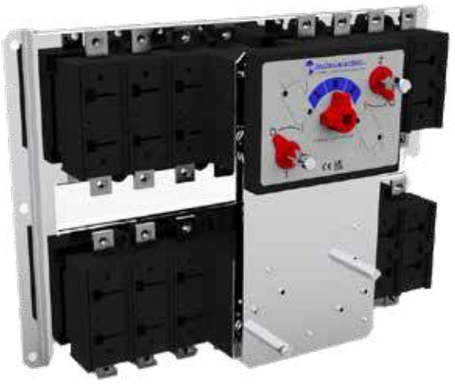
vector Energy

MANUAL CHANGE-OVER SWITCHES

CMA 125 ÷ 3150 A







_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 $\qquad K = 1 - \frac{t_a - 40}{100}$

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

CSP

Double layer change-over switches







COP

Horizontal change-over switches







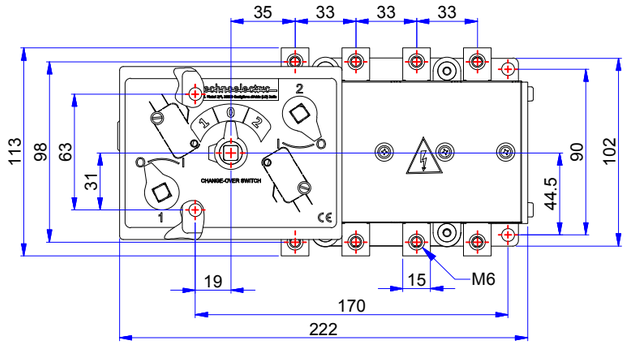
Caratteristiche tecniche _Technincal Features	Tipo _Type		CS|CO - 1P							CS|CO - 2P			
Corrente nominale _Rated current	In	A	32	45	63	80	100	125	160	160	200	250	315
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Tensione nominale 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 / 1	3,5 / 2,1	3,5 / 2,1	3,5 / 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

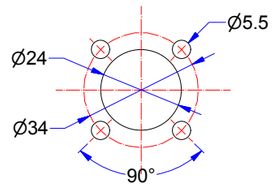
Caratteristiche tecniche _Technincal Features	Tipo _Type		CS|CO| - 5P 50kA							CS|CO - 6P			
Corrente nominale _Rated current	In	A	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
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

