Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR
D					
C					
B					
A					

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANȚAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT

C.N.C.F. "C.F.R." - S.A.

CONSULTANT / CONSULTANT

			Data Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza		
Aprobat Approved	Coordonator Secțiune 1 Section 1 Coordinator	C. Gambelli		
Verificat Checked	Tunel Expert Tunnel Expert	C. Gambelli		
Întocmit Elaborated	Proiectant Designer	P. Amodio		

SUBCONSULTANT / SUBCONSULTANT

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible			
Întocmit Elaborated	Proiectant Designer			

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h.
Sectiune 1 Brasov - Sighisoara

Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h.
Section 1 Brasov - Sighisoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
P.Th. / T.D.

Denumire desen / Drawing Title : **TUNNEL/TUNELUL HOMOROD**

RACIOS SIDE/INSPRE RACOS
Safety Tunnel Power Supply system /Sistem de alimentare de siguranță a tunelul
Single-line diagrams low-voltage electrical panels of safe area QdP
Diagrame single-line cadru electrice joasa tensiune de zona sigura QdP

Codificare / Codification System	Scara / Scale	LOT	Nr. / No
E A 5 1 0 1 C 1 2 L X T S 2 0 7 6 0 0 4 0	-		

ELECTRICAL CHARACTERISTICS/ CARACTERISTICILE ELECTRICE

RATED INSULATION VOLTAGE/TENSIUNEA NOMINALA DE IZOLARE		1000 V
RATED WORKING VOLTAGE/TENSIUNE DE LUCRU NOMINALA		400/230 V
NOMINAL FREQUENCY/FRECVENTA NOMINALA		50 Hz
ELECTRICAL SYSTEM/SISTEMUL ELECTRIC		TN-S
MAXIMUM SHORT CIRCUIT CURRENT ALLEGED/MaximA Curent de scurt circuitului PRESUPUSA MAXIMUM SHORT CIRCUIT CURRENT ALLEGED/MaximA Curent de scurt circuitului PRESUPUSA		55 kA
RATED CURRENT (BAR MAIN)/CURENT NOMINAL (BARUL PRINCIPAL)		400 A
ACCEPTABLE RATED CURRENT/CURENT NOMINAL ACCEPTABIL SHORT FOR 1 SEC./SCURT PENTRU 1 SEC.		105 kA
RATED CURRENT/CURENT NOMINAL ALLOWABLE PEAK/ADMISIBILE PEAK		254 kA
NOMINAL VOLTAGE AUXILIARY CIRCUITS/ TENSIUNEA NOMINAL CIRCUITELOR AUXILIARE		230 Vac / 24 Vdc
TEST VOLTAGE/TENSIUNE DE TESTARE A 50 HZ FOR 1 MIN./A 50 HZ PENTRU 1 MIN.	CIRCUITS OF POWER/ CIRCUITE DE PUTERE	2500 V
	AUXILIARY CIRCUITS/ CIRCUITELOR AUXILIARE	1500 V
IMPULSE WITHSTAND VOLTAGE/TENSIUNE DE REZISTA LA IMPULS		8 kV

TESTING/TESTAREA
SEC. CEI 17-113

[X] INDIVIDUAL TESTS/TESTE INDIVIDUALE

[ ] TYPE TESTS/TESTE DE TIP

SPECIFIC DESCRIPTION/DESCRIERE SPECIFICA:

SBARRE PRINCIPALI E DERIVATE
- IN PIATTO DI RAME E/O ALLUMINIO
- ISOLAMENTO IN ARIA

SBARRA DI TERRA
- SEZIONE MINIMA 150 mmq

MECHANICAL CHARACTERISTICS/ CARACTERISTICILE MECANICE

FORM OF SEGREGATION/FORMA DE SEGREGARE		3A
CARPENTRY/TAMPLARIE — MATERIAL/MATERIALE		ACCIAIO ZINCATO E VERNICIATO
CARPENTRY/TAMPLARIE — EXTERIOR PANEL THICKNESS/ GROSIMEA PANOULUI EXTERIOR		15/10 mm
CARPENTRY/TAMPLARIE		

DEGREE OF PROTECTION/ GRAD DE PROTECTIE

IP41	ON THE EXTERNAL INVOLUCRE/ PE EXTERIOR LOCUINTE
IP20	WITHIN THE PANEL AT OPEN DOORS/ ÎN CADRULA UN DESCHISE USI

PANEL ACCESSIBILITY/ACCES CADRU	FRONT/FATA	SI
	BACK/INAPOI	NO
	SIDE/LATERALE	SI
EXPANDABLE PANEL/EXTENSIBIL CADRU	RIGHT SIDE/PARTEA DREAPTA	SI
	LEFT SIDE/PARTEA STÂNGA	SI
FUND/PARTEA INFERIOARA	FONDO CHIUSO/BOTOLA ASPORTABILE	
FRAME OR BASIC IRON/ FRAME SAU FIER DE BASE	ACCIAIO ZINCATO	

POWER/PUTERE	ARRIVALS/SOSIRI	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
POWER/PUTERE	DEPARTURES/PLECARI	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
AUXILIARIES/ AUXILIARE	ENTRY/INTRARE	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
AUXILIARIES/ AUXILIARE	OUTPUT/IESIRE	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO

PAINTING/PICTURA [X]
(CYCLE NORMALIZED TGN-001)/
(CICLUL NORMALIZAT TGN-001)
SPESS. MIN. 50 MICRON ±10%

EXTERNAL PANEL/ EXTERNE CADRU	RAL 7035
INTERNAL PANEL/ INTERN CADRU	

OVERALL DIMENSIONS (mm)/ DIMENSIUNI DE GABARIT (mm): 3950 LX 2231 HX 637 P

SUBDIVISION SECTIONS/COMPARTIMENTARE SECTIUNI:

TOTAL MASS/TOTALE MASA: KG.

