vector Energy

MOTORIZED CHANGE-OVER SWITCHES

CMO 160 ÷ 3150 A







_GENERALITIES

The three and four pole change-over switches, with motorized operation, allow remote control of change-over/breaking/disconnection under load of power circuits in low voltage systems.

_RANGE

The range of motorized change-over switches is made by 15 sizes of switches of current rating from 160A to 4000A, 3 and 4 poles are available in the CS series with switch disconnectors laid one upon the other and in the “CO” series with switch disconnectors horizontally interlocked.
The CS series is made by 4 families: MSX1, MSX, MSY, MS differentiated among them mainly by the supply voltage and by the display of the position of the change-over switch.
The horizontal CO series is made in the MS version only.

_GENERAL CHARACTERISTICS

The motorized change-over switches are made by means of two switch disconnectors of Visualcompact and Globe Technics series mechanically interlocked.

- Automatic under-load change-over (ac-22, ac-23) from and to any of positions “1”, “0”, “2” both electrical and manual (emergency changeover), transfer function with direct transition from position “1” to position “2” and viceversa
- Front display of positions “1”, “0”, “2” by digital display (for MS version) and mechanical indicator.
- Safety: locking by padlock preventing any electrical or manual operation, key lock for the selection of electrical or manual operation (for MS series only)
- External signalisation of positions “1”, “0” and “2” by a clean contact (no voltage supply)
- Quick operating time from pos. “1” To “2” and back
- Easy and fast electrical connections by means of terminal blocks of quick connection type
- Power supply voltage 12-24v dc, 110/220v ac, others on request

Compact dimensions
Selection of operating logic by a micro switch on the pc board and easily accessible for the following logic:

A) impulse (150ms min)
B) contactor (maintained contact)

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Two layers change-over switches MSX series types CS 2-3-4-5 from 160A to 1250A, power supply 24V DC, display by mechanical indicator.

Two layers change-over switches MSX1 series type CS 2-3-4 from 160A to 800A, power supply 12V DC, display by mechanical indicator.

Two layers change-over switches MSY series types CS 2-3-4-5 from 160A to 1250A, power supply 220V AC, display by mechanical indicator.

Two layers change-over switches MS series type CS 3-4-5-6 from 315A to 3150A and GT series 4000A, multiple power supply voltage 24V DC, 110/220 AC, visualisation by display and mechanical indicator.

Horizontal change-over switches MS series type CO 4-5-6 from 630A to 3150A, multiple power supply 24V DC, 110/220 AC, display by digital display and mechanical indicator.

_ACCESSORIES

Bridge connections for two layers change-over switches of CS2, CS3, CS4 e CS5 series.

Special executions and special power supply voltages on request.

Handle for emergency manual operation supplied with the change over switch

CSPMS

Double layer motorized change-over switches







SERIE_SERIES **CMO**

Caratteristiche tecniche _Technincal Features	Tipo _Type		CS2			
Corrente nominale _Rated current	In	A	160	200	250	315
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500
Corrente nominale termica _Thermal current	Ith	A	160	200	250	315
Corrente nominale d' impiego _Rated operational current						
AC-21A/B	400V	A	160	200	250	250/315
	500V	A	160	200	250	250/315
	690V	A	160	200	250	250/315
AC-22A/B	400V	A	160	200	250	250/315
	500V	A	160	200	250	250/250
	690V	A	160	200	250	250/250
AC-23A/B	400V	A	160	200	250	250/250
	500V	A	125	160	200	200/200
	690V	A	100	125	160	160/160
DC-21A/B*	220V	A	160	200	250	250/315
	420V	A	160	200	250	250/315
	560V	A	-	-	-	-
DC-22A/B*	220V	A	160	200	250	250/315
	420V	A	160	200	250	250/250
	560V	A	-			
DC-23A/B*	220V	A	160	200	250	250/250
	420V	A	160	200	250	250/250
	560V	A	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	1600	2000	2500	2500
Potere di interruzione _Breaking capacity	400V AC23	A	1280	1600	2000	2000
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	8	8	8	8
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	16	16	16	16
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	13,5	13,5	13,5	13,5
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	85	105	130	130
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current						
Tipo fusibile _Backup fuse		A	160	200	250	315
Valore efficace _R.M.S. value		kA	50	50	50	50
Valore di picco _Peak value		kA	16	20	25	27
Durata meccanica _Mechanical endurance		n.	10000	10000	10000	10000
Durata elettrica _Electrical endurance		n.	2000	2000	2000	2000/200
Potenza dissipata per polo ** _Power losses for pole		W	1,6	2,4	3,8	6,1
Dimensione cavo _Cable section		mm^2	70	95	120	185
Dimensione barre _Bars dimension		mm	20x4	20x5	20x6	22x8
Tempi di commutazione _ Change over time	[I-II o II-I]	sec	1,8	1,8	1,8	1,8
Tensione di alimentazione c.c. _DC voltage supply	± 10%		12/24	12/24	12/24	12/24
	min		18	18	18	18
Tensione di alimentazione c.a. _AC voltage supply	± 10%		-	-	-	-
Consumo comando elettrico _Power motor consumption	A		3	3	3	3
Peso netto _Net weight	3P	Kg	6,4	6,4	6,4	6,4
	4P		6,6	6,6	6,6	6,6

