COMMUTATORI MANUALI E BY-PASS

_MANUAL CHANGE-OVER SWITCHES

CMA 32 ÷ 4000 A

GENERALITÀ
Serie di commutatori ad azionamento manuale che permettono l'apertura e la commutazione di due circuiti elettrici in bassa tensione.
Sono realizzati interbloccando due normali interruttori sezionatori della serie VISUALCOMPACT.
La posizione sovrapposta dei due interruttori sezionatori rende particolarmente compatta questa soluzione facilitando notevolmente il collegamento a cavi o barre.

CARATTERISTICHE GENERALI
3 posizioni I-O-II
versione senza zero con sovrapposizione dei contatti 1, 1+II, II (overlapping) fino a 3150A.
Interruttori-sezionatori interbloccati in sovvraposizione o orizzontalmente
Visibilità diretta, mediante finestrelle, dei contatti fissi e mobili
Manovre a scatto rapido indipendente
Doppia interruzione per ogni polo
Alto potere di interruzione (AC-23A IEC 60947-3)
Elevata durata meccanica ed elettrica
Adatti per utilizzo in climi tropicali
Ampia gamma di accessori
Comando di tipo rotativo frontale a mezzo di:
- Maniglia esterna a doppio isolamento con dispositivo bloccoporta nelle posizioni I e II
- Grado di protezione IP65.
- Lucchettabilità fino a 3 lucchetti in posizione O

Possibilità di esecuzione per by-pass fino a 1250A 35kA
Possibilità di esecuzioni speciali di commutatori a 6-8 poli

CONDIZIONI NORMALI DI SERVIZIO, MONTAGGIO E TRASPORTO
temperatura ambiente di immagazzinamento e trasporto - 25°C + 55°C
temperatura ambiente di funzionamento - 20°C + 40°C
in caso di temperatura ambiente (t_a) superiore, applicare la seguente formula di declassamento:

$I_{The} = k\ I_{Th}$ dove $\quad K = 1 - \frac{t_a - 40}{100}$

umidità relativa max 95%
frequenza nominale 50 - 60 Hz
altitudine max 2000 m s.l.m.
grado di inquinamento 3 secondo IEC 60947-1
tipo di servizio (secondo IEC 60947-1):
- servizio 8 ore
- servizio ininterrotto
- servizio intermittente 60% classe 30
- servizio temporaneo
- servizio periodico

Per condizioni di impiego diverse consultare il costruttore.

CONFORMITÀ ALLE NORME
IEC 60947-1|IEC 60947-3|UNI EN 60947-1|UNI EN 60947-3

CERTIFICATI E OMOLOGAZIONI
KEMA | RINA | ENEL codice 13.32.23 | A2A | CESI | IENGF | EAC

_GENERALITIES
Manually Operated Changeover Switches, suitable for breaking and switching between two low voltage electrical circuits.
They are made by two standard switches of VISUALCOMPACT series. mechanically interlocked.
The arrangement of two switches mounted one on top of the other makes this execution particularly compact and easy to connect to cables or bus- bars.

_GENERAL CHARACTERISTICS
3 positions I-0-II
Version without 0 (overlapping) functions 1, 1+II, II up to 3150A
Load break switches two-layer or horizontally interlocked
Visibility of fixed and moving contacts by means of windows
Indipendent fast action operation
Double break contacts
High breaking capacity (ac-23a iec 60947-3)
High electrical and mechanical endurance
Resistant to damp heat
Wide range of accessories
Rotary front operation by means of:
- External double insulated handle with door-interlock in I and II position.
- IP65 degree of protection.
- Padlockable with up to three padlocks in 0 position

ByPass version available up to 1250 A, 35kA.
6-8 pole special execution available.

_NORMAL SERVICE, MOUNTING AND TRANSPORT CONDITIONS
storage and transport ambient temperature - 25°C + 55°C
working ambient temperature - 20°C + 40°C
in case of higher ambient temperature (t_a) consider the following derating formula:

$I_{The} = k\ I_{Th}$ dove $\quad K = 1 - \frac{t_a - 40}{100}$

relative humidity max 95%
rated frequency 50 - 60 Hz
altitude max 2000 m a.s.l.
pollution degree 3 according IEC 60947-1
duty (IEC 60947-1):
- eight-hour duty
- uninterrupted duty
- intermittent duty 60% class 30
- temporary duty
- periodic duty

For different operating conditions please contact the manufacturer.

_CONFORMITY TO STANDARDS
IEC 60947-1|IEC 60947-3|UNI EN 60947-1|UNI EN 60947-3

_CERTIFICATES AND APPROVALS
KEMA | RINA | ENEL code 13.32.23 | A2A | CESI | IENGF | EAC

Tipo _type	Corrente nominale _rated current	Senza maniglia _without handle		Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE	POLI _POLES	CODICE _CODE
CS1P	32 A	3	110008SM	3	110008
		4	110108SM	4	110108
	45A	3	110018SM	3	110018
		4	110118SM	4	110118
	63A	3	110028SM	3	110028
		4	110128SM	4	110128
	80A	3	110038SM	3	110038
		4	110138SM	4	110138
	100A	3	110048SM	3	110048
		4	110148SM	4	110148
	125A	3	110058SM	3	110058
		4	110158SM	4	110158
	160A	3	110068SM	3	110068
		4	110168SM	4	110168
CS2P	160A	3	120018SM	3	120018
		4	120118SM	4	120118
	200A	3	120028SM	3	120028
		4	120128SM	4	120128
	250A	3	120038SM	3	120038
		4	120138SM	4	120138
	315A	3	120048SM	3	120048
		4	120148SM	4	120148
CS3P	315A	3	130018SM	3	130018
		4	130118SM	4	130118
	400A	3	130028SM	3	130028
		4	130128SM	4	130128
	500A	3	130038SM	3	130038
		4	130138SM	4	130138
CS4P	630A	3	140038SM	3	140038
		4	140138SM	4	140138
	800A	3	140048SM	3	140048
		4	140148SM	4	140148
CS5P (35kA)	800A	3	150008SM	3	150008
		4	150108SM	4	150108
	1000A	3	150018SM	3	150018
		4	150118SM	4	150118
	1250A	3	150028SM	3	150028
		4	150128SM	4	150128
CS5P (50kA)	800A	3	150078SM	3	150078
		4	150178SM	4	150178
	1000A	3	150088SM	3	150088
		4	150188SM	4	150188
	1250A	3	150098SM	3	150098
		4	150198SM	4	150198
	1600A	3	150038SM	3	150038
		4	150138SM	4	150138
	2000A	3	150048SM	3	150048
		4	150148SM	4	150148
	2500A	3	150058SM	3	150058
		4	150158SM	4	150158
	3150A	3	150068SM	3	150068
		4	150168SM	4	150168
CS6P	1600A	3	160008SM	3	160008
		4	160108SM	4	160108
	2000A	3	160018SM	3	160018
		4	160118SM	4	160118
	2500A	3	160028SM	3	160028
		4	160128SM	4	160128
	3150A	3	160038SM	3	160038
		4	160138SM	4	160138

COP

Commutatori orizzontali _horizontal change-over switches

Tipo _type	Corrente nominale _rated current	Senza maniglia _without handle		Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE	POLI _POLES	CODICE _CODE
CO1P	32 A	3	110003SM	3	110003
		4	110103SM	4	110103
	45A	3	110013SM	3	110013
		4	110113SM	4	110113
	63A	3	110023SM	3	110023
		4	110123SM	4	110123
	80A	3	110033SM	3	110033
		4	110133SM	4	110133
	100A	3	110043SM	3	110043
		4	110143SM	4	110143
	125A	3	110053SM	3	110053
		4	110153SM	4	110153
	160A	3	110063SM	3	110063
		4	110163SM	4	110163
CO2P	160A	3	120013SM	3	120013
		4	120113SM	4	120113
	200A	3	120023SM	3	120023
		4	120123SM	4	120123
	250A	3	120033SM	3	120033
		4	120133SM	4	120133
	315A	3	120043SM	3	120043
		4	120143SM	4	120143
CO3P	315A	3	130013SM	3	130013
		4	130113SM	4	130113
	400A	3	130023SM	3	130023
		4	130123SM	4	130123
	500A	3	130033SM	3	130033
		4	130133SM	4	130133
CO4P	630A	3	140033SM	3	140033
		4	140133SM	4	140133
	800A	3	140043SM	3	140043
		4	140143SM	4	140143
CO5P (35kA)	800A	3	150003SM	3	150003
		4	150103SM	4	150103
	1000A	3	150013SM	3	150013
		4	150113SM	4	150113
	1250A	3	150023SM	3	150023
		4	150123SM	4	150123
CO5P (50kA)	800A	3	150073SM	3	150073
		4	150173SM	4	150173
	1000A	3	150083SM	3	150083
		4	150183SM	4	150183
	1250A	3	150093SM	3	150093
		4	150193SM	4	150193
	1600A	3	150033SM	3	150033
		4	150133SM	4	150133
	2000A	3	150043SM	3	150043
		4	150143SM	4	150143
	2500A	3	150053SM	3	150053
		4	150153SM	4	150153
	3150A	3	150063SM	3	150063
		4	150163SM	4	150163
CO6P	1600A	3	160003SM	3	160003
		4	160103SM	4	160103
	2000A	3	160013SM	3	160013
		4	160113SM	4	160113
	2500A	3	160023SM	3	160023
		4	160123SM	4	160123
	3150A	3	160033SM	3	160033
		4	160133SM	4	160133

BYP

BYP sovrapposti | Commutatori BY-PASS

GENERALITÀ

I commutatori by-pass sono una combinazione di tre interruttori interbloccati tra loro meccanicamente cosi da costituire un dispositivo in grado di collegare in derivazione parti in manutenzione.

_BYP two layers | BY-PASS change-over switches

GENERALITIES

By Pass Change over switches are a combination of three mechanically interlocked switches, make to shunt circuit sections that has to go under maintenance.

I codici riportati nelle tabelle corrispondono alla portata indicata.
Il codice, di un by-pass con valori di portata (Amp.) diverso da quelli riportati nelle tabelle, si ottiene aggiungendo la desinenza 0 al codice del corrispondente sezionatore.

_By-pass switch disconnectors code written in the tables corresponding at the specific rated current value.
To order a by-pass Change over switches , not included in these tables, add 0 at the end of the code of the corresponding switch disconnector.

Tipo _type	Corrente nominale _rated current	Senza maniglia _without handle		Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE	POLI _POLES	CODICE _CODE
BYP1 SOVRAPPOSTI _TWO LAYERS	125A	3	110050SM	3	110050
		4	110150SM	4	110150
BYP2 SOVRAPPOSTI _TWO LAYERS	250A	3	120030SM	3	120030
		4	120130SM	4	120130
BYP3 SOVRAPPOSTI _TWO LAYERS	400A	3	130020SM	3	130020
		4	130120SM	4	130120
BYP4 SOVRAPPOSTI _TWO LAYERS	800A	3	140040SM	3	140040
		4	140140SM	4	140140
BYP5 SOVRAPPOSTI _TWO LAYERS	1250A	3	150020SM	3	150020
		4	150120SM	4	150120

Caratteristiche tecniche _Technincal Features	Tipo _Type		CS|CO - 1P							CS|CO - 2P			
Corrente nominale _Rated current	In	A	32	45	63	80	100	125	160	160	200	250	315
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	8	8	8	8	8	8	8	12	12	12	12
Corrente nominale termica _Thermal current	Ith	A	32	45	63	80	100	125	160	160	200	250	315
Corrente nominale d' impiego _Rated operational current													
AC-21A/B	400V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	500V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	690V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
AC-22A/B	400V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	500V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
	690V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
AC-23A/B	400V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
	500V	A	25	35	45	63	80	100	100/100	125	160	200	200/200
	690V	A	20	30	35	45	63	80	80/80	100	125	160	160/160
DC-21A/B	220V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	420V	A	-	-	-	-	-	-	-	160	200	250	250/315
	560V	A	-	-	-	-	-	-	-	-	-	-	-
DC-22A/B	220V	A	32	45	63	80	100	125	125/125	160	200	250	250/315
	420V	A	-	-	-	-	-	-	-	160	200	250	250/250
	560V	A	-	-	-	-	-	-	-				
DC-23A/B	220V	A	20	30	35	45	63	80	80/80	160	200	250	250/250
	420V	A	-	-	-	-	-	-	-	160	200	250	250/250
	560V	A	-	-	-	-	-	-	-	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	320	450	630	800	1000	1250	1250	1600	2000	2500	2500
Potere di interruzione _Breaking capacity	400V AC23	A	256	360	504	640	800	1000	1000	1280	1600	2000	2000
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	5	5	5	5	5	5	5	8	8	8	8
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	10	10	10	10	10	10	10	16	16	16	16
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	7,5	7,5	7,5	7,5	7,5	7,5	7,5	13,5	13,5	13,5	13,5
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	17	23	33	42	52	65	65	85	105	130	130
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current													
Tipo fusibile _Backup fuse		A	32	45	63	80	100	125	160	160	200	250	315
Valore efficace _R.M.S. value		kA	50	50	50	50	50	50	50	50	50	50	50
Valore di picco _Peak value		kA	6	9	10	12	12	15	16	16	20	25	27
Durata meccanica _Mechanical endurance		n.	12000	12000	12000	12000	12000	10000	10000	10000	10000	10000	10000
Durata elettrica _Electrical endurance		n.	3000	3000	3000	3000	3000	2000	2000	2000	2000	2000	2000/200
Potenza condensatori a 400V _Rated capacitor power at 400V		kVAR	15	20	30	40	45	50	50	70	90	110	110
Potenza dissipata per polo _Power losses for pole		W	0,1	0,2	0,4	0,7	1,1	1,7	2,7	1,6	2,4	3,8	6,1
Dimensione cavo _Cable section		mm^2	10	10	16	25	35	50	70	70	95	120	185
Dimensione barre _Bars dimension		mm	10x2	10x2	12x3	12x3	14x3	16x3	16x4	20x4	20x5	20x6	22x8
Peso netto _Net weight	3P	Kg	3,2 / 2	3,2 / 2	3,2 / 2	3,2 / 2	3,2 / 2	3,2 / 2	3,2 / 2	4,5 / 3	4,5 / 3	4,5 / 3	4,5 / 3
	4P		3,5 / 2,1	3,5 / 2,1	3,5 / 2,1	3,5 / 2,1	3,5 / 2,1	3,5 / 2,1	3,5 / 2,1	5 / 3,2	5 / 3,2	5 / 3,2	5 / 3,2

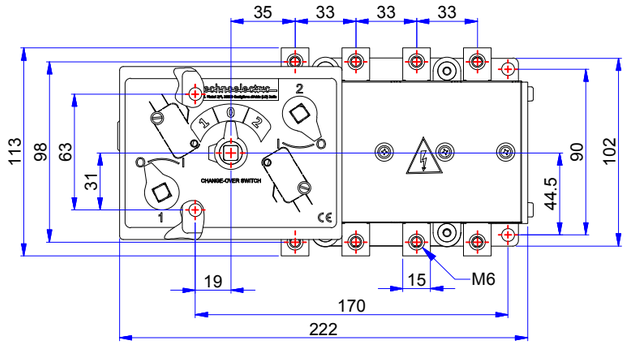
Caratteristiche tecniche _Technincal Features	Tipo _Type		CS|CO - 3P			CS|CO - 4P		CS|CO - 5P		
Corrente nominale _Rated current	In	A	315	400	500	630	800	800	1000	1250
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	12	12	12	12	12	12	12	12
Corrente nominale termica _Thermal current	Ith	A	315	400	500	630	800	800	1000	1250
Corrente nominale d' impiego _Rated operational current										
AC-21A/B	400V	A	315	400	500/500	630	630/800	800	1000	1250
	500V	A	315	400	500/500	630	630/800	800	1000	1250
	690V	A	315	400	400/500	630	630/800	800	1000	1250
AC-22A/B	400V	A	315	400	500/500	630	630/800	800	1000	1250
	500V	A	315	400	400/400	630	630/630	800	1000	1250
	690V	A	315	400	400/400	630	630/630	800	1000	1250
AC-23A/B	400V	A	315	400	500/500	630	630/630	800	1000	1250
	500V	A	250	315	315/315	500	500/500	800	800	800
	690V	A	200	250	250/250	400	400/400	400	400	400
DC-21A/B	220V	A	315	400	400/500	630	630/800	800	1000	1250
	420V	A	315	400	400/500	630	630/800	-	-	-
	560V	A	315	400	400/500	630	630/800	-	-	-
DC-22A/B	220V	A	315	400	400/500	630	630/800	800	1000	1250
	420V	A	315	400	400/400	630	630/630	-	-	-
	560V	A	315	400	400/400	630	630/630	-	-	-
DC-23A/B	220V	A	315	400	400/400	630	630/630	500	630	800
	420V	A	315	400	400/400	630	630/630	-	-	-
	560V	A	315	400	400/400	630	630/630	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	3150	4000	5000	6300	6300	8000	10000	12500
Potere di interruzione _Breaking capacity	400V AC23	A	2520	3200	4000	5040	5040	6400	8000	10000
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	13	13	13	26,5	26,5	35	35	35
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	26	26	26	53	53	70	70	70
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	26	26	26	30	30	73,5	73,5	73,5
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	165	210	210	330	330	420	525	630
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current										
Tipo fusibile _Backup fuse		A	315	400	500	630	800	800	1000	1250
Valore efficace _R.M.S. value		kA	50	50	50	50	50	100	100	100
Valore di picco _Peak value		kA	27	30	37	40	40	50	60	70
Durata meccanica _Mechanical endurance		n.	8000	8000	8000	8000	8000	7000	7000	7000
Durata elettrica _Electrical endurance		n.	1500	1500	1500/200	1500	1500/200	1000	1000	1000
Potenza condensatori a 400V _Rated capacitor power at 400V		kVAR	140	180	180	300	300	380	475	600
Potenza dissipata per polo _Power losses for pole		W	5,9	9,4	14,8	15,6	25,7	17,5	27,3	42,7
Dimensione cavo _Cable section		mm^2	185	2x120	2x150	2x185	2x240	2x240	-	-
Dimensione barre _Bars dimension		mm	30x6	2x25x5	2x30x5	2x40x5	2x40x6	2x50x5	2x50x5	2x50x5
Peso netto _Net weight	3P	Kg	9,4 / 7,5	9,4 / 7,5	9,4 / 7,5	15 / 13,8	15 / 13,8	28 / 23,5	36,7 / 31	46,6 / 40,3
	4P		10,2 / 8,3	10,2 / 8,3	10,2 / 8,3	16,8 / 14,6	16,8 / 14,6	30 / 25,2	39,2 / 33,5	50,8 / 44,2

Caratteristiche tecniche _Technincal Features	Tipo _Type		CS|CO| - 5P 50kA							CS|CO - 6P			
Corrente nominale _Rated current	In	A	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	12	12	12	12	12	12	12	12	8	8	8
Corrente nominale termica _Thermal current	Ith	A	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150
Corrente nominale d' impiego _Rated operational current													
AC-21A/B	400V	A	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150
	500V	A	800	1000	1250	1250	1600	2000	2500	1600	2000	2500	3150
	690V	A	800	1000	1250	1250	1250	1250	1250	1250	1250	1250	1250
AC-22A/B	400V	A	800	1000	1250	1250	1250	-	-	1600	2000	2500	1600
	500V	A	800	1000	1250	-	-	-	-	1250	1250	1250	-
	690V	A	800	1000	1250	-	-	-	-	400	400	800	-
AC-23A/B	400V	A	800	1000	1250	-	-	-	-	1250	1250	-	-
	500V	A	630	800	1000	-	-	-	-	800	800	-	-
	690V	A	500	630	800	-	-	-	-	400	400	-	-
DC-21A	220V	A	800	1000	1250	1600	2000	-	-	1600	2000	-	-
	420V	A	-	-	-	-	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-	-	-	-	-
DC-22A	220V	A	800	1000	1250	-	-	-	-	-	-	-	-
	420V	A	-	-	-	-	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-	-	-	-	-
DC-23A	220V	A	500	630	800	-	-	-	-	-	-	-	-
	420V	A	-	-	-	-	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	8000	10000	12500	-	-	-	-	12500	12500	-	-
Potere di interruzione _Breaking capacity	400V AC23	A	6400	8000	10000	-	-	-	-	10000	10000	-	-
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	50	50	50	50	50	50	50	60	60	70	70
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	100	100	100	100	100	100	100	120	120	140	140
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	105	105	105	105	105	105	105	105	105	105	105
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	420	525	630	630	630	-	-	630	630	-	-
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current													
Tipo fusibile _Backup fuse		A	800	1000	1250	-	-	-	-	-	-	-	-
Valore efficace _R.M.S. value		kA	100	100	100	-	-	-	-	-	-	-	-
Valore di picco _Peak value		kA	50	60	70	-	-	-	-	-	-	-	-
Durata meccanica _Mechanical endurance		n.	4000	4000	4000	4000	4000	2000	2500	4000	2500	2500	2500
Durata elettrica _Electrical endurance		n.	1000	1000	1000	500	500	500	500	1000	500	500	500
Potenza condensatori a 400V _Rated capacitor power at 400V		kVAR	380	475	600	-	-	-	-	780	850	1.100	1250
Potenza dissipata per polo _Power losses for pole		W	15,6	24,3	38,0	38,3	61,3	91,7	145,5	47,8	74,7	85,4	118,1
Dimensione cavo _Cable section		mm^2	2x240	-	-	-	-	-	-	-	-	-	-
Dimensione barre _Bars dimension		mm	2x50x5	2x50x6	2x50x8	3x50x8	3x50x12	4x50x12	6x50x12	2x80x10	2x80x10	3x80x10	32x100x10
Peso netto _Net weight	3P	Kg	28 / 23,5	28 / 23,5	28 / 23,5	36,7 / 31	36,7 / 31	46,6 / 40,3	46,6 / 40,3	47 / 41,3	49,7 / 44	70 / 63,8	89,5 / 81,8
	4P		30 / 25,2	30 / 25,2	30 / 25,2	39,2 / 33,5	39,2 / 33,5	50,8 / 44,2	50,8 / 44,2	50,3 / 44,5	53 / 47,3	72 / 65,8	95,5 / 88

