WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

CUSTOMER : **KGJ Šamorín (IFT)**

ORDER : **OPP-21-5023205** ITEM : **10000**

PROJECT : **ZOBA_211213170112_001**

SWITCHGEAR NAME : **ZOBA_211213170112_001**

SWITCHGEAR TYPE : **UniSec 24 kV - 50 Hz - 630 A - 16 kA x1 s**

DOCUMENT : **General Arrangement Drawings**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | COVER SHEET | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | General Arrangement Drawings | Approved | Eng. dept. | Ref. designation | | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0001 | Page A01 |
| | | ZOBA_211213170112_001 | | | | | Cont A03 |

# INDEX OF SHEETS

| SHEET | DESCRIPTION | REVISION |
|---|---|---|
| A01 | COVER SHEET | A |
| A03 | INDEX OF SHEETS | A |
| A10 | REFERENCE DESIGNATIONS | A |
| C01 | GENERAL CHARACTERISTICS | A |
| D01 | SINGLE LINE DIAGRAM | A |
| F01 | FRONT VIEW DRAWING | A |
| G01 | INSTALLATIONS RULES | A |
| H01 | FOUNDATION FRAMES DRAWING | A |
| J01 | FOUNDATION FRAME DRAWINGS WITH DETAILS | A |
| J02 | FOUNDATION FRAME DRAWINGS WITH DETAILS | A |
| L01 | SECTION VIEW | A |
| L02 | SECTION VIEW | A |
| L03 | SECTION VIEW | A |

# REVISION LIST

| INDEX REV | DESCRIPTION | DATE | PREPARED | APPROVED |
|---|---|---|---|---|
| A | FIRST ISSUE | 13. 12. 2021 | Aut. generat. | Eng. dept. |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| L | | | | |

# STANDARD REFERENCES

*THIS DRAWING IS IN COMPLIANCE WITH THE FOLLOWING INTERNATIONAL STANDARDS:*
*- IEC 60617: GRAPHICAL SYMBOLS FOR DIAGRAMS*
*- IEC 61082: PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY*
*- IEC 81346: STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS*

*THE DIAGRAM INDICATES COMPONENTS HAVING A MOVABLE PART IN THE FOLLOWING POSITION OR OPERATIONAL STATE (IEC 61082-1 7.4.4.1):*
*- C.BREAKER OR CONTACTOR IN OPEN (OFF) AND SERVICE POSITION*
*- DISCONNECTORS AND EARTHING SWITCH IN OPEN POSITION*
*- WITHDRAWABLE VOLTAGE TRANSFORMERS IN CONNECTED POSITION*
*- CLOSING SPRINGS OF C.BREAKER IN DISCHARGED POSITION*
*- CONNECTOR OF C.BREAKER AUXILIARY CIRCUITS IN CONNECTED POSITION*
*- CIRCUITS IN DE-ENERGIZED STATE*
*- RELAYS IN NON-ACTUATED STATE*
*- GAS PRESSURE AT RATED SERVICE VALUE*
*- FUSES NOT OPERATED*
*- DOORS AND PRESSURE RELIEF FLAPS IN CLOSED POSITION*

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# REFERENCE DESIGNATION OF OBJECTS IN ELECTRICAL DOCUMENTS

(IN COMPLIANCE WITH STANDARD IEC 81346-2 AND ABB TECHNICAL STANDARD 2NBA000001)

| DESIGNATION | DESCRIPTION |
|---|---|
| -AA | MULTIFUNCTION UNIT (CENTRAL UNIT) |
| -BAR | VOLTAGE PROTECTION RELAY |
| -BAS1,2,3 | VOLTAGE SENSORS |
| -BAT1,2,3 | VOLTAGE TRANSFORMERS |
| -BAT4,5,6 | ADDITIONAL VOLTAGE TRANSFORMERS |
| -BCD | DIFFERENTIAL PROTECTIVE RELAY |
| -BCF | FEEDER PROTECTION RELAY |
| -BCG | GENERATOR PROTECTION RELAY |
| -BCM | MOTOR PROTECTION RELAY |
| -BCN | NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -BCP | TRANSFORMER PROTECTION RELAY |
| -BCR | CURRENT PROTECTION RELAY |
| -BCS1,2,3 | CURRENT SENSORS |
| -BCT1,2,3 | CURRENT TRANSFORMERS |
| -BCT4,5,6 | ADDITIONAL CURRENT TRANSFORMERS |
| -BCT7,8,9 | ADDITIONAL CURRENT TRANSFORMERS |
| -BCZ | DISTANCE PROTECTION RELAY |
| -BEF | FREQUENCY PROTECTION RELAY |
| -BER | SUPERVISION RELAYS |
| -BES | SYNCHRONIZING RELAY |
| -BET | THERMAL PROTECTION RELAY |
| -BUS1,2,3 | COMBINED CURRENT AND VOLTAGE SENSORS |
| -FA1,2,3 | SURGE ARRESTERS |
| -FCF1,2,3 | MEDIUM VOLTAGE FUSES |
| -GA | GENERATORS |
| -KFL | LOCKOUT RELAY |
| -KZA | NETWORK SWITCHES (COMMUNICATION) |
| -MAD | MOTOR FOR ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR -QBS |
| -MAE | MOTOR FOR ELECTRICAL OPERATION OF EARTHING SWITCH -QCE |
| -MAS | MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -MAT | MOTOR FOR ELECTRICAL OPERATION OF TRUCK RACKING-IN/OUT |
| -MBC | CLOSING RELEASE OF CIRCUIT-BREAKER |
| -MBC4 | CLOSING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBO1 | FIRST OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO2 | SECOND OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO3 | OPENING SOLENOID FOR OVERCURRENT RELEASE OF CIRCUIT-BREAKER |
| -MBO4 | OPENING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBU | UNDERVOLTAGE RELEASE OF CIRCUIT-BREAKER |
| -MBU4 | UNDERVOLTAGE RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -PFV | VOLTAGE INDICATORS |
| -PFV1 | VOLTAGE INDICATOR ON FEEDER SIDE |
| -PFV2 | VOLTAGE INDICATOR ON BUSBAR SIDE |
| -PGA | AMMETERS |
| -PGF | FREQUENCYMETERS |
| -PGJ | ACTIVE ENERGY METERS |
| -PGK | REACTIVE ENERGY METERS |
| -PGM | MULTIFUNCTION INDICATORS |
| -PGQ | VARMETERS |
| -PGV | VOLTMETERS |
| -PGW | WATTMETERS |
| -QAB | CIRCUIT-BREAKERS |
| -QAC | CONTACTORS FOR POWER |
| -QAM | MOTOR STARTERS |
| -QAV | VARIABLE SPEED DRIVES (VSD) |
| -QBD | DISCONNECTORS |
| -QBF | FUSE SWITCH |
| -QBH | MANUAL CIRCUIT-BREAKERS |
| -QBS | SWITCH-DISCONNECTORS |
| -QCE | EARTHING SWITCH |
| -RAA | FERRO-RESONANCE DUMPING RESISTOR |
| -RB | UNINTERRUPTIBLE POWER SUPPLIES (UPS) |
| -RLE1 | ELECTROMECHANICAL LOCK PREVENTING CIRCUIT-BREAKER CLOSING |
| -RLE2 | ELECTROMECHANICAL LOCK PREVENTING TRUCK RACKING-IN/OUT |
| -RLE3 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF EARTHING SWITCH |
| -RLE4 | ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -RLE5 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF LINE SWITCH |
| -RLE8 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF BUSBAR EARTHING SWITCH |
| -SFA | AMMETRIC SWITCHES |
| -SFV | VOLTMETRIC SWITCHES |
| -TA | POWER TRANSFORMERS |
| -XDM | SEALABLE TERMINAL BLOCK FOR MEASUREMENT |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# CHARACTERISTICS

(IN COMPLIANCE WITH STANDARD IEC 62271-200)

| | | |
|---|---|---|
| SWITCHGEAR VERSION | = COMPLETE | |
| RATED VOLTAGE (Un) | = 24 | kV |
| OPERATING VOLTAGE | = 22 | kV |
| RATED FREQUENCY (fr) | = 50 | Hz |
| RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE (Up) | = 125 | kV |
| RATED POWER FREQUENCY WITHSTAND VOLTAGE (Ud) | = 50 | kV |
| RATED CURRENT OF MAIN BUSBARS (Ir) | = 630 | A |
| RATED SHORT-TIME WITHSTAND CURRENT (Ik) | = 16 | kA |
| RATED PEAK WITHSTAND CURRENT (Ip) | = 40 | kA |
| RATED DURATION OF SHORT CIRCUIT (tk) | = 1 | s |
| INTERNAL ARC CLASSIFICATION (IAC) | = AFLR | |
| ARC TEST CURRENT (Ia) | = 16 | kA x 1s |
| AMBIENT CONDITION | = NORMAL | |
| AMBIENT AIR TEMPERATURE | = -5°C...+40°C | |
| DEGREE OF PROTECTION (OPERATION SEATS EXCLUDED) | = IP3X | |
| DEGREE OF PROTECTION WITH OPEN DOORS | = IP2X | |
| RATED SUPPLY VOLTAGE OF CONTROL AND SIGNALLING CIRCUITS (Ua) | = 24VDC | |
| RATED SUPPLY VOLTAGE OF SPRING CHARGING MOTOR (Ua) | = 24VDC | |
| RATED SUPPLY VOLTAGE OF LIGHTING AND HEATING CIRCUITS (Ua) | = 230VAC | |
| RATED VOLTAGE OF LOW VOLTAGE CONDUCTORS (Uo/U) | = 450/750V | |
| TYPE OF CABLE FOR LOW VOLTAGE CONDUCTORS | = PVC | |
| CROSS-SECTION OF CONDUCTORS FOR VOLTAGE CIRCUITS | = 1.5 mm² | |
| CROSS-SECTION OF OTHER CONDUCTORS (CONTROL AND SIGNALLING CIRCUITS) | = 1 mm² | |
| CROSS-SECTION OF CONDUCTORS FOR INTERCONNECTIONS | = 2.5 mm² | |
| CROSS-SECTION OF CONDUCTORS FOR INTERCONNECTIONS OF SUPPLY VOLTAGE | = 4 mm² | |

# NOTES

| | | | |
|---|---|---|---|
| COLOUR OF FRONT DOORS | = RAL 7035 | | |
| SIDEWALLS PAINTED | = YES | SIDES | = L+R |

# AUTOMATION AND CONTROL

| | |
|---|---|
| ETHERNET COMMUNICATION PROTOCOL | = |
| SERIAL COMMUNICATION PROTOCOL | = |
| IEC61850 EDITION | = 6F |
| COMMUNICATION MEDIA | = |

# SUPPLIED IMPLEMENTS

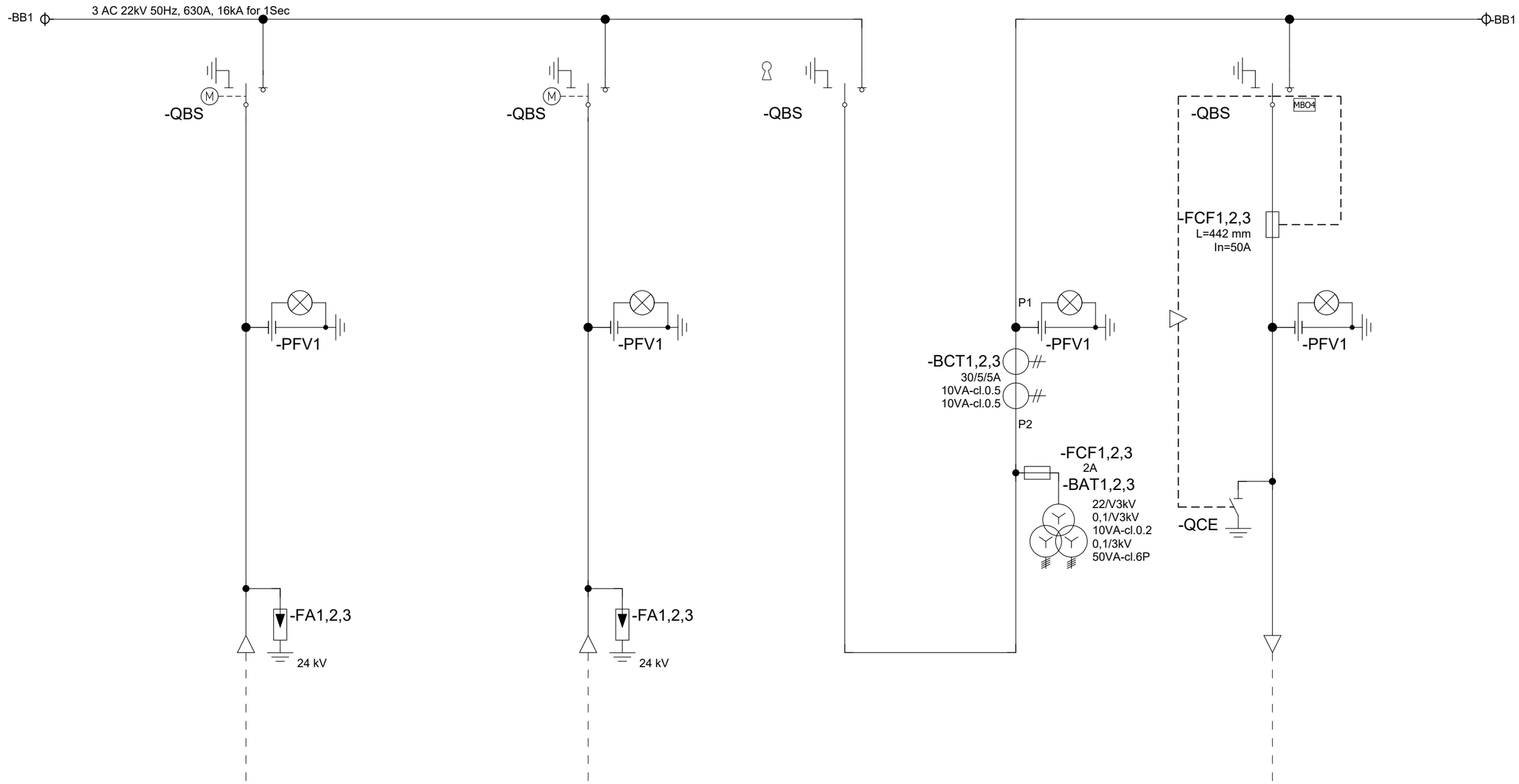
MIMIC DIAGRAM

COUPLE OF SIDES CLOSING

BOTTOM CLOSURE

ISOLATOR OPERATING LEVER

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

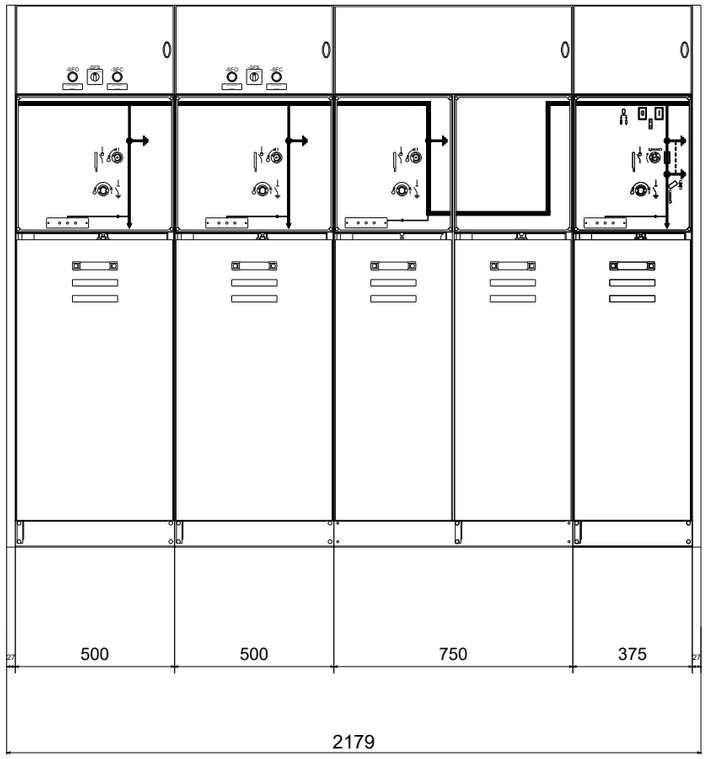



| Panel | POLE01 | POLE02 | POLE03 | POLE04 |
|---|---|---|---|---|
| Panel Name | SDC | SDC | SDM | SFC |
| Description | PRÍVOD 1 | PRÍVOD 2 | MERANIE | TRAFO |
| Rated Current | 630A | 630A | 630A | 100A |
| Max. Cable Size | 3x1x300mm² | 3x1x300mm² | - | 3x1x95mm² |
| Circuit Diagram | 0100 | 0100 | 0101 | 0102 |

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: SINGLE LINE DIAGRAM<br>General Arrangement Drawings | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0001 | Page: D01 | |
| | | | | Cont: F01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# FRONT VIEW



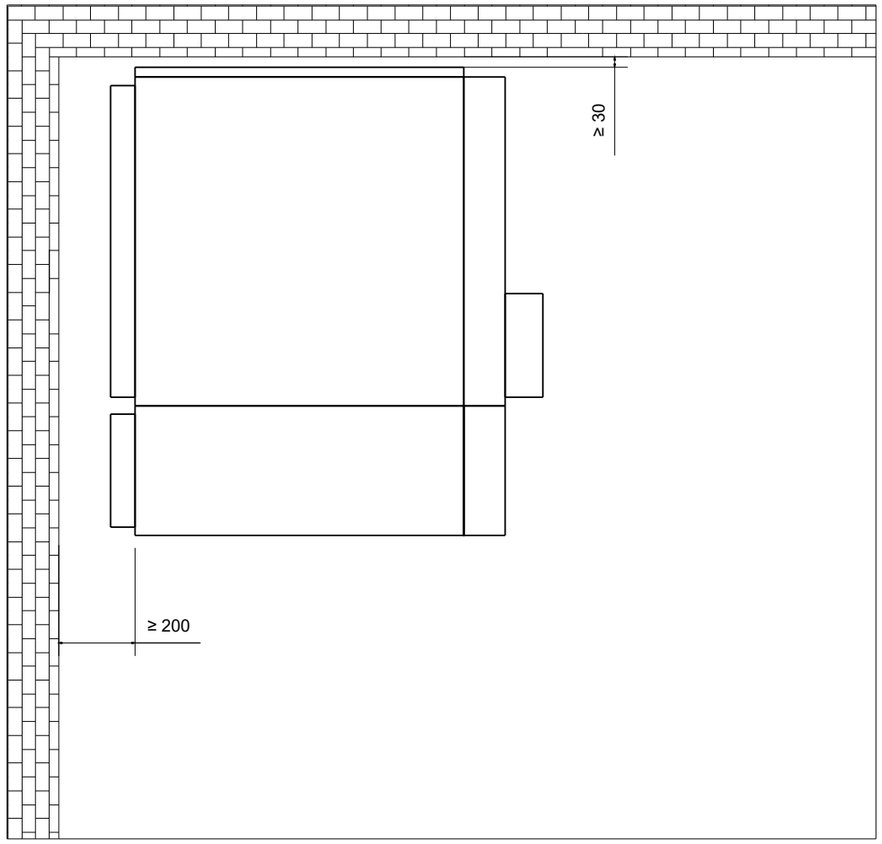

| Panel | POLE01 | POLE02 | POLE03 | POLE04 |
|---|---|---|---|---|
| Panel Type | SDC | SDC | SDM | SFC |
| Description | PRÍVOD 1 | PRÍVOD 2 | MERANIE | TRAFO |

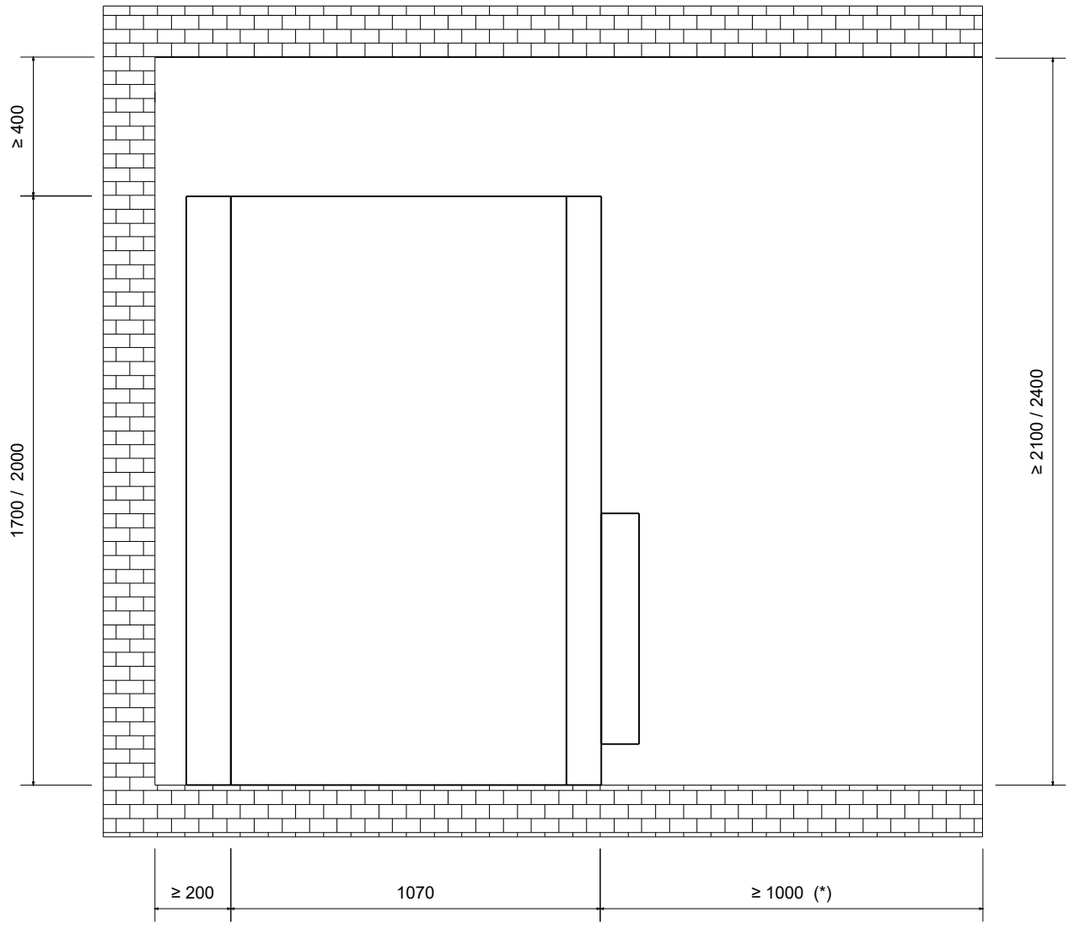
| | | | | | |
|---|---|---|---|---|---|
| Based on | Title | FRONT VIEW DRAWING | Prepared | Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A |
| | | General Arrangement Drawings | Approved | Eng. dept. | Ref. designation | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. 0001 | Page F01 |
| | | ZOBA_211213170112_001 | | | | Cont G01 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# RULES FOR INSTALLATION IN THE ROOM