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

Caratteristiche tecniche _Technincal Features	Tipo _Type		CS3			CS4/CO4	
Corrente nominale _Rated current	In	A	315	400	500	630	800
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500
Corrente nominale termica _Thermal current	Ith	A	315	400	500	630	800
Corrente nominale d' impiego _Rated operational current							
AC-21A/B	400V	A	315	400	500/500	630	630/800
	500V	A	315	400	400/500	630	630/800
	690V	A	315	400	400/500	630	630/800
AC-22A/B	400V	A	315	400	400/500	630	630/800
	500V	A	315	400	500/500	630	630/630
	690V	A	315	400	400/400	630	630/630
AC-23A/B	400V	A	315	400	500/500	630	630/630
	500V	A	250	315	315/315	500	500/500
	690V	A	200	250	250/250	400	400/400
DC-21A/B*	220V	A	315	400	400/500	630	630/800
	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
	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	630/800
	420V	A	315	400	400/400	630	630/800
	560V	A	315	400	400/400	630	630/800
Potere di chiusura _Rated making capacity	400V AC23	A	3150	4000	5000	6300	6300
Potere di interruzione _Breaking capacity	400V AC23	A	2520	3200	4000	5040	5040
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	13	13	13	26,6	26,6
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	26	26	26	53	53
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	26	26	26	30	30
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	165	210	210	330	330
Corrente di corto circuito condizionata da fusibile _Rated fuse short-circuit current							
Tipo fusibile _Backup fuse		A	315	400	500	630	800
Valore efficace _R.M.S. value		kA	50	50	50	50	50
Valore di picco _Peak value		kA	27	30	37	40	50
Durata meccanica _Mechanical endurance		n.	8000	8000	8000	8000	8000
Durata elettrica _Electrical endurance		n.	1500	1500	1500/200	1500	1500/200
Potenza dissipata per polo ** _Power losses for pole		W	5,9	9,4	14,8	15,6	25,7
Dimensione cavo _Cable section		mm^2	185	2x120	2x150	2x185	2x240
Dimensione barre _Bars dimension		mm	30x6	2x25x5	2x30x5	2x40x5	2x40x6
Tempi di commutazione _ Change over time	[I-II o II-I]	sec	1,8	1,8	1,8	2,8	2,8
Tensione di alimentazione c.c. _DC voltage supply	± 10%		24	24	24	24	24
	min		18	18	18	18	18
Tensione di alimentazione c.a. _AC voltage supply	± 10%		230	230	230	230	230
Consumo comando elettrico _Power motor consumption	A		4	4	4	4	4
Peso netto _Net weight	3P	Kg	16	16	16	21/20,8	21/20,8
	4P		16,5	16,5	16,5	22/21,5	22/21,5