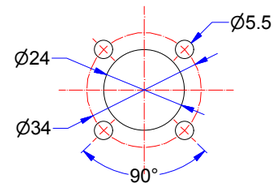
Caratteristiche tecniche _Technincal Features	Tipo _Type		BYP - 1P							BYP - 2P			
Corrente nominale _Rated current	In	A	32	45	63	80	100	125	160	160	200	250	315
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	8	8	8	8	8	8	8	12	12	12	12
Corrente nominale termica _Thermal current	Ith	A	32	45	63	80	100	125	160	160	200	250	315
Corrente nominale d' impiego _Rated operational current													
AC-21A/B	400V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	500V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	690V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
AC-22A/B	400V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	500V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
	690V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
AC-23A/B	400V	A	32	45	63	80	100	125	125/125	160	200	250	250/250
	500V	A	25	35	45	63	80	100	100/100	125	160	200	200/200
	690V	A	20	30	35	45	63	80	80/80	100	125	160	160/160
DC-21A	220V	A	32	45	63	80	100	125	125/160	160	200	250	250/315
	420V	A	-	-	-	-	-	-	-	160	200	250	250/315
	560V	A	-	-	-	-	-	-	-	-	-	-	-
DC-22A	220V	A	32	45	63	80	100	125	125/125	160	200	250	250/315
	420V	A	-	-	-	-	-	-	-	160	200	250	250/250
	560V	A	-	-	-	-	-	-	-				
DC-23A	220V	A	20	30	35	45	63	80	80/80	160	200	250	250/250
	420V	A	-	-	-	-	-	-	-	160	200	250	250/250
	560V	A	-	-	-	-	-	-	-	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	320	450	630	800	1000	1250	1250	1600	2000	2500	2500
Potere di interruzione _Breaking capacity	400V AC23	A	256	360	504	640	800	1000	1000	1280	1600	2000	2000
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	5	5	5	5	5	5	5	8	8	8	8
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	10	10	10	10	10	10	10	16	16	16	16
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	7,5	7,5	7,5	7,5	7,5	7,5	7,5	13,5	13,5	13,5	13,5
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	17	23	33	42	52	65	65	85	105	130	130
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current													
Tipo fusibile _Backup fuse		A	32	45	63	80	100	125	160	160	200	250	315
Valore efficace _R.M.S. value		kA	50	50	50	50	50	50	50	50	50	50	50
Valore di picco _Peak value		kA	6	9	10	12	12	15	16	16	20	25	27
Durata meccanica _Mechanical endurance		n.	12000	12000	12000	12000	12000	10000	10000	10000	10000	10000	10000
Durata elettrica _Electrical endurance		n.	3000	3000	3000	3000	3000	2000	2000	2000	2000	2000	2000/200
Potenza condensatori a 400V _Rated capacitor power at 400V		kVAR	15	20	30	40	45	50	50	70	90	110	110
Potenza dissipata per polo _Power losses for pole		W	0,1	0,2	0,4	0,7	1,1	1,7	2,7	1,6	2,4	3,8	6,1
Dimensione cavo _Cable section		mm2	10	10	16	25	35	50	70	70	95	120	185
Dimensione barre _Bars dimension		mm	10x2	10x2	12x3	12x3	14x3	16x3	16x4	20x4	20x5	20x6	22x8
Peso netto _Net weight	3P	Kg	4	4	4	4	4	4	4	6	6	6	6
	4P		4,5	4,5	4,5	4,5	4,5	4,5	4,5	6,5	6,5	6,5	6,5

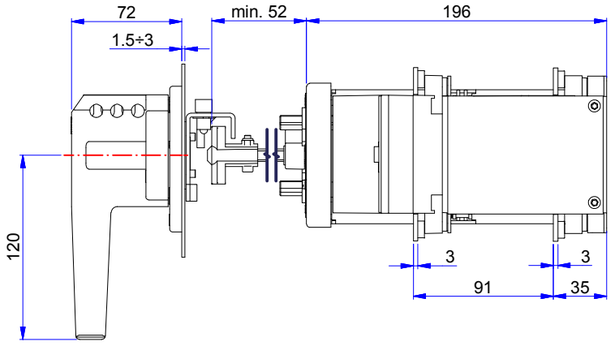
Caratteristiche tecniche _Technincal Features	Tipo _Type		BYP - 3P			BYP - 4P		BYP - 5P 35kA		
Corrente nominale _Rated current	In	A	315	400	500	630	800	800	1000	1250
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	12	12	12	12	12	12	12	12
Corrente nominale termica _Thermal current	Ith	A	315	400	500	630	800	800	1000	1250
Corrente nominale d' impiego _Rated operational current										
AC-21A/B	400V	A	315	400	500/500	630	630/800	800	1000	1250
	500V	A	315	400	500/500	630	630/800	800	1000	1250
	690V	A	315	400	400/500	630	630/800	800	1000	1250
AC-22A/B	400V	A	315	400	500/500	630	630/800	800	1000	1250
	500V	A	315	400	400/400	630	630/630	800	1000	1250
	690V	A	315	400	400/400	630	630/630	800	1000	1250
AC-23A/B	400V	A	315	400	500/500	630	630/630	800	1000	1250
	500V	A	250	315	315/315	500	500/500	800	800	800
	690V	A	200	250	250/250	400	400/400	400	400	400
DC-21A	220V	A	315	400	400/500	630	630/800	800	1000	1250
	420V	A	315	400	400/500	630	630/800	-	-	-
	560V	A	315	400	400/500	630	630/800	-	-	-
DC-22A	220V	A	315	400	400/500	630	630/800	800	1000	1250
	420V	A	315	400	400/400	630	630/630	-	-	-
	560V	A	315	400	400/400	630	630/630	-	-	-
DC-23A	220V	A	315	400	400/400	630	630/630	500	630	800
	420V	A	315	400	400/400	630	630/630	-	-	-
	560V	A	315	400	400/400	630	630/630	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	3150	4000	5000	6300	6300	8000	10000	12500
Potere di interruzione _Breaking capacity	400V AC23	A	2520	3200	4000	5040	5040	6400	8000	10000
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	13	13	13	26,5	26,5	35	35	35
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	26	26	26	53	53	70	70	70
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	26	26	26	30	30	73,5	73,5	73,5
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	165	210	210	330	330	420	525	630
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current										
Tipo fusibile _Backup fuse		A	315	400	500	630	800	800	1000	1250
Valore efficace _R.M.S. value		kA	50	50	50	50	50	100	100	100
Valore di picco _Peak value		kA	27	30	37	40	40	50	60	70
Durata meccanica _Mechanical endurance		n.	8000	8000	8000	8000	8000	7000	7000	7000
Durata elettrica _Electrical endurance		n.	1500	1500	1500/200	1500	1500/200	1000	1000	1000
Potenza condensatori a 400V _Rated capacitor power at 400V		kVAR	140	180	180	300	300	380	475	600
Potenza dissipata per polo _Power losses for pole		W	5,9	9,4	14,8	15,6	25,7	17,5	27,3	42,7
Dimensione cavo _Cable section		mm^2	185	2x120	2x150	2x185	2x240	2x240	-	-
Dimensione barre _Bars dimension		mm	30x6	2x25x5	2x30x5	2x40x5	2x40x6	2x50x5	2x50x5	2x50x5
Peso netto _Net weight	3P	Kg	12,5	12,5	12,5	21	21	38,6	38,6	38,6
	4P		14	14	14	23,5	23,5	41,7	41,7	41,7

CS1P 32 ÷ 160 A



Foratura portella _Door drilling





CS2P 160 ÷ 315 A

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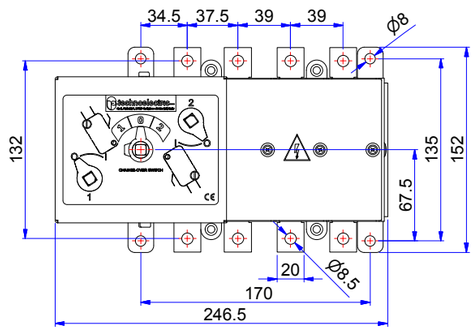
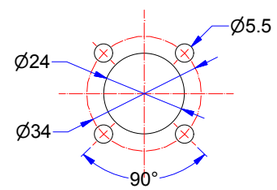
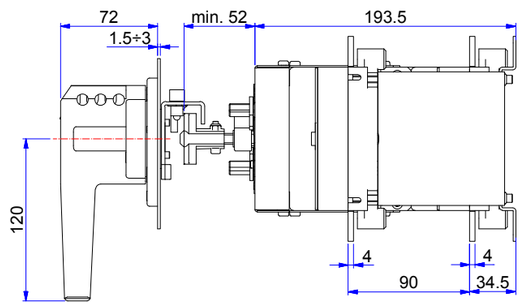
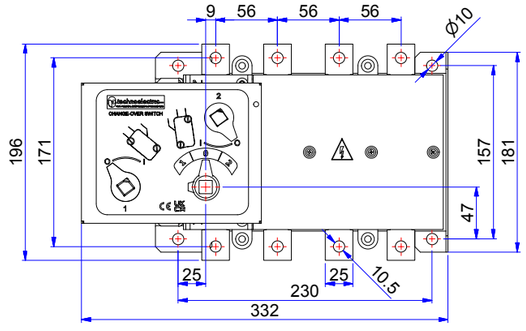


Foratura portella _Door drilling

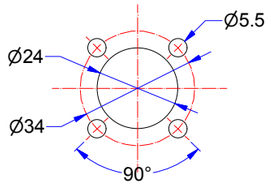


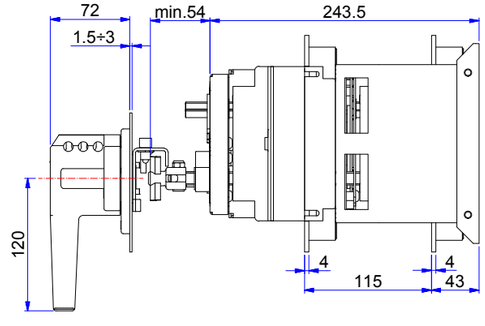


CS3P 315 ÷ 500 A

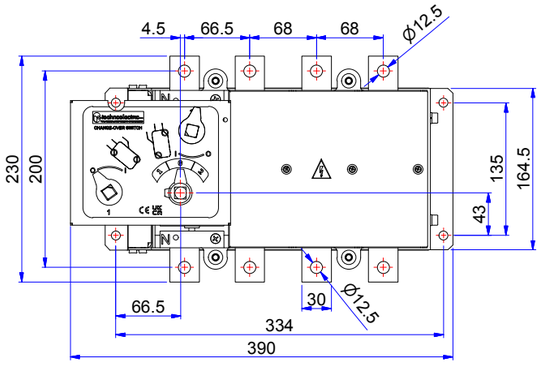


Foratura portella _Door drilling

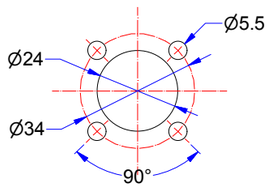


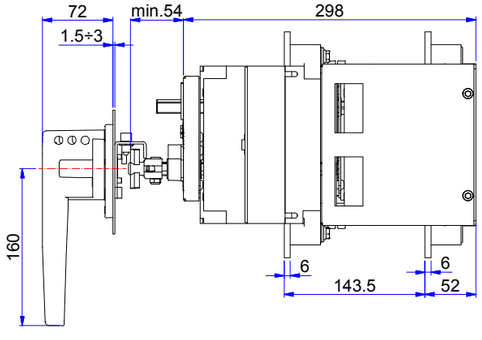


CS4P 630 ÷ 800 A

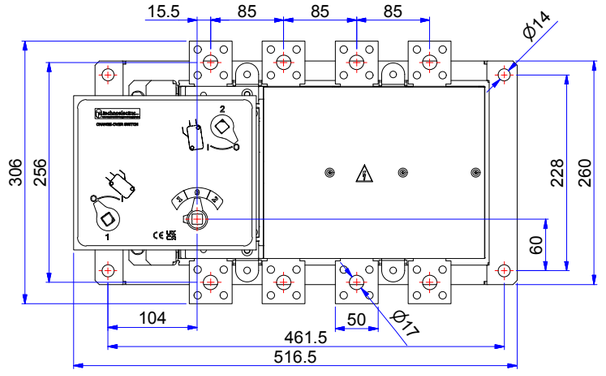


Foratura portella _Door drilling

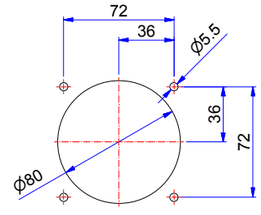


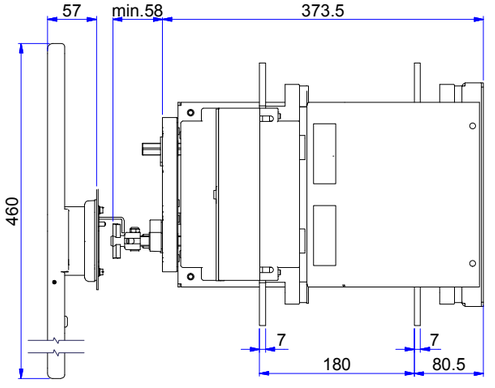


CS5P 800 ÷ 1250 A

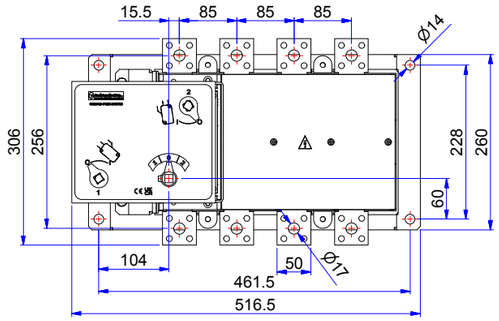


Foratura portella _Door drilling

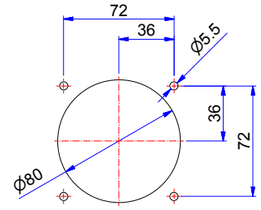


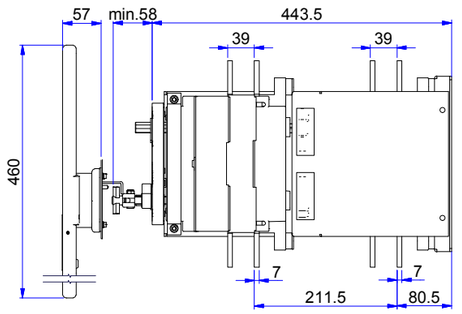


CS5P 1600 ÷ 2000 A

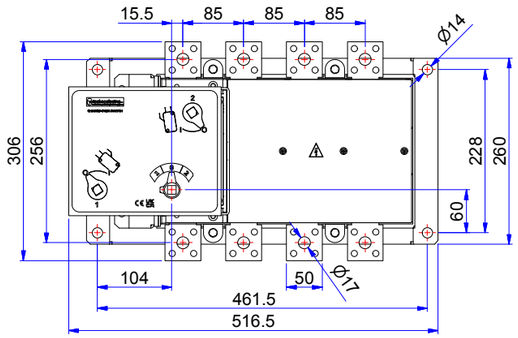


Foratura portella _Door drilling

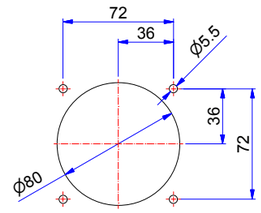


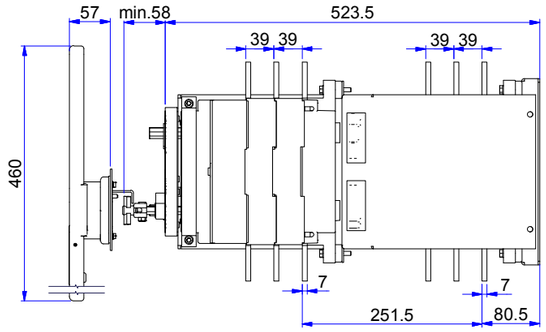


CS5P 2500 ÷ 3150 A

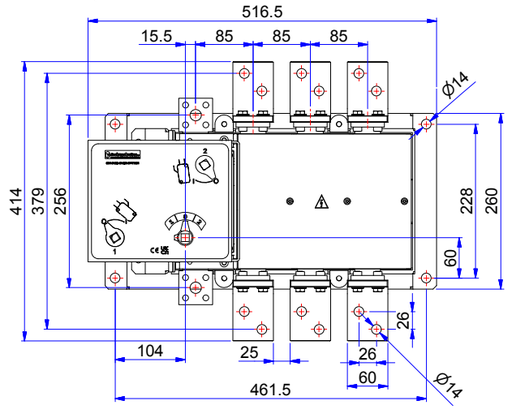


Foratura portella _Door drilling

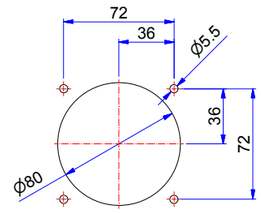


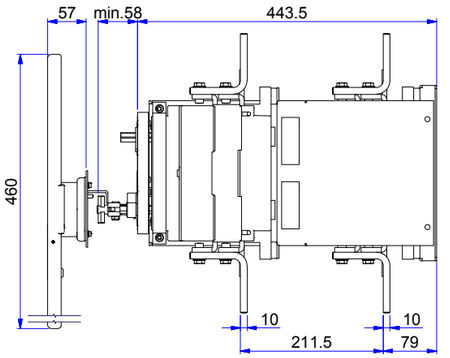


CS6P 1600 A (neutro _neutral 1250 A)



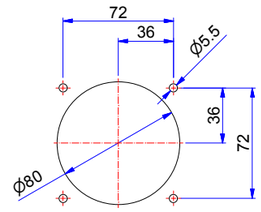
Foratura portella _Door drilling

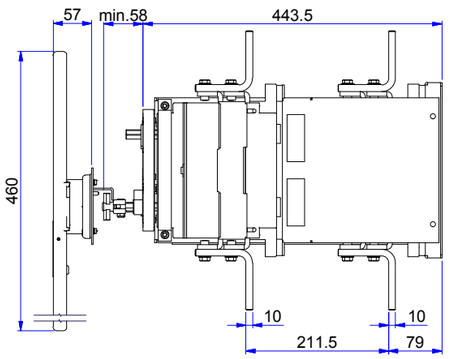




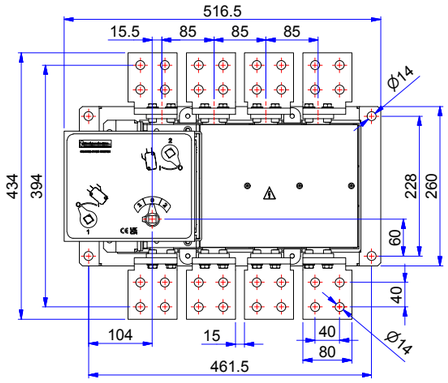
CS6P FN 1600 A

Foratura portella _Door drilling

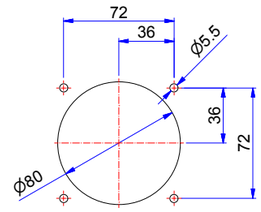


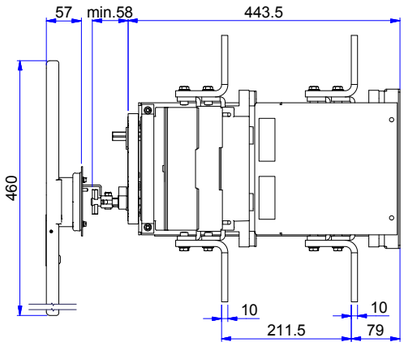


CS6P FN 2000 A

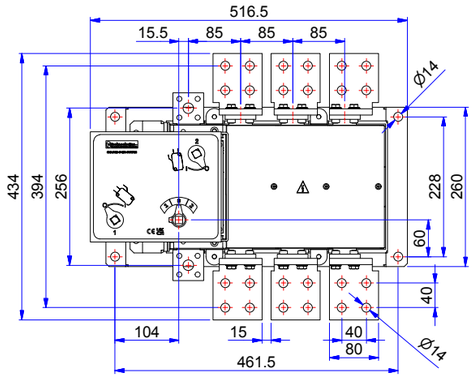


Foratura portella _Door drilling

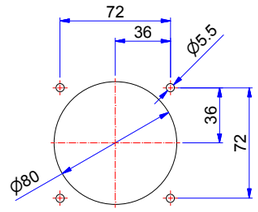


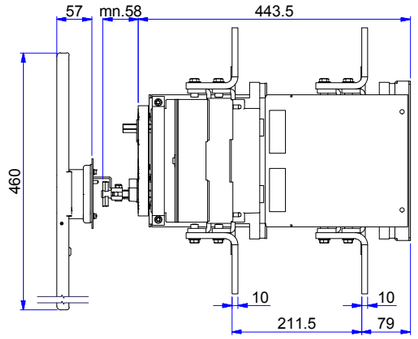


CS6P 2000 A (neutro _neutral 1250 A)

