

ABB India Limited
ELDS-Nashik

SO 50
PO 47

15 kV VACUUM CIRCUIT BREAKER TYPE OVB-VBF

CUSTOMER: Coopera – Eletrocar
CUSTOMER PO. NO.: 350062
CUSTOMER NUMBER: 13472
BREAKER TYPE: OVB-VBF 36.20.32 EL3
BREAKER QUANTITY : 1

TECHNICAL DETAILS: DETALHES TÉCNICOS:

STANDARD NORMA	IEC 62271-100	SPRING CHARGE MOTOR SUPPLY VOLTAGE TENSÃO ALIM. MOTOR CARREGAMENTO MOLA	125 VDC / EXTERNO
HIGHER SYSTEM VOLTAGE MÁXIMA TENSÃO DO SISTEMA	15 kV	AUXILIARY SUPPLY VOLTAGE TENSÃO ALIMENTAÇÃO AUXILIAR	220 VAC / EXTERNO
SERVICE VOLTAGE TENSÃO NOMINAL	15 kV	PAINT SHADE PINTURA	MUNSELL N6,5
RATED CURRENT CORRENTE NOMINAL	2000 A	ENCLOSURE FABRICATION MATERIAL TYPE TIPO MATERIAL DE FABRICAÇÃO DO GABINETE	STAINLESS STEEL AÇO INOXIDÁVEL
RATED FREQUENCY FREQUÊNCIA NOMINAL	50/60 Hz	ENCLOSURE FABRICATION MATERIAL THICKNESS ESPESSURA MAT. DE FABRICAÇÃO DO GABINETE	3 mm
BASIC INSULATION LEVEL NÍVEL DE ISOLAMENTO BÁSICO	70 kVrms / 170 kVp	SUPPORT STRUCTURE TYPE TIPO DO SUPORTE DA ESTRUTURA	CB
SHORT CIRCUIT BREAKING CURRENT INTERRUP. CORRENTE DE CURTO CIRCUITO	25 kA / 3 SEC	TERMINAL CONNECTOR (REQD. IF ANY) CONECTORES DE LINHA	NOT IN ABB SCOPE NÃO É ESCOPO INABB
SHORT CIRCUIT MAKING CURRENT RETAB. CORRENTE DE CURTO CIRCUITO	82 kAp	MECHANISM TYPE TIPO DO MECANISMO	SPRING CHARGED (EL3) MOLA CARREGADA (EL3)
MINIMUM CREEPAGE DISTÂNCIA MÍNIMA DE FUGA	1116 mm	AMBIENT TEMPERATURE (AVERAGE) TEMPERATURA AMBIENTE (MÉDIA)	35/40 °C
CONTROL VOLTAGE TENSÃO DE CONTROLE	125 VDC / EXTERNO	PROTECTION DEGREE GRAU DE PROTEÇÃO	IP55

During the installation, commissioning period and the time of operation, client is obliged to follow all instructions and recommendation given by manufacturers of individual instruments installed inside supplied equipment
Durante a instalação, período de comissionamento e o tempo de operação, o cliente é obrigado a seguir todas as instruções e recomendações dadas pelos fabricantes de instrumentos individuais instalados dentro do equipamento fornecido


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-	-	-	-	Coopera – Eletrocar	Project name			Doc. No.	Lang.		
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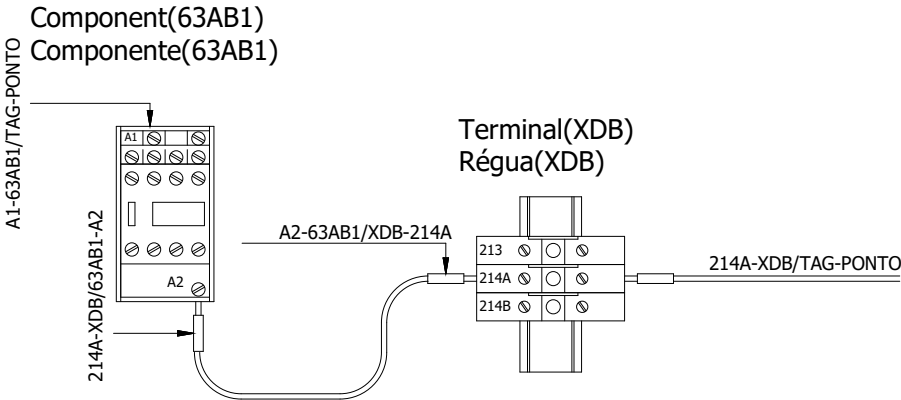
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CHECK LIST

TECHNICAL DETAILS
DETALHES TÉCNICOS

3	PROJECT FEATURES CARACTERÍSTICAS DO PROJETO		
3.1	TERMINAL BLOCK TYPE TIPO DOS BORNES	UK6N / UK10N	
3.2	CROSS FERRULE SCHEME (SEE PICTURE 1) FORMATÇÃO DO ANILHAMENTO (VER FIGURA 1)	CROSS FERULE ORIGEM/DESTINO	
3.3	ELECTRICAL WIRING CABOS ELÉTRICOS	PVC 70°C 750V ANTIFLAME CL4 PVC 70°C 750V ANTICHAMAS CL4	
3.4	DC CIRCUIT CIRCUITO DC	COLOR COR	GRAY CINZA
		SIZE BITOLA	2,5 mm²
3.5	AC CIRCUIT AND HEATER CIRCUITO AC E AQUECIMENTO	COLOR COR	BLACK PRETO
		SIZE BITOLA	1,5 mm²
3.6	EARTHING CIRCUIT CIRCUITO DE ATERRAMENTO	COLOR COR	GREEN/YELLOW VERDE/AMARELO
		SIZE BITOLA	2,5 mm²
3.7	VOLTAGE TRANSFORMER CIRCUIT CIRCUITO DE TRANSF. DE POTENCIAL	COLOR COR	-
		SIZE BITOLA	-
3.8	CURRENT TRANSFORMER CIRCUIT CIRCUITO DE TRANSF. DE CORRENTE	COLOR COR	-
		SIZE BITOLA	-
3.9	OPTIONAL ACCESSORIES ACESSÓRIOS OPCIONAIS	COIL SUPERVISION RELAY (QTY) RELÉ DE SUPERVISÃO DA BOBINA (QTD)	0
		VOLTAGE SUPERVISION RELAY (QTY) RELÉ DE SUPERVISÃO DE TENSÃO (QTD)	0
		CAPACITIVE TRIP RELAY (QTY) RELÉ TRIP CAPACITIVO (QTD)	0
		DIODE (QTY) DÍODO (QTD)	0
		BRAZILIAN POWER PLUG AND LAMP SOCKET (QTY) TOMADA PADRÃO BRASIL E SOQUETE LAMP (QTD)	1
3.10	PACKAGING WRAPPED IN PVC FILM AND WOODEN CRATE EMBALAGEM ENVOLTO EM FILME PVC E ENGRADADO DE MADEIRA		
3.11	TEST/INSPECTION ACCORDING TO PIT (INSPECTION AND TEST PLAN) ENSAIO/INSPEÇÃO CONFORME PIT (PLANO DE INSPEÇÃO E TESTE)		



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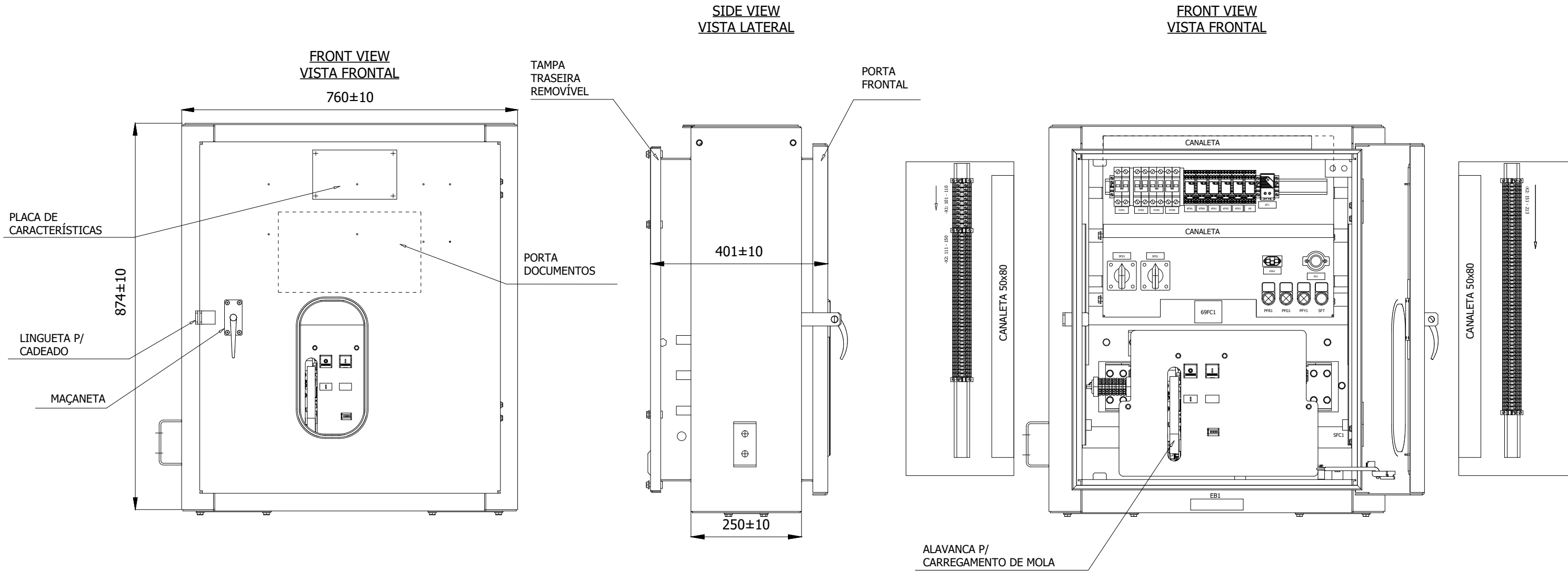
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Make of Equipments list.
Lista de fabricantes de equipamentos.

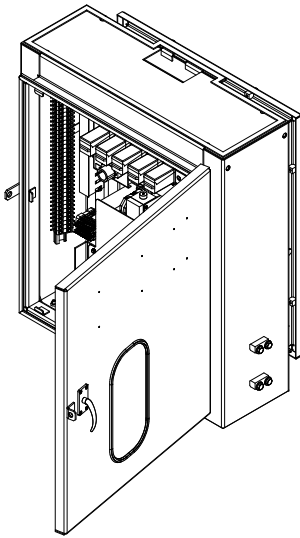
Sr. No.	DESCRIPTION	MAKE
1	VACUUM CIRCUIT BREAKER & PANEL DISJUNTOR TRIPOLAR A VÁCUO & PAINEL	ABB
2	CLOSING AND TRIPPING COIL BOBINA DE FECHAMENTO E TRIP	IMAX / LEELEN / EQ.
3	AUXILIARY PLUG IN RELAYS RELÉS AUXILARES PLUG IN	ABB / PLA / JYOTI / EQ.
4	MCB MINIDISJUNTORES	ABB / SCHNEIDER / HPL / EQ
5	SELECTOR SWITCHES CHAVES SELETORAS	SWITRON / SHIRKE / EQ.
6	INDICATING LAMP SINALIZADORES DE INDICAÇÃO	ABB / ESSEN DEINKI / TEKNIC / EQ.
7	AUXILIARY SWITCH CONTATOS AUXILIARES	SHUBHADA
8	CABLE / WIRE CABO / FIO	ROLLIFLEX / POLYCAB / FINOLEX / R.R KABLES / EQ.
9	TERMINAL BLOCKS BORNES	CONNECTWELL / PHOENIX / ELMEX / EQ.
10	CONNECTING LUGS CONECTORES	M.G.ELECTRICAL / CHETANA / ECC / DOWELLS / EQ.
11	THERMOSTATS TERMOSTATOS	APT CONTROLS / STEGO / VELICO/ EQ.
12	ILLUMINATION LAMPS-LED LÂMPADAS DE ILUMINAÇÃO - LED	HPL / ANCHOR / PHILLIPS / WIPRO / CROMPTON / EQ
13	HEATERS AQUECEDORES	APT CONTROLS / VELICO / GIRISH EGO /EQ.
14	TOGGLE SWITCH CHAVE FIM DE CURSO	SWITRON / KAYCEE / SHIRKE
15	DOOR OPERATE LIMIT SWITCH INTERRUPTOR DA PORTA	SURAJ / KAYCEE / EQ.
16	3 PIN SOCKET FOR AUX. SUPPLY TOMADA 3 PINOS PARA ALIMENTAÇÃO AUXILIAR	ABB / LEGRAND / ANCHOR / SCHNEIDER
17	SPRING CHARGING MOTOR MOTOR CARREGAMENTO MOLA	WUXI
18	PUSH BUTTON BOTÃO PULSADOR	ABB / TEKNIC

NOTE: MAKES MENTIONED IN ABOVE TABLE ARE STANDARD COMPONENTS WHICH ARE USED IN MANUFACTURING OF CIRCUIT BREAKER. BILL OF MATERIAL CONTAINS SPECIFIC MAKES OF COMPOENTNS WHICH ARE USED IN SCHEMATICS.
IF ANY SPECIFIC MAKE EQUIPMENT IS NOT AVAILABLE DURING MANUFACTURING OF BREAKER(S)THEN ALTERNATE MAKE EQUIPMENT FROM OF MAKE LIST WILL BE USED
NOTA: OS FABRICANTES MENCIONADOS NA TABELA ACIMA SÃO O PADRÃO PARA COMPONENTES UTILIZADOS NA FABRICAÇÃO DE DISJUNTORES. A LISTA DE MATERIAL CONTÉM MARCAS ESPECÍFICAS DE COMPOENTES QUE SÃO UTILIZADOS NOS ESQUEMAS. SE QUALQUER EQUIPAMENTO DE FABRICAÇÃO ESPECÍFICA NÃO ESTIVER DISPONÍVEL DURANTE A FABRICAÇÃO DO(S) DISJUNTOR(ES), SERÁ USADO EQUIPAMENTO DE FABRICAÇÃO ALTERNATIVA DA LISTA DE FABRICANTES

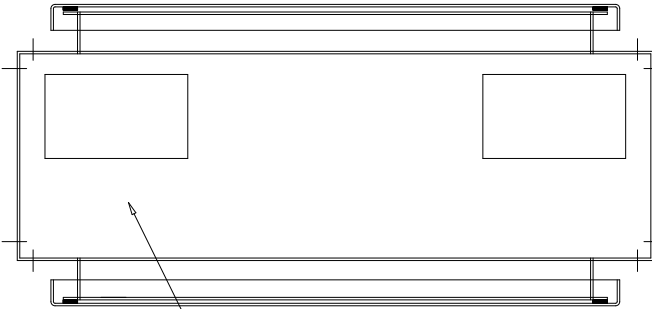
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FRONTAL PERSPECTIVE
VISTA PERSPECTIVA FRONTAL



