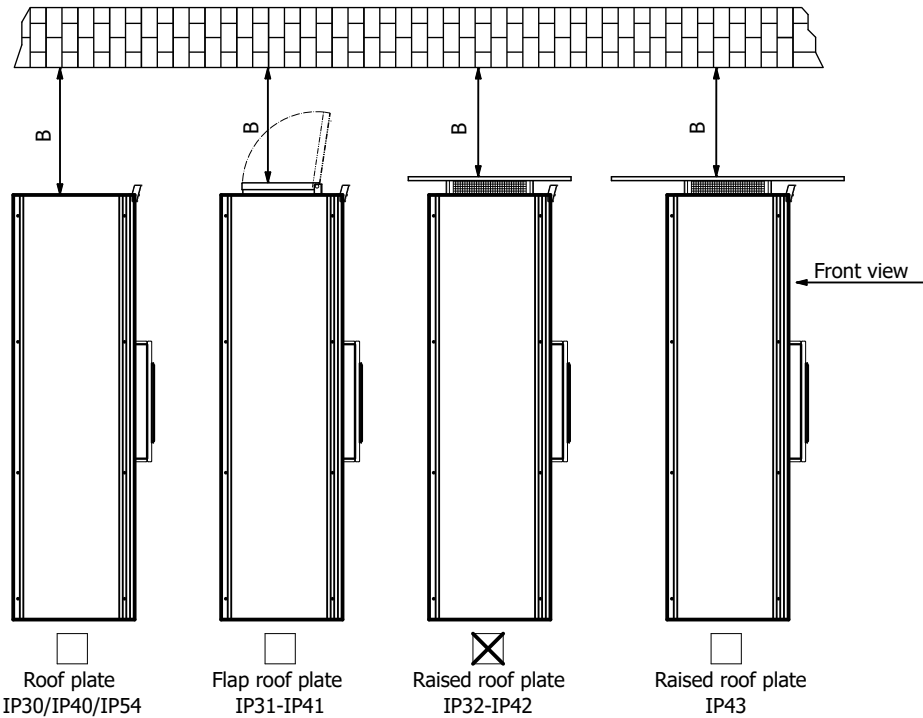
D Tool/Wire > 1.0 mm diameter, 100 mm length

## Wall distances

Floor View



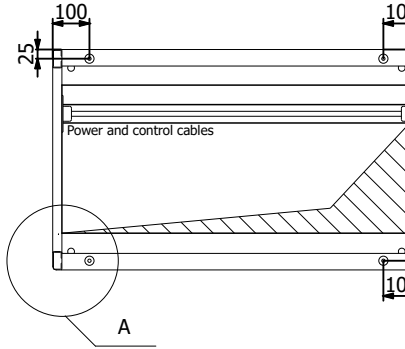
Side view



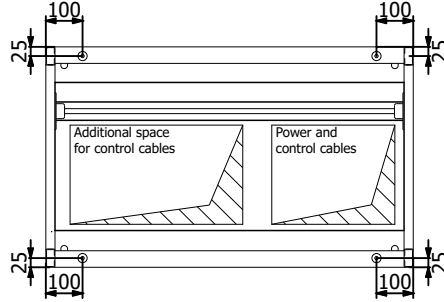
Internal protection	A1 (right mounted doors)	A1 (left mounted doors)	A2	B (Section to ceiling)	C (Section to back wall)
IP30-IP40	100 mm	170 mm	170 mm	500 mm	105 mm
IP54	100 mm	170 mm	170 mm	500 mm	105 mm
Raised roof plate (RRP)					
IP31-IP41	135 mm	170 mm	170 mm	500 mm	205 mm
IP32-IP42	135 mm	170 mm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