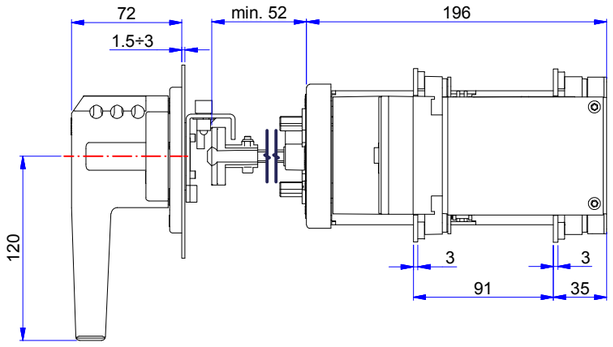
CS1P 32 ÷ 160 A





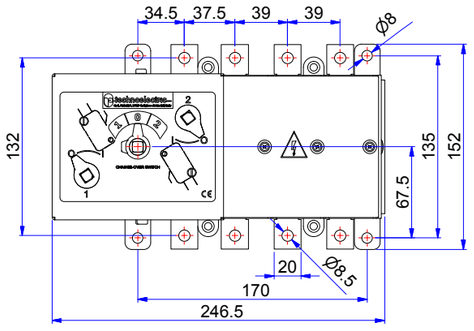
Foratura portella _Door drilling



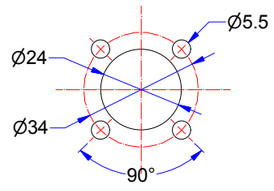


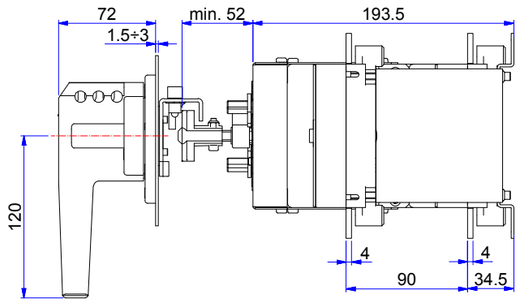
CS2P 160 ÷ 315 A





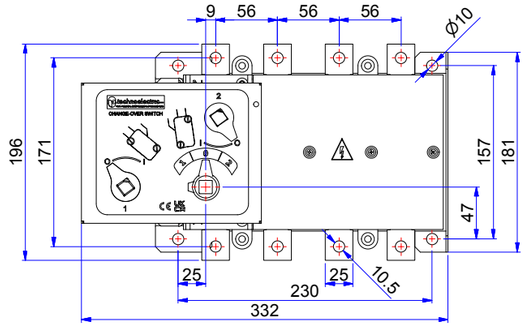
Foratura portella _Door drilling



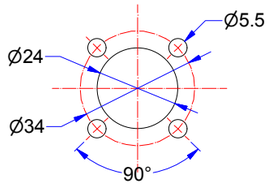


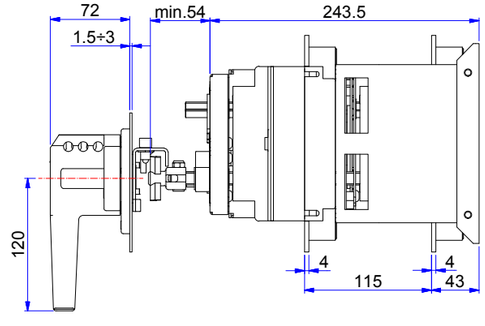
CS3P 315 ÷ 500 A





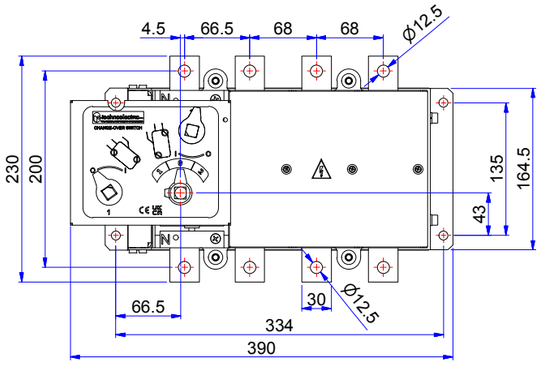
Foratura portella _Door drilling



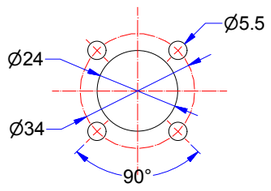


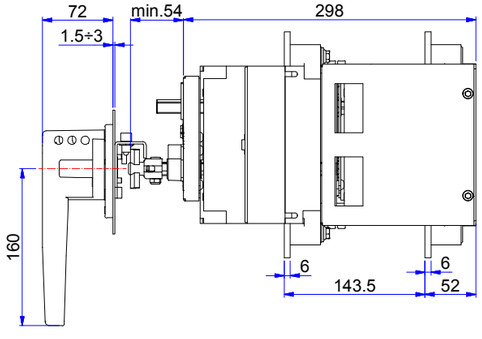
CS4P 630 ÷ 800 A





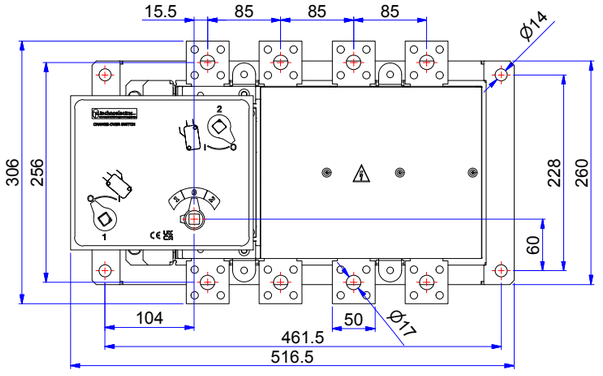