BOTTOM VIEW
VISTA INFERIOR




ENTRADA DE CABOS

TAG	MATERIAL	FABR.	FUNÇÃO
FCM1	DISJUNTOR 2-POLOS, 6A	ABB	PROTEÇÃO MOTORIZAÇÃO
FCM2	DISJUNTOR 2-POLOS, 6A	ABB	PROTEÇÃO COMANDO
FCM3	DISJUNTOR 2-POLOS, 6A	ABB	PROTEÇÃO COMANDO MU
FCM4	DISJUNTOR 2-POLOS, 10A	ABB	PROTEÇÃO SERVIÇOS AUX.
KFN1	RELE AUX. 4NAF, 125Vcc	ABB	RELE ANTI-PUMPING
KFN9	RELE AUX. 4NAF, 125Vcc	ABB	RELÉ STATUS MOLA
KFA1	RELE AUX. 4NAF, 125Vcc	ABB	FALTA Vcc MOTOR
KFA2	RELE AUX. 4NAF, 125Vcc	ABB	FALTA Vcc COMANDO
KFA3	RELE AUX. 4NAF, 125Vcc	ABB	FALTA Vcc COMANDO MU
69	RELE AUX. 4NAF, 125Vcc	ABB	BLOQUEIO DE RELIGAMENTO
PFR1	SINALEIRO VM, Ø22mm	ABB	DISJUNTOR LIGADO
PFG1	SINALEIRO VD, Ø22mm	ABB	DISJUNTOR DESLIGADO
PFY1	SINALEIRO AM, Ø22mm	ABB	MOLA CARREGADA
EA1	LÂMPADA, 220VAC	ABB	ILUMINAÇÃO INTERNA
XDS1	TOMADA 0-250V	ABB	TOMADA DE SERVIÇO

GE: TERMINAL DE ATERRAMENTO

TAG	MATERIAL	FABR.	FUNÇÃO
EB1	RESISTÊNCIA 70W, 0-250V	APT	AQUECIMENTO
EB2	RESISTÊNCIA 70W, 0-250V	APT	AQUECIMENTO
BT1	TERMOSTATO 0-60°C	EBERLE	-
SFC1	FIM-DE-CURSO 1NAF, 250V	KAYCEE	LIMITE DE PORTA ABERTA P/ ILUM.
BB1	CONTATOS AUXILIARES DO DISJUNTOR	ABB	-
	13NA+13NF		
MO1	BOBINA DE ABERTURA 1, 125 VDC	ABB	TAG: MO1
MU	BOBINA DE MÍNIMA TENSÃO, 125 VDC	ABB	TAG: MU
MC	BOBINA DE FECHAMENTO, 125 VDC	ABB	TAG: MC
MS	MOTOR DE CARREGAMENTO DE MOLA 125 VDC	ABB	TAG: MS
BS1	FIM DE CURSO ESTADO DA MOLA, 1NAF	ABB	-
BS2	FIM DE CURSO DESLIGA MOTORIZAÇÃO, 1NAF	ABB	-
69FC1	BLOQUEIO 69	ABB	FUNÇÃO BLOQUEIO 69
SFS3	CHAVE COMUTADORA 2 POS. FIXAS	SWITRON	CHAVE LOCAL-REMOTO
SFS1	CHAVE COMUTADORA 2 POS. C/ RETORNO	SWITRON	CHAVE LIGA-DESLIGA

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Technical drawings of various components:

- SFS3**: A square component with a central vertical slot and four corner mounting holes.
- SFS1**: A square component with a central vertical slot and four corner mounting holes, similar to SFS3.
- XDS1**: A rectangular component with a central slot and two side mounting holes.
- EA1**: A circular component with a central hole and two side mounting holes.
- PFR1**, **PFG1**, **PFY1**, and **SFT**: Four circular components with a central hole and a cross-shaped slot.

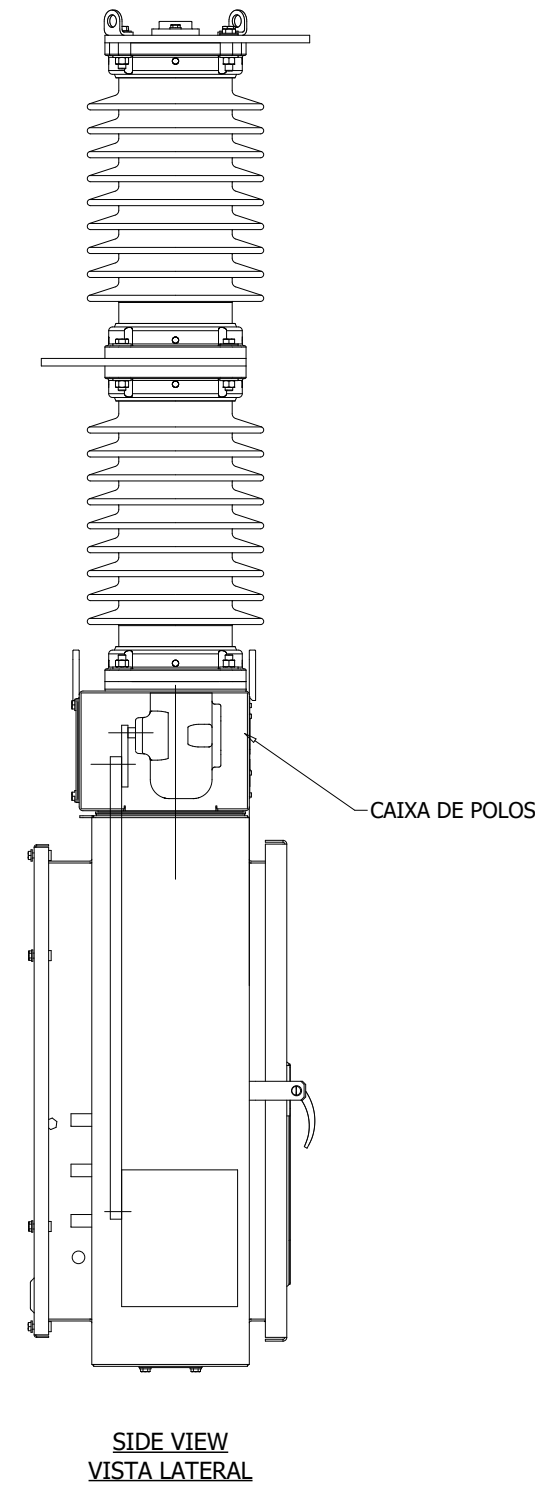
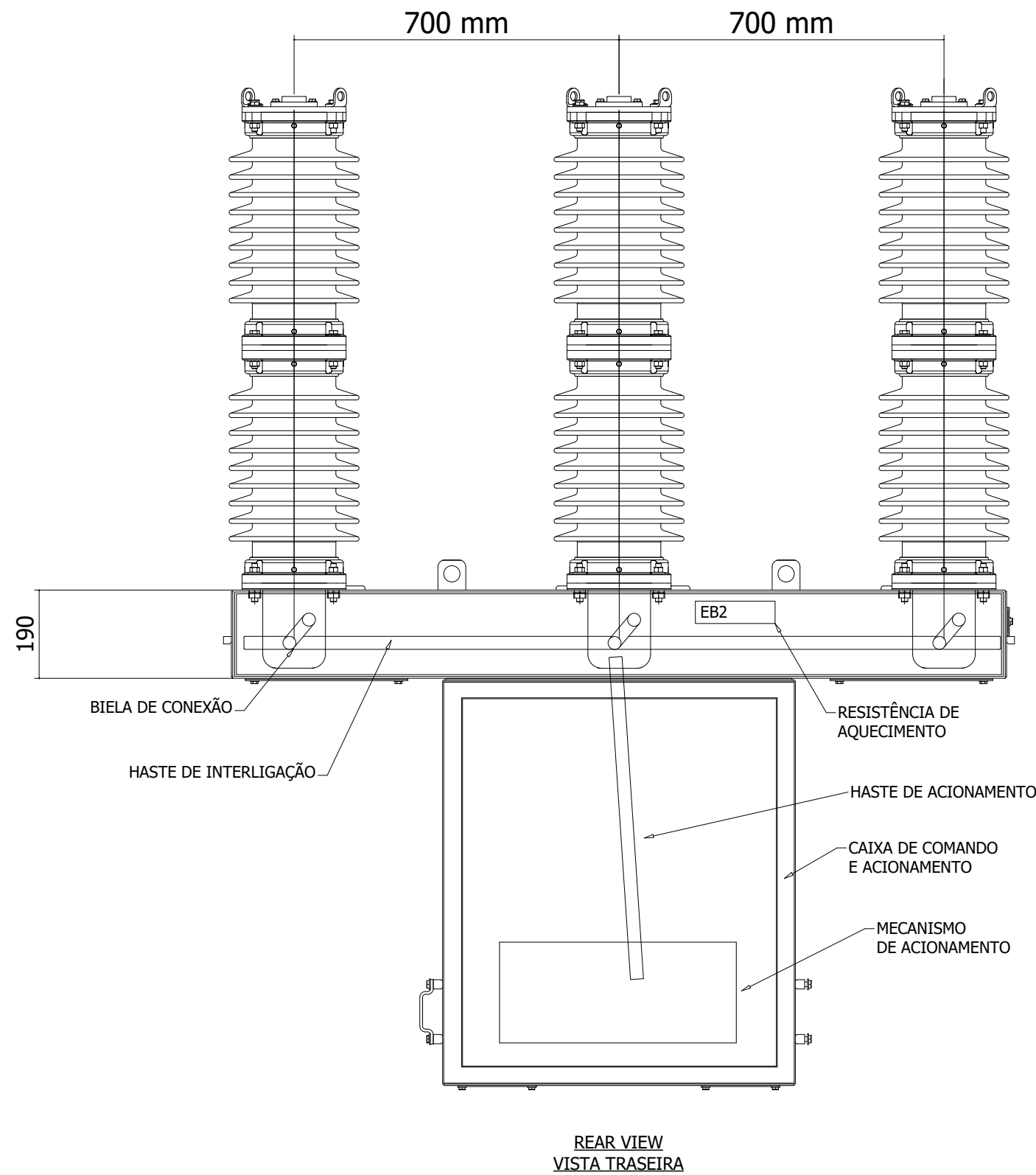
LEGENDA


NOTA 1:

- ETIQUETAS DE ACRÍLICO
- FUNDO PRETO
- LETRA BRANCA
- AUTO ADESIVA

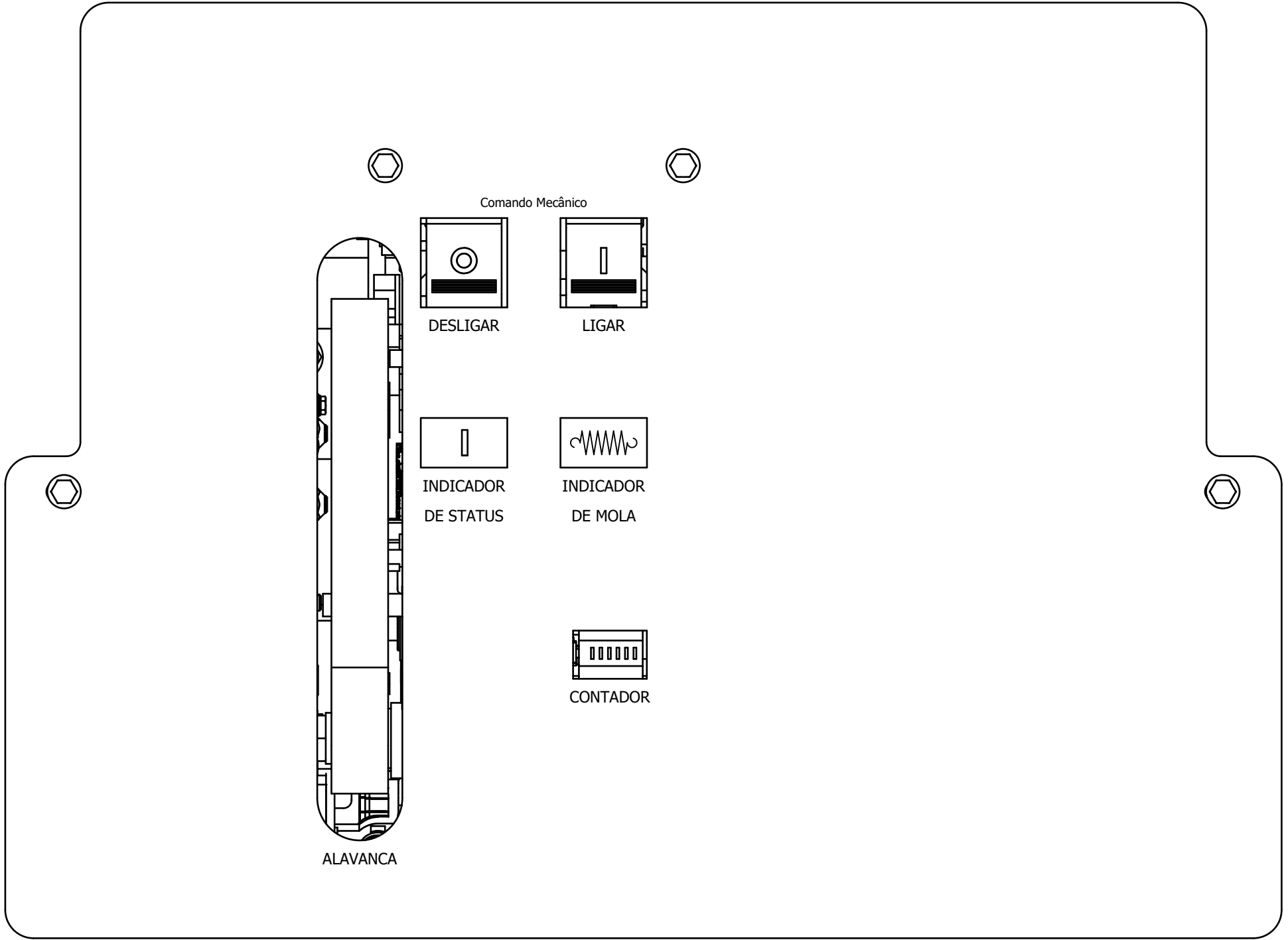
Based on				Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS MOUNTING PLATE LAYOUT	Order No 13472	= K00	
-	-	-	-	Customer:	Checked	B.S.	Approved				L.P.	+ MECANICA
-	-	-	-	Coopera – Eletrocar	Project name							Doc. No.
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV			 India Ltd., Nashik, ELDS	E-2552105.001-P1		Page	8
Rev.	Description	Date	Name	-							Pages	28

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Based on					Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS		Order No	= K00
-	-	-	-	Customer :	Checked	B.S.	Approved	L.P.	INSIDE VIEW - POLE BOX AND INTERCONNECTION MECHANISM	 India Ltd., Nashik, ELDS		13472	+ MECANICA
-	-	-	-	Coopera – Eletrocar	Project name DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV			Doc. No.				Lang.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.				E-2552105.001-P1				Page	9
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Nota: lay-out da cobertura do mecanismo

Notas:

- Alavanca de Carregamento de Mola Incorporada ao Mecanismo;
- Indicação de "0"para Disjuntor Desligado e "I" para Ligado;
- Comando Mecânico por Botões.