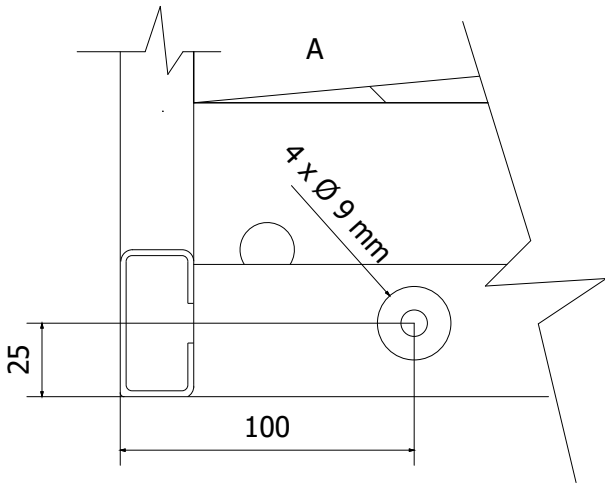
MNS 3.0 without bottom plate



MNS 3.0 with bottom plate



Anchor hole



For Approval	<input type="checkbox"/>	Approved For Construction	<input checked="" type="checkbox"/>
As Tested	<input type="checkbox"/>	As Build	<input type="checkbox"/>
R3V5	19.05.2021	Last Revision Date	
R0V0	01.02.2021	Creation Date	
Rev.	Date	Description	SIGN

Supplier	ABB ELEKTRİK SAN. A.Ş.
SCALE	1
DESIGNED BY	: VINEETHA
CHECKED BY	: O.TOPAL
APPROVED BY	: O.YILMAZ

Customer	RMG COPPER JSC
RMG	RICH METALS GROUP

End User	RMG COPPER JSC
RMG	RICH METALS GROUP

Project	TREL-DEU-RMG MOTOR CONTROL CENTRE MNS-GEORGIA BE01-WC-006 400V LV MOTOR CONTROL CENTER
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Title	Legend Sheet
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Drawing No.	4TRD021001T9006
Project No.	K21001

+DOCUMENTS	SIZE	A3
PAGE No.	6	REV.
CONT.	7	

\* Example  
LOCATION CODING OF MNS 3.0

Section height				
mm	E	alphabetical classification		MNS iS
2200 mm		A	A	
2000 mm	72 E	B	A B C D	1
			A B C D	2
	68 E	C	A B C D	3
			A B C D	4
1800 mm	64 E	D	A B C D	5
			A B C D	6
	60 E	E	A B C D	7
			A B C D	8
1600 mm	56 E	F	A B C D	9
			A B C D	10
	52 E	G	A B C D	11
			A B C D	12
1400 mm	48 E	H	A B C D	13
			A B C D	14
	44 E	J	A B C D	15
			A B C D	16
1200 mm	40 E	K	A B C D	17
			A B C D	18
	36 E	L	A B C D	19
			A B C D	20
1000 mm	32 E	M	A B C D	21
			A B C D	22
	28 E	N	A B C D	23
			A B C D	24
800 mm	24 E	P	A B C D	25
			A B C D	26
	20 E	Q	A B C D	27
			A B C D	28
600 mm	16 E	R	A B C D	29
			A B C D	30
	12 E	S	A B C D	31
			A B C D	32
400 mm	8 E	T	A B C D	33
			A B C D	34
	4 E	U	A B C D	35
			A B C D	36
200 mm				
0 mm	0 E	W		

Equipment compartment				Power cable area	Incoming section
Position in compartment					Position in compartment
01	02	03	04	05	01

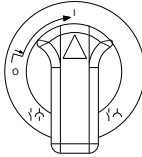
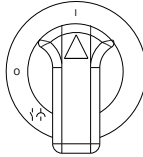

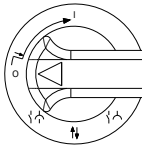
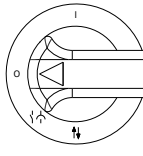

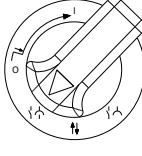
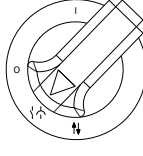

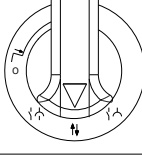
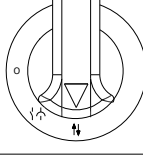

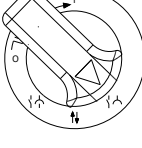
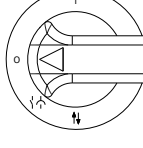

+01	+02
<p>.AA01 6E</p> <p>.BA01 8E4</p> <p>.BA02 8E4</p> <p>EMPTY SPACE</p> <p>EMPTY SPACE</p> <p>.DA01 8E2</p> <p>.DA03 8E2</p> <p>.FA01 8E4</p> <p>.FA02 8E4</p> <p>EMPTY SPACE</p> <p>EMPTY SPACE</p> <p>.HA01 8E2</p> <p>.HA03 8E2</p> <p>.KA01 16E</p> <p>.PA01 24E</p>	<p>.AA01 29E</p> <p>.EC01</p> <p>.GD01 25E</p> <p>.PA01 31E</p>