CONDITIONS OF SERVICE CONDITII DE SERVICE

TEMPERATURE MAX./TEMPERATURA MAX.	+40°C
MEDIA AMBIENT TEMPERATURE/TEMPERATURII ÎN CAMERA MEDIA	
MINIMUM AMBIENT TEMPERATURE/TEMPERATURA IN CAMERA MINIMA	-5°C
RELATED HUMIDITY MAX/UMIDITATE RELATIVA MAX	83% (23°C)
ALTITUDE ABOVE SEA LEVEL/ALTITUDINEA	<1000 mt
PRESSURE-DEPRESSION/PRESIUNE-DEPRESIA	

COMPLIANCE WITH REGULATIONS/RESPECTAREA REGLEMENTARILOR

CEI ITALIANE 17-113 / EN61439

IEC INTERNAZIONALI 61439-1

OTHERS/ALTE

NOTE

CAVETTERIA PER CIRCUITI AUSILIARI:
- TIPO N07G9-K
- CAVETTERIA DI COLORE NERO

SEZIONI:
- CIRCUITI AMPEROMETRICI/VOLTMETRICI >= 2.5 mmq
- CIRCUITI DI COMANDO >= 1.5 mmq
- CIRCUITI DI SEGNALAZIONE >= 1.5 mmq

NOTES NUMBER (SEE SUBSEQUENT SHEETS):

(1) COMMAND TO RELEASE OF EMERGENCY BUTTON PLACE OUT OF THE DOOR OF THE CABIN

(2) REPORTING TO BRING THE SYSTEM OF SUPERVISION

(3) RELATED TO EMERGENCY NETWORK DATA IN SQUARE

(4) 3 BLOCKS WITH KEYS RINGED WITH KEY ON:

- EARTHING SIDE MT
- EARTHING PDQ
- EARTHING ARRIVAL IN FIRST CELL QDT

(5) 2 BLOCKS WITH KEYS RINGED WITH KEY ON:

- SWITCH BACK PDQ
- CELL SWITCH IN THE FIRST ARRIVAL QDT

(6) ELECTRIC DRIVE THE SWITCH TRANSFORMER PROTECTION OF LAND IN RELATED Q_MT

(7) CONSENT BY OPERATOR FOR RECONFIGURATION / REFEEDING THROUGH AUTOMATIC SYSTEM OF PROTECTION

(8) INPUTS FOR THE RE-ACTIVATION / REFEEDING AUTOMATIC (TWISTED SHIELDED INDIVIDUALLY 2X1 SQ MM)

(9) THE CORRESPONDING SWITCH INTERLOCK ELECTRIC TRANSFORMER SIDE MT

KEY TO ABBREVIATIONS:

- Ib: OPERATING CURRENT, CALCULATED ACCORDING TO THE SIZE OF POWER [A]

SWITCH

- In: PROTECTION OF RATED CURRENT [A]
- Ith: SETTING THE CURRENT RESPONSE THERMAL PROTECTION [A]
- Idn: CALIBRATION OF DIFFERENTIAL CURRENT [A]
- Im: CALIBRATION OF MAGNETIC ACTION OF THE PROTECTION OF CURRENT [A]

CONTACTOR

- In: CONTACTOR SIZE [A]
- Pn: SCOPE OF CONTACTOR [kW]

TA

- I1n/I2n: CONVERSION RATIO OF CURRENT [A / A]

TV

- V1n/V2n: CONVERSION RATIO OF NOMINAL [v / v]

POWER LINE

- Iz: PERMISSIBLE CURRENT CABLE, CALCULATED ON THE BASIS OF FLOW RATE AND COEFFICIENTS DERATING ARISING FROM THE INSTALLATION MODE [A]
- Cdt in Ib: PARTIAL LOSS OF POWER (PIPELINE DUE TO USERS ONLY) AND THE CURRENT Ib cosj NOMINAL [%]
- Cdt tot. in Ib: DROP VOLTAGE TOTAL (FROM THE VALLEY TO THE PROVISION OF USERS) AND THE CURRENT Ib cosj NOMINAL [%]
- Zk: MINIMUM IMPEDANCE FAULT OR THREE-PHASE NEUTRAL DOWNSTREAM USERS [mW]
- Zs: Minimal impedance of phase-earth fault DOWNSTREAM USERS [mW]
- Ik trifas. / SINGLE-PHASE.: MAXIMUM SHORT CIRCUIT CURRENT PHASE PERMANENT NEUTRAL-PHASE OR DOWNSTREAM USERS [kA]
- Ik1 phase / earth: MAXIMUM SHORT CIRCUIT CURRENT PHASE-GROUND DOWNSTREAM USERS [kA]

NOTE numărul (a se vedea coli ulterioare):

(1) COMANDA LA ELIBERAREA DE buton de urgenta plasa în afara uşa DE MÂNĂ

(2) RAPORTARE pentru a aduce sistemul de supraveghere

(3) referitoare la datele de REŢEA DE URGENŢĂ în Piaţa

(4) 3 blocuri cu ajutorul tastelor cu inele CHEIE ON:

- Împământare SIDE MT
- Împământare PDQ
- SOSIREA de împământare ÎN QDT prima celulă

(5) 2 blocuri cu CHEILE inele cu CHEIE ON:

- Reveni PDQ
- SWITCH celulă din QDT prima sosire

(6) ELECTRICE DRIVE PROTECŢIA TRANSFORMER SWITCH de teren în Q_MT CONEXE

(7) ACORD de către operator pentru reconfigurarea / refeeding PRIN SISTEM AUTOMAT DE PROTECŢIE

(8) input-uri pentru AUTOMATIC RE-ACTIVAREA / refeeding (rasucita ecranate INDIVIDUAL mm 2x1 m^2)

(9) corespunzătoare SWITCH interblocare electrice de transformare MT SIDE

CHEIA ABREVIERI:

- Ib: Curent de operare, calculat în conformitate cu DIMENSIUNEA DE PUTERE [A]

SWITCH

- În: PROTECŢIA A Curent nominal [A]
- Ith: STABILIRE PROTECŢIA RĂSPUNS ACTUAL termică [A]
- Idn: CALIBRAREA DIFERENTIAL curent [A]
- Im: CALIBRAREA DE ACŢIUNE MAGNETICE DE PROTECŢIE A curent [A]