MINIMUM DISTANCES TO BE RESPECTED DURING INSTALLATION



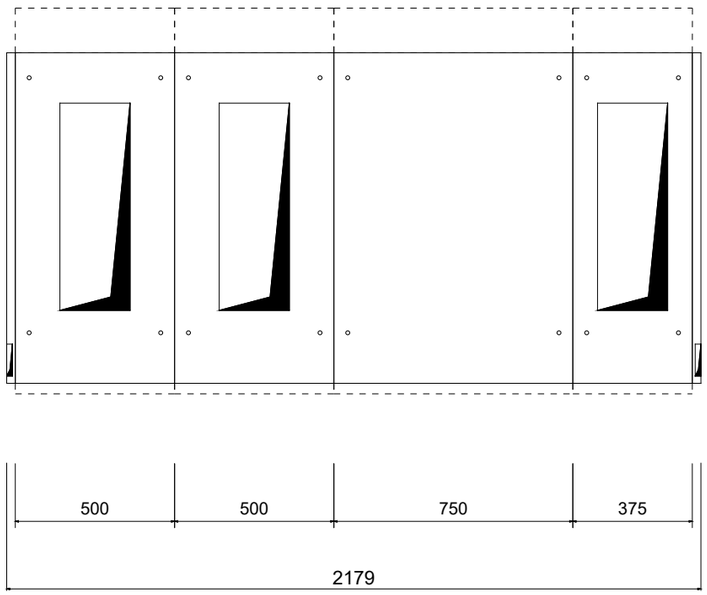

(*) 1300 mm at least for units with circuit-breaker

- IAC A-FLR SOLUTION UP TO 16kA 1sec WITH FILTERS
- NO ACCESS RESTRICTIONS TO THE SWG ROOM WHILE SWG IS IN SERVICE

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: INSTALLATIONS RULES<br>General Arrangement Drawings | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0001 | Page: G01 | |
| | | | | Cont: H01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# FOUNDATION FRAMES

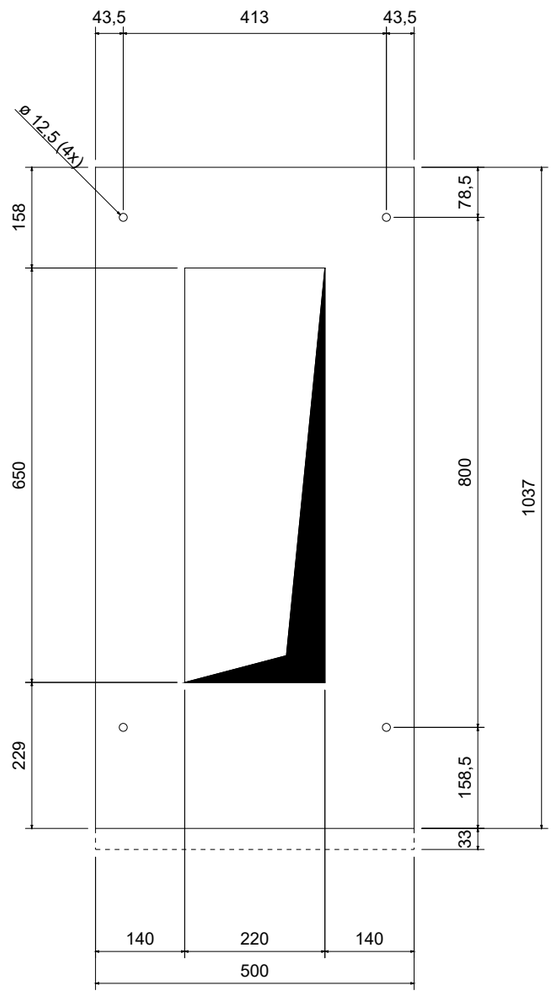



| Panel | POLE01 | POLE02 | POLE03 | POLE04 |
|---|---|---|---|---|
| Panel Type | SDC | SDC | SDM | SFC |
| Description | PRÍVOD 1 | PRÍVOD 2 | MERANIE | TRAFO |

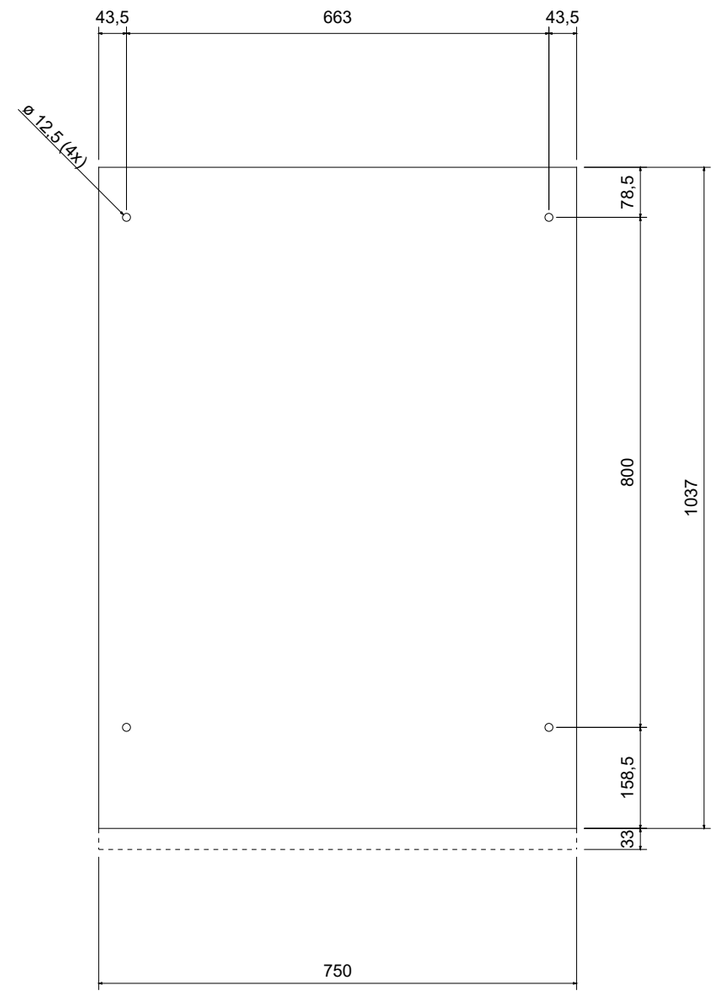
| | | | | | |
|---|---|---|---|---|---|
| Based on | Title | FOUNDATION FRAMES DRAWING | Prepared | Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A |
| | | General Arrangement Drawings | Approved | Eng. dept. | Ref. designation | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. 0001 | Page H01 |
| | | ZOBA_211213170112_001 | | | | Cont J01 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# FOUNDATION FRAMES DETAILS




PANELS: POLE01, POLE02

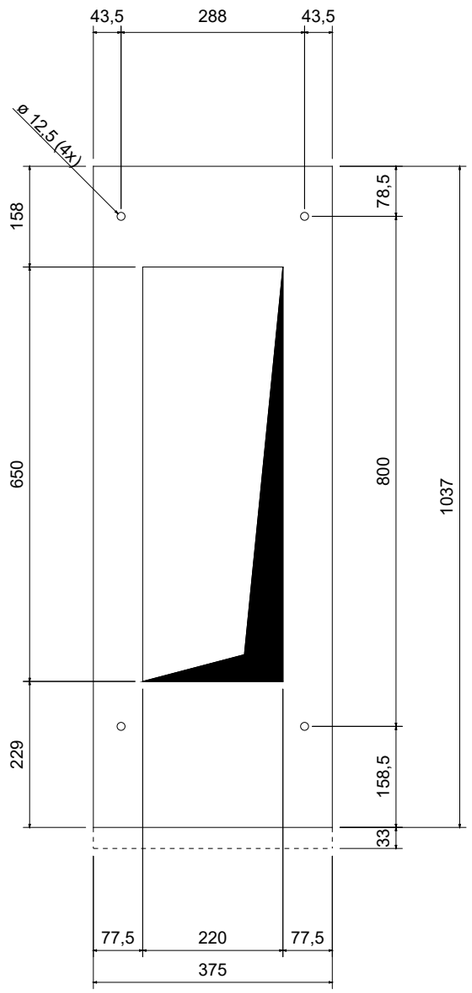



PANELS: POLE03

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title FOUNDATION FRAME DRAWINGS WITH DETAILS<br>General Arrangement Drawings | Prepared Aut. generat.<br>Approved Eng. dept. | Project No./Item OPP-21-5023205 10000<br>Ref. designation | Revision A<br>Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0001 | Page J01<br>Cont J02 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# FOUNDATION FRAMES DETAILS

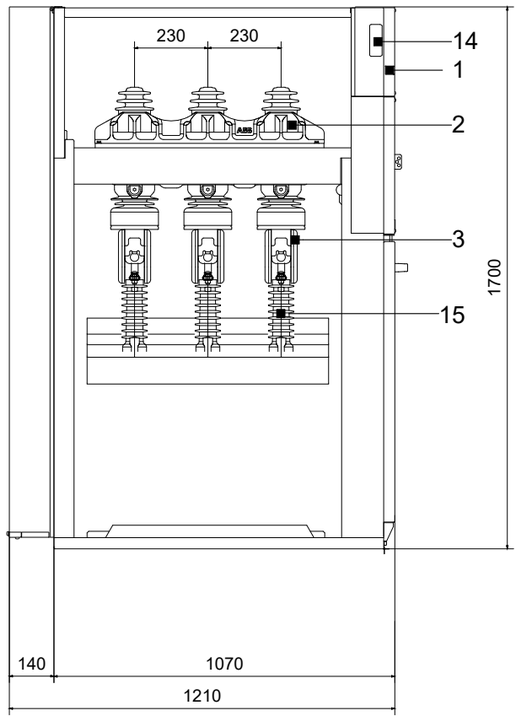



PANELS: POLE04

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title FOUNDATION FRAME DRAWINGS WITH DETAILS | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A |
| | General Arrangement Drawings | Approved Eng. dept. | Ref. designation | Lang en |
| | Project name KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | Doc. No. 0001 | Page J02 |
| | ZOBA_211213170112_001 | | | Cont L01 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# SECTION VIEW



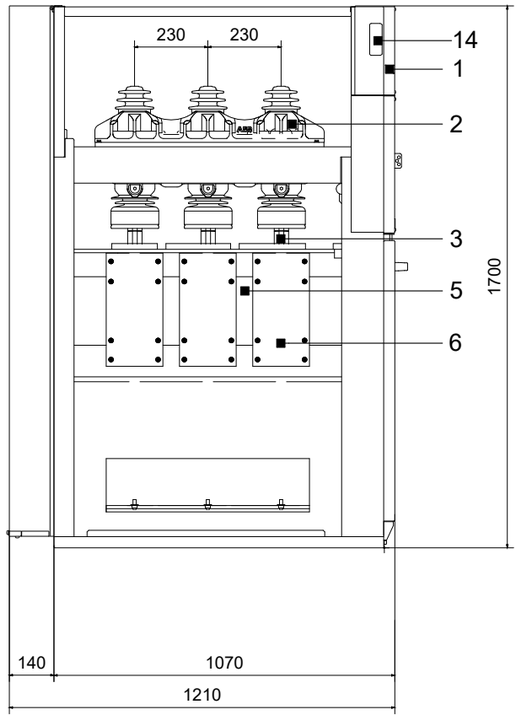

| | |
|---|---|
| - | DISTANCE BETWEEN THE CABLE CONNECTION POINT AND THE FLOOR = 920mm |
| 1 | LVC |
| 2 | SWITCH DISCONNECTOR |
| 3 | LOWER COPPER BARS |
| 14 | INTERPANEL WIRING PASSAGE |
| 15 | SURGE ARRESTER |

Panel : POLE01, POLE02

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title | SECTION VIEW | Prepared | Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A |
| | | General Arrangement Drawings | Approved | Eng. dept. | Ref. designation | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. 0001 | Page L01 |
| | | ZOBA_211213170112_001 | | | | Cont L02 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# SECTION VIEW



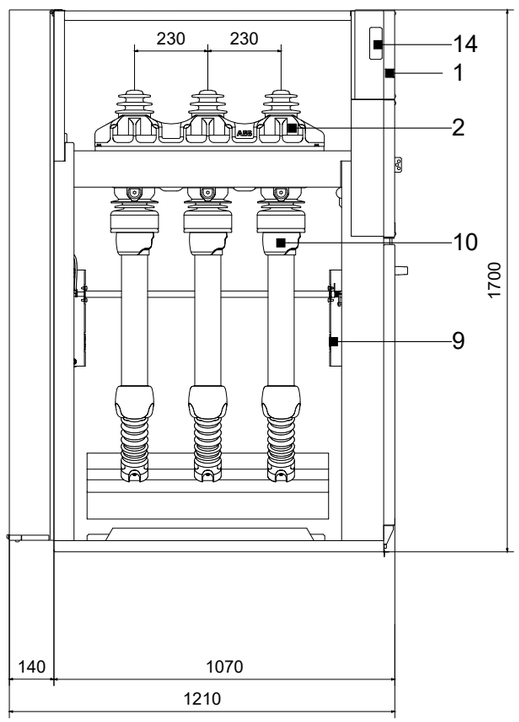

Panel : POLE03

| | |
|---|---|
| - | DISTANCE BETWEEN THE CABLE TERMINAL AND THE FLOOR = 525mm |
| 1 | LVC |
| 2 | SWITCH DISCONNECTOR |
| 3 | LOWER COPPER BARS |
| 5 | CURRENT TRANSFORMER |
| 6 | VOLTAGE TRANSFORMER |
| 14 | INTERPANEL WIRING PASSAGE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | SECTION VIEW | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | General Arrangement Drawings | Approved | Eng. dept. | Ref. designation | | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0001 | Page L02 |
| | | ZOBA_211213170112_001 | | | | | Cont L03 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# SECTION VIEW




| | |
|---|---|
| - | DISTANCE BETWEEN THE CABLE CONNECTION POINT AND THE FLOOR = 450mm |
| 1 | LVC |
| 2 | SWITCH DISCONNECTOR |
| 9 | EARTHING-SWITCH |
| 10 | FUSES |
| 14 | INTERPANEL WIRING PASSAGE |

Panel : POLE04

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: SECTION VIEW | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | General Arrangement Drawings | Approved: Eng. dept. | Ref. designation | Lang: en | |
| | Project name: KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | Doc. No.: 0001 | Page: L03 | |
| | ZOBA_211213170112_001 | | | Cont: =ICD&ICD/A01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

CUSTOMER : **KGJ Šamorín (IFT)**

ORDER : **OPP-21-5023205** ITEM : **10000**

PROJECT : **ZOBA_211213170112_001**

SWITCHGEAR NAME : **ZOBA_211213170112_001**

SWITCHGEAR TYPE : **UniSec 24 kV - 50 Hz - 630 A - 16 kA x1 s**

DOCUMENT : **Interconnections**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | COVER SHEET | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Interconnections | Approved | Eng. dept. | Ref. designation | | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0400 | Page A01 |
| | | ZOBA_211213170112_001 | | | | | Cont A03 |

# INDEX OF SHEETS

| SHEET | DESCRIPTION | REVISION |
|---|---|---|
| A01 | COVER SHEET | A |
| A03 | INDEX OF SHEETS | A |
| Q01 | INTERCONNECTION DIAGRAM | A |

# REVISION LIST

| INDEX REV | DESCRIPTION | DATE | PREPARED | APPROVED |
|---|---|---|---|---|
| A | FIRST ISSUE | 13. 12. 2021 | Aut. generat. | Eng. dept. |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| L | | | | |

# STANDARD REFERENCES

*THIS DRAWING IS IN COMPLIANCE WITH THE FOLLOWING INTERNATIONAL STANDARDS:*
*- IEC 60617: GRAPHICAL SYMBOLS FOR DIAGRAMS*
*- IEC 61082: PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY*
*- IEC 81346: STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS*

*THE DIAGRAM INDICATES COMPONENTS HAVING A MOVABLE PART IN THE FOLLOWING POSITION OR OPERATIONAL STATE (IEC 61082-1 7.4.4.1):*
*- C.BREAKER OR CONTACTOR IN OPEN (OFF) AND SERVICE POSITION*
*- DISCONNECTORS AND EARTHING SWITCH IN OPEN POSITION*
*- WITHDRAWABLE VOLTAGE TRANSFORMERS IN CONNECTED POSITION*
*- CLOSING SPRINGS OF C.BREAKER IN DISCHARGED POSITION*
*- CONNECTOR OF C.BREAKER AUXILIARY CIRCUITS IN CONNECTED POSITION*
*- CIRCUITS IN DE-ENERGIZED STATE*
*- RELAYS IN NON-ACTUATED STATE*
*- GAS PRESSURE AT RATED SERVICE VALUE*
*- FUSES NOT OPERATED*
*- DOORS AND PRESSURE RELIEF FLAPS IN CLOSED POSITION*

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

| COLOUR | CROSS SECTION [ mm² ] | POLE01 | POLE02 | POLE03 | POLE04 | |
|---|---|---|---|---|---|---|
| bk | 4 | | | | -XDI1 1 2 | AUXILIARY POWER SUPPLY 24VDC AUXILIARY CIRCUITS |
| bk | 4 | | | | -XDI1 3 4 | |
| bk | 4 | -XDI3 1 2 | -XDI3 1 2 | | | AUXILIARY POWER SUPPLY 24VDC MOTOR DISCONNECTOR |
| bk | 4 | -XDI3 3 4 | -XDI3 3 4 | | | |
| bk | 4 | -XDI4 1 2 | -XDI4 1 2 | -XDI4 1 2 | -XDI4 1 2 | AUXILIARY POWER SUPPLY 230VAC HEATING |
| bk | 4 | -XDI4 3 4 | -XDI4 3 4 | -XDI4 3 4 | -XDI4 3 4 | |

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title INTERCONNECTION DIAGRAM<br>Interconnections | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0400 | Page Q01 | |
| | | | | Cont =POLE01&CD/A01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

CUSTOMER : **KGJ Šamorín (IFT)**

ORDER : **OPP-21-5023205** ITEM : **10000**

PROJECT : **ZOBA_211213170112_001**

SWITCHGEAR NAME : **ZOBA_211213170112_001**

DESIGNATION OF UNIT : **POLE01,POLE02**

TYPE OF UNIT : **SDC**

DOCUMENT : **Circuit Diagram**

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title COVER SHEET<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE01,POLE02 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0100 | Page A01 | |
| | | | | Cont A03 | |

# INDEX OF SHEETS

| SHEET | DESCRIPTION | REVISION |
|---|---|---|
| A01 | COVER SHEET | A |
| A03 | INDEX OF SHEETS | A |
| A10 | REFERENCE DESIGNATIONS | A |
| A11 | REFERENCE DESIGNATIONS | A |
| A12 | REFERENCE DESIGNATIONS | A |
| C01 | MAIN CIRCUITS | A |
| C04 | MAIN CIRCUITS | A |
| D01 | DISTRIBUTION OF AUXILIARY CIRCUITS | A |
| G01 | DISTRIBUTION OF AUXILIARY CIRCUITS | A |
| L01 | DRIVE CIRCUITS (MOTOR) | A |
| Q02 | AVAILABLE CONTACTS | A |
| Q04 | AVAILABLE CONTACTS | A |
| X01 | TERMINAL BLOCKS | A |
| X02 | TERMINAL BLOCKS | A |
| X03 | TERMINAL BLOCKS | A |
| X04 | TERMINAL BLOCKS | A |
| Z01 | PARTS LIST | A |
| Z10 | MV DEVICES CHARACTERISTICS | A |

# REVISION LIST

| INDEX REV | DESCRIPTION | DATE | PREPARED | APPROVED |
|---|---|---|---|---|
| A | FIRST ISSUE | 13. 12. 2021 | Aut. generat. | Eng. dept. |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| L | | | | |

# STANDARD REFERENCES

*THIS DRAWING IS IN COMPLIANCE WITH THE FOLLOWING INTERNATIONAL STANDARDS:*
*- IEC 60617: GRAPHICAL SYMBOLS FOR DIAGRAMS*
*- IEC 61082: PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY*
*- IEC 81346: STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS*

*THE DIAGRAM INDICATES COMPONENTS HAVING A MOVABLE PART IN THE FOLLOWING POSITION OR OPERATIONAL STATE (IEC 61082-1 7.4.4.1):*
*- C.BREAKER OR CONTACTOR IN OPEN (OFF) AND SERVICE POSITION*
*- DISCONNECTORS AND EARTHING SWITCH IN OPEN POSITION*
*- WITHDRAWABLE VOLTAGE TRANSFORMERS IN CONNECTED POSITION*
*- CLOSING SPRINGS OF C.BREAKER IN DISCHARGED POSITION*
*- CONNECTOR OF C.BREAKER AUXILIARY CIRCUITS IN CONNECTED POSITION*
*- CIRCUITS IN DE-ENERGIZED STATE*
*- RELAYS IN NON-ACTUATED STATE*
*- GAS PRESSURE AT RATED SERVICE VALUE*
*- FUSES NOT OPERATED*
*- DOORS AND PRESSURE RELIEF FLAPS IN CLOSED POSITION*