Location coding of functional withdrawable unit in sections of MNS 3.0  
Location coding of functional withdrawable units diagrammed  
below in 2E modular dimensions  
TOTAL 72E = 1800mm / 1E = 25mm  
The withdrawable section is subdivided in:  
- perpendicularly in alphabetical classification and MNS 3.0 clasification  
- horizontal in numbers from 01 to 05

Example:

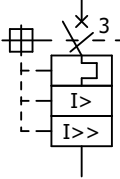
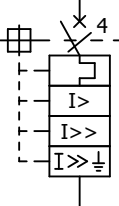
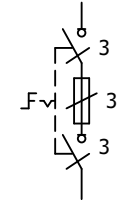
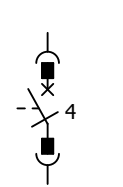
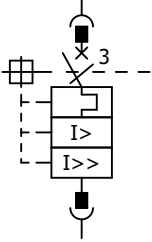
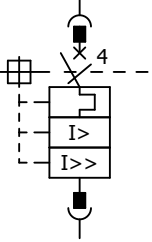
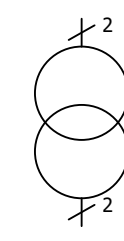
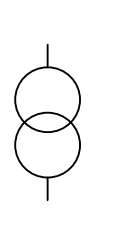
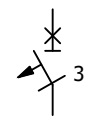

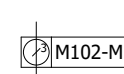
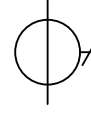


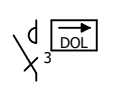
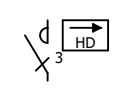
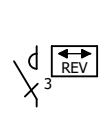
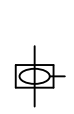

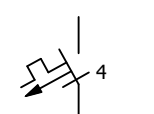


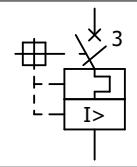
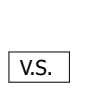


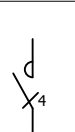
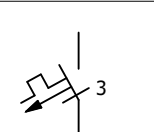
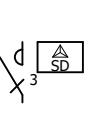


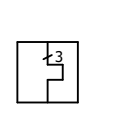
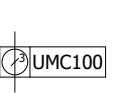


Quantity	Module size	Location in section
4	8E/4	BA01, BA02, FA01, FA02
4	8E/2	DA01, DA03, HA01, HA03
1	16E	KA01
1	24E	PA01




The withdrawable modules have five modes (operating handle schematised):

Mode	Position of switch			Mechanical / Electrical Status
	8E/4 and 8E/2	4E...24E	Designation	
1			<b>ON position</b> 	ON position-Main and control circuits are closed. Module is locked.
2			<b>OFF position</b> 	OFF position- Main circuit are disconnected, the control circuits are closed. Module is locked. Can be locked with 3 padlocks.
3			<b>Test position</b> 	TEST position-Main circuit are disconnected, the control circuits are closed. Module is locked. Can be locked with 3 padlocks.
4			<b>Moving position</b>  (Withdrawn mode)	MOVE position-Main and control circuits are disconnected.
5			<b>Disconnected position</b>  (Isolated mode)	ISOLATED position-The module is 30 mm drawn out of the section.Main and control circuits are disconnected and the isolating distance is fulfilled. Can be locked with 3 padlocks.

### Example for coding of location for withdrawable modules

## 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-006 400V LV MOTOR CONTROL CENTER		<b>Title</b> Symbol Overview		<b>Drawing No.</b> 4TRD021001T9006		+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.					
1				2		3		4		5		6		7		8			



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1	2	3	4	5	6	7	8	
A								A
B								B
C								C
D								D
E								E
F								F

Manufacturers Name and Type

ABB MNS 3.0

Manufacturers Serial Number

4TRS021001X9006

Switchgear Tag Number

BE01-WC-006

Switchgear Title

400V LV MOTOR CONTROL CENTER

System Rated Voltage and Phases

400 VAC, ~3P+N+PE

System Wires and Frequency

4, 50 Hz

Rated Power Widtstand Voltage

2,2kV

Rated Lightening Imp. Withstand Voltage

8 kV

Rated Fault Current

28 kA

Rated RMS Short-Circuit Current, (s)