CONTACTOR

- În: SIZE CONTACTOR [A]
- Pn: DOMENIUL DE APLICARE A CONTACTOR [kW]

TA

- I1n/I2n: rata de conversie a curentului [A / A]

televizor

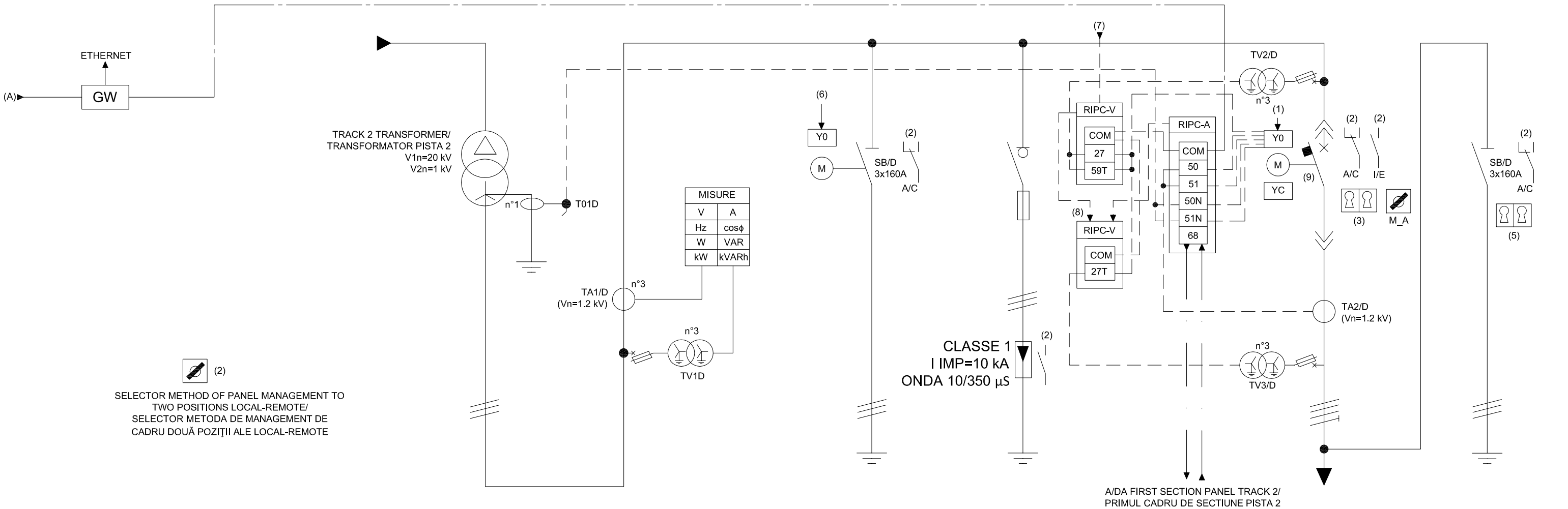
- V1n/V2n: rata de conversie nominală de [v / v]

POWER LINE

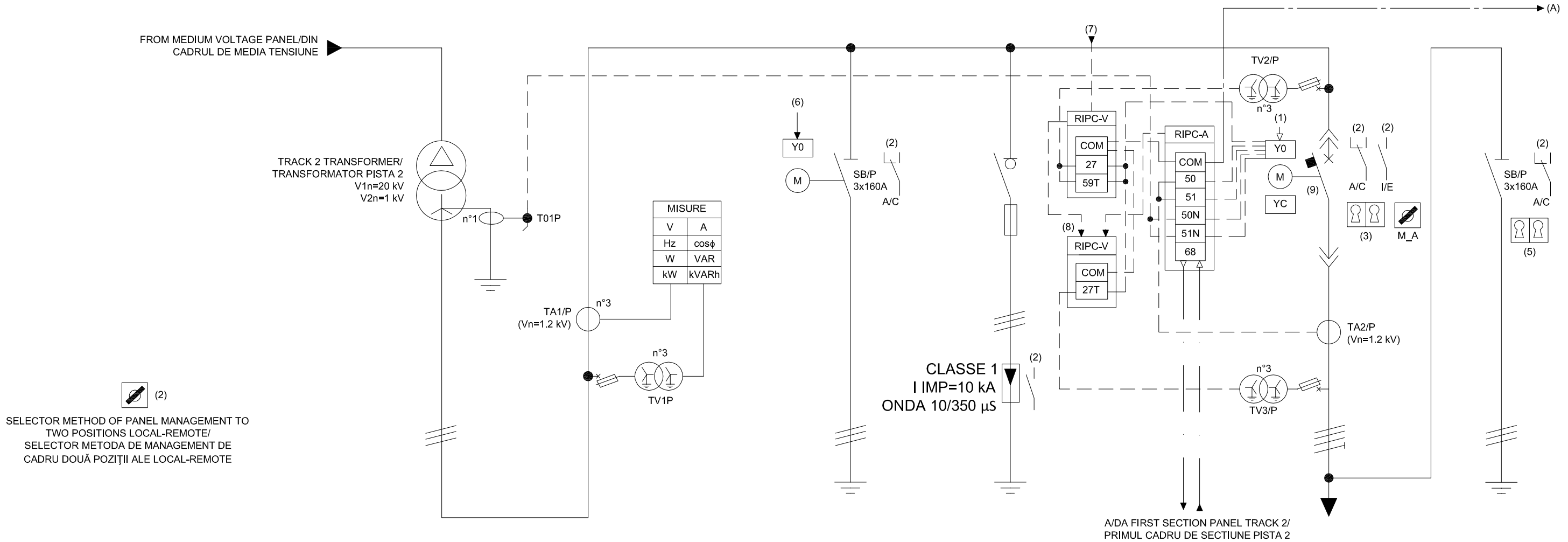
- Iz: CABLU ADMISE CURENT, calculată pe baza debitului şi coeficienţii de declasare REZULTATE DIN MODUL DE INSTALARE [A]
- Cdt în Ib: pierderi parţiale de putere (PIPELINE CAUZA utilizatorilor numai), iar curentul Ib cosj NOMINALE [%]
- Cdt tot. în Ib: tensiunea totală DROP (DIN vale la dispoziţie de utilizatori) şi curentul Ib cosj NOMINALE [%]
- ZK: FAULT impedanta MINIMUM sau trei faze UTILIZATORI NEUTRE DOWNSTREAM [mW]
- Zs: impedanta minima de fază-pământ vina DOWNSTREAM Utilizatori [mW]
- Trifas Ik / SINGLE-PHASE: MAXIM Curent de scurt CIRCUIT FAZA utilizatori permanenti NEUTRE-FAZA sau în aval [kA]..
- Ik1 faza / pământ: maximă a circuitului, Curent de scurt FAZA-SOL UTILIZATORII DIN AVAL [kA]

