

Commutatori motorizzati Motorized change-over switches CMO 160 ÷ 4000 A

generalità
generalities VI - 02

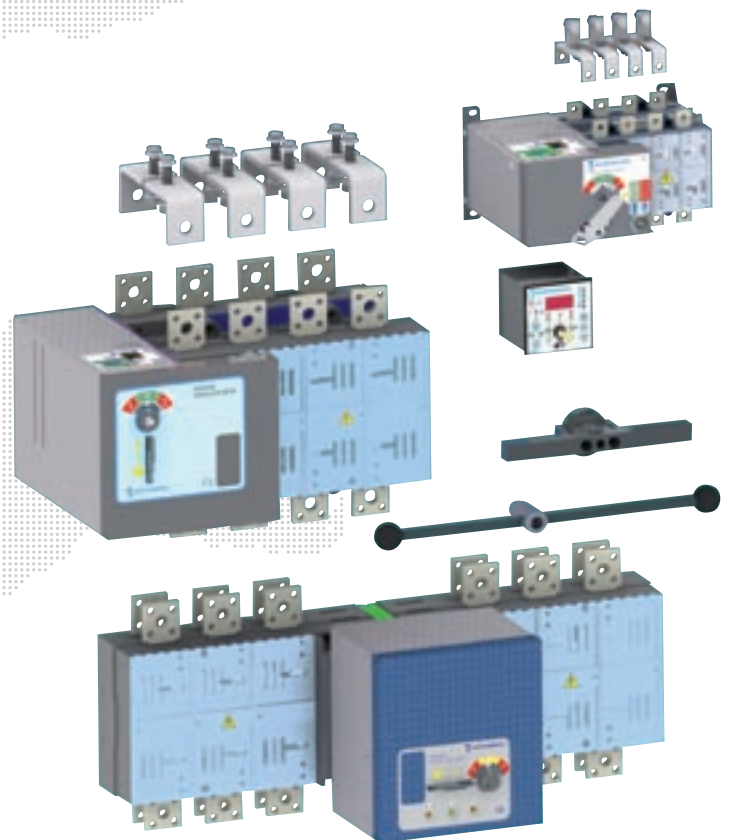
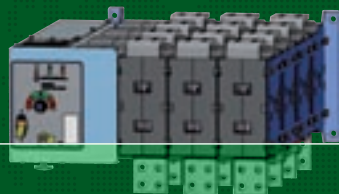
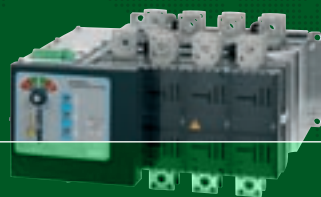
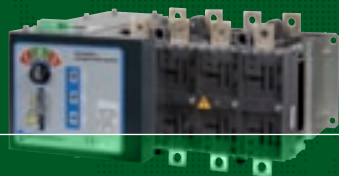
codici ordinazione
order references VI - 04

dati tecnici
technical data VI - 06

dimensionali
dimensions VI - 08

accessori
accessories VI - 16

TMC
generalità | codici per l'ordinazione
generalities | order references VI - 18



GENERALITÀ

Le apparecchiature di commutazione con comando motorizzato, tripolari e tetrapolari consentono manovre a distanza di commutazione/interruzione/sezionamento sottocarico di linee di potenza in sistemi di bassa tensione.

GAMMA

La gamma di commutatori motorizzati è costituita da 15 taglie con portate amperometriche da 160A a 4000A, 3 e 4 poli, è disponibile la serie CS (versione sovrapposta) e la serie CO (versione orizzontale).

La serie CS è costituita da 4 famiglie: MSX, MSX1, MSY, MS differenziate tra loro principalmente per le diverse tensioni di alimentazione e per la visualizzazione della posizione del commutatore.

La serie CO è realizzata nella sola versione MS.

CARATTERISTICHE GENERALI

I commutatori motorizzati sono realizzati impiegando due interruttori di manovra-sezionatori della serie Visualcompact e della serie Globe Technics interbloccati meccanicamente tra di loro.

- ▶ commutazione automatica sotto carico (AC-22, AC-23) da e per qualsiasi delle posizioni "1", "0", "2" sia elettrica che manuale (commutazione d'emergenza) funzione deviatore con passaggio diretto da "1" a "2" e viceversa
- ▶ visualizzazione frontale delle posizioni "1", "0", "2" a mezzo display e/o indice meccanico (per la versione MS)
- ▶ sicurezza: blocco lucchettabile che interdice ogni manovra elettrica o manuale, blocco a chiave per la selezione della manovra elettrica o manuale (solo su serie MS-CO)
- ▶ segnalazioni esterne delle posizioni "1", "0", "2" tramite contatto pulito (non alimentato)
- ▶ tempi rapidi di manovra da "1" a "2" e viceversa
- ▶ collegamenti facili ed immediati a mezzo morsettiera ad aggancio rapido
- ▶ alimentazioni 12-24V cc, 110/220V ca, altre a richiesta
- ▶ dimensioni compatte
- ▶ scelta della logica funzionamento per mezzo di un micro-interruttore posto sulla scheda di comando facilmente accessibile per le seguenti logiche:
 - ▶ a impulso (min. 150ms)
 - ▶ b contattore (contatto mantenuto)

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: MSX, MSX1, MSY, MS differentiated between 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 change-over), transfer function with direct transition from position "1" to position "2" and viceversa
- ▶ front display of positions "1", "0", "2" by digital display and/or mechanical indicator (for MS version)
- ▶ safety: locking by padlock preventing any electrical or manual operation, key lock for the selection of electrical or manual operation (on 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)

Commutatori sovrapposti serie MSX tipo CS 2-3-4-5 da 160A a 1600A, alimentazione 24V dc, visualizzazione a indice meccanico.

Commutatori sovrapposti serie MSX1 tipo CS 2-3-4 da 160A a 800A, alimentazione 12V dc, visualizzazione a indice meccanico.

Commutatori sovrapposti serie MSY tipo CS 2-3-4-5 da 160A a 1600A, alimentazione 220V ac, visualizzazione a indice meccanico.

Commutatori sovrapposti serie MS tipo CS 3-4-5-6 da 315A a 3150A e serie GT da 4000A, alimentazione multipla 24V dc, 110/220 ac, visualizzazione a mezzo display ed indice meccanico.

Commutatori orizzontali serie MS tipo CO 4-5-6 da 630A a 3150A, alimentazione multipla 24V dc, 110/220 ac, visualizzazione a mezzo display e indice meccanico.

ACCESSORI

Connessioni a ponte per commutatori sovrapposti della serie CS2, CS3, CS4 e CS5 (vedi pag VI-16).

Esecuzioni speciali e tensioni di alimentazione speciali a richiesta.