28 kA ,1s

Rated Peak Short-Circuit Current

105 kA

Busbar Rating

1000A

Protection Class

IP41

Year of Manufacture

2021

Standard

IEC61439-2

Purchaser's Name

RMG COPPER JSC

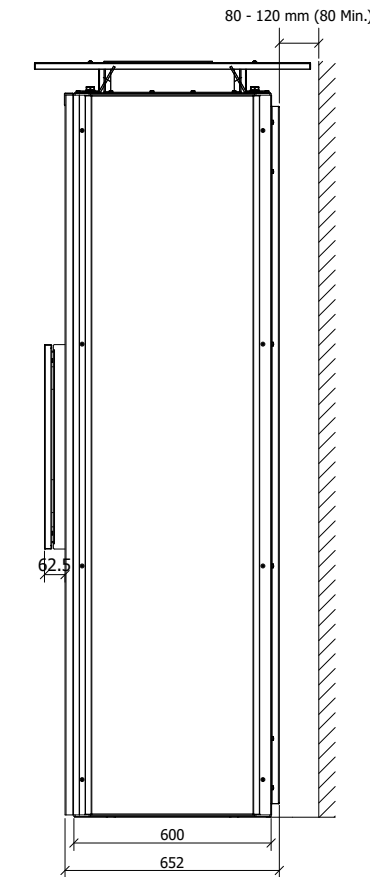
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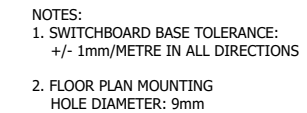
ABB ELEKTRİK SANAYİ A.Ş.




Alçak Gerilim Sistemleri

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




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SIDE VIEW



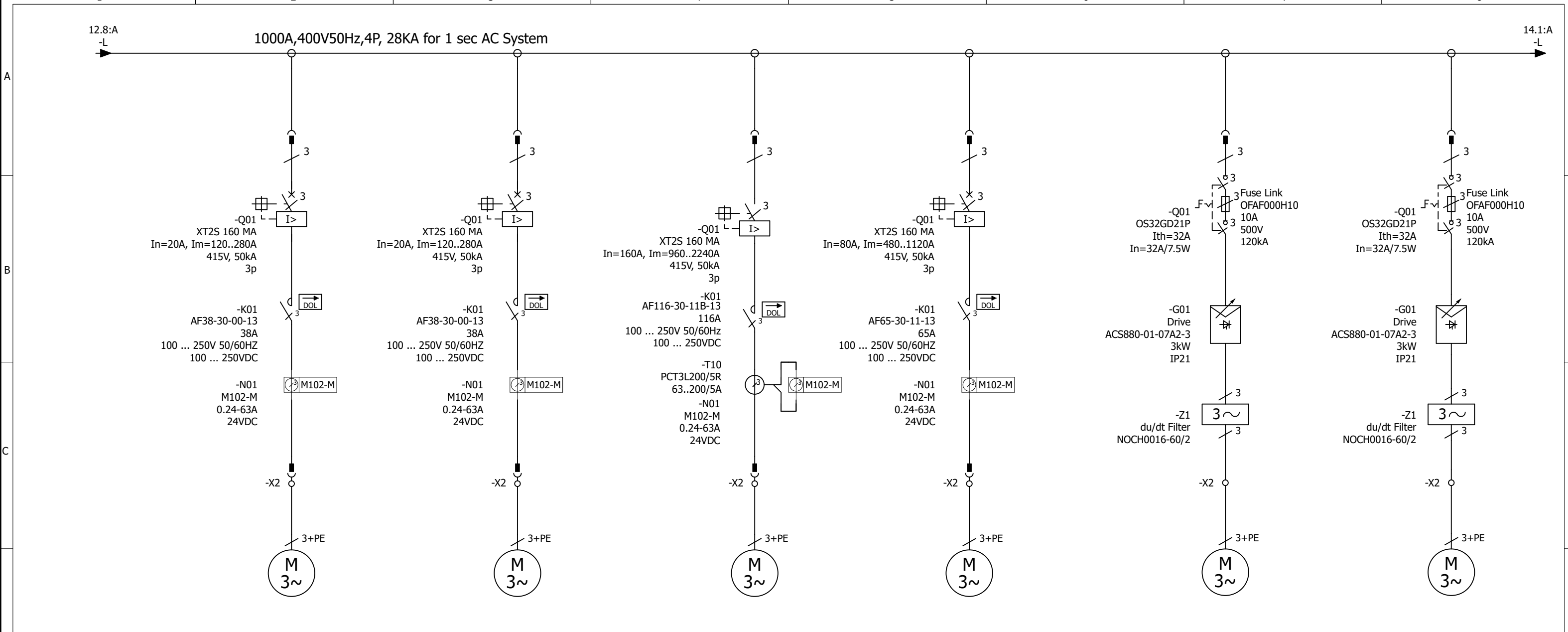
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ROV0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL										CONT.		+SL/11	REV.	
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ														
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R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL								CONT.		13	REV.	
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ												