Foratura portella _Door drilling



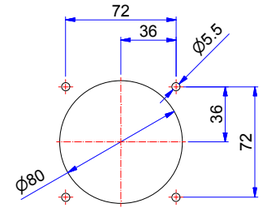


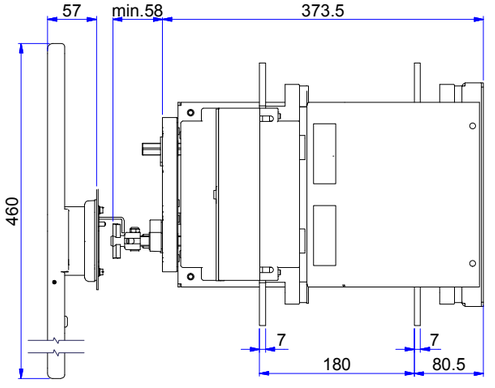
CS5P 800 ÷ 1250 A





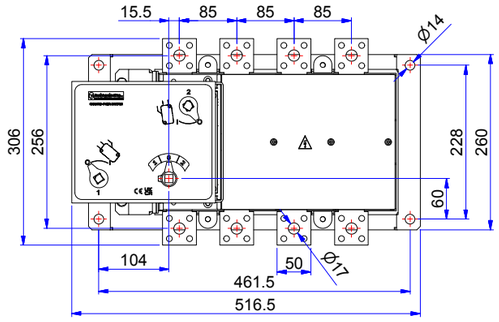
Foratura portella _Door drilling



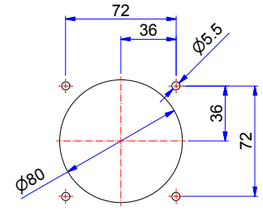


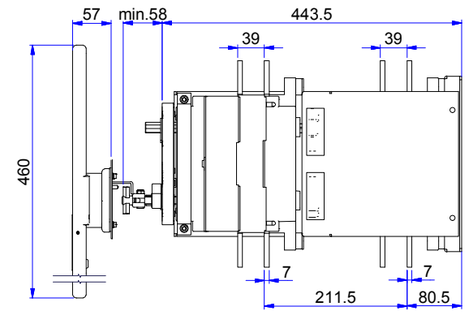
CS5P 1600 ÷ 2000 A





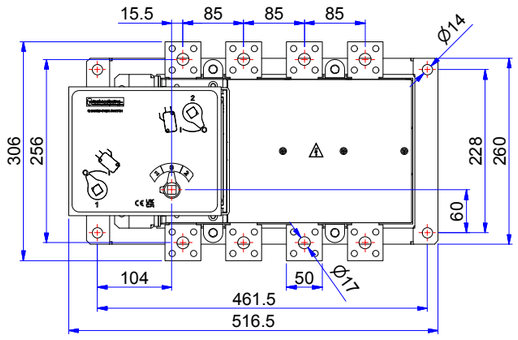
Foratura portella _Door drilling



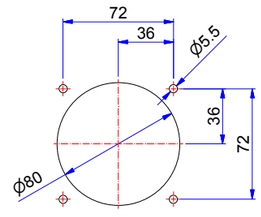


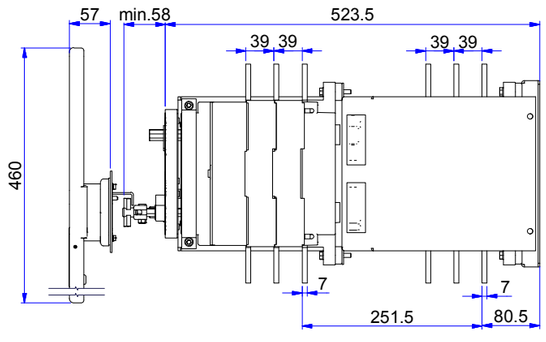
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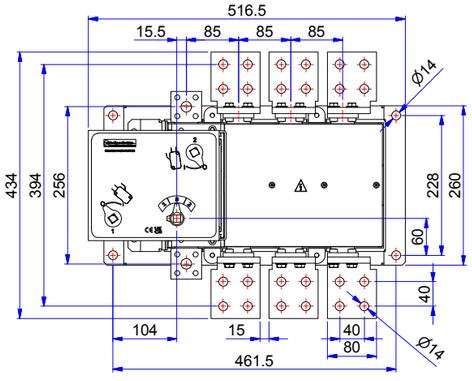
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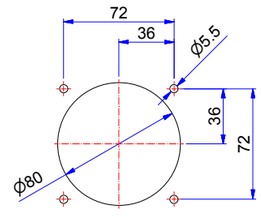