Two layers change-over switches MSX series types CS 2-3-4-5 from 160A to 1600A, 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 1600A, 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

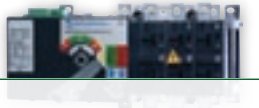
Bridge connections for two layers change-over switches of CS2, CS3, CS4 e CS5 series (see page VI-16).

Special executions and special power supply voltages on request.

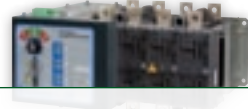
Commutatori sovrapposti
Two layers change-over switches

Tipo Type	Corrente nominale Rated current	Poli Poles	Codice Code	Codice Code	Codice Code
CS2	160A	3	120018MSX	120018MSX1	120018MSY
		4	120118MSX	120118MSX1	120118MSY
	200A	3	120028MSX	120028MSX1	120028MSY
		4	120128MSX	120128MSX1	120128MSY
	250A	3	120038MSX	120038MSX1	120038MSY
		4	120138MSX	120138MSX1	120138MSY
315A	3	120048MSX	120048MSX1	120028MSY	
	4	120148MSX	120148MSX1	120148MSY	
CS3	315A	3	130018MS	130018MSX	130018MSY
		4	130118MS	130118MSX	130118MSY
	400A	3	130028MS	130028MSX	130028MSY
		4	130128MS	130128MSX	130128MSY
	500A	3	130038MS	130038MSX	130038MSY
		4	130138MS	130138MSX	130138MSY
CS4	630A	3	140038MS	140038MSX	140038MSY
		4	140138MS	140138MSX	140138MSY
	800A	3	140048MS	140048MSX	140048MSY
		4	140148MS	140148MSX	140148MSY
	800A	3	150008MS	150008MSX	150008MSY
		4	150108MS	150108MSX	150108MSY
1000A	3	150018MS	150018MSX	150018MSY	
	4	150118MS	150118MSX	150118MSY	
1250A	3	150028MS	150028MSX	150028MSY	
	4	150128MS	150128MSX	150128MSY	
CS5	1600A	3	150038MS	-	-
		4	150138MS	-	-
	2000A	F.N.	15013FN8MS	-	-
		3	150048MS	-	-
	2500A	4	150148MS	-	-
		F.N.	15014FN8MS	-	-
CS6	1600A	3	150058MS	-	-
		4	150158MS	-	-
	2000A	F.N.	15015FN8MS	-	-
		3	150068MS	-	-
	2500A	4	150168MS	-	-
		F.N.	15016FN8MS	-	-
3150A	3	160008MS	-	-	
	4	160108MS	-	-	
GT6	1600A	F.N.	16010FN8MS	-	-
		3	160018MS	-	-
	2000A	4	160118MS	-	-
		F.N.	16011FN8MS	-	-
	2500A	3	160028MS	-	-
		4	160128MS	-	-
3150A	F.N.	16012FN8MS	-	-	
	3	160038MS	-	-	
4000A	4	160138MS	-	-	
	3	GT60048MS	-	-	
		4	GT60148MS	-	-

CS2



CS4



CS6



Commutatori motorizzati
Motorized change-over switches

Tipo \ Type	Corrente nominale \ Rated current	Poli \ Poles	Codice / Code
C04	630A	3	140033MS
		4	140133MS
	800A	3	140043MS
		4	140143MS
C05	800A	3	150003MS
		4	150103MS
	1000A	3	150013MS
		4	150113MS
	1250A	3	150023MS
		4	150123MS
	1600A	3	150033MS
		4	150133MS
	2000A	F.N.	15013FN3MS
		3	150043MS
	2500A	4	150143MS
		F.N.	15014FN3MS
	3150A	3	150053MS
		4	150153MS
	3150A	F.N.	15015FN3MS
		3	150063MS
1600A	4	150163MS	
	F.N.	15016FN3MS	
C06	1600A	3	160003MS
		4	160103MS
		F.N.	16010FN3MS
	2000A	3	160013MS
		4	160113MS
	2500A	F.N.	16011FN3MS
		3	160023MS
		4	160123MS
3150A	F.N.	16012FN3MS	
	3	160033MS	
	4	160033MS	



C04



Maniglia per la manovra manuale di emergenza. Commutatore tipo CS MSX/Y, taglie 2, 3 e 4.
Handle for emergency manual operation. Change-over switch type CS MSX/Y size 2, 3 and 4.



Maniglia per la manovra manuale di emergenza con impugnatura scorrevole adatta a qualsiasi tipo di quadro.
Commutatore tipo CS - CO - GT MS, taglie 5 e 6.
Handle for emergency manual operation with sliding grip suitable for any type of switchboard. Change-over switch type CS - CO - GT MS size 5 and 6.

La maniglia è compresa nella fornitura del commutatore
Handle is supplied with the change-over switches

Tipo \ Type	CS2						CS3		
Corrente nominale \ Rated current	In	A	160	200	250	315	315	400	500
Tensione nominale d'isolamento \ Rated insulation voltage	Ui	V	1000	1000	1000	1000	1000	1000	1000
Corrente nominale termica \ Rated thermal current	Ith	A	160	200	250	315	315	400	500
Corrente nominale d'impiego \ Rated operational current Ie									
AC-21A/B	400V	A	160	200	250	250/315	315	400	500/500
	500V	A	160	200	250	250/315	315	400	400/500
	690V	A	160	200	250	250/315	315	400	400/500
AC-22A/B	400V	A	160	200	250	250/315	315	400	400/500
	500V	A	160	200	250	250/250	315	400	500/500
	690V	A	160	200	250	250/250	315	400	400/400
AC-23A/B	400V	A	160	200	250	250/250	315	400	500/500
	500V	A	125	160	200	200/200	250	315	315/315
	690V	A	100	125	160	160/160	200	250	250/250
DC-21A/B(1)	220V	A	160	200	250	250/315	315	400	400/500
	420V	A	160	200	250	250/315	315	400	400/500
	560V	A	-	-	-	-	315	400	400/500
DC-22A/B(1)	220V	A	160	200	250	250/315	315	400	400/500
	420V	A	160	200	250	250/250	315	400	400/400
	560V	A	-	-	-	-	315	400	400/400
DC-23A/B(1)	220V	A	160	200	250	250/250	315	400	400/400
	420V	A	160	200	250	250/250	315	400	400/400
	560V	A	-	-	-	-	315	400	400/400
Potere di chiusura \ Rated making capacity	400V AC23	A	1600	2000	2500	2500	3150	4000	5000
Potere di interruzione \ Rated breaking capacity	400V AC23	A	1280	1600	2000	2000	2520	3200	4000
Corrente di breve durata \ Short-circuit withstand current	1sec	kA	8	8	8	8	13	13	13
Corrente di breve durata \ Short-circuit withstand current	0,25 sec	kA	16	16	16	16	26	26	26
Potere di chiusura in corto circuito \ Short-circuit making capacity	400V	kA	13,5	13,5	13,5	13,5	26	26	26
Potenza nominale d'impiego \ Rated operational power	AC-23A	400V	kA	85	105	130	130	165	210
Corrente di corto circuito condizionata da fusibile \ Rated fuse short-circuit current									
Tipo fusibile \ Back up fuse		A	160	200	250	315	315	400	500
Valore efficace \ R.M.S. value		kA	50	50	50	50	50	50	50
Valore di picco \ Peak value		kA	16	20	25	27	27	30	37
Durata meccanica \ Mechanical endurance		n	10000	10000	10000	10000	8000	8000	8000
Durata elettrica \ Electrical endurance		n	2000	2000	2000	2000/200	1500	1500	1500/200
Potenza dissipata per polo \ Power losses for pole		W	1,6	2,4	3,8	6,0	5,9	9,4	14,8
Dimensione cavo \ Cable section		mmq	70	95	120	185	185	240	2x150
Dimensione barre \ Bars dimension		mm	20x4	20x5	20x6	22x8	30x6	2x25x5	2x30x5
Tempi di commutazione \ Change over time	[I-II o II-I]	sec	1,8	1,8	1,8	1,8	1,8	1,8	1,8
Tensione di alimentazione c.c. \ DC voltage supply	± 10%	V	12/24	12/24	12/24	12/24	24	24	24
	min	V	18	18	18	18	18	18	18
Tensione di alimentazione c.a. \ AC voltage supply	± 10%	V	-	-	-	-	230	230	230
Consumo comando elettrico \ Power motor consumption		A	3	3	3	3	4	4	4
Peso netto \ Net weight	3P	Kg	5,5	5,5	5,5	5,5	17	17	17
	4P	Kg	6	6	6	6	18	18	18