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Module No.	K2826_NRDOL-M102_11kW_50kA_XT2S 160 MA 32_8E2_3P_WM_IE2	K2826_NRDOL-M102_11kW_50kA_XT2S 160 MA 32_8E2_3P_WM_IE2	K2829_NRDOL-M102_37kW_50kA_XT2S 160 MA 160_8E_3P_WM_IE2	K2828_NRDOL-M102_30kW_50kA_XT2S 160 MA 80_8E_3P_WM_IE2	K2703_VFD-du_dt Filter_3kW_OS32G_32A_ACS 880_16E	K2703_VFD-du_dt Filter_3kW_OS32G_32A_ACS 880_16E
Control Diagram	K21001K8821	K21001K8821	K21001K8822	K21001K8821	K21001K8701	K21001K8701
Customer Control Diagram	DOL	DOL	DOL	R3V3 DOL	VFD	VFD
Line No	13	14	15	16	17	18
Power (kW)	11	11	37	30	3	3
Voltage (V)	400	400	400	400	400	400
Current (A)	21.1	-	-	-	-	-
Cable Cross Section mm²	-	-	-	-	-	-
Incoming / Outgoing	TOP	TOP	TOP	TOP	TOP	TOP
Tag No	SF01_PU007_MA01	SMF_2	SF01_CP002_MA01	SF01_CP001_MA01	SF01_PU003_MA01	SF01_PU004_MA01
Description	SPILLAGE PUMP	SPARE FEEDER-2	DRYING COMPRESSOR (STAND BY)	DRYING COMPRESSOR	FILTRATE PUMP	FILTRATE PUMP (STAND BY)
Location	+N002.FA01	+N002.FA03	+N002.RA01	+N002.TA01	+N003.EA01	+N003.JA01

For Approval ☐ As Tested

Approved For Construction ☒ As Build

R3V5 15.06.2021

Last Revision Date

R0V0 01.02.2021

Creation Date

Rev.

Date

DESCRIPTION

SIGN

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

**Customer**  
RMG COPPER JSC

**End User**  
RMG COPPER JSC

**Project**  
TREL-DEU-RMG MOTOR CONTROL CENTRE  
MNS-GEORGIA  
BE01-WC-006  
400V LV MOTOR CONTROL CENTER

**Title**  
Single Line Diagram

**Drawing No.**  
4TRD021001S9006

**Project No.**  
K21001

+SL

PAGE No.

CONT.

SIZE A3

13

14

REV.