CODES ANSI LEGEND/
LEGENDA CODURI ANSI

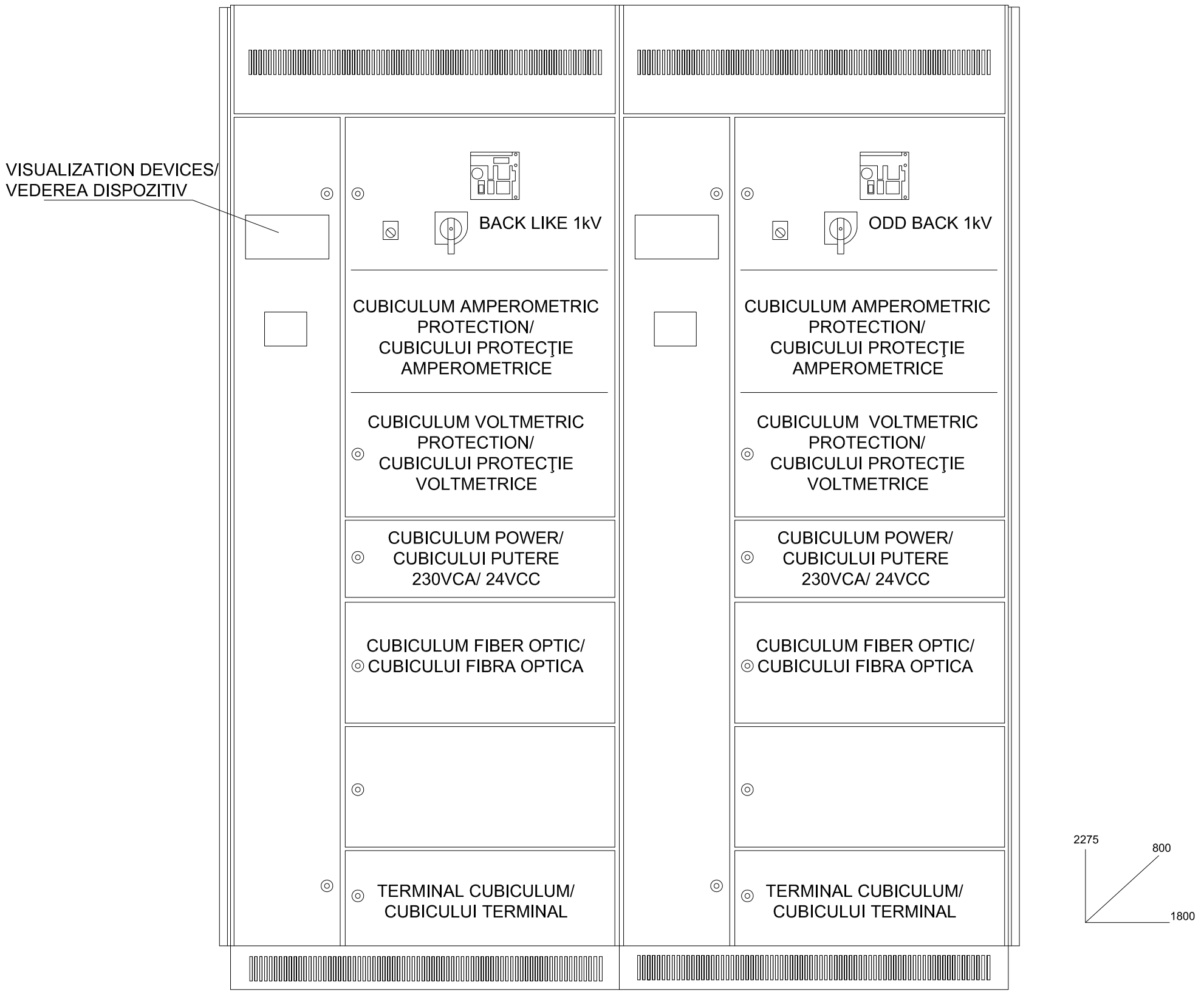
49T	MAXIMUM TEMPERATURE (TRANSFORMER)/TEMPERATURA MAXIMA (TRANSFORMATOR)
50	MAXIMUM PEAK CURRENT/CURENTUL MAXIM INSTANTANEU
51	CURRENT MAXIMUM LATE/CURENTUL MAXIM INTARZIERE
51N	MAXIMUM EARTH FAULT LATE CURRENT/CURENT MAXIM DE DEFECTE PAMÂNTULUI INTARZIERE
67	MAXIMUM CURRENT DIRECTIONAL PHASE/CURENTUL MAXIM DE DIRECTIONAL FAZA
67N	MAXIMUM CURRENT DIRECTIONAL EARTH FAULT/MAXIME DIRECTIONAL CURENT DE DEFECT PAMÂNTULUI
68	SELECTIVITY LOGIC (NETWORK LOCK)/SELECTIVITATEA LOGIC (RETEA BLOCK)
52	SWITCH/SWITCH
89	DISCONNECTOR/SEPARATOR

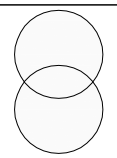
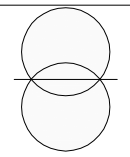
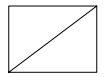
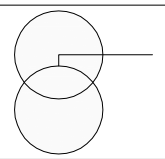
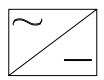
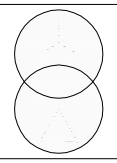
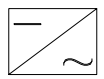
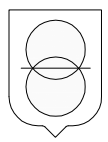
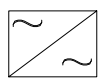
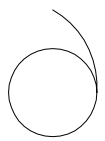
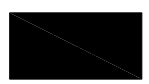