Due poli in serie \ Two poles in series

CS4 / C04				CS5 / C05					CS6 / C06				GT
630	800	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150	4000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
630	800	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150	4000

Corrente nominale d'impiego \ Rated operational current Ie

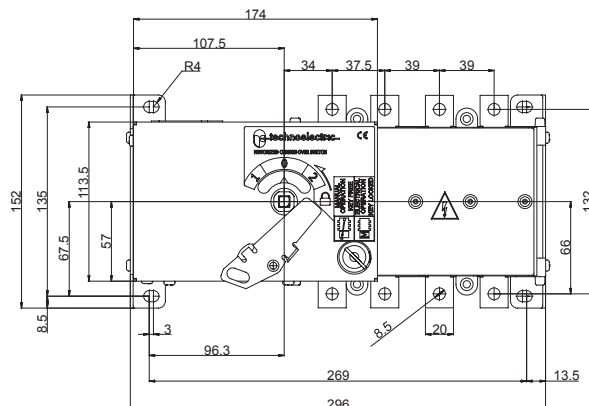
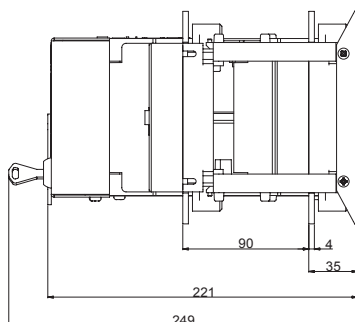
630	630/800	800	1000	1250	1600	2000	2500	3150	1600	2000	2500	3150	4000
630	630/800	800	1000	1250	1250	1600	2000	2500	1600	2000	2500	3150	4000
630	630/800	800	1000	1250	1250	1250	1250	1250	1250	1250	1250	1250	-
630	630/800	800	1000	1250	1250	1250	-	-	1600	2000	2500	1600	-
630	630/800	800	1000	1250	-	-	-	-	1250	1250	1250	-	-
630	630/800	800	1000	1250	-	-	-	-	400	400	800	-	-
630	630/800	800	1000	1250	-	-	-	-	1250	1250	-	-	-
500	500/500	630	800	1000	-	-	-	-	800	800	-	-	-
400	400/400	500	630	800	-	-	-	-	400	400	-	-	-
630	630/800	800	1000	1250	1600	2000	-	-	1600	2000	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
630	630/800	800	1000	1250	-	-	-	-	-	-	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
630	630/800	800	630	800	-	-	-	-	-	-	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
630	630/800	-	-	-	-	-	-	-	-	-	-	-	-
6300	6300	8000	10000	12500	-	-	-	-	12500	12500	-	-	-
5040	5040	6400	8000	10000	-	-	-	-	10000	10000	-	-	-
26,5	26,5	50	50	50	50	50	50	50	60	60	70	70	50
53	53	100	100	100	100	100	100	100	120	120	140	140	-
30	30	105	105	105	105	105	105	105	105	105	105	105	100
330	330	420	525	630	630	630	-	-	630	630	-	-	-

Corrente di corto circuito condizionata da fusibile \ Rated fuse short-circuit current

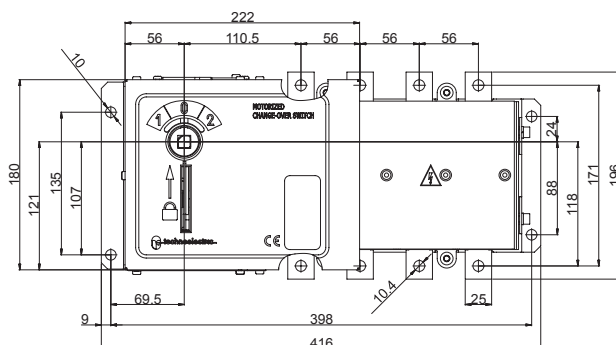
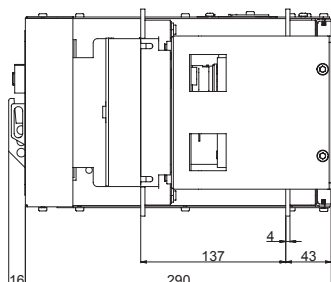
630	800	800	1000	1250	-	-	-	-	-	-	-	-	-
50	50	100	100	100	-	-	-	-	-	-	-	-	100
40	50	50	60	70	-	-	-	-	-	-	-	-	-
8000	8000	4000	4000	4000	4000	4000	2500	2500	4000	2500	2500	2500	2500
1500	1500/200	1000	1000	1000	500	500	500	500	1000	500	500	500	500
15,6	25,7	15,6	24,3	38	38,3	61,3	91,7	145,5	47,8	74,7	85,4	118,1	272
2x185	2x240	2x240	-	-	-	-	-	-	-	-	-	-	-
2x40x5	2x40x6	2x50x5	2x50x6	2x50x8	3x50x8	3x50x12	4x50x12	6x50x12	2x80x10	2x80x10	3x80x10	3x100x10	-
2,8	2,8	3	3	3	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	22
24	24	24	24	24	24	24	24	24	24	24	24	24	24
18	18	18	18	18	18	18	18	18	18	18	18	18	-
230	230	230	230	230	230	230	230	230	230	230	230	230	230
4	4	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	5÷6	3,8
22	22	37	37	37	51	51	70	70	51	53	74	108	196
24	24	37	37	37	53	53	74	74	53	55	80	116	230