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# REFERENCE DESIGNATION OF OBJECTS IN ELECTRICAL DOCUMENTS

(IN COMPLIANCE WITH STANDARD IEC 81346-2 AND ABB TECHNICAL STANDARD 2NBA000001)

| DESIGNATION | DESCRIPTION |
|---|---|
| -AA | MULTIFUNCTION UNIT (CENTRAL UNIT) |
| -BAD1, -BAD4 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L1 |
| -BAD2, -BAD5 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L2 |
| -BAD3, -BAD6 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L3 |
| -BAR | VOLTAGE PROTECTION RELAY |
| -BAS1 | VOLTAGE SENSOR LOCATED ON PHASE L1 |
| -BAS2 | VOLTAGE SENSOR LOCATED ON PHASE L2 |
| -BAS3 | VOLTAGE SENSOR LOCATED ON PHASE L3 |
| -BAT1 | VOLTAGE TRANSFORMER LOCATED ON PHASE L1 |
| -BAT2 | VOLTAGE TRANSFORMER LOCATED ON PHASE L2 |
| -BAT3 | VOLTAGE TRANSFORMER LOCATED ON PHASE L3 |
| -BCD | DIFFERENTIAL PROTECTIVE RELAY |
| -BCF | FEEDER PROTECTION RELAY |
| -BCG | GENERATOR PROTECTION RELAY |
| -BCM | MOTOR PROTECTION RELAY |
| -BCN | NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -BCP | TRANSFORMER PROTECTION RELAY |
| -BCR | CURRENT PROTECTION RELAY |
| -BCS1 | CURRENT SENSOR LOCATED ON PHASE L1 |
| -BCS2 | CURRENT SENSOR LOCATED ON PHASE L2 |
| -BCS3 | CURRENT SENSOR LOCATED ON PHASE L3 |
| -BCT1, -BCT4 | CURRENT TRANSFORMER LOCATED ON PHASE L1 |
| -BCT2, -BCT5 | CURRENT TRANSFORMER LOCATED ON PHASE L2 |
| -BCT3, -BCT6 | CURRENT TRANSFORMER LOCATED ON PHASE L3 |
| -BCZ | DISTANCE PROTECTION RELAY |
| -BEF | FREQUENCY PROTECTION RELAY |
| -BER | SUPERVISION RELAYS |
| -BES | SYNCHRONIZING RELAY |
| -BET | THERMAL PROTECTION RELAY |
| -BGB1...-BGB3 | POSITION SWITCHES OF CIRCUIT-BREAKER |
| -BGB5 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE ENERGIZED |
| -BGB6 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE EXCLUDED MECHANICALLY |
| -BGD | POSITION SWITCH OF L.V. INSTRUMENT COMPARTMENT DOOR |
| -BGD1 | POSITION SWITCH OF CIRCUIT-BREAKER COMPARTMENT DOOR |
| -BGD2 | POSITION SWITCH OF CABLE COMPARTMENT DOOR |
| -BGE1 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN OPEN POSITION |
| -BGE2 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN CLOSED POSITION |
| -BGF | POSITION SWITCHES OF MEDIUM VOLTAGE FUSES |
| -BGI7 | POSITION SWITCH SIGNALLING DICONNECTOR (OR SWITCH-DISCONNECTOR) -QBD NOT IN MANUAL OPERATION |
| -BGI41... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN FEEDER POSITION |
| -BGI43... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN EARTH POSITION |
| -BGK | POSITION SWITCH OF KEY LOCK |
| -BGL1 | POSITION SWITCH OF ELECTROMECHANICAL LOCK -RLE1 |
| -BGS1, -BGS2 | POSITION SWITCHES OF CIRCUIT-BREAKER SPRINGS |
| -BGS6, -BGS7 | POSITION SWITCHES OF THE SPRINGS OF SWITCH-DISCONNECTOR FOR CONTROL CIRCUITS OF THE MOTOR OPERATOR |
| -BGT1 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT2 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN TEST POSITION |
| -BGT3 | POSITION SWITCH ON TRUCK SIGNALLING TRUCK NOT IN ISOLATING TRAVEL POSITION |
| -BGT4 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT5 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN TEST POSITION |
| -BM | HYGROSTAT |
| -BPA4 | PRESSURE SWITCH LOCATED IN CABLE COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPA5 | PRESSURE SWITCH LOCATED IN CIRCUIT-BREAKER COMPARTMENT |
| -BPA6 | PRESSURE SWITCH LOCATED IN BUSBAR OR IN BUSBAR AND CIRCUIT-BREAKER COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPS | PRESSURE SWITCH LOCATED ON CIRCUIT-BREAKER |
| -BR | FLAME DETECTORS, SMOKE DETECTORS |
| -BT | THERMOSTAT |
| -BU | BUCHHOLZ RELAY |
| -BX1 | UNIT WITH SENSORS FOR DETECTION OF INTERNAL ARCING |
| -BX2 | ADDITIONAL CURRENT SENSING UNIT FOR DETECTION OF INTERNAL ARCING |
| -BUS | MULTIFUNCTION SENSORS |
| -BUS1 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L1 |
| -BUS2 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L2 |
| -BUS3 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L3 |
| -CA | CAPACITORS |
| -EA1 | LIGHTING LAMP LOCATED IN L.V. INSTRUMENT COMPARTMENT |
| -EA2 | LIGHTING LAMP LOCATED IN CABLE COMPARTMENT |
| -EA4 | LIGHTING LAMP LOCATED IN CIRCUIT BREAKER COMPARTIMENT |
| -EB1 | HEATER LOCATED IN CABLE COMPARTMENT |
| -EB3 | HEATER LOCATED IN MOTOR CABINET |
| -EB5 | HEATER LOCATED IN L.V. INSTRUMET COMPARTMENT |
| -EB8 | HEATERS LOCATED IN RIGHT SIDE OF THE OPERATING MECHANISM ENCLOSURE |
| -FA1 | SURGE ARRESTER LOCATED ON PHASE L1 |
| -FA2 | SURGE ARRESTER LOCATED ON PHASE L2 |
| -FA3 | SURGE ARRESTER LOCATED ON PHASE L3 |
| -FCD | FUSE-DISCONNECTORS FOR PROTECTION OF AUXILIARY CIRCUITS |
| -FCF1 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L1 |
| -FCF2 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L2 |
| -FCF3 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L3 |
| -FCM1 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF SPRINGS CHARGING MOTOR ON MAIN CIRCUIT-BREAKER |
| -FCM2 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CONTROL CIRCUITS |
| -FCM3 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUIT-BREAKER SPRINGS CHARGING MOTOR |
| -FCM4 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR OPERATION |
| -FCM5 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -FCM6 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF BROKEN DELTA SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -FCM7 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, FIRST WINDING |
| -FCM8 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, SECOND WINDING |
| -FCM9 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF PROTECTION RELAYS OR MULTIFUNCION UNITS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | | Title | REFERENCE DESIGNATIONS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision | A |
| | | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE01,POLE02 | Lang | en |
| | | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0100 | Page | A10 |
| | | | ZOBA_211213170112_001 | | | | | Cont | A11 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

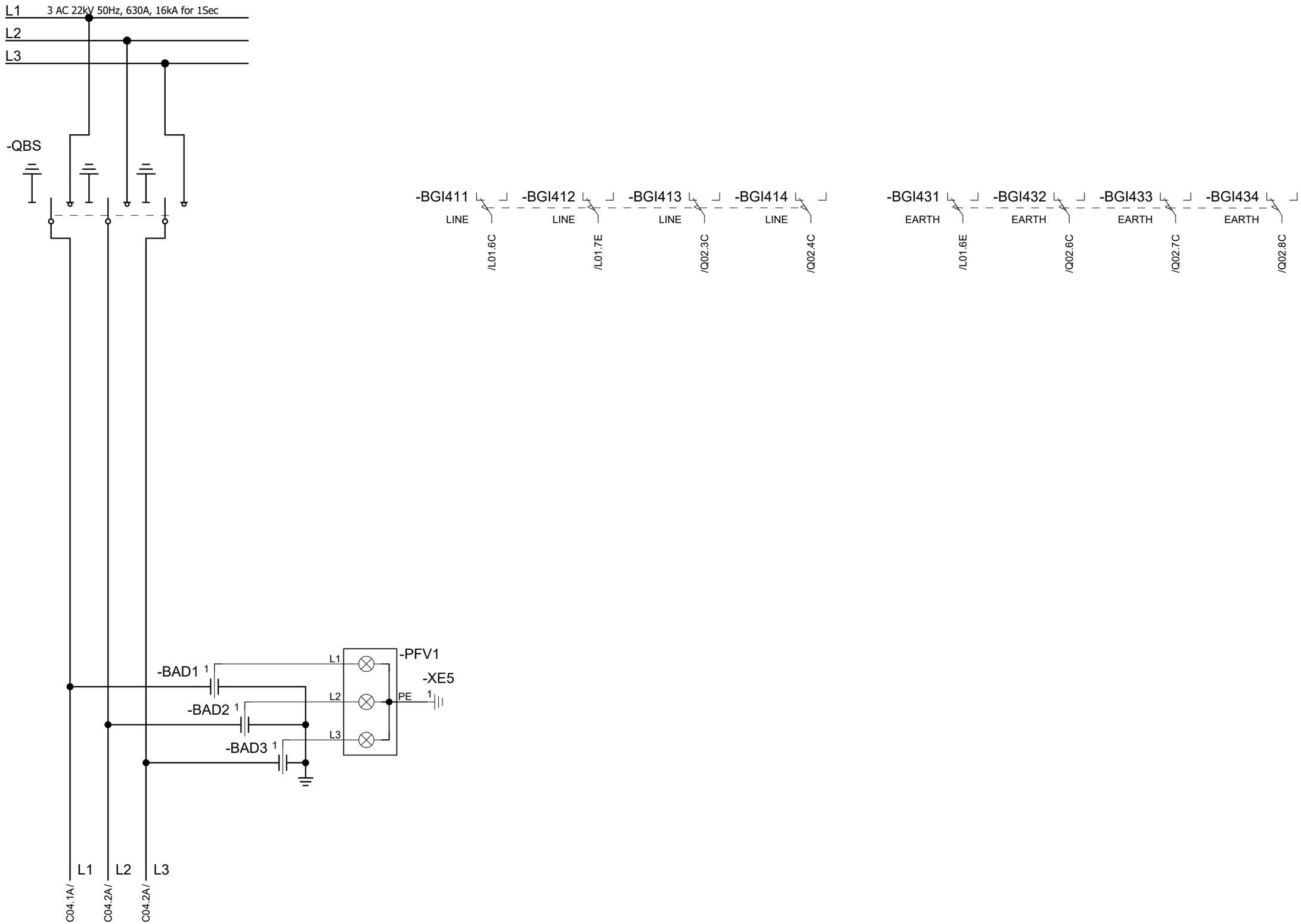
| | |
|---|---|
| -FCT | THERMAL OVERLOAD RELEASES |
| -GA | GENERATORS |
| -KFA1 | AUXILIARY RELAY SIGNALLING LOW GAS PRESSURE |
| -KFA2 | AUXILIARY RELAY SIGNALLING INSUFFICIENT GAS PRESSURE |
| -KFA3...-KFA9 | AUXILIARY RELAYS OR CONTACTORS |
| -KFC | CLOSING RELAYS OR CONTACTORS |
| -KFI | INTEGRATED CIRCUITS |
| -KFL | LOCKOUT RELAY |
| -KFM | MICROPROCESSORS |
| -KFN | ANTIPUMPING RELAYS |
| -KFO | OPENING RELAYS OR CONTACTORS |
| -KFP | PROGRAMMABLE LOGIC CONTROLLERS (PLC) |
| -KFR | RECLOSING RELAYS |
| -KFS | SYNCHRONIZING DEVICES |
| -KFT | AUXILIARY TIME RELAYS, DELAY ELEMENTS |
| -KFU | CONTROL UNIT |
| -KFZ | CONTROLLERS |
| -KZA | NETWORK SWITCHES (COMMUNICATION) |
| -MAD | MOTOR FOR ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR -QBS |
| -MAE | MOTOR FOR ELECTRICAL OPERATION OF EARTHING SWITCH -QCE |
| -MAS | MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -MAT | MOTOR FOR ELECTRICAL OPERATION OF TRUCK RACKING-IN/OUT |
| -MBC | CLOSING RELEASE OF CIRCUIT-BREAKER |
| -MBC4 | CLOSING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBO1 | FIRST OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO2 | SECOND OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO3 | OPENING SOLENOID FOR OVERCURRENT RELEASE OF CIRCUIT-BREAKER |
| -MBO4 | OPENING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBU | UNDERVOLTAGE RELEASE OF CIRCUIT-BREAKER |
| -MBU4 | UNDERVOLTAGE RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -PFB | BLUE SIGNAL LAMPS |
| -PFF | FLAG RELAYS |
| -PFG | GREEN SIGNAL LAMPS |
| -PFR | RED SIGNAL LAMPS |
| -PFS | SHORT CIRCUIT INDICATORS |
| -PFV | VOLTAGE INDICATORS |
| -PFV1 | VOLTAGE INDICATOR ON FEEDER SIDE |
| -PFV2 | VOLTAGE INDICATOR ON BUSBAR SIDE |
| -PFW | WHITE SIGNAL LAMPS |
| -PFX | CROSS INDICATORS, ELECTROMECHANICAL INDICATORS |
| -PFY | YELLOW SIGNAL LAMPS |
| -PGA | AMMETERS |
| -PGC | COUNTERS |
| -PGF | FREQUENCYMETERS |
| -PGH | HOURMETERS |
| -PGI | PROTECTION AND CONTROL UNIT: HUMAN MACHINE INTERFACE |
| -PGJ | ACTIVE ENERGY METERS |
| -PGK | REACTIVE ENERGY METERS |
| -PGM | MULTIFUNCTION INDICATORS |
| -PGP | POWER-FACTOR METERS |
| -PGQ | VARMETERS |
| -PGS | SYNCHRONOSCOPES |
| -PGV | VOLTMETERS |
| -PGW | WATTMETERS |
| -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 |
| -QBS | SWITCH-DISCONNECTORS |
| -QBT | TRUCK |
| -QCE | EARTHING SWITCH |
| -QQ | CLUTCHES |
| -RAA | FERRO-RESONANCE DUMPING RESISTOR |
| -RAD | DIODES |
| -RAI | INDUCTORS |
| -RAR | RESISTORS |
| -RF | FILTERS |
| -RLE1 | ELECTROMECHANICAL LOCK PREVENTING CIRCUIT-BREAKER CLOSING |
| -RLE2 | ELECTROMECHANICAL LOCK PREVENTING TRUCK RACKING-IN/OUT |
| -RLE3 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF EARTHING SWITCH |
| -RLE4 | ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -RLE5 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF LINE SWITCH |
| -SFA | AMMETRIC SWITCHES |
| -SFC | CONTROL SWITCHES, CLOSING PUSH-BUTTONS |
| -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 | CONVERTER |
| -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 |
| -TFV | VOLTAGE TRANSDUCERS |
| -WA | BUSBARS |
| -WBC | POWER CABLES |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

| | |
|---|---|
| -WGC | CONTROL CABLES |
| -WGS | COMMUNICATION CABLES (SHIELDED TWISTED PAIRS) |
| -WH | OPTICAL FIBERS |
| -XDA | TERMINAL BLOCK FOR CIRCUITS OF CURRENT TRANSFORMERS |
| -XDA1 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L1 |
| -XDA2 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L2 |
| -XDA3 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L3 |
| -XDA5 | CONNECTOR FOR CIRCUITS OF NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -XDB | CONNECTOR FOR ISOLATION OF CIRCUIT-BREAKER |
| -XDB1 | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB2 | TERMINAL BLOCK FOR ADDITIONAL AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB10...-XDB89 | CONNECTOR FOR CIRCUIT-BREAKER INTERNAL CIRCUITS |
| -XDB90 | CONNECTOR FOR POSITION SWITCH OF EARTHING SWITCH ON BUSBAR |
| -XDB91 | CONNECTOR FOR OPENING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB92 | CONNECTOR FOR CLOSING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB93 | CONNECTOR FOR POSITION SWITCHES OF SWITCH-DISCONNECTOR |
| -XDB94 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF LINE SWITCH |
| -XDB95 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF EARTHING SWITCH |
| -XDB96 | CONNECTOR FOR UNDERVOLTAGE RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB97 | CONNECTOR FOR CIRCUITS OF THE CONTACTOR CONTROL UNIT OF THE MOTOR FOR THE ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR |
| -XDC | CUSTOMER TERMINAL BLOCK |
| -XDC1 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT BREAKER |
| -XDC2 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDC3 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF PROTECTION RELAY AND MULTIFUNCTION UNIT |
| -XDC4 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDC5 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CONTACTS OF MINIATURE CIRCUIT-BREAKERS |
| -XDE | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF EARTHING SWITCH -QCE |
| -XDH | TERMINAL BLOCK FOR AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDH1 | TERMINAL BLOCK FOR CIRCUITS OF ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -XDI | TERMINAL BLOCK FOR INTERCONNECTION (CONNECTION BETWEEN PANELS) |
| -XDI1 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CONTROL CIRCUITS |
| -XDI2 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -XDI3 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR ELECTRICAL OPERATION |
| -XDI4 | TERMINAL BLOCK FOR INTERCONNECTIONS OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDI6 | TERMINAL BLOCK FOR INTERCONNECTIONS OF VOLTAGE CIRCUITS |
| -XDI7 | TERMINAL BLOCK FOR INTERCONNECTIONS OF MOD-BUS CIRCUITS |
| -XDI8 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CURRENT CIRCUITS |
| -XDI9 | TERMINAL BLOCK FOR INTERCONNECTIONS OF SPECIAL CIRCUITS |
| -XDM | SEALABLE TERMINAL BLOCK FOR MEASUREMENT |
| -XDS | SOCKET OUTLETS |
| -XDT | TERMINAL BLOCK FOR POSITION CONTACTS OF TRUCK |
| -XDV | TERMINAL BLOCK FOR CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDV1 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L1 |
| -XDV2 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L2 |
| -XDV3 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L3 |
| -XDV4 | CONNECTOR FOR CIRCUITS OF FERRO-RESONANCE DUMPING RESISTOR |
| -XDX | SUPPORT TERMINAL BLOCKS |
| -XE1 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, LEFT SIDE |
| -XE2 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, RIGHT SIDE |
| -XE5 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, VOLTAGE INDICATOR SIDE |
| -XE6 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, REAR BOTTOM SIDE |
| -XE20 | EARTHING TERMINAL BLOCK FOR CURRENT TRANSFORMERS |
| -XE21 | EARTHING TERMINAL BLOCK FOR VOLTAGE TRANSFORMERS |

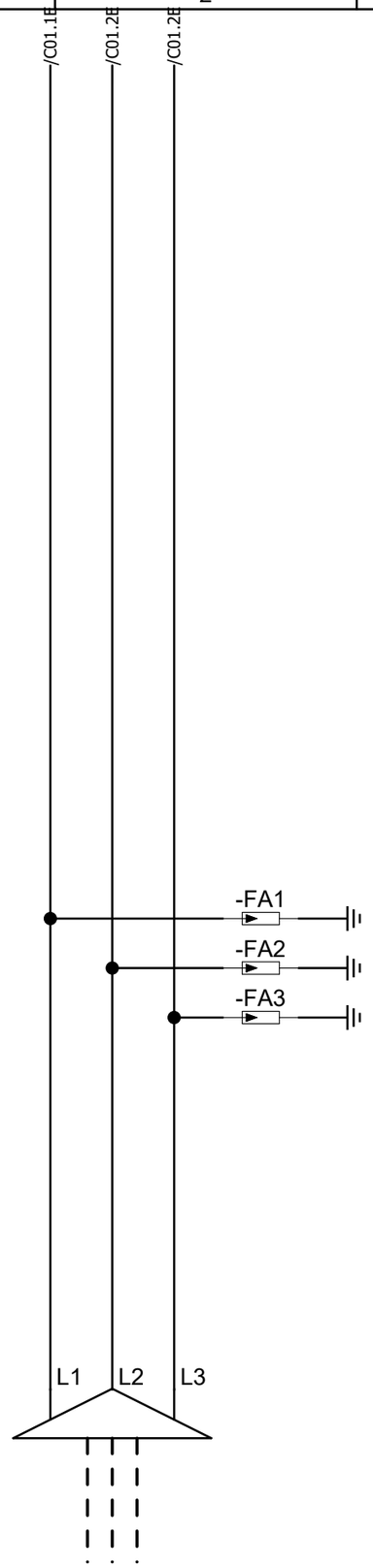


WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | MAIN CIRCUITS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE01,POLE02 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0100 | Page C01 |
| | | ZOBA_211213170112_001 | | | | | Cont C04 |

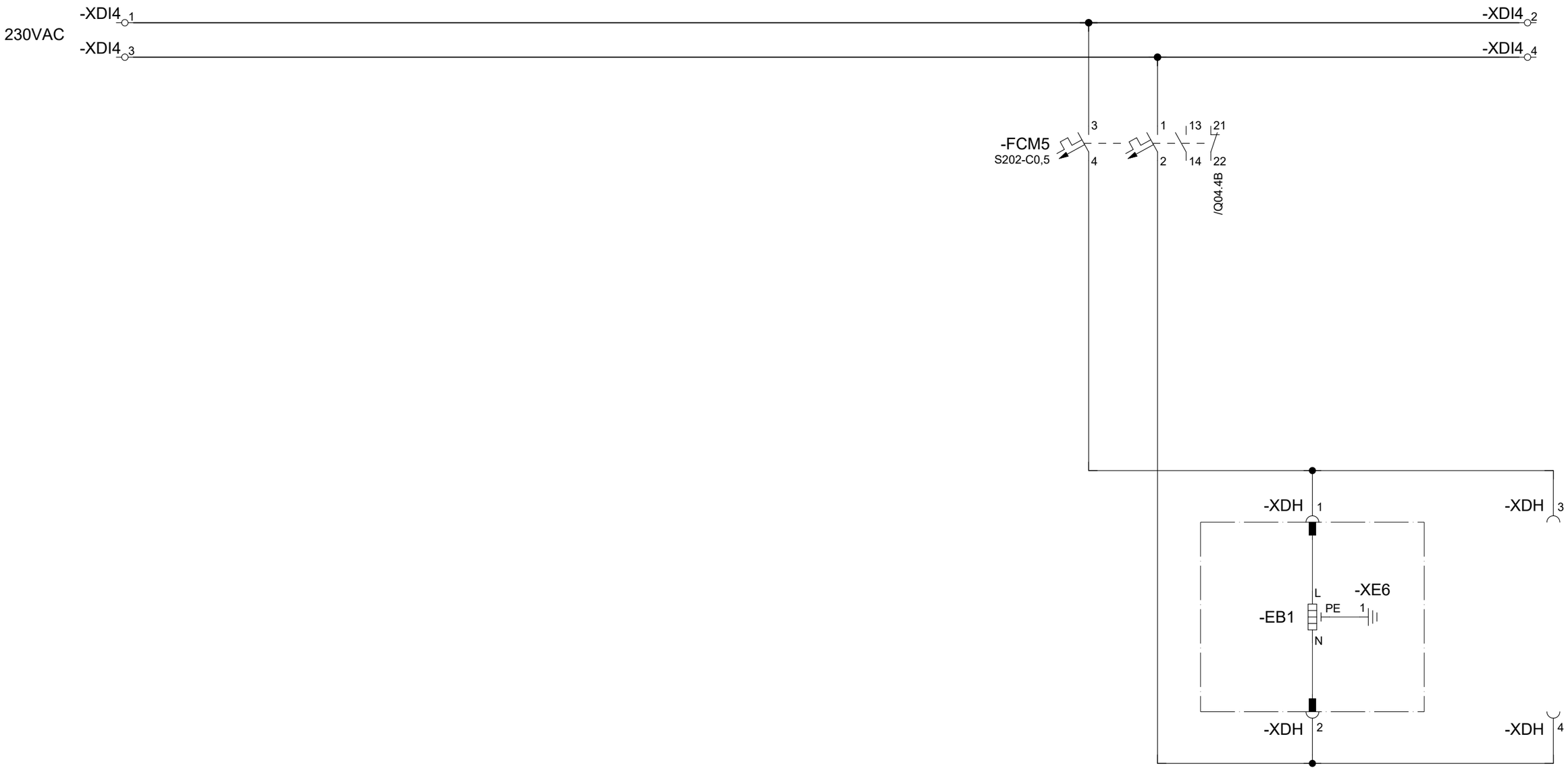
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title MAIN CIRCUITS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE01,POLE02 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0100 | Page C04 | |
| | | | | Cont D01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