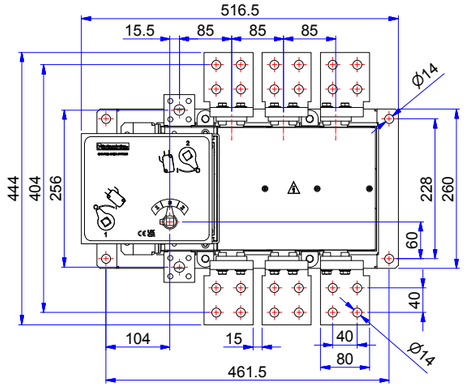


Foratura portella _Door drilling

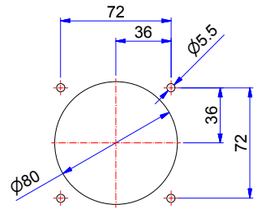


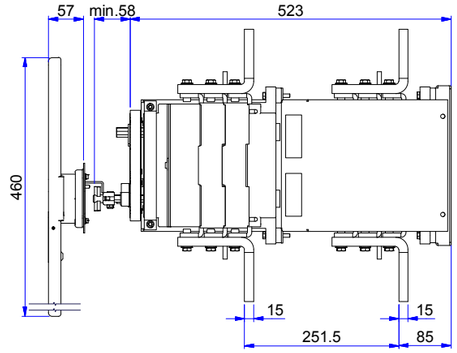


CS6P 2500 A (neutro _neutral 1250 A)

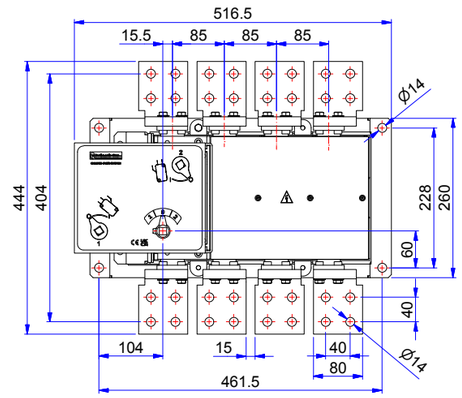


Foratura portella _Door drilling

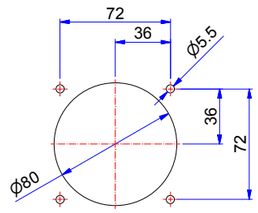


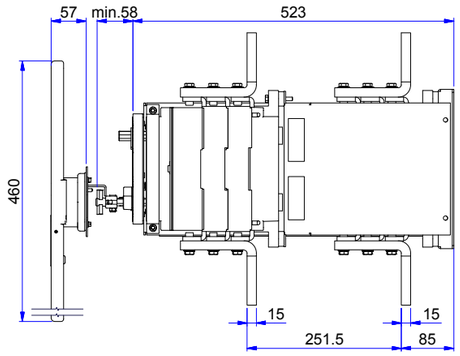


CS6P FN 2500 A

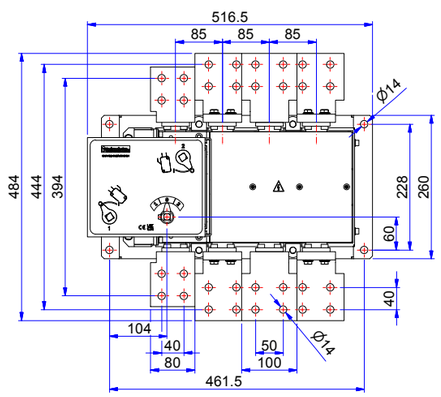


Foratura portella _Door drilling

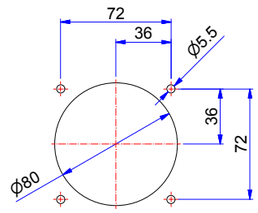


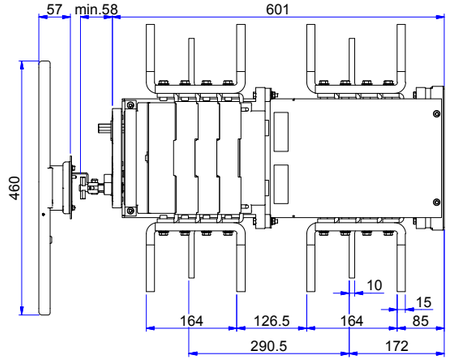


CS6P 3150 A

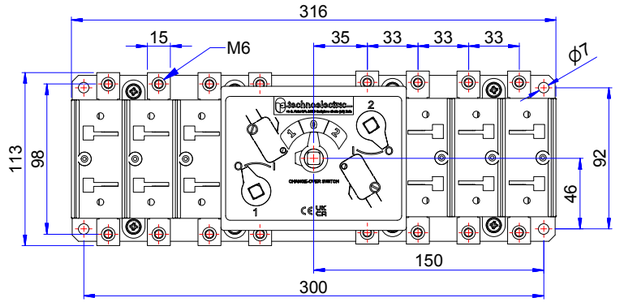


Foratura portella _Door drilling

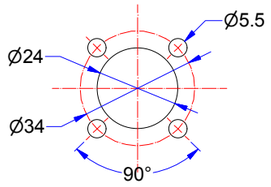


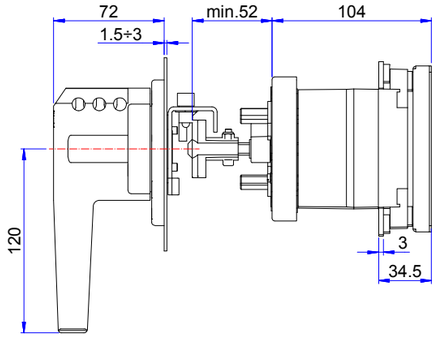


CO1P 32 - 160 A

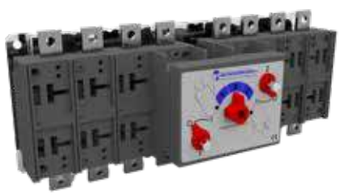


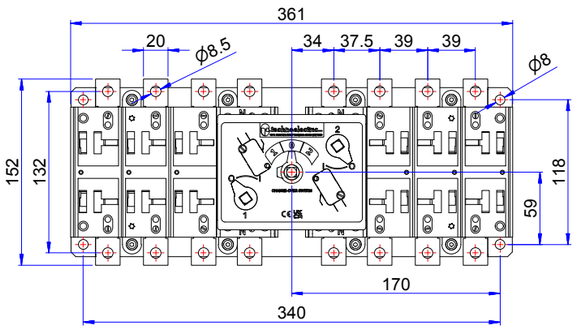
Foratura portella _Door drilling



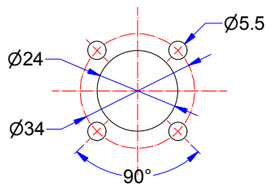


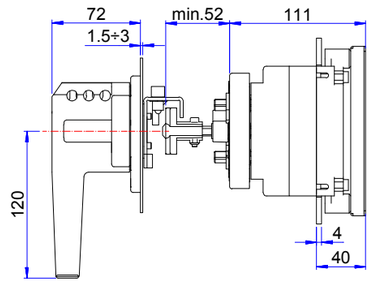
CO2P 160 - 315 A



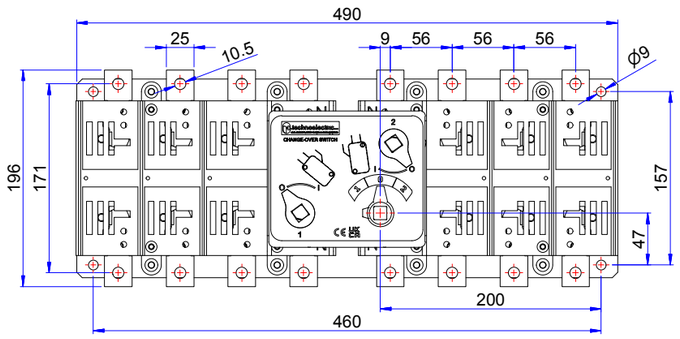


Foratura portella _Door drilling

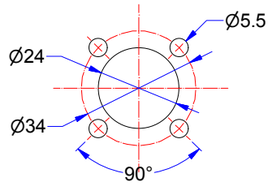


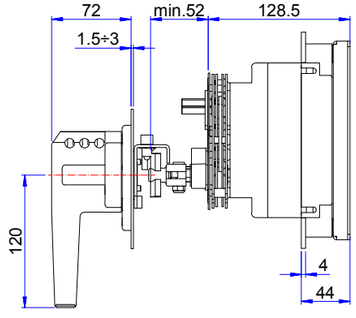


CO3P 315 - 500 A

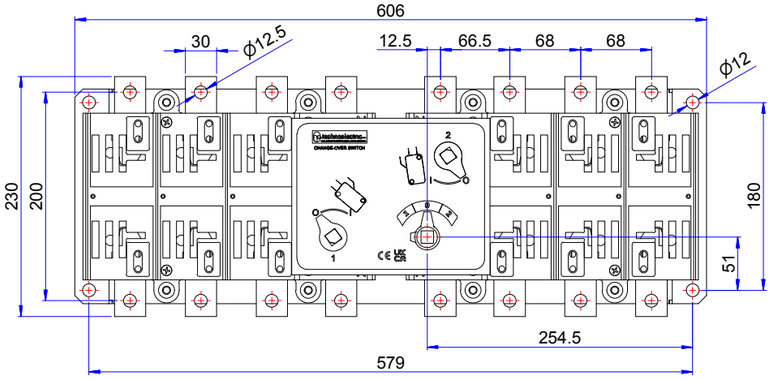


Foratura portella _Door drilling

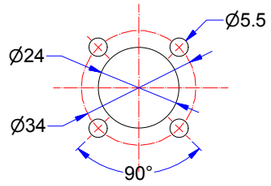


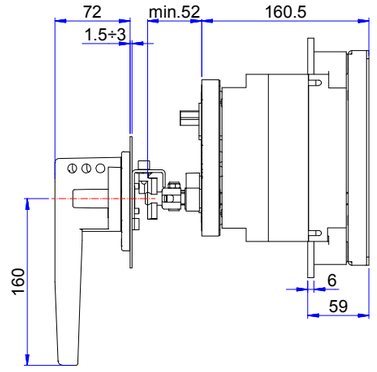


CO4P 630 - 800 A

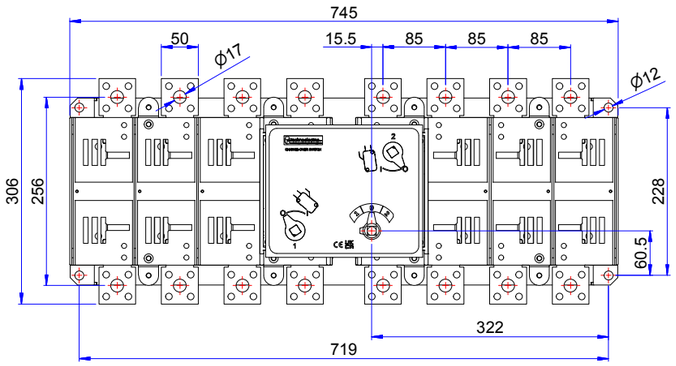


Foratura portella _Door drilling

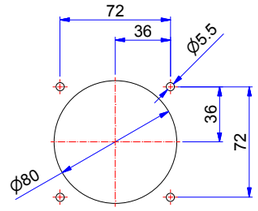


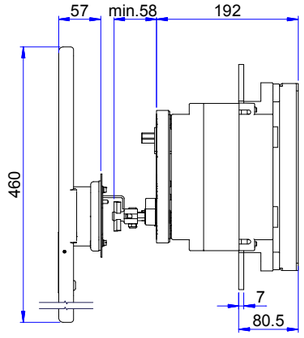


CO5P 800 ÷ 1250 A

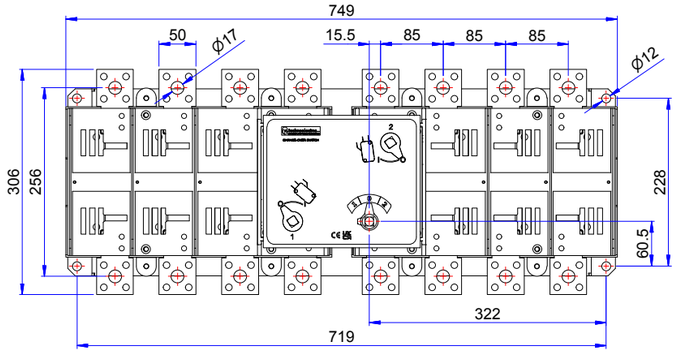


Foratura portella _Door drilling

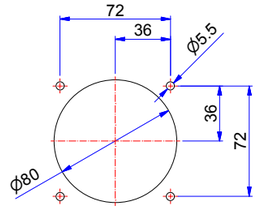


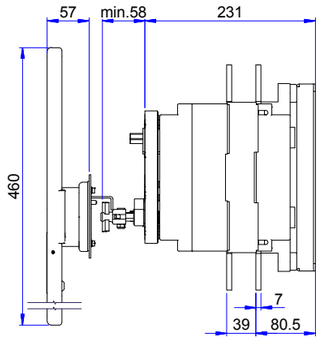


CO5P 1600 ÷ 2000 A

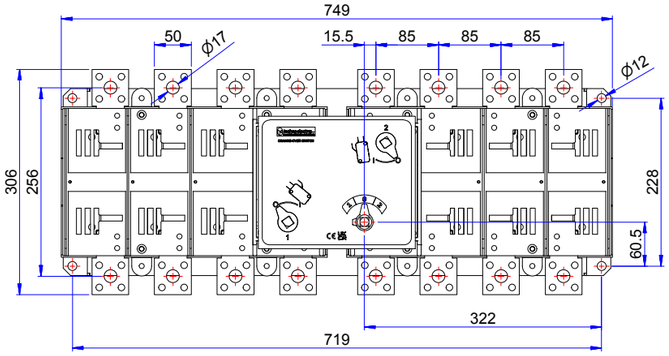


Foratura portella _Door drilling

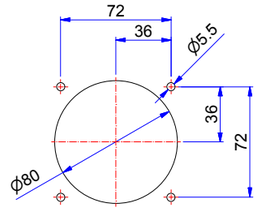


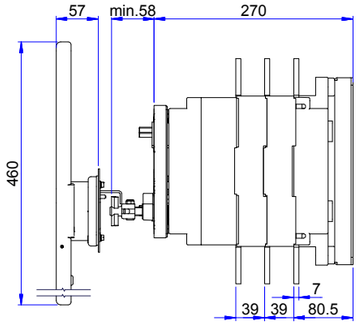


CO5P 2500 ÷ 3150 A

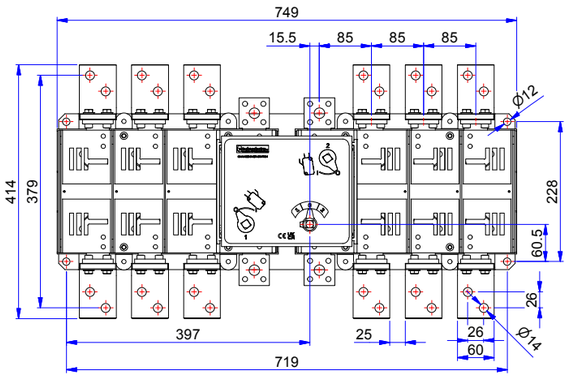


Foratura portella _Door drilling

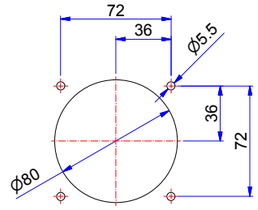


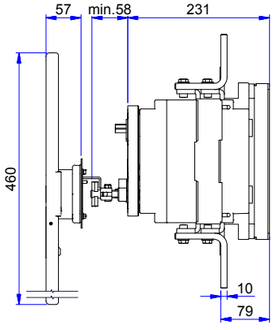


CO6P 1600 A (neutro _neutral 1250 A)

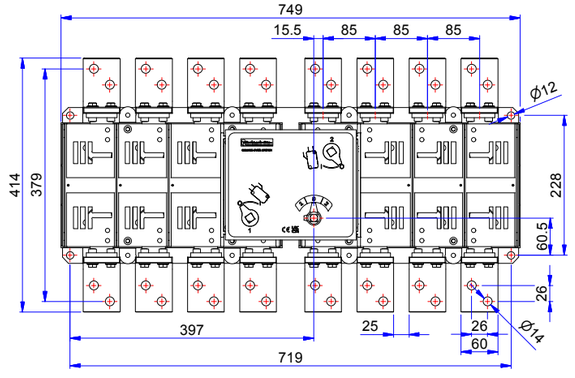


Foratura portella _Door drilling

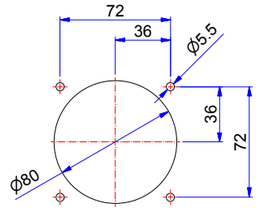


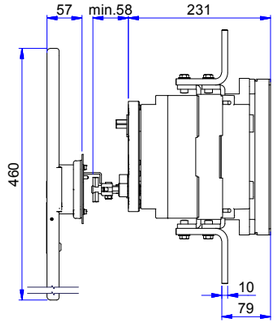


CO6P FN 1600 A

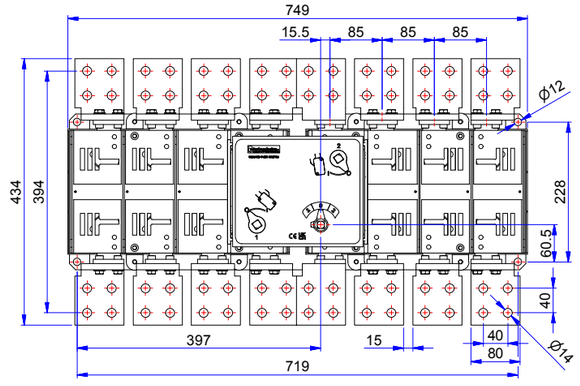


Foratura portella _Door drilling

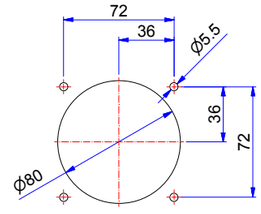


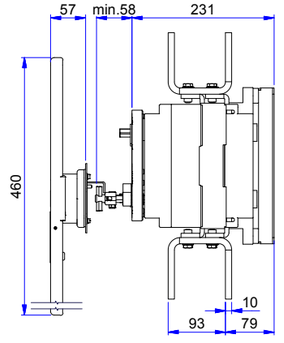


CO6P FN 2000 A

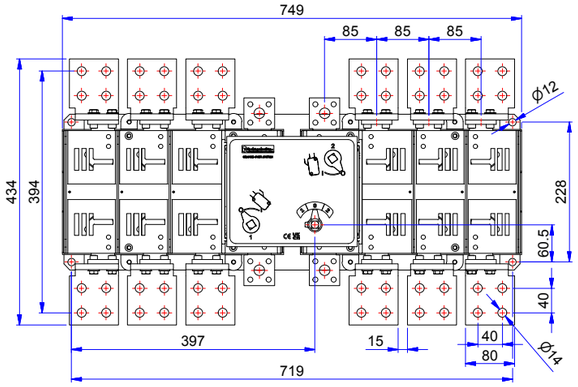


Foratura portella _Door drilling

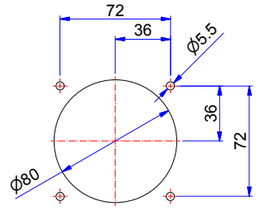


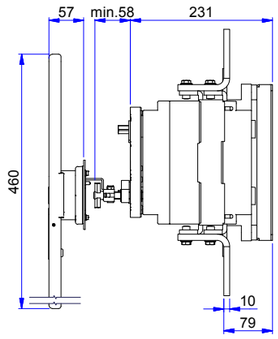


CO6P 2000 A (neutro _neutral 1250 A)

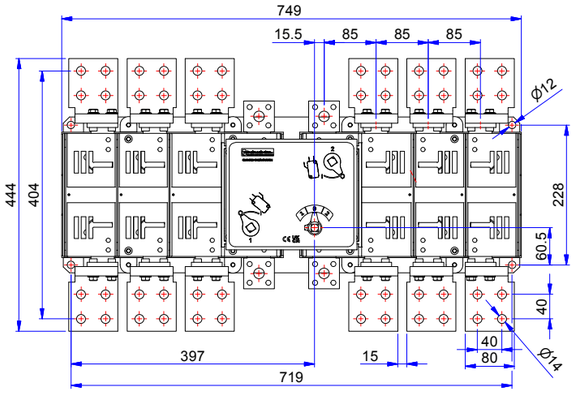


Foratura portella _Door drilling

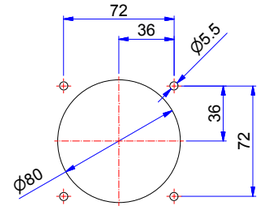


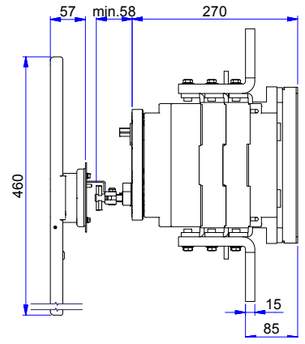


CO6P 2500 A (neutro _neutral 1250 A)

