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**IMPORTANT NOTE:**

THIS DOCUMENT IS PREPARED TO SHOW TRABB STANDARD DOCUMENTATION AND PRINCIPAL CIRCUITS

ANY CHANGE REQUEST IN DOCUMENTATION, CIRCUITS, MATERIALS, LABELS WILL BE EVALUATED AS CHANGE ORDER AND DELIVERY TIME EXTENSION

THE DOCUMENTATION WILL BE SAME FOR ZS1 AND ZS2 PANELS HOWEVER SOME ELECTRICAL PARAMETERS, DIMENSIONS, MECHANICAL OPTIONS MIGHT DIFFER BETWEEN ZS1 AND ZS2

PLEASE WAIT FOR THE PROJECT SPECIFIC DESIGN DOCUMENTATION WHEN PROJECT STARTS

THE MATERIALS IN PROJECT SCOPE WILL BE USED IN PROJECT SPECIFIC DESIGN DOCUMENTATION

SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	Order No.	=
		Customer	Checked name		Approved name		Project SAP number	+
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		TRABB Plotframe	DCC Code &EEC	Lang. English
Rev. Code	Date	Name	Contract No.	TENDER No.		ABB ABB Elektrik San. A.Ş.	Doc. No.	Page A00
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## Standard documentation which customers receive

- 1) Catalogue
  - The catalogues for equipment which is used in switchgear
- 2) Configurations
  - Source file for configuration of protection relays
- 3) Drawings
  - Electrical drawings of switchgear (see below)
- 4) Protection and control
  - Operation and technical manual for protection relay
- 5) Routine test reports

## Structure of ABB documentations

### Basic submittal

- General specification
- Single Line Diagram - SLD
- General Arrangement - GA
- Foundation frame - FF (could be included in GA)
- ARC Diagram - ARC
- Interconnection - ICD
- Information pages - INF

### General drawings

-The drawings for each typical panel: Single line diagram, connections, low voltage compartment layout, door layout, terminals diagram....

### Reference designation of functional units in switchgear

M - 1 kV - 6 kV  
 L - 6 kV - 10 kV  
 K - 10kV - 20 kV  
 J - 20 kV - 30 kV  
 H - 30 kV - 45 kV  
 number means designation of functional unit  
 Additional ABB Letter code A, B, C ...  
 ABB Standard 2NBA000001  
 TRABB Standard 1YTU140493K01

## Standard documentation for TRABB

- 1YTU140492K01: Main Standardization of AIS SWGR UniGear
- 1YTU140493K01: Identification of conductors
- 1YTU140494K01: Location of electrical components and connections
- 1YTU140495K01: Conductors
- 1YTU140496K01: Terminal blocks
- 1YTU140497K01: Cable channels and Internal Layout Figures
- 1YTU140498K01: Designation labels

Letter coding in Internal numbering of documents, device order codes, ... etc.  
 X for ZS2 export panels  
 L for ZS2 local panels  
 T for ZS1 export panels  
 E for ZS1 local panels

Internal number for each set of drawings (typical panel)  
 TRABB standard 1YTU100054K01

### Revision table

Rev.Code: A, B, C, D ....

Date:

Name:

ABB standard 1VLD110063

Name of customer, if is specified

Customer logo, if is specified

Name of drawing, for example:

Current transformers

Internal number of project

DCC code and Page  
 ABB Stand. 2NDA000001

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Customer name			Project name		36 kV Switchgear Sample MV SWITCHGEAR		DCC Code &EEC	Lang. English	
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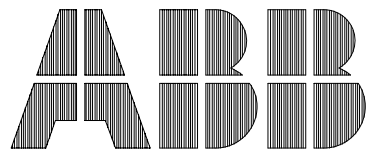


ABB Elektrik San. A.Ş., PPMV Turkey  
 Dilovasi Organize Sanayi Bölgesi  
 4. Kısım D-4009 sokak no:11  
 41455 Dilovası Kocaeli Turkey

### 36kV SWITCHGEAR TYPE UNIGEAR

CUSTOMER: Customer name  
 PROJECT NAME: Project name  
 ABB REF. NO.: Project SAP number

#### SWITCHGEAR BASIC DATA

STANDARD	IEC 62 271-200
RATED VOLTAGE	36kV
RATED VOLTAGE (DERATED)	36kV
SERVICE VOLTAGE	34.5kV
RATED FREQUENCY	50Hz
POWER FREQUENCY WITHSTAND VOLTAGE / BIL	70kV / 170kV
POWER FREQUENCY WITH. VOLT. / BIL (DERATED)	70kV / 170kV
RATED BUSBAR CURRENT	1250A
RATED SHORT CIRCUIT CURRENT / PEAK WITHSTAND CURRENT	25kA / 62.5kA
RATED SHORT CIRCUIT CURRENT DURATION	3s
INTERNAL ARC CLASS. (IAC) TYPE/CURRENT/TIME	AFLR / 25kA / 1s
DEGREE OF PROTECTION (EXTERNAL/INTERNAL)	IP4X / IP2X
MV PHASE DESIGNATION	L1, L2, L3
AMBIENT TEMPERATURE	-5°C ... 40°C
ALTITUDE	≤1000m

#### ABB PROJECT REALIZATION TEAM

PROJECT MANAGER: name  
 ELEC. DESIGN ENGINEER: name

During the installation, commissioning period and the time of operation, client is obliged to follow all instructions and recommendation given by manufacturers of individual instruments installed inside supplied equipment

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name	Approved name		PROJECT TITLE PAGE		Project SAP number +	
		Customer name	Project name		36 kV Switchgear Sample MV SWITCHGEAR		DCC Code		Lang. English
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SAMPLE

# SHEET INDEX

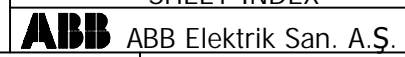
PAGE	PAGE NAME	REVISION		
=K00/A01	PROJECT TITLE PAGE			
=K00/A02	SHEET INDEX			
=K00/C01	GEN. SPECIFICATION OF SWGR.			

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SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name		SHEET INDEX	Project SAP number +	
		Customer name	Project name					DCC Code	Lang. English
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## GENERAL INFORMATIONS

SWITCHGEAR TYPE ZS2 Single busbar system  
 PACKING Export packing without wooden box

## SECONDARY WIRES PARAMETERS *TRABB Standard 1YTU140495K01*

SEC. WIRES TYPE AND NOMINAL VOLTAGE H07V-K, 0.45/0.75 kV  
 CONTROL CIRCUIT 1.5mm<sup>2</sup> BLACK  
 CURRENT CIRCUIT 2.5mm<sup>2</sup> BLACK  
 VOLTAGE CIRCUIT 1.5mm<sup>2</sup> BLACK  
 HEATING, LIGHTING CIRCUIT 1.5mm<sup>2</sup> BLACK  
 EARTHING CIRCUIT 2.5mm<sup>2</sup> YELLOW GREEN  
 SUPPLY INTERCONNECTION 2.5mm<sup>2</sup> BLACK  
 LOGIC/VOLTAGE INTERCONNECTION 2.5mm<sup>2</sup> BLACK/BLACK  
 MARKING OF WIRE ENDS (MATERIAL) TERMINAL COMPLETE (CLIP ON MARKER)

## AUXILIARY VOLTAGES

CONTROL/SIGNALIZATION/PROTECTION CIRCUITS DC 110V  
 CIRCUIT BREAKER SPRING CHARGER MOTOR DC 110V  
 CIRCUIT BREAKER TRUCK MOTOR -  
 EARTHING SWITCH MOTOR DRIVE -  
 2nd TRIPPING COIL -  
 INTERNAL LIGHTING AND HEATING 1/N AC 220V, 50Hz  
 AUXILIARY VOLTAGES CONNECTION POSITION Leftmost panel

## OTHER ELECTRICAL PARAMETERS

TERMINALS TYPE Push-In type PT2.5  
 FAULT LIMITING DEVICE NONE  
 ANTICONDENS. HEATER IN COMP. LV/CB/CABLE NO/YES/YES  
 ANTICONDENS. HEATER CONTROL Thermostat in cable comp.  
 INTERNAL LIGHTING ONLY LV compartment  
 REMOTE COMMUNICATION PROTOCOL None  
 IED COMMUNICATION PROTOCOL 1st / 2nd IEC 61850 Single / None  
 COMMUNICATION MEDIA Galvanic (RJ45)  
 IEC61850 EDITION EDITION 1

## FINAL DOCUMENTATION

DOCUMENTATION WILL BE SHARED BY A WEB FOLDER LINK  
 NUMBER OF HARDCOPIES / CD 0/ 0  
 STRUCTURE Per typical  
 FORMAT PDF

## SWITCHGEAR MECHANICAL DESIGN

COATING COLOR RAL 7035

### Cu BARS DESIGN

HORIZONTAL MAIN BUSBARS  
 CONNECTION POINTS COATING NO  
 T-OFF DROPPER VERTICAL BUSBARS  
 CONNECTION POINTS COATING NO  
 POWER CABLE CONNECTION FLAGS COATING NO  
 EARTHING BUSBAR COATING NO  
 BUSBAR PARTITIONING NO  
 INSULATED HORIZONTAL MAIN BUSBARS YES  
 INSULATION OF T-OFF DROPPER VERTICAL BUSBARS UPTO UPPER BUSHINGS YES  
 INSULATION OF POWER CONNECTION CABLE FLAGS ( INSULATION BARRIERS) NO

### LOW VOLTAGE COMPARTMENT

LV COMPARTMENT DOORS DESIGN Standard  
 MIMIC DIAGRAM On LV comp. doors  
 MIMIC DIAGRAM COLOR GREEN  
 LV ASSEMBLY PANEL MECH. DESIGN Standard

### LABELS

UNIT NAMEPLATES LANGUAGE English  
 UNIT NAMEPLATES DESIGN Engraved  
 UNIT NAMEPLATES COLOR BLACK ON WHITE  
 DEVICES ON LV DOORS LABELS LANGUAGE English  
 DEVICES ON LV DOORS LABELS DESIGN Engraved  
 DEVICES ON LV DOORS LABELS COLOR BLACK ON WHITE  
 DEVICES INSIDE LV COMP. LABELS LANGUAGE N/A  
 DEVICES INSIDE LV COMP. LABELS DESIGN Self-adhesive Brother tape  
 DEVICES INSIDE LV COMP. LABELS COLOR BLACK ON YELLOW

### CIRCUIT BREAKER

CB FIGURES 1,2,7,8,26,34,52  
 REF.DOC.: 1VCD400155.pdf  
 CB Operation Sequence: O - 0.3 sec - CO - 15 sec - CO

CB PLUG MICROSWITCH

IF BUSBAR ES EXISTS.

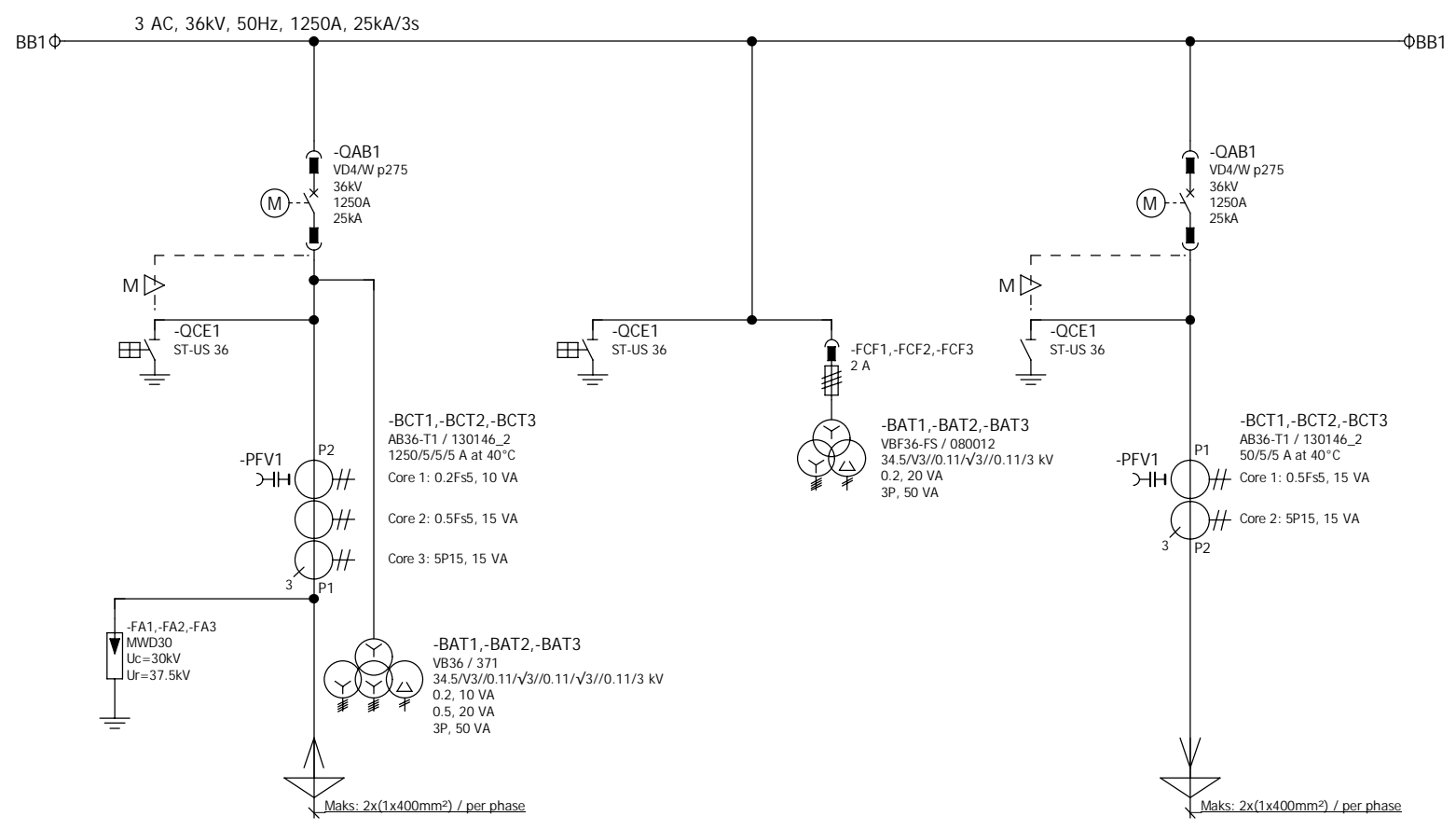
\* NOTE1:  
 BELOW SECONDARY WIRES ARE HARNESSSED ACCORDING TO TRABB STANDARD AND THEIR TYPES,CROSS SECTIONS,COLORS CAN NOT BE CHANGED  
 CB PLUG WIRES (FROM CB TO LVC)  
 E/S WIRES (FROM E/S TO LVC)  
 THERMOSTAT, HYGROSTAT, HEATER WIRES (FROM CABLE/CB COMP. TO LVC)  
 LVC LAMP WIRES (FROM LAMP TO FIRST CONNECTED TERMINAL)  
 ITH LIMITER WIRES (FROM PRIMARY COMP TO LVC)  
 APPARATUS WIRING (VOLTAGE TRANSFORMERS, DISCONNECTORS, CIRCUIT BREAKERS)

SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
Customer			Checked name	Approved name		GEN. SPECIFICATION OF SWGR.		Project SAP number	+
Customer name			Project name			ABB		DCC Code &EEC	Lang. English
Contract No.			36 kV Switchgear Sample			ABB Elektrik San. A.Ş.		Doc. No.	Page C01
TENDER No.			MV SWITCHGEAR					1YTU220471K01	Pages 3
Rev. Code	Date	Name							

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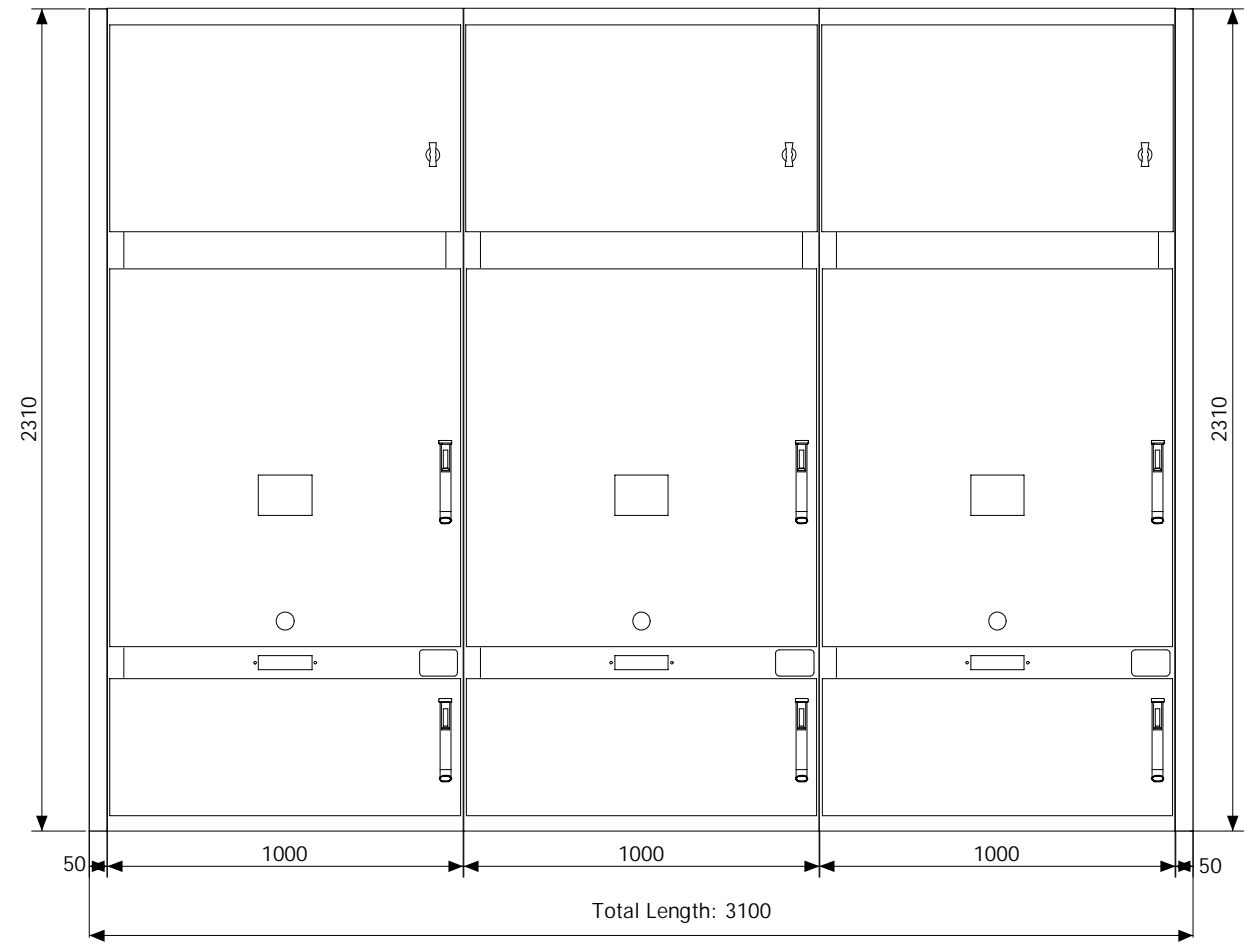


PANEL	1	H01	2	H02	3	H03
PANEL NAME		name of cubicle 1		name of cubicle 2		name of cubicle 3
DRAWING Nr.		1YTU**0***L/X1151		1YTU**0***L/X1152		1YTU**0***L/X1153
TYPICAL		INC1		MET1		OUT1
PROT. RELAY		RELAY REF615-J / HBFJAEAGNBCLBEA11G		RELAY REF615-J / HBFJAEAGNBCLBEA11G		RELAY REF615-J / HBFJAEAGNBCLBEA11G
PROT. FUNCT.		27,50,51,50N,51N,59,59N,86,94		50,51,50N,51N,86,94		50,51,50N,51N,86,94
METERING FUNCT.		3I,In,3U,Vn,P, E, Q,f, pf		3I,In,3U,Vn,P, E, Q,f, pf		3I,In,3U,Vn,P, E, Q,f, pf
COMMUNICATION		IEC 61850 (1xRJ45) + MODBUS		IEC 61850 (1xRJ45) + MODBUS		IEC 61850 (1xRJ45) + MODBUS
METERING, TEST AND CONTROL EQUIPMENT		-PFV1		-PFV1		-PFV1

Based on		Prepared name	Date	date	Title	Order No.	= K00
Customer		Checked name	Approved name		COMMON DRAWINGS	Project SAP number	+ SLD
Customer name		Project name			SINGLE LINE DIAGRAM	DCC Code &EFA	Lang. English
Contract No.		36 kV Switchgear Sample MV SWITCHGEAR			ABB	Doc. No.	Page D01
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Gas duct outlets rear number / placement: / Switchgear room height - H:  $H \geq 4$  m



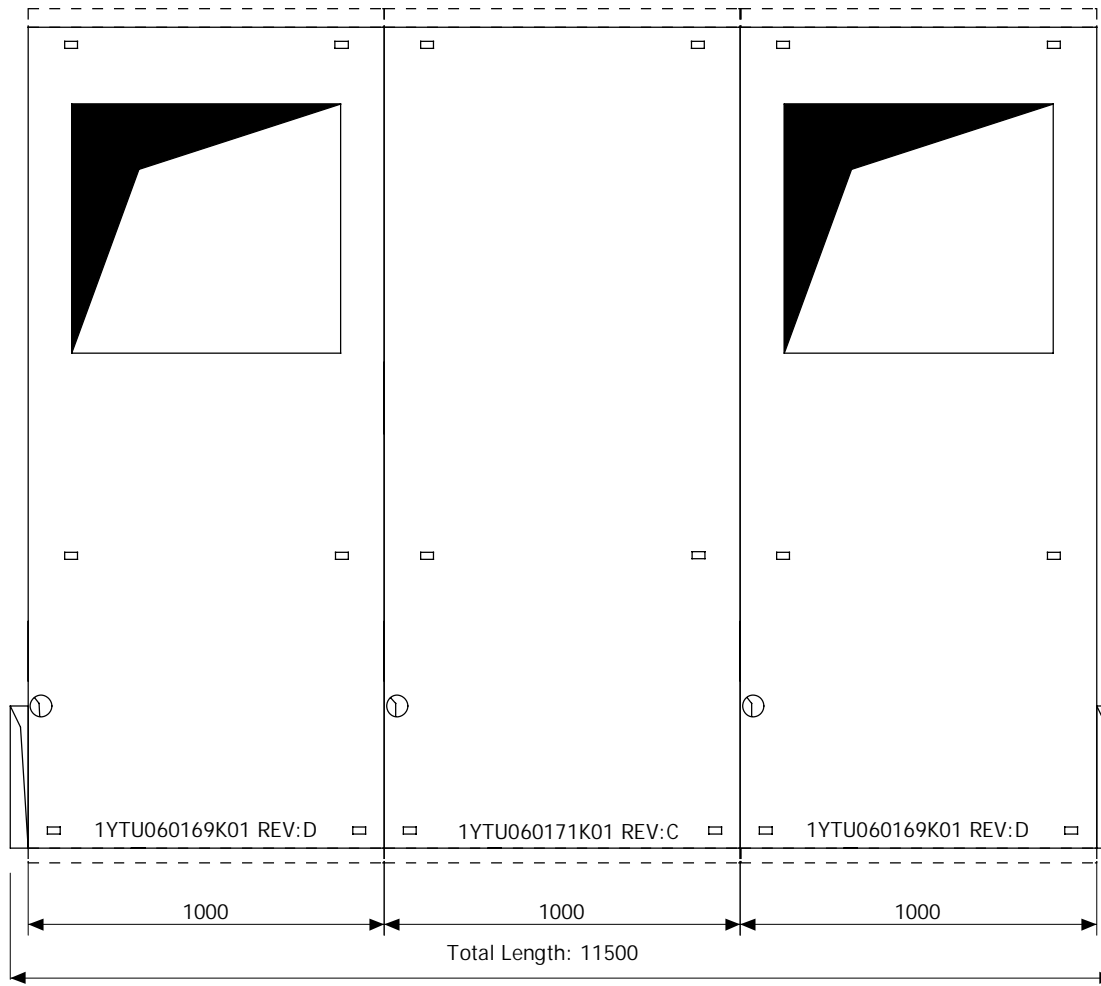
PANEL	1	H01	2	H02	3	H03
PANEL NAME	name of cubicle 1		name of cubicle 1		name of cubicle 1	
CB MECHANICAL CONTROL	OFF		NO		OFF	

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
Customer			Checked name	Approved name		FRONT VIEW		Project SAP number	+ GA
Customer name			Project name					DCC Code & ELH	Lang. English
Contract No.			36 kV Switchgear Sample			ABB		Doc. No.	Page F01
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Unless otherwise noted on foundation details pages:  
 For non-wall standing installation: Minimum distance between a wall and a panel must be 600 mm on back side and 100 mm lateral. (Recommended)  
 For wall installation: Minimum distance between a wall and a panel must be 100 mm lateral and on back side.