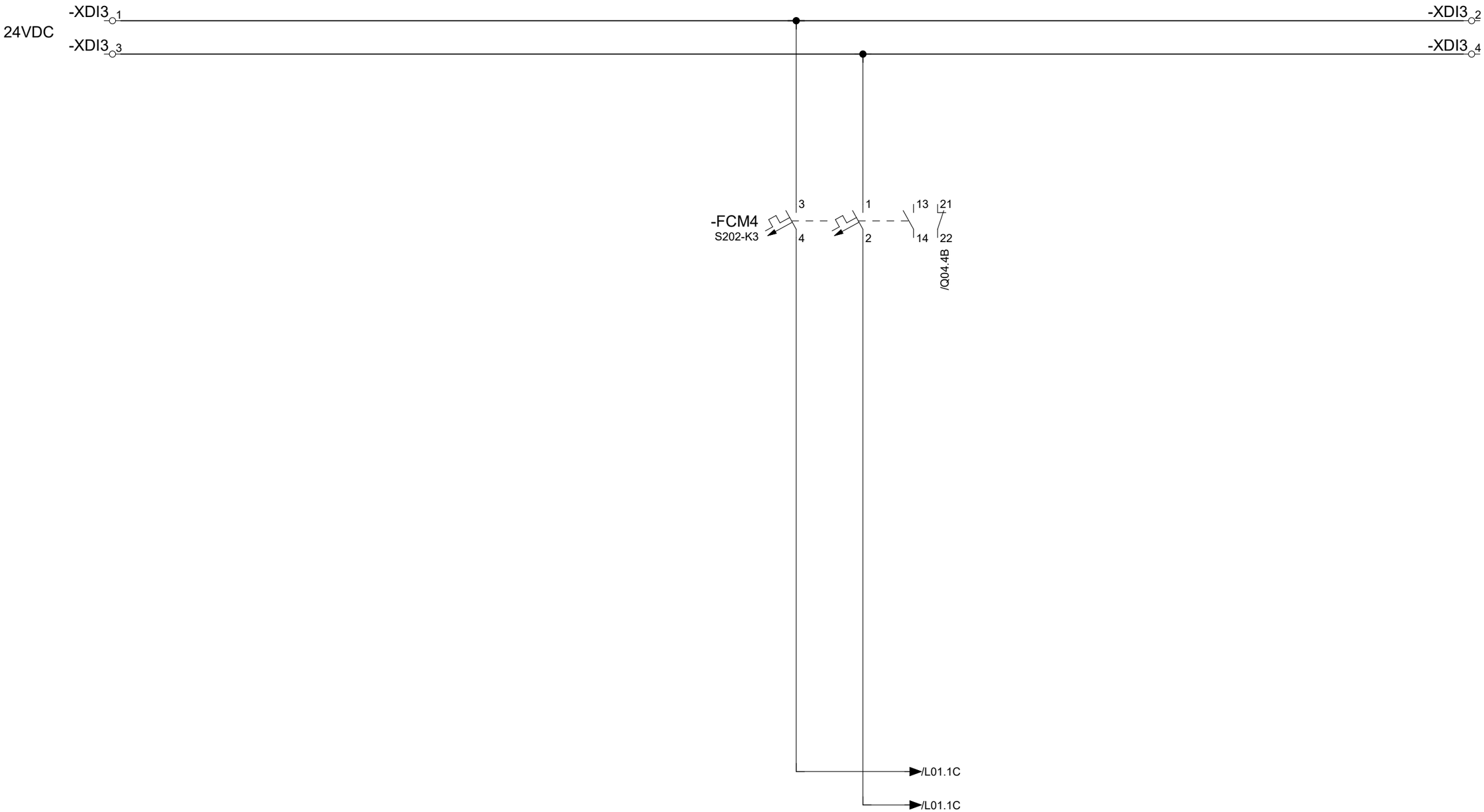
| AUXILIARY POWER SUPPLY | HEATING ELEMENT IN CABLE COMPARTIMENT | AVAILABLE |
|---|---|---|




| Based on | Title | DISTRIBUTION OF AUXILIARY CIRCUITS<br>Circuit Diagram | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision | A |
|---|---|---|---|---|---|---|---|---|
| | | | Approved | Eng. dept. | Ref. designation | POLE01,POLE02 | Lang | en |
| | Project name | KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | | Doc. No. | 0100 | Page | D01 |
| | | | | | | | Cont | G01 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

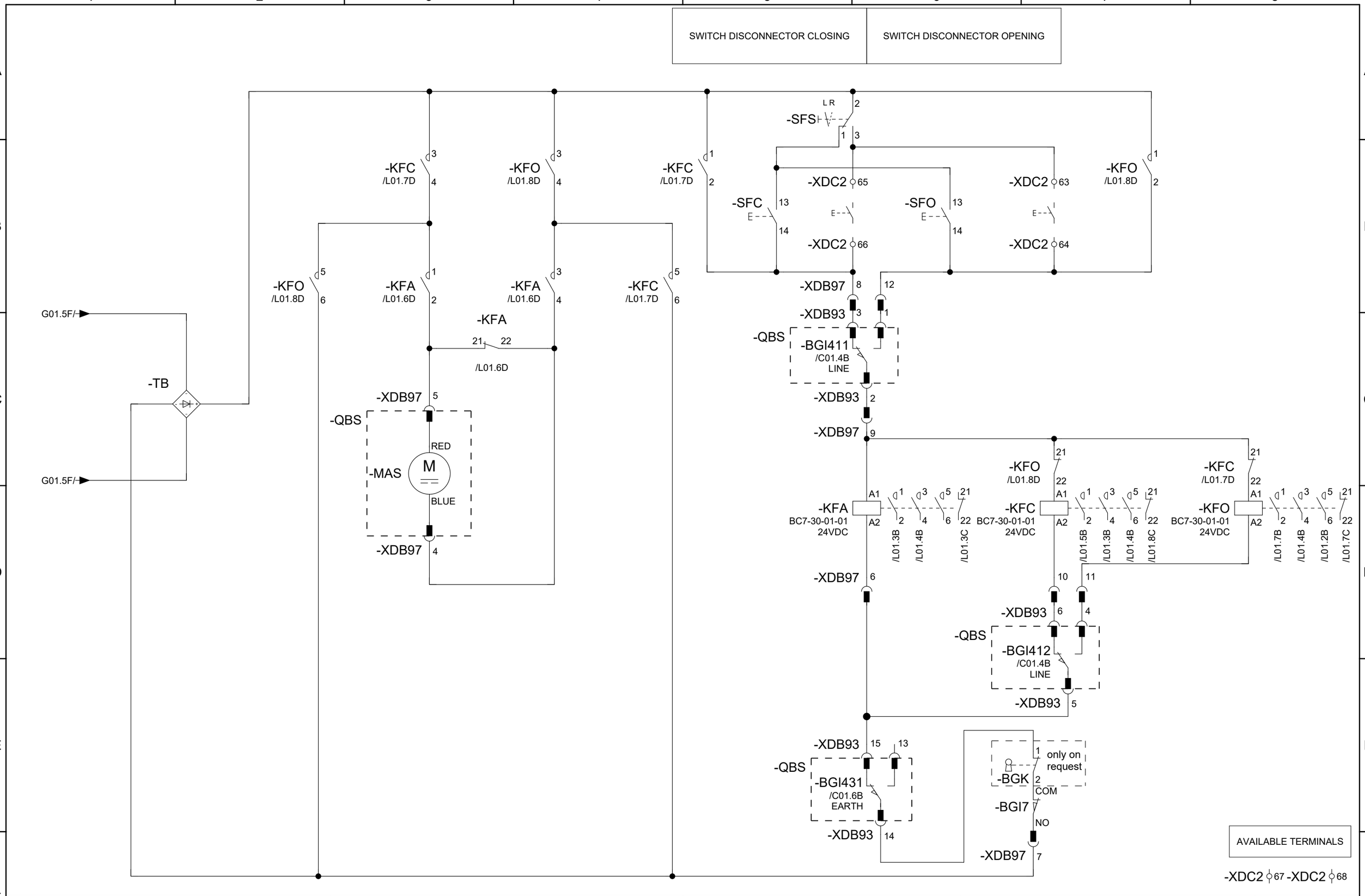
AUXILIARY POWER SUPPLY MOTOR CARD
SWITCH-DISCONNECTOR




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title DISTRIBUTION OF AUXILIARY CIRCUITS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE01,POLE02 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0100 | Page G01 | |
| | | | | Cont L01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

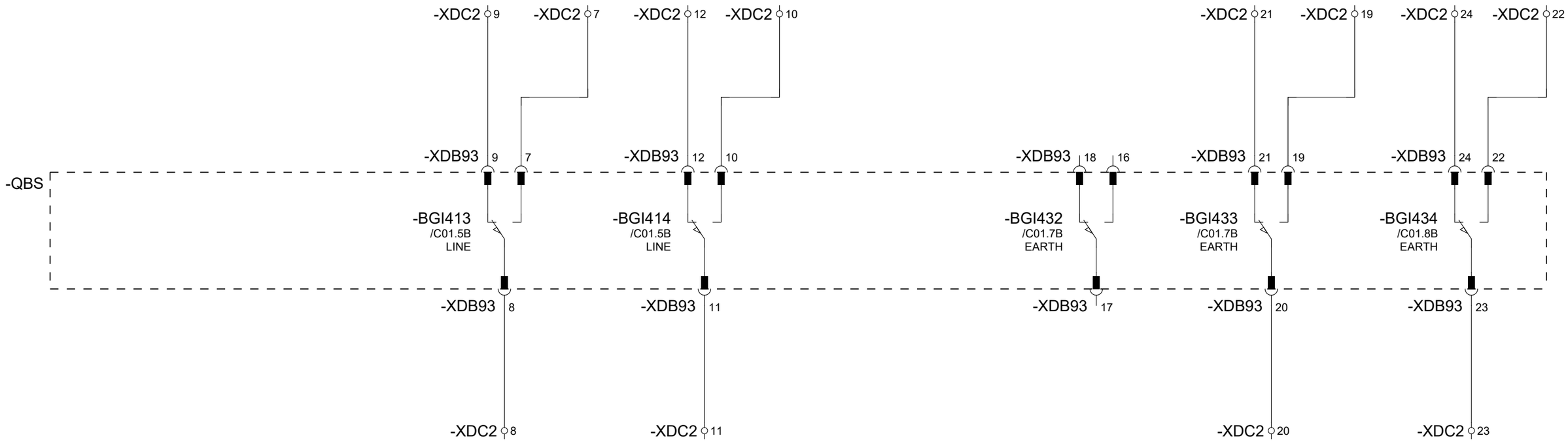
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: DRIVE CIRCUITS (MOTOR) | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A |
| | Circuit Diagram | Approved: Eng. dept. | Ref. designation: POLE01,POLE02 | Lang: en |
| | Project name: KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | Doc. No. 0100 | Page: L01 |
| | ZOBA_211213170112_001 | | | Cont: Q02 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

| SWITCH-DISCONNECTOR IN LINE POSITION | | SWITCH-DISCONNECTOR IN LINE POSITION | | SWITCH-DISCONNECTOR IN EARTH POSITION | | SWITCH-DISCONNECTOR IN EARTH POSITION | |
|---|---|---|---|---|---|---|---|
| OPEN | CLOSED | OPEN | CLOSED | OPEN | CLOSED | OPEN | CLOSED |

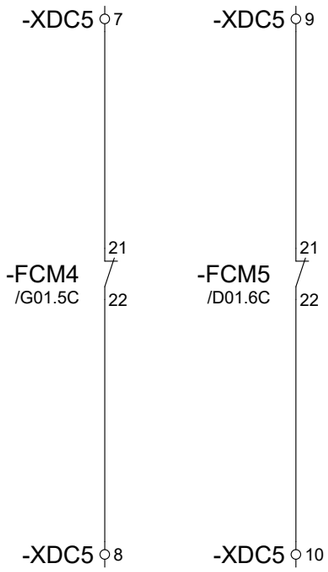



AVAILABLE TERMINALS

-XDC2 31 -XDC2 32

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: AVAILABLE CONTACTS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE01,POLE02 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0100 | Page: Q02 | |
| | | | | Cont: Q04 | |

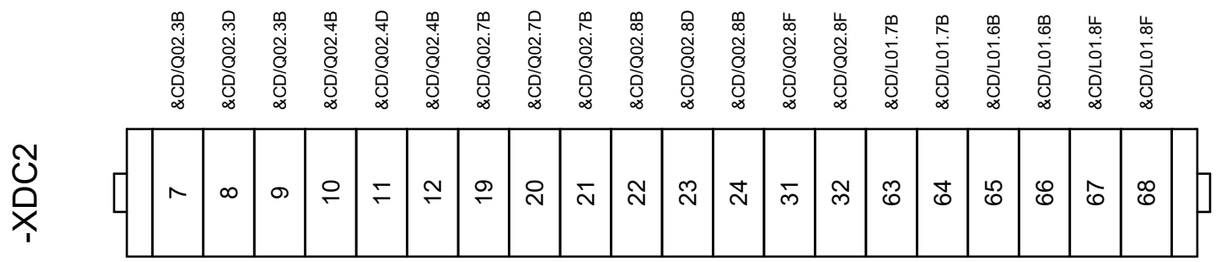
AUXILIARY CONTACTS OF MINIATURE CIRCUIT BREAKER




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title AVAILABLE CONTACTS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE01,POLE02 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0100 | Page Q04 | |
| | | | | Cont X01 | |

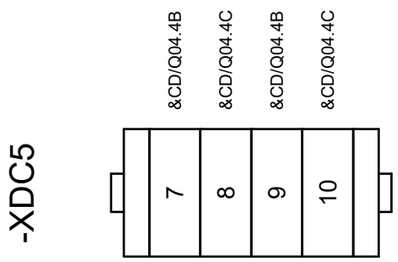
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

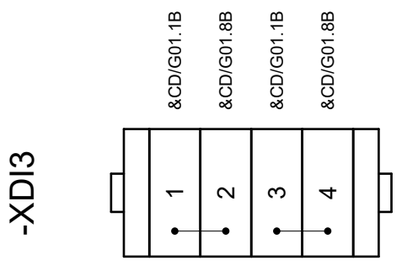
| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE01,POLE02 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0100 | Page: X01 | |
| | | | | Cont: X02 | |




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat.<br>Approved: Eng. dept. | Project No./Item: OPP-21-5023205 10000<br>Ref. designation: POLE01,POLE02 | Revision: A<br>Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0100 | Page: X02<br>Cont: X03 | |

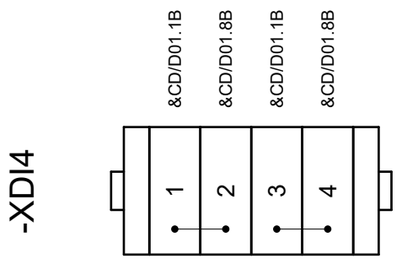
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE01,POLE02 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0100 | Page: X03 | |
| | | | | Cont: X04 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE01,POLE02 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0100 | Page: X04 | |
| | | | | Cont: Z01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# PART LIST

| DESIGNATION | CLASS | CHARACTERISTICS | CODE ORDER NUMBER | MANUFACTURED CODE | QUANTITY | SUPPLIER |
|---|---|---|---|---|---|---|
| -EB1 | Heating | HEATER 50W 110-250VAC/DC | 3WDA026276P0001 | SHT50W | 1 | ALFA ELECTRIC |
| -FCM4 | Protection devices | MCB S202-K3 | 3WCA022097P0305 | 2CDS252001R0317 | 1 | ABB |
| -FCM4 | Protection devices | AUX. CONTACT S2C-H11L<br>FOR MCB SERIES S200 | 3WCA022097P0013 | 2CDS200936R0001 | 1 | ABB |
| -FCM5 | Protection devices | MCB S202-C0,5 | 3WCA022097P0101 | 2CDS252001R0984 | 1 | ABB |
| -FCM5 | Protection devices | AUX. CONTACT S2C-H11L<br>FOR MCB SERIES S200 | 3WCA022097P0013 | 2CDS200936R0001 | 1 | ABB |
| -KFA | Relays, contactors | ABB MINI CONTACTOR BC7-30-01-01<br>24VDC | 3WDA019769P0003 | GJL1313001R0011 | 1 | ABB |
| -KFC | Relays, contactors | ABB MINI CONTACTOR BC7-30-01-01<br>24VDC | 3WDA019769P0003 | GJL1313001R0011 | 1 | ABB |
| -KFO | Relays, contactors | ABB MINI CONTACTOR BC7-30-01-01<br>24VDC | 3WDA019769P0003 | GJL1313001R0011 | 1 | ABB |
| -PFV1 | Signal devices | VPIS ABB 43911082 | 3WDA020579P0001 | 43911082 | 1 | ELECTRONSYST. MD |
| -SFC | Sensor, switch, and pushbutton | PUSHBUTTON CP1-10G-10<br>GREEN COLOR | 3WDA008620P0004 | 1SFA619100R1012 | 1 | ABB |
| -SFO | Sensor, switch, and pushbutton | PUSHBUTTON CP1-10R-10<br>RED COLOR | 3WDA008620P0005 | 1SFA619100R1011 | 1 | ABB |
| -SFS | Sensor, switch, and pushbutton | LOC/REM SWITCH CA10 A221-600+FT2+F9FA514 | 3WDA014364P0001 | CA10 A221-600+FT2+F9FA 514 | 1 | KRAUS NAIMER |
| -TB | Rectifier | Rectifier KBPC 2508 25A-800V | 3WDA020242P0001 | - | 1 | ABB |
| -XDC2 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 20 | ABB |
| -XDC5 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 4 | ABB |
| -XDI3 | Terminals | TERMINAL D6/8.ADO.1 | 3WDA025414P0003 | EN019904621 | 4 | ABB |
| -XDI4 | Terminals | TERMINAL D6/8.ADO.1 | 3WDA025414P0003 | EN019904621 | 4 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# M.V. DEVICES

| DESIGNATION | CLASS | CHARACTERISTICS | QUANTITY | SUPPLIER |
|---|---|---|---|---|
| -FA1 | Surge arrester | 24 kV | 1 | ABB |
| -FA2 | Surge arrester | 24 kV | 1 | ABB |
| -FA3 | Surge arrester | 24 kV | 1 | ABB |
| -QBS | Switch-Disconnector | G-Sec 24kV 630A 16kA | 1 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

CUSTOMER : **KGJ Šamorín (IFT)**

ORDER : **OPP-21-5023205** ITEM : **10000**

PROJECT : **ZOBA_211213170112_001**

SWITCHGEAR NAME : **ZOBA_211213170112_001**

DESIGNATION OF UNIT : **POLE03**

TYPE OF UNIT : **SDM**

DOCUMENT : **Circuit Diagram**

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title COVER SHEET<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE03 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0101 | Page A01 | |
| | | | | Cont A03 | |

# INDEX OF SHEETS

| SHEET | DESCRIPTION | REVISION |
|---|---|---|
| A01 | COVER SHEET | A |
| A03 | INDEX OF SHEETS | A |
| A10 | REFERENCE DESIGNATIONS | A |
| A11 | REFERENCE DESIGNATIONS | A |
| A12 | REFERENCE DESIGNATIONS | A |
| C01 | MAIN CIRCUITS | A |
| C02 | MAIN CIRCUITS | A |
| C03 | MAIN CIRCUITS | A |
| D01 | DISTRIBUTION OF AUXILIARY CIRCUITS | A |
| Q02 | AVAILABLE CONTACTS | A |
| Q04 | AVAILABLE CONTACTS | A |
| X01 | TERMINAL BLOCKS | A |
| X02 | TERMINAL BLOCKS | A |
| X03 | TERMINAL BLOCKS | A |
| X04 | TERMINAL BLOCKS | A |
| Z01 | PARTS LIST | A |
| Z10 | MV DEVICES CHARACTERISTICS | A |

# REVISION LIST

| INDEX REV | DESCRIPTION | DATE | PREPARED | APPROVED |
|---|---|---|---|---|
| A | FIRST ISSUE | 13. 12. 2021 | Aut. generat. | Eng. dept. |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| L | | | | |

# STANDARD REFERENCES

*THIS DRAWING IS IN COMPLIANCE WITH THE FOLLOWING INTERNATIONAL STANDARDS:*
*- IEC 60617: GRAPHICAL SYMBOLS FOR DIAGRAMS*
*- IEC 61082: PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY*
*- IEC 81346: STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS*

*THE DIAGRAM INDICATES COMPONENTS HAVING A MOVABLE PART IN THE FOLLOWING POSITION OR OPERATIONAL STATE (IEC 61082-1 7.4.4.1):*
*- C.BREAKER OR CONTACTOR IN OPEN (OFF) AND SERVICE POSITION*
*- DISCONNECTORS AND EARTHING SWITCH IN OPEN POSITION*
*- WITHDRAWABLE VOLTAGE TRANSFORMERS IN CONNECTED POSITION*
*- CLOSING SPRINGS OF C.BREAKER IN DISCHARGED POSITION*
*- CONNECTOR OF C.BREAKER AUXILIARY CIRCUITS IN CONNECTED POSITION*
*- CIRCUITS IN DE-ENERGIZED STATE*
*- RELAYS IN NON-ACTUATED STATE*
*- GAS PRESSURE AT RATED SERVICE VALUE*
*- FUSES NOT OPERATED*
*- DOORS AND PRESSURE RELIEF FLAPS IN CLOSED POSITION*