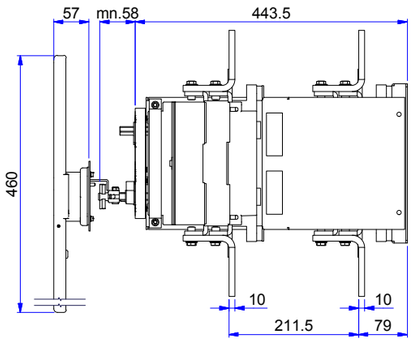
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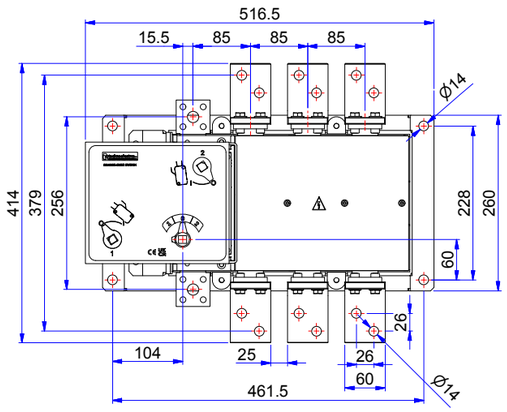
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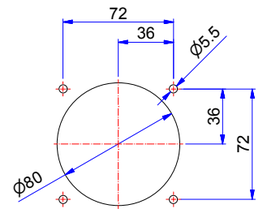


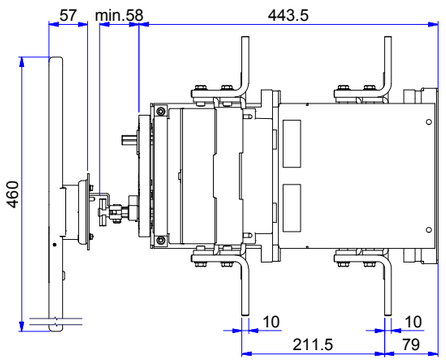
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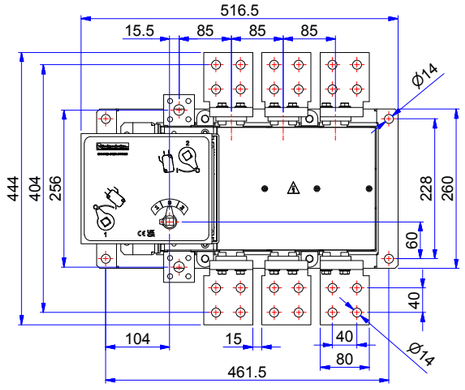
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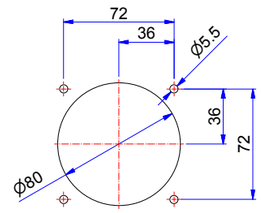


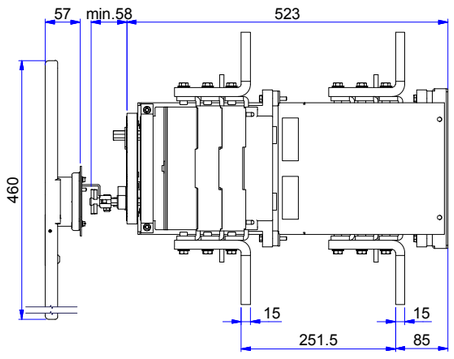
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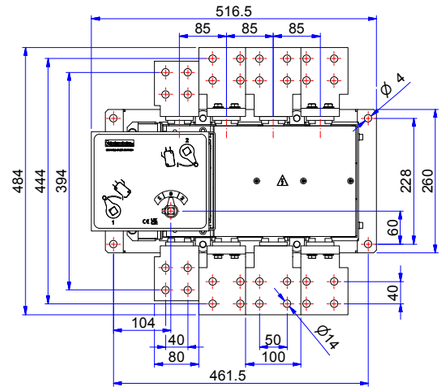
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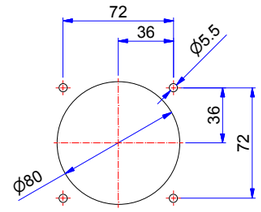