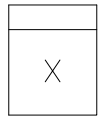
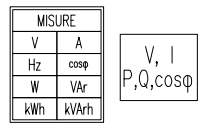
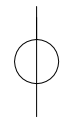
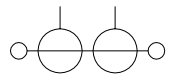
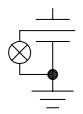
USERS/UTILIZATORI	NAME/NUME				TR20/1kV TRACK 2/PISTA 2		MEASURES/MĂSURI		DISCONNECTOR GROUND/ SEPARATOR DE SOL		UNLOADER OVERVOLTAGE/ DESCĂRCĂTOR SUPRATENSIUNE		SWITCH BACK 1000V-TRACK 2 COMUTAȚI ÎNAPOI 1000V-PISTA 2		DISCONNECTOR GROUND/ SEPARATOR DE SOL	
	SIGLA								SA/D		SCA2		IQdP/D		SB/D	
	TYPE/TIP								R-S-T		R-S-T		R-S-T		R-S-T	
	POWER/PUTERE	kW	Ib	A												
	CONTEMPORANEITY COEFFICIENT CONTEMPORANEITATEA COEFICIENT		cosfi													
SWITCH OR DISCONNECTOR/	CONSTRUCTOR															
	TYPE/TIP															
	N.POLES		In						3	160	3	125	3	250	3	160
	Ith			A									-	-		
	IM (o curva)	A	Pdi	kA									-	12		
FUSE/FUSE	TYPE/TIP										22x58					
	CALIBER			A							125 gG					
TA	I1n/I2n			A/A	100/1		100/5						200/5			
	PERFORMANCE PERFORMANȚĂ	VA	PRECISION PRECIZIE		5	5P5	3	Cl. 0.5					2	5P10		
TV	V1n/V2n			V/V			(1000/V3)/(1000/V3)						(1000/V3)/(1000/V3)			
	PERFORMANCE PERFORMANȚĂ	VA	PRECISION PRECIZIE				20	Cl. 0.5					20	3P		
POWER LINE/ LINE PUTERE	CABLE TYPE/TIP DE CABLU				FG10M1 0,6/1 kV								FG10M1 0,6/1 kV			
	FORMATION/FORMARE				3x1x240 mmq								3x1x240 mmq			
	LENGHT/LUNGIMEA			m	20								-			
	Iz			A	396								396			
	C.D.T. a Ib	%	C.D.T. totale a Ib	%												
	Zk	mΩ	Zs	mΩ												
	Ik trifase/monof.	kA	Ik fase/terra	kA												
	TERMINAL NUMBER/TERMINAL NUMĂR															

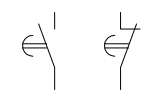
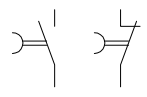
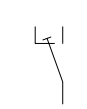


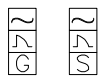
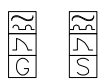
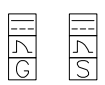
USERS/UTILIZATORI	NAME/NUME				TR20/1kV TRACK 1/PISTA 1		MEASURES/MĂSURI		DISCONNECTOR GROUND/ SEPARATOR DE SOL		UNLOADER OVERVOLTAGE/ DESCĂRCĂTOR SUPRATENSIUNE		SWITCH BACK 1000V-TRACK 1 COMUTAŢI ÎNAPOI 1000V-PISTA 1		DISCONNECTOR GROUND/ SEPARATOR DE SOL	
	SIGLA								SA/P		SCA1		IQdP/P		SB/P	
	TYPE/TIP								R-S-T		R-S-T		R-S-T		R-S-T	
	POWER/PUTERE	kW	Ib	A												
	CONTEMPORANEITY COEFFICIENT CONTEMPORANEITATEA COEFICIENT		cosfi													
SWITCH OR DISCONNECTOR/	CONSTRUCTOR															
	TYPE/TIP															
	N.POLES		In						3	160	3	125	3	250	3	160
	Ith			A									-	-		
	IM (o curva)	A	Pdi	kA									-	12		
FUSE/FUSE	TYPE/TIP										22x58					
	CALIBER			A							125 gG					
TA	I1n/I2n			A/A	100/1		100/5						200/5			
	PERFORMANCE PERFORMANŢĂ	VA	PRECISION PRECIZIE		5	5P5	3	Cl. 0.5					2	5P10		
TV	V1n/V2n			V/V			(1000/V3)/(1000/V3)						(1000/V3)/(1000/V3)			
	PERFORMANCE PERFORMANŢĂ	VA	PRECISION PRECIZIE				20	Cl. 0.5					20	3P		
POWER LINE/ LINE PUTERE	CABLE TYPE/TIP DE CABLU				FG10M1 0,6/1 kV								FG10M1 0,6/1 kV			
	FORMATION/FORMARE				3x1x240 mmq								3x1x240 mmq			
	LENGHT/LUNGIMEA			m	20								-			
	Iz			A	396								396			
	C.D.T. a Ib	%	C.D.T. totale a Ib	%												
	Zk	mΩ	Zs	mΩ												
	Ik trifase/monof.	kA	Ik fase/terra	kA												
	TERMINAL NUMBER/TERMINAL NUMĂR															

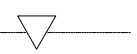
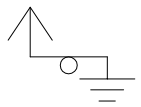

VISUALIZATION DEVICES/
VEDEREA DISPOZITIV
BACK LIKE 1kV
ODD BACK 1kV
CUBICULUM AMPEROMETRIC PROTECTION/ CUBICULUI PROTECŢIE AMPEROMETRICE
CUBICULUM VOLTMETRIC PROTECTION/ CUBICULUI PROTECŢIE VOLTMETRICE
CUBICULUM POWER/ CUBICULUI PUTERE 230VCA/ 24VCC
CUBICULUM FIBER OPTIC/ CUBICULUI FIBRA OPTICA
TERMINAL CUBICULUM/ CUBICULUI TERMINAL
2275
800
1800