Commutatori sovrapposti
Two layers change-over switches

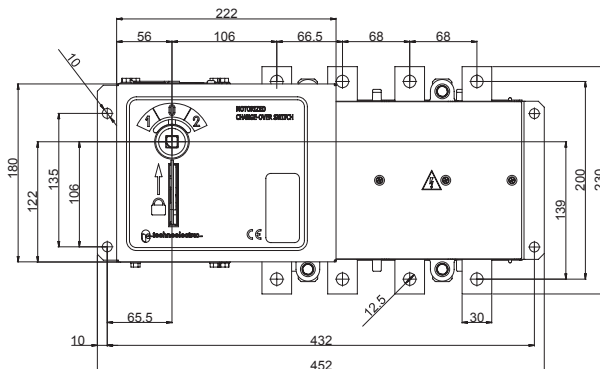
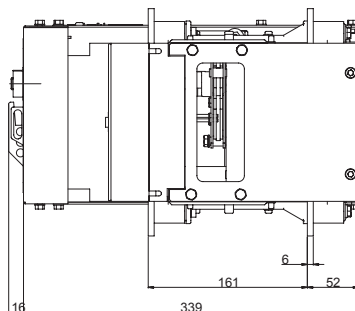
CS2



CS3

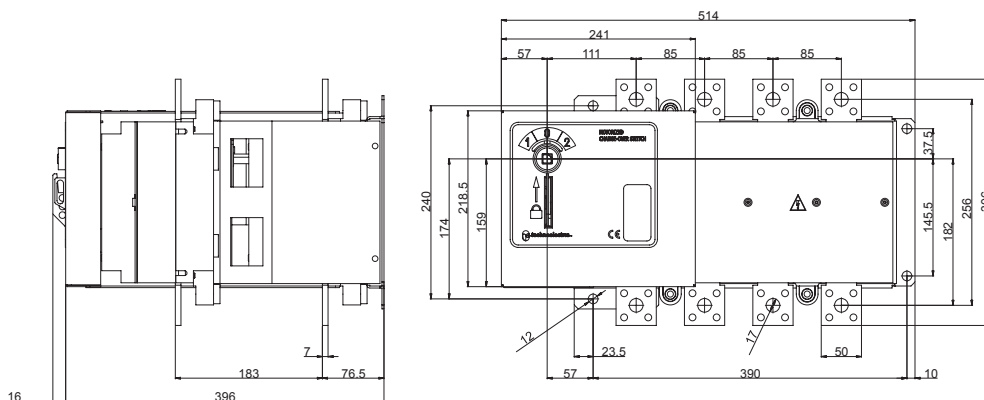


CS4

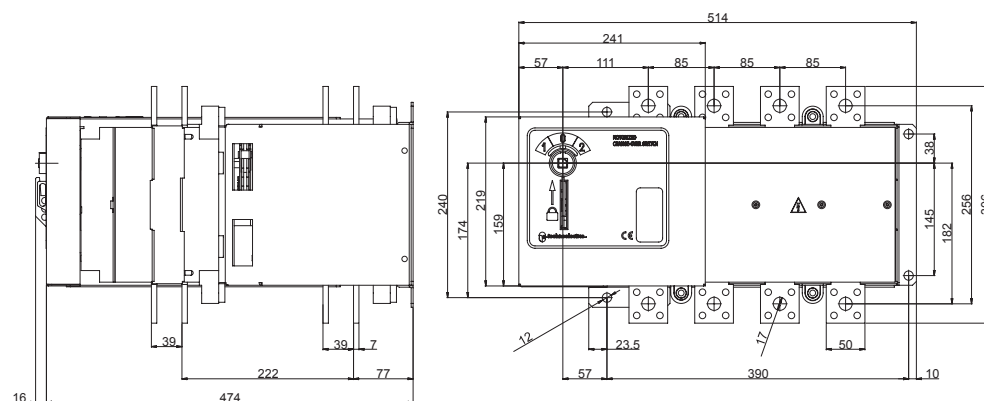


Commutatori sovrapposti
Two layers change-over switches

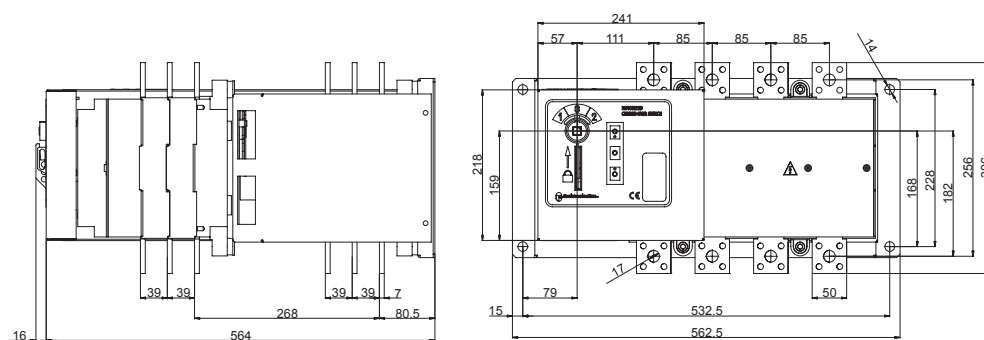
CS5 1250 A



CS5 2000 A

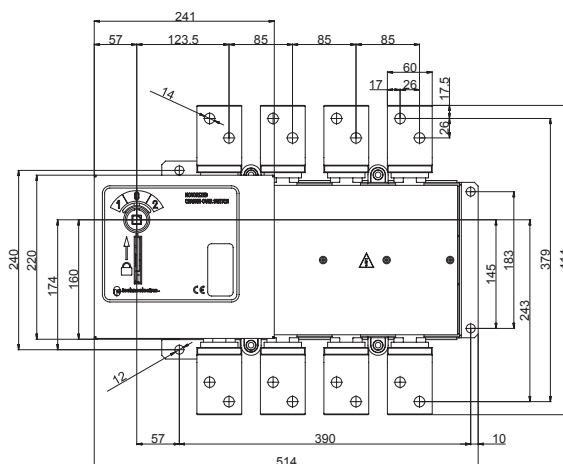
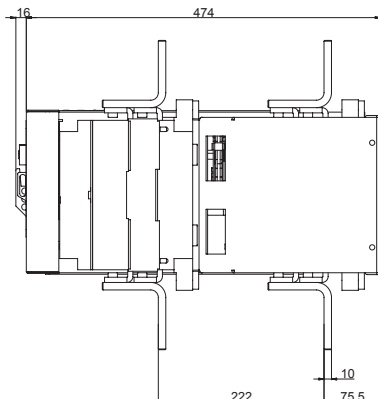