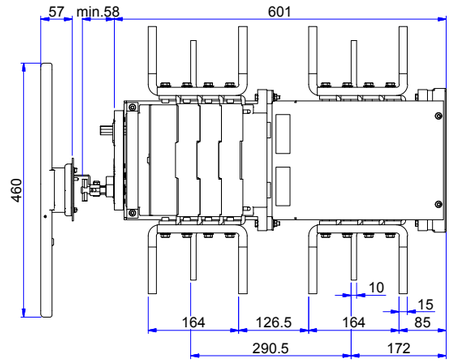
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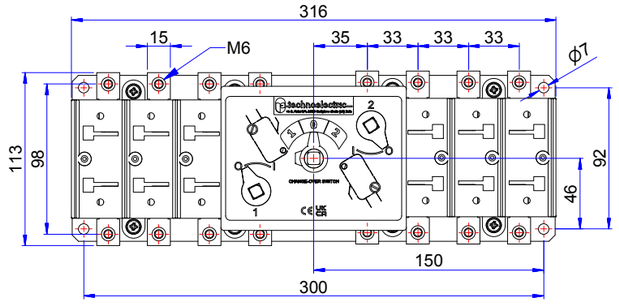
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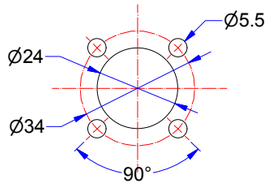


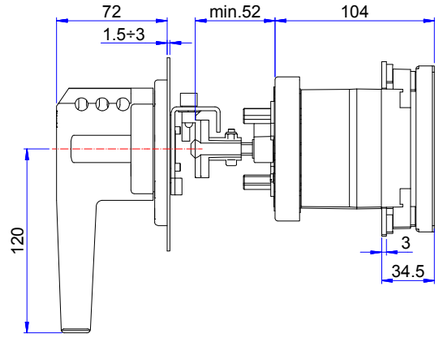
CO1P 32 - 160 A



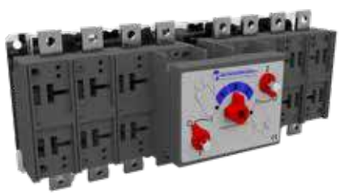


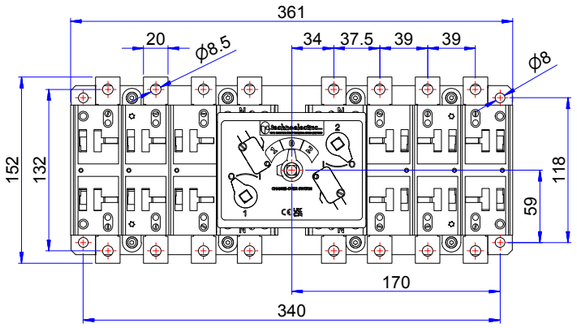
Foratura portella _Door drilling



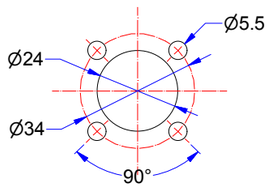


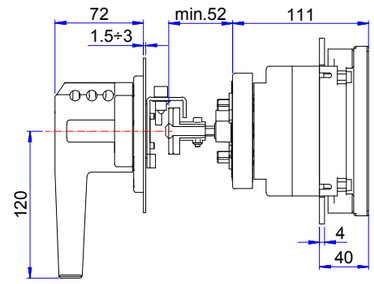
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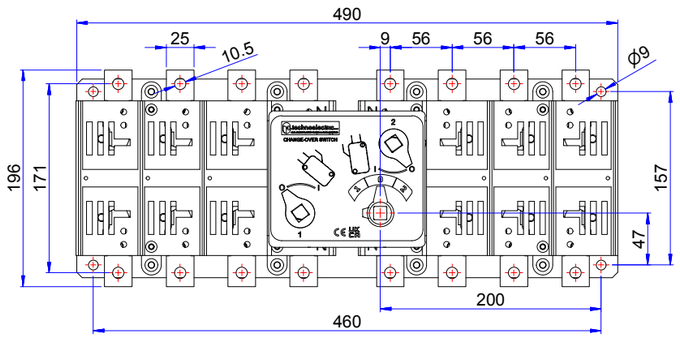
Foratura portella _Door drilling