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# REFERENCE DESIGNATION OF OBJECTS IN ELECTRICAL DOCUMENTS

(IN COMPLIANCE WITH STANDARD IEC 81346-2 AND ABB TECHNICAL STANDARD 2NBA000001)

| DESIGNATION | DESCRIPTION |
|---|---|
| -AA | MULTIFUNCTION UNIT (CENTRAL UNIT) |
| -BAD1, -BAD4 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L1 |
| -BAD2, -BAD5 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L2 |
| -BAD3, -BAD6 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L3 |
| -BAR | VOLTAGE PROTECTION RELAY |
| -BAS1 | VOLTAGE SENSOR LOCATED ON PHASE L1 |
| -BAS2 | VOLTAGE SENSOR LOCATED ON PHASE L2 |
| -BAS3 | VOLTAGE SENSOR LOCATED ON PHASE L3 |
| -BAT1 | VOLTAGE TRANSFORMER LOCATED ON PHASE L1 |
| -BAT2 | VOLTAGE TRANSFORMER LOCATED ON PHASE L2 |
| -BAT3 | VOLTAGE TRANSFORMER LOCATED ON PHASE L3 |
| -BCD | DIFFERENTIAL PROTECTIVE RELAY |
| -BCF | FEEDER PROTECTION RELAY |
| -BCG | GENERATOR PROTECTION RELAY |
| -BCM | MOTOR PROTECTION RELAY |
| -BCN | NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -BCP | TRANSFORMER PROTECTION RELAY |
| -BCR | CURRENT PROTECTION RELAY |
| -BCS1 | CURRENT SENSOR LOCATED ON PHASE L1 |
| -BCS2 | CURRENT SENSOR LOCATED ON PHASE L2 |
| -BCS3 | CURRENT SENSOR LOCATED ON PHASE L3 |
| -BCT1, -BCT4 | CURRENT TRANSFORMER LOCATED ON PHASE L1 |
| -BCT2, -BCT5 | CURRENT TRANSFORMER LOCATED ON PHASE L2 |
| -BCT3, -BCT6 | CURRENT TRANSFORMER LOCATED ON PHASE L3 |
| -BCZ | DISTANCE PROTECTION RELAY |
| -BEF | FREQUENCY PROTECTION RELAY |
| -BER | SUPERVISION RELAYS |
| -BES | SYNCHRONIZING RELAY |
| -BET | THERMAL PROTECTION RELAY |
| -BGB1...-BGB3 | POSITION SWITCHES OF CIRCUIT-BREAKER |
| -BGB5 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE ENERGIZED |
| -BGB6 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE EXCLUDED MECHANICALLY |
| -BGD | POSITION SWITCH OF L.V. INSTRUMENT COMPARTMENT DOOR |
| -BGD1 | POSITION SWITCH OF CIRCUIT-BREAKER COMPARTMENT DOOR |
| -BGD2 | POSITION SWITCH OF CABLE COMPARTMENT DOOR |
| -BGE1 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN OPEN POSITION |
| -BGE2 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN CLOSED POSITION |
| -BGF | POSITION SWITCHES OF MEDIUM VOLTAGE FUSES |
| -BGI7 | POSITION SWITCH SIGNALLING DICONNECTOR (OR SWITCH-DISCONNECTOR) -QBD NOT IN MANUAL OPERATION |
| -BGI41... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN FEEDER POSITION |
| -BGI43... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN EARTH POSITION |
| -BGK | POSITION SWITCH OF KEY LOCK |
| -BGL1 | POSITION SWITCH OF ELECTROMECHANICAL LOCK -RLE1 |
| -BGS1, -BGS2 | POSITION SWITCHES OF CIRCUIT-BREAKER SPRINGS |
| -BGS6, -BGS7 | POSITION SWITCHES OF THE SPRINGS OF SWITCH-DISCONNECTOR FOR CONTROL CIRCUITS OF THE MOTOR OPERATOR |
| -BGT1 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT2 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN TEST POSITION |
| -BGT3 | POSITION SWITCH ON TRUCK SIGNALLING TRUCK NOT IN ISOLATING TRAVEL POSITION |
| -BGT4 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT5 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN TEST POSITION |
| -BM | HYGROSTAT |
| -BPA4 | PRESSURE SWITCH LOCATED IN CABLE COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPA5 | PRESSURE SWITCH LOCATED IN CIRCUIT-BREAKER COMPARTMENT |
| -BPA6 | PRESSURE SWITCH LOCATED IN BUSBAR OR IN BUSBAR AND CIRCUIT-BREAKER COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPS | PRESSURE SWITCH LOCATED ON CIRCUIT-BREAKER |
| -BR | FLAME DETECTORS, SMOKE DETECTORS |
| -BT | THERMOSTAT |
| -BU | BUCHHOLZ RELAY |
| -BX1 | UNIT WITH SENSORS FOR DETECTION OF INTERNAL ARCING |
| -BX2 | ADDITIONAL CURRENT SENSING UNIT FOR DETECTION OF INTERNAL ARCING |
| -BUS | MULTIFUNCTION SENSORS |
| -BUS1 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L1 |
| -BUS2 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L2 |
| -BUS3 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L3 |
| -CA | CAPACITORS |
| -EA1 | LIGHTING LAMP LOCATED IN L.V. INSTRUMENT COMPARTMENT |
| -EA2 | LIGHTING LAMP LOCATED IN CABLE COMPARTMENT |
| -EA4 | LIGHTING LAMP LOCATED IN CIRCUIT BREAKER COMPARTIMENT |
| -EB1 | HEATER LOCATED IN CABLE COMPARTMENT |
| -EB3 | HEATER LOCATED IN MOTOR CABINET |
| -EB5 | HEATER LOCATED IN L.V. INSTRUMET COMPARTMENT |
| -EB8 | HEATERS LOCATED IN RIGHT SIDE OF THE OPERATING MECHANISM ENCLOSURE |
| -FA1 | SURGE ARRESTER LOCATED ON PHASE L1 |
| -FA2 | SURGE ARRESTER LOCATED ON PHASE L2 |
| -FA3 | SURGE ARRESTER LOCATED ON PHASE L3 |
| -FCD | FUSE-DISCONNECTORS FOR PROTECTION OF AUXILIARY CIRCUITS |
| -FCF1 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L1 |
| -FCF2 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L2 |
| -FCF3 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L3 |
| -FCM1 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF SPRINGS CHARGING MOTOR ON MAIN CIRCUIT-BREAKER |
| -FCM2 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CONTROL CIRCUITS |
| -FCM3 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUIT-BREAKER SPRINGS CHARGING MOTOR |
| -FCM4 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR OPERATION |
| -FCM5 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -FCM6 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF BROKEN DELTA SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -FCM7 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, FIRST WINDING |
| -FCM8 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, SECOND WINDING |
| -FCM9 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF PROTECTION RELAYS OR MULTIFUNCION UNITS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | REFERENCE DESIGNATIONS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE03 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0101 | Page A10 |
| | | ZOBA_211213170112_001 | | | | | Cont A11 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

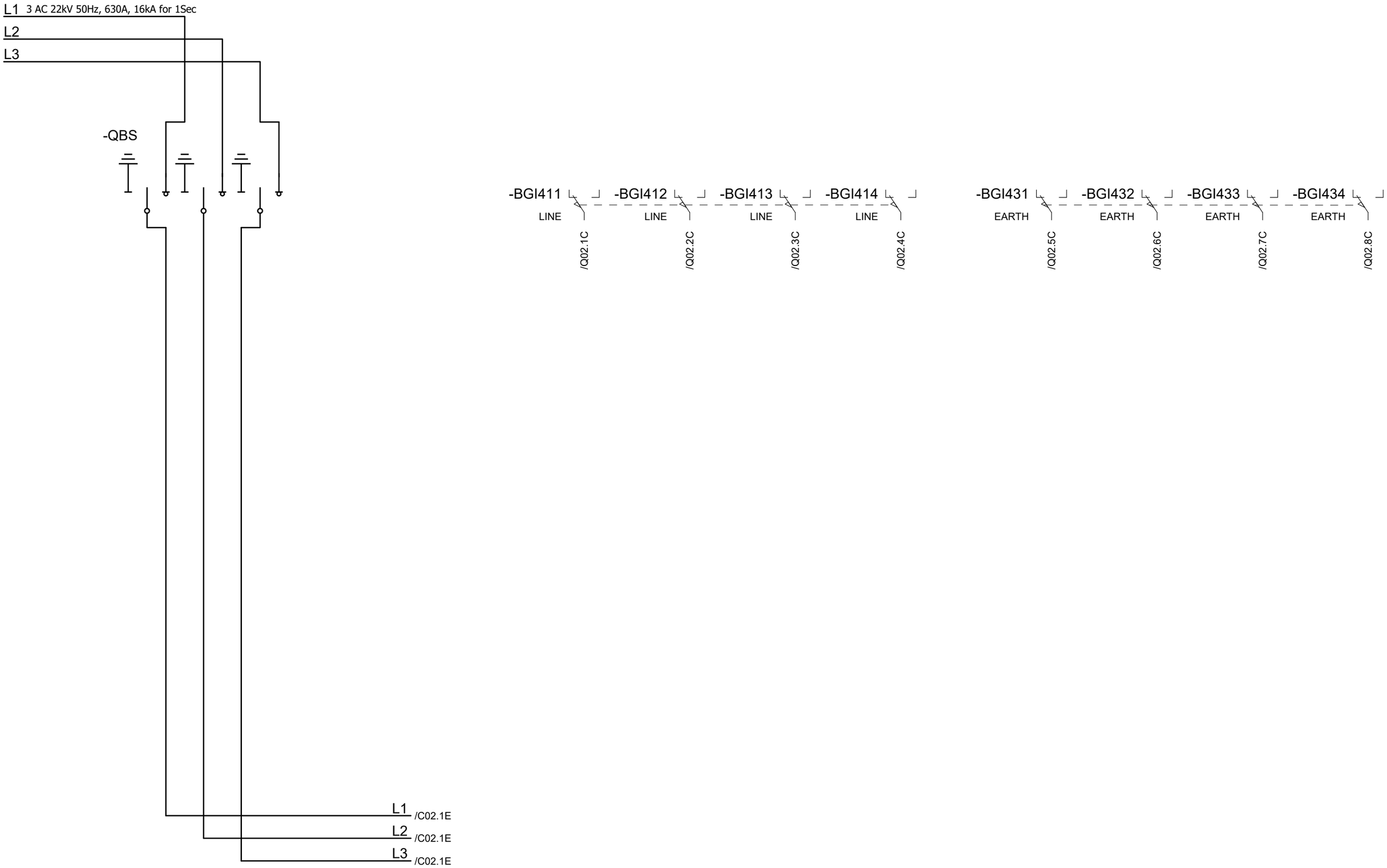
| | |
|---|---|
| -FCT | THERMAL OVERLOAD RELEASES |
| -GA | GENERATORS |
| -KFA1 | AUXILIARY RELAY SIGNALLING LOW GAS PRESSURE |
| -KFA2 | AUXILIARY RELAY SIGNALLING INSUFFICIENT GAS PRESSURE |
| -KFA3...-KFA9 | AUXILIARY RELAYS OR CONTACTORS |
| -KFC | CLOSING RELAYS OR CONTACTORS |
| -KFI | INTEGRATED CIRCUITS |
| -KFL | LOCKOUT RELAY |
| -KFM | MICROPROCESSORS |
| -KFN | ANTIPUMPING RELAYS |
| -KFO | OPENING RELAYS OR CONTACTORS |
| -KFP | PROGRAMMABLE LOGIC CONTROLLERS (PLC) |
| -KFR | RECLOSING RELAYS |
| -KFS | SYNCHRONIZING DEVICES |
| -KFT | AUXILIARY TIME RELAYS, DELAY ELEMENTS |
| -KFU | CONTROL UNIT |
| -KFZ | CONTROLLERS |
| -KZA | NETWORK SWITCHES (COMMUNICATION) |
| -MAD | MOTOR FOR ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR -QBS |
| -MAE | MOTOR FOR ELECTRICAL OPERATION OF EARTHING SWITCH -QCE |
| -MAS | MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -MAT | MOTOR FOR ELECTRICAL OPERATION OF TRUCK RACKING-IN/OUT |
| -MBC | CLOSING RELEASE OF CIRCUIT-BREAKER |
| -MBC4 | CLOSING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBO1 | FIRST OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO2 | SECOND OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO3 | OPENING SOLENOID FOR OVERCURRENT RELEASE OF CIRCUIT-BREAKER |
| -MBO4 | OPENING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBU | UNDERVOLTAGE RELEASE OF CIRCUIT-BREAKER |
| -MBU4 | UNDERVOLTAGE RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -PFB | BLUE SIGNAL LAMPS |
| -PFF | FLAG RELAYS |
| -PFG | GREEN SIGNAL LAMPS |
| -PFR | RED SIGNAL LAMPS |
| -PFS | SHORT CIRCUIT INDICATORS |
| -PFV | VOLTAGE INDICATORS |
| -PFV1 | VOLTAGE INDICATOR ON FEEDER SIDE |
| -PFV2 | VOLTAGE INDICATOR ON BUSBAR SIDE |
| -PFW | WHITE SIGNAL LAMPS |
| -PFX | CROSS INDICATORS, ELECTROMECHANICAL INDICATORS |
| -PFY | YELLOW SIGNAL LAMPS |
| -PGA | AMMETERS |
| -PGC | COUNTERS |
| -PGF | FREQUENCYMETERS |
| -PGH | HOURMETERS |
| -PGI | PROTECTION AND CONTROL UNIT: HUMAN MACHINE INTERFACE |
| -PGJ | ACTIVE ENERGY METERS |
| -PGK | REACTIVE ENERGY METERS |
| -PGM | MULTIFUNCTION INDICATORS |
| -PGP | POWER-FACTOR METERS |
| -PGQ | VARMETERS |
| -PGS | SYNCHRONOSCOPES |
| -PGV | VOLTMETERS |
| -PGW | WATTMETERS |
| -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 |
| -QBS | SWITCH-DISCONNECTORS |
| -QBT | TRUCK |
| -QCE | EARTHING SWITCH |
| -QQ | CLUTCHES |
| -RAA | FERRO-RESONANCE DUMPING RESISTOR |
| -RAD | DIODES |
| -RAI | INDUCTORS |
| -RAR | RESISTORS |
| -RF | FILTERS |
| -RLE1 | ELECTROMECHANICAL LOCK PREVENTING CIRCUIT-BREAKER CLOSING |
| -RLE2 | ELECTROMECHANICAL LOCK PREVENTING TRUCK RACKING-IN/OUT |
| -RLE3 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF EARTHING SWITCH |
| -RLE4 | ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -RLE5 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF LINE SWITCH |
| -SFA | AMMETRIC SWITCHES |
| -SFC | CONTROL SWITCHES, CLOSING PUSH-BUTTONS |
| -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 | CONVERTER |
| -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 |
| -TFV | VOLTAGE TRANSDUCERS |
| -WA | BUSBARS |
| -WBC | POWER CABLES |



WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

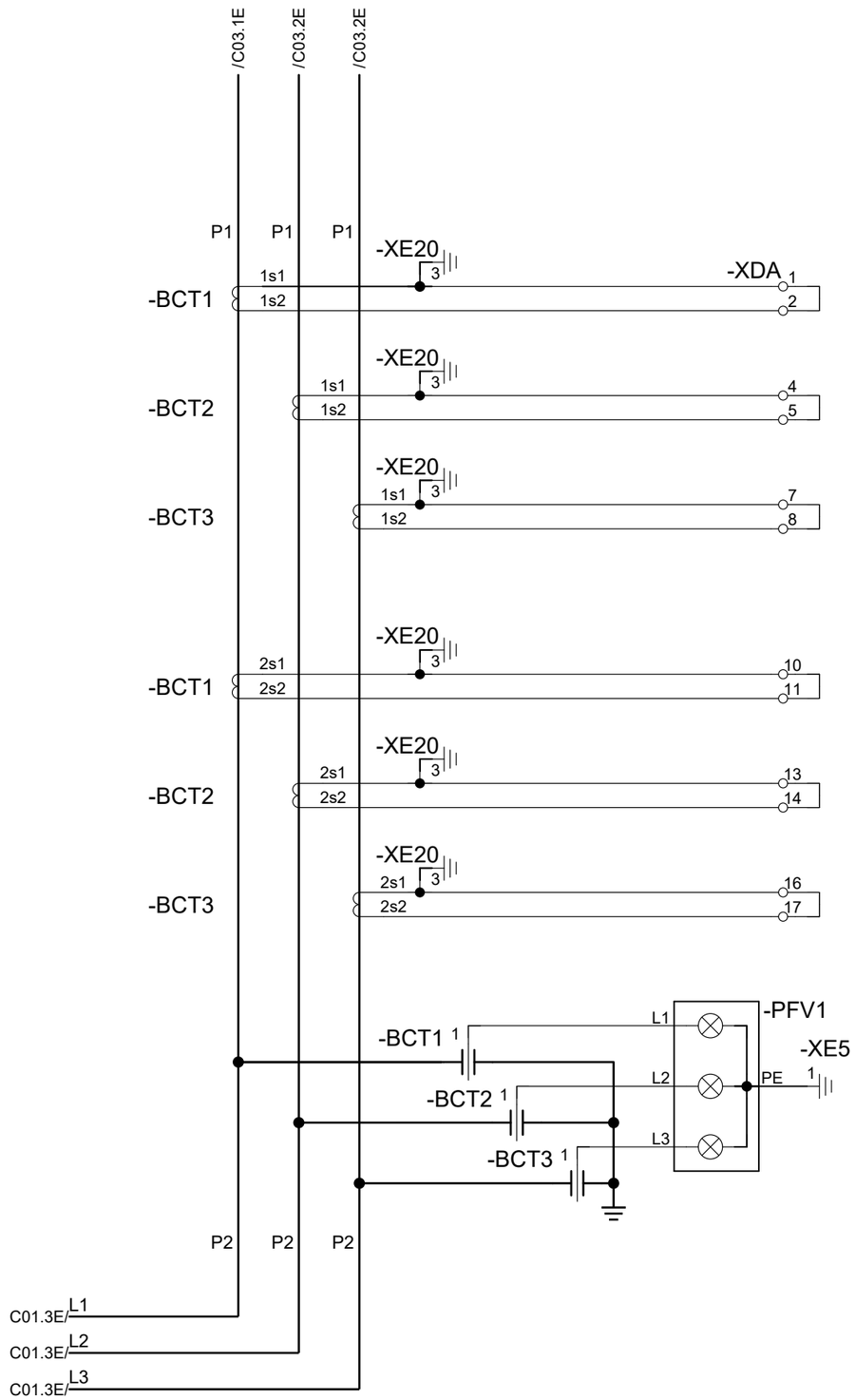
| | |
|---|---|
| -WGC | CONTROL CABLES |
| -WGS | COMMUNICATION CABLES (SHIELDED TWISTED PAIRS) |
| -WH | OPTICAL FIBERS |
| -XDA | TERMINAL BLOCK FOR CIRCUITS OF CURRENT TRANSFORMERS |
| -XDA1 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L1 |
| -XDA2 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L2 |
| -XDA3 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L3 |
| -XDA5 | CONNECTOR FOR CIRCUITS OF NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -XDB | CONNECTOR FOR ISOLATION OF CIRCUIT-BREAKER |
| -XDB1 | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB2 | TERMINAL BLOCK FOR ADDITIONAL AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB10...-XDB89 | CONNECTOR FOR CIRCUIT-BREAKER INTERNAL CIRCUITS |
| -XDB90 | CONNECTOR FOR POSITION SWITCH OF EARTHING SWITCH ON BUSBAR |
| -XDB91 | CONNECTOR FOR OPENING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB92 | CONNECTOR FOR CLOSING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB93 | CONNECTOR FOR POSITION SWITCHES OF SWITCH-DISCONNECTOR |
| -XDB94 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF LINE SWITCH |
| -XDB95 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF EARTHING SWITCH |
| -XDB96 | CONNECTOR FOR UNDERVOLTAGE RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB97 | CONNECTOR FOR CIRCUITS OF THE CONTACTOR CONTROL UNIT OF THE MOTOR FOR THE ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR |
| -XDC | CUSTOMER TERMINAL BLOCK |
| -XDC1 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT BREAKER |
| -XDC2 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDC3 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF PROTECTION RELAY AND MULTIFUNCTION UNIT |
| -XDC4 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDC5 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CONTACTS OF MINIATURE CIRCUIT-BREAKERS |
| -XDE | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF EARTHING SWITCH -QCE |
| -XDH | TERMINAL BLOCK FOR AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDH1 | TERMINAL BLOCK FOR CIRCUITS OF ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -XDI | TERMINAL BLOCK FOR INTERCONNECTION (CONNECTION BETWEEN PANELS) |
| -XDI1 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CONTROL CIRCUITS |
| -XDI2 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -XDI3 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR ELECTRICAL OPERATION |
| -XDI4 | TERMINAL BLOCK FOR INTERCONNECTIONS OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDI6 | TERMINAL BLOCK FOR INTERCONNECTIONS OF VOLTAGE CIRCUITS |
| -XDI7 | TERMINAL BLOCK FOR INTERCONNECTIONS OF MOD-BUS CIRCUITS |
| -XDI8 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CURRENT CIRCUITS |
| -XDI9 | TERMINAL BLOCK FOR INTERCONNECTIONS OF SPECIAL CIRCUITS |
| -XDM | SEALABLE TERMINAL BLOCK FOR MEASUREMENT |
| -XDS | SOCKET OUTLETS |
| -XDT | TERMINAL BLOCK FOR POSITION CONTACTS OF TRUCK |
| -XDV | TERMINAL BLOCK FOR CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDV1 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L1 |
| -XDV2 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L2 |
| -XDV3 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L3 |
| -XDV4 | CONNECTOR FOR CIRCUITS OF FERRO-RESONANCE DUMPING RESISTOR |
| -XDX | SUPPORT TERMINAL BLOCKS |
| -XE1 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, LEFT SIDE |
| -XE2 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, RIGHT SIDE |
| -XE5 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, VOLTAGE INDICATOR SIDE |
| -XE6 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, REAR BOTTOM SIDE |
| -XE20 | EARTHING TERMINAL BLOCK FOR CURRENT TRANSFORMERS |
| -XE21 | EARTHING TERMINAL BLOCK FOR VOLTAGE TRANSFORMERS |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.