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

Caratteristiche tecniche _Technincal Features	Tipo _Type		CS5/CO5						
Corrente nominale _Rated current	In	A	800	1000	1250	1600	2000	2500	3150
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500	1500	1500	1500
Corrente nominale termica _Thermal current	Ith	A	800	1000	1250	1600	2000	2500	3150
Corrente nominale d' impiego _Rated operational current									
AC-21A/B	400V	A	800	1000	1250	1600	2000	2500	3150
	500V	A	800	1000	1250	1250	1600	2000	2500
	690V	A	800	1000	1250	1250	1250	1250	1250
AC-22A/B	400V	A	800	1000	1250	1250	1250	-	-
	500V	A	800	1000	1250	-	-	-	-
	690V	A	800	1000	1250	-	-	-	-
AC-23A/B	400V	A	800	1000	1250	-	-	-	-
	500V	A	630	800	1000	-	-	-	-
	690V	A	500	630	800	-	-	-	-
DC-21A/B*	220V	A	800	1000	1250	1600	-	-	-
	420V	A	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-
DC-22A/B*	220V	A	800	1000	1250	-	-	-	-
	420V	A	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-
DC-23A/B*	220V	A	800	630	800	-	-	-	-
	420V	A	-	-	-	-	-	-	-
	560V	A	-	-	-	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	8000	10000	12500	-	-	-	-
Potere di interruzione _Breaking capacity	400V AC23	A	6400	8000	10000	-	-	-	-
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	50	50	50	50	50	50	50
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	100	100	100	100	100	100	100
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	105	105	105	105	105	105	105
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	420	525	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	2500	2500
Durata elettrica _Electrical endurance		n.	1000	1000	1000	500	500	500	500
Potenza dissipata per polo ** _Power losses for pole		W	15,6	24,3	38	38,3	61,3	91,3	145,5
Dimensione cavo _Cable section		mm^2	2x240	-	-	-	-	-	-
Dimensione barre _Bars dimension		mm	2x50x5	2x50x8	3x50x8	3x50x12	4x50x12	6x50x12	2x80x10
Tempi di commutazione _ Change over time	[I-II o II-I]	sec	3	3	3	3,8	3,8	3,8	3,8
Tensione di alimentazione c.c. _DC voltage supply	± 10%		24	24	24	24	24	24	24
	min		18	18	18	18	18	18	18
Tensione di alimentazione c.a. _AC voltage supply	± 10%		230	230	230	230	230	230	230
Consumo comando elettrico _Power motor consumption	A		5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6
Peso netto _Net weight	3P	Kg	35/35,8	35/35,8	35/35,8	46/43,8	46/43,8	56/53,8	56/53,8
	4P		37/37,8	37/37,8	37/37,8	48,5/46,2	48,5/46,2	58,5/57,8	58,5/57,8

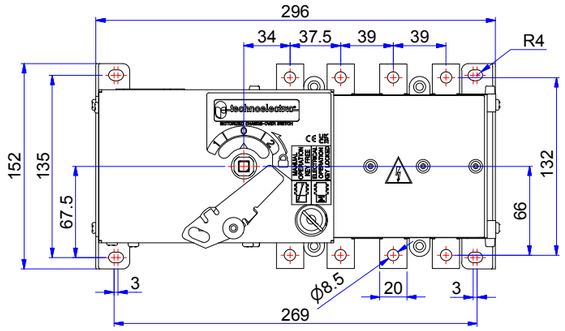
*Due poli in serie _Two poles in series **Escluso fusibile _Fuse excluded

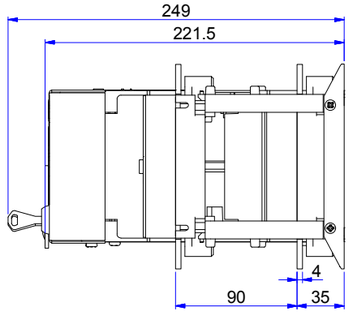
Caratteristiche tecniche _Technincal Features	Tipo _Type		CS6/CO6			
Corrente nominale _Rated current	In	A	1600	2000	2500	3150
Tensione nominale d'isolamento _Rated insulation voltage	Ui	V	1500	1500	1500	1500
Corrente nominale termica _Thermal current	Ith	A	1600	2000	2500	3150
Corrente nominale d' impiego _Rated operational current						
AC-21A/B	400V	A	1600	2000	2500	3150
	500V	A	1600	2000	2500	3150
	690V	A	1250	1250	1250	1250
AC-22A/B	400V	A	1600	2000	2500	1600
	500V	A	1250	1250	1250	-
	690V	A	400	400	800	-
AC-23A/B	400V	A	1250	1250	-	-
	500V	A	800	800	-	-
	690V	A	400	400	-	-
DC-21A/B*	220V	A	1600	2000	-	-
	420V	A	-	-	-	-
	560V	A	-	-	-	-
DC-22A/B*	220V	A	-	-	-	-
	420V	A	-	-	-	-
	560V	A	-	-	-	-
DC-23A/B*	220V	A	-	-	-	-
	420V	A	-	-	-	-
	560V	A	-	-	-	-
Potere di chiusura _Rated making capacity	400V AC23	A	12500	12500	-	-
Potere di interruzione _Breaking capacity	400V AC23	A	10000	10000	-	-
Corrente di breve durata _Short-circuit withstand current	1 sec	kA	60	60	70	70
Corrente di breve durata _Short-circuit withstand current	0,25 sec	kA	120	120	140	140
Potere di chiusura in corto circuito _Short-circuit making capacity	400V	kA	105	105	105	105
Potenza nominale d'impiego _Rated operational power	400V AC23	kW	630	630	-	-
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.	4000	2500	2500	2500
Durata elettrica _Electrical endurance		n.	1000	500	500	500
Potenza dissipata per polo ** _Power losses for pole		W	47,8	74,7	85,4	118,1
Dimensione cavo _Cable section		mm^2	-	-	-	-
Dimensione barre _Bars dimension		mm	2x80x10	2x80x10	3x80x10	3x100x10
Tempi di commutazione _ Change over time	[I-II o II-I]	sec	3,8	3,8	3,8	3,8
Tensione di alimentazione c.c. _DC voltage supply	± 10%		24	24	24	24
	min		18	18	18	18
Tensione di alimentazione c.a. _AC voltage supply	± 10%		230	230	230	230
Consumo comando elettrico _Power motor consumption	A		5÷6	5÷6	5÷6	5÷6
Peso netto _Net weight	3P	Kg	51/54	52,5/56,8	78/77,3	98/96
	4P		53,5/57,2	54,5/60	80/79,3	104/102