CS5 3150 A

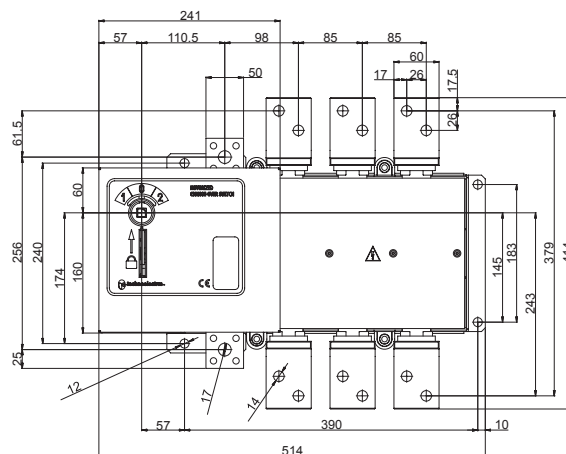
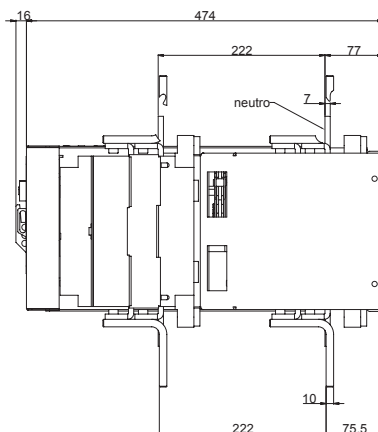
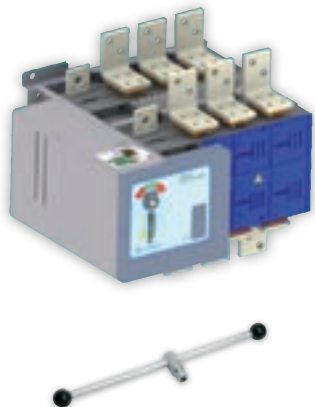


Commutatori sovrapposti
Two layers change-over switches

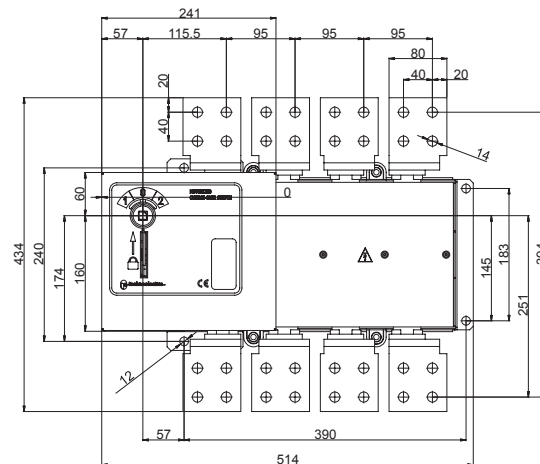
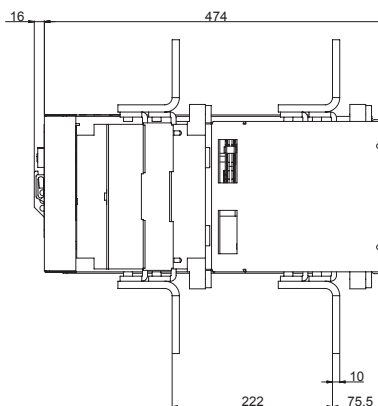
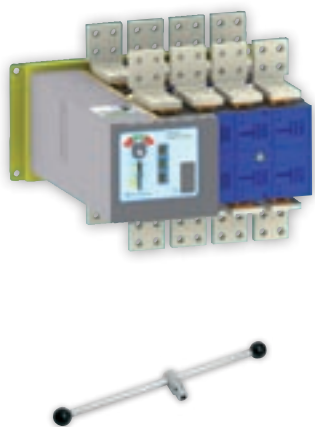
CS6 FN 1600 A