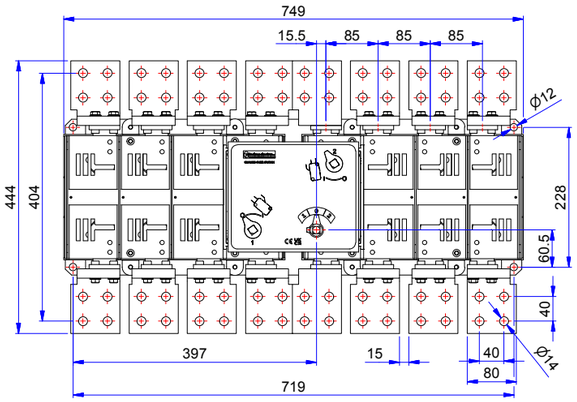


Foratura portella _Door drilling

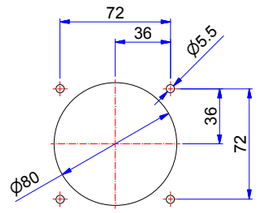


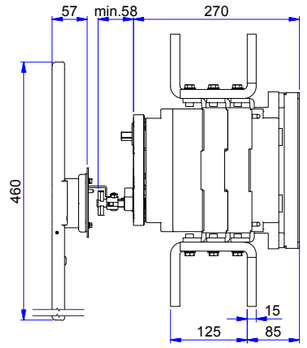


CO6P FN 2500 A

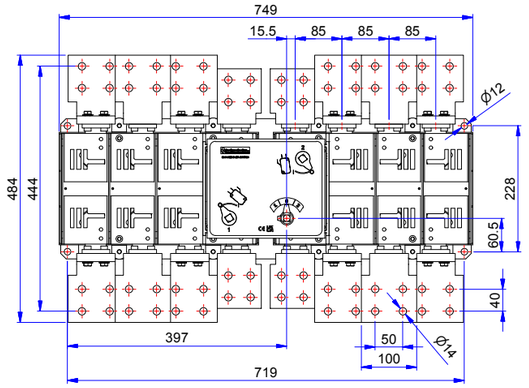


Foratura portella _Door drilling

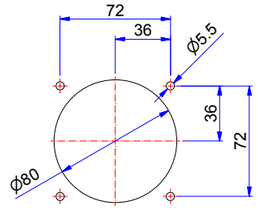


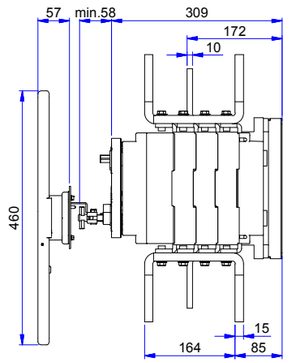


CO6P 3150 A

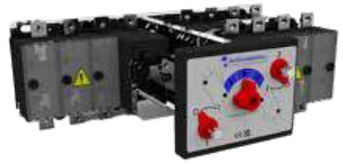


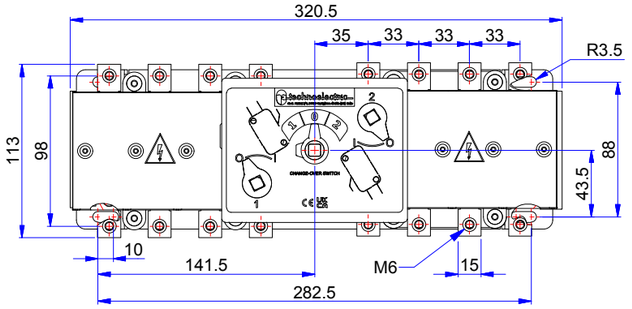
Foratura portella _Door drilling



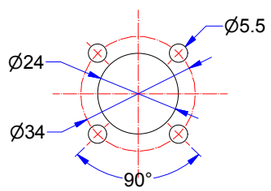


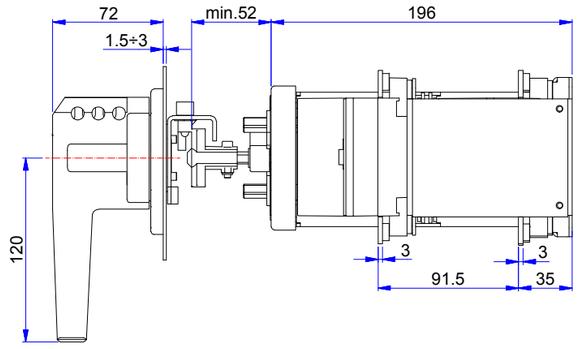
BYP 1P 125 A



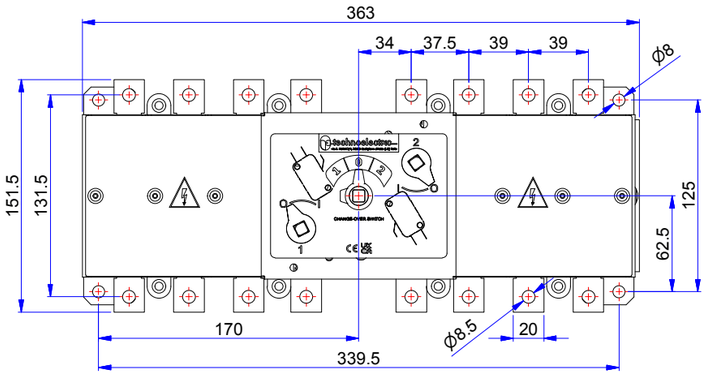


Foratura portella _Door drilling

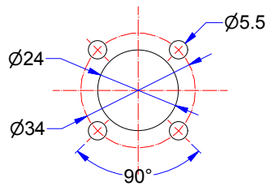


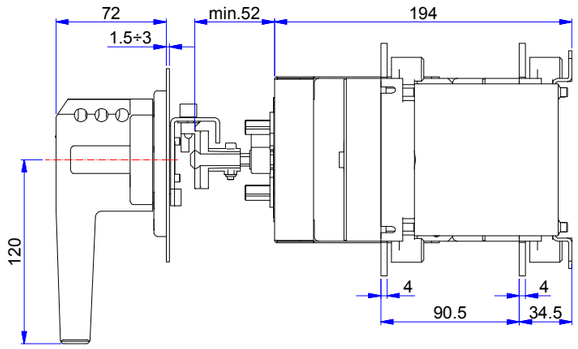


BYP 2P 250 A

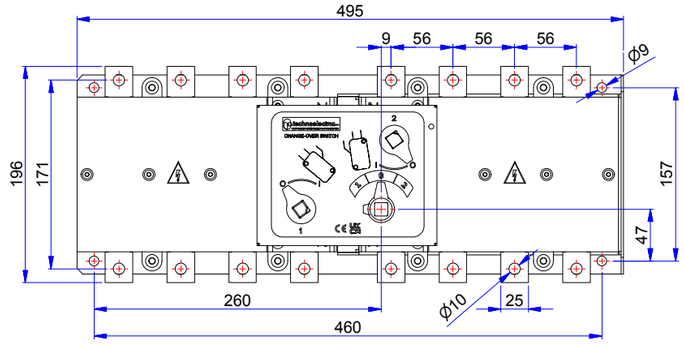


Foratura portella _Door drilling

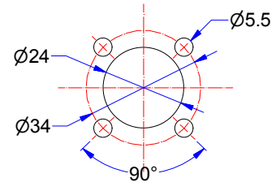


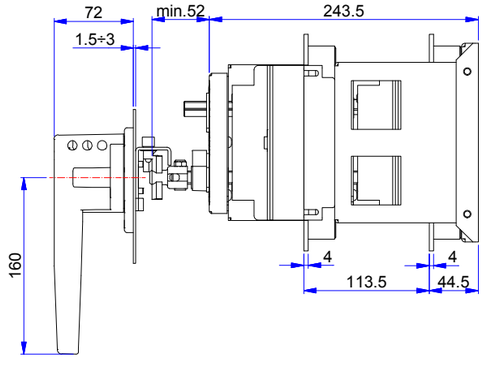


BYP 3P 400 A

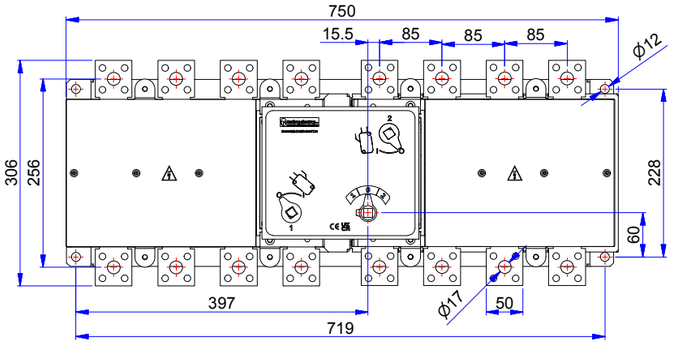


Foratura portella _Door drilling

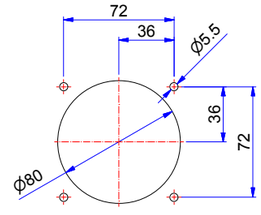


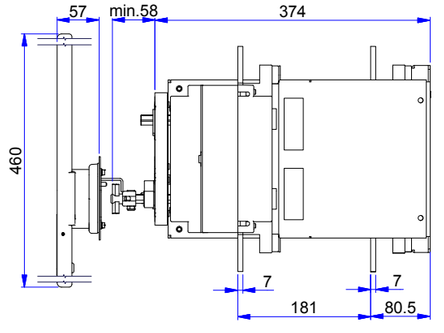


BYP 5P 1250 A

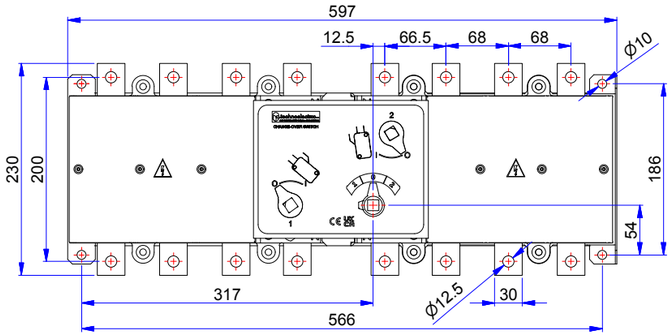


Foratura portella _Door drilling

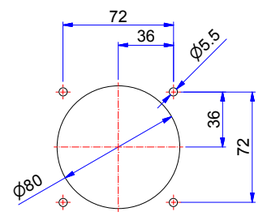


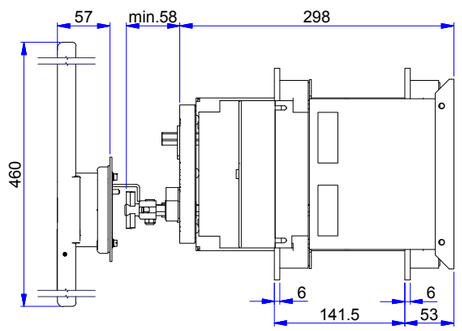


BYP 4P 800 A



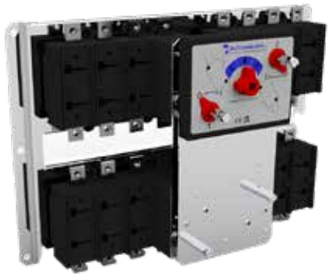
Foratura portella _Door drilling

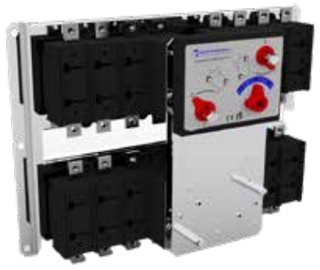




COP

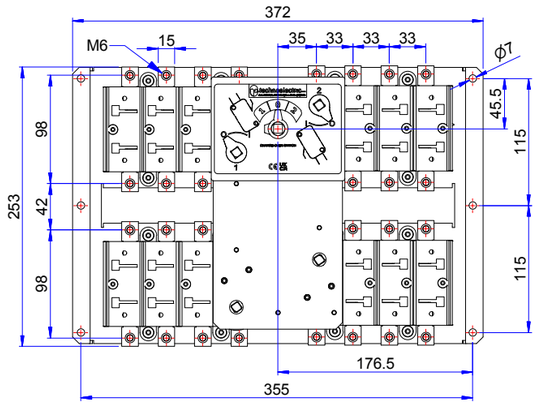
Commutatori 6-8 poli
_6-8 poles change-over switches



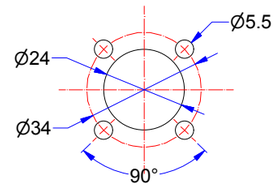


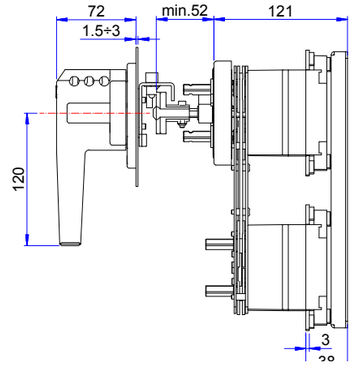
Tipo _type	Corrente nominale _rated current	Senza maniglia _without handle		Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE	POLI _POLES	CODICE _CODE
CO1P	32 A	6	1100032SM	6	1100032
		8	1101032SM	8	1101032
	45A	6	1100132SM	6	1100132
		8	1101132SM	8	1101132
	63A	6	1100232SM	6	1100232
		8	1101232SM	8	1101232
	80A	6	1100332SM	6	1100332
		8	1101332SM	8	1101332
	100A	6	1100432SM	6	1100432
		8	1101432SM	8	1101432
	125A	6	1100532SM	6	1100532
		8	1101532SM	8	1101532
	160A	6	1100632SM	6	1100632
		8	1101632SM	8	1101632
CO2P	160A	6	1200132SM	6	1200132
		8	1201132SM	8	1201132
	200A	6	1200232SM	6	1200232
		8	1201232SM	8	1201232
	250A	6	1200332SM	6	1200332
		8	1201332SM	8	1201332
	315A	6	1200432SM	6	1200432
		8	1201432SM	8	1201432
CO3P	315A	6	1300132SM	6	1300132
		8	1301132SM	8	1301132
	400A	6	1300232SM	6	1300232
		8	1301232SM	8	1301232
	500A	6	1300332SM	6	1300332
		8	1301332SM	8	1301332
CO4P	630A	6	1400332SM	6	1400332
		8	1401332SM	8	1401332
	800A	6	1400432SM	6	1400432
		8	1401432SM	8	1401432
CO5P (35kA)	800A	6	1500032SM	6	1500032
		8	1501032SM	8	1501032
	1000A	6	1500132SM	6	1500132
		8	1501132SM	8	1501132
	1250A	6	1500232SM	6	1500232
		8	1501232SM	8	1501232

CO1P 32 ÷ 160 A

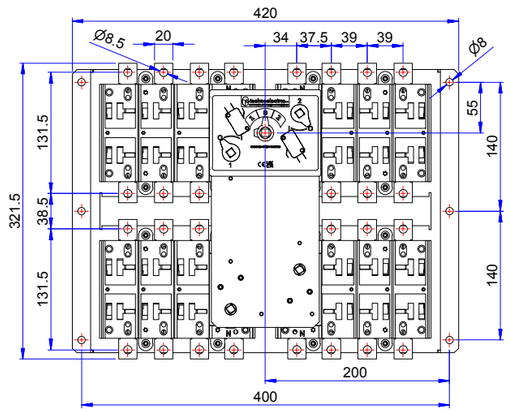


Foratura portella _Door drilling

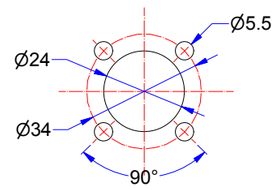


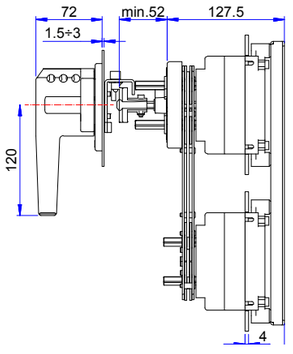


CO2P 160 ÷ 315 A

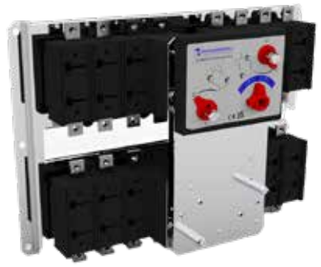


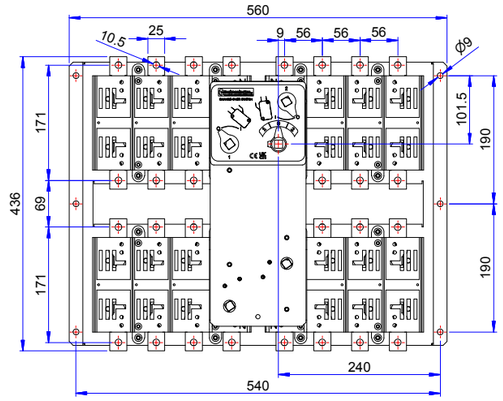
Foratura portella _Door drilling



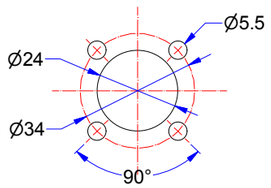


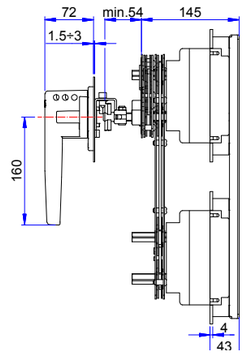
CO3P 315 ÷ 500 A



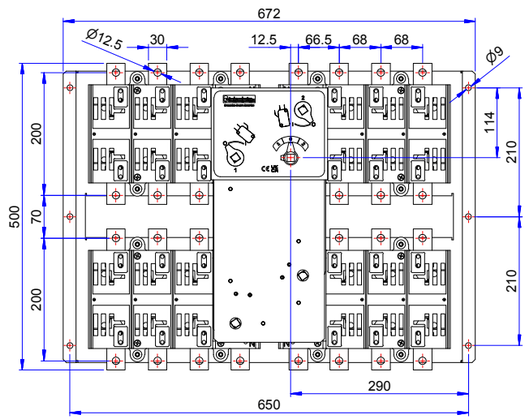


Foratura portella _Door drilling

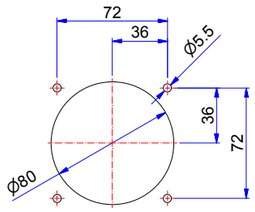


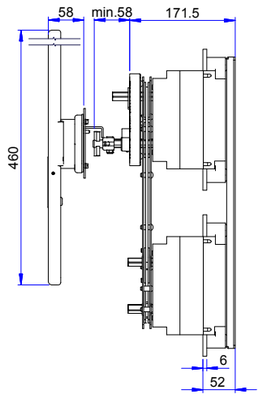


CO4P 630 ÷ 800 A

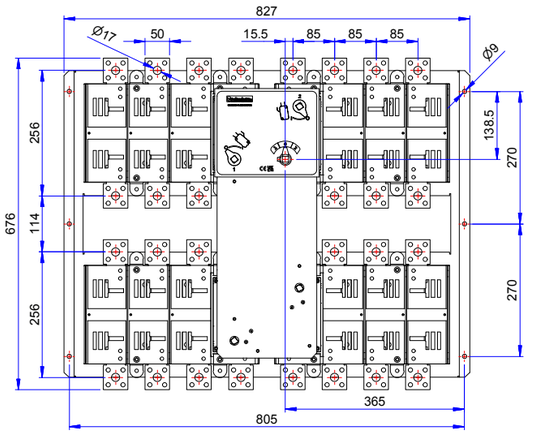


Foratura portella _Door drilling

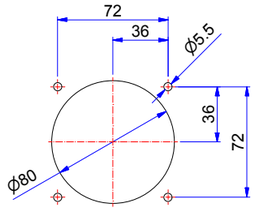


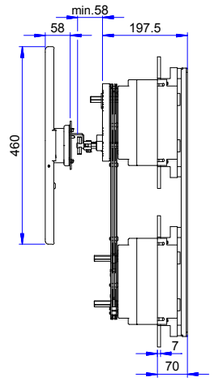


CO5P 800 ÷ 1250 A



Foratura portella _Door drilling





COP overlapping

Commutatori orizzontali senza zero overlapping _overlapping without zero change-over switches horizontal execution

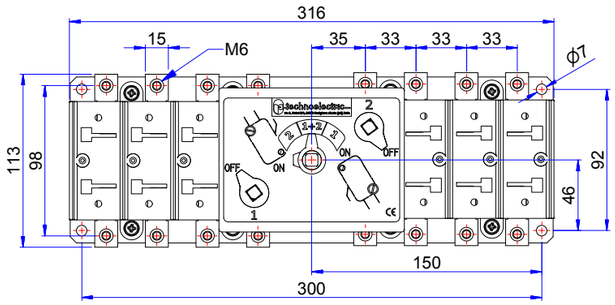
Tipo _type	Corrente nominale _rated current	Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE
CO1P	32 A	3	110003OL
		4	110103OL
	45A	3	110013OL
		4	110113OL
	63A	3	110023OL
		4	110123OL
	80A	3	110033OL
		4	110133OL
	100A	3	110043OL
		4	110143OL
	125A	3	110053OL
		4	110153OL
	160A	3	110063OL
		4	110163OL
CO2P	160A	3	120013OL
		4	120113OL
	200A	3	120023OL
		4	120123OL
	250A	3	120033OL
		4	120133OL
	315A	3	120043OL
		4	120143OL
CO3P	315A	3	130013OL
		4	130113OL
	400A	3	130023OL
		4	130123OL
	500A	3	130033OL
		4	130133OL
CO4P	630A	3	140033OL
		4	140133OL
	800A	3	140043OL
		4	140143OL
CO5P (35kA)	800A	3	150003OL
		4	150103OL
	1000A	3	150013OL
		4	150113OL
	1250A	3	150023OL
		4	150123OL
CO5P (50kA)	800A	3	150073OL
		4	150173OL
	1000A	3	150083OL
		4	150183OL
	1250A	3	150093OL
		4	150193OL
	1600A	3	150033OL
		4	150133OL
	2000A	3	150043OL
		4	150143OL
	2500A	3	150053OL
		4	150153OL
	3150A	3	150063OL
		4	150163OL
CO6P	1600A	3	160003OL
		4	160103OL
	2000A	3	160013OL
		4	160113OL
	2500A	3	160023OL
		4	160123OL
	3150A	3	160033OL
		4	160133OL