CONFIGURAÇÕES DOS BOTÕES:

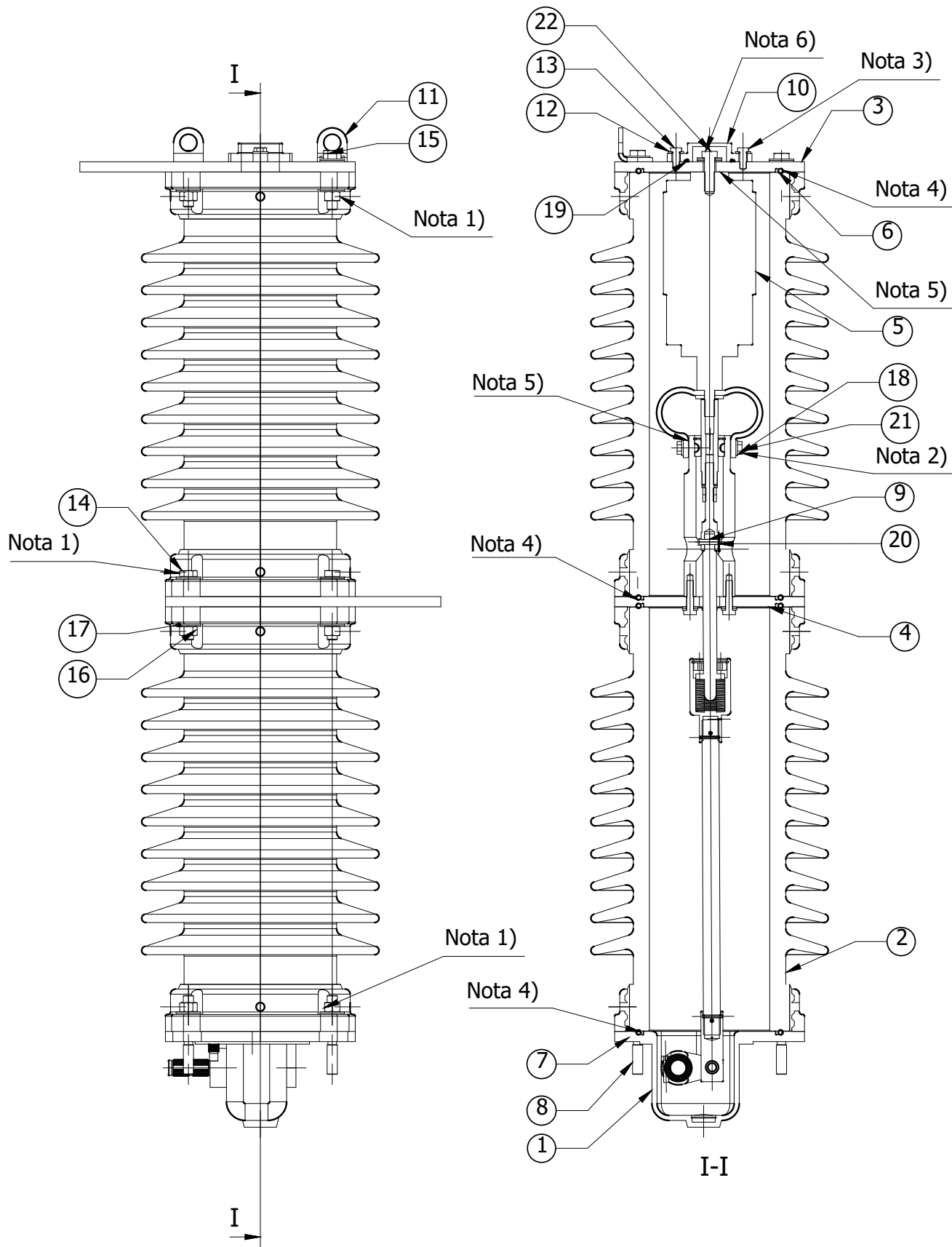
- DESLIGAR = VERDE com letra "0" em branco
- LIGAR = VERMELHO com letra "I"em branco

Based on					Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS		Order No	= K00	
-	-	-	-	Customer:	Checked	B.S.	Approved	L.P.	LAYOUT OF THE MECHANISM COVERAGE		13472	+ MECANICA		
-	-	-	-	Coopera – Eletrocar	Project name							Doc. No.		Lang.
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV				 India Ltd., Nashik, ELDS		E-2552105.001-P1		Page	10
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NOTA:

- 1) TORQUE 70 Nm
2) TORQUE 22 Nm (Parte nº 18)
3) TORQUE 25 Nm (Parte nº 13)
4) APLICAR GRAXA FOMBLIN
5) APLICAR UMA CAMADA FINA DE GRAXA DE CONTATO
6) TORQUE 60 Nm (Parte nº 19)
7) DISTÂNCIA DE ESCOAMENTO DE 1116mm
8) MATERIAL DO ISOLADOR: PORCELANA
9) COR: MARROM

ITEM	CÓDIGO ID	DESCRIÇÃO	QUANT.
1	2REA039975A0001	BIELA DE ACIONAMENTO ISOLADA	1
2	2REA042716A0001	ISOLADOR	2
3	2REA032996P0001	TERMINAL SUPERIOR	1
4	2REA033336A0001	TERMINAL INFERIOR	1
5	2REA039977A0001	INTERRUPTOR	1
6	2REA032993P0001	O-RING	4
7	2REA032995P0001	ESPAÇADOR	4
8	2REA032997P0001	REBITE	4
9	2REA038924P0001	PINO	1
10	2REA032158P0001	TAMPA	1
11	2REA032159P0001	SUPORE PARA OVB	2
12	9ADJ490084P0509	ARRUELA DIN6796 8.4/18	2
13	9ADA122-32	PARAFUSO CAB. SEXTAVADA ISO4017 M8X20mm	2
14	3WEA046312P0001	PARAFUSO CAB. SEXTAVADA ISO4017 M12X75mm	4
15	9ADA57-27	PARAFUSO CAB. SEXTAVADA ISO4014 M12X60mm	4
16	9ADA268-4	PORCA ISO4032 M12-8	12
17	2REA043862P0001	ANEL DE VEDAÇÃO M12	41
18	9ADJ400320P0109	ARRUELA DIN6796 8.4/18	4
19	2REA033670P0001	O-RING	1
20	9ABA113-23	CAVILHA ISO1234 2X16mm	1
21	9ABA450023P0310	PARAFUSO CAB. SEXTAVADA ISO4017 M8X20mm	4
22	9ABA450023P8119	PARAFUSO CAB. SEXTAVADA ISO4017 M12X40mm	1



Based on				Prepared M.K.K.	Date 01/08/2025	Title COMMON DRAWINGS	Order No 13472	= K00
-	-	-	-	Customer:	Checked B.S.	Approved L.P.	Doc. No.	+ MECANICA
-	-	-	-	Coopera – Eletrocar	Project name		Lang.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV	India Ltd., Nashik, ELDS	E-2552105.001-P1	Page 11
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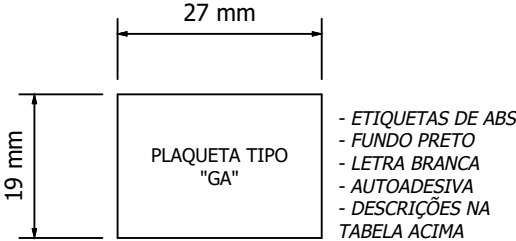
NOMENCLATURA DE PLAQUETAS


PLAQUETA			PRIMEIRA LINHA					SEGUNDA LINHA					TERCEIRA LINHA				
POSICÃO	TIPO	QUANT.	1	5	10	15	22	1	5	10	15	22	1	5	10	15	22
1	GA	01	DISJUNTOR					LIGADO					REMOTO DESLIGA				
2	GA	01	DISJUNTOR					DESLIGADO									
3	-	-	-					-									
4	GA	01	TESTE					DE LÂMPADAS									
5	GA	01	CHAVE					LOCAL-									
6	GA	01	CHAVE					LIGA-									
7	GA	01	LÂMPADA														
8	GA	01	TOMADA AUXILIAR					220V-20A									

OBS.: GRAVAR 2 VEZ(ES) ESTA LISTA DE PLAQUETAS

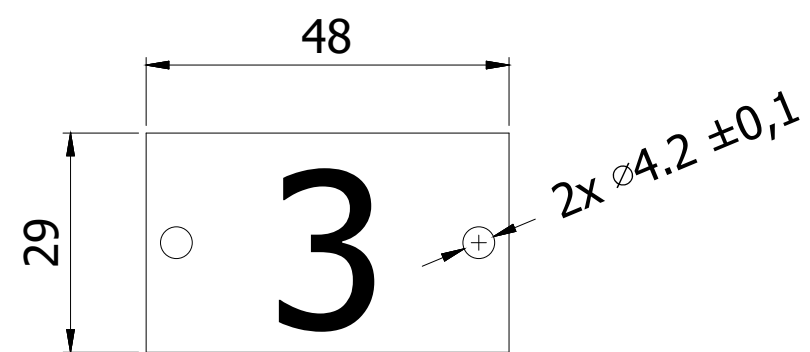
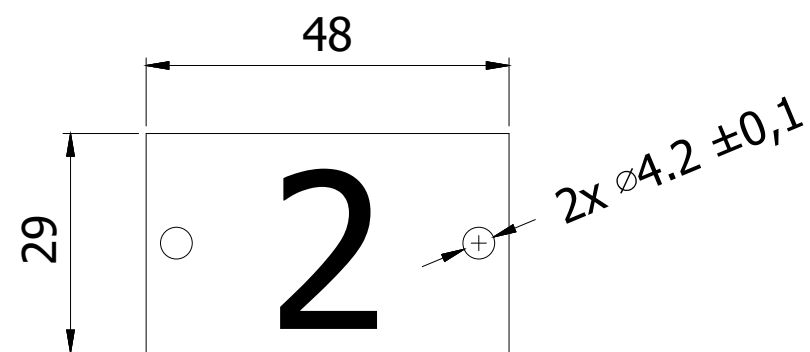
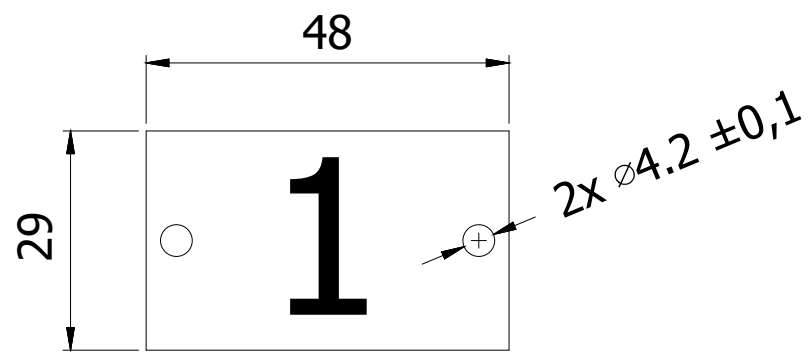
LEGENDA

TIPO	DIMENSAO EM mm	ESPACO DISPONIVEL	QUANT. LINHAS
GA	19 x 27	10 P/ LINHA	MAX. 3



Based on				Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS		Order No	= K00		
-	-	-	-	Customer:	Checked	B.S.	Approved	L.P.	PLATES NOMENCLATURE		13472	+ MECANICA		
-	-	-	-	Coopera – Eletrocar	Project name						Doc. No.	Lang.		
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV				 India Ltd., Nashik, ELDS		E-2552105.001-P1		Page	12
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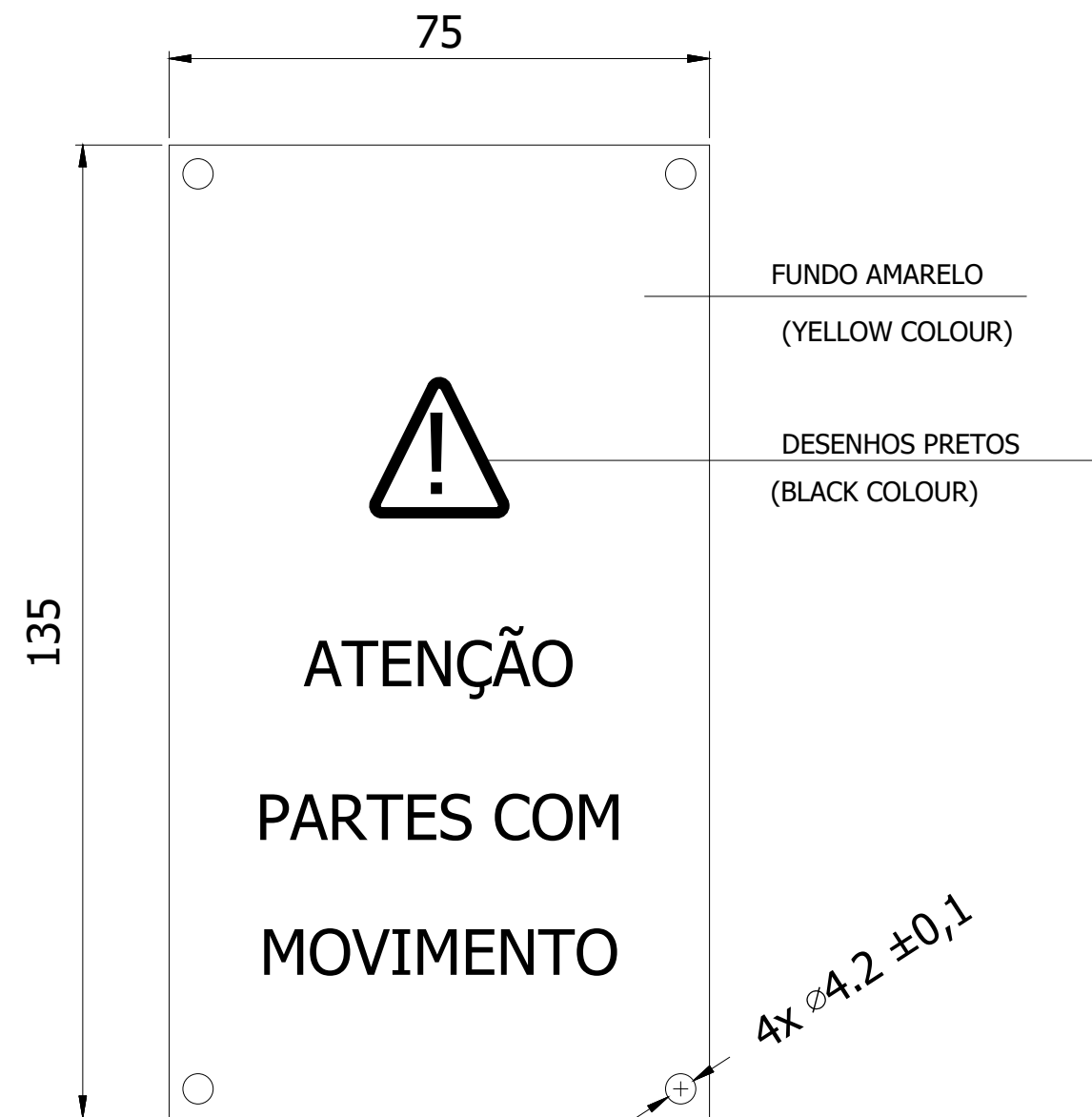
IDENTIFICAÇÃO FASES