CS6 1600 A | N 1250 A

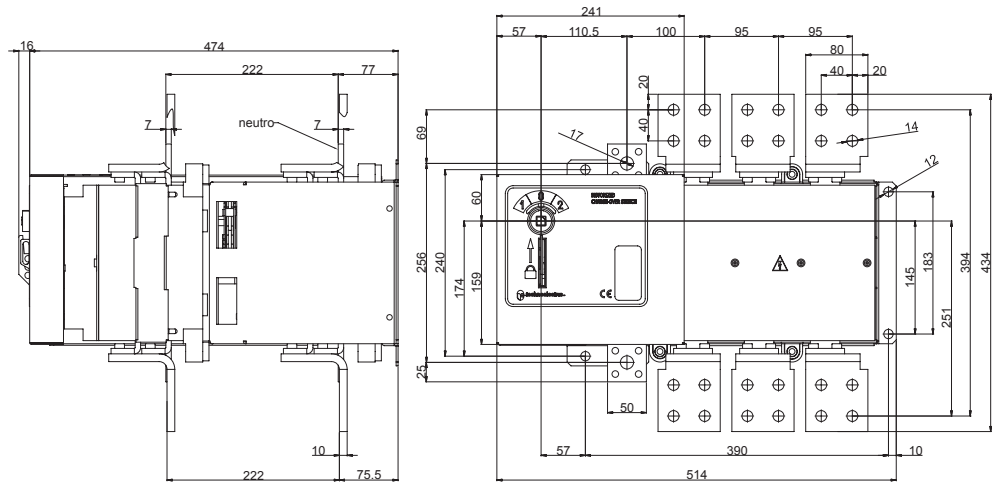


CS6MS FN 2000 A

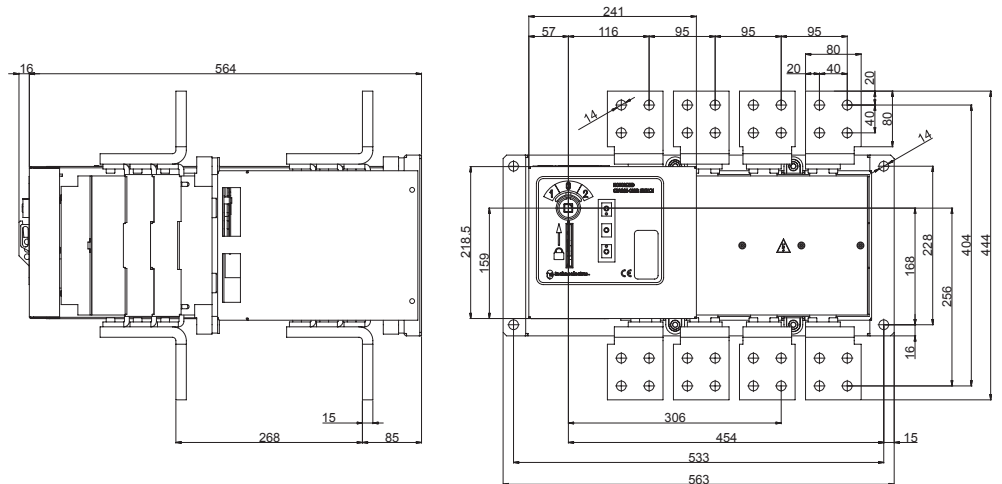
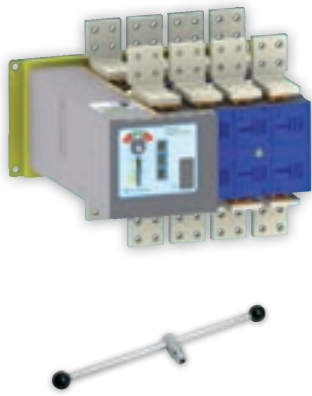


Commutatori sovrapposti
Two layers change-over switches

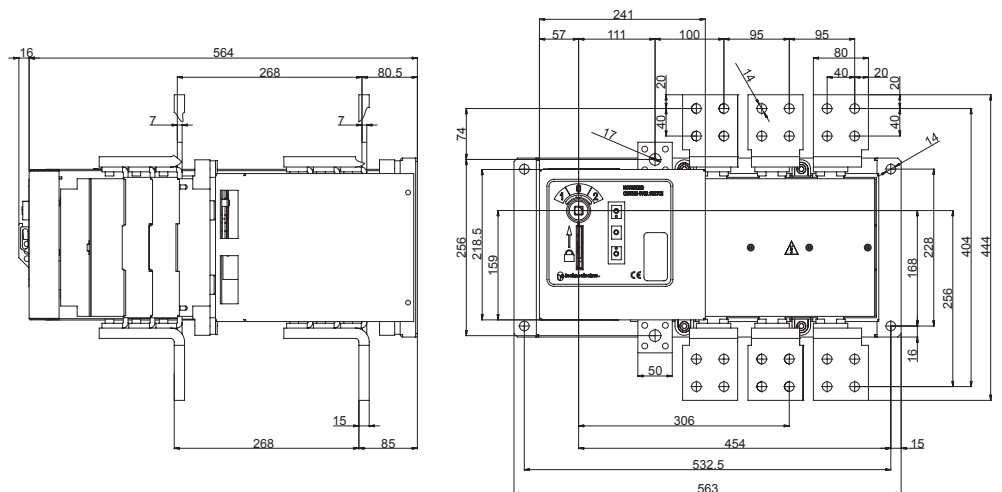
CS6 2000 A | N 1250 A



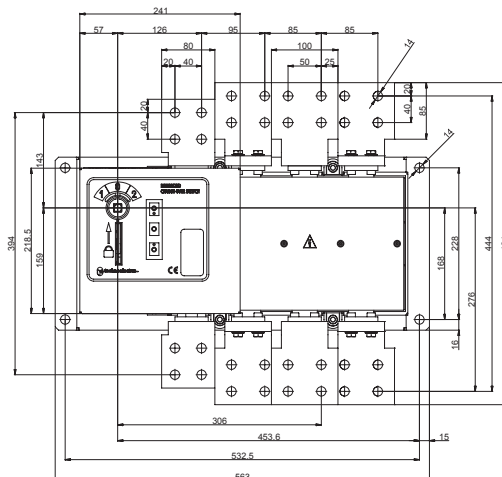
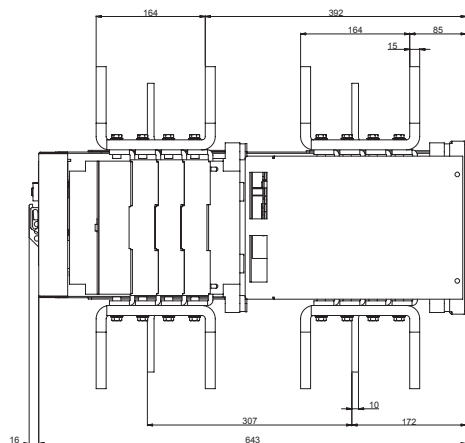
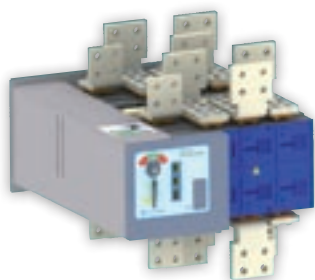
CS6 FN 2500 A



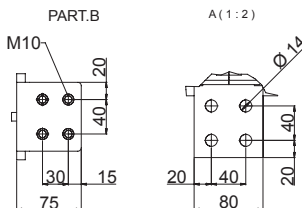
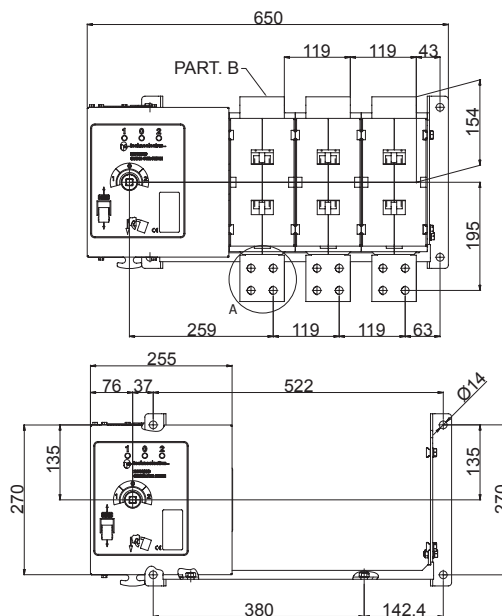
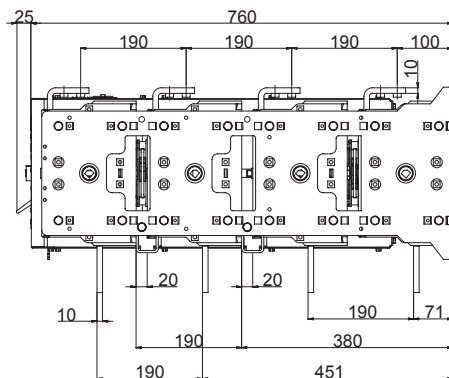
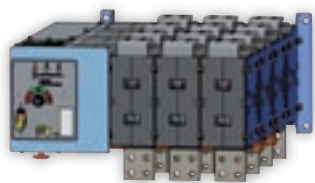
CS6 2500 A | N 1250 A