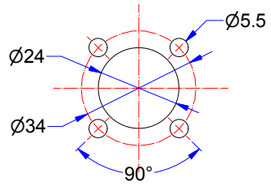


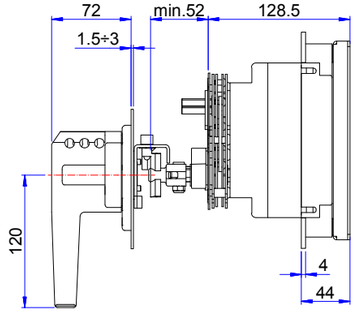
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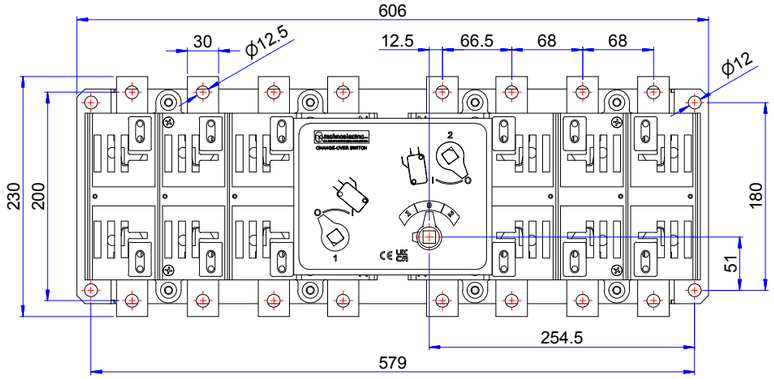
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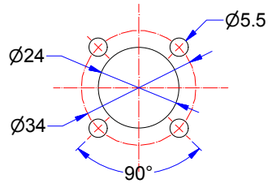