NOTA: PLAQUETA FUNDO INOX
POLIDO E LETRAS EM PRETO
QUANTIDADE : 1PÇ

Plaqueta gravada na ABB.
Tolerancias gerais segundo IN 2002 1030
Todas as dimensões estão em mm
Altura Texto 21mm

PLACA DE AVISO

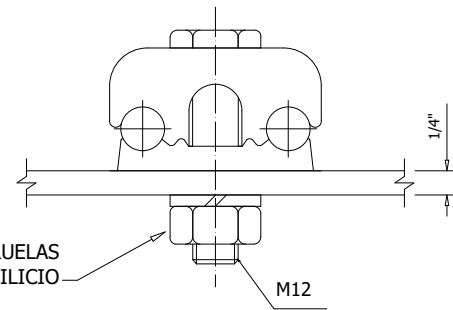
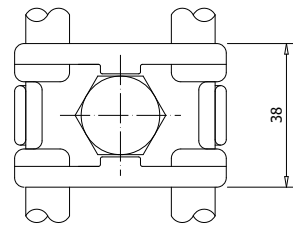


FUNDO AMARELO
(YELLOW COLOUR)

DESENHOS PRETOS
(BLACK COLOUR)

4x $\varnothing 4.2 \pm 0,1$

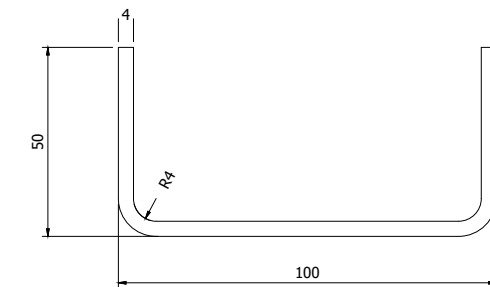
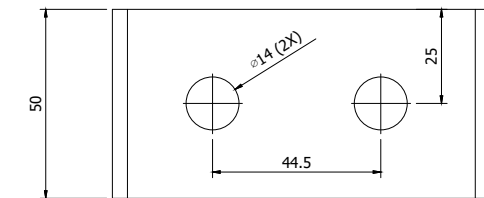
CONECTOR DE ATERRAMENTO



TERMINAL DE ATERRAMENTO
TIPO AFD-300A PARA CABOS DE 50 A 150mm²
MATERIAL: BRONZE ESTANHADO
ESTRUTURAS, CXS DE COMANDO
QTDE: 03 PÇS

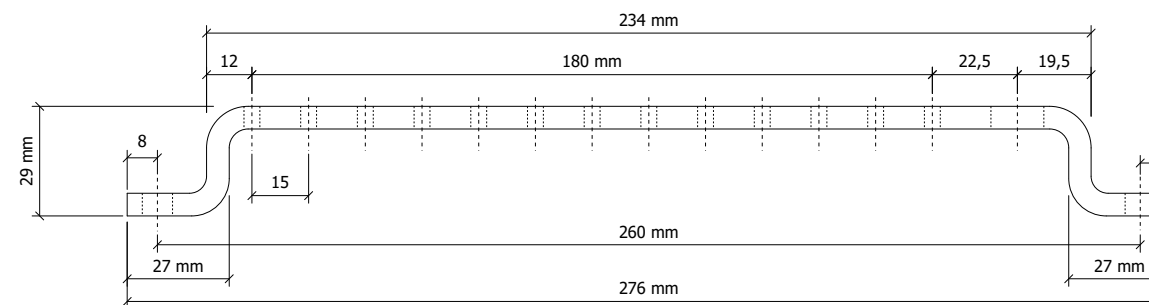
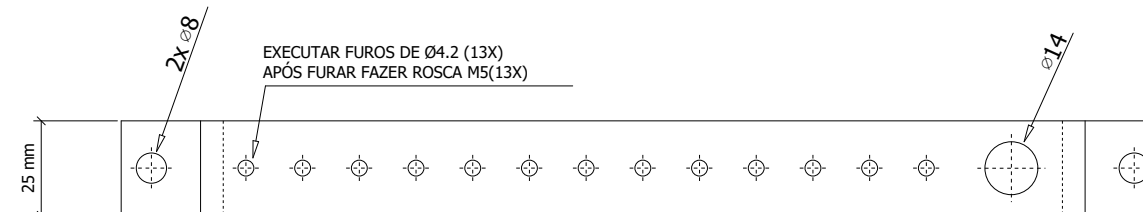
BARRA DE ATERRAMENTO

FIXADA NA PARTE EXTERNA
CAIXA DE CONTROLE E DUTO DE POLOS




BARRA DE ATERRAMENTO
MATERIAL: AÇO INOX SOLDADO
QTDE: 2 PCS (TOTAL)
1 PC CX. DE CONTROLE
1 PC CX. DE POLOS

BARRA DE ATERRAMENTO

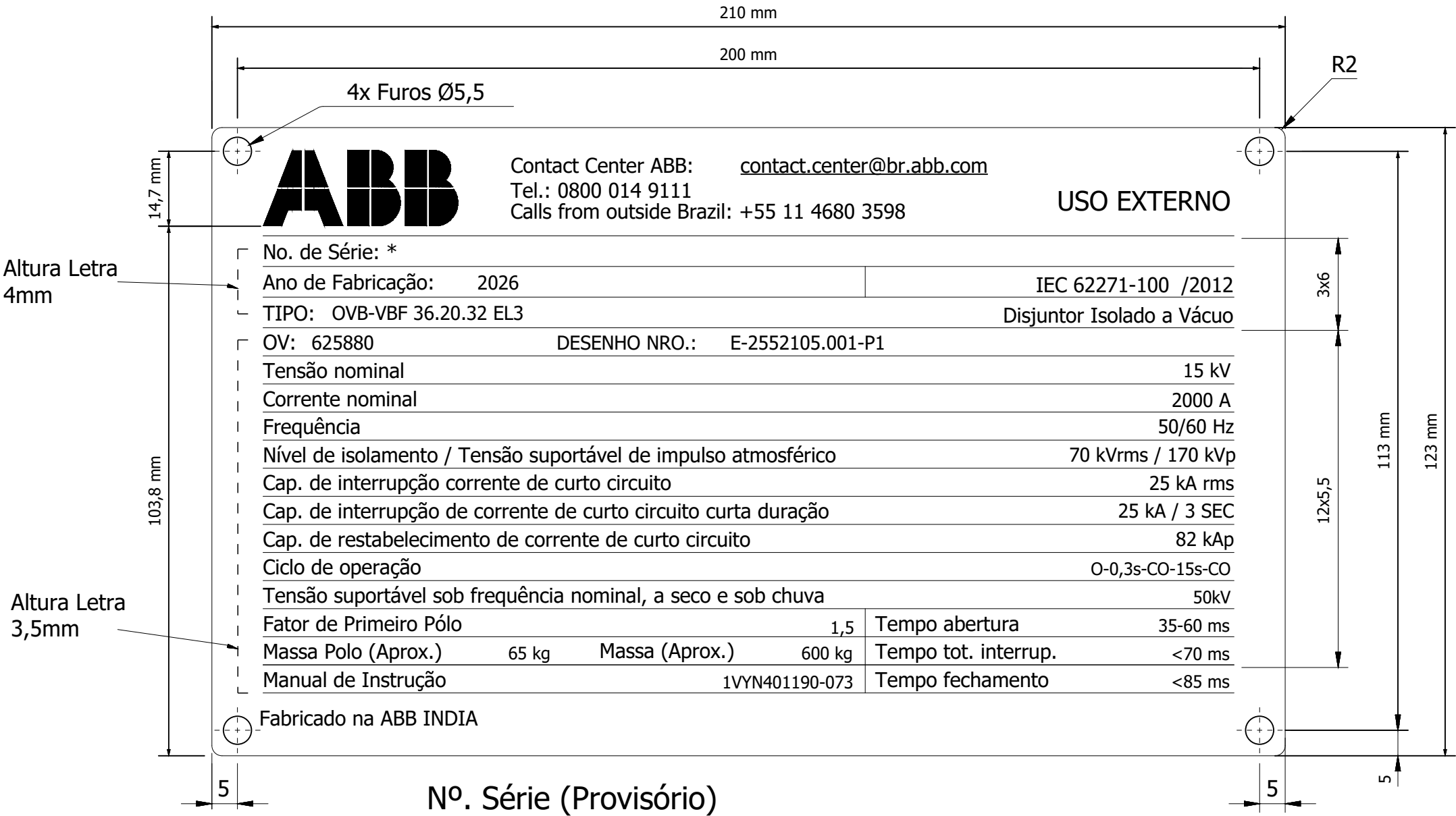


BARRA DE ATERRAMENTO
COBRE ESTANHADO; DIM. 6x25x240mm
13x PONTOS
QUANT.: 01 PÇ

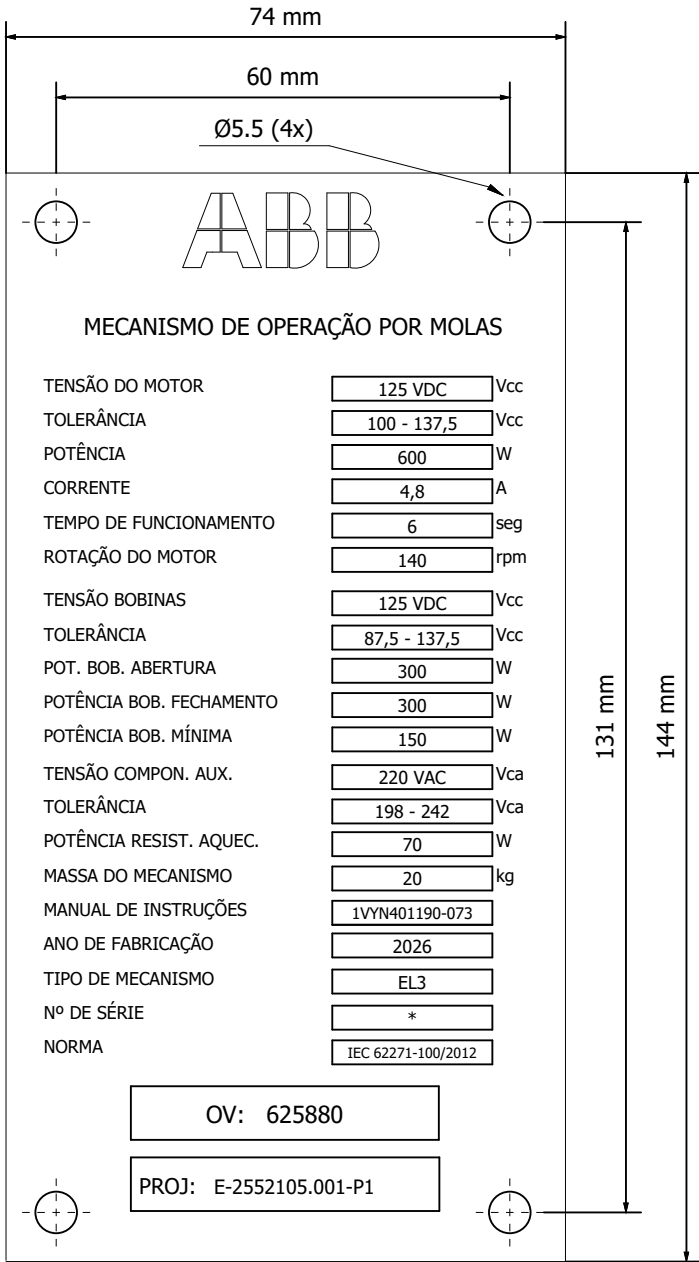
Based on				Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS	Order No	= K00		
-	-	-	-	Customer:	Checked	B.S.	Approved				L.P.	CONECTORES E BARRA DE ATERRAMENTO	13472
-	-	-	-	Coopera – Eletrocar	Project name			Doc. No.					
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV			 India Ltd., Nashik, ELDS		E-2552105.001-P1		Page	14
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PLACA DO MECANISMO DO DISJUNTOR