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

CS2P

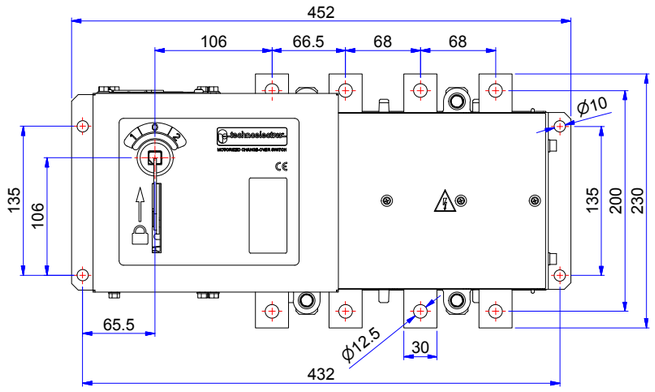


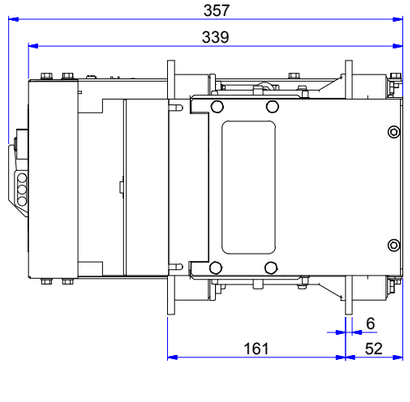




CS4P

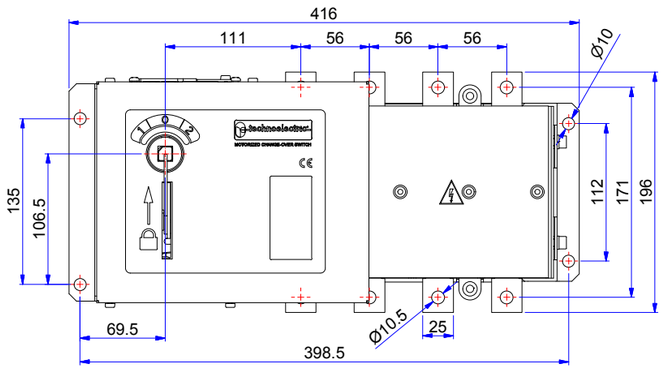


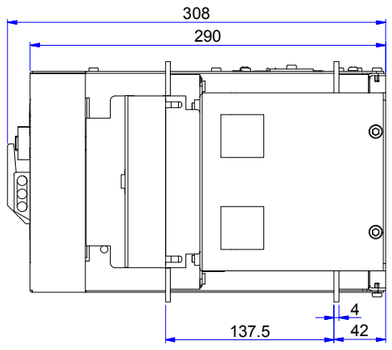




CS3P

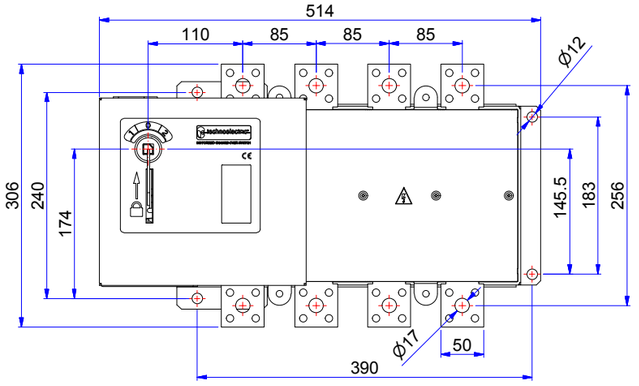


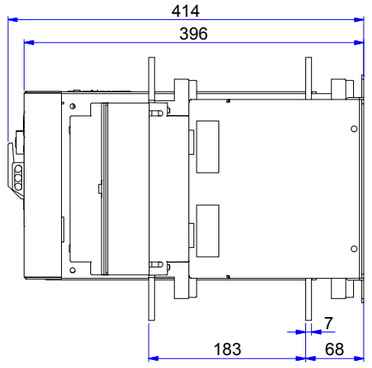