PANEL	H01	H02	H03
PANEL NAME	name of cubicle 1	name of cubicle 2	name of cubicle 3
INTERLOCKING BETWEEN CABLE COMP. DOOR AND ES	Mechanical interlocking	Mechanical interlocking	Mechanical interlocking
INTERLOCKING BETWEEN CB DOOR AND WITHDRAW. PART	Mechanical interlocking	Mechanical interlocking	Mechanical interlocking
KEY LOCK FOR CB RACKING IN	NO	NO	NO
EARTH SWITCH KEY LOCKS	Closed	Closed	Closed

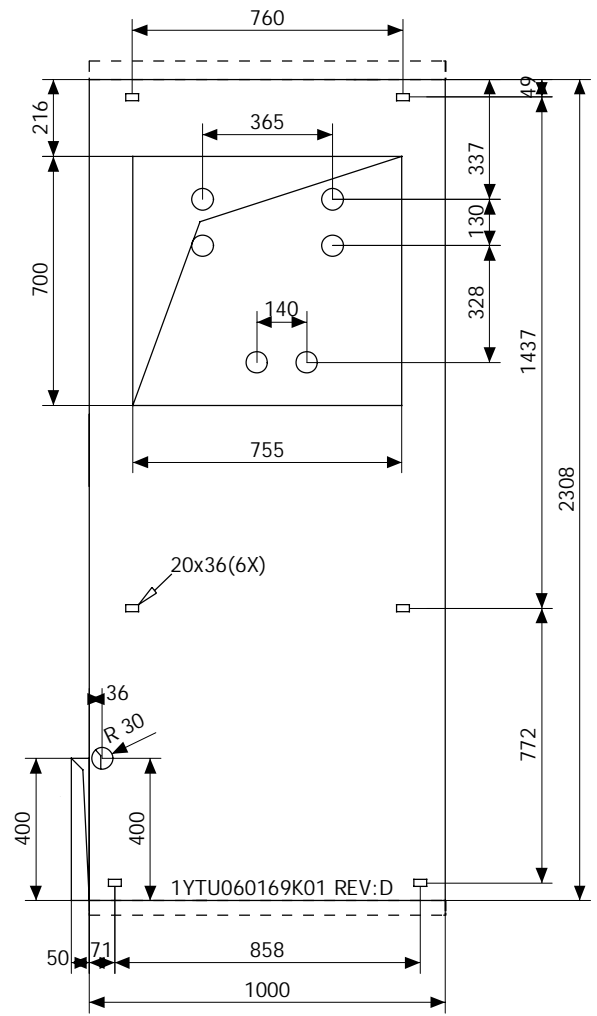
Based on			Prepared name	Date	date	Title	Order No.	= K00
Customer	Customer name		Checked name	Approved name		COMMON DRAWINGS	Project SAP number	+ GA
Contract No.	TENDER No.		Project name			SWGR. FOOTPRINT	DCC Code & ELH	Lang. English
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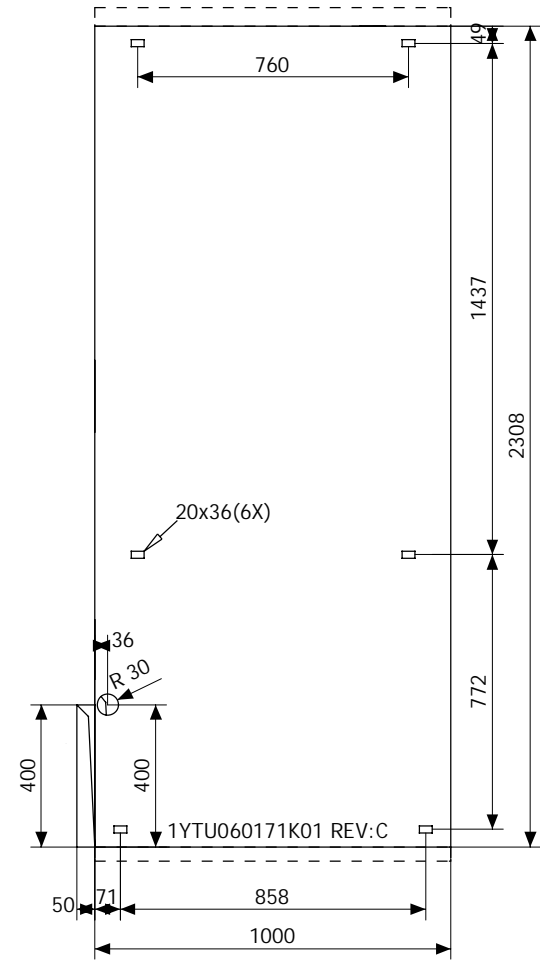
Evenness tolerance for laying the floor frame: ± 2 mm within a measuring length of 1 m

Control cable entry:  
 -50 x 250mm and R30 openings when individual cable entry required for panels  
 -50 x 400mm openings at leftmost and rightmost panels

Fixing methods are mentioned in the instruction manual,  
 doc.nr. 1YTU571780-012



PANELS:  
H01, H03



PANELS:  
H02

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
Customer			Checked name	Approved name		SWGR. FOOTPRINT DETAILS		Project SAP number	
Customer name			Project name			DCC Code &ELH		+ GA	
Contract No.			36 kV Switchgear Sample			Lang. English		Page J01	
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3			6			7		8	
4			7			8		8	
5			8			8		8	
6			8			8		8	
7			8			8		8	
8			8			8		8	

**ABB** ABB Elektrik San. A.Ş.

# DESCRIPTION OF ZONES ASSIGNED IN EPLAN

ZONE	DESCRIPTION
ACS	ACCESSORIES
BB	BUSBAR COMPARTMENT
CAB	CABLE COMPARTMENT
CB	CIRCUIT BREAKER COMPARTMENT
CRT (CWT)	CABLE REMOVABLE (WITHDRAWABLE) VOLTAGE TRANSFORMERS
CT	CURRENT TRANSFORMERS
ES	EARTHING SWITCH
LCB	LOW VOLTAGE COMPARTMENT-BOTTOM
LCR	LOW VOLTAGE COMPARTMENT-RIGHT PANEL
LCT	LOW VOLTAGE COMPARTMENT-TOP
LV	WIRING PANEL OF LOW VOLTAGE COMPARTMENT
LVD	LOW VOLTAGE COMPARTMENT DOOR
LVR	WIRING PANEL OF LOW VOLTAGE COMPARTMENT-RIGHT PANEL
MV	MEDIUM VOLTAGE COMPARTMENT
PLG	MEDIUM VOLTAGE COMPARTMENT-TRUCK MULTIPLUG
REF	LOW VOLTAGE COMPARTMENT- BASIC UNIT OF DIVIDED REF PROTECTION
SPA	PROJECT SPARE PARTS
TES	TOP MOUNTED BUSBAR EARTHING SWITCH
TOP	TOP OF SWITCHGEAR (FOR DUMPING RESISTOR)
TRA	TRANSFORMER ACCESSORIES
TVT	TOP MOUNTED BUSBAR VOLTAGE TRANSFORMERS
VT	VOLTAGE TRANSFORMERS

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number	+ INF
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		ABB Elektrik San. A.Ş.		DCC Code &EFS	Lang. English
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SAMPLE

# DEVICE NAME DESCRIPTION

DEVICE NAME	DESCRIPTION
-AA	MULTIFUNCTION UNIT (CENTRAL UNITS)
-BAD	CAPACITIVE VOLTAGE DIVIDERS
-BAR	VOLTAGE PROTECTION RELAYS
-BAS	VOLTAGE SENSORS
-BAT	VOLTAGE TRANSFORMERS
-BCD	DIFFERENTIAL PROTECTION RELAYS
-BCF	FEEDER PROTECTION RELAYS
-BCG	GENERATOR PROTECTION RELAYS
-BCM	MOTOR PROTECTION RELAYS
-BCN	NEUTRAL CURRENT TRANSFORMERS
-BCP	TRANSFORMER PROTECTION RELAYS
-BCR	CURRENT PROTECTION RELAYS
-BCS	CURRENT SENSORS
-BCT	CURRENT TRANSFORMERS
-BCZ	DISTANCE PROTECTION RELAYS
-BD	DENSITY SWITCHES
-BEF	FREQUENCY SCHUTZ RELAYS
-BER	SUPERVISOINS RELAYS
-BES	SYNCHRONIZING RELAYS
-BET	THERMAL PROTECTION RELAYS
-BGA	ARC SCHOCK DETECTORS (POSITION SWITCHES)
-BGB	POSITION SWITCHES (PROXIMITY SENSORS) OF CIRCUIT-BREAKER
-BGC	POSITION SWITCHES OF CIRCUIT-BREAKER CONNECTOR
-BGD	POSITION SWITCHES (PROXIMITY SENSORS) OF THE DOOR
-BGE	POSITION SWITCHES (PROXIMITY SENSORS) OF EARTHING SWITCH

DEVICE NAME	DESCRIPTION
-BGF	POSITION SWITCHES OF MEDIUM VOLTAGE FUSES
-BGI	POSITION SWITCHES OF DISCONNECTORS
-BGK	POSITION SWITCHES OF KEY LOCKS
-BGL	POSITION SWITCHES OF ELECTROMECHANICAL LOCKS
-BGS	POSITION SWITCHES (PROXIMITY SENSORS) OF CIRCUIT-BREAKER SPRINGS
-BGT	POSITION SWITCHES (PROXIMITY SENSORS) OF CIRCUIT-BREAKER TRUCK
-BGV	POSITION SWITCHES OF VENTILATORS
-BGZ	OTHER POSITION SWITCHES
-BM	HYGROSTAT
-BPA	ARC PRESSURE DETECTORS
-BPS	PRESSURE SWITCHES
-BQ	INSULATION MONITORING DEVICE
-BR	FLAME DETECROS, SMOKE DETECTORS, OPTOCOUPLER
-BT	THERMOSTATS
-BU	BUCHHOLZ RELAY
-BX	ARC PROTECTION RELAYS
-BZ	MULTIFUNCTION SENSORS, COMBINED CURRENT AND VOLTAGE SENSORS
-BZR	RADIO FREQUENCY IDENTIFICATION DEVICES
-CA	CAPACITORS
-CN	GAS CYLINDER
-CQ	SPRING
-EA	LIGHTING LAMPS
-EB	HEATERS
-FA	SURGE ARRESTER
-FB	RESIDUAL CURRENT DEVICE

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SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number	+ INF
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		ABB ElektriK San. A.Ş.		DCC Code &EFS	Lang. English
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# DEVICE NAME DESCRIPTION

DEVICE NAME	DESCRIPTION
-FCD	FUSE-DISCONNECTORS FOR PROTECTION OF AUXILIARY CIRCUITS
-FCF	MEDIUM VOLTAGE FUSES
-FCM	MINIATURE CIRCUIT-BREAKERS
-FCT	THERMAL OVERLOAD RELEASES
-FN	MECHANICAL OR INSULATING PROTECTION
-GA	GENERATORS
-GO	VENTILATORS
-KFA	AUXILIARY RELAYS OR CONTACTORS
-KFC	AUXILIARY RELAYS OR CONTACTORS FOR CLOSING
-KFE	INPUT/OUTPUT MODULE, INPUT/OUTPUT EXPANSION MODULE
-KFI	INTEGRATED CIRCUITS
-KFL	LOCK-OUT RELAYS
-KFM	MICROPROCESSORS
-KFN	ANTIPUMPING RELAYS
-KFO	AUXILIARY RELAYS OR CONTACTORS FOR OPENING
-KFP	PROGRAMMABLE LOGIC CONTROLLER (PLC)
-KFR	RECLOSING RELAYS
-KFS	SYNCHRONIZING DEVICES
-KFT	AUXILIARY TIME RELAYS, DELAY ELEMENTS
-KFU	CONTROL UNITS
-KFZ	FEEDBACK CONTROLLER, POTENTIOMETER, REGULATOR
-MAD	MOTORS FOR ELECTRICAL OPERATION OF DISCONNECTORS
-MAE	MOTORS FOR ELECTRICAL OPERATION OF EARTHING SWITCH
-MAS	MOTORS FOR SPRINGS CHARGING OF CIRCUIT-BREAKER OR DISCONNECTOR
-MAT	MOTORS FOR ELECTRICAL OPERATION OF TRUCK

DEVICE NAME	DESCRIPTION
-MBC	CLOSING RELEASES
-MBO	OPENING RELEASE
-MBU	UNDERVOLTAGE RELEASES
-ML	OPERATING MECHANISM
-PFB	BLUE SIGNAL LAMPS
-PFF	FLAG RELAYS
-PFG	GREEN SIGNAL LAMPS
-PFR	RED SIGNAL LAMPS
-PFS	SHORT CIRCUIT INDICATORS
-PFV	VOLTAGE INDICATORS
-PFW	WHITE SIGNAL LAMPS
-PFX	CROSS INDICATORS, ELECTROMECHANICAL INDICATORS
-PFY	YELLOW SIGNAL LAMPS
-PGA	AMMETERS
-PGC	COUNTERS
-PGF	FREQUENCY METERS
-PGH	HOUR METERS
-PGI	HUMAN MACHINE INTERFACES
-PGJ	ACTIVE ENERGY METERS
-PGK	REACTIVE ENERGY METERS
-PGM	MULTIFUNCTION INDICATORS
-PGP	POWER-FACTOR METERS
-PGQ	VARMETERS
-PGS	SYNCHRONOSCOPES
-PGV	VOLTMETERS

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number + INF	
		Customer name	Project name			DCC Code &EFS		Lang. English	
Rev. Code	Date	Name	Contract No.			Doc. No.		Page Z05	
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# DEVICE NAME DESCRIPTION

DEVICE NAME	DESCRIPTION
-PGW	WATTMETERS
-PH	NAMEPLATES
-PJ	ACOUSTICAL SIGNAL DEVICES (BELLS, SIRENS)
-QAB	CIRCUIT-BREAKERS
-QAC	CONTACTORS (FOR POWER)
-QBD	DISCONNECTORS
-QBH	MANUAL CIRCUIT-BREAKERS
-QBL	LINKS
-QBM	MINIATURE SWITCH-DISCONNECTORS
-QBP	POLES OR VACUUM INTERRUPTER
-QBS	SWITCH-DISCONNECTORS
-QBT	TRUCKS
-QCA	EARTHING SWITCHES FOR ELIMINATION OF INTERNAL ARC
-QCE	EARTHING SWITCHES
-QQ	CLUTCHES
-QZD	THREE-POSITION DISCONNECTORS (COMBINED DISCONNECTOR AND EARTHING SWITCHES)
-QZS	THREE-POSITION SWITCH-DISCONNECTORS (COMBINED SWITCH-DISCONNECTORS AND EARTHING SWITCHES)
-RAA	ANTIFERRORESONANCE RESISTORS
-RAD	DIODES
-RAI	INDUCTORS
-RAR	RESISTORS
-RF	FILTERS
-RLE	ELECTROMECHANICAL LOCKS
-RLM	MECHANICAL INTERLOCKS
-RR	SHOCK-ABSORBERS