CS6 3150 A

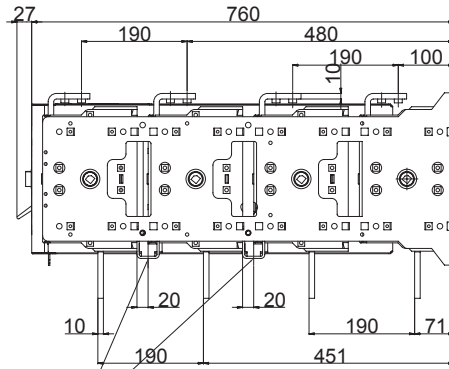
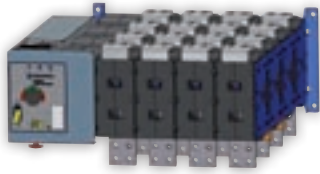


GT 4000 A 3P

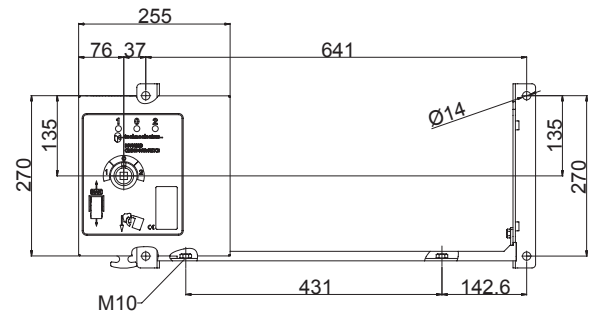
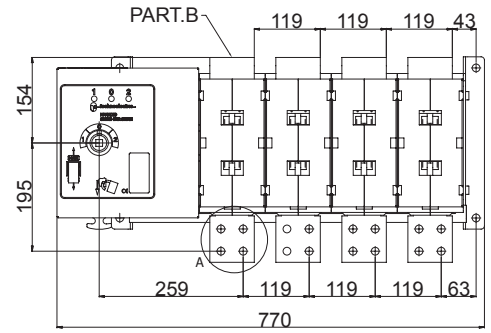
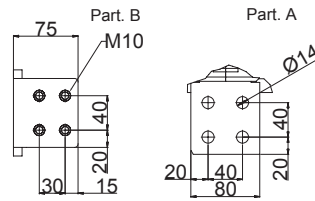


Commutatori sovrapposti
Two layers change-over switches

GT 4000 A 4P

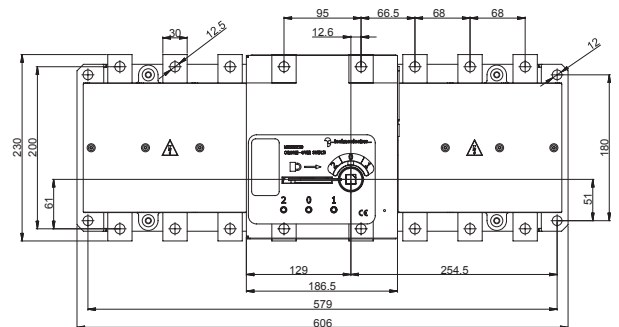
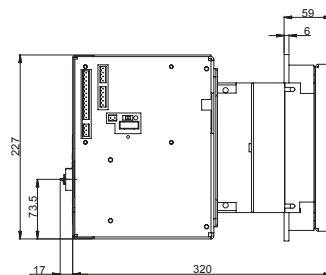


Fissaggio
Fixing



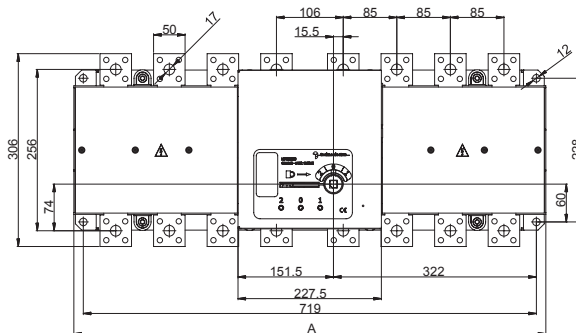
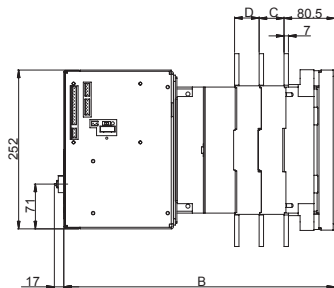
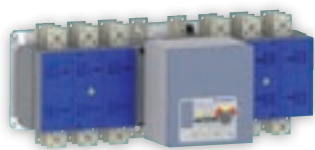
Commutatori orizzontali
Horizontal change-over switches

C04



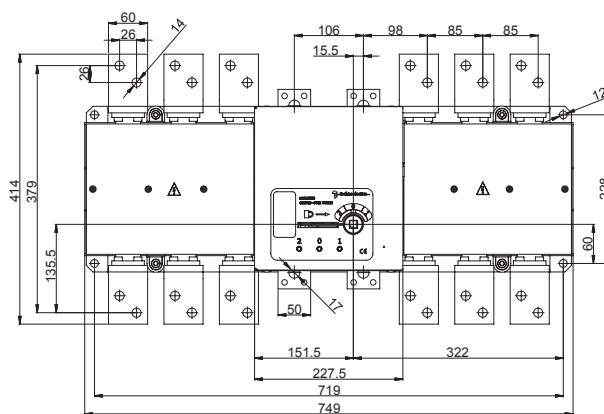
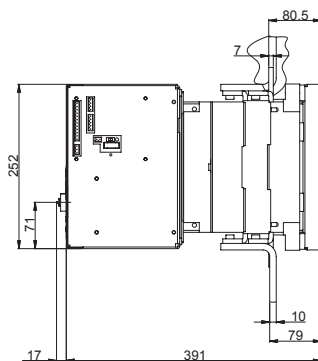
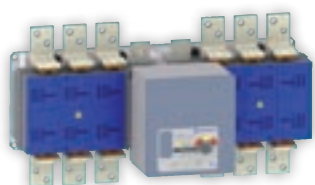
Commutatori orizzontali
Horizontal change-over switches