CS5P 800 ÷ 1250 A

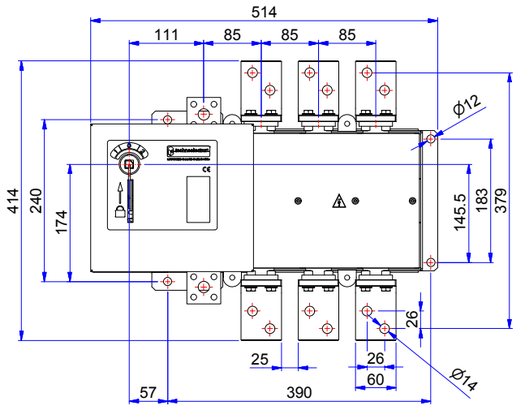


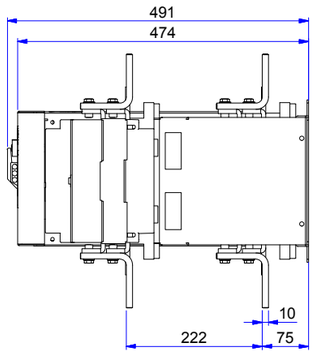




CS6P 1600 A

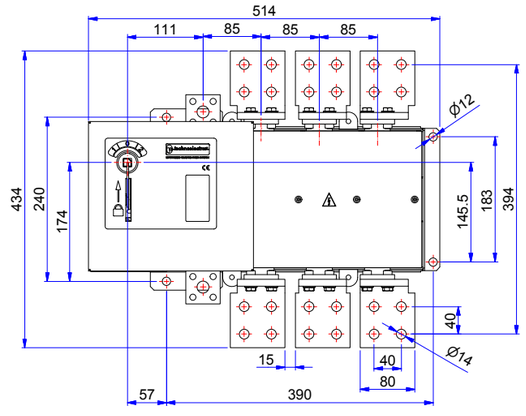


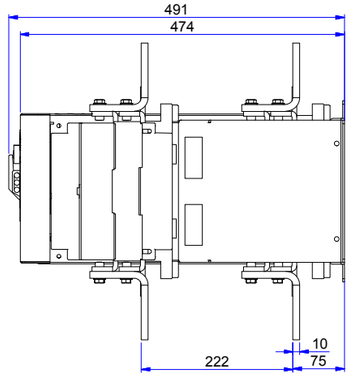




CS6P 2000 A

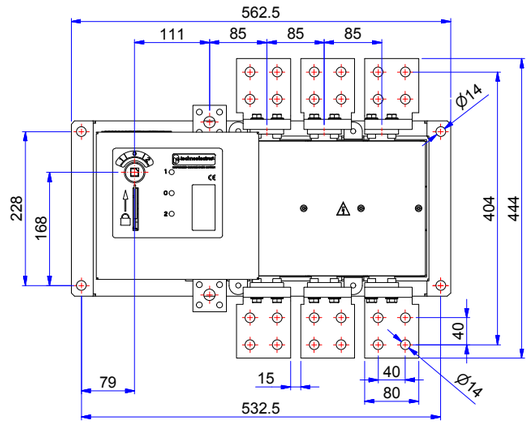


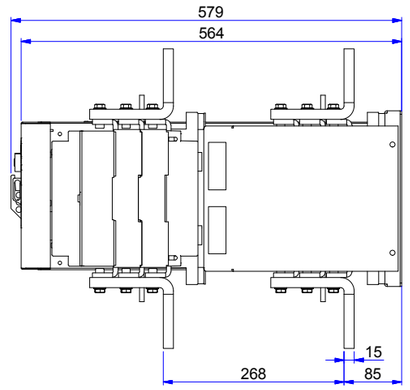




CS6P 2500 A







CS6P 3150 A