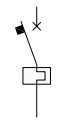
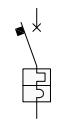
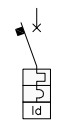
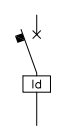
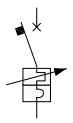
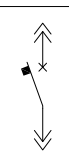
	GENERAL GRAPHIC SIGN TRANSFORMER/GENERAL GRAFIC INSCRIERE TRANSFORMER		ROTARY MACHINE OR SYSTEM WITH ROTARY MACHINE/MASINA ROTATIV SAU SISTEM CU MASINA ROTATIV G = GENERATOR/GENERATOR; M = MOTOR/MOTOARE; GS = SYNCHRONOUS GENERATOR/SINCRON GENERATOR; MS = SYNCHRONOUS MOTOR/MOTOR SINCRON; GE = GENERATING SET/GENERATOR
	TWO WINDING TRANSFORMER WITH SCREEN– ISOLATION TRANSFORMER/TRANSFORMATOR CU DOUĂ ÎNTOARCEREA MONITOR–TRANSFORMER DE IZOLARE		POWER CONVERTER SIGN GRAPHIC GENERAL/CONVERTOR DE PUTERE SEMNUL GRAFIC GENERALE
	CENTRAL WITH SOCKET TRANSFORMER ON A WINDING/transformator CU PRIZA CENTRALE PE O LICHIDAREA		RECTIFIER/RECTIFIER
	THREE–PHASE TRANSFORMER CONNECTIONS STAR TRIANGLE/TRIFAZAT TRANSFORMER CONEXIUNI STAR TRIANGLE		CURRENT CONVERTER IN ALTERNATING/CONVERTOR CURENT N ALTERNANTA (INVERTER)
	TRANSFORMER SECURITY/TRANSFORMATOR SECURITATE		STATIC SWITCH/STATICE SWITCH
	AUTOTRANSFORMER/AUTOTRANSFORMATOR		GATEWAY
	THREE–PHASE TRIANGLE WINDING/LICHIDARE TREI FAZE UN TRIUNGHI		SERIAL NETWORK RS485/SERIAL REŢEA RS485
	TRIANGLE OPEN PHASE WINDING/TRIANGLE OPEN PHASE WINDING OPEN		NETWORK OF LOGIC SELECTIVITY COMMUNICATION/REŢEAUA DE COMUNICARE SELECTIVITĂŢII LOGICĂ
	STAR PHASE WINDING/LICHIDARE TREI FAZE STEA		WIRING DEVICES FOR PROTECTION/CABLARE DISPOZITIVE DE PROTECŢIE
	THREE PHASE STAR WIND WITH NEUTRAL ACCESSIBLE BY EXTERNAL/LICHIDARE TREI FAZE STEA CU NEUTRU ACCES EXTERNE		
	THREE–PHASE WINDING AT ZIG–ZAG/LICHIDARE TREI FAZE ZIG–ZAG		

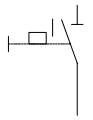
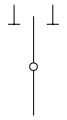
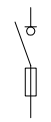
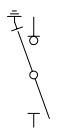
	MULTI–POSITION SWITCH/SWITCH MULTI–POZIŢII		RECORDER INSTRUMENT (COUNT, X = MEASURED QUANTITY, ES. KWH POWER)/INSTRUMENTUL RECORDER (COUNT, X = CANTITATEA MĂSURATĂ, ES. KWH DE ENERGIE)
	WATCH GENERAL GRAPHIC SIGN/WATCH SEMNUL GRAFIC GENERALE		INSTRUMENTS (X = MEASURED QUANTITY, ES. V VOLTAGE)/INSTRUMENTE (X = CANTITATEA MĂSURATĂ, ES V TENSIUNE)
	TWILIGHT/		MEASURING INSTRUMENT (MULTIMETER OR OTHER DEVICE)/INSTRUMENTE (METER SAU A ALTUI DISPOZITIV)
	PRESSURE TO SERVE THE CELL (X) THE BIN (N)/SENSOR DE PRESIUNE PENTRU A SERVI CELL (X) BIN (N)		TRANSFORMER CURRENT "TA"/TRANSFORMATOR DE CURENT "TA"
	ACCUMULATOR BATTERY OR FLEECE/ACUMULATOR BATERIE SAU LÂNĂ		CURRENT TRANSFORMERS 2 SECONDARY WINDINGS, EACH ON THEIR MAGNETIC CIRCUIT/TRANSFORMATOARE DE CURENT 2 ÎNFĂŞURĂRI SECUNDARE, FIECARE PE CIRCUITUL ACESTORA MAGNETIC
	DIVIDER FOR INDICATOR POWER/DIVIZOR PENTRU INDICATOR DE PUTERE		