CSP overlapping

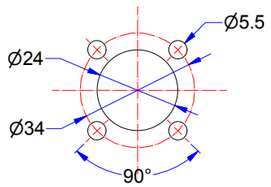
Commutatori sovrapposti senza zero overlapping _overlapping whitout zero change-over switches two layers execution

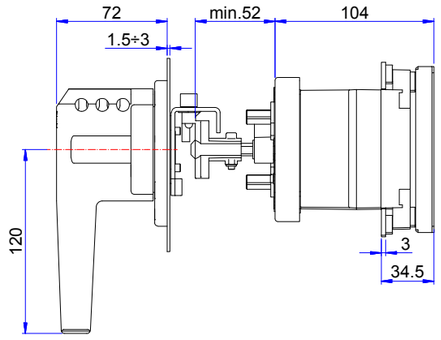
Tipo _type	Corrente nominale _rated current	Maniglia blocco porta _door interlock handle	
		POLI _POLES	CODICE _CODE
CS1P	32 A	3	110008OL
		4	110108OL
	45A	3	110018OL
		4	110118OL
	63A	3	110028OL
		4	110128OL
	80A	3	110038OL
		4	110138OL
	100A	3	110048OL
		4	110148OL
	125A	3	110058OL
		4	110158OL
	160A	3	110068OL
		4	110168OL
CS2P	160A	3	120018OL
		4	120118OL
	200A	3	120028OL
		4	120128OL
	250A	3	120038OL
		4	120138OL
	315A	3	120048OL
		4	120148OL
CS3P	315A	3	130018OL
		4	130118OL
	400A	3	130028OL
		4	130128OL
	500A	3	130038OL
		4	130138OL
CS4P	630A	3	140038OL
		4	140138OL
	800A	3	140048OL
		4	140148OL
CS5P (35kA)	800A	3	150008OL
		4	150108OL
	1000A	3	150018OL
		4	150118OL
	1250A	3	150028OL
		4	150128OL
CS5P (50kA)	800A	3	150078OL
		4	150178OL
	1000A	3	150088OL
		4	150188OL
	1250A	3	150098OL
		4	150198OL
	1600A	3	150038OL
		4	150138OL
	2000A	3	150048OL
		4	150148OL
	2500A	3	150058OL
		4	150158OL
	3150A	3	150068OL
		4	150168OL
CS6P	1600A	3	160008OL
		4	160108OL
	2000A	3	160018OL
		4	160118OL
	2500A	3	160028OL
		4	160128OL
	3150A	3	160038OL
		4	160138OL

CO1P OL 32 ÷ 160 A

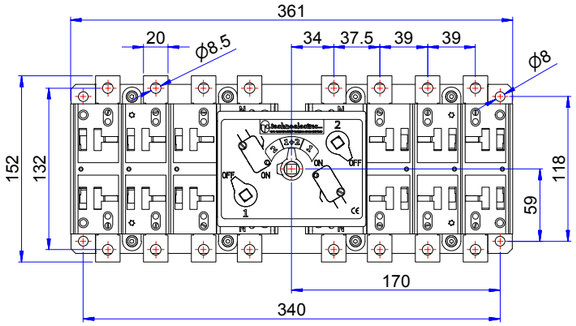


Foratura portella _Door drilling

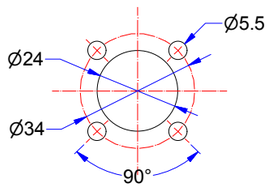


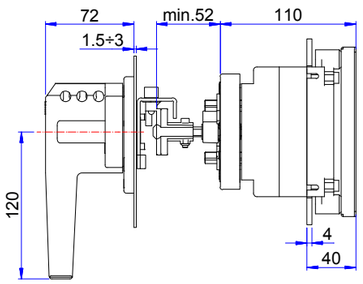


CO2P OL 160 ÷ 315 A

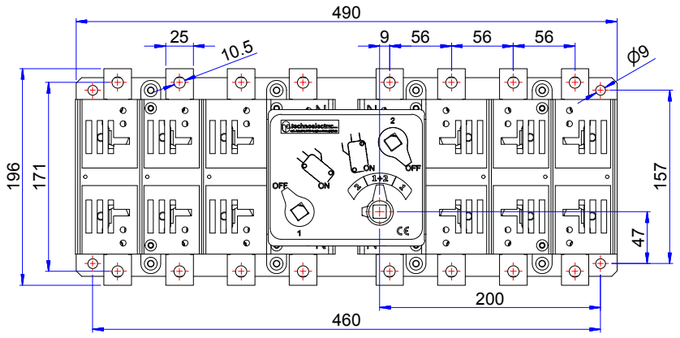


Foratura portella _Door drilling

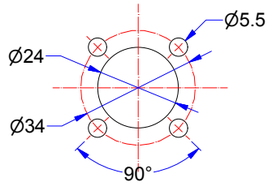


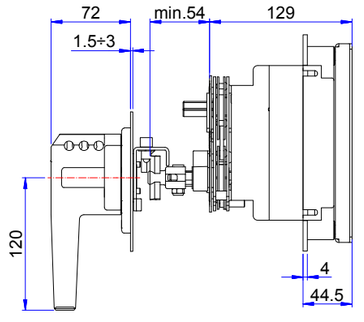


CO3P OL 315 ÷ 500 A

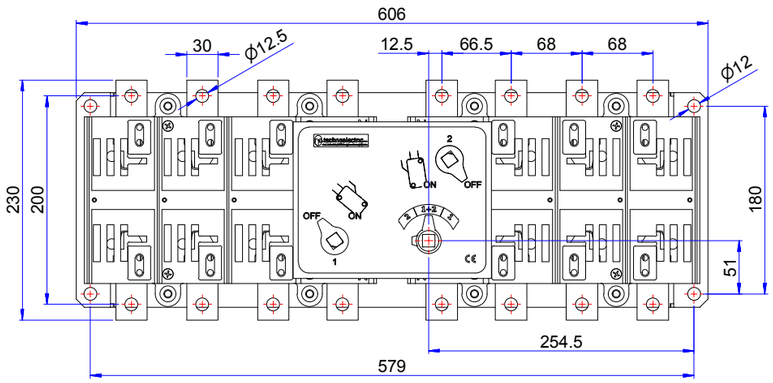


Foratura portella _Door drilling

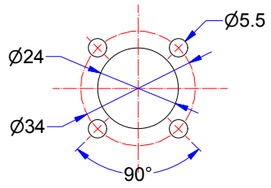


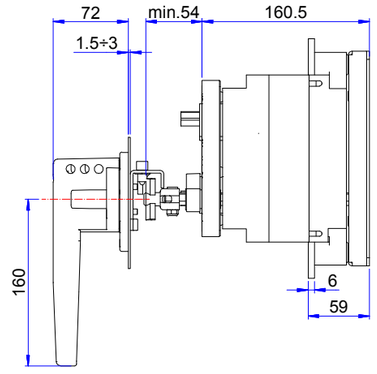


CO4P OL 630 ÷ 800 A

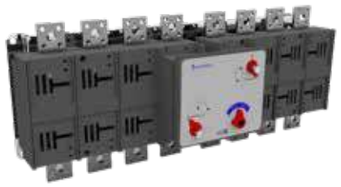


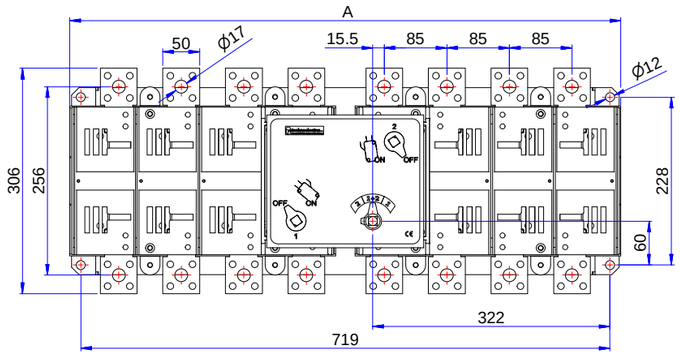
Foratura portella _Door drilling



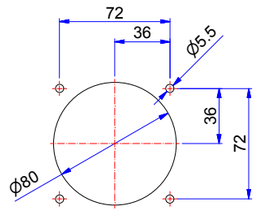


CO5P OL 800 ÷ 1250A 35kA

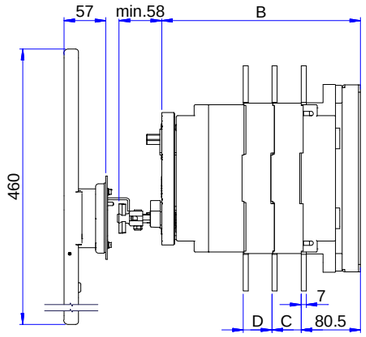




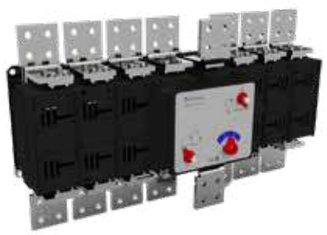
Foratura portella _Door drilling

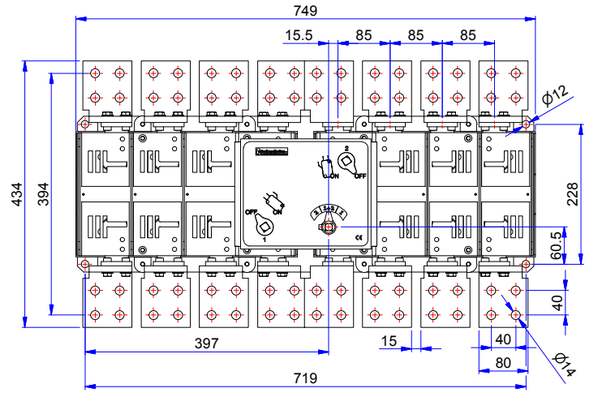


Tipo/Type	A	B	C	D
CO5P OL 800÷1250A	744	192		
CO5P OL 1600÷2000A	749	231	39	
CO5P OL 2500÷3150A	749	270	39	39