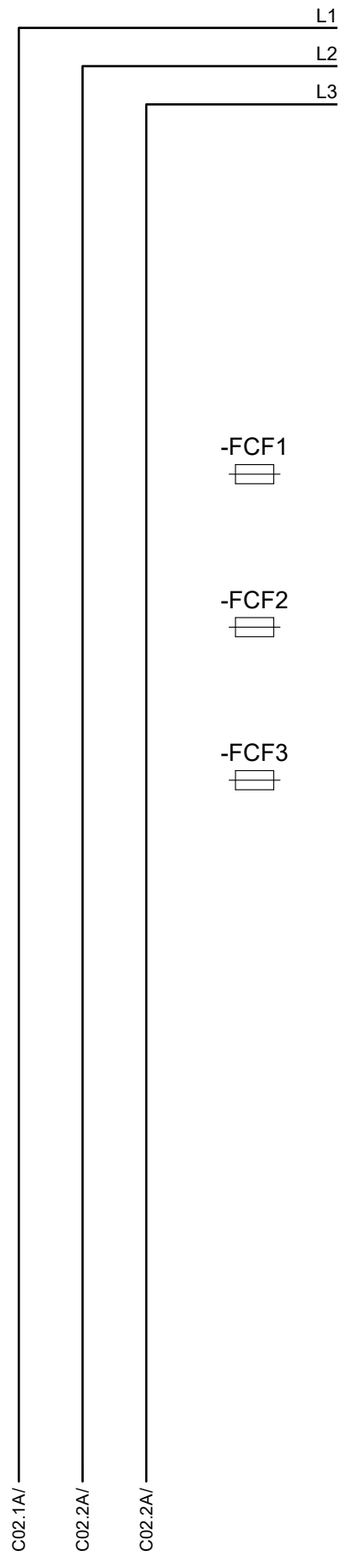

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | MAIN CIRCUITS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE03 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0101 | Page C01 |
| | | ZOBA_211213170112_001 | | | | | Cont C02 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | MAIN CIRCUITS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE03 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0101 | Page C02 |
| | | ZOBA_211213170112_001 | | | | | Cont C03 |

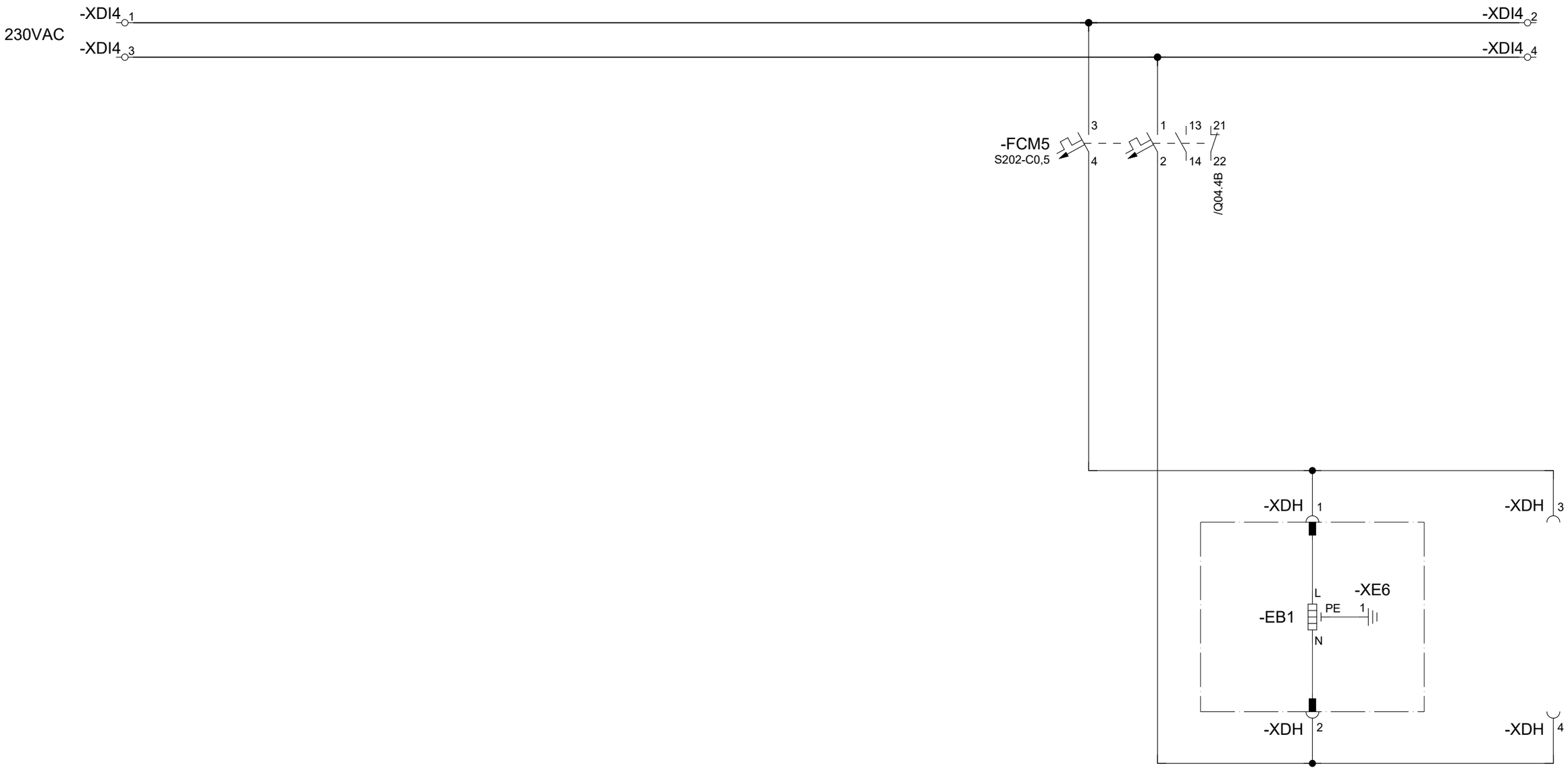
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title MAIN CIRCUITS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE03 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0101 | Page C03 | |
| | | | | Cont D01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

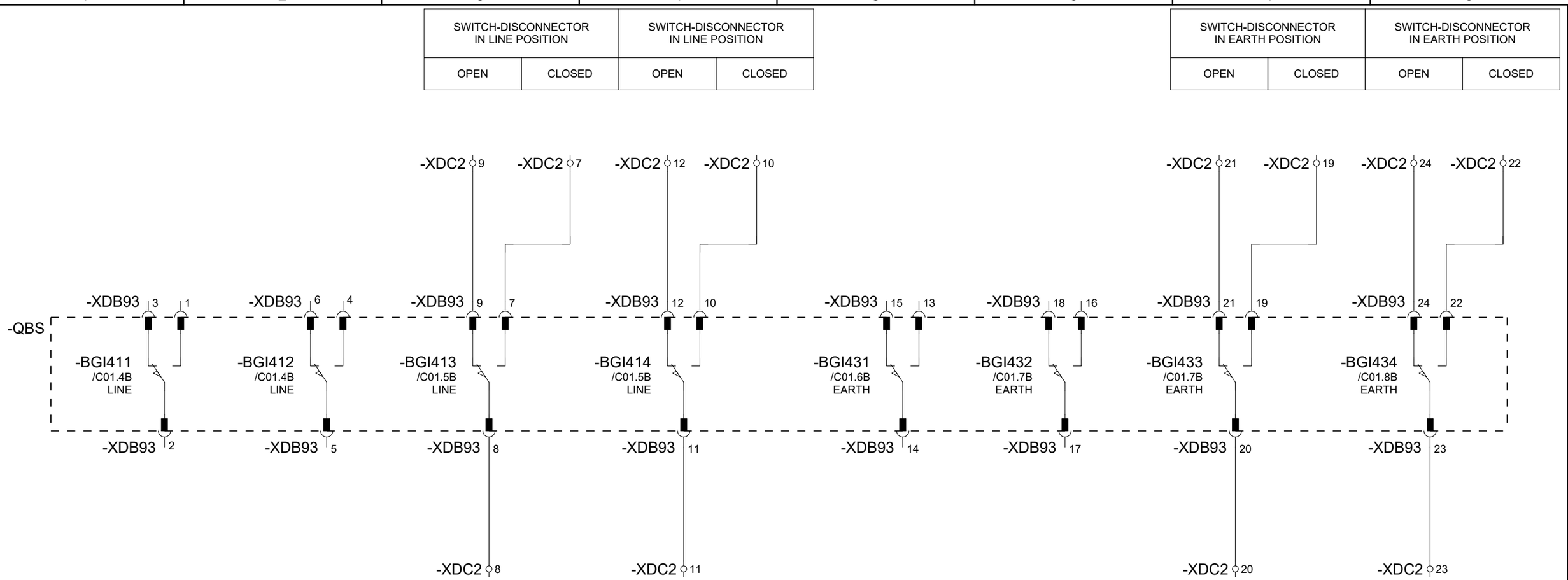
| AUXILIARY POWER SUPPLY | HEATING ELEMENT IN CABLE COMPARTIMENT | AVAILABLE |
|---|---|---|




| Based on | Title | DISTRIBUTION OF AUXILIARY CIRCUITS<br>Circuit Diagram | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision | A |
|---|---|---|---|---|---|---|---|---|
| | | | Approved | Eng. dept. | Ref. designation | POLE03 | Lang | en |
| | Project name | KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | | Doc. No. | 0101 | Page | D01 |
| | | | | | | | Cont | Q02 |

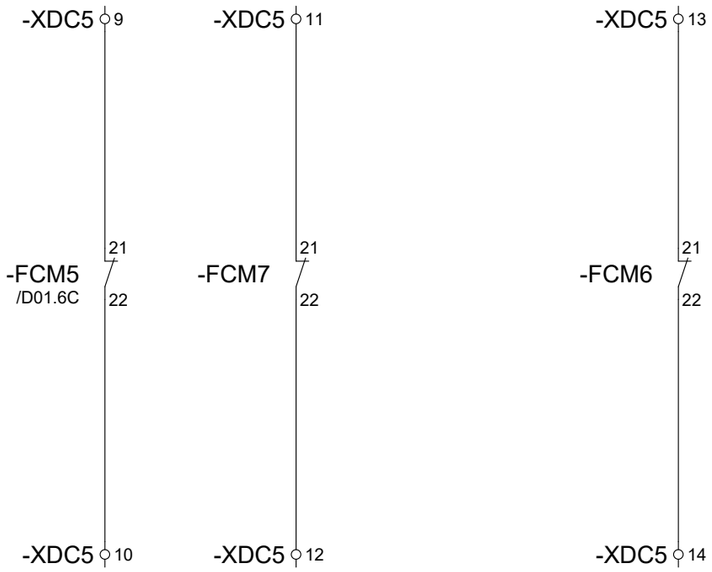
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | AVAILABLE CONTACTS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE03 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0101 | Page Q02 |
| | | ZOBA_211213170112_001 | | | | | Cont Q04 |

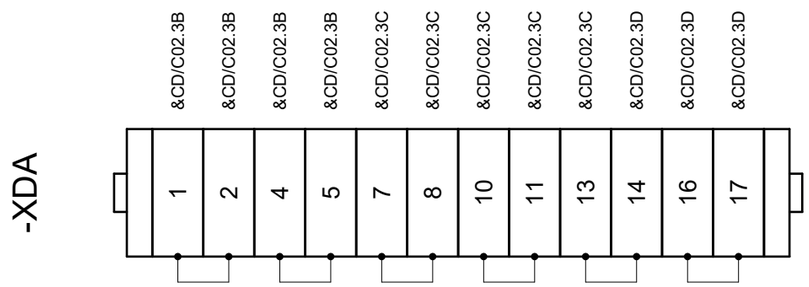
AUXILIARY CONTACTS OF MINIATURE CIRCUIT BREAKER




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title AVAILABLE CONTACTS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE03 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0101 | Page Q04 | |
| | | | | Cont X01 | |

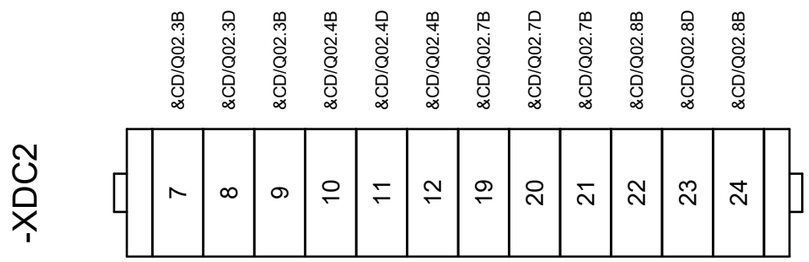
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

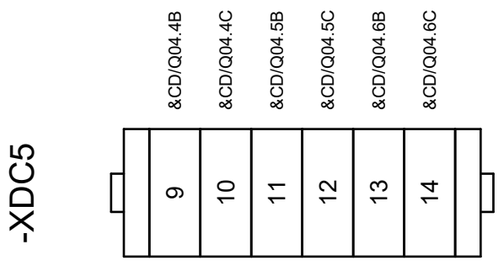
| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE03 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0101 | Page: X01 | |
| | | | | Cont: X02 | |




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title TERMINAL BLOCKS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE03 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0101 | Page X02 | |
| | | | | Cont X03 | |

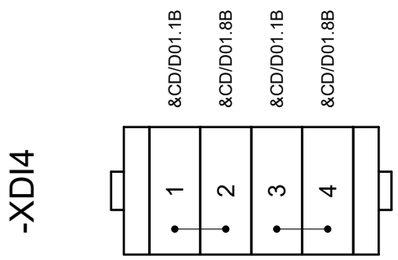
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE03 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0101 | Page: X03 | |
| | | | | Cont: X04 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat.<br>Approved: Eng. dept. | Project No./Item: OPP-21-5023205 10000<br>Ref. designation: POLE03 | Revision: A<br>Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0101 | Page: X04<br>Cont: Z01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# PART LIST

| DESIGNATION | CLASS | CHARACTERISTICS | CODE ORDER NUMBER | MANUFACTURED CODE | QUANTITY | SUPPLIER |
|---|---|---|---|---|---|---|
| -EB1 | Heating | HEATER 50W 110-250VAC/DC | 3WDA026276P0001 | SHT50W | 1 | ALFA ELECTRIC |
| -FCM5 | Protection devices | MCB S202-C0,5 | 3WCA022097P0101 | 2CDS252001R0984 | 1 | ABB |
| -FCM5 | Protection devices | AUX. CONTACT S2C-H11L<br>FOR MCB SERIES S200 | 3WCA022097P0013 | 2CDS200936R0001 | 1 | ABB |
| -PFV1 | Signal devices | VPIS ABB 43911082 | 3WDA020579P0001 | 43911082 | 1 | ELECTRONSYST. MD |
| -XDA | Terminals | TEST DISCONNECT TERMINAL BLOCK UTME 4-CT/1P | 3WDA030258P0001 | 3057432 | 12 | PHOENIX |
| -XDC2 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 12 | ABB |
| -XDC5 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 6 | ABB |
| -XDI4 | Terminals | TERMINAL D6/8.ADO.1 | 3WDA025414P0003 | EN019904621 | 4 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# M.V. DEVICES

| DESIGNATION | CLASS | CHARACTERISTICS | QUANTITY | SUPPLIER |
|---|---|---|---|---|
| -BCT1 | Current Transformer | 30/5/5A 10VA - cl.0.5 10VA - cl.0.5 | 1 | ABB |
| -BCT2 | Current Transformer | 30/5/5A 10VA - cl.0.5 10VA - cl.0.5 | 1 | ABB |
| -BCT3 | Current Transformer | 30/5/5A 10VA - cl.0.5 10VA - cl.0.5 | 1 | ABB |
| -FCF1 | Mv Fuse | In=2A | 1 | ABB |
| -FCF2 | Mv Fuse | In=2A | 1 | ABB |
| -FCF3 | Mv Fuse | In=2A | 1 | ABB |
| -QBS | Switch-Disconnector | G-Sec 24kV 630A 16kA | 1 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

CUSTOMER : **KGJ Šamorín (IFT)**

ORDER : **OPP-21-5023205** ITEM : **10000**

PROJECT : **ZOBA_211213170112_001**

SWITCHGEAR NAME : **ZOBA_211213170112_001**

DESIGNATION OF UNIT : **POLE04**

TYPE OF UNIT : **SFC**

DOCUMENT : **Circuit Diagram**

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title COVER SHEET<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE04 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0102 | Page A01 | |
| | | | | Cont A03 | |

# INDEX OF SHEETS

| SHEET | DESCRIPTION | REVISION |
|---|---|---|
| A01 | COVER SHEET | A |
| A03 | INDEX OF SHEETS | A |
| A10 | REFERENCE DESIGNATIONS | A |
| A11 | REFERENCE DESIGNATIONS | A |
| A12 | REFERENCE DESIGNATIONS | A |
| C01 | MAIN CIRCUITS | A |
| C04 | MAIN CIRCUITS | A |
| D01 | DISTRIBUTION OF AUXILIARY CIRCUITS | A |
| G01 | DISTRIBUTION OF AUXILIARY CIRCUITS | A |
| M01 | CONTROL CIRCUITS | A |
| Q02 | AVAILABLE CONTACTS | A |
| Q03 | AVAILABLE CONTACTS | A |
| Q04 | AVAILABLE CONTACTS | A |
| X01 | TERMINAL BLOCKS | A |
| X02 | TERMINAL BLOCKS | A |
| X03 | TERMINAL BLOCKS | A |
| X04 | TERMINAL BLOCKS | A |
| X05 | TERMINAL BLOCKS | A |
| Z01 | PARTS LIST | A |
| Z10 | MV DEVICES CHARACTERISTICS | A |

# REVISION LIST

| INDEX REV | DESCRIPTION | DATE | PREPARED | APPROVED |
|---|---|---|---|---|
| A | FIRST ISSUE | 13. 12. 2021 | Aut. generat. | Eng. dept. |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| L | | | | |

# STANDARD REFERENCES

*THIS DRAWING IS IN COMPLIANCE WITH THE FOLLOWING INTERNATIONAL STANDARDS:*
*- IEC 60617: GRAPHICAL SYMBOLS FOR DIAGRAMS*
*- IEC 61082: PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY*
*- IEC 81346: STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS*

*THE DIAGRAM INDICATES COMPONENTS HAVING A MOVABLE PART IN THE FOLLOWING POSITION OR OPERATIONAL STATE (IEC 61082-1 7.4.4.1):*
*- C.BREAKER OR CONTACTOR IN OPEN (OFF) AND SERVICE POSITION*
*- DISCONNECTORS AND EARTHING SWITCH IN OPEN POSITION*
*- WITHDRAWABLE VOLTAGE TRANSFORMERS IN CONNECTED POSITION*
*- CLOSING SPRINGS OF C.BREAKER IN DISCHARGED POSITION*
*- CONNECTOR OF C.BREAKER AUXILIARY CIRCUITS IN CONNECTED POSITION*
*- CIRCUITS IN DE-ENERGIZED STATE*
*- RELAYS IN NON-ACTUATED STATE*
*- GAS PRESSURE AT RATED SERVICE VALUE*
*- FUSES NOT OPERATED*
*- DOORS AND PRESSURE RELIEF FLAPS IN CLOSED POSITION*

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# REFERENCE DESIGNATION OF OBJECTS IN ELECTRICAL DOCUMENTS

(IN COMPLIANCE WITH STANDARD IEC 81346-2 AND ABB TECHNICAL STANDARD 2NBA000001)