PLACA DO MECANISMO DO DISJUNTOR



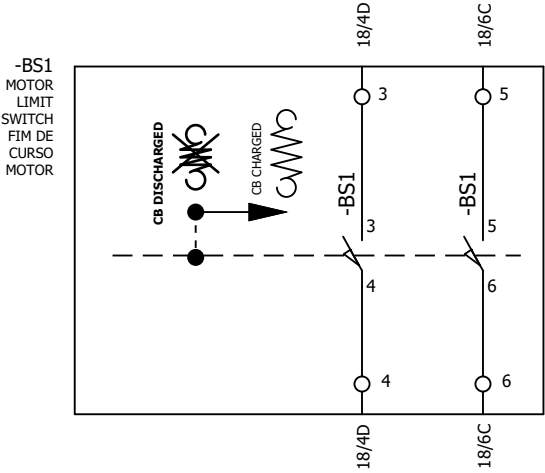
QUANTIDADE DOS DISJUNTORES: 1

BREAKER SERIAL NUMBER : 1VYN

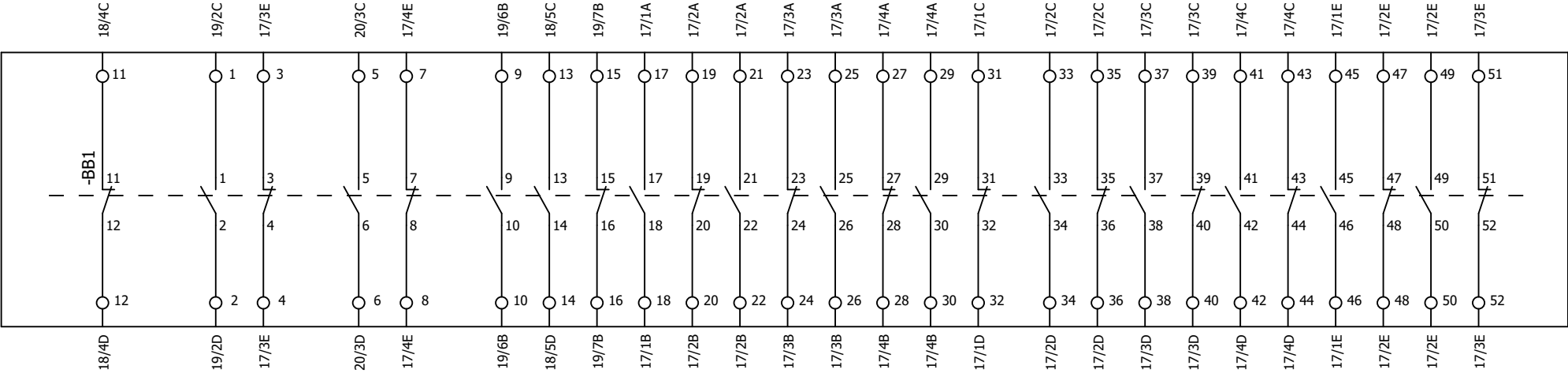
ARTIGO Nº. ARTICLE No.	
DIMENSÕES DIMENSIONS	ESPESSURA 0,7mm THICKNESS 0,7mm
MATERIAL/TIPO MATERIAL/TYPE	AÇO INOX 07Cr18Ni9 SS 07Cr18Ni9 AS PER IS:6611-72
NOME DO ITEM NAME OF ITEM	

Based on					Prepared	M.K.K.	Date	01/08/2025	Title	COMMON DRAWINGS		Order No	= K00	
-	-	-	-	Customer:	Checked	B.S.	Approved	L.P.	RATING PLATE	 India Ltd., Nashik, ELDS	Doc. No.	13472	+ MECANICA	
-	-	-	-	Coopera – Eletrocar	Project name			DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV				E-2552105.001-P1	Lang.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.									Page	
Rev.	Description	Date	Name	-									Pages	

CB OPEN, SPRING NOT CHARGED
DISJ. ABERTO, MOLA NÃO CARREGADA

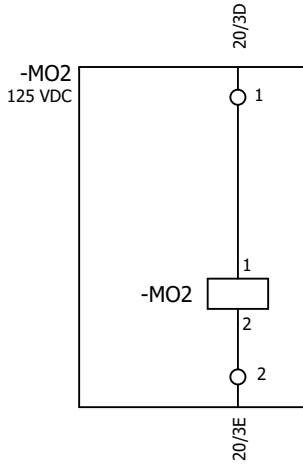
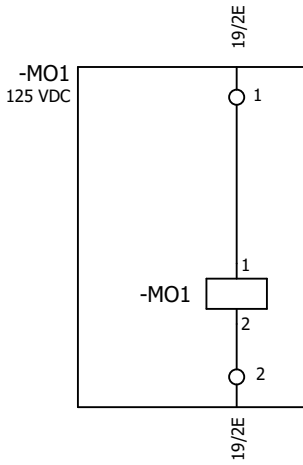
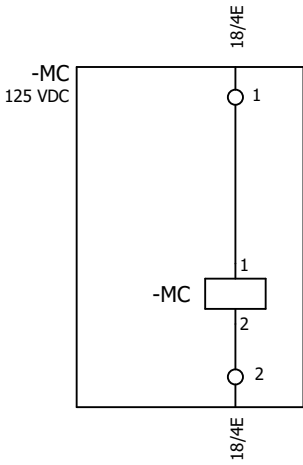
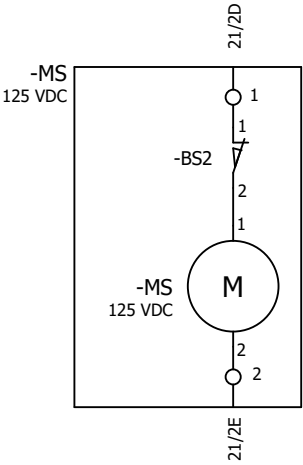


-BB1
AUXILIARY SWITCH
CONTACT
CONTATOS AUXILIARES

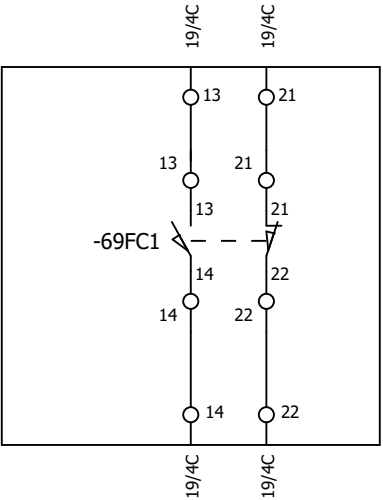


BREAKER AUXILIARY SWITCH
CONTATOS AUXILIARES DISJUNTOR

LIMIT SWITCH OF THE SPRING CHARGING MOTOR
FIM DE CURSO DO MOTOR DE CARREGAMENTO DA MOLA



-69FC1
LIMIT SWITCH
OF THE LOCK 69
FIM DE CURSO
DO BLOQUEIO 69

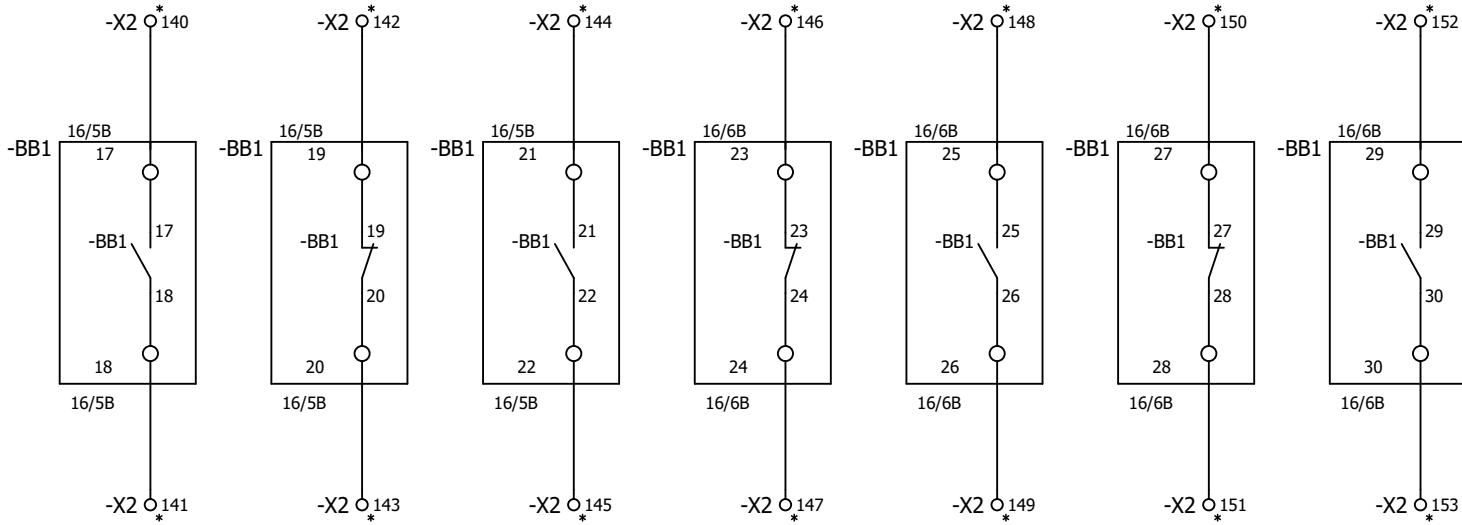


LIMIT SWITCH OF LOCK 69
FIM DE CURSO DO BLOQUEIO 69

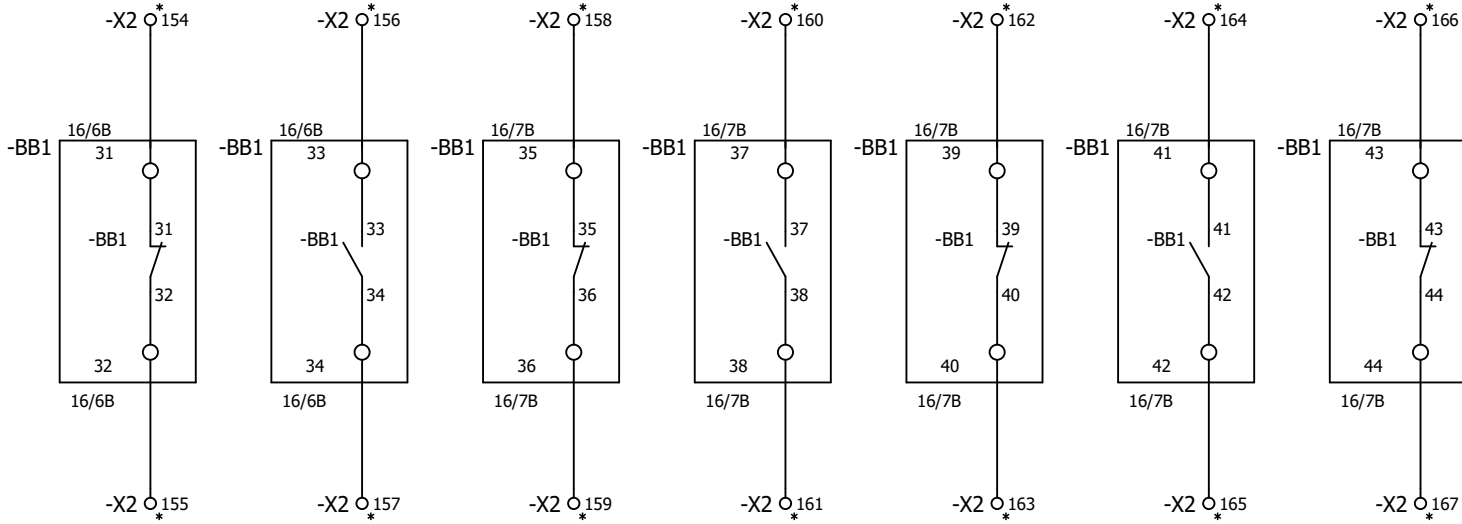
SUPPLY VOLTAGE TERMINAL
-X1 = RÉGUA DE BORNES ALIMENTAÇÃO
Borne UK10N - 0,5-16mm² - 57A - CINZA

BREAKER INTERNAL TERMINAL
-X2 = RÉGUA DE BORNE INTERNA DISJUNTOR
Terminal UK6N 3004524
Borne UK6N - 0,2-10mm² - 41A - CINZA

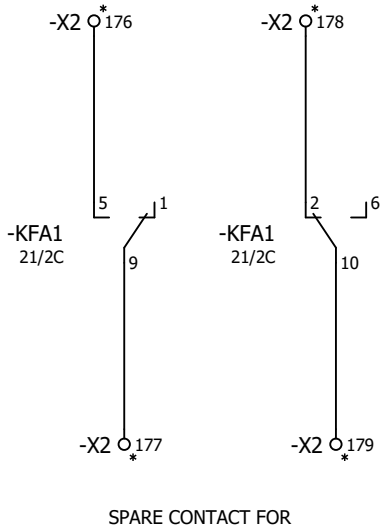
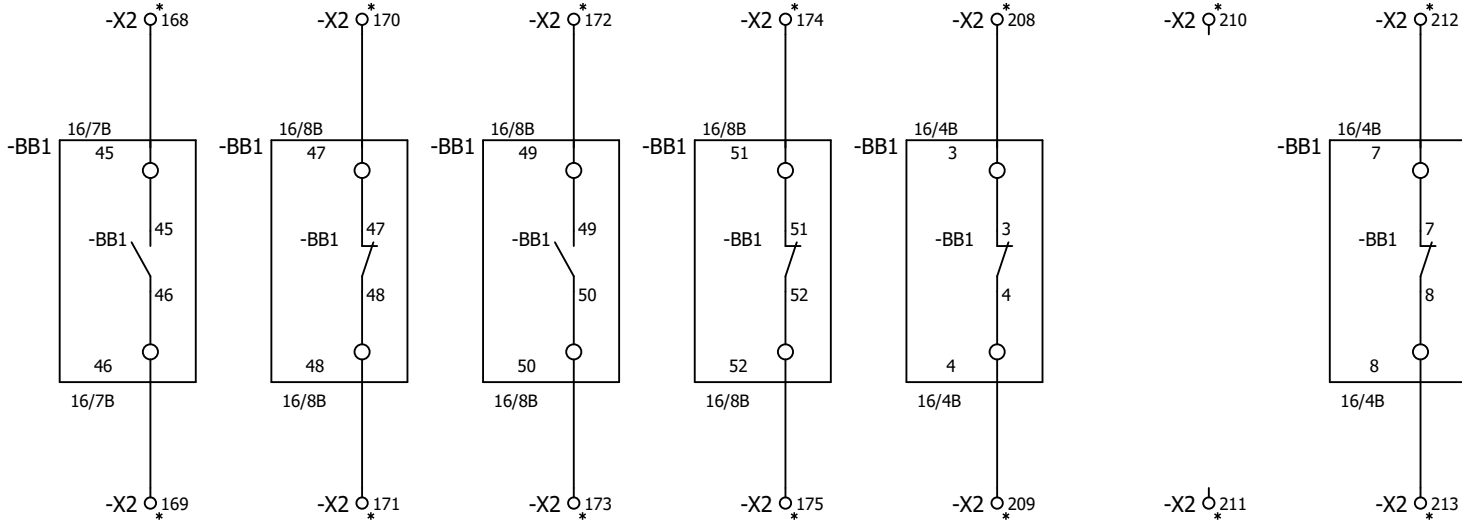
Based on				Prepared	M.K.K.	Date	01/08/2025	Title	OUTDOOR VACUUM CIRCUIT BREAKER		Order No	= H01		
-	-	-	-	Customer:	Checked	B.S.	Approved		L.P.	CIRCUIT BREAKER OVERVIEW		13472	+ HV	
-	-	-	-	Coopera – Eletrocar	Project name				Doc. No.		Lang.			
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV				E-2552105.001-P1		Page		16	
Rev.	Description	Date	Name	-					E-2552105.001-P1		Pages		28	
								ABB		India Ltd., Nashik, ELDS				