DEVICE NAME	DESCRIPTION
-SFA	AMMETRIC SWITCHES
-SFC	CLOSING PUSH-BUTTONS, CONTROL SWITCHES
-SFL	LOCKING CONTACTS
-SFM	MOTOR CONTROL PUSH-BUTTON
-SFO	OPENING PUSH-BUTTONS
-SFR	RESET PUSH-BUTTONS
-SFS	SELECTOR SWITCHES
-SFT	TEST PUSH-BUTTONS
-SFU	UNLOCKING PUSH-BUTTONS
-SFV	VOLTMETRIC SWITCHES
-TA	POWER TRANSFORMERS
-TB	RECTIFIERS, CONVERTERS (FEEDERS)
-TFA	ACTIVE POWER TRANSDUCERS
-TFC	CURRENT TRANSDUCERS
-TFF	FREQUENCY TRANSDUCERS
-TFJ	ACTIVE ENERGY TRANSDUCERS
-TFK	REACTIVE ENERGY TRANSDUCERS
-TFM	MULTIFUNCTION TRANSDUCERS
-TFP	POWER-FACTOR TRANSDUCERS
-TFQ	REACTIVE POWER TRANSDUCERS
-TFS	SIGNAL CONVERTERS
-TFT	TEMPERTAURE TRANSDUCERS
-TFV	VOLTAGE TRANSDUCERS
-UA	SUPPORTS
-UZ	FITTINGS

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SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number + INF	
		Customer name	Project name			ABB Elektrik San. A.Ş.		DCC Code &EFS	Lang. English
Rev. Code	Date	Name	36 kV Switchgear Sample MV SWITCHGEAR			Doc. No.		1YTU220471K01	Page Z06
		TENDER No.						Pages	9

# DEVICE NAME DESCRIPTION

DEVICE NAME	DESCRIPTION
-WA	BUSBARS
-WBB	BUSHINGS
-WBC	POWER CABLES
-WE	EARTHING CONNECTIONS
-WGC	CONTROL CABLES
-WGS	COMMUNICATION CABLES (SHIELDED TWISTED PAIRS)
-WH	OPTICAL FIBRES
-WQ	MECHANICAL TRANSMISSIONS
-XB	POWER CONNECTORS
-XD	CONNECTORS OR TERMINAL BLOCKS FOR MEDIUM VOLTAGE SWITCHES (ADMITTED)
-XDA	TERMINAL BLOCKS FOR AMMETRIC CIRCUITS
-XDB	CONNECTORS OR TERMINAL BLOCKS FOR CIRCUIT-BREAKER
-XDC	TERMINAL BLOCKS FOR CUSTOMER
-XDE	CONNECTORS OR TERMINAL BLOCKS FOR EARTHING SWITCH
-XDF	CONNECTORS OR TERMINAL BLOCKS FOR FORCED COOLING VENTILATORS
-XDH	CONNECTORS OR TERMINAL BLOCKS FOR HEATERS AND FOR POSITION SWITCHES DETECTING INTERNAL ARC
-XDI	CONNECTORS OR TERMINAL BLOCKS FOR INTERCONNECTIONS
-XDJ	CONNECTORS OR TERMINAL BLOCKS FOR DISCONNECTORS
-XDM	TERMINAL BLOCKS FOR MEASURING TEST
-XDP	MULTILEVEL TERMINAL BLOCKS WITH ADVANCED BRIDGING OPTIONS
-XDS	SOCKET OUTLETS
-XDT	CONNECTORS OR TERMINAL BLOCKS FOR TRUCK POSITION CONTACTS
-XDU	CONNECTORS OR TERMINAL BLOCKS FOR VOLTAGE TRANSFORMER TRUCKS
-XDV	CONNECTORS OR TERMINAL BLOCKS FOR VOLTMETRIC CIRCUITS
-XDX	SUPPORT TERMINAL BLOCKS OR SUPPORT CONNECTORS

DEVICE NAME	DESCRIPTION
-XDZ	CONNECTORS OR TERMINAL BLOCKS FOR THREE-POSITION DISCONNECTORS OR SWITCH-DISCONNECTORS
-XE	EARTHING TERMINALS

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number + INF	
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		ABB Elektrik San. A.Ş.		DCC Code &EFS	Lang. English
Rev. Code	Date	Name	TENDER No.				Doc. No.	1YTU220471K01	Page 207
1		2	3	4	5	6	7	8	9

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# TERMINAL STRIP DESCRIPTION

## TERMINAL STRIP DESCRIPTION

- XD11 INTERCONNECTIONS
- XD12 INTERCONNECTIONS
- XD13 INTERCONNECTIONS
- XD14 INTERCONNECTIONS
- XDIA INTERCONNECTIONS
- XDIV INTERCONNECTIONS
- XDA CURRENT TRANSFORMERS
- XDV VOLTAGE TRANSFORMER
- XDCA CURRENTS TO CUSTOMER SIDE
- XDCV VOLTAGES TO CUSTOMER SIDE
- XDB1 TERMINAL BLOCKS FOR CB AUXILIARY CIRCUITS
- XDB2 END SWITCH OF CB 58-PIN PLUG
- XDJ TERMINAL BLOCK FOR DISCONNECTOR AUXILIARY CIRCUIT
- XDX CONTROL AND PROTECTION CIRCUITS
- XDX1 PROTECTION RELAY CARDS
- XDH AC 230 V CIRCUITS
- XE GROUND
- XDE EARTHING SWITCH
- XDF TERMINALS BLOCK FOR AUXILIARY CIRCUIT OF FORCED COOLING VENTILATORS
- XDH ITH LIMITORS
- XDC CUSTOMER TERMINALS
- XDCS AUXILIARY SUPPLY TERMINALS
- WE EARTHING POINTS

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name	REFERENCE DESIG. OF OBJECTS		Project SAP number	+ INF
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		ABB Elektrik San. A.Ş.		DCC Code &EFS	Lang. English
Rev. Code	Date	Name	Contract No.	TENDER No.		Doc. No.		1YTU220471K01	Page Z08
								Pages	9

# PROTECTION FUNCTIONS - ANSI CODES

FUNCTION	DESCRIPTION	FUNCTION	DESCRIPTION
21, 21P, 21N	DISTANCE PROTECTION	470-	NEGATIVE-SEQUENCE OVERVOLTAGE PROTECTION
21FL	FAULT LOCATOR	47U+	POSITIVE-SEQUENCE UNDERVOLTAGE PROTECTION
21GT	THREE-PHASE UNDERIMPEDANCE PROTECTION	49F	THREE-PHASE THERMAL PROTECTION FOR FEEDERS, CABLES AND DISTRIBUTION TRANSFORMERS
21YN	ADMITTANCE BASED EARTH-FAULT PROTECTION	49T,	THREE-PHASE THERMAL OVERLOAD PROTECTION (POWER TRANSFORMERS, GENERATORS)
24	OVEREXCITATION PROTECTION	49M	THERMAL OVERLOAD PROTECTION FOR MOTORS
27	THREE-PHASE UNDERVOLTAGE PROTECTION	50L/50NL	ARC PROTECTION
27/59THD	THIRD HARMONIC BASED STATOR EARTH-FAULT PROTECTION	50N	NON-DIRECTIONAL EARTH-FAULT INSTANTANEOUS PROTECTION
32N	WATTMETRIC BYSED EARTH-FAULT PROTECTION	50P	THREE-PHASE NON-DIRECTIONAL INSTANTANEOUS OVERCURRENT PROTECTION
32R/32O	REVERSE POWER/DIRECTIONAL OVERPOWER PROTECTION	51BF/51NBF	CIRCUIT BREAKER FAILURE PROTECTION
32U	UNDERPOWERPROTECTION	51LR	MOTOR LOAD JAM PROTECTION
37F	LOSS OF PHASE (UNDERCURRENT)	51N	NON-DIRECTIONAL EARTH-FAULT PROTECTION
37, 37M	LOSS OF LOAD SUPERVISION	51NHA	HARMONIC BASED EARTH-FAULT PROTECTION
40	THREE-PHASE UNDEREXCITATION PROTECTION	51P	THREE-PHASE NON-DIRECTIONAL OVERCURRENT PROTECTION
46	NEGATIVE-SEQUENCE OVERCURRENT PROTECTION	51V	VOLTAGE DEPENDENT OVERCURRENT PROTECTION
46G, 46M	NEGATIVE-SEQUENCE OVERCURRENT PROTECTION (FOR MOTORS, GENERATORS)	59	THREE-PHASE OVERVOLTAGE PROTECTION
46PD	PHASE DISCONTINUITY PROTECTION	59G	RESIDUAL OVERVOLTAGE PROTECTION
46R	PHASE REVERSAL PROTECTION	64	ROTOR EARTH-FAULT PROTECTION
470+	POSITIVE-SEQUENCE OVERVOLTAGE PROTECTION	67	THREE-PHASE DIRECTIONAL OVERCURRENT PROTECTION

NOTE: All protection functions mentioned on this page can be used in ABB Relion protection relays. Not all of protection functions are usable in every ABB Relion protection type.

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SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
		Customer	Checked name		Approved name			Project SAP number	+ INF
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		<b>ANSI CODES</b>		DCC Code &EFS	Lang. English
Rev. Code	Date	Name	Contract No.	TENDER No.		<b>ABB</b> ABB Elektrik San. A.Ş.		Doc. No.	Page Z09
1								1YTU220471K01	Pages 9



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Symbol	Description
	Vacuum type Withdrawable Circuit Breaker
	MV Current Transformer
	MV Fixed Voltage Transformer
	Withdrawable / Removable fused voltage transformer
	Earthing Switch with Blocking Coil
	Capacitive Voltage Indicator (Indicator in CT) (on Low Voltage Comp. door)
	Capacitive Voltage Indicator, 3-Phase LCD display (on Low Voltage Comp. door)
	Surge arrester
	MV Cable connection point
	Mechanical interlock  <small>Mechanical interlocking between CB and its resp. ES : CB can only be rack into service if resp. ES is in OPEN position. ES can only be closed if CB is in TEST or WITHDRAWN position.</small>
CB FIGURES	Figure numbers of defined functions, which are given by manufacturer

Symbol	Description
	Ferroresonant protection device
	Local/Remote Selector Switch
	Ammeter
	Ammeter Selector Switch
	Voltmeter
	Voltmeter Selector Switch

Symbol	Description
3I	Three-phase current
3U	Three-phase voltage
In	Residual current
Un	Residual voltage
P	Three-phase active power
Q	Three-phase reactive power
E	Three-phase energy (kWh)
pf	Power factor
f	Frequency
PFV1	Capacitive Voltage Indicator
ST-US 36	Type of earthing switchgear
MWD	Type of cable type current transformer
REF615	Type of Surge Arrester
RJ-45	Feeder Protection and control IED
Uc	Galvanic connector type
Ur	Continuous operating voltage Rated voltage

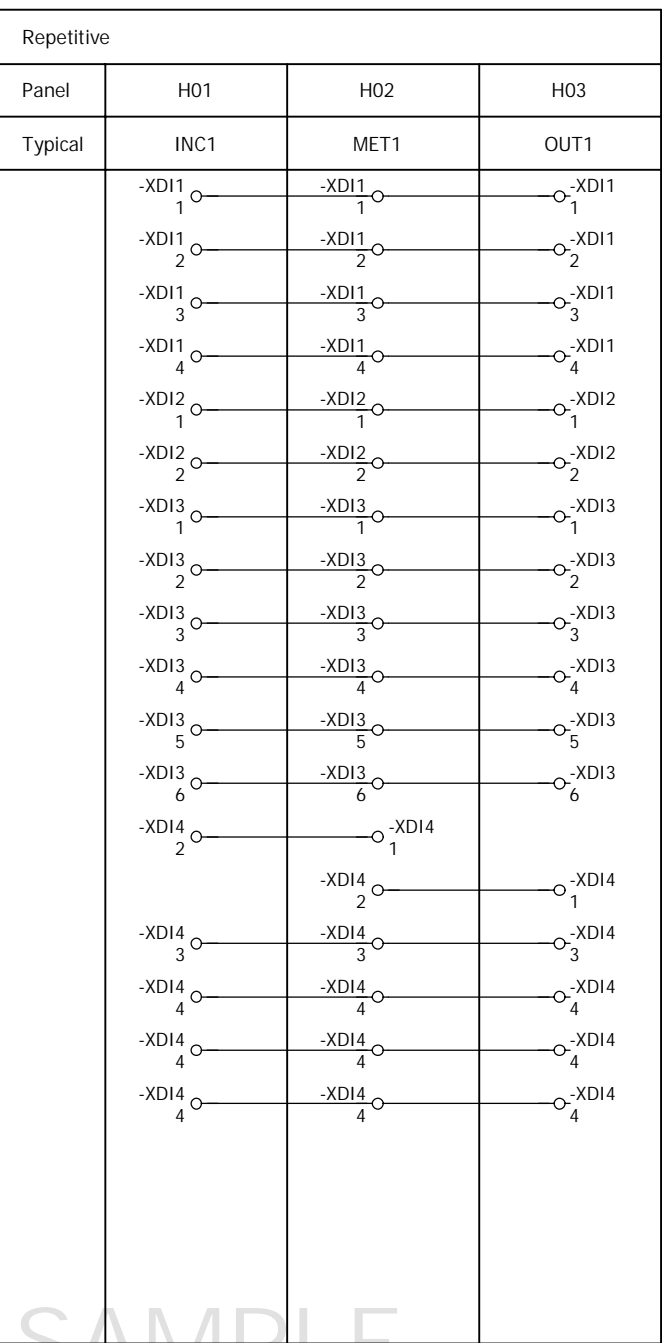
Symbol	Description
-BAT1,-BAT2,-BAT3	Voltage Transformer
-BCT1,-BCT2,-BCT3	Current Transformer
-FA1,-FA2,-FA3	Surge arrester
-FCF1,-FCF2,-FCF3	Fuse
-QAB1	Circuit Breaker
-QCE1	Earthing Switch
-PFV1	Capacitive Voltage Indicator

Symbol	Description
27	Three-phase undervoltage
50	Instantaneous Three-phase non-directional overcurrent
51	Instantaneous Non-directional earth-fault
50N	Time dependent Three-phase non-directional overcurrent
51N	Time dependent Non-directional earth-fault
59	Three-phase overvoltage protection
59N	Residual overvoltage protection
86/94	Lockout, Master trip