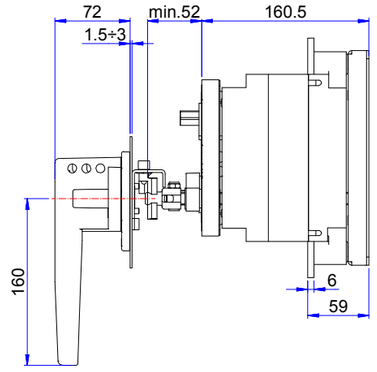
CO4P 630 - 800 A





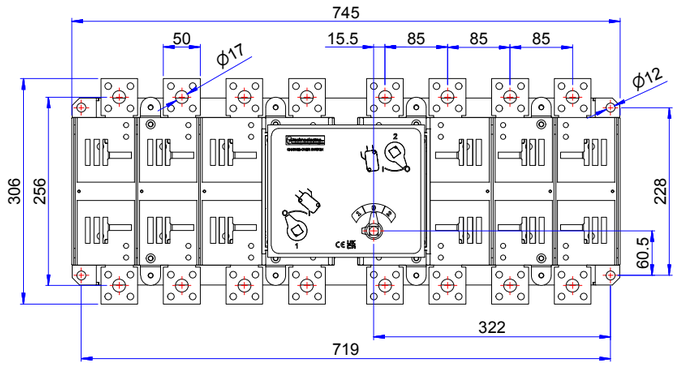
Foratura portella _Door drilling



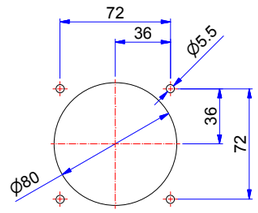


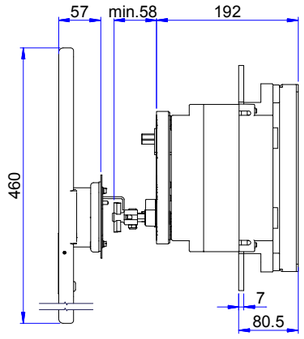
CO5P 800 ÷ 1250 A





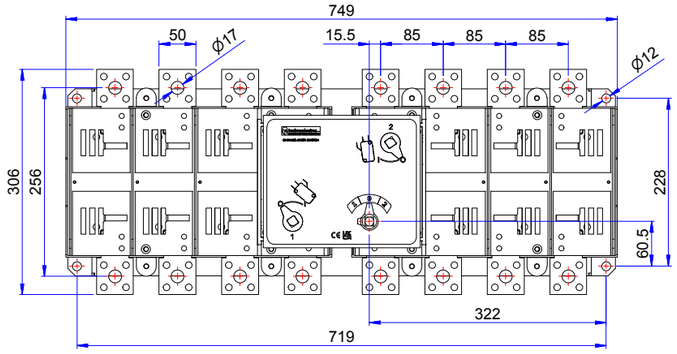
Foratura portella _Door drilling



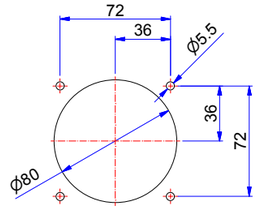


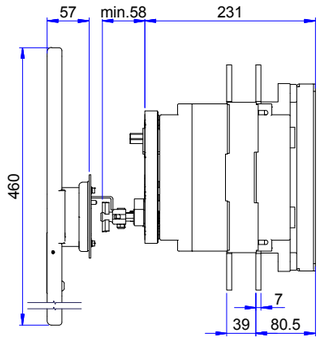
CO5P 1600 ÷ 2000 A





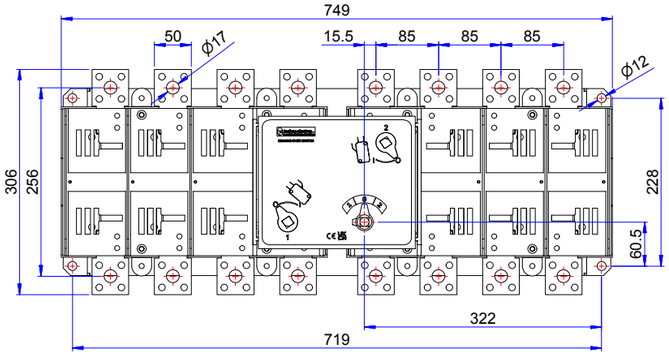
Foratura portella _Door drilling



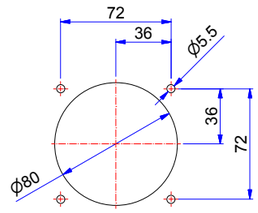


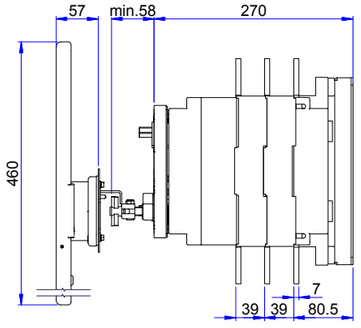
CO5P 2500 ÷ 3150 A





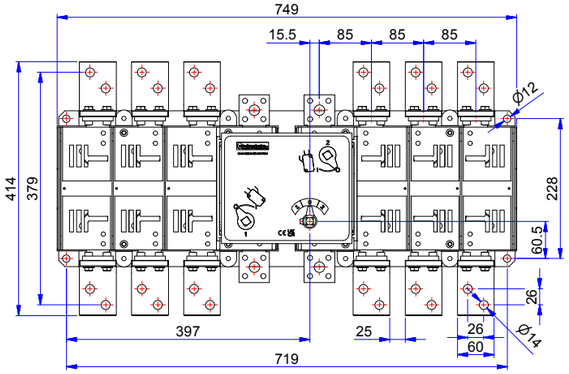
Foratura portella _Door drilling



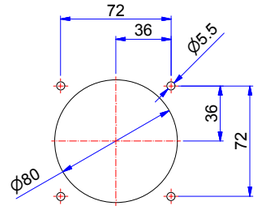


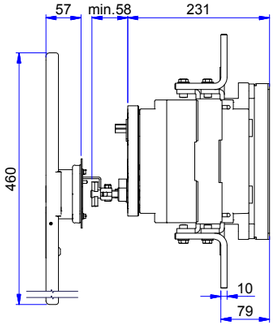