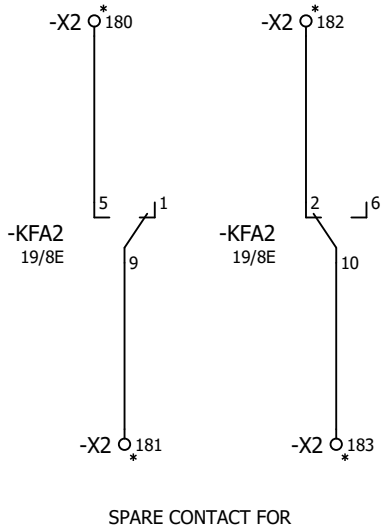
BREAKER SPARE CONTACTS
CONTATOS AUXILIARES DISJUNTOR



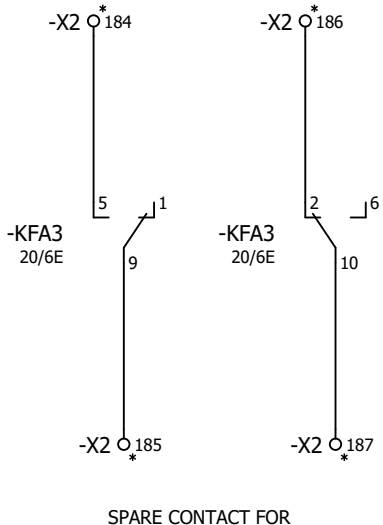
BREAKER SPARE CONTACTS
CONTATOS AUXILIARES DISJUNTOR



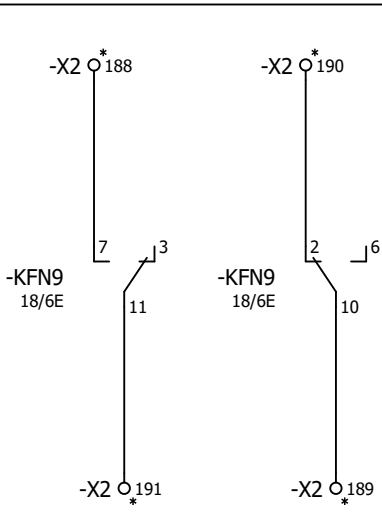
SPARE CONTACT FOR
AUXILIARY MULTIPLIER RELAY
CONTATOS RESERVA DO
RELÉ MULTIPLICADOR AUXILIAR



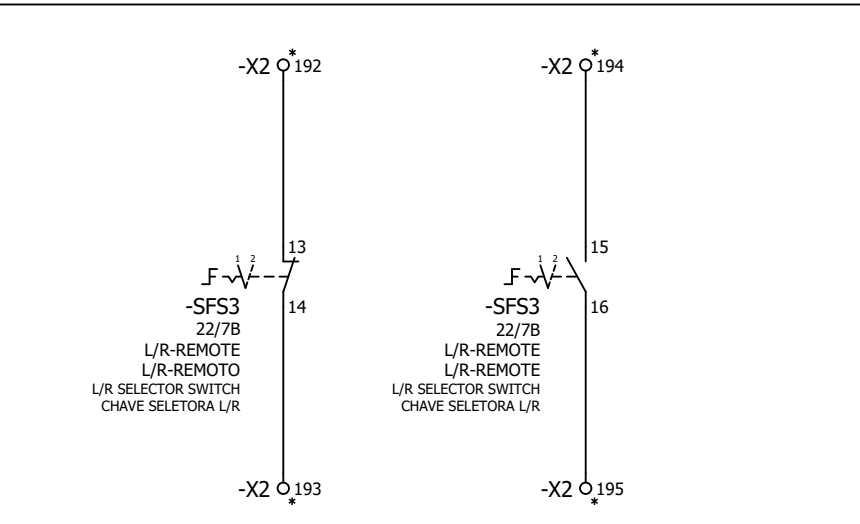
SPARE CONTACT FOR
AUXILIARY MULTIPLIER RELAY
CONTATOS RESERVA DO
RELÉ MULTIPLICADOR AUXILIAR



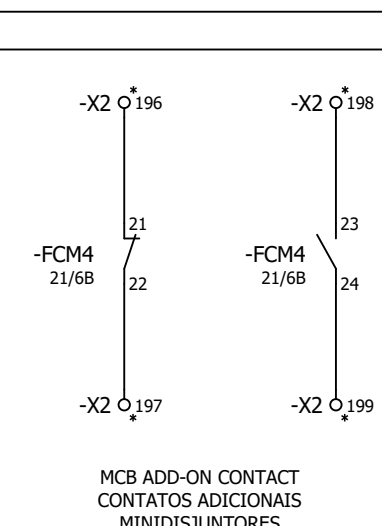
SPARE CONTACT FOR
AUXILIARY MULTIPLIER RELAY
CONTATOS RESERVA DO
RELÉ MULTIPLICADOR AUXILIAR



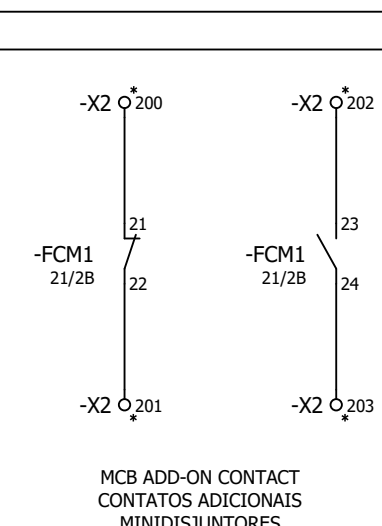
SPARE CONTACT FOR
SPRING CHARGE RELAY
CONTATOS RESERVA
RELÉ CARREGAMENTO DA MOLA



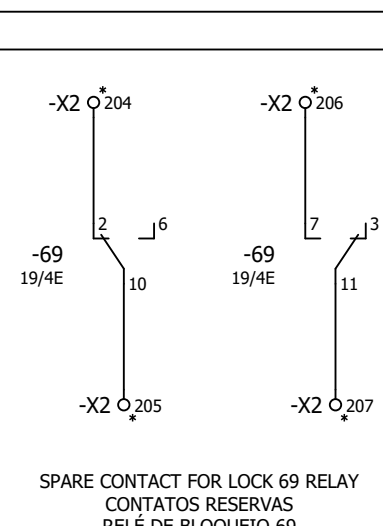
SPARE CONTACT FOR LOCAL REMOTE SWITCH
CONTATOS RESERVA DA CHAVE LOCAL REMOTO




MCB ADD-ON CONTACT
CONTATOS ADICIONAIS
MINIDISJUNTORES



MCB ADD-ON CONTACT
CONTATOS ADICIONAIS
MINIDISJUNTORES

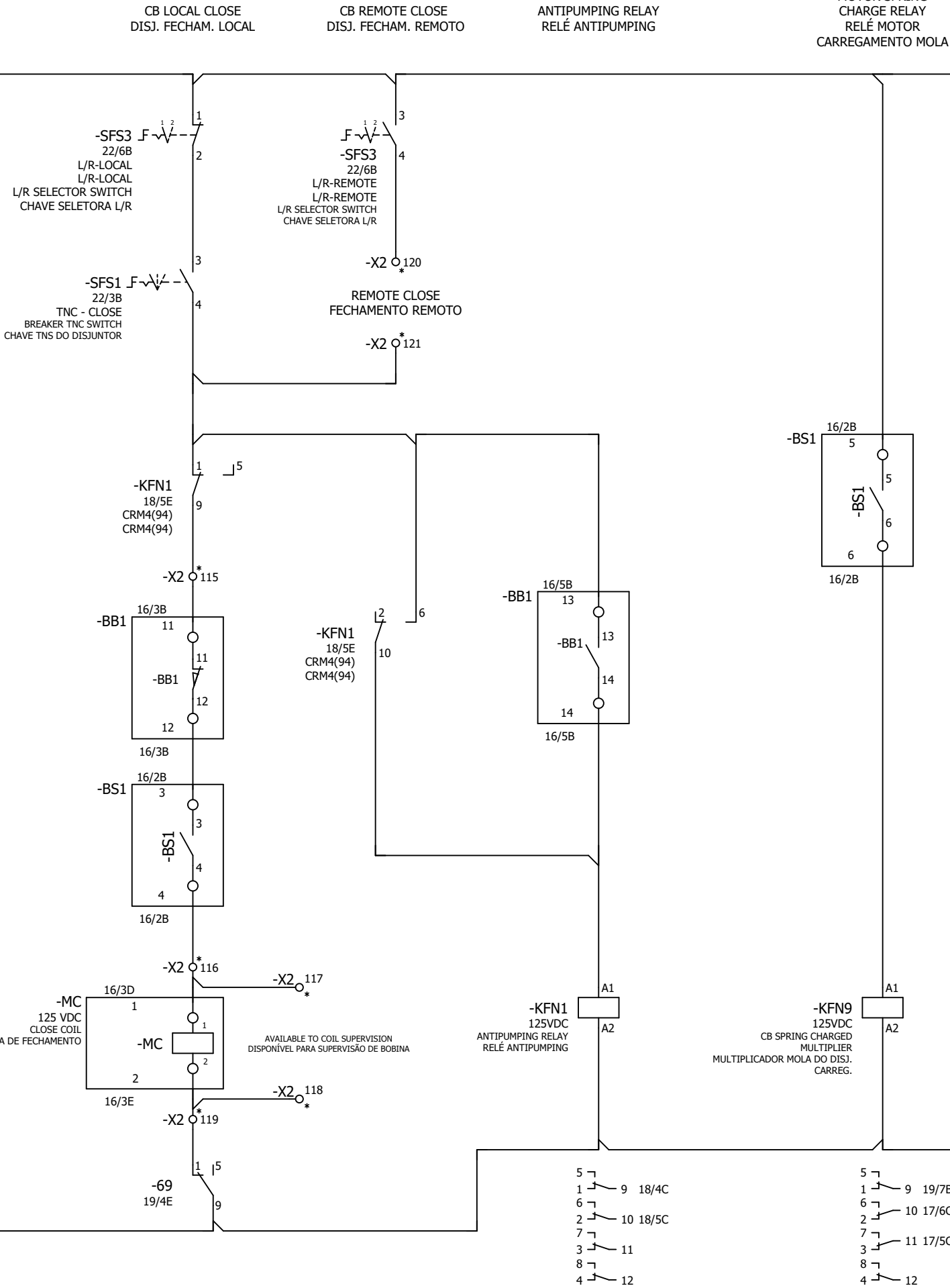
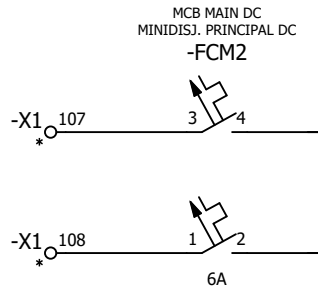



SPARE CONTACT FOR LOCK 69 RELAY
CONTATOS RESERVAS
RELÉ DE BLOQUEIO 69

Based on				Prepared	M.K.K.	Date	01/08/2025	Title	OUTDOOR VACUUM CIRCUIT BREAKER		Order No	= H01	
-	-	-	-	Customer:	Checked	B.S.	Approved	L.P.	SPARE CONTACTS		13472	+ HV	
-	-	-	-	Coopera – Eletrocar	Project name			Doc. No.			Lang.		
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV			 India Ltd., Nashik, ELDS		E-2552105.001-P1		Page	17
Rev.	Description	Date	Name	-						Pages	28		

CLOSING CIRCUIT VOLTAGE SUPPLY
ALIMENTAÇÃO CIRCUITO DE FECHAMENTO

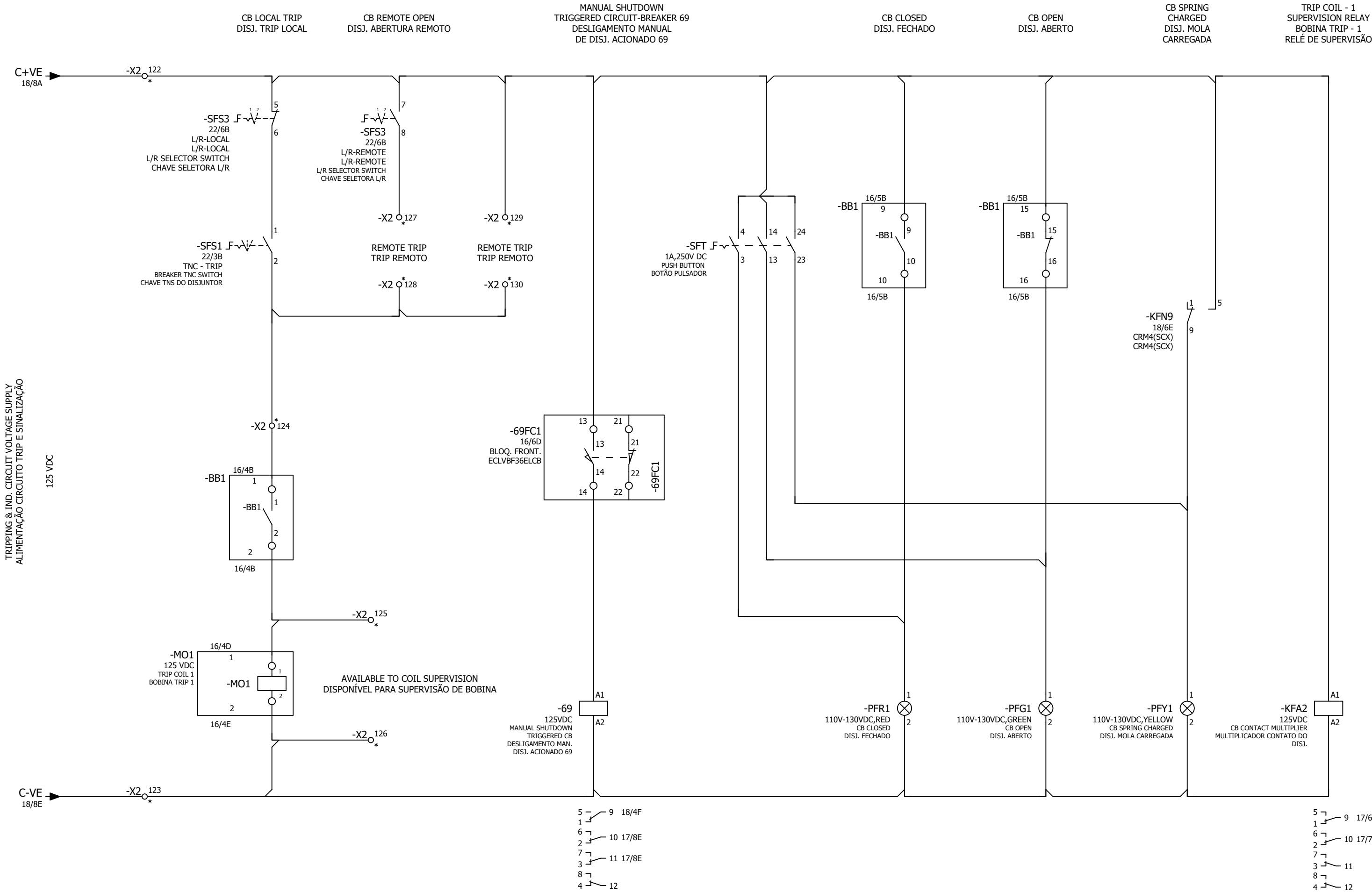
125 VDC




Based on				Prepared	M.K.K.	Date	01/08/2025	Title	OUTDOOR VACUUM CIRCUIT BREAKER		Order No	= H01	
-	-	-	-	Customer:	Checked	B.S.	Approved		L.P.	CLOSING CIRCUIT	13472	+ HV	
-	-	-	-	Coopera – Eletrocar	Project name				 India Ltd., Nashik, ELDS		Doc. No.	Lang.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV			E-2552105.001-P1		Page		18	
Rev.	Description	Date	Name	-						Pages		28	