SAMPLE

Based on			Prepared name	Date	date	Title	COMMON DRAWINGS	Order No.	= K00
Customer			Checked name	Approved name		LEGEND AND SYMBOLS		Project SAP number	+ INF
Customer name			Project name			DCC Code &EFS		Lang. English	
Contract No.			36 kV Switchgear Sample MV SWITCHGEAR			Doc. No.		Page Z11	
Rev. Code	Date	Name	TENDER No.			ABB Elektrik San. A.Ş.		Pages 9	
1	2	3	4	5	6	7	8	1YTU220471K01	

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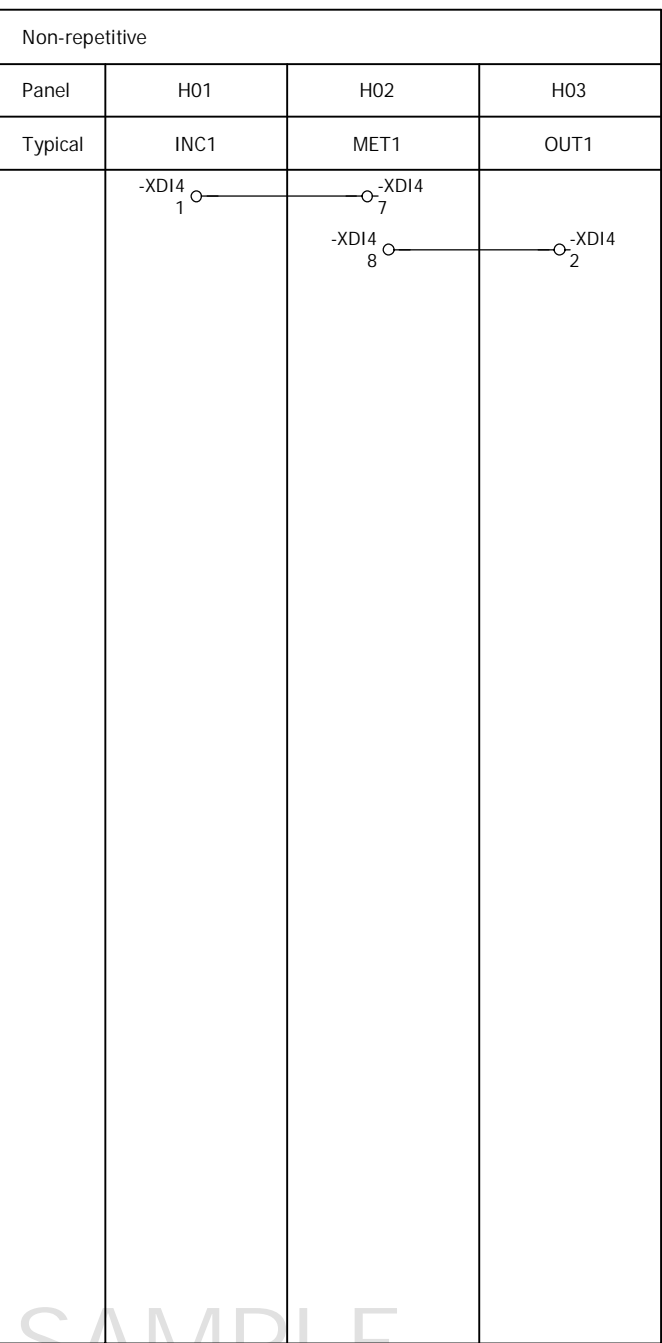


SAMPLE

SAMPLE

Based on			Prepared name	Date	date	Title	Order No.	= ICD
		Customer	Checked name		Approved name	INTERCON. BETWEEN PANELS INTERCONNECTIONS	Project SAP number	+ ICD
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		<b>ABB</b> ABB Elektrik San. A.Ş.	DCC Code	Lang. English
Rev. Code	Date	Name	Contract No.	TENDER No.	Doc. No.		1YTU220471K01	Page A01
1							Pages 2	

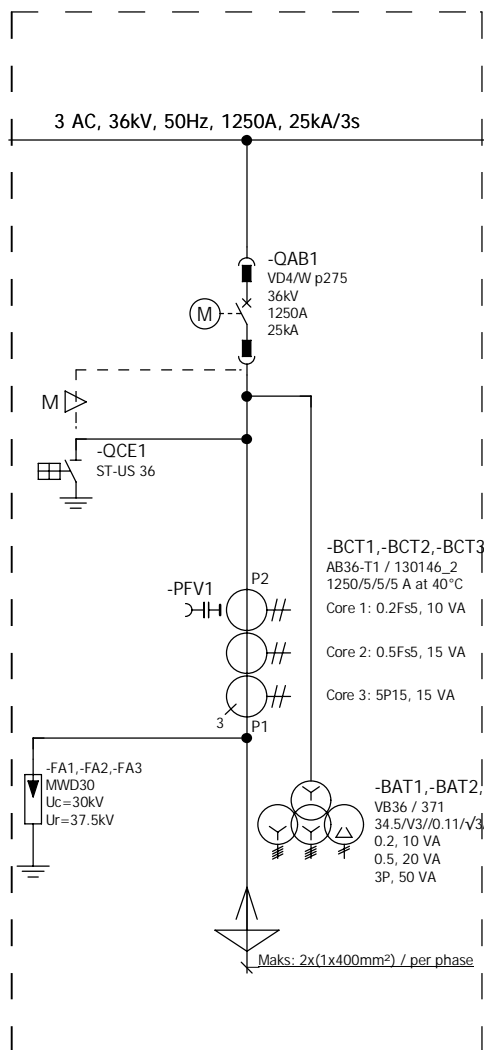
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SAMPLE

Based on			Prepared name	Date	date	Title	Order No.	= ICD
		Customer	Checked name		Approved name	INTERCON. BETWEEN PANELS INTERCONNECTIONS	Project SAP number	+ ICD
		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		<b>ABB</b> ABB Elektrik San. A.Ş.	DCC Code	Lang. English
Rev. Code	Date	Name	TENDER No.				Doc. No.	Page A02
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							1YTU220471K01	Pages 2

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VALID FOR PANELS:

POS.	DESIGN.	NAME
1	H01	name of cubicle 1

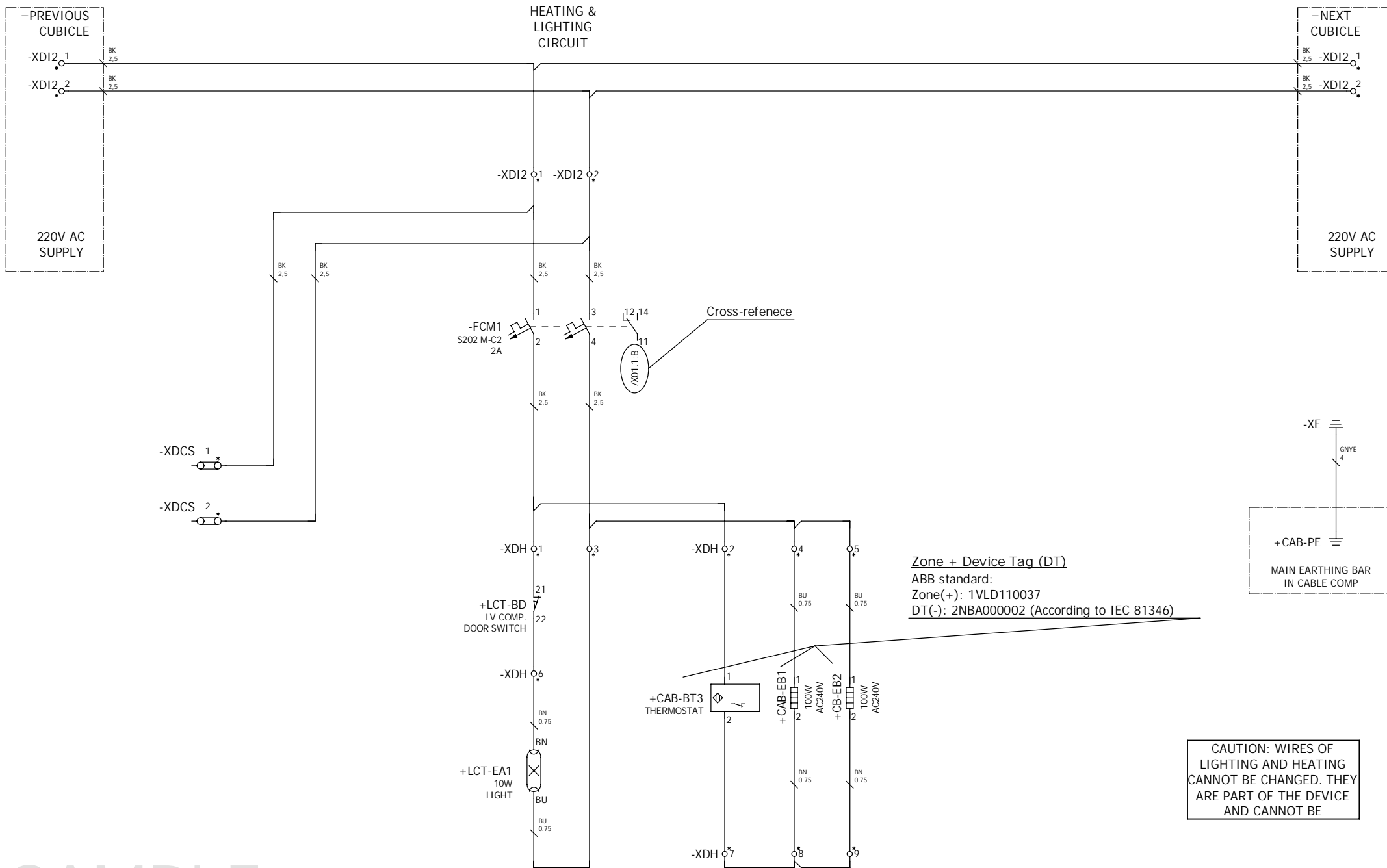
PANEL	1	H01
PANEL NAME	name of cubicle 1	
DRAWING Nr.	1YTU**0***L/X1151	
TYPICAL	INC1	
PROT. RELAY	RELAY REF615-J / HBFJAEAGNBCLBEA11G	
PROT. FUNCT.	27,50,51,50N,51N,59,59N,86,94	
METERING FUNCT.	3I,In,3U,Vn,P, E, Q,f, pf	
COMMUNICATION	IEC 61850 (1xRJ45) + MODBUS	
METERING, TEST AND CONTROL EQUIPMENT		

Based on	Prepared name	Date	date	Title	Order No.	= INC1
Customer	Checked name	Approved name		TR6 Transformer Outgoing Cubicle	Project SAP number	+ LV
Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		SINGLE LINE SCHEME	DCC Code &EFA	Lang. English
Contract No.	TENDER No.			ABB	Doc. No.	Page A01
Rev. Code	Date	Name	ABB Elektrik San. A.Ş.		1YTU220471K01	Pages 47

SAMPLE

F

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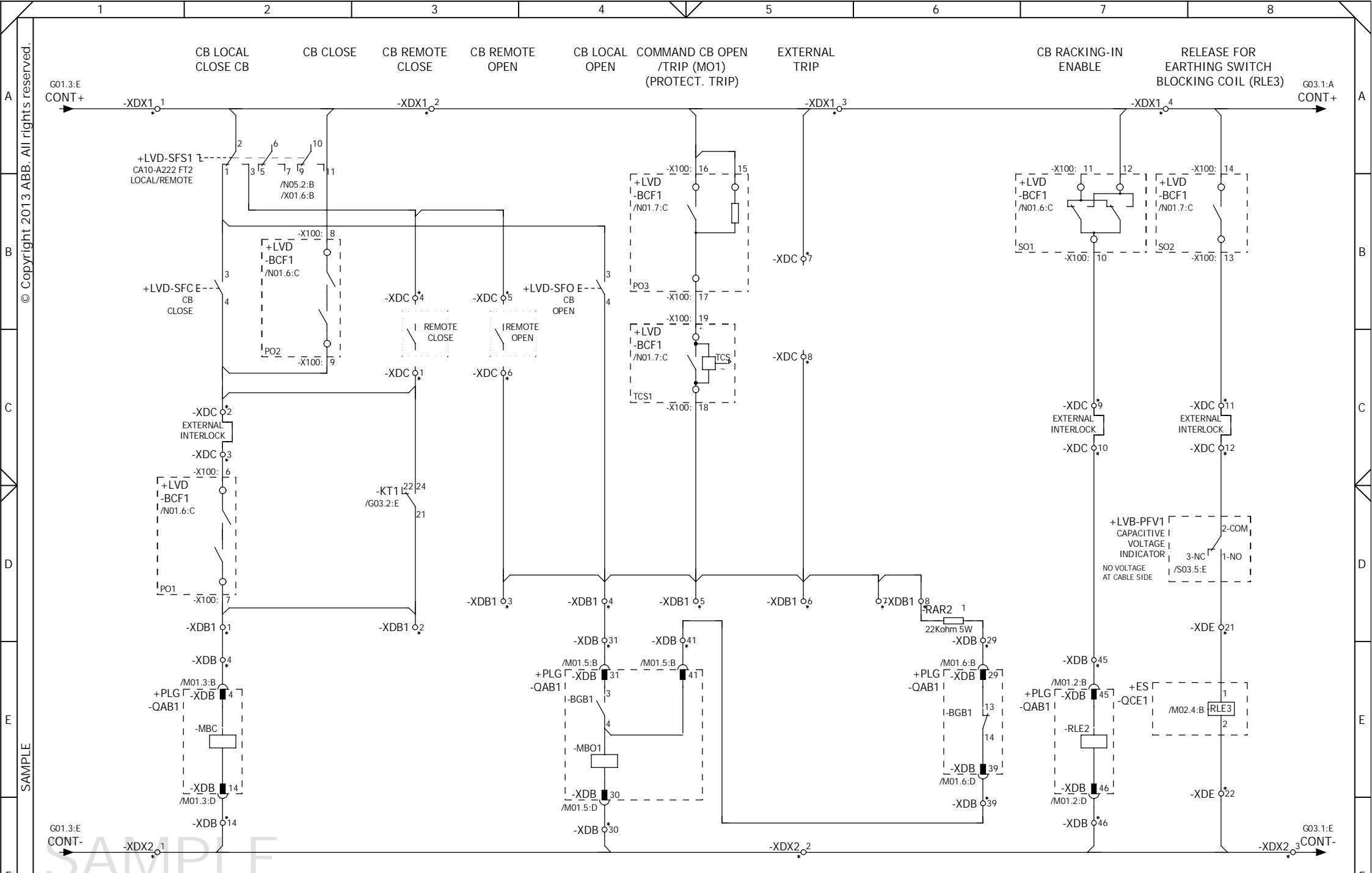
Zone + Device Tag (DT)  
 ABB standard:  
 Zone(+): 1VLD110037  
 DT(-): 2NBA000002 (According to IEC 81346)