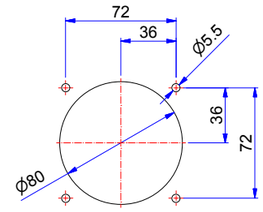


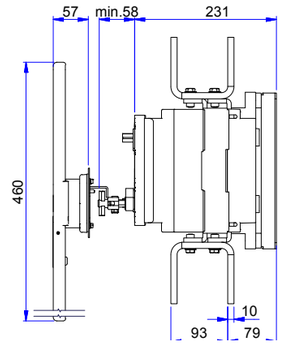
CO6P OL 2000 A



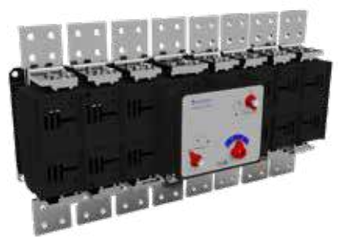


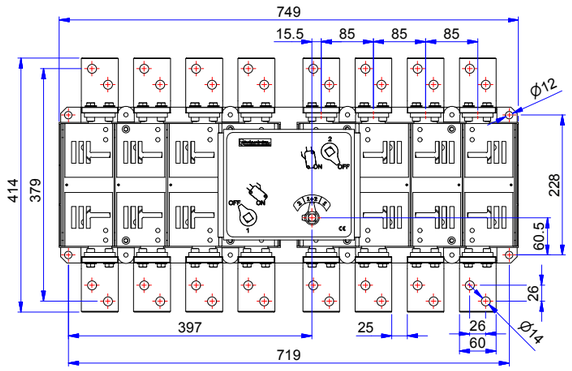
Foratura portella _Door drilling



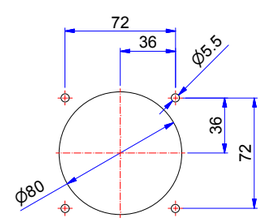


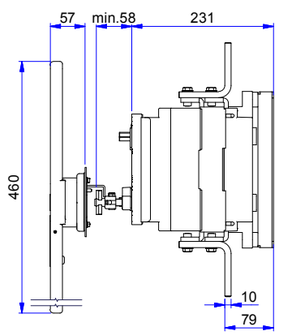
CO6P OL 1600 A



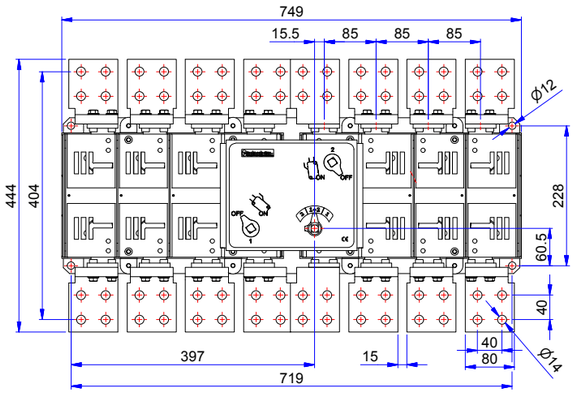


Foratura portella _Door drilling

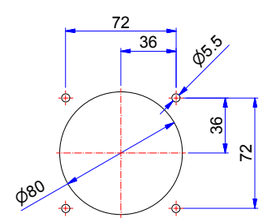


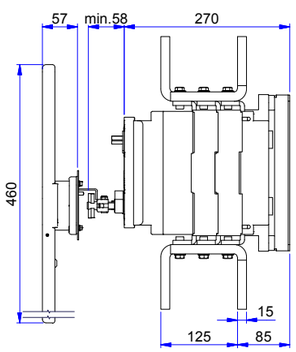


CO6P OL 2500 A

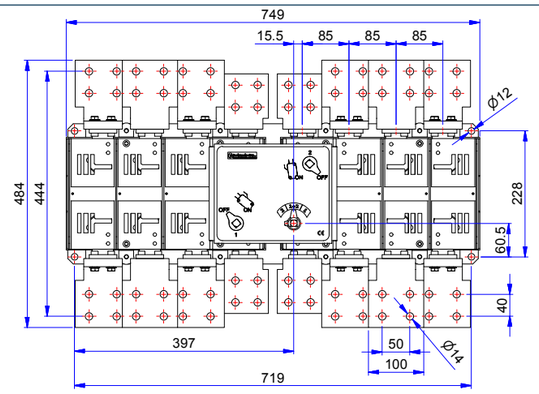


Foratura portella _Door drilling

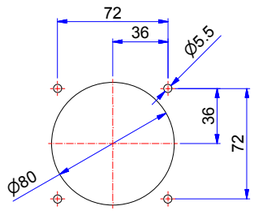


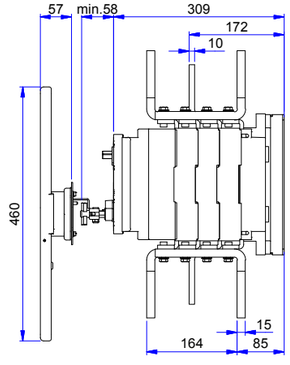


CO6P OL 3150 A

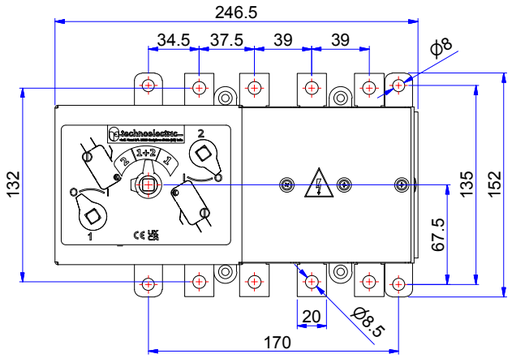


Foratura portella _Door drilling

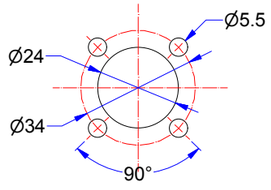


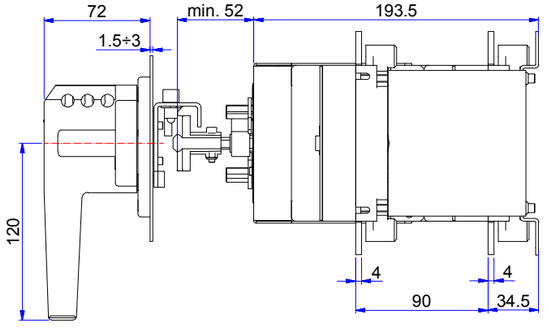


CS2P OL 160 ÷ 315 A

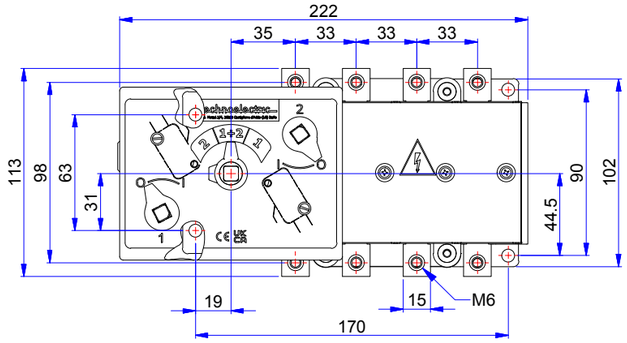


Foratura portella _Door drilling

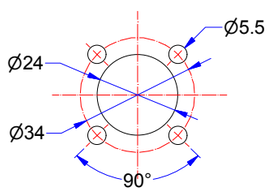


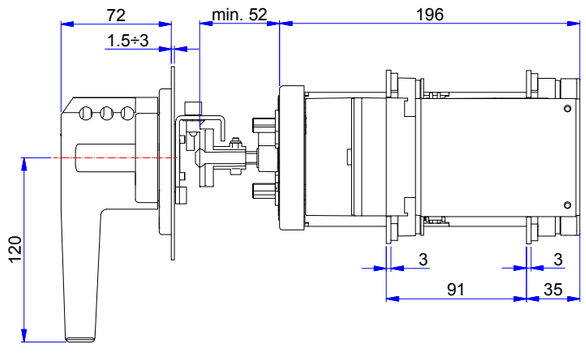


CS1P OL 32 ÷ 160 A

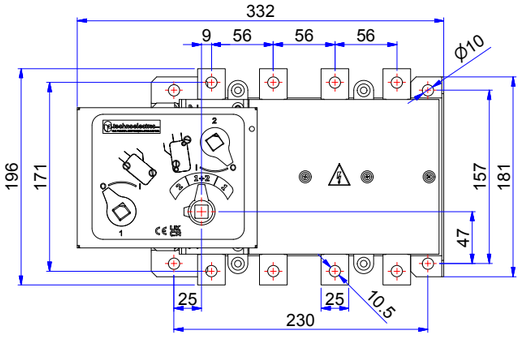


Foratura portella _Door drilling

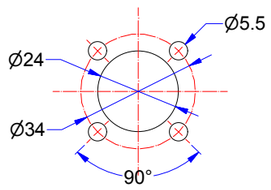


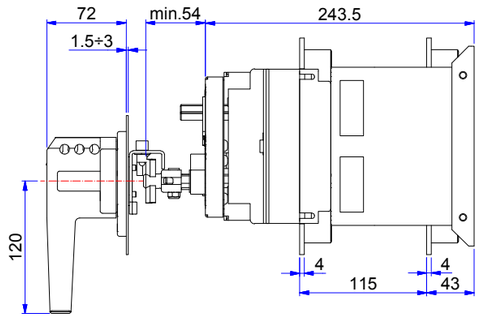


CS3P OL 315 ÷ 500 A

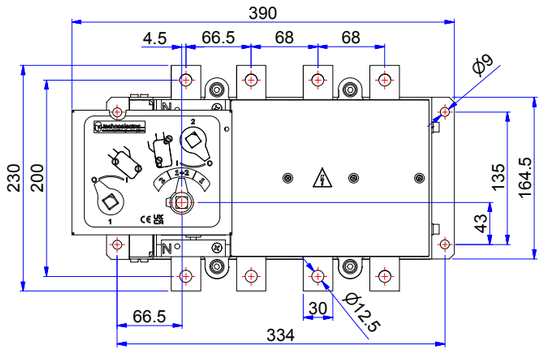


Foratura portella _Door drilling

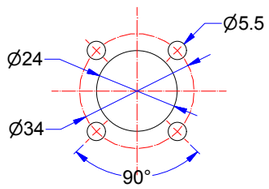


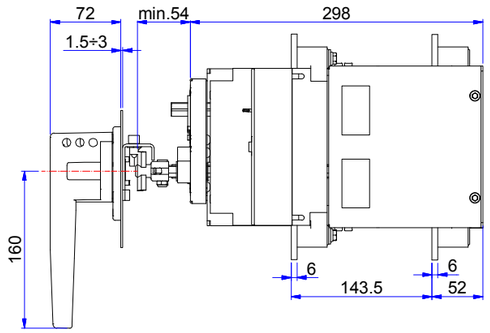


CS4P OL 630 ÷ 800 A

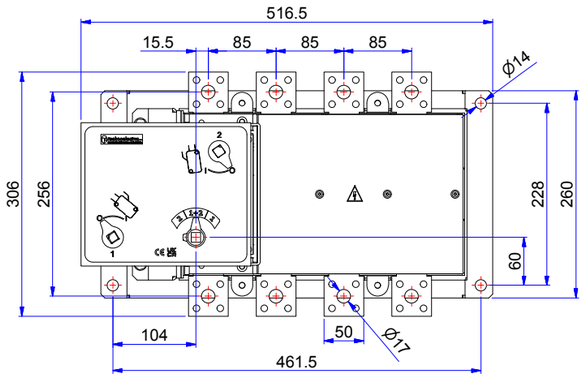


Foratura portella _Door drilling

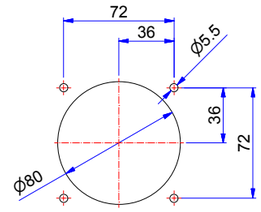


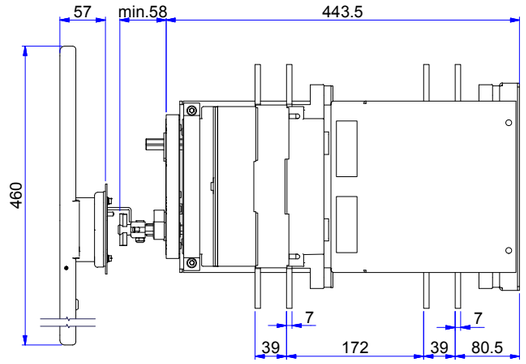


CS5P OL 1600 ÷ 2000 A

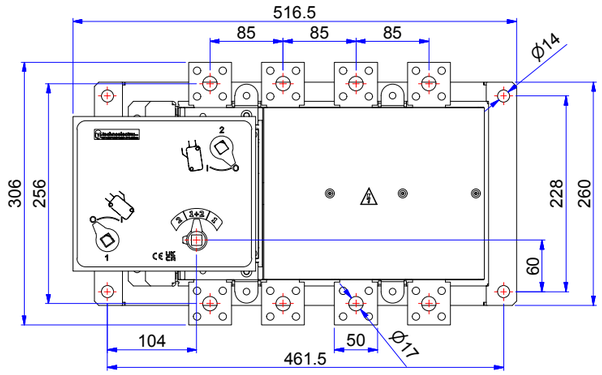


Foratura portella _Door drilling

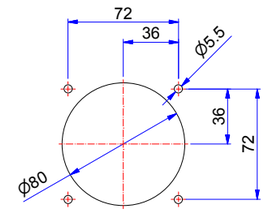


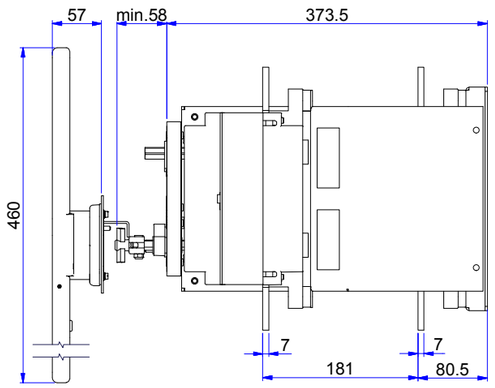


CS5P OL 800 ÷ 1250 A

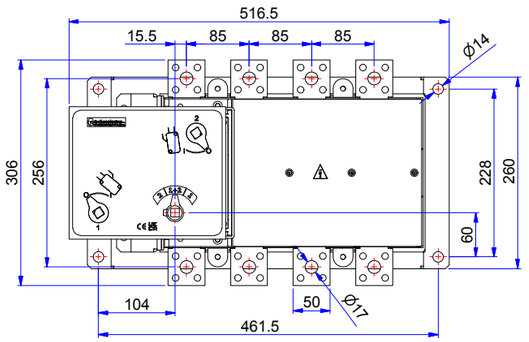


Foratura portella _Door drilling

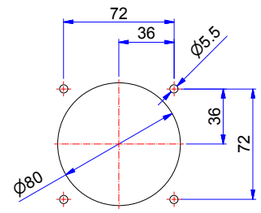


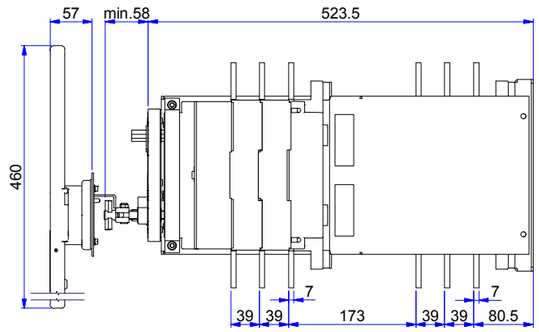


CS5P OL 2500 ÷ 3150 A

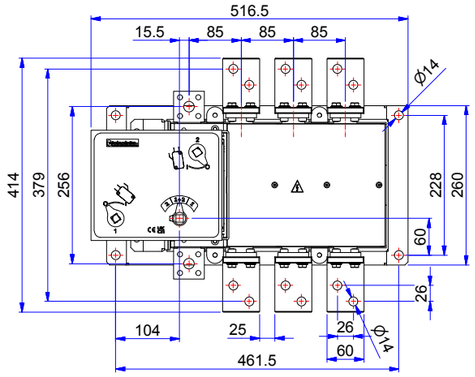


Foratura portella _Door drilling

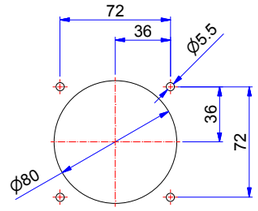


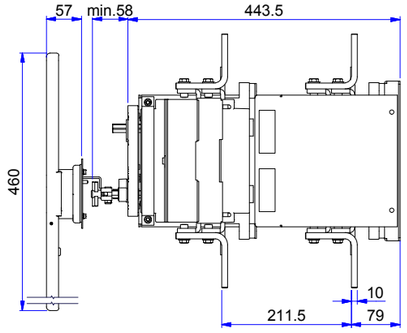


CS6P OL 1600 A

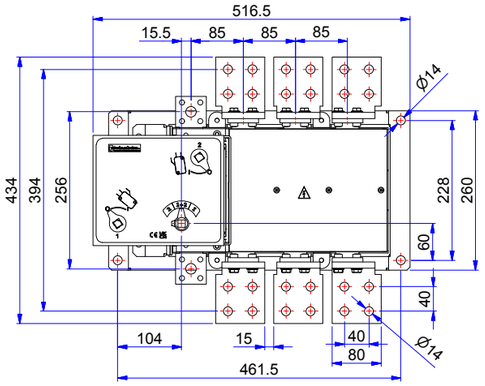


Foratura portella _Door drilling

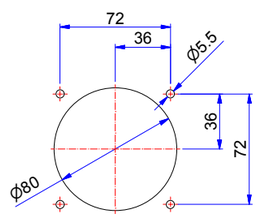


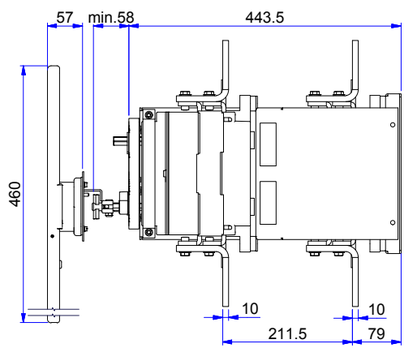


CS6P OL 2000 A

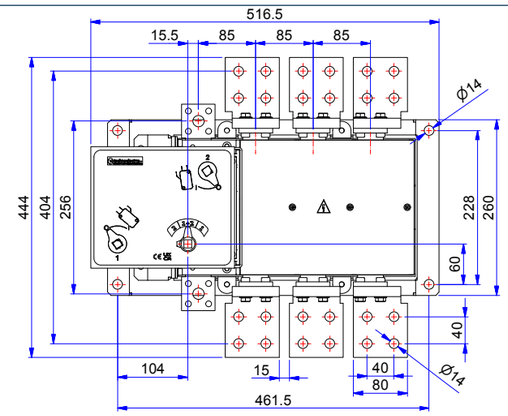


Foratura portella _Door drilling

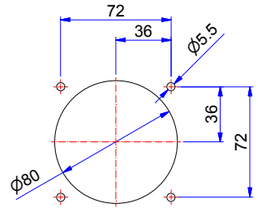


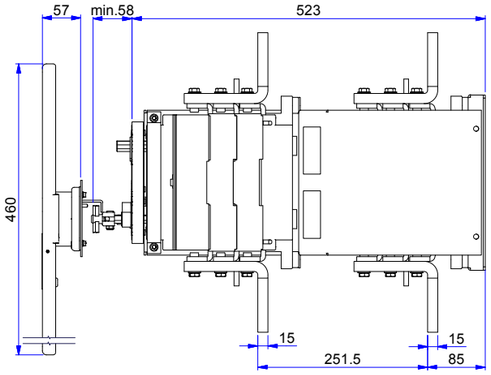


CS6P OL 2500 A

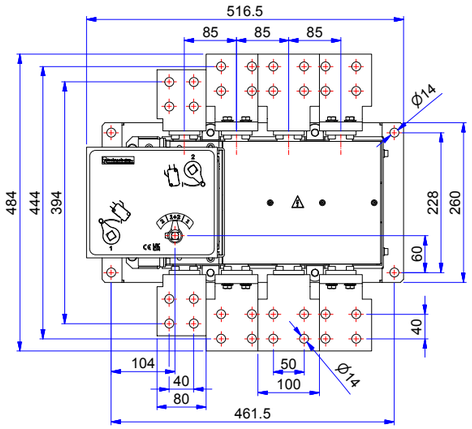


Foratura portella _Door drilling

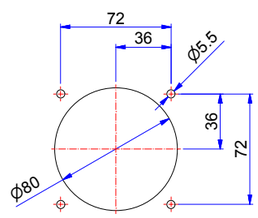


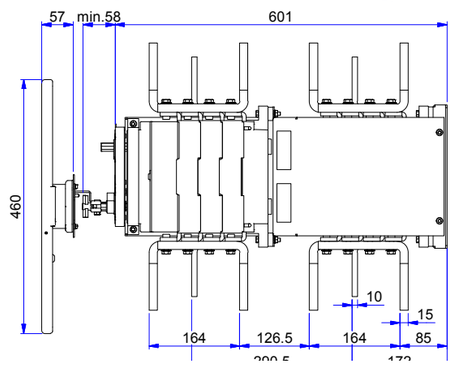


CS6P OL 3150 A



Foratura portella _Door drilling





SERIE_SERIES **CMA**

COF

Commutatori orizzontali con fusibli _Horizontal change-over switches with fuses

Tipo _type	Corrente nominale _rated current	POLI _POLES	Senza maniglia _without handle			Maniglia blocco porta _door interlock handle		
			NFC	DIN	BS	NFC	DIN	BS
			CODICE _CODE					
CO1F	32 A	3	110203SM	110403SM	110603SM	110203	110403	110603
		4	110303SM	110503SM	110703SM	110303	110503	110703
	45A	3	110213SM	110413SM	110613SM	110213	110413	110613
		4	110313SM	110513SM	110713SM	110313	110513	110713
	63A	3	110223SM	110423SM	110623SM	110223	110423	110623
		4	110323SM	110523SM	110723SM	110323	110523	110723
	80A	3	110233SM	110433SM	110633SM	110233	110433	110633
		4	110333SM	110533SM	110733SM	110333	110533	110733
	100A	3	110243SM	110443SM	110643SM	110243	110443	110643
		4	110343SM	110543SM	110743SM	110343	110543	110743
CO2F	100A	3	120213SM	120413SM	120603SM	120213	120413	120603
		4	120313SM	120513SM	120703SM	120313	120513	120703
	125A	3	120223SM	120423SM	120613SM	120223	120423	120613
		4	120323SM	120523SM	120713SM	120323	120523	120713
	160A	3		120433SM	120623SM		120433	120623
		4		120533SM	120723SM		120533	120723
CO3F	200A	3		130413SM	130613SM		130413	130613
		4		130513SM	130713SM		130513	130713
	250A	3		130423SM	130623SM		130423	130623
		4		130523SM	130723SM		130523	130723
CO4F	315A	3		140223SM	140423SM		140223	140423
		4		140323SM	140523SM		140323	140523
	400A	3		140233SM	140433SM		140233	140433
		4		140333SM	140533SM		140333	140533
CO5F	630A	3		150203SM	150403SM		150203	150403
		4		150303SM	150503SM		150303	150503
	800A	3			150413SM			150413
		4			150513SM			150513

Caratteristiche tecniche _Technincal Features	Tipo _Type		CO1F					CO2F		
Corrente nominale _Rated current	In	A	32	45	63	80	100	100	125	160
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	8	8	8	8	8	12	12	12
Corrente nominale termica _Thermal current	Ith	A	32	45	63	80	100	100	125	160
Corrente nominale d' impiego _Rated operational current										
AC-21A	400V	A	32	45	63	80	100	100	125	160
	500V	A	32	45	63	80	100	100	125	160
	690V	A	32	45	63	80	100	100	125	160
AC-22A	400V	A	32	45	63	80	80	100	125	160
	500V	A	32	45	63	80	80	100	125	160
	690V	A	32	45	63	80	80	100	125	160
AC-23A	400V	A	32	45	63	80	80	100	125	160
	500V	A	25	32	45	63	63	80	100	125
	690V	A	20	25	32	45	45	63	80	100
DC-21A*	48V	A	32	50	63	80	100	100	125	160
	220V	A	32	50	63	80	100	100	125	160
	420V	A	32	50	63	80	100	100	125	160
	560V	A	-	-	-	-	-	100	125	160
DC-22A*	48V		32	50	63	80	80	100	125	160
	220V	A	32	50	63	80	80	100	125	160
	420V	A	32	50	63	80	80	100	125	160
	560V	A	-	-	-	-	-	100	125	160
DC-23A*	48V	A	32	50	63	80	80	100	125	160
	220V	A	32	50	50	63	80	100	125	160
	420V	A	32	50	50	50	63	100	125	160
	560V		–	-	-	-	-	100	125	160
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	17	23	33	42	42	52	65	85
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current										
Tipo fusibile _Backup fuse		A	32	45	63	80	80	100	125	160
Valore efficace _R.M.S. value		kA	100	100	100	100	100	50	50	50
Valore di picco _Peak value		kA	6	9	10	12	12	12	15	15
Potere di chiusura nominale 420V c.a. cos 0,35 (0,45*) _ Rated making capacity at 420V AC cos 0,35 (0,45*)		A	320*	450*	630*	800*	800*	1000*	1250	1600
Potere di interruzione nominale 420V cos 0,35 (0,45*) _Rated breaking capacity at 420V cos 0,35 (0,45*)		A	256*	360*	504*	640*	640*	800*	1000	1280
Potere di chiusura, interruzione nominale c.c. (3) _Rated making and breaking capacity DC (3)		A	80	120	140	180	180	252	320	400
Potenza condensatori a 400V Rated capacitor power at 400V		kVAR	15	20	30	40	45	45	50	70
Durata meccanica \ Mechanical endurance		n	10000	10000	10000	10000	10000	8000	8000	8000
Durata elettrica \ Electrical endurance		n	1500	1500	1500	1500	1500	1000	1000	1000
Potenza dissipata per polo \ Power losses for pole**		W	0.3	0.6	1.2	2.0	3.1	2.1	3.3	5.5
Dimensione cavo \ Cable section		mm^2	25	25	25	25	35	70	70	70
Dimensione barre \ Bars dimension		mm	12x3	12x3	12x3	12x3	16x3	16x4	16x4	16x4
Peso netto _Net weight	3P	Kg	2,4	2,4	2,4	2,4	2,4	4	4	4
	4P		2,6	2,6	2,6	2,6	2,6	4,3	4,3	4,3

*Due poli in serie _Two poles in series

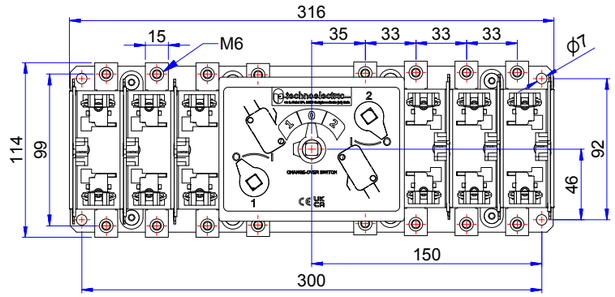
**Escluso fusibile _Fuse excluded

SERIE_SERIES **CMA**

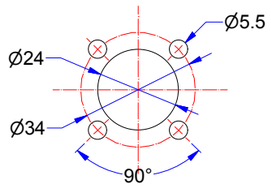
Caratteristiche tecniche _Technincal Features	Tipo _Type		CO3F		CO4F		CO5F	
Corrente nominale _Rated current	In	A	200	250	315	400	630	800
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500
Tensione nominale impulso _Shock resistance	U imp	kV	12	12	12	12	12	12
Corrente nominale termica _Thermal current	Ith	A	200	250	315	400	630	800
Corrente nominale d' impiego _Rated operational current								
AC-21A	400V	A	200	250	315	400	630	800
	500V	A	200	250	315	400	630	800
	690V	A	200	250	315	400	630	800
AC-22A	400V	A	200	250	315	400	630	800
	500V	A	200	250	315	400	630	800
	690V	A	200	250	315	400	630	800
AC-23A	400V	A	200	250	315	400	630	800
	500V	A	160	200	250	315	500	630
	690V	A	125	160	200	250	400	500
DC-21A*	48V	A	200	250	315	400	630	800
	220V	A	200	250	315	400	630	800
	420V	A	200	250	315	400	630	800
	560V	A	-	-	-	-	-	-
DC-22A*	48V		200	250	315	400	630	800
	220V	A	200	250	315	400	630	800
	420V	A	200	250	315	400	630	800
	560V	A	-	-	-	-	-	-
DC-23A*	48V	A	200	250	315	400	630	800
	220V	A	160	200	315	315	500	630
	420V	A	160	250	250	250	400	500
	560V		-	-	-	-	-	-
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	105	130	165	210	330	420
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current								
Tipo fusibile _Backup fuse		A	200	250	315	400	630	800
Valore efficace _R.M.S. value		kA	50	50	50	50	50	50
Valore di picco _Peak value		kA	20	25	25	30	40	40
Potere di chiusura nominale 420V c.a. cos 0,35 (0,45*) _ Rated making capacity at 420V AC cos 0,35 (0,45*)		A	2000	2500	3150	4000	6300	8000
Potere di interruzione nominale 420V cos 0,35 (0,45*) _Rated breaking capacity at 420V cos 0,35 (0,45*)		A	1600	2000	2520	3200	5040	6400
Potere di chiusura, interruzione nominale c.c. (3) _Rated making and breaking capacity DC (3)		A	500	640	800	1000	1600	2000
Potenza condensatori a 400V Rated capacitor power at 400V		kVAR	90	110	140	180	300	370
Durata meccanica \ Mechanical endurance		n	7000	7000	7000	7000	4000	4000
Durata elettrica \ Electrical endurance		n	1000	1000	1000	1000	1000	1000
Potenza dissipata per polo \ Power losses for pole**		W	11.7	17.5	12.9	20.8	52.9	85.3
Dimensione cavo \ Cable section		mm^2	120	120	240	240	2x185	2x185
Dimensione barre \ Bars dimension		mm	25x4	25x4	32x5	32x5	2x40x6	2x40x6
Peso netto _Net weight	3P	Kg	9,5	9,5	16,2	16,2	29,2	29,2
	4P		9,9	9,9	16,8	16,8	30,8	30,8

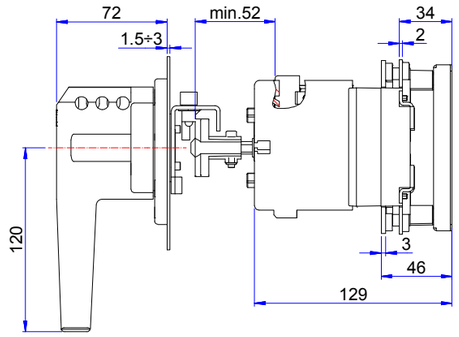
*Due poli in serie _Two poles in series **Escluso fusibile _Fuse excluded