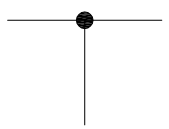
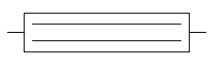
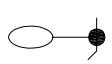
	CLOSING CONTACT (OPEN TO REPOSE)/CONTACT DE INCHIDERE (DESCHIS LA REPAUS)		CLOSING CONTACT SENSITIVE TO TEMPERATURE/CONTACT DE ÎNCHIDEREA SENSIBILE LA TEMPERATURA
	OPENING CONTACT (OPEN TO REPOSE)/CONTACT DE DESCHIDERE (DESCHIS LA REPAUS)		CLOSING CONTACT TO THERMIC RELAY/CONTACT DE ÎNCHIDERE DE RELEU TERMICE
	CONTACT EXCHANGE WITH MOMENTARY INTERRUPTION/DATE DE SCHIMB CU ÎNTRERUPERILOR MOMENTANE		THREE–WAY SWITCH/TREI–WAY SWITCH
	CONTACT A TWO–WAY THREE POSITIONS WITH CENTRAL POSITION OPENING/DATE DE A DOUA–WAY TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		TWO–WAY SWITCH/DOUĂ–WAY SWITCH
	CLOSING CONTACT WITH MANUAL DRIVE/CONTACT DE INCHIDERE CU COMANDA MANUAL		TWO–WAY SWITCH AT THREE POSITIONS WITH CENTRAL POSITION OPENING/DOUĂ –WAY SWITCH TREI POZIŢII CU DESCHIDERE POZIŢIE CENTRALĂ
	CLOSING CONTACT WITH CONTROL BUTTON/CONTACT DE INCHIDERE CU BUTONUL DE CONTROL		CONTACT N.A.–N.C. TIMED TO ACTION/CONTACT N.A–N.C. CRONOMETRAT PENTRU A ACŢIUNE
	OPENING CONTACT WITH CONTROL BUTTON/CONTACT DE DESCHIDERE CU BUTONUL DE CONTROL		CONTACT N.A.–N.C. THE TIMED RELEASE/CONTACT N.A.–N.C.CRONOMETRAT PENTRU A ELIBERAREA
	CLOSING CONTACT WITH CONTROL ROD/CONTACT DE INCHIDERE CU COMANDA ROD		
	CLOSING CONTACT WITH ROTARY CONTROL/CONTACT DE INCHIDERE CU CONTROL ROTATIV		
	CLOSING POSITION CONTACT/POZIŢIA DE CONTACT DE INCHIDERE		
	OPENING POSITION CONTACT/POZIŢIA DE CONTACT DE DESCHIDERE (LIMIT/LIMITA)		
	EXCHANGE CONTACT WITHOUT INTERRUPTION/CONTACT DE SCHIMB FĂRĂ ÎNTRERUPERE		

COM	INTERFACE MODULE FOR CONNECTING A SYSTEM OF SUPERVISION/MODULUL DE INTERFATA PENTRU CONECTAREA UNUI SISTEM DE SUPRAVEGHERE
M S A	INDICATION SWITCH TYPE/INDICAŢIE SWITCH TIP: (M) MODULAR/MODULARE (D) BOXED/BOXED (A) OPEN/DESCHIS
	DIFFERENTIAL INDICATION OF TYPE AC (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI AC (GENERALA SAU SELECTIV)
	DIFFERENTIAL INDICATION OF TYPE A (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI A (GENERALA SAU SELECTIV)
	DIFFERENTIAL INDICATION OF TYPE B (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI B (GENERALA SAU SELECTIV)
	CONTROL COIL GENERAL SYMBOL/BOBINĂ DE CONTROL GENERAL SIMBOLUL
X	CONTROL COIL (IE=OPENING COIL YO, YC=CLOSING COIL, YUO=COIL A POWER FAILURE)/BOBINĂ DE CONTROL(IE=BOBINĂ DESCHISE YO, YC=BOBINĂ INCHIDERE, YUO=BOBINĂ PANĂ DE CURENT)
	FREE RELEASE MECHANISM/MECANISMUL ELIBERAREA GRATUIT
M	MOTOR FOR CONTROL SWITCH/MOTOR PENTRU CONTROL SWITCH
TX/RX FO/Cu	CONVERTER COPPER–FIBER OPTICS FOR SELECTIVITY LOGIC (TX TRANSMITTER, RECEIVER RX)/CONVERTOR CUPRU –FIBRA OPTICA PENTRU LOGICA SELECTIVITATEA (TX TRANSMITTER, RECEPTOR RX

	LOCK KEY/BLOCAREA CHEIE: WITH INDICATION FREE KEY–TOSWITCH–SWITCH OPEN–EXTRACT/CU EXPUNE LIBERTATEA CHEIE DE SWITCH– SWITCH DESCHIS–EXTRACTUL WITH INDICATION FREE KEY–TOSWITCH–SWITCH CLOSED/CU EXPUNE LIBERTATEA CHEIE DE SWITCH–SWITCH INSCHIS
	RINGED KEYS/CHEI INELAT
	DEVICE OF OPERATION AND CONTROL OF REMOVABLE TYPE/DISPOZITIV DE FUNCŢIONAREA ŞI CONTROLUL DE TIP AMOVIBIL
	MECHANICAL INTERLOCK BETWEEN DEVICES (UNLESS OTHERWISE INDICATED)/CONECTARE MECANICĂ ÎNTRE DISPOZITIVE (CU EXCEPŢIA CAZULUI NU ESTE INDICAT)
	GROUNDING BARS SIGN WITHOUT POWER TO CLOSING/SEMNAL DE IMPAMANTAREA FĂRĂ PUTERE LA INCHIDE
	AUXILIARY SWITCH SIGNALS LEGEND (X)/SWITCH AUXILIARE LEGENDA MESAJE (X): –I/O DEVICE CONNECTED/DISCONNECTED, A/C DEVICE OPEN/CLOSED; SR RELAY TRIPPED; M SOFT STATE –I /O DISPOZITIV CONECTAT/DECONECTAT, A/C DISPOZITIV ÎNCHIS/DESCHIS; SRRELAY DECLANŞAT; M STAT
	LAMP (X = COLOR) FOR SWITCHES WITH MEANING OF COLORS: RED RD=(OPEN), GN=GREEN (CLOSED) YE=YELLOW (TRIP), BU=Blue (connected/disconnected), WH=WHITE (springs charged) ; OG=ORANGE LAMPĂ (X = COLOR) pentru switch–uri cu sensul de culori: ROŞU RD = (DESCHIS), GN = VERDE (ÎNCHIS) YE = GALBEN (TRIP), BU = Albastru (conectat / deconectat), WH = ALB (izvoare perceput) ; OG = ORANGE
	FLASHING SIGNAL LAMP/LAMPĂ DE SEMNALIZARE INTERMITENT
	CROSS LAMP SWITCH STATE SIGNAL/LAMPĂ CRUCEA SEMNAL DE STAT SWITCH