If hygrostat is used, set value: @ %50  
 If thermostat is used, set value: @ Dew Point + min 5 °C (To be set by customer based on dew point on substation location)

Based on			Prepared name	Date	date	Title	Order No.	= INC1
Customer			Checked name	Approved name		TR6 Transformer Outgoing Cubicle	Project SAP number	+ LV
Customer name			Project name			AC SUPPLY CIRCUITS	DCC Code &EFS	Lang. English
Contract No.			36 kV Switchgear Sample			ABB Elektrik San. A.Ş.	Doc. No.	Page D01
TENDER No.			MV SWITCHGEAR				1YTU220471K01	Pages 47
Rev. Code	Date	Name						

SAMPLE





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SAMPLE

SAMPLE

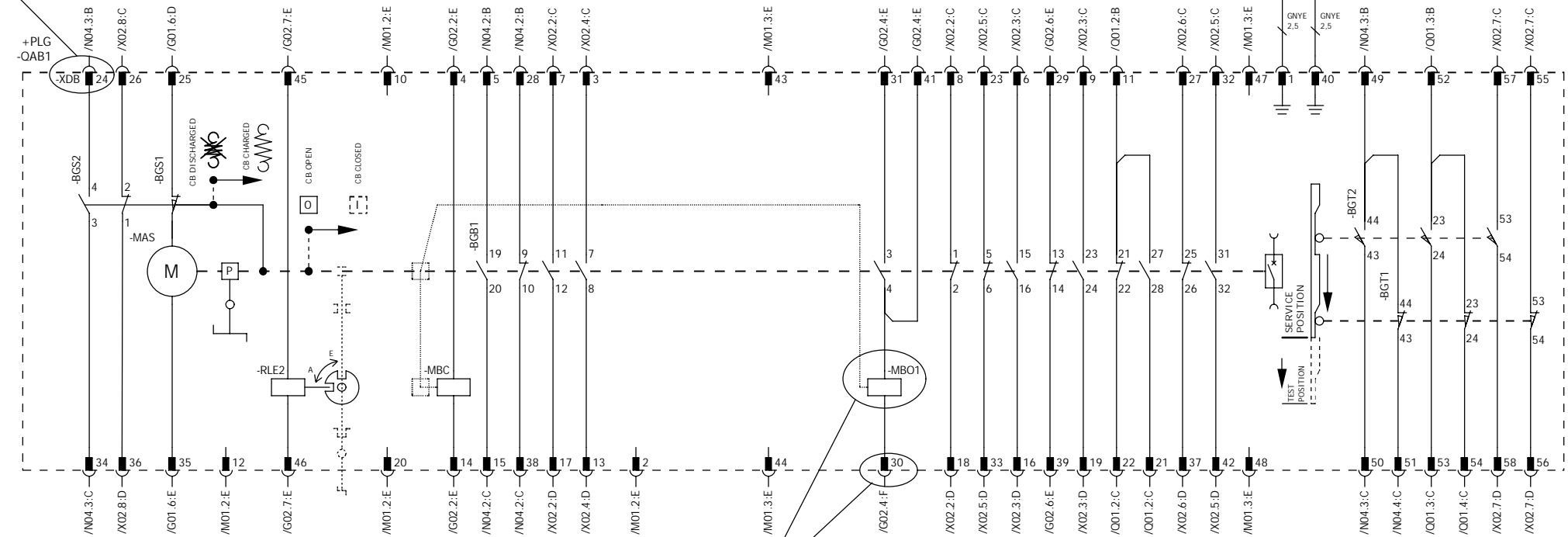
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Customer name			Project name		36 kV Switchgear Sample		CONTROL CIRCUITS		DCC Code &EFS		Lang. English	
Contract No.			MBO1		MBO1		ABB		Doc. No.		Page G02	
TENDER No.			MVB SWITCHGEAR		MVB SWITCHGEAR		ABB Elektrik San. A.Ş.		1YTU220471K01		Pages 47	
Rev. Code	Date	Name										
1												

# VD4/W 36.12.25

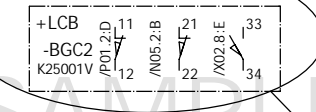
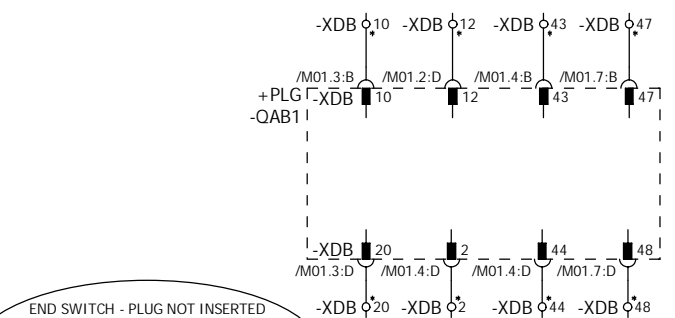
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CB OPEN, TRUCK IN SERVICE POSITION, SPRING NOT CHARGED

### Designation of plug



### CB UNUSED PINS



### Functional designation

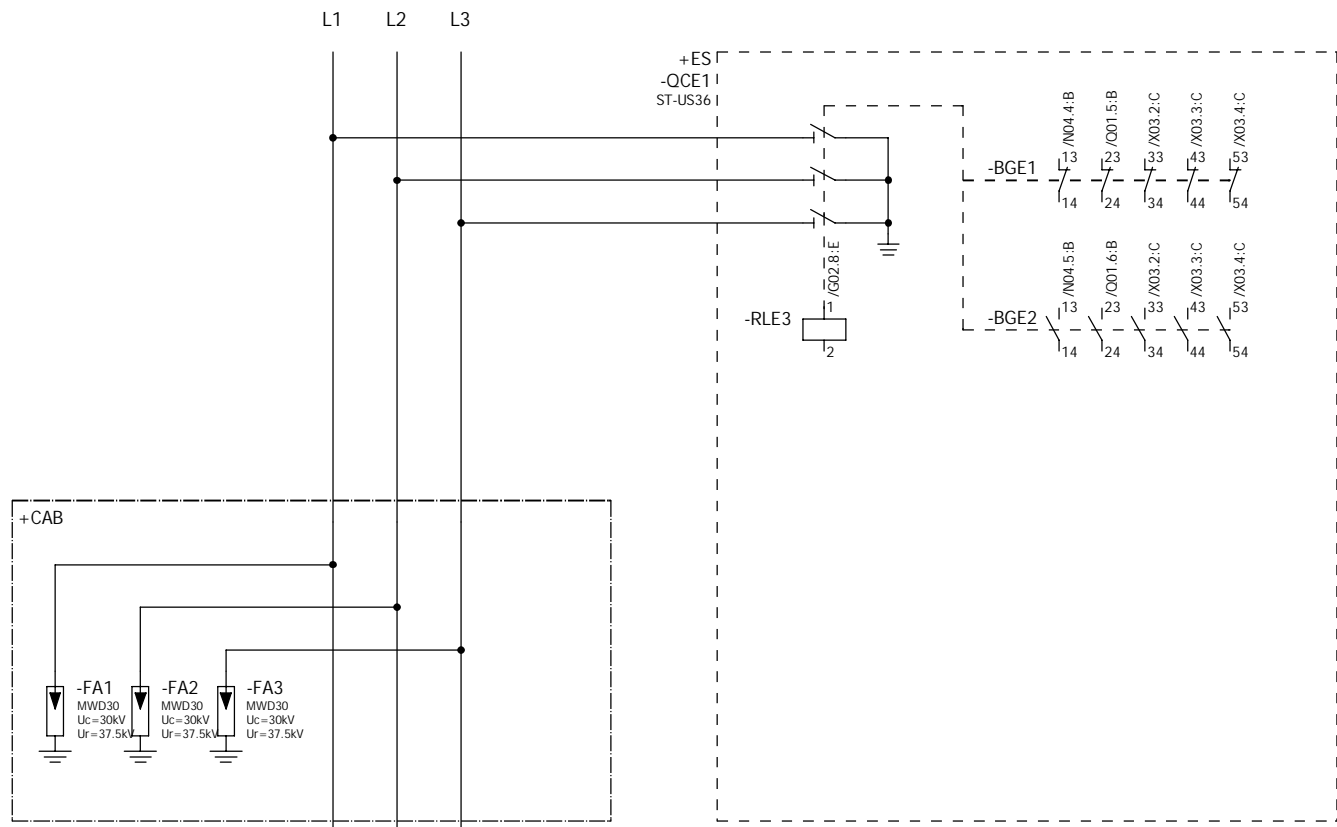
DESIGNAT.	FIGURE	DESCRIPTION	DESIGNAT.	FIGURE	DESCRIPTION
-MAS	FIG.1	MOTOR FOR SPRING CHARGING	-BGS2	FIG.26	SIGNALLING - SPRING CHAR./DISCHAR.
-BGS1	FIG.1	CONTACT FOR CHARGER MECHANISM			
-MBC	FIG.2	CLOSING RELEASE			
			-BGB1	FIG.34	AUXILIARY SWITCH CB SHAFT
			-BGB1	FIG.34	AUXILIARY SWITCH CB SHAFT
-MBO1	FIG.7	FIRST OPENING RELEASE	-BGB1	FIG.34	AUXILIARY SWITCH CB SHAFT
-RLE2	FIG.8	ELECTROMECHANICAL LOCK CB TRUCK	-BGT1	FIG.52	CB TRUCK IN SERVICE (CONNECTED) POSITION
			-BGT2	FIG.52	CB TRUCK IN TEST (ISOLATED) POSITION
-XE		GROUND TERMINALS	-XDB		58-POLE PLUG FOR AUXILIARY CIRCUITS

NOTE: WHEN FIG. 7 IS REQUESTED, CONTACT -BGB1 (3-4) GIVEN IN FIG. 34 IS NOT AVAILABLE.  
 NOTE: WHEN FIG. 10 IS REQUESTED, CONTACT -BGB1 (31-32) GIVEN IN FIG. 34 IS NOT AVAILABLE.  
 NOTE: WHEN FIG. 30 IS REQUESTED, CONTACT -BGB1 (25-26) GIVEN IN FIG. 34 IS NOT AVAILABLE.  
 NOTE: WHEN FIG. 9 IS REQUESTED, CONTACT -BGB1 (7-8) GIVEN IN FIG. 34 IS NOT AVAILABLE.  
 NOTE: WHEN FIG. 6 IS REQUESTED, CONTACT -BGB1 (23-24) GIVEN IN FIG. 34 IS NOT AVAILABLE.  
 NOTE: FIG. 4 IS GIVEN WHEN FIG. 34 IS REQUESTED.