CO1F 32 ÷ 100 A

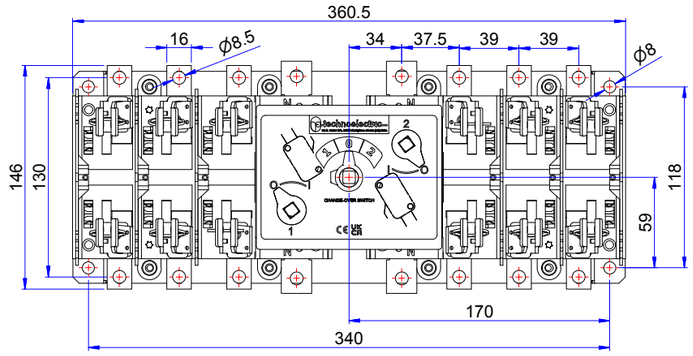


Foratura portella _Door drilling

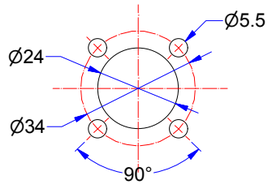


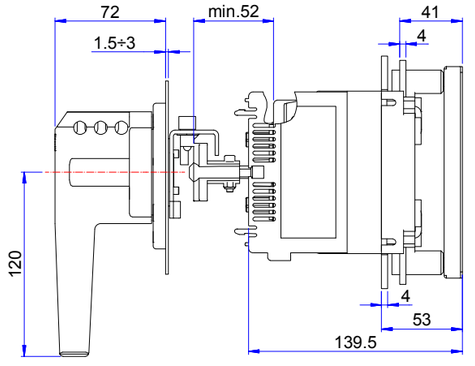


CO2F 100 ÷ 160 A

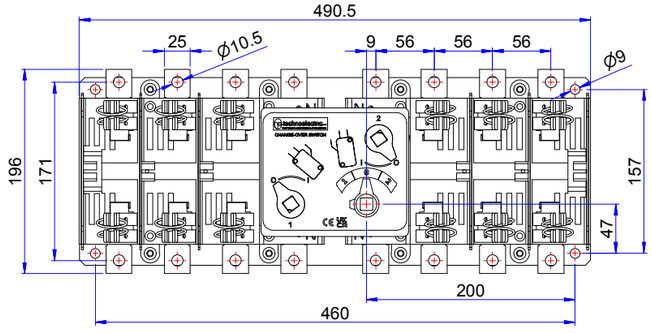


Foratura portella _Door drilling

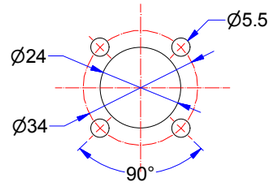


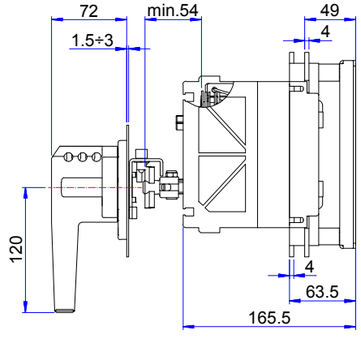


CO3F 200 ÷ 250 A

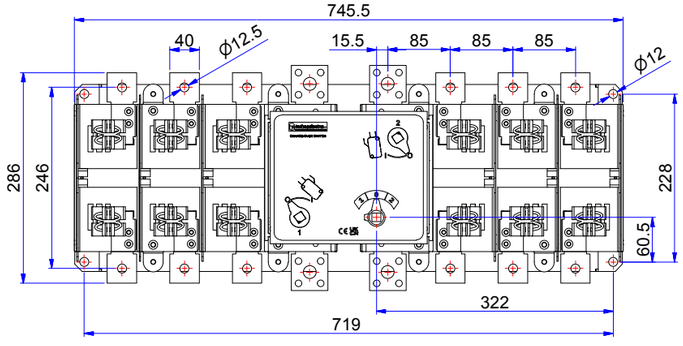


Foratura portella _Door drilling

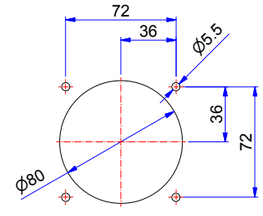


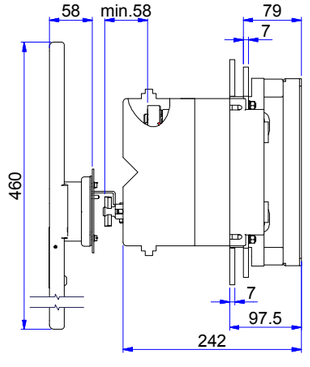


CO5F 630 ÷ 800 A

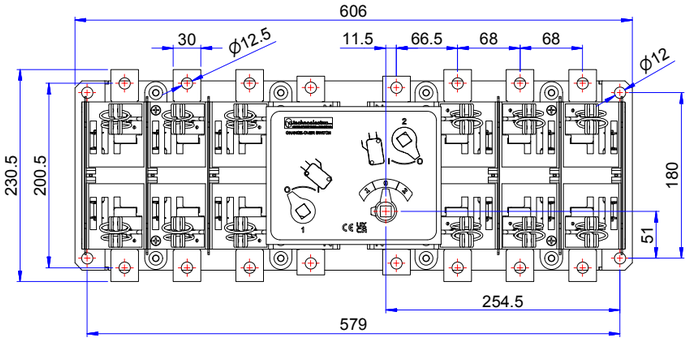


Foratura portella _Door drilling





CO4F 315 ÷ 400 A



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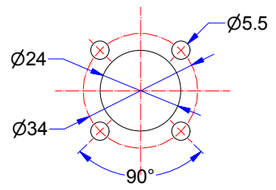
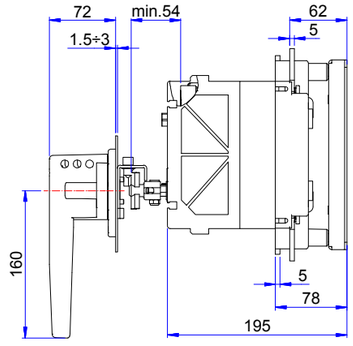




COMMUTATORE GT

GENERALITÀ

Serie di commutatori ad azionamento manuale che permettono l'apertura e la commutazione di due circuiti elettrici in bassa tensione. Sono realizzati interbloccando due normali interruttori sezionatori della serie GT.

CARATTERISTICHE GENERALI

3 Posizioni I-0-II
Visibilità diretta, mediante finestrelle, dei contatti fissi e mobili
Manovre a scatto rapido indipendente
Doppia interruzione per ogni polo
Elevata durata meccanica ed elettrica
Adatti per utilizzo in climi tropicali
Comando di tipo rotativo frontale a mezzo di:
Maniglia esterna a doppio isolamento con dispositivo bloccoporta nelle posizioni i e ii

CONDIZIONI NORMALI DI SERVIZIO, MONTAGGIO E TRASPORTO

temperatura ambiente di immagazzinamento e trasporto - 25°C + 55°C
temperatura ambiente di funzionamento - 20°C + 40°C
in caso di temperatura ambiente (t_a) superiore, applicare la seguente formula di declassamento:

$I_{The} = k\ I_{Th}$ dove $\quad K = 1 - \frac{t_a - 40}{100}$

umidità relativa max 95%
frequenza nominale 50 - 60 Hz
altitudine max 2000 m s.l.m.
grado di inquinamento 3 secondo IEC 60947-1
tipo di servizio (secondo IEC 60947-1):
servizio 8 ore
servizio ininterrotto
servizio intermittente 60% classe 30
servizio temporaneo
servizio periodico

Per condizioni di impiego diverse consultare il costruttore.

GT CHANGE-OVER SWITCHES

_GENERALITIES

Change-over switches manually operated suitable for breaking and permutating two low voltage electrical circuits. They are made by two standard switches of GT series mechanically interlocked.

_GENERAL CHARACTERISTICS

3 Positions I-0-II
Visibility of fixed and moving contacts by means of windows
Indipendent fast action operation
Double break contacts
High electrical and mechanical endurance
Resistant to damp heat
Rotary front operation by means of:
External double insulated handle with door-interlock in I and II position

_NORMAL SERVICE, MOUNTING AND TRANSPORT CONDITIONS

storage and transport ambient temperature - 25°C + 55°C
working ambient temperature - 20°C + 40°C
in case of higher ambient temperature (t_a) consider the following derating formula:

$I_{The} = k\ I_{Th}$ dove $\quad K = 1 - \frac{t_a - 40}{100}$

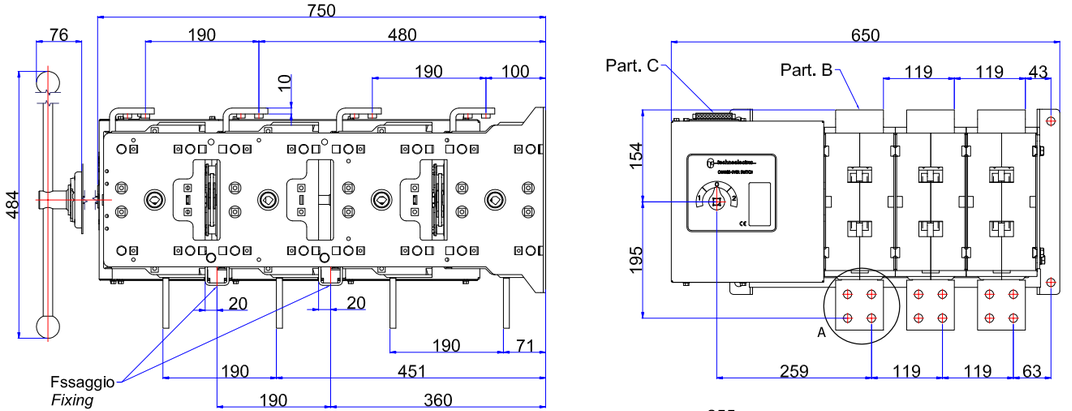
relative humidity max 95%
rated frequency 50 - 60 Hz
altitude max 2000 m a.s.l.
pollution degree 3 according IEC 60947-1
duty (IEC 60947-1):
eight-hour duty
uninterrupted duty
intermittent duty 60% class 30
temporary duty
periodic duty

For other operating conditions please contact the manufacturer.

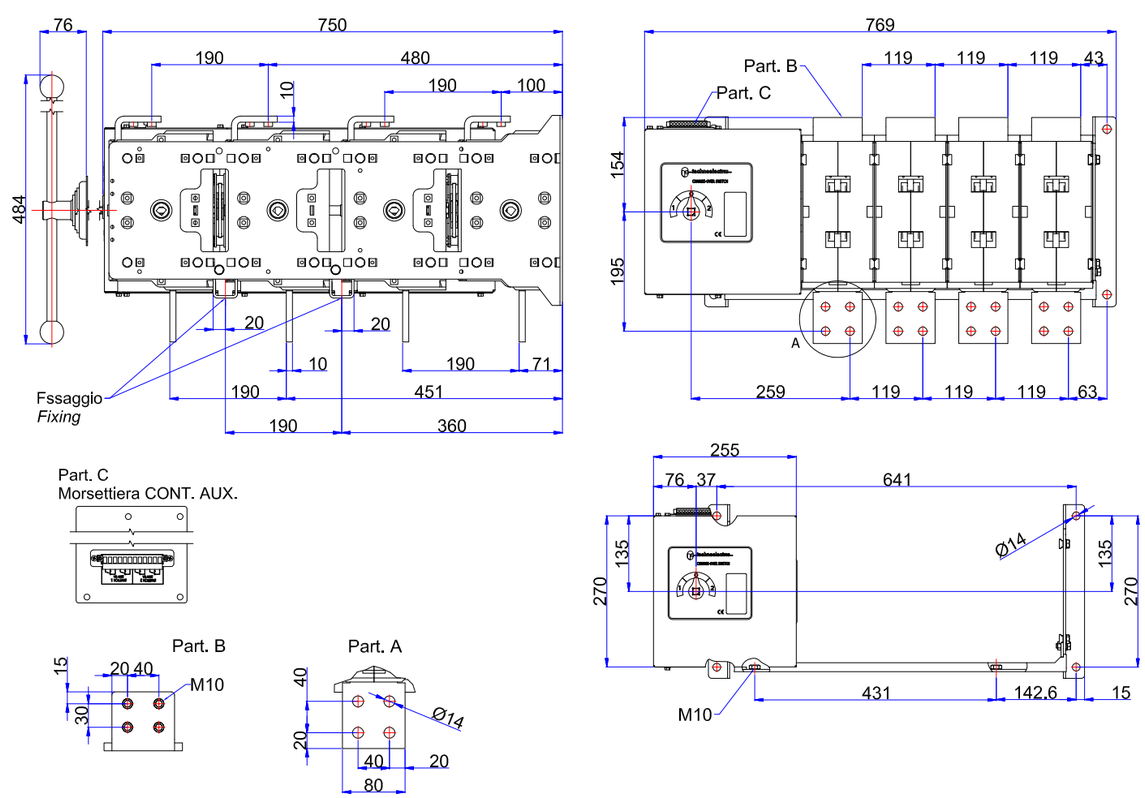
Tipo _type	Corrente nominale _rated current	POLI _POLES	CODICE _CODE
GT6	3150A	3P	GT60038
		4P	GT60138
	4000A	3P	GT60048
		4P	GT60148

Caratteristiche tecniche _Technincal Features	Tipo _Type		GT 3150	GT 4000
Corrente nominale _Rated current	In	A	3150A	4000A
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500
Corrente nominale termica _Thermal current	Ith	A	3150	4000
Corrente nominale d' impiego _Rated operational current				
AC-21A	420V	A	3150	4000
	500V	A	3150	4000
	690V	A	-	-
AC-22A	420V	A	-	-
	500V	A	-	-
	690V	A	-	-
AC-23A	420V	A	-	-
	500V	A	-	-
	690V	A	-	-
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	50	50
Potere di chiusura in corto circuito _Short-circuit making capacity		kA	105	105
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current				
Tipo fusibile _Backup fuse		A	-	-
Valore efficace _R.M.S. value		kA	-	-
Valore di picco _Peak value		kA	-	-
Durata meccanica _Mechanical endurance		n.	2500	2500
Durata elettrica _Electrical endurance		n.	500	500
Potenza dissipata per polo _Power dissipation per pole		W	170	272
Potenza condensatori a 400V _Rated capacitor power at 400V	400 V	kVAR	1250	1600
Peso netto _Net weight	3P	Kg	180	180
	4P		220	220

GT 4000A 3P



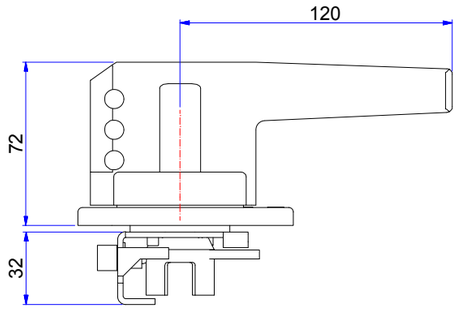
GT 4000A 4P



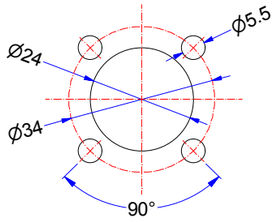
MANIGLIA BLOCCO PORTA_Door interlock handles

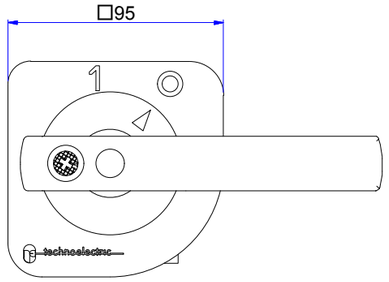
Tipo_type	CO - CS - BYP 1 | 2 | 3	CO - CS - BYP 4	CO - CS - BYP 5 35 kA	CO - CS 5 50kA | CO - CS 6	CO - CS 5 50kA | CO - CS 6
Codice _code	18582	18583	18584	18838	18839

18582

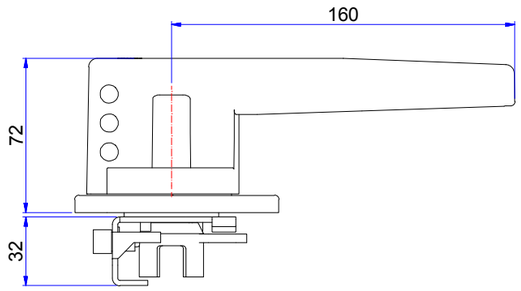


Foratura portella _Door drilling

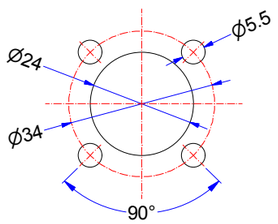


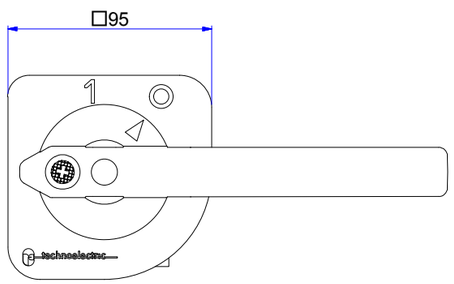


18583



Foratura portella _Door drilling





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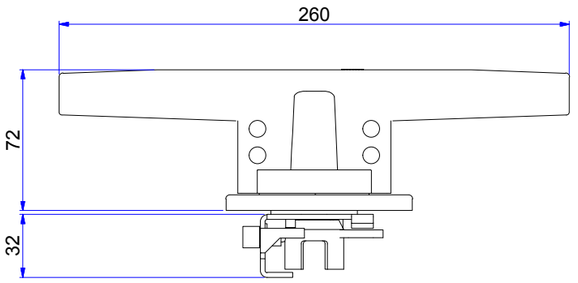
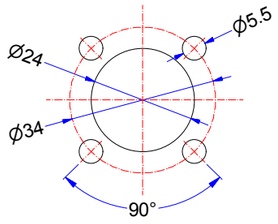
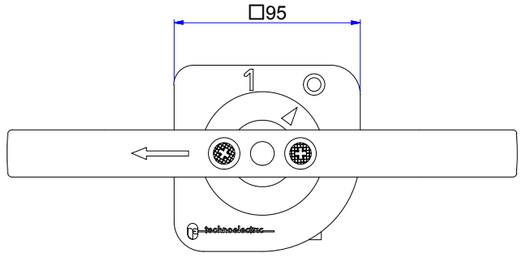


Foratura portella _Door drilling





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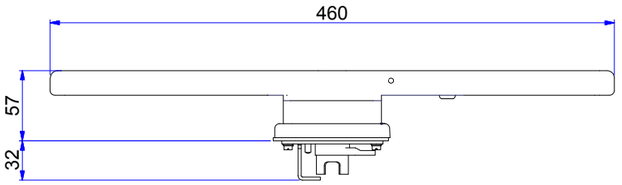
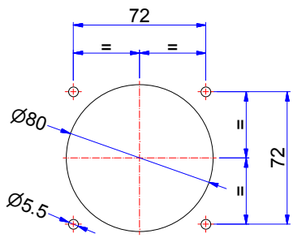
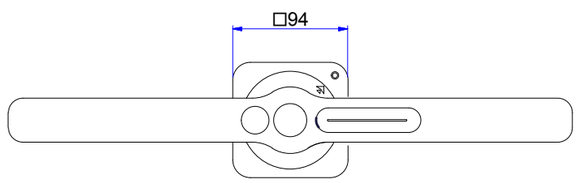


Foratura portella _Door drilling





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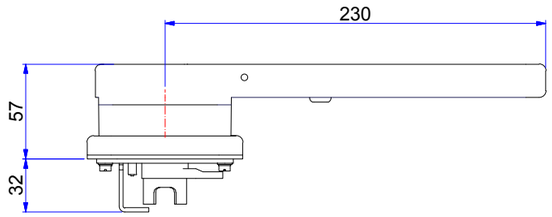
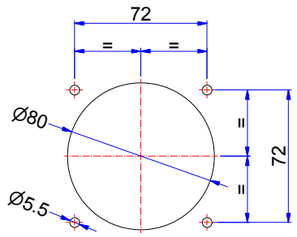
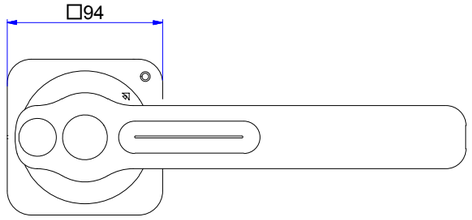


Foratura portella _Door drilling



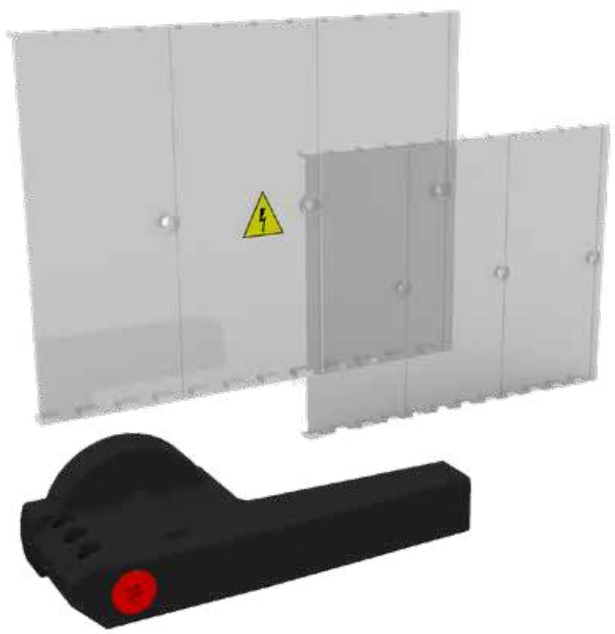


MANIGLIA DIRETTA CON SCHERMI _direct handle with covers

Tipo_type	CO1P	CO2P	CO3P	CO4P	CO5P	CO6P
Codice _code	18588	18589	18590	18591	18853	18853

Fornita completa di due schermi copricontatti principali per interruttori di tipo P.

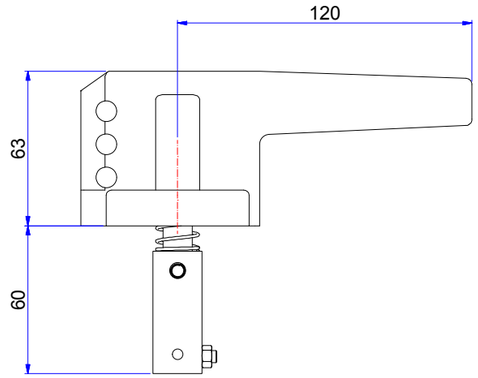
_With two main contact shields covers.