	SWITCH (POWER)/SWITCH (PUTERE)	X	RELAY OF MEASURING OR SIMILAR DEVICE WITH INDICATION OF SECURITY FEATURES ENABLED IN ANSI CODES/RELEU PENTRU DISPOZITIV DE MĂSURARE SAU SIMILARE CU INDICAŢIE DE CARACTERISTICI DE SECURITATE ESTE ACTIVAT ÎN CODURI ANSI
	SWITCH WITH BUILT-IN FUSE/SWITCH CU BUILT-IN FUSE		THERMAL RELAY/RELEU TERMIC
	POWER SWITCH FOR AUTOMATIC OPENING/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ		RELAY MAGNETIC/RELEU MAGNETIC
	POWER SWITCH OPENING AUTOMATIC, THERMIC/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ. TERMICE	Id	CURRENT DIFFERENTIAL RELAY/RELEU CURENT DIFERENTIAL
	POWER SWITCH OPENING AUTOMATIC, MAGNETOTHERMIC/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ. MAGNETOTERMICE	I >	OVERCURRENT RELAY (LONG DELAY)/RELEU SUPRACURENT (ÎNTÂRZIERII PRELUNGITE)
	POWER SWITCH FOR AUTOMATIC OPENING, DIFFERENTIAL MAGNETOTHERMIC/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ, DIFERENŢIAL MAGNETO TERMICE	I>>	OVERCURRENT RELAY (SHORT DELAY)/RELEU SUPRACURENT (SCURTĂ ÎNTÂRZIERE)
	POWER SWITCH FOR AUTOMATIC OPENING, WORKING FOR CURRENT DIFFERENTIAL/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ, LUCRU PENTRU DIFERENTIAL CURENT	I ⏚	EARTH FAULT RELAY/RELEU FAULT PĂMÂNTULUI
	POWER SWITCH AT AUTOMATIC OPENING WITH ADJUSTABLE THERMIC/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ CU CĂLDURĂ REGLABIL	U=O	RELAY GROUND FAULT RELAY A LACK OF POWER/RELEU ÎMPĂMÂNTARE RELEU LIPSĂ DE PUTERE
	POWER SWITCH AT AUTOMATIC OPENING REMOVABLE/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ AMOVIBIL	U<	RELAY UNDERVOLT/RELEU UNDERVOLT
		M D / SG/EL	PROTECTION TRIP UNITS ELECTRIC UNIT OF MEASURE (M) AND DIALOGUE (D)/ ÎMPIEDICAT DE UNITATI ELECTRICE CU UNITATEA DE MASURA (M) ŞI DIALOG (D)

	DISCONNECTOR/SEPARATOR		CONTACTOR (CLOSING CONTACT)/CONTACTOR (CONTACT DISCHIS)
	DISCONNECTOR WITH BUILT–IN FUSE/SEPARATOR CU BUILT–IN FUSE		CONTACTOR AUTOMATIC OPENING (ASSOCIATED TO A RELAY PROTECTION)/CONTACTOR AUTOMAT DESCHISE (CONEXE A RELEU DE PROTECŢIE)
	DISCONNECTOR TO MANUAL DRIVE WITH BLOCKING DEVICE/SEPARATOR LA MANUALĂ CU DISPOZITIV DE BLOCARE		CONTACTOR (OPENING CONTACT)/CONTACTOR (CONTACT INCHIS)
	TWO–WAY DISCONNECTOR THREE POSITIONS, WITH CENTRAL POSITION OPENING/DOUĂ –WAY SEPARATOR TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		CONTACTOR AUTOMATIC OPENING WITH FUSE, WORKING FOR THERMAL EFFECT/CONTACTOR DESCHIDEREA AUTOMATĂ CU SIGURANŢĂ, LUCRU PENTRU EFECT TERMICĂ
	TWO–WAY DISCONNECTOR THREE POSITIONS, WITH CENTRAL POSITION OPENING/DOUĂ –WAY SEPARATOR TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		
	SWITCH–DISCONNECTORS/ÎNTRERUPTOARE–SEPARATOARE		
	SWITCH–DISCONNECTORS WITH FUSE/ÎNTRERUPTOARE–SEPARATOARE CU FUSE		
	SWITCH–DISCONNECTORS WITH INTEGRATED FUSE/NTRERUPTOARE–SEPARATOARE CU SIGURANŢĂ INTEGRATĂ		
	SWITCH ROTARY DISCONNECTOR/SWITCH COMUTATOR ROTATIV		

	PHASE CONDUCTOR/CONDUCTOR FAZA		RESISTOR/RESISTOR
	NEUTRAL CONDUCTOR/NEUTRU CONDUCTOR		INDUCTORS, COILS, WINDING/INDUCTOARE, BOBINE, LICHIDAREA
	PROTECTION CONDUCTOR/CONDUCTOR DE PROTECŢIE		CAPACITOR GRAPHIC SIGN GENERAL/CAPACITOR GRAFIC GENERAL INSCRIERE
	NEUTRAL CONDUCTOR HAVING EVEN FUNCTION OF PROTECTION CONDUCTOR/CONDUCTORUL NEUTRU AVÂND CHIAR FUNCŢIA DE CONDUCTOR DE PROTECŢIE		GROUND SIGN GRAPHIC GENERAL/SOL INSCRIERE GRAFIC GENERALE
	CONNECTION OF CONDUCTORS/CONEXIUNE DE CONDUCTORI		MASS (FRAME)/MASA (FRAME)
	TERMINAL OR JACK/TERMINAL SAU CLAMP		LAND OF PROTECTION/TEREN DE PROTECŢIE
	EXAMPLE DERIVATION/DERIVATIE EXEMPLU		EQUIPOTENTIAL/ECHIPOTENŢIALĂ
	PIPELINE IN RAIL PROTECTED/CONDUCTE IN PROTEJATE BEAM		FUSE GENERAL SIGN/FUSE GENERALE INSCRIERE
	JUNCTION OF CONDUCTOR/JUNCTION DE CONDUCTOR		FUSE WITH STRIKER/FUSE CU PERCUTOR
	SOCKET PLUG (MALE AND FEMALE)/PRIZA (MASCULIN ŞI FEMININ)		FUSE With striker AND SEPARATE CIRCUIT SIGNAL/FUSE CU PERCUTOR ŞI SEMNALUL DE CIRCUIT SEPARAT
	TOROID FOR DIFFERENTIAL CIRCUIT–HOMOPOLAR/TOROID PENTRU UN CIRCUIT DE DIFERENTIAL–HOMOPOLARE		UNLOADER/DESCĂRCĂTOR