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TRIPPING & IND. CIRCUIT VOLTAGE SUPPLY
ALIMENTAÇÃO CIRCUITO TRIP E SINALIZAÇÃO

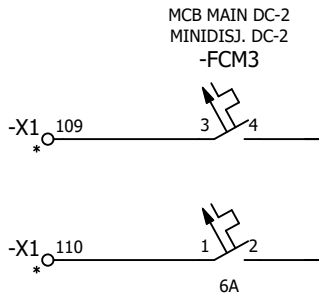


Based on					Prepared	M.K.K.	Date	01/08/2025	Title	OUTDOOR VACUUM CIRCUIT BREAKER		Order No	= H01	
-	-	-	-	Customer:	Checked	B.S.	Approved	L.P.		TRIPPING & INDICATION CKT		13472	+ HV	
-	-	-	-	Coopera – Eletrocar	Project name				 India Ltd., Nashik, ELDS	Doc. No.		Lang.		
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV					E-2552105.001-P1		Page 19		
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UNDERVOLTAGE CIRCUIT VOLTAGE SUPPLY
ALIMENTAÇÃO CIRCUITO MINIMA TENSÃO

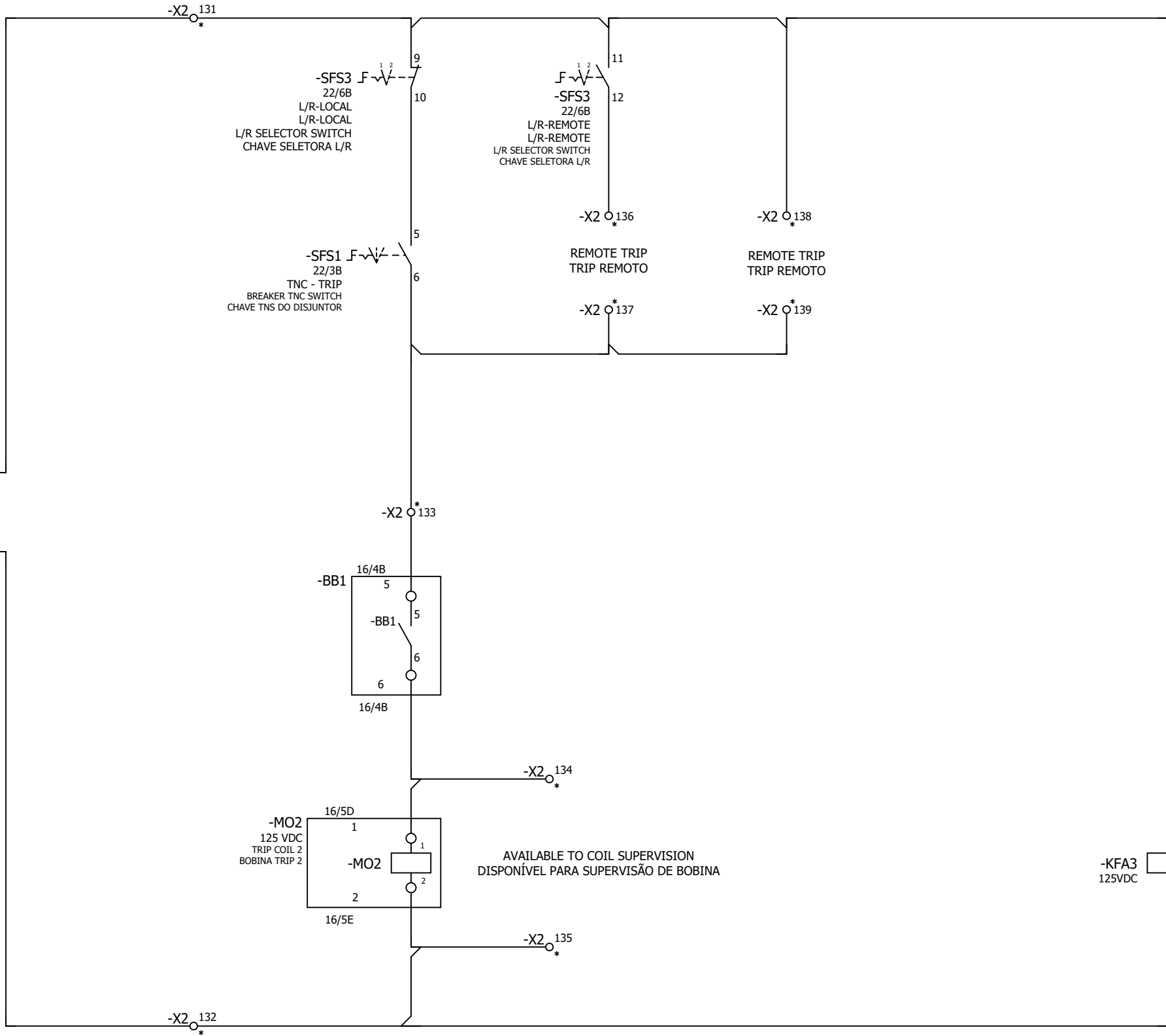
125 VDC



CB LOCAL TRIP
DISJ. TRIP
LOCAL

CB REMOTE OPEN
DISJ. ABERTURA
REMOTO

UNDERVOLTAGE COIL
SUPERVISION RELAY
BOBINA DE MINIMA
RELÉ DE SUPERVISÃO



- 5 9 17/8A
- 1 10 17/8A
- 6 11
- 2 12
- 7
- 3
- 8
- 4

Based on				Prepared M.K.K.	Date 01/08/2025	Title OUTDOOR VACUUM CIRCUIT BREAKER	Order No 13472	= H01
-	-	-	-	Customer:	Checked B.S.	Approved L.P.		+ HV
-	-	-	-	Coopera – Eletrocar	Project name		Doc. No.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV		E-2552105.001-P1	
Rev.	Description	Date	Name	-	India Ltd., Nashik, ELDS		Page 20	Pages 28

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A

B

C

D

E

F

A

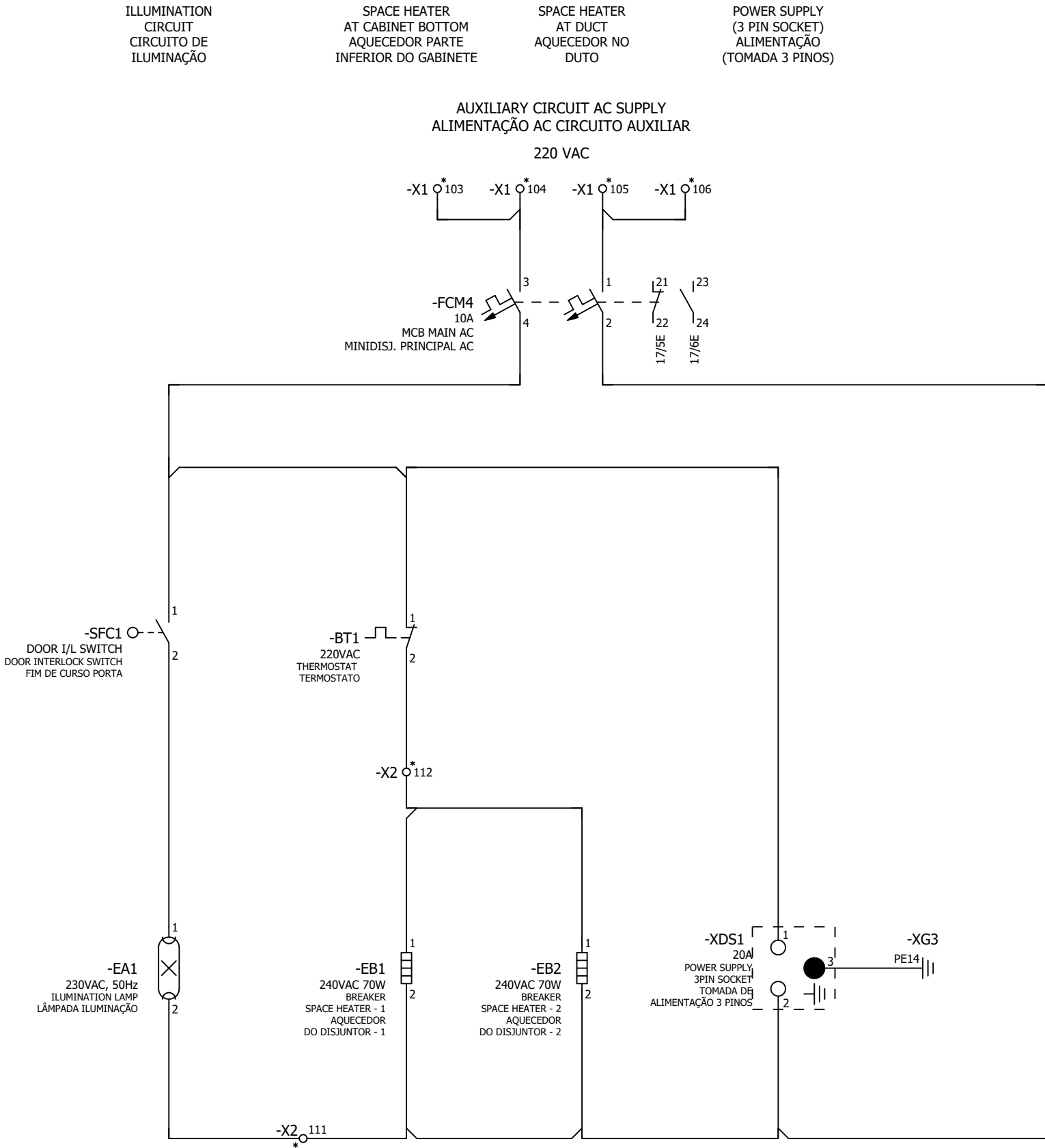
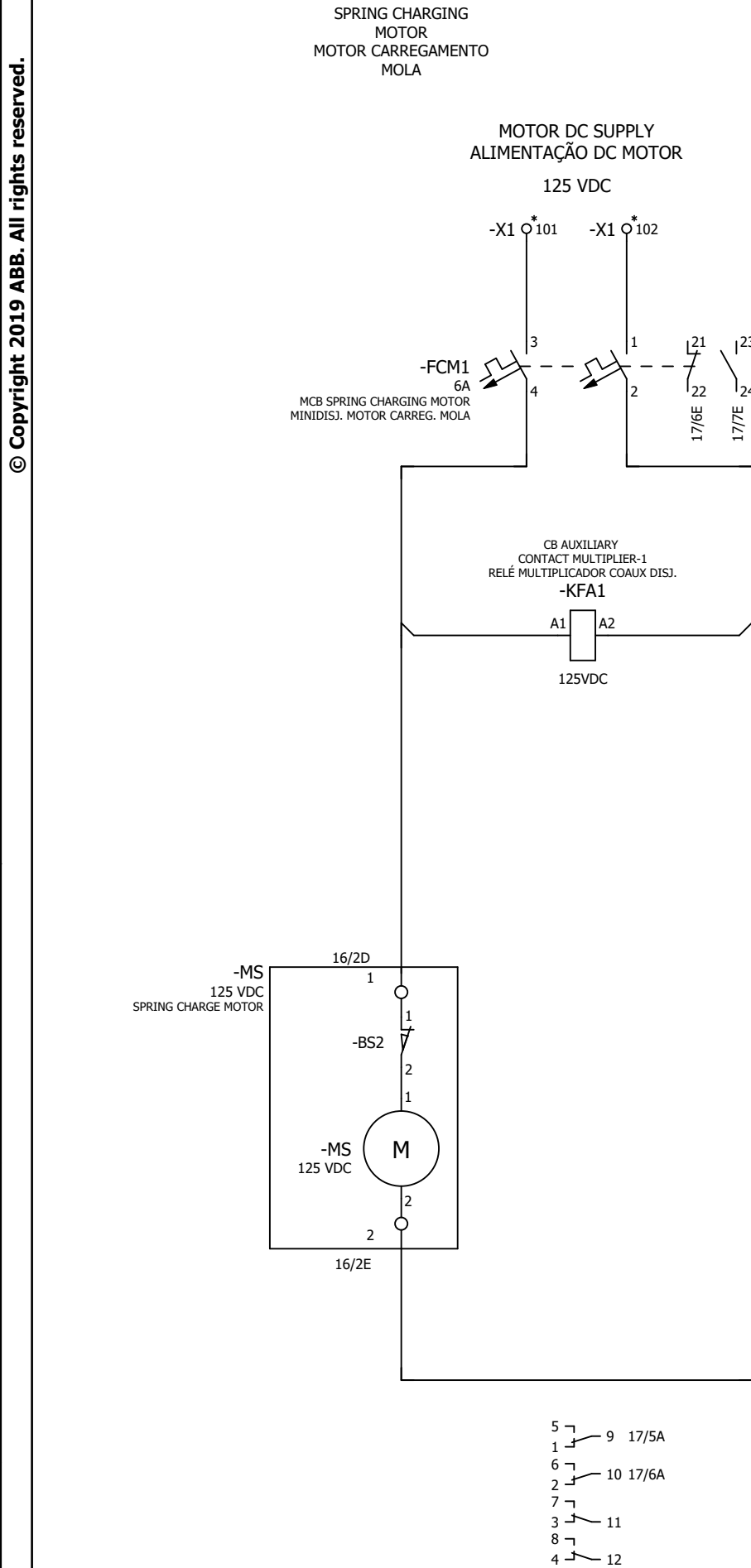
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C