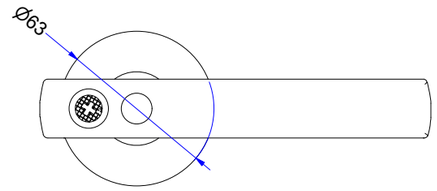


MANIGLIA DIRETTA SENZA SCHERMI _direct handle without covers

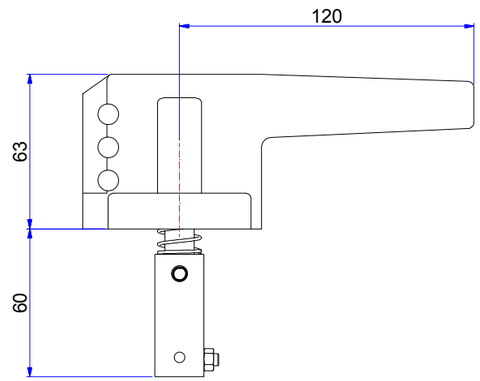
Tipo_type	CS1-CS2	CS3	CS4	CS5 35kA	CS5 50kA - CS6
Codice _code	18187	18083	18084	18188	18189

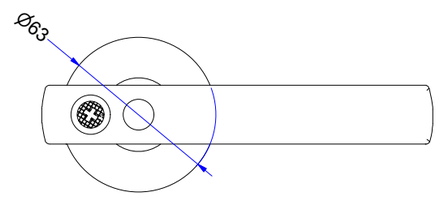
18187



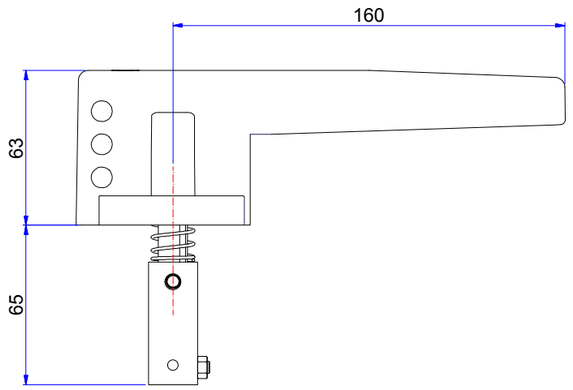


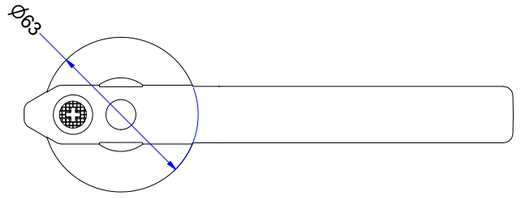
18083





18084





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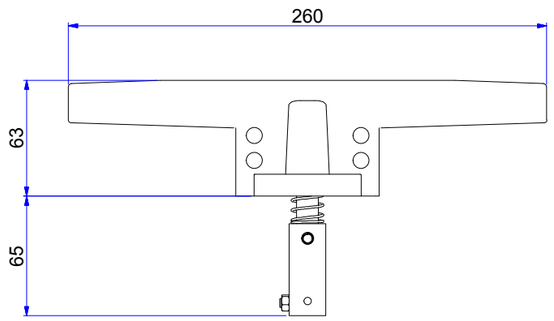

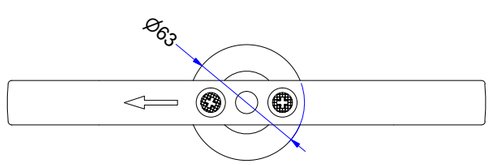

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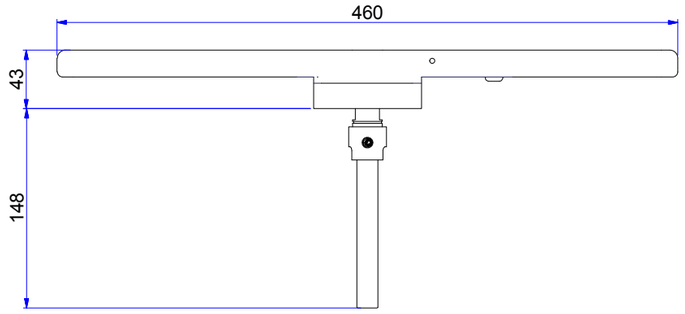
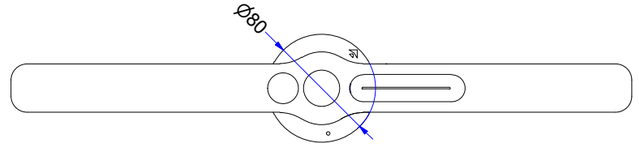
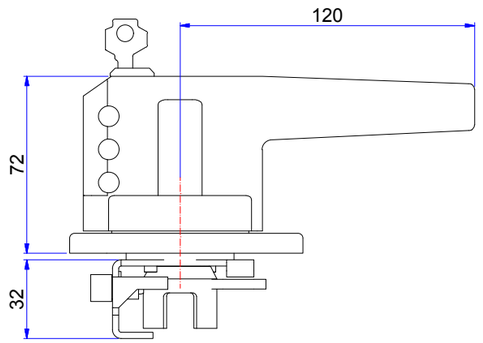




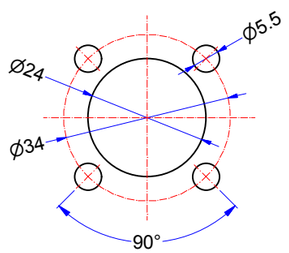
MANIGLIA BLOCCO PORTA CON BLOCCO CHIAVE IN POSIZIONE 0
_door interlock handle with key lock 0 position

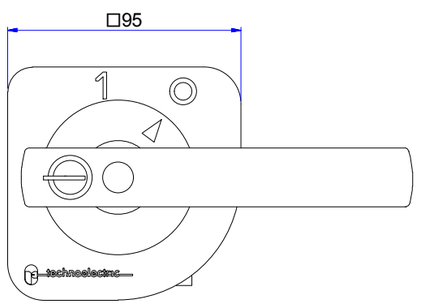
Tipo_type	CO - CS - CC - BYP 1 | 2| 3	CO - CS - CC - BYP 4	CO - CS - C BYP5 35 kA
Codice _code	18500	18501	18502

18500

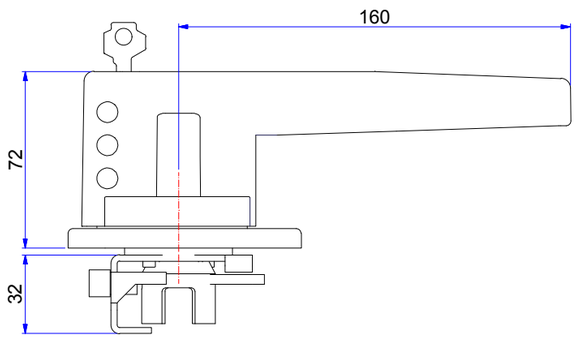


Foratura portella _Door drilling

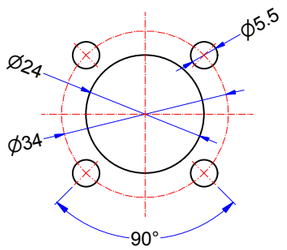


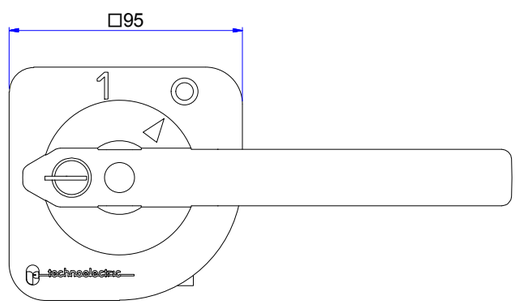


18501

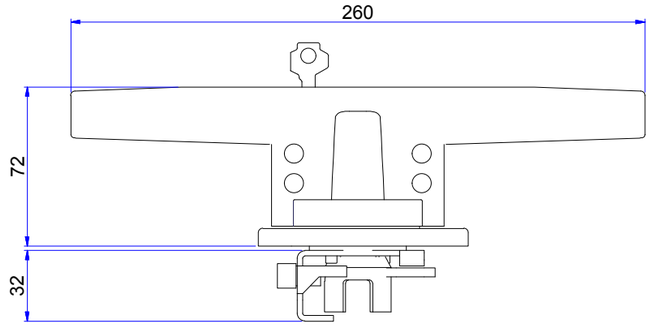


Foratura portella _Door drilling

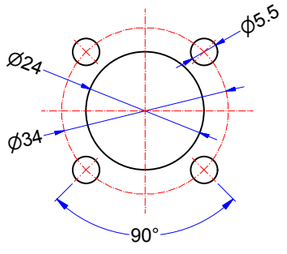


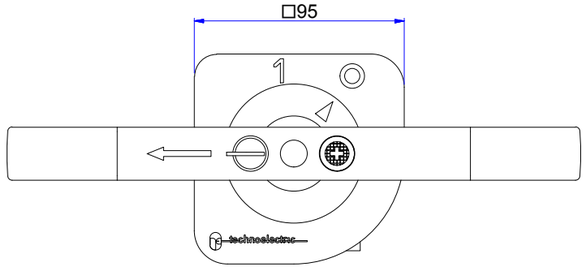


18502



Foratura portella _Door drilling





PROLUNGA ALBERO COMANDO _extension shaft

100 MM

Tipo _type	CO - CS - BYP 1 | 2	CO - CS - BYP 3 | 4 | 5 CO - CS 6
Codice _code	18571	18573

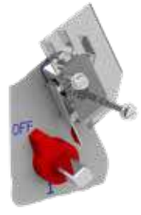
200 MM

Tipo _type	CO - CS - BYP 1 | 2	CO - CS - BYP 3 | 4 | 5 CO - CS 6
Codice _code	18574	18576

ALBERO COMANDO 300 MM _300mm Shaft

Tipo _type	CO - CS - BYP 1 | 2	CO - CS - BYP 3 | 4 | 5 CO - CS 6
Codice _code	18575	18578

CONTATTI AUSILIARI IN SCAMBIO 1NA+1NC _auxiliary contacts 1NO+1NC



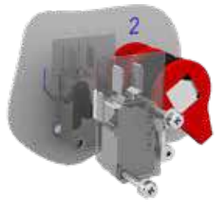
18566

18560

Tipo _type	CO - CS - BYP 1 | 2	CO - CS - BYP 3 | 4 | 5 CO - CS 6
Codice _code	18566	18560

CONTATTI AUSILIARI IN SCAMBIO 2NA+2NC
_auxiliary contacts 2NO+2NC

18568



18567

Tipo _type	CO - CS - BYP 1 | 2	CO - CS - BYP 3 | 4 | 5 CO - CS 6
Codice _code	18568	18567

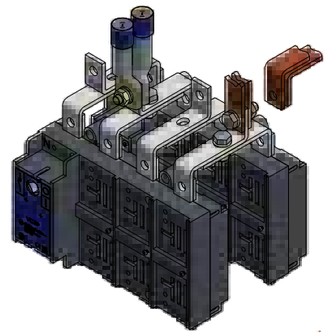
CALOTTA PROTEZIONE TERMINALI SUPERIORI
_upper terminal cover

Tipo _type	CO1P	CO2P	CO3P	CO4P	CO5P	CO5P 1600 A
Codice _code	18050	18052	18350	18054	18056	18058

CALOTTA PROTEZIONE TERMINALI INFERIORI
_lower terminal cover

Tipo _type	CO1P	CO2P	CO3P	CO4P	CO5P	CO5P 1600 A
Codice _code	18051	18053	18351	18055	18057	18059

CONNESSIONI A PONTE
_Connecting bridges

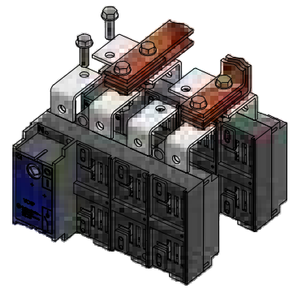


COLLEGAMENTO CAVO\SBARRA _connection cable\bar

Tipo _type	CS1 32-160A		CS2 160-315A		CS3 315-500A		CS4 630-800A	
Poli _poles	3	4	3	4	3	4	3	4
Codice _code	18411	18410	18408	18409	18419	18412	18417	18418

COLLEGAMENTO SBARRA _connection bar

Tipo _type	CS5 800-1250A	
Poli _poles	3	4
Codice _code	18424	18414



COLLEGAMENTO CAVO _connection cable

Tipo _type	CS5 1600-2000A		CS5 1600-2000A
Poli _poles	3	4	4 FN
Codice _code	18438	18439	18440

PIATTO PER TERMINALI SEZIONATORI
_terminal plate for switches

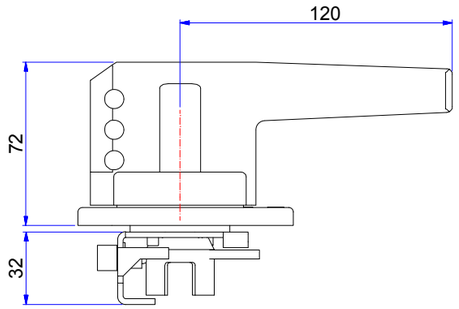
Tipo _type Piatto _plate	CO - CS 5 4mm	CO - CS 5 6mm
Codice _code	18138	18139

La confezione contiene 1 piatto per terminale
_Each box contain a terminal plate

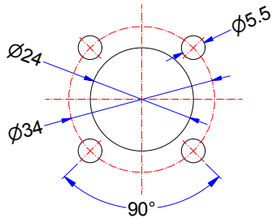
MANIGLIA BLOCCO PORTA_Door interlock handles

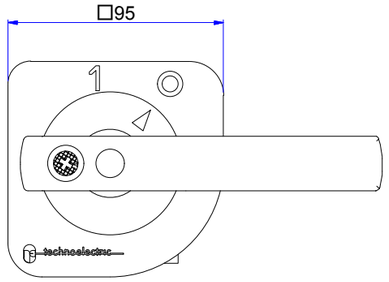
Tipo_type	CO 1F	CO 2F	CO 3F	CO 4F	CO 5F
Codice _code	18582	18582	18582	18583	18584

18582

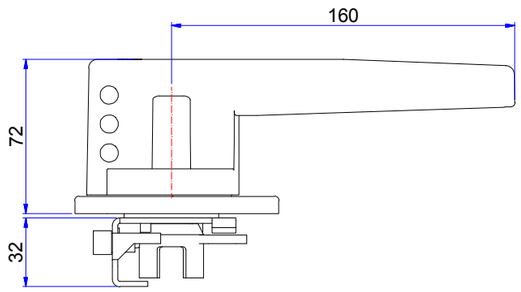


Foratura portella _Door drilling

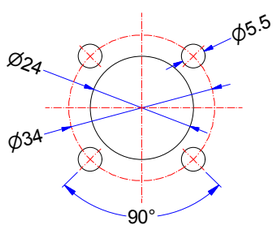


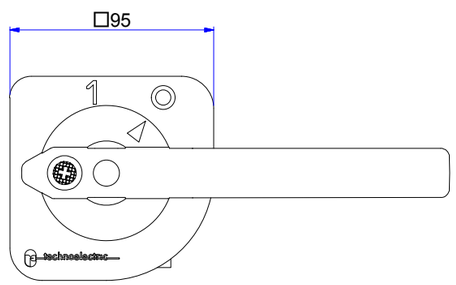


18583

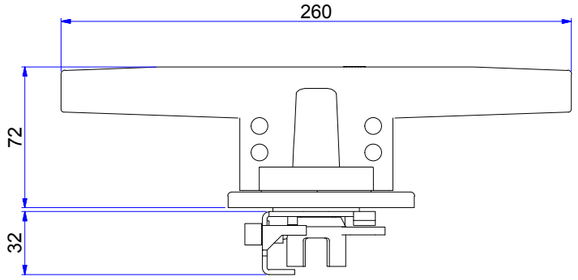


Foratura portella _Door drilling

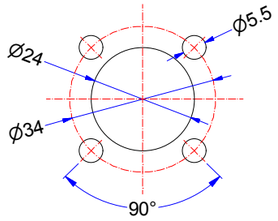


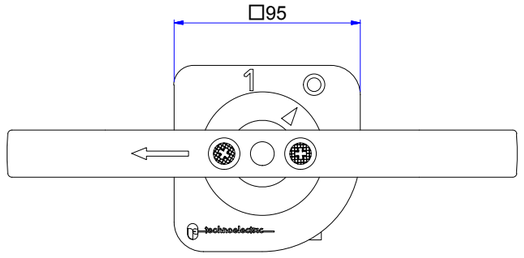


18584



Foratura portella _Door drilling

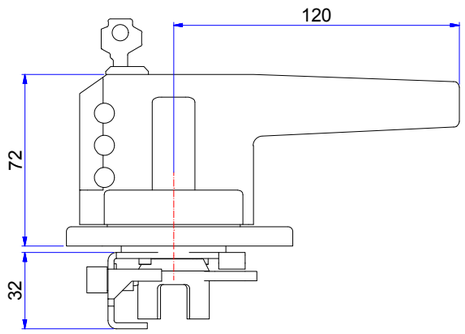




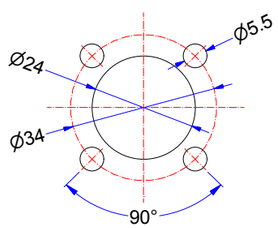
MANIGLIA BLOCCO PORTA CON BLOCCO CHIAVE _Door interlock handles with key lock

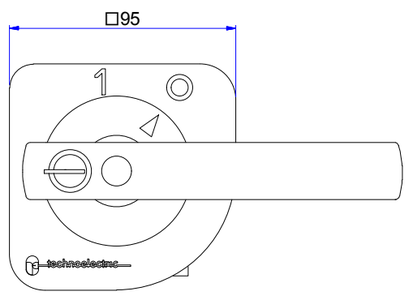
Tipo_type	CO 1F	CO 2F	CO 3F	CO 4F	CO 5F
Codice _code	18500	18500	18500	18501	18502

18500

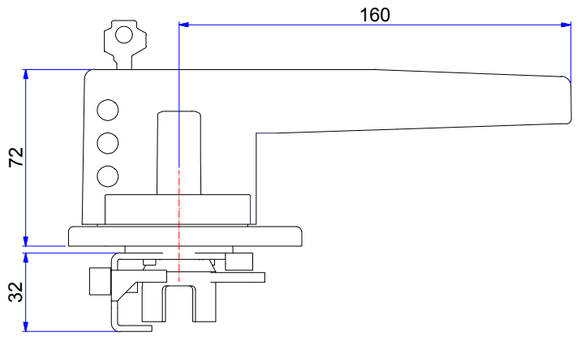


Foratura portella _Door drilling

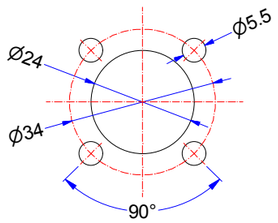


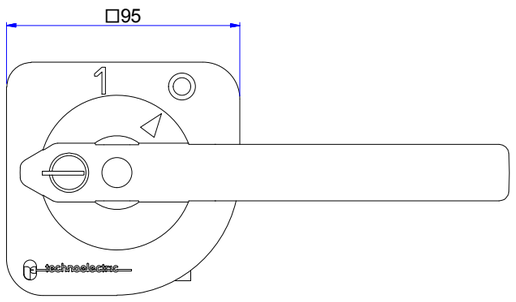


18501

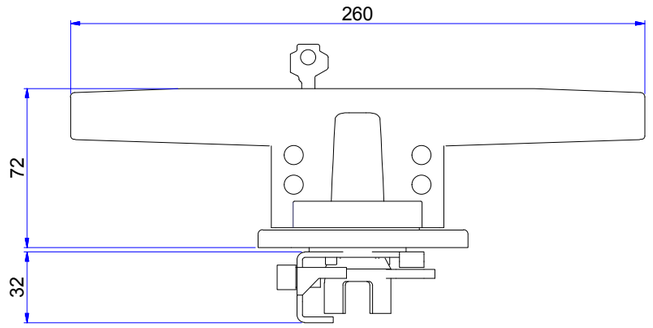


Foratura portella _Door drilling

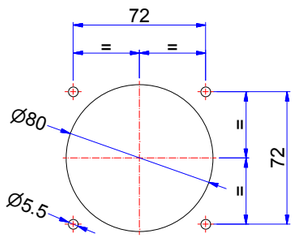


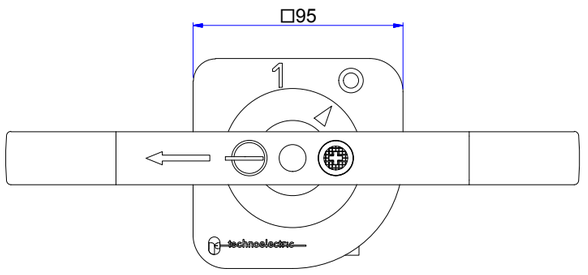


18502



Foratura portella _Door drilling





MANIGLIA DIRETTA _direct handle

Tipo _type	CO 1F	CO 2F	CO 3F	CO 4F	CO 5F
Codice _code	18594	18595	18597	18598	18599

SCHERMO PROTEZIONE FUSIBILI _fuse cover

Tipo _type	CO 1F	CO 2F	CO 3F	CO 4F	CO 5F
Codice _code	18660	18661	18663	18664	18665

PROLUNGA ALBERO COMANDO _extension shaft

100 mm

Tipo _type	COF 1 | 2	COF 3 | 4 | 5
Codice _code	18571	18573

200 mm

Tipo _type	COF 1 | 2	COF 3 | 4 | 5
Codice _code	18574	18576

300 mm

Tipo _type	COF 1 | 2	COF 3 | 4 | 5
Codice _code	18575	18578