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Based on			Prepared name	Date	Title	Order No.	= INC1
Customer	Customer name	Contract No.	Checked name	Approved name	TR6 Transformer Outgoing Cubicle VD4/W INTERNAL WIRING	Project SAP number	+ LV
Rev. Code	Date	Name	Project name		36 kV Switchgear Sample MV SWITCHGEAR	DCC Code &EFS	Lang. English
TENDER No.					ABB	Doc. No.	Page M01
					ABB Elektrik San. A.Ş.	1YTU220471K01	Pages 47

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DESIGNATION	DESCRIPTION
-BGE1	EARTHING SWITCH OPEN
-BGE2	EARTHING SWITCH CLOSED
-RLE3	EARTHING SWITCH BLOCKING COIL
-FA1-3	SURGE ARRESTERS

EARTHING SWITCH OPEN

SAMPLE

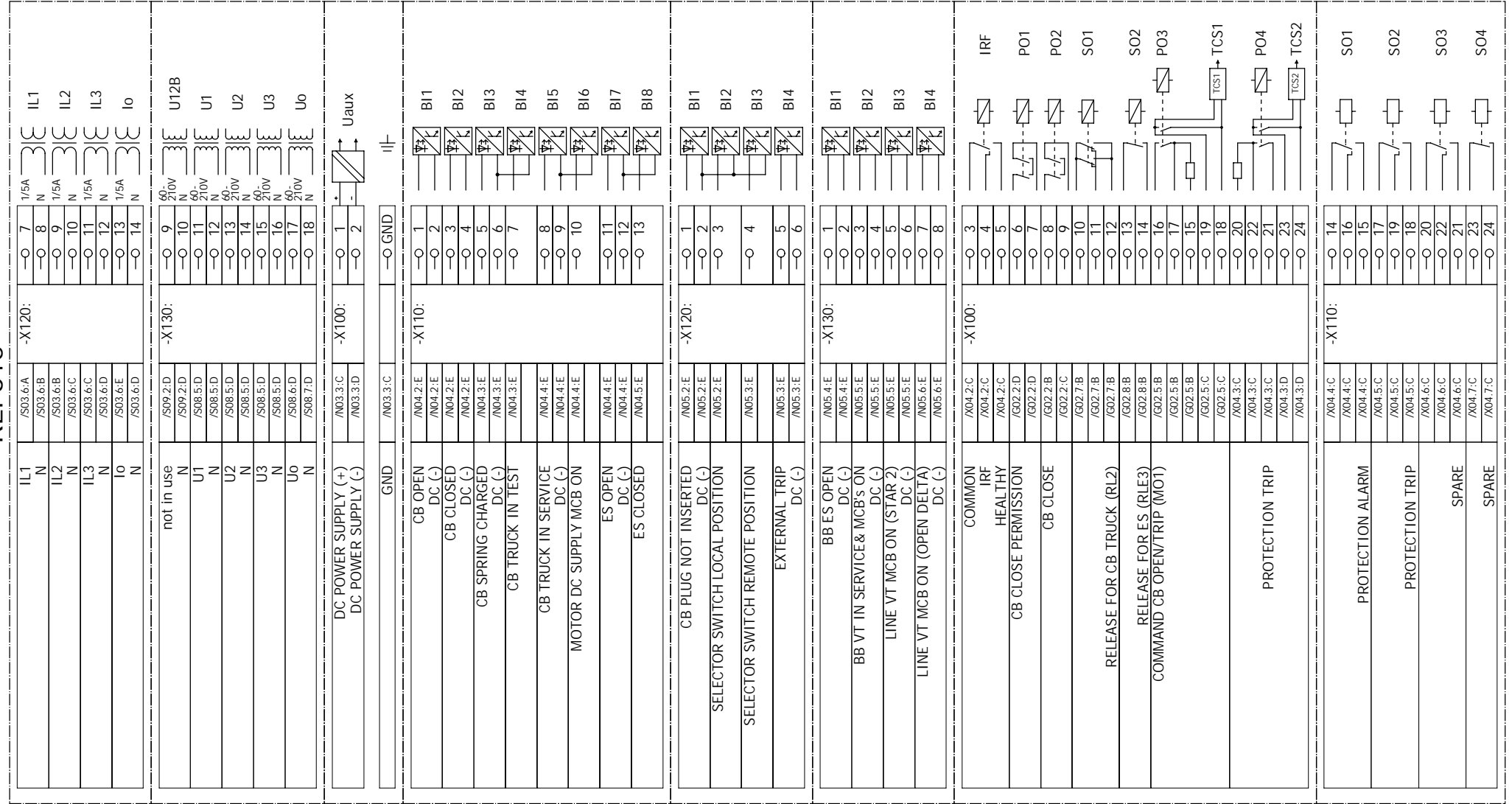
Based on			Prepared name	Date	date	Title	Order No.	= INC1
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		Customer name	Project name	36 kV Switchgear Sample MV SWITCHGEAR		EARTHING SWITCH TYPE ST-US 36	DCC Code &EFS	Lang. English
Rev. Code	Date	Name	Contract No.	TENDER No.		ABB	Doc. No.	Page M02
1						ABB Elektrik San. A.Ş.	1YTU220471K01	Pages 47

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+LVD-BCF1  
Configuration H, J, N

REF615 : FEEDER PROTECTION AND CONTROL

REF615

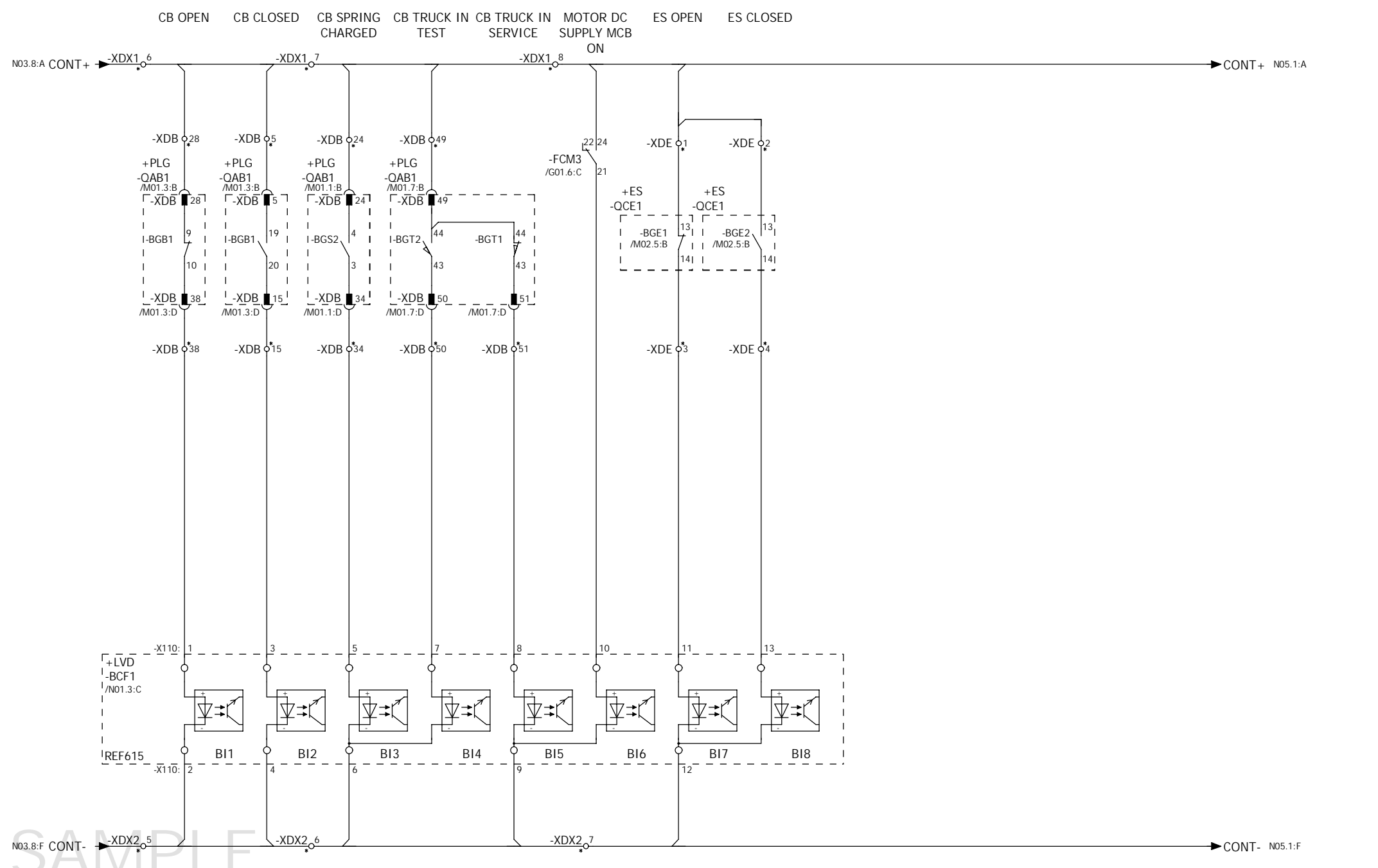


REF615

Based on		Prepared name		Date		Title		Order No.		= INC1	
Customer		Checked name		Approved name		TR6 Transformer Outgoing Cubicle		Project SAP number		+ LV	
Customer name		Project name		36 kV Switchgear Sample		REF615 - A I + Binary I/O Board		DCC Code &EFS		Lang. English	
Contract No.		TENDER No.		MV SWITCHGEAR		ABB ElektriK San. A.Ş.		Doc. No.		Page N01	
Rev. Code		Date		Name		ABB		1YTU220471K01		Pages 47	

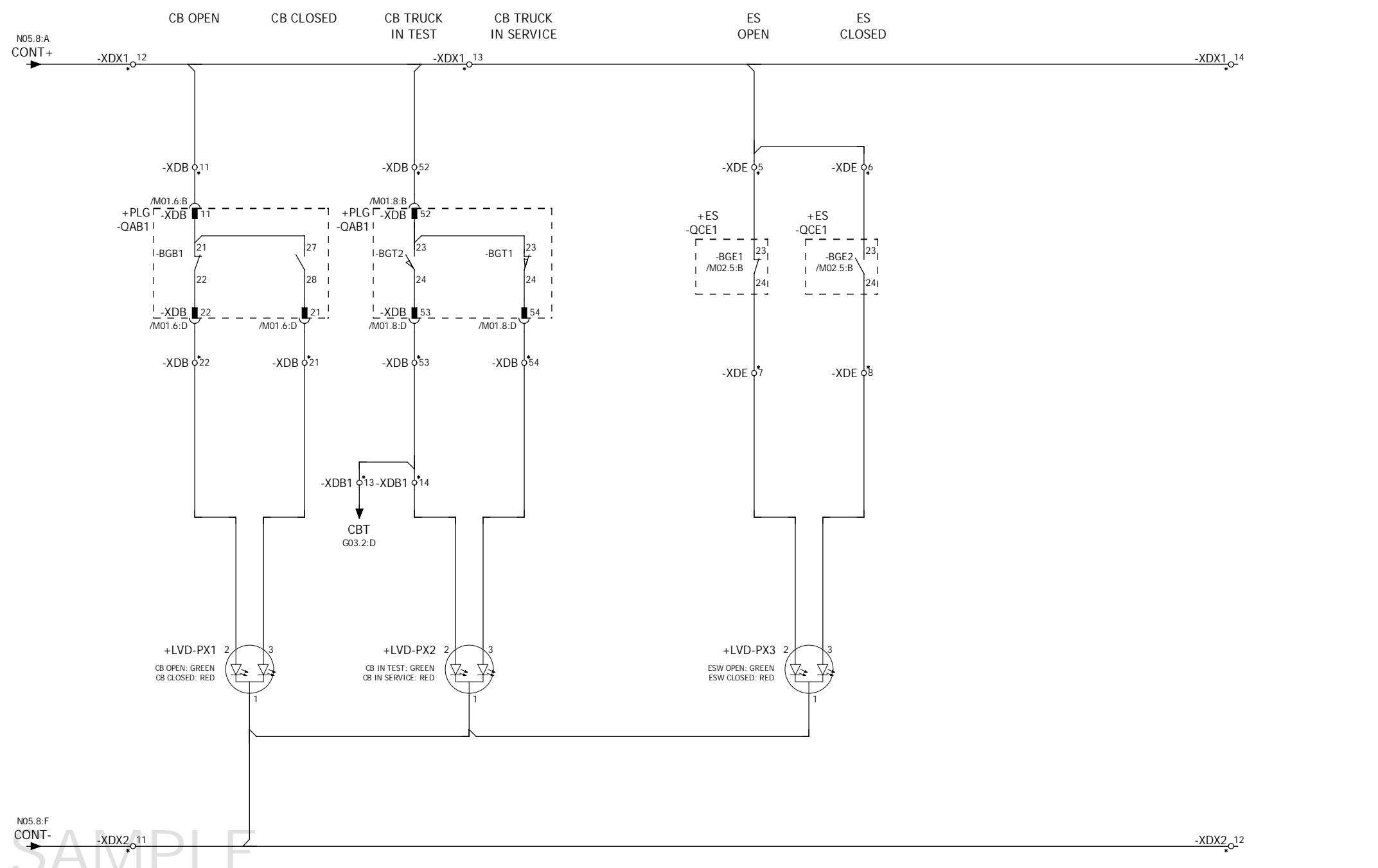
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SAMPLE