14

1

2

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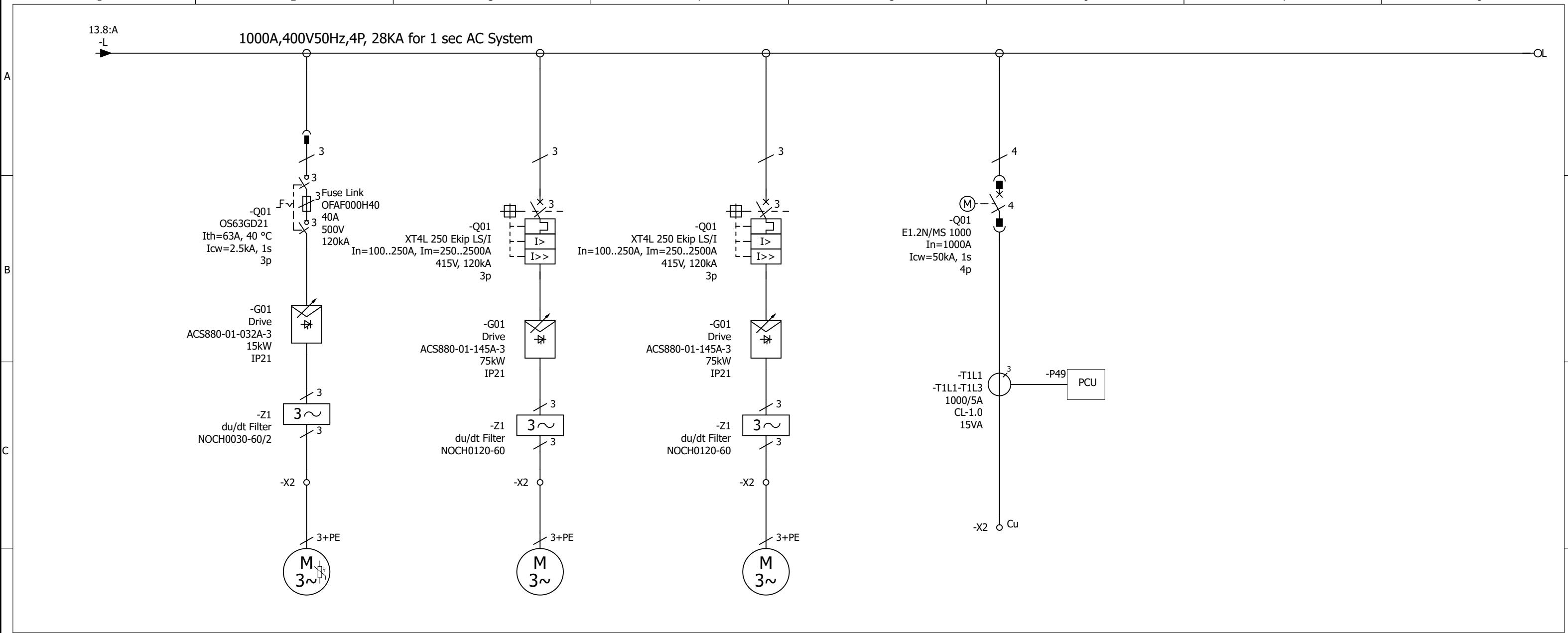
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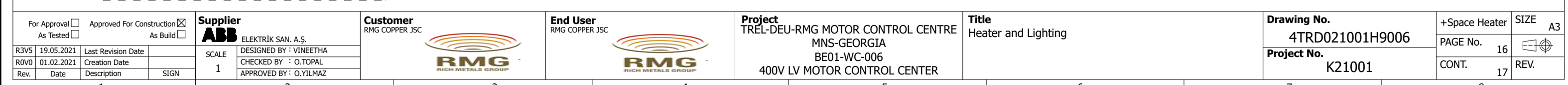
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Module No.	K2708_VFD-du_dt Filter_15kW_ OS63G_63A_ACS 880_28E	K2714_VFD-du_dt Filter_75kW_XT4 L 250 Ekip LS_I_250A_ACS 880_85E	K2714_VFD-du_dt Filter_75kW_XT4 L 250 Ekip LS_I_250A_ACS 880_85E	K2506_INC_1000A_Icu_66kA_E1.2N_MS_4P_ Icw_50kA_BBT_IOT_CABLE_1000A_DC2BB	
Control Diagram	K21001K8701	K21001K8702	K21001K8702	K21001K8506	
Customer Control Diagram	VFD	VFD	VFD	INC	
Line No	19	20	21	22	
Power (kW)	15	75	75	-	
Voltage (V)	400	400	400	400	
Current (A)	30	128.6	128.6	-	
Cable Cross Section mm²	-	-	-	3Rx1Cx240 mm2/Phase	
Incoming / Outgoing	TOP	TOP	TOP	TOP	
Tag No	SF01_MI001_MA01	SF01_PU001_MA01	SF01_PU002_MA01	-	
Description	FILTER FEED TANK AGITATOR	FILTER FEED PUMP	FILTER FEED PUMP (STAND BY)	INCOMER FROM BE01-WB-004	
Location	+N003.NA01	+N004.AA01	+N005.AA01	+N006.AA01	










## Parts list

4TR-ABBME\_Partlist

[illegible]

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R3V5	19.05.2021	Last Revision Date		SCALE 1	DESIGNED BY : VINEETHA		 		Project No. K21001		PAGE No. 17						
R0V0	01.02.2021	Creation Date			CHECKED BY : O.TOPAL						CONT.		REV.				
Rev.	Date	Description	SIGN		APPROVED BY : O.YILMAZ												