| DESIGNATION | DESCRIPTION |
|---|---|
| -AA | MULTIFUNCTION UNIT (CENTRAL UNIT) |
| -BAD1, -BAD4 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L1 |
| -BAD2, -BAD5 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L2 |
| -BAD3, -BAD6 | CAPACITIVE VOLTAGE DIVIDER LOCATED ON PHASE L3 |
| -BAR | VOLTAGE PROTECTION RELAY |
| -BAS1 | VOLTAGE SENSOR LOCATED ON PHASE L1 |
| -BAS2 | VOLTAGE SENSOR LOCATED ON PHASE L2 |
| -BAS3 | VOLTAGE SENSOR LOCATED ON PHASE L3 |
| -BAT1 | VOLTAGE TRANSFORMER LOCATED ON PHASE L1 |
| -BAT2 | VOLTAGE TRANSFORMER LOCATED ON PHASE L2 |
| -BAT3 | VOLTAGE TRANSFORMER LOCATED ON PHASE L3 |
| -BCD | DIFFERENTIAL PROTECTIVE RELAY |
| -BCF | FEEDER PROTECTION RELAY |
| -BCG | GENERATOR PROTECTION RELAY |
| -BCM | MOTOR PROTECTION RELAY |
| -BCN | NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -BCP | TRANSFORMER PROTECTION RELAY |
| -BCR | CURRENT PROTECTION RELAY |
| -BCS1 | CURRENT SENSOR LOCATED ON PHASE L1 |
| -BCS2 | CURRENT SENSOR LOCATED ON PHASE L2 |
| -BCS3 | CURRENT SENSOR LOCATED ON PHASE L3 |
| -BCT1, -BCT4 | CURRENT TRANSFORMER LOCATED ON PHASE L1 |
| -BCT2, -BCT5 | CURRENT TRANSFORMER LOCATED ON PHASE L2 |
| -BCT3, -BCT6 | CURRENT TRANSFORMER LOCATED ON PHASE L3 |
| -BCZ | DISTANCE PROTECTION RELAY |
| -BEF | FREQUENCY PROTECTION RELAY |
| -BER | SUPERVISION RELAYS |
| -BES | SYNCHRONIZING RELAY |
| -BET | THERMAL PROTECTION RELAY |
| -BGB1...-BGB3 | POSITION SWITCHES OF CIRCUIT-BREAKER |
| -BGB5 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE ENERGIZED |
| -BGB6 | POSITION SWITCH OF CIRCUIT-BREAKER SIGNALLING UNDERVOLTAGE RELEASE EXCLUDED MECHANICALLY |
| -BGD | POSITION SWITCH OF L.V. INSTRUMENT COMPARTMENT DOOR |
| -BGD1 | POSITION SWITCH OF CIRCUIT-BREAKER COMPARTMENT DOOR |
| -BGD2 | POSITION SWITCH OF CABLE COMPARTMENT DOOR |
| -BGE1 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN OPEN POSITION |
| -BGE2 | POSITION SWITCHES SIGNALLING EARTHING SWITCH -QCE IN CLOSED POSITION |
| -BGF | POSITION SWITCHES OF MEDIUM VOLTAGE FUSES |
| -BGI7 | POSITION SWITCH SIGNALLING DICONNECTOR (OR SWITCH-DISCONNECTOR) -QBD NOT IN MANUAL OPERATION |
| -BGI41... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN FEEDER POSITION |
| -BGI43... | POSITION SWITCHES SIGNALLING SWITCH-DISCONNECTOR -QBS CLOSED IN EARTH POSITION |
| -BGK | POSITION SWITCH OF KEY LOCK |
| -BGL1 | POSITION SWITCH OF ELECTROMECHANICAL LOCK -RLE1 |
| -BGS1, -BGS2 | POSITION SWITCHES OF CIRCUIT-BREAKER SPRINGS |
| -BGS6, -BGS7 | POSITION SWITCHES OF THE SPRINGS OF SWITCH-DISCONNECTOR FOR CONTROL CIRCUITS OF THE MOTOR OPERATOR |
| -BGT1 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT2 | POSITION SWITCHES ON TRUCK SIGNALLING TRUCK IN TEST POSITION |
| -BGT3 | POSITION SWITCH ON TRUCK SIGNALLING TRUCK NOT IN ISOLATING TRAVEL POSITION |
| -BGT4 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN SERVICE POSITION |
| -BGT5 | POSITION SWITCHES ON SWITCHGEAR SIGNALLING TRUCK IN TEST POSITION |
| -BM | HYGROSTAT |
| -BPA4 | PRESSURE SWITCH LOCATED IN CABLE COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPA5 | PRESSURE SWITCH LOCATED IN CIRCUIT-BREAKER COMPARTMENT |
| -BPA6 | PRESSURE SWITCH LOCATED IN BUSBAR OR IN BUSBAR AND CIRCUIT-BREAKER COMPARTMENT FOR DETECTION OF INTERNAL ARCING |
| -BPS | PRESSURE SWITCH LOCATED ON CIRCUIT-BREAKER |
| -BR | FLAME DETECTORS, SMOKE DETECTORS |
| -BT | THERMOSTAT |
| -BU | BUCHHOLZ RELAY |
| -BX1 | UNIT WITH SENSORS FOR DETECTION OF INTERNAL ARCING |
| -BX2 | ADDITIONAL CURRENT SENSING UNIT FOR DETECTION OF INTERNAL ARCING |
| -BUS | MULTIFUNCTION SENSORS |
| -BUS1 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L1 |
| -BUS2 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L2 |
| -BUS3 | COMBINED CURRENT AND VOLTAGE SENSOR, LOCATED ON PHASE L3 |
| -CA | CAPACITORS |
| -EA1 | LIGHTING LAMP LOCATED IN L.V. INSTRUMENT COMPARTMENT |
| -EA2 | LIGHTING LAMP LOCATED IN CABLE COMPARTMENT |
| -EA4 | LIGHTING LAMP LOCATED IN CIRCUIT BREAKER COMPARTIMENT |
| -EB1 | HEATER LOCATED IN CABLE COMPARTMENT |
| -EB3 | HEATER LOCATED IN MOTOR CABINET |
| -EB5 | HEATER LOCATED IN L.V. INSTRUMET COMPARTMENT |
| -EB8 | HEATERS LOCATED IN RIGHT SIDE OF THE OPERATING MECHANISM ENCLOSURE |
| -FA1 | SURGE ARRESTER LOCATED ON PHASE L1 |
| -FA2 | SURGE ARRESTER LOCATED ON PHASE L2 |
| -FA3 | SURGE ARRESTER LOCATED ON PHASE L3 |
| -FCD | FUSE-DISCONNECTORS FOR PROTECTION OF AUXILIARY CIRCUITS |
| -FCF1 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L1 |
| -FCF2 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L2 |
| -FCF3 | MEDIUM VOLTAGE FUSE LOCATED ON PHASE L3 |
| -FCM1 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF SPRINGS CHARGING MOTOR ON MAIN CIRCUIT-BREAKER |
| -FCM2 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CONTROL CIRCUITS |
| -FCM3 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUIT-BREAKER SPRINGS CHARGING MOTOR |
| -FCM4 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR OPERATION |
| -FCM5 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -FCM6 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF BROKEN DELTA SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -FCM7 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, FIRST WINDING |
| -FCM8 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF STAR CONNECTION SECONDARY CIRCUITS OF VOLTAGE TRANSFORMERS, SECOND WINDING |
| -FCM9 | MINIATURE CIRCUIT-BREAKER FOR PROTECTION OF CIRCUITS OF PROTECTION RELAYS OR MULTIFUNCION UNITS |



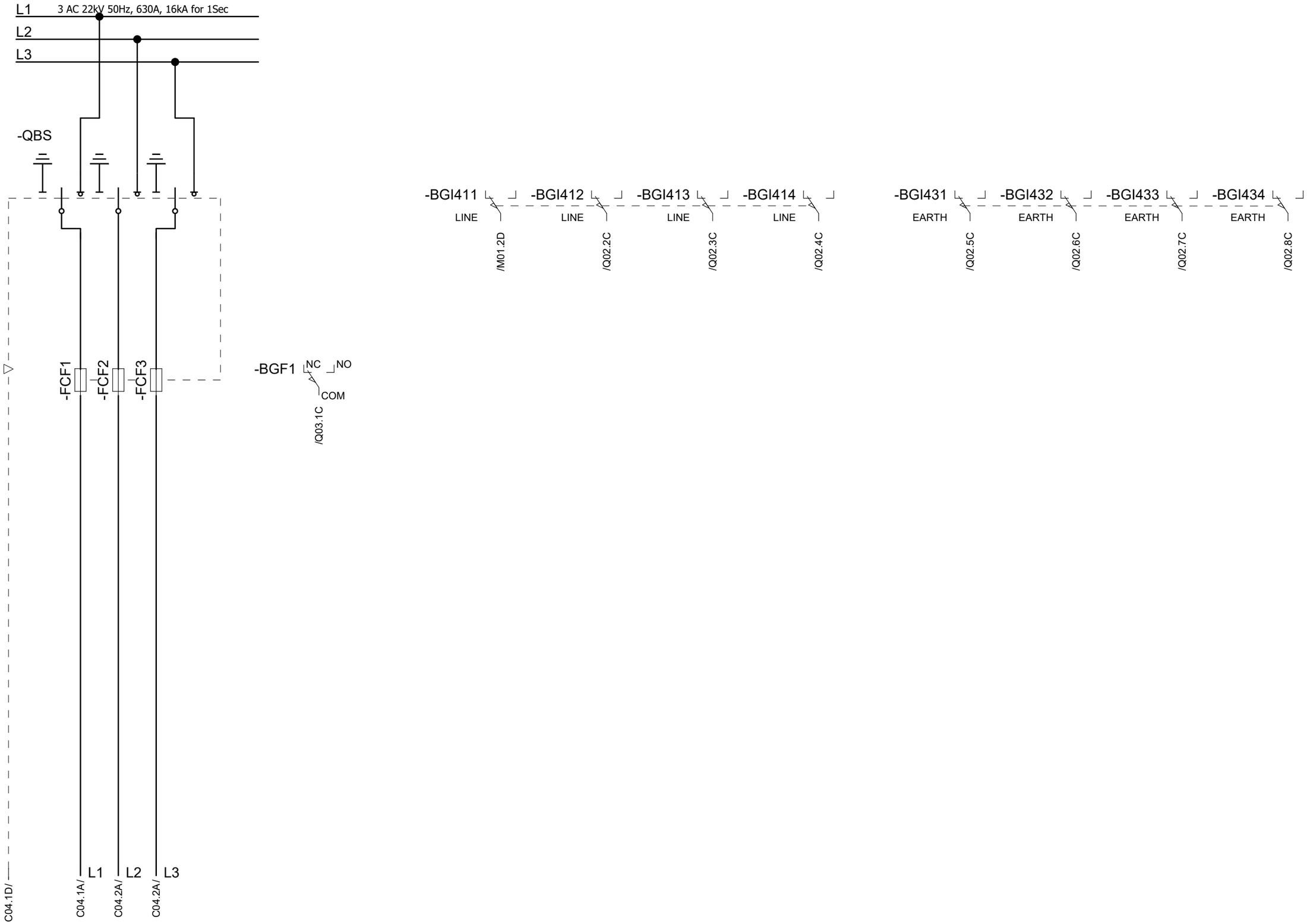
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

| | |
|---|---|
| -FCT | THERMAL OVERLOAD RELEASES |
| -GA | GENERATORS |
| -KFA1 | AUXILIARY RELAY SIGNALLING LOW GAS PRESSURE |
| -KFA2 | AUXILIARY RELAY SIGNALLING INSUFFICIENT GAS PRESSURE |
| -KFA3...-KFA9 | AUXILIARY RELAYS OR CONTACTORS |
| -KFC | CLOSING RELAYS OR CONTACTORS |
| -KFI | INTEGRATED CIRCUITS |
| -KFL | LOCKOUT RELAY |
| -KFM | MICROPROCESSORS |
| -KFN | ANTIPUMPING RELAYS |
| -KFO | OPENING RELAYS OR CONTACTORS |
| -KFP | PROGRAMMABLE LOGIC CONTROLLERS (PLC) |
| -KFR | RECLOSING RELAYS |
| -KFS | SYNCHRONIZING DEVICES |
| -KFT | AUXILIARY TIME RELAYS, DELAY ELEMENTS |
| -KFU | CONTROL UNIT |
| -KFZ | CONTROLLERS |
| -KZA | NETWORK SWITCHES (COMMUNICATION) |
| -MAD | MOTOR FOR ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR -QBS |
| -MAE | MOTOR FOR ELECTRICAL OPERATION OF EARTHING SWITCH -QCE |
| -MAS | MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -MAT | MOTOR FOR ELECTRICAL OPERATION OF TRUCK RACKING-IN/OUT |
| -MBC | CLOSING RELEASE OF CIRCUIT-BREAKER |
| -MBC4 | CLOSING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBO1 | FIRST OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO2 | SECOND OPENING RELEASE OF CIRCUIT-BREAKER |
| -MBO3 | OPENING SOLENOID FOR OVERCURRENT RELEASE OF CIRCUIT-BREAKER |
| -MBO4 | OPENING RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -MBU | UNDERVOLTAGE RELEASE OF CIRCUIT-BREAKER |
| -MBU4 | UNDERVOLTAGE RELEASE OF SWITCH-DISCONNECTOR -QBS |
| -PFB | BLUE SIGNAL LAMPS |
| -PFF | FLAG RELAYS |
| -PFG | GREEN SIGNAL LAMPS |
| -PFR | RED SIGNAL LAMPS |
| -PFS | SHORT CIRCUIT INDICATORS |
| -PFV | VOLTAGE INDICATORS |
| -PFV1 | VOLTAGE INDICATOR ON FEEDER SIDE |
| -PFV2 | VOLTAGE INDICATOR ON BUSBAR SIDE |
| -PFW | WHITE SIGNAL LAMPS |
| -PFX | CROSS INDICATORS, ELECTROMECHANICAL INDICATORS |
| -PFY | YELLOW SIGNAL LAMPS |
| -PGA | AMMETERS |
| -PGC | COUNTERS |
| -PGF | FREQUENCYMETERS |
| -PGH | HOURMETERS |
| -PGI | PROTECTION AND CONTROL UNIT: HUMAN MACHINE INTERFACE |
| -PGJ | ACTIVE ENERGY METERS |
| -PGK | REACTIVE ENERGY METERS |
| -PGM | MULTIFUNCTION INDICATORS |
| -PGP | POWER-FACTOR METERS |
| -PGQ | VARMETERS |
| -PGS | SYNCHRONOSCOPES |
| -PGV | VOLTMETERS |
| -PGW | WATTMETERS |
| -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 |
| -QBS | SWITCH-DISCONNECTORS |
| -QBT | TRUCK |
| -QCE | EARTHING SWITCH |
| -QQ | CLUTCHES |
| -RAA | FERRO-RESONANCE DUMPING RESISTOR |
| -RAD | DIODES |
| -RAI | INDUCTORS |
| -RAR | RESISTORS |
| -RF | FILTERS |
| -RLE1 | ELECTROMECHANICAL LOCK PREVENTING CIRCUIT-BREAKER CLOSING |
| -RLE2 | ELECTROMECHANICAL LOCK PREVENTING TRUCK RACKING-IN/OUT |
| -RLE3 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF EARTHING SWITCH |
| -RLE4 | ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -RLE5 | ELECTROMECHANICAL LOCK PREVENTING INSERTION OF LEVER FOR CLOSING OPERATION OF LINE SWITCH |
| -SFA | AMMETRIC SWITCHES |
| -SFC | CONTROL SWITCHES, CLOSING PUSH-BUTTONS |
| -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 | CONVERTER |
| -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 |
| -TFV | VOLTAGE TRANSDUCERS |
| -WA | BUSBARS |
| -WBC | POWER CABLES |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

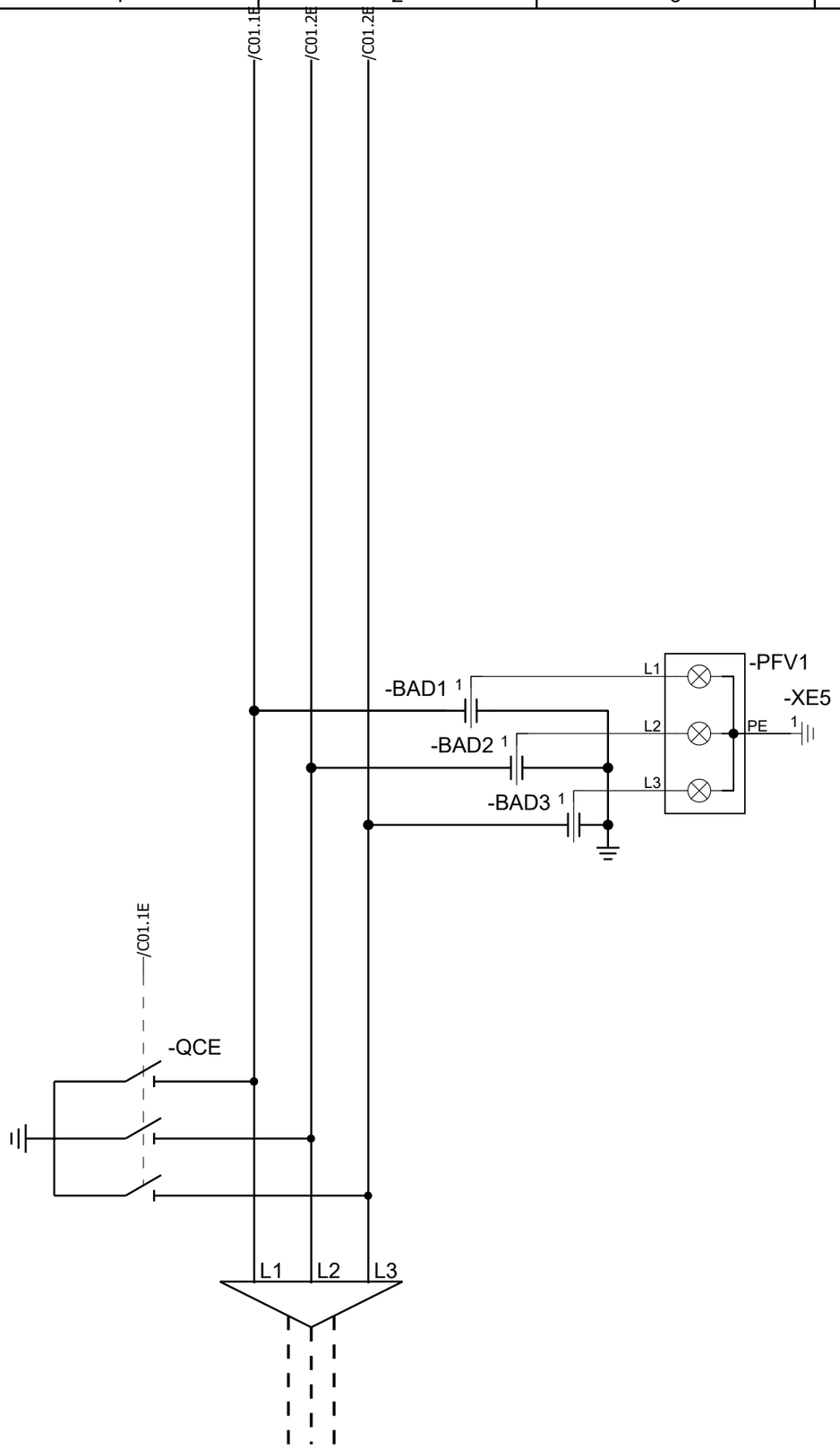
| | |
|---|---|
| -WGC | CONTROL CABLES |
| -WGS | COMMUNICATION CABLES (SHIELDED TWISTED PAIRS) |
| -WH | OPTICAL FIBERS |
| -XDA | TERMINAL BLOCK FOR CIRCUITS OF CURRENT TRANSFORMERS |
| -XDA1 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L1 |
| -XDA2 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L2 |
| -XDA3 | CONNECTOR FOR CIRCUITS OF CURRENT TRANSFORMERS ON PHASE L3 |
| -XDA5 | CONNECTOR FOR CIRCUITS OF NEUTRAL (RESIDUAL) CURRENT TRANSFORMER |
| -XDB | CONNECTOR FOR ISOLATION OF CIRCUIT-BREAKER |
| -XDB1 | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB2 | TERMINAL BLOCK FOR ADDITIONAL AUXILIARY CIRCUITS OF CIRCUIT-BREAKER |
| -XDB10...-XDB89 | CONNECTOR FOR CIRCUIT-BREAKER INTERNAL CIRCUITS |
| -XDB90 | CONNECTOR FOR POSITION SWITCH OF EARTHING SWITCH ON BUSBAR |
| -XDB91 | CONNECTOR FOR OPENING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB92 | CONNECTOR FOR CLOSING RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB93 | CONNECTOR FOR POSITION SWITCHES OF SWITCH-DISCONNECTOR |
| -XDB94 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF LINE SWITCH |
| -XDB95 | CONNECTOR FOR ELECTROMECHANICAL LOCK ON CLOSING OPERATION OF EARTHING SWITCH |
| -XDB96 | CONNECTOR FOR UNDERVOLTAGE RELEASE CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDB97 | CONNECTOR FOR CIRCUITS OF THE CONTACTOR CONTROL UNIT OF THE MOTOR FOR THE ELECTRICAL OPERATION OF SWITCH-DISCONNECTOR |
| -XDC | CUSTOMER TERMINAL BLOCK |
| -XDC1 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF CIRCUIT BREAKER |
| -XDC2 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF SWITCH-DISCONNECTOR |
| -XDC3 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF PROTECTION RELAY AND MULTIFUNCTION UNIT |
| -XDC4 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDC5 | CUSTOMER TERMINAL BLOCK FOR AUXILIARY CONTACTS OF MINIATURE CIRCUIT-BREAKERS |
| -XDE | TERMINAL BLOCK FOR AUXILIARY CIRCUITS OF EARTHING SWITCH -QCE |
| -XDH | TERMINAL BLOCK FOR AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDH1 | TERMINAL BLOCK FOR CIRCUITS OF ELECTROMECHANICAL LOCK PREVENTING THE DOOR OPENING OPERATION |
| -XDI | TERMINAL BLOCK FOR INTERCONNECTION (CONNECTION BETWEEN PANELS) |
| -XDI1 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CONTROL CIRCUITS |
| -XDI2 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR CIRCUIT-BREAKER SPRINGS CHARGING |
| -XDI3 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CIRCUITS OF MOTOR FOR SWITCH-DISCONNECTOR ELECTRICAL OPERATION |
| -XDI4 | TERMINAL BLOCK FOR INTERCONNECTIONS OF AUXILIARY CIRCUITS IN ALTERNATING CURRENT |
| -XDI6 | TERMINAL BLOCK FOR INTERCONNECTIONS OF VOLTAGE CIRCUITS |
| -XDI7 | TERMINAL BLOCK FOR INTERCONNECTIONS OF MOD-BUS CIRCUITS |
| -XDI8 | TERMINAL BLOCK FOR INTERCONNECTIONS OF CURRENT CIRCUITS |
| -XDI9 | TERMINAL BLOCK FOR INTERCONNECTIONS OF SPECIAL CIRCUITS |
| -XDM | SEALABLE TERMINAL BLOCK FOR MEASUREMENT |
| -XDS | SOCKET OUTLETS |
| -XDT | TERMINAL BLOCK FOR POSITION CONTACTS OF TRUCK |
| -XDV | TERMINAL BLOCK FOR CIRCUITS OF VOLTAGE TRANSFORMERS |
| -XDV1 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L1 |
| -XDV2 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L2 |
| -XDV3 | CONNECTOR FOR CIRCUITS OF VOLTAGE TRANSFORMERS ON PHASE L3 |
| -XDV4 | CONNECTOR FOR CIRCUITS OF FERRO-RESONANCE DUMPING RESISTOR |
| -XDX | SUPPORT TERMINAL BLOCKS |
| -XE1 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, LEFT SIDE |
| -XE2 | EARTHING TERMINAL BLOCK FOR L.V. COMPARTMENT, RIGHT SIDE |
| -XE5 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, VOLTAGE INDICATOR SIDE |
| -XE6 | EARTHING TERMINAL BLOCK FOR CABLE COMPARTMENT, REAR BOTTOM SIDE |
| -XE20 | EARTHING TERMINAL BLOCK FOR CURRENT TRANSFORMERS |
| -XE21 | EARTHING TERMINAL BLOCK FOR VOLTAGE TRANSFORMERS |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: MAIN CIRCUITS<br>Circuit Diagram | Prepared: Aut. generat.<br>Approved: Eng. dept. | Project No./Item: OPP-21-5023205 10000<br>Ref. designation: POLE04 | Revision: A<br>Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: C01<br>Cont: C04 | |