D

E

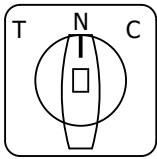
F



CB OPEN,
SPRING NOT CHARGED
DISJ.
ABERTO, MOLA NÃO CARREGADA

Based on				Prepared	M.K.K.	Date	01/08/2025	Title	OUTDOOR VACUUM CIRCUIT BREAKER		Order No	= H01	
-	-	-	-	Customer:	Checked	B.S.	Approved		L.P.	AC SUPPLY & MOTOR CIRCUITS	13472	+ HV	
-	-	-	-	Coopera – Eletrocar	Project name			 India Ltd., Nashik, ELDS			Doc. No.	Lang.	
0	Para Aprovação	01/08/25	M.K.K.	Contractor / Contract No.	DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV					E-2552105.001-P1	Page 21		
Rev.	Description	Date	Name	-						Pages 28			

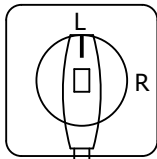
TRIP-NEUTRAL-CLOSE
SELECTOR SWITCH
CHAVE SELETORA
TRIP-NEUTRO-FECHADO



SPRING-RETURN HANDLE
PISTOL GRIP
RETORNO AUT. AO CENTRO

-SFS1 TNC SELECTOR SWITCH CHAVE SELETORA TNC											
1	TRIP										
2	NEUTRAL										
3	CLOSE										

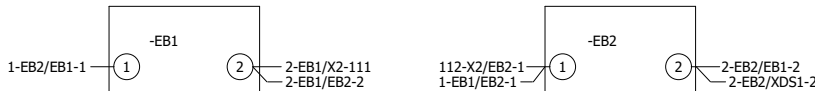
LOCAL/REMOTE
SELECTOR SWITCH
CHAVE SELETORA
LOCAL/REMOTO



WING TYPE
NON-LOCKABLE
MANOPLA SEM
BLOQUEIO

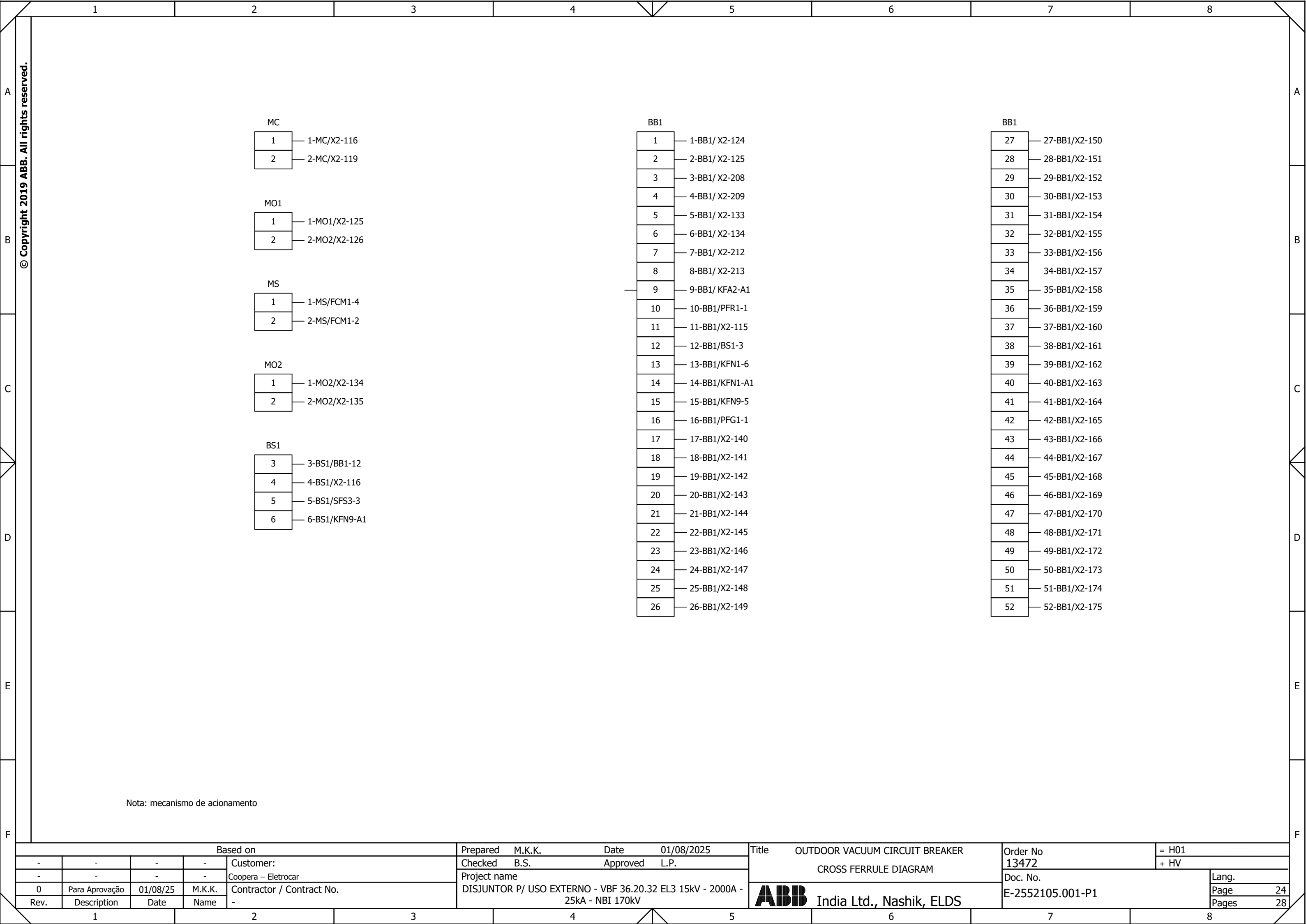
-SFS3 L/R SELECTOR SWITCH CHAVE SELETORA L/R																	
1	LOCAL																
2	REMOTE																

Order No 13472	= H01	
	+ HV	
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-SFS1					
CONTATOS		1	2		5 6
TRIP		X			X
NEUTRAL					
CLOSE				X	
CONTATOS			3 4		7 8

28-BB1/X2-151	151
29-BB1/X2-152	152
30-BB1/X2-153	153
31-BB1/X2-154	154
32-BB1/X2-155	155
33-BB1/X2-156	156
34-BB1/X2-157	157
35-BB1/X2-158	158
36-BB1/X2-159	159
37-BB1/X2-160	160
38-BB1/X2-161	161
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41-BB1/X2-164	164
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44-BB1/X2-167	167
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46-BB1/X2-169	169
47-BB1/X2-170	170
48-BB1/X2-171	171
49-BB1/X2-172	172
50-BB1/X2-173	173
51-BB1/X2-174	174
52-BB1/X2-175	175
5-KFA1/X2-176	176
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2-KFA2/X2-182	182
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5-KFA3/X2-184	184
9-KFA3/X2-185	185
2-KFA3/X2-186	186
10-KFA3/X2-187	187
7-KFN9/X2-188	188
10-KFN9/X2-189	189
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11-KFN9/X2-191	191
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16-SFS3/X2-195	195
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13-FCM4/X2-198	198
14-FCM4/X2-199	199
21-FCM1/X2-200	200
22-FCM1/X2-201	201
13-FCM1/X2-202	202
14-FCM1/X2-203	203
2-69/X2-204	204
10-69/X2-205	205
7-69/X2-206	206
11-69/X2-207	207
3-BB1/X2-208	208
4-BB1/X2-209	209
	210
	211
7-BB1/X2-212	212
8-BB1/X2-213	213



Nota: mecanismo de acionamento

Based on

-

-

-

-

Customer:

Coopera – Eletrocar

Contractor / Contract No.

-

Prepared

M.K.K.

Date

01/08/2025

Checked

B.S.

Approved

L.P.

Project name

DISJUNTOR P/ USO EXTERNO - VBF 36.20.32 EL3 15kV - 2000A - 25kA - NBI 170kV

Title

OUTDOOR VACUUM CIRCUIT BREAKER

CROSS FERRULE DIAGRAM

ABB

India Ltd., Nashik, ELDS

Order No

13472

Doc. No.

E-2552105.001-P1

= H01

+ HV

Lang.

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A B C D E F	<div> <div> <div>PARTS LIST</div> <div>LISTA DE MATERIAL</div> </div> <div> <div>H01</div> <div>OUTDOOR VACUUM CIRCUIT BREAKER</div> </div> </div>									A B C D E F																																																																																																																																																											
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PRINCIPAL AC	+HV21/6B	ABB	1SYS272012R0104	MCB 2 Pole ,10A, Voltage 400V AC - SB202 M-C10 Minidisjuntor 2 Pólos, 10A, tensão até 400V AC - SB202 M-C10	1	-FCM4	+HV21/6B	ABB	1VYN452320-050	Add on Aux Contact 1NO+1NC - S2-H11 [GHS2701916R0001] Contato auxiliar adicional 1NA+1NF - S2-H11 [GHS2701916R0001]	1	<table> <tr> <td colspan="4">Based on</td><td>Prepared M.K.K.</td><td>Date 01/08/2025</td><td>Title OUTDOOR VACUUM CIRCUIT BREAKER</td><td>Order No 13472</td><td colspan="2">= H01</td></tr> <tr> <td>-</td><td>-</td><td>-</td><td>-</td><td rowspan="2">Customer: Coopera – Eletrocar</td><td>Checked B.S.</td><td>Approved L.P.</td><td rowspan="2">Parts list</td><td colspan="2">+ BOM</td></tr> <tr> <td>-</td><td>-</td><td>-</td><td>-</td><td colspan="3">Project name</td><td>Doc. 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-FCM1 MCB SPRING CHARGING MOTOR MINIDISJ. MOTOR CARREG. MOLA	+HV21/2B	ABB	1SYS252067R0064	MCB 2 Pole ,6A, Voltage 440V DC - DC MCB SB202-C6DC Minidisjuntor 2 Pólos ,6A, tensão até 440V DC - DC MCB SB202-C6DC	1																																																																																																																																																																
-FCM1	+HV21/2B	ABB	1VYN452320-050	Add on Aux Contact 1NO+1NC - S2-H11 [GHS2701916R0001] Contato auxiliar adicional 1NA+1NF - S2-H11 [GHS2701916R0001]	1																																																																																																																																																																
-FCM2 MCB MAIN DC MINIDISJ. PRINCIPAL DC	+HV18/2C	ABB	1SYS252067R0064	MCB 2 Pole ,6A, Voltage 440V DC - DC MCB SB202-C6DC Minidisjuntor 2 Pólos ,6A, tensão até 440V DC - DC MCB SB202-C6DC	1																																																																																																																																																																
-FCM3 MCB MAIN DC-2 MINIDISJ. DC-2	+HV20/2C	ABB	1SYS252067R0064	MCB 2 Pole ,6A, Voltage 440V DC - DC MCB SB202-C6DC Minidisjuntor 2 Pólos ,6A, tensão até 440V DC - DC MCB SB202-C6DC	1																																																																																																																																																																
-FCM4 MCB MAIN AC MINIDISJ. PRINCIPAL AC	+HV21/6B	ABB	1SYS272012R0104	MCB 2 Pole ,10A, Voltage 400V AC - SB202 M-C10 Minidisjuntor 2 Pólos, 10A, tensão até 400V AC - SB202 M-C10	1																																																																																																																																																																
-FCM4	+HV21/6B	ABB	1VYN452320-050	Add on Aux Contact 1NO+1NC - S2-H11 [GHS2701916R0001] Contato auxiliar adicional 1NA+1NF - S2-H11 [GHS2701916R0001]	1																																																																																																																																																																
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-KFA1 CB AUXILIARY CONTACT MULTIPLIER-1 RELÉ MULTIPLICADOR COAUX DISJ.										+HV21/2C										ABB-PEENYA										1SVR405613R8200										CR-M125DC4 Plug-in Relay, CR-M4 With Base For Contacts 4C/O SR, Aux.Voltage:125V DC Relé plug-in CR-M125DC4 4NAF, com base CR-M4, tensão 125V DC										1																																																	
-KFA1										+HV21/2C										ABB										1SVR405651R3100										SOCKET CR-M4LS BASE CR-M4LS										1																																																	
-KFA1										+HV21/2C										ABB										1SVR405659R1000										HOLDER CR-MH CLIP CR-MH										1																																																	
-KFA2 CB CONTACT MULTIPLIER MULTIPLICADOR CONTATO DO DISJ.										+HV19/8E										ABB-PEENYA										1SVR405613R8200										CR-M125DC4 Plug-in Relay, CR-M4 With Base For Contacts 4C/O SR, Aux.Voltage:125V DC Relé plug-in CR-M125DC4 4NAF, com base CR-M4, tensão 125V DC										1																																																	
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-KFA3										+HV20/6E										ABB-PEENYA										1SVR405613R8200										CR-M125DC4 Plug-in Relay, CR-M4 With Base For Contacts 4C/O SR, Aux.Voltage:125V DC Relé plug-in CR-M125DC4 4NAF, com base CR-M4, tensão 125V DC										1																																																	
-KFN1 ANTIPUMPING RELAY RELÉ ANTIPUMPING										+HV18/5E										ABB-PEENYA										1SVR405613R8200										CR-M125DC4 Plug-in Relay, CR-M4 With Base For Contacts 4C/O SR, Aux.Voltage:125V DC Relé plug-in CR-M125DC4 4NAF, com base CR-M4, tensão 125V DC										1																																																	
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-KFN9 CB SPRING CHARGED MULTIPLIER MULTIPLICADOR MOLA DO DISJ. CARREG.										+HV18/6E										ABB-PEENYA										1SVR405613R8200										CR-M125DC4 Plug-in Relay, CR-M4 With Base For Contacts 4C/O SR, Aux.Voltage:125V DC Relé plug-in CR-M125DC4 4NAF, com base CR-M4, tensão 125V DC										1																																																	
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-MC CLOSE COIL BOBINA DE FECHAMENTO										+HV18/3E										XIAMEN LEELEN										1VCR004291G0005										110-127VAC/110-132VDC CLOSE COIL - EL3 Bobina de fechamento, 110-127VAC/110-132VDC - EL3										1																																																	
-MO1 TRIP COIL 1 BOBINA TRIP 1										+HV19/2D										XIAMEN LEELEN										1VCR004289G0005										110-127VAC/110-132VDC TRIP COIL 1 - EL3 Bobina de Trip 1 110-127VAC/110-132VDC - EL3										1																																																	
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Device TAG Identificação (TAG)				Placement Posicionamento		Manufacturer Fabricante		Code Código		Material Description Descrição do Material				Quantity Quant.	
-XDS1 POWER SUPPLY 3PIN SOCKET TOMADA DE ALIMENTAÇÃO 3 PINOS				+HV21/7D		ABB		2CLA213620N1102		20AMP BRAZILIAN Socket - N2136.2 BL Tomada padrão Brasileiro, 20A - N2136.2 BL				1	