Based on			Prepared name		Date		Title		Order No.		= INC1	
Customer			Checked name		Approved name		TR6 Transformer Outgoing Cubicle		Project SAP number		+ LV	
Customer name			Project name		36 kV Switchgear Sample		REF615 - Binary Input		DCC Code &EFS		Lang. English	
Contract No.			TENDER No.		MV SWITCHGEAR		ABB		Doc. No.		Page N04	
Rev. Code			Date		Name		ABB Elektrik San. A.Ş.		1YTU220471K01		Pages 47	
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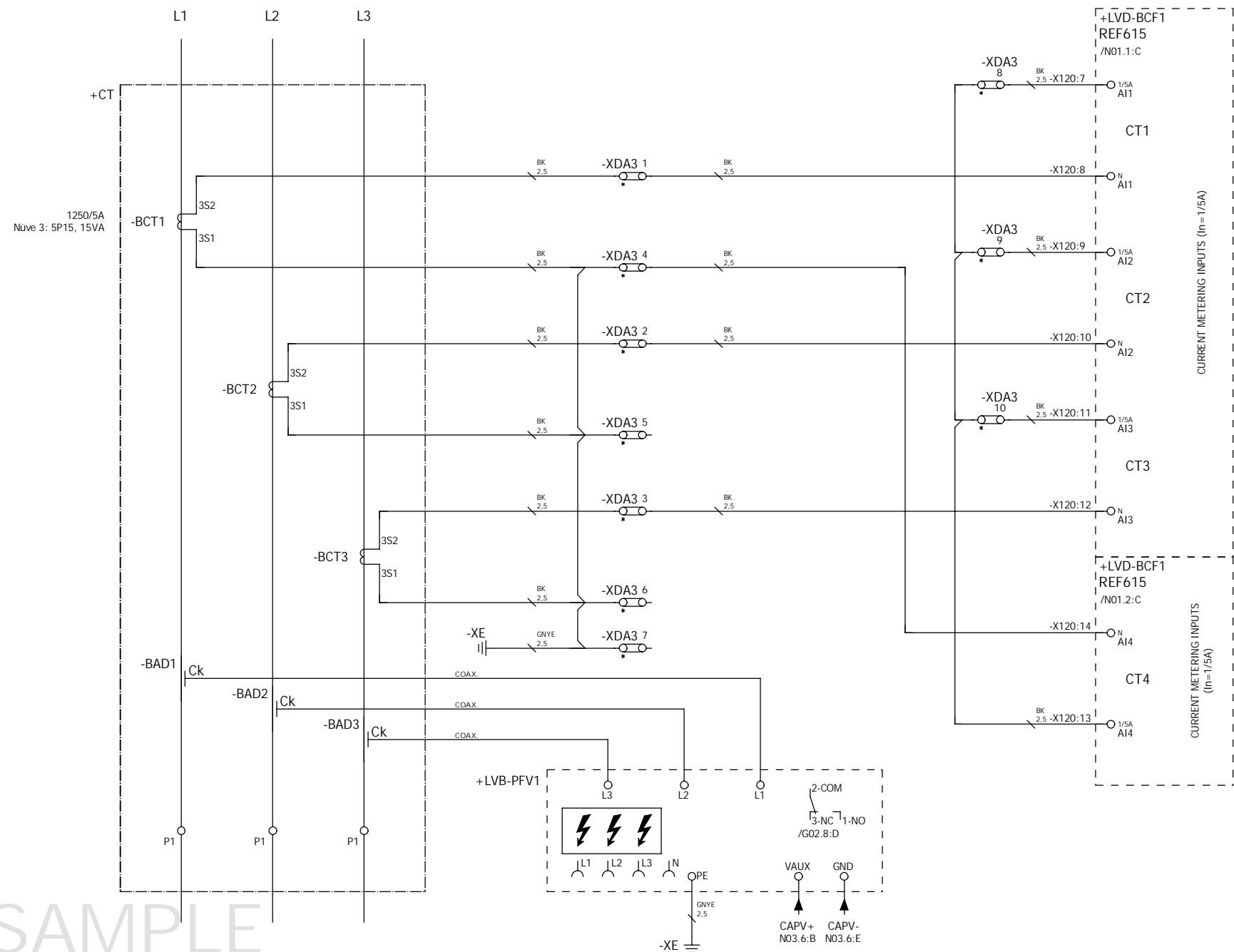
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SAMPLE

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Customer name			Project name			MIMIC DIAGRAM	DCC Code &EFS	Lang. English
Contract No.			36 kV Switchgear Sample			ABB ABB Elektrik San. A.Ş.	Doc. No.	Page Q01
TENDER No.			MV SWITCHGEAR				1YTU220471K01	Pages 47
Rev. Code	Date	Name						
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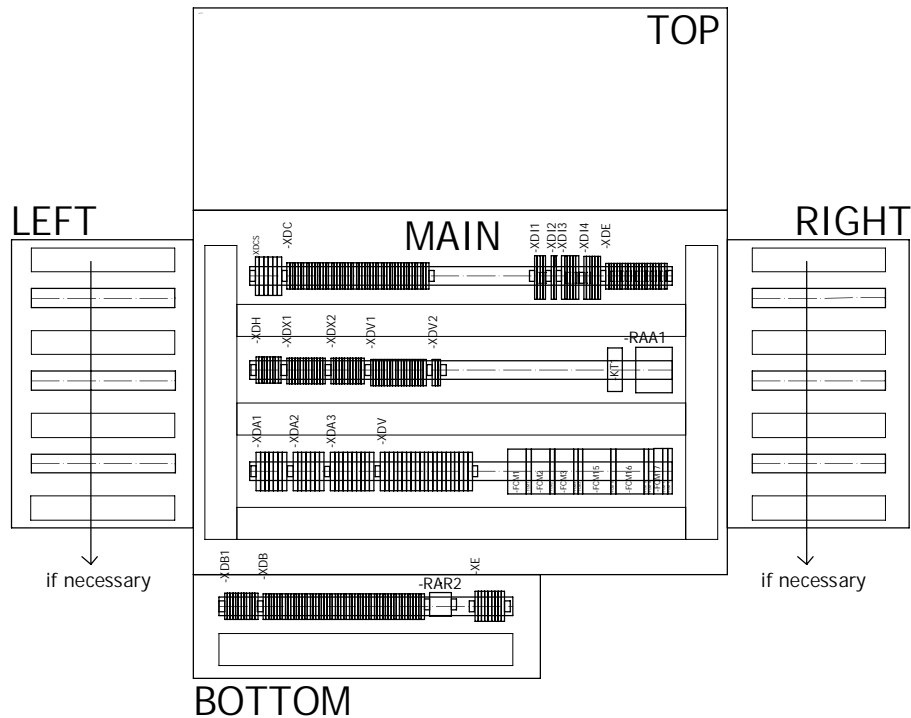
SAMPLE

SAMPLE

Based on			Prepared name		Date		date		Title		Order No.		= INC1	
Customer			Checked name		Date		Approved name		S24/TGP/401 TEİAŞ GİRİŞ		Project SAP number		+ LV	
Customer name			Project name		36 kV Switchgear Sample		MV SWITCHGEAR		CURRENT TRANSFORMER CORE 3		DCC Code &EFS		Lang. English	
Contract No.			TENDER No.		36 kV Switchgear Sample		MV SWITCHGEAR		ABB		Doc. No.		Page 503	
Rev. Code			Date		Name		TENDER No.		ABB Elektrik San. A.Ş.		1YTU220471K01		Pages 47	



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=INC1+LV		=INC1		
DEVICE TAG	TEXT	DT	TYPE	QTY
-FCM1	HEATING & LIGHTING CIRCUIT MCB	-RAR2	RESISTANCE, 22 kOhm, 5W;BASE STRIP-UMSTBVK 2.5/7-G-5.08 CONNECTOR-MSTB 2.5/7-ST-5.08 COMPONENT CONNECTOR COVER - KGG-MSTB 2.5/7	1
-FCM2	CONTROL CIRCUIT MCB			
-FCM3	SPRING CHARGER CIRCUIT MCB			
-FCM15	VT MCB (STAR 1)	-XDA1	URTK/S TERMINAL	7
-FCM16	VT MCB (STAR 2)	-XDA2	URTK/S TERMINAL	7
-FCM17	VT MCB (OPEN DELTA)	-XDA3	URTK/S TERMINAL	10
-KT1	AUX. RELAY SOCKET	-XDB	PT 2,5 Spring terminal blocks	58
-RAA1	VT GUARD	-XDB1	PT 2,5 Spring terminal blocks	14
		-XDC	PT 2,5 Spring terminal blocks	51
		-XDCS	URTK/S TERMINAL	6
		-XDE	PT 2,5/1P - INTERCONNECTION TERMINAL	22
		-XDH	PT 2,5 Spring terminal blocks	9
		-XDI1	PT 2,5-QUATTRO/2P - INTERCONNECTION TERMINAL	4
		-XDI2	PT 2,5-QUATTRO/2P - INTERCONNECTION TERMINAL	2
		-XDI3	PT 2,5-QUATTRO/2P - INTERCONNECTION TERMINAL	6
		-XDI4	PT 2,5-QUATTRO/2P - INTERCONNECTION TERMINAL	6
		-XDV	URTK/S TERMINAL	21
		-XDV1	PT 2,5 Spring terminal blocks	20
		-XDV2	PT 2,5 Spring terminal blocks	3
		-XDX1	PT 2,5 Spring terminal blocks	14
		-XDX2	PT 2,5 Spring terminal blocks	12
		-XE	PE TERMINAL BLOCK, SPRING-CAGE CONN	10

Description of equipment

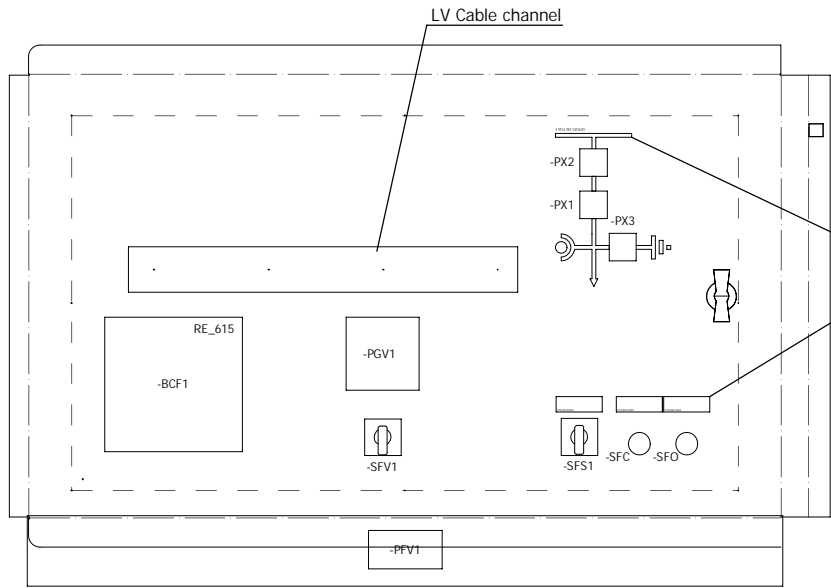
Designation of equipment (will be shown on the label)

SAMPLE

SAMPLE

Based on			Prepared name		Date		Title		Order No.		= INC1	
Customer			Checked name		Approved name		TR6 Transformer Outgoing Cubicle		Project SAP number		+ LV	
Customer name			Project name		36 kV Switchgear Sample		PANEL LAYOUT		DCC Code &ELU		Lang. English	
Contract No.			TENDER No.		MV SWITCHGEAR		ABB		Doc. No.		Page V02	
Rev. Code			Date		Name		ABB Elektrik San. A.S.		1YTU220471K01		Pages 47	

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MIMIC LABEL  
MATERIAL: FOLIO PLATE  
FIXING: SELF-ADHESIVE

DEVICE LABEL  
MATERIAL: ABS PLASTIC  
FIXING: PLASTIC RIVET

=INC1+LVD	
DEVICE TAG	TEXT
-PX1	POSITION INDICATORS
-PX2	POSITION INDICATORS
-PX3	POSITION INDICATORS
-BCF1	REF615 PROTECTION RELAY
-PGV1	VOLTMETER
-SFV1	VOLTMETER SELECTOR SWITCH
-SFS1	LOCAL / REMOTE SELECTOR SWITCH
-SFC	CB CLOSE
-SFO	CB OPEN
=INC1+LVB	
DEVICE TAG	TEXT
-PFV1	CAPACITIVE VOLTAGE INDICATOR

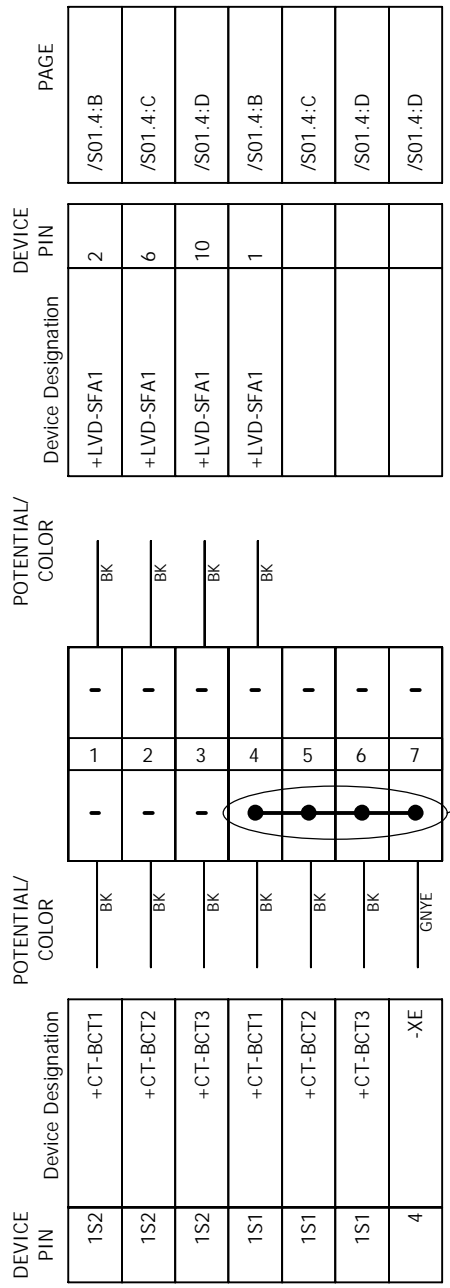
Description of equipment (will be shown on the label,if exists)

Designation of equipment

SAMPLE

Based on			Prepared name	Date	date	Title	Order No.	= INC1
Customer	Customer name	Contract No.	Checked name	Approved name	Project name	TR6 Transformer Outgoing Cubicle LV COMP. DOOR LAYOUT	Project SAP number	+ LV
Rev. Code	Date	Name	36 kV Switchgear Sample MV SWITCHGEAR			ABB Elektrik San. A.Ş.	DCC Code &ELU	Lang. English
TENDER No.						Doc. No.	1YTU220471K01	Page W02
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# Terminal diagram -XDA1



TOTAL TERMINALS COUNT: 7 PCS  
 TERMINAL TYPE: URTK/S TERMINAL

Based on			Prepared name	Date	date	Title	Order No.	= INC1
Customer			Checked name	Approved name		TERMINALS = INC1+LV-XDA1	Project SAP number	+ LV
Customer name			Project name			36 kV Switchgear Sample MV SWITCHGEAR	DCC Code	Lang. English
Contract No.			TENDER No.			ABB	Doc. No.	Page X06
Rev. Code	Date	Name				ABB Elektrik San. A.Ş.	1YTU220471K01	Pages 47