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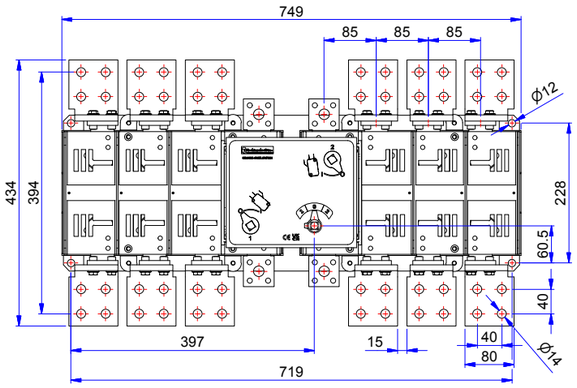
Foratura portella _Door drilling



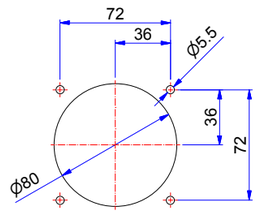


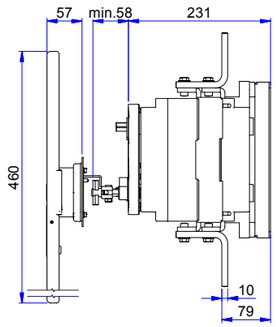
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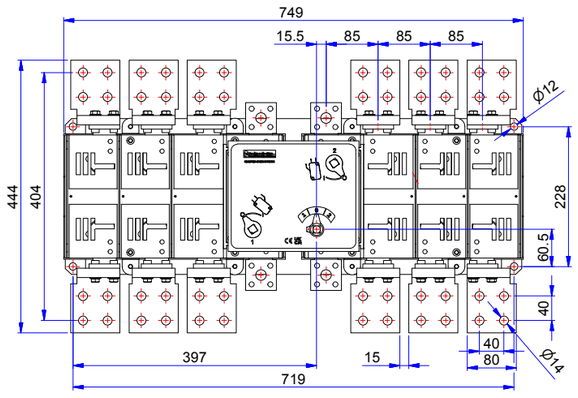
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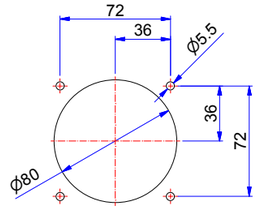


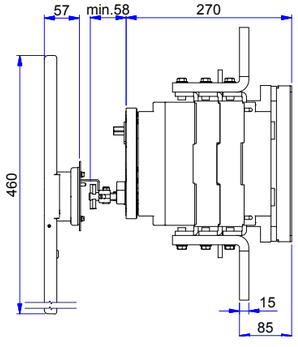
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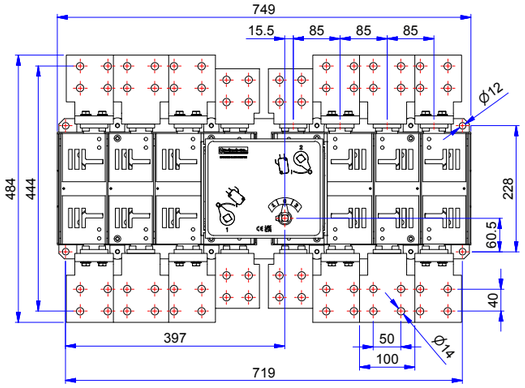
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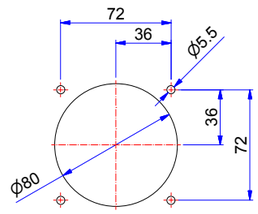


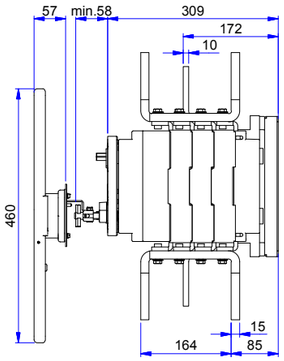
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Foratura portella _Door drilling





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