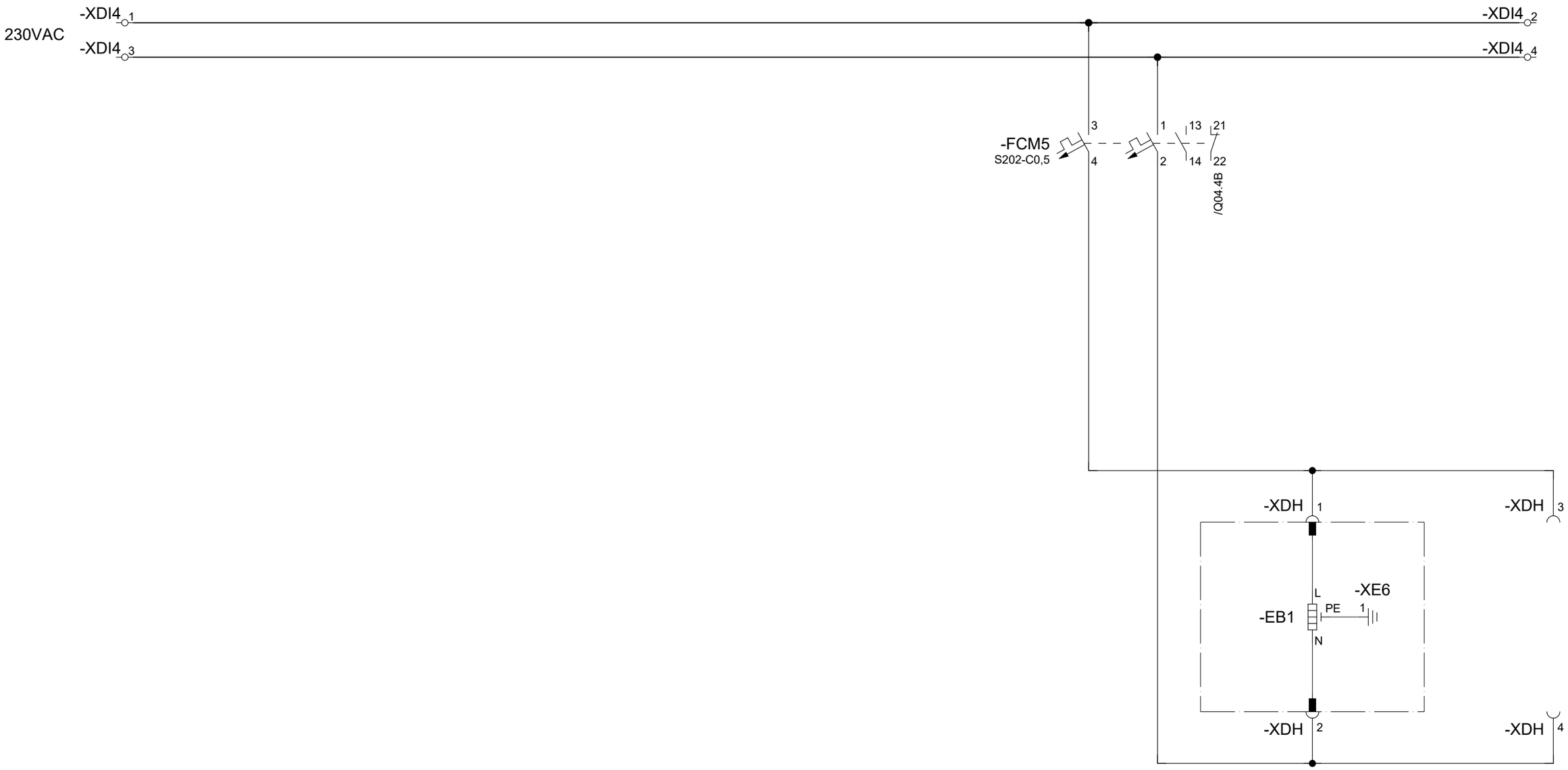
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: MAIN CIRCUITS<br>Circuit Diagram | Prepared: Aut. generat.<br>Approved: Eng. dept. | Project No./Item: OPP-21-5023205 10000<br>Ref. designation: POLE04 | Revision: A<br>Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: C04<br>Cont: D01 | |

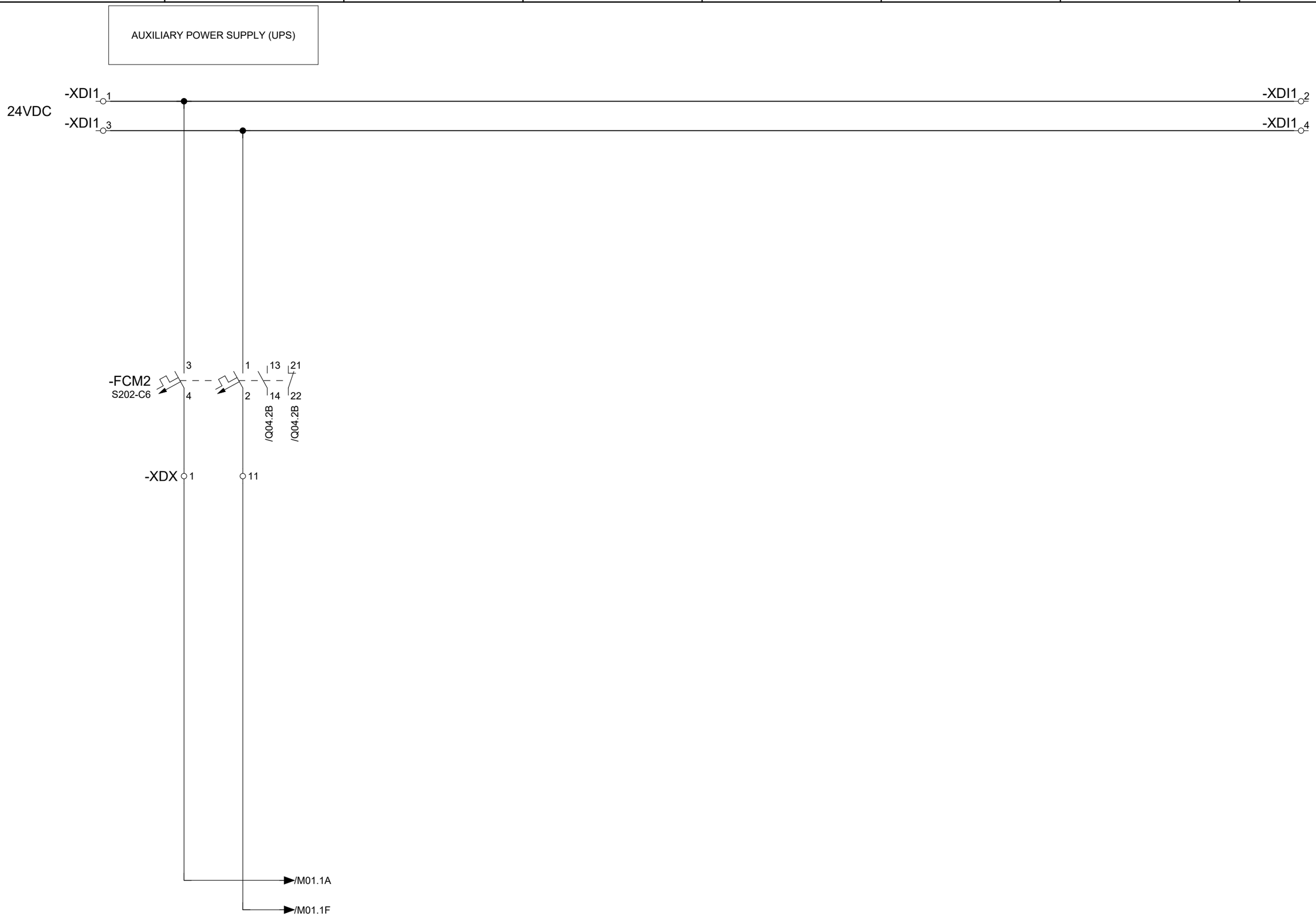
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

| AUXILIARY POWER SUPPLY | HEATING ELEMENT IN CABLE COMPARTIMENT | AVAILABLE |
|---|---|---|




| Based on | Title | DISTRIBUTION OF AUXILIARY CIRCUITS<br>Circuit Diagram | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision | A |
|---|---|---|---|---|---|---|---|---|
| | | | Approved | Eng. dept. | Ref. designation | POLE04 | Lang | en |
| | Project name | KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | | Doc. No. | 0102 | Page | D01 |
| | | | | | | | Cont | G01 |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

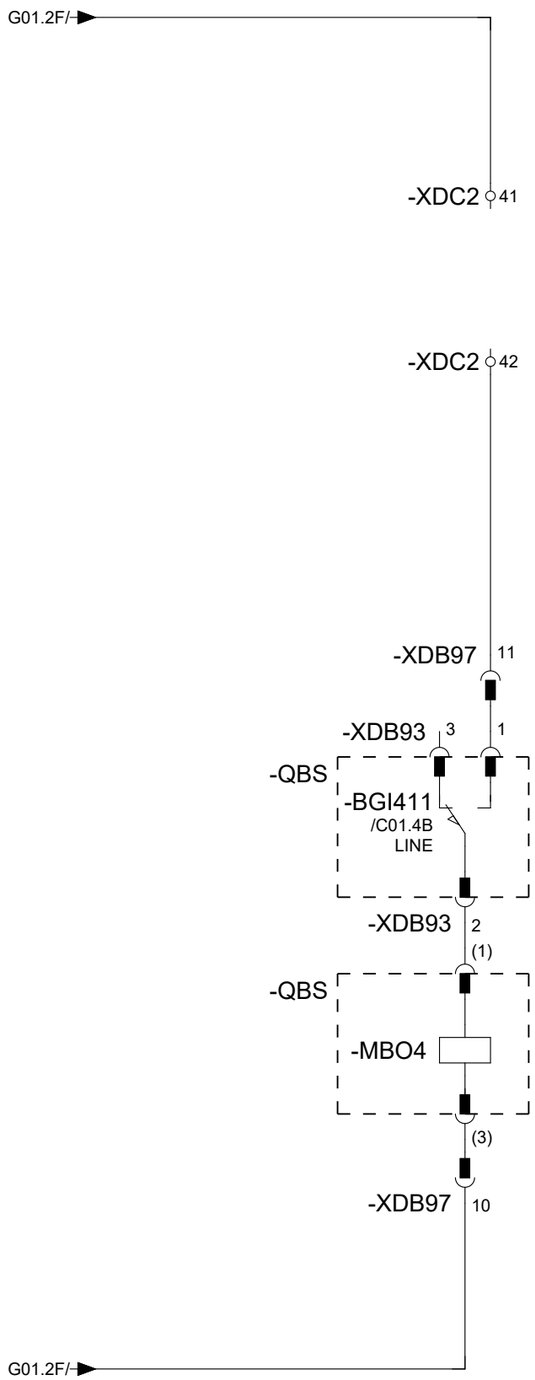



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Based on | Title | DISTRIBUTION OF AUXILIARY CIRCUITS | Prepared | Aut. generat. | Project No./Item | OPP-21-5023205 10000 | Revision A |
| | | Circuit Diagram | Approved | Eng. dept. | Ref. designation | POLE04 | Lang en |
| | Project name | KGJ Šamorín (IFT) | ABB Electrification Distribution Solutions | | Doc. No. | 0102 | Page G01 |
| | | ZOBA_211213170112_001 | | | | | Cont M01 |

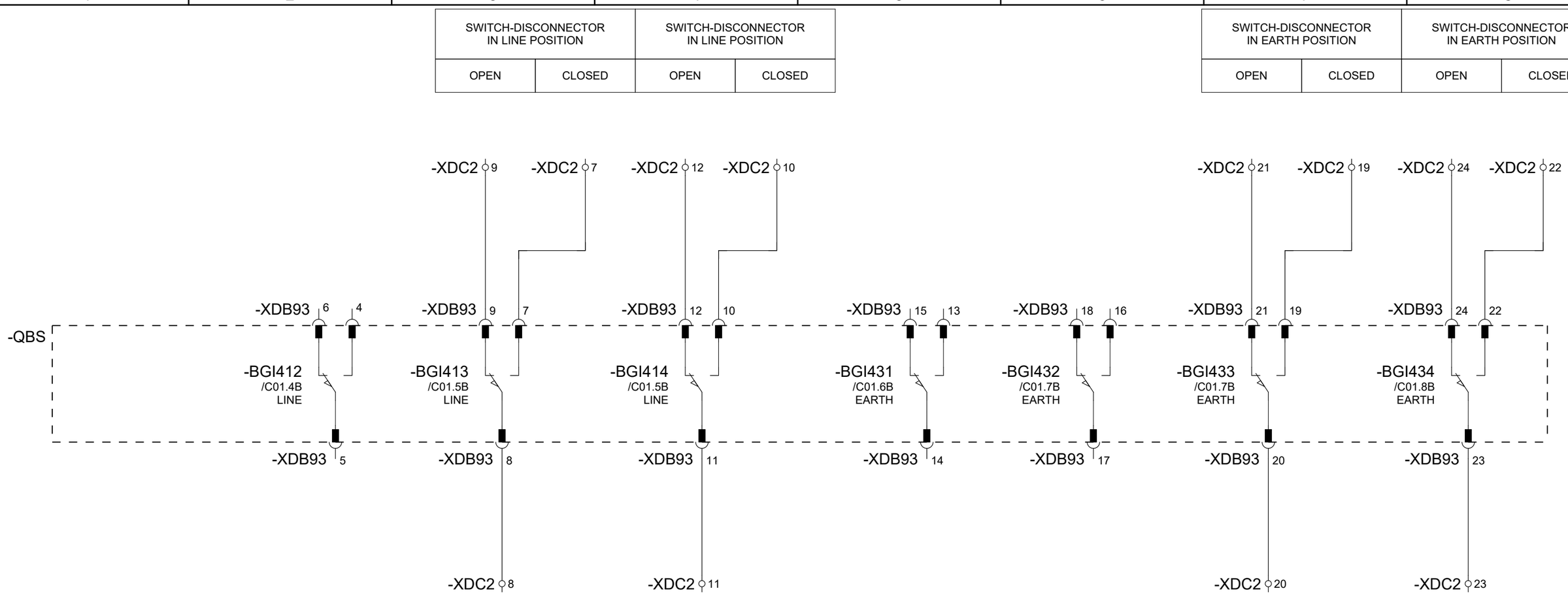
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

SWITCH DISCONNECTOR OPENING



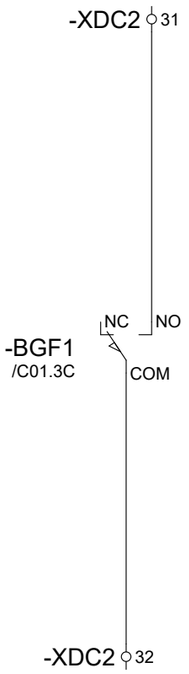

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title CONTROL CIRCUITS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE04 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0102 | Page M01 | |
| | | | | Cont Q02 | |




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: AVAILABLE CONTACTS<br>Circuit Diagram | Prepared: Aut. generat.<br>Approved: Eng. dept. | Project No./Item: OPP-21-5023205 10000<br>Ref. designation: POLE04 | Revision: A<br>Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: Q02<br>Cont: Q03 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

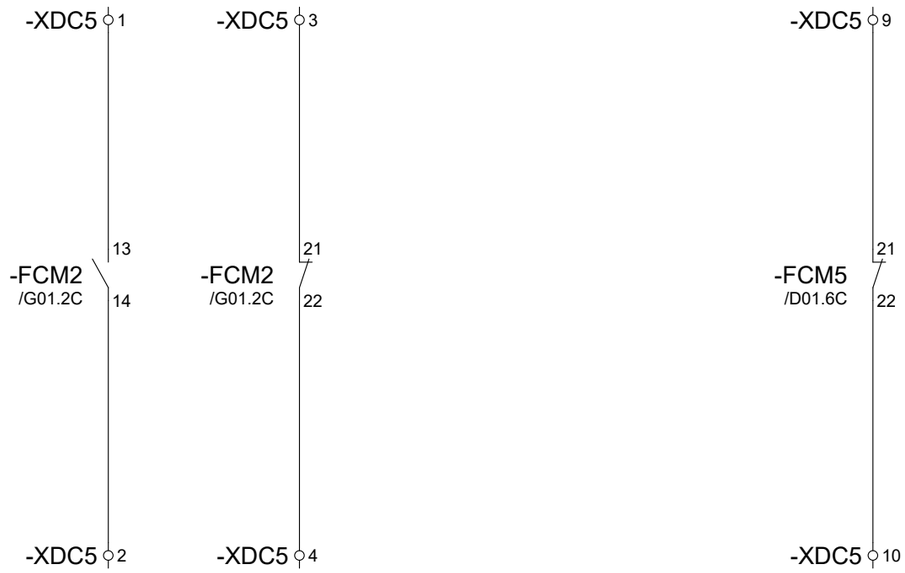
FUSE TRIP




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title AVAILABLE CONTACTS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE04 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0102 | Page Q03 | |
| | | | | Cont Q04 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

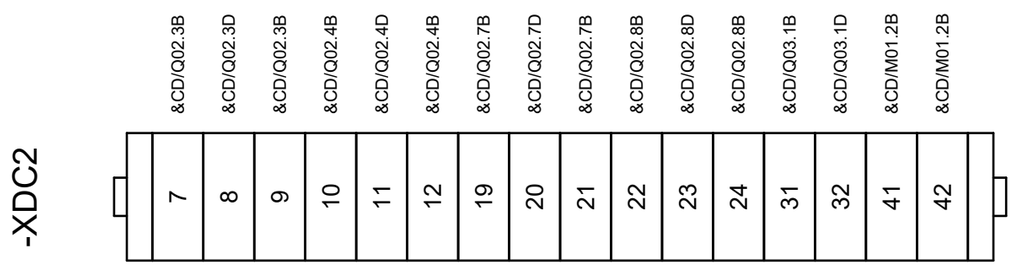
AUXILIARY CONTACTS OF MINIATURE CIRCUIT BREAKER




| | | | | | |
|---|---|---|---|---|---|
| Based on | Title AVAILABLE CONTACTS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE04 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0102 | Page Q04 | |
| | | | | Cont X01 | |

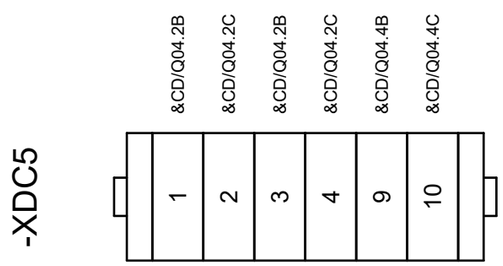
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title TERMINAL BLOCKS<br>Circuit Diagram | Prepared Aut. generat. | Project No./Item OPP-21-5023205 10000 | Revision A | |
| | | Approved Eng. dept. | Ref. designation POLE04 | Lang en | |
| | Project name KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No. 0102 | Page X01 | |
| | | | | Cont X02 | |

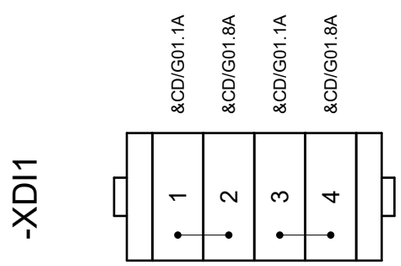



NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE04 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: X02 | |
| | | | | Cont: X03 | |

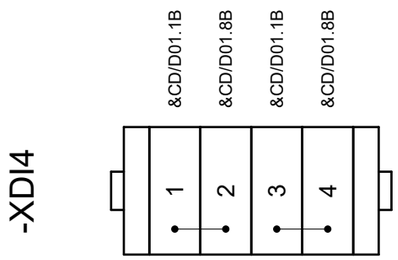
WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

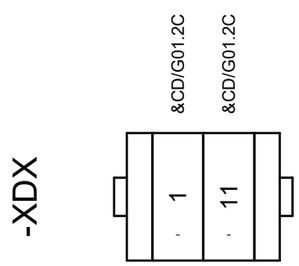
| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE04 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: X03 | |
| | | | | Cont: X04 | |




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE04 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: X04 | |
| | | | | Cont: X05 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.




NOTE : "&CD MEANS THAT REFERENCE IS RELEVANT TO CIRCUIT DIAGRAM"

| | | | | | |
|---|---|---|---|---|---|
| Based on | Title: TERMINAL BLOCKS<br>Circuit Diagram | Prepared: Aut. generat. | Project No./Item: OPP-21-5023205 10000 | Revision: A | |
| | | Approved: Eng. dept. | Ref. designation: POLE04 | Lang: en | |
| | Project name: KGJ Šamorín (IFT)<br>ZOBA_211213170112_001 | ABB Electrification Distribution Solutions | Doc. No.: 0102 | Page: X05 | |
| | | | | Cont: Z01 | |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# PART LIST

| DESIGNATION | CLASS | CHARACTERISTICS | CODE ORDER NUMBER | MANUFACTURED CODE | QUANTITY | SUPPLIER |
|---|---|---|---|---|---|---|
| -EB1 | Heating | HEATER 50W 110-250VAC/DC | 3WDA026276P0001 | SHT50W | 1 | ALFA ELECTRIC |
| -FCM2 | Protection devices | MCB S202-C6 | 3WCA022097P0107 | 2CDS252001R0064 | 1 | ABB |
| -FCM2 | Protection devices | AUX. CONTACT S2C-H11L FOR MCB SERIES S200 | 3WCA022097P0013 | 2CDS200936R0001 | 1 | ABB |
| -FCM5 | Protection devices | MCB S202-C0,5 | 3WCA022097P0101 | 2CDS252001R0984 | 1 | ABB |
| -FCM5 | Protection devices | AUX. CONTACT S2C-H11L FOR MCB SERIES S200 | 3WCA022097P0013 | 2CDS200936R0001 | 1 | ABB |
| -PFV1 | Signal devices | VPIS ABB 43911082 | 3WDA020579P0001 | 43911082 | 1 | ELECTRONSYST. MD |
| -XDC2 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 16 | ABB |
| -XDC5 | Terminals | TERMINAL D2,5/5.ADO | 3WCA022102P0001 | EN019955423 | 6 | ABB |
| -XDI1 | Terminals | TERMINAL D6/8.ADO.1 | 3WDA025414P0003 | EN019904621 | 4 | ABB |
| -XDI4 | Terminals | TERMINAL D6/8.ADO.1 | 3WDA025414P0003 | EN019904621 | 4 | ABB |
| -XDX | Terminals | TERMINAL D1/5.ADO.1 | 3WDA025413P0001 | 1SNA199563R2400 | 2 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.

# M.V. DEVICES

| DESIGNATION | CLASS | CHARACTERISTICS | QUANTITY | SUPPLIER |
|---|---|---|---|---|
| -FCF1 | Mv Fuse | Fuses of length 442mm -50A | 1 | ABB |
| -FCF2 | Mv Fuse | Fuses of length 442mm -50A | 1 | ABB |
| -FCF3 | Mv Fuse | Fuses of length 442mm -50A | 1 | ABB |
| -QBS | Switch-Disconnector | G-Sec 24kV 100A 16kA | 1 | ABB |
| -QCE | Earthing switch | EF 230 | 1 | ABB |

WE RESERVE ALL RIGHTS IN THIS DOCUMENT AND IN THE INFORMATION CONTAINED THEREIN. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT EXPRESS AUTHORITY IS STRICTLY FORBIDDEN.