C05 800 ÷ 3150 A

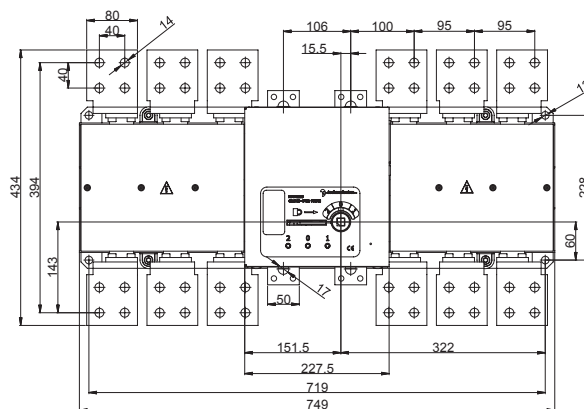
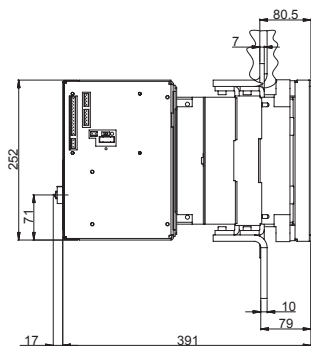
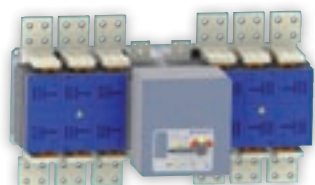


TIPO / TYPE	A	B	C	D
C05 MOT 800÷1250A	744	352		
C05 MOT 1600÷2000A	749	391	39	
C05 MOT 2500÷3150A	749	430	39	39

C06 1600 Q

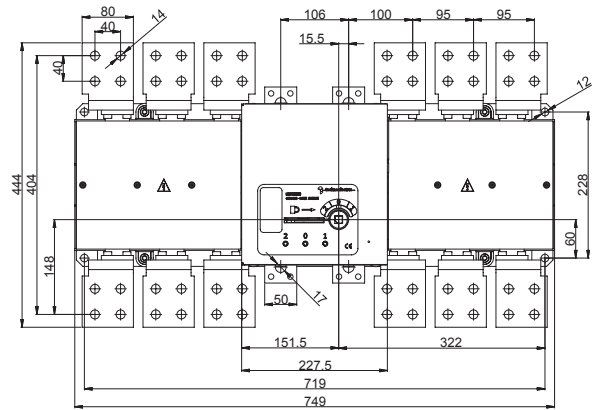
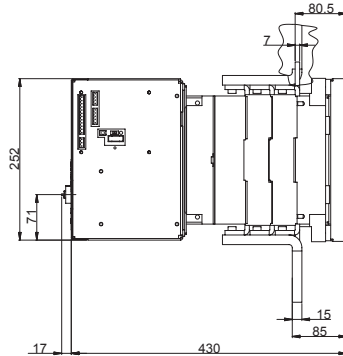
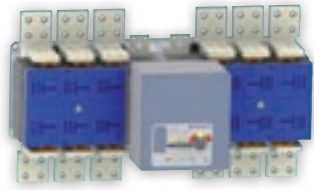


C06 2000 A

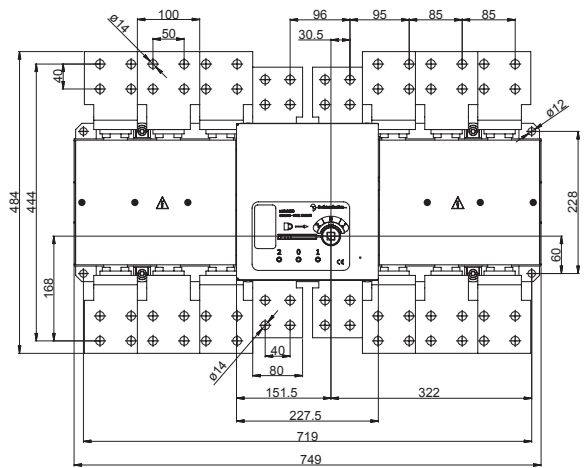
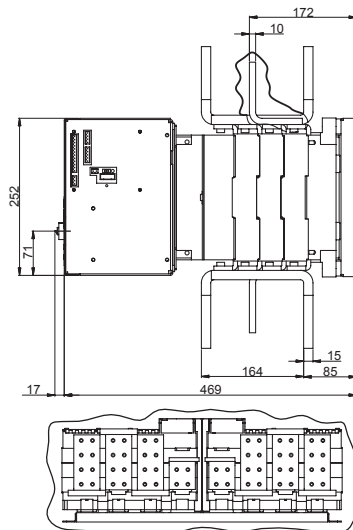
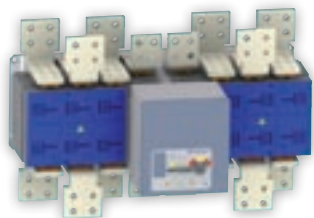


Commutatori orizzontali
Horizontal change-over switches

C06 2500 A

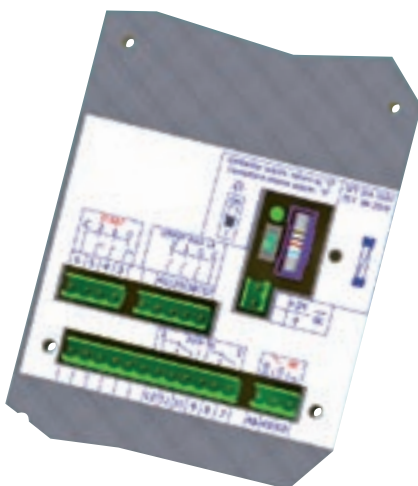


C06 3150 A

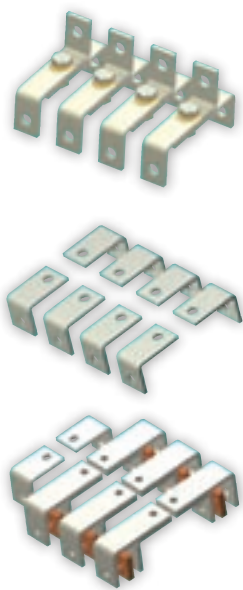


Schema morsettiera 24V dc - 110 ÷ 220V ac per CSMS | COMS | GT MS
Terminal board diagram 24V dc - 100 ÷ 220V ac rating type CSMS | COMS | GT MS

Schema morsettiera 24V dc | 220V ac per CS MS X-Y
Terminal board diagram 24V dc | 220V ac rating type CS MS X-Y



Connessioni a ponte \ Connecting bridges



Codice cavo \ sbarra \ Code cable \ bar

tipo \ type	CS2 160-315A		CS3 315-500A		CS4 630-800A	
poli \ poles	3P	4P	3P	4P	3P	4P
Codice \ Code	18408	18409	18419	18412	18417	18418

Codice sbarra \ Code bar

tipo \ type	CS4 630-800A		CS5 800-1250A	
poli \ poles	3P	4P	3P	4P
Codice \ Code	18427	18428	18424	18414

Codice sbarra \ Code bar

tipo \ type	CS5 1600-2000A		CS5 1600-2000A
poli \ poles	3P	4P	4P FN
Codice \ Code	18438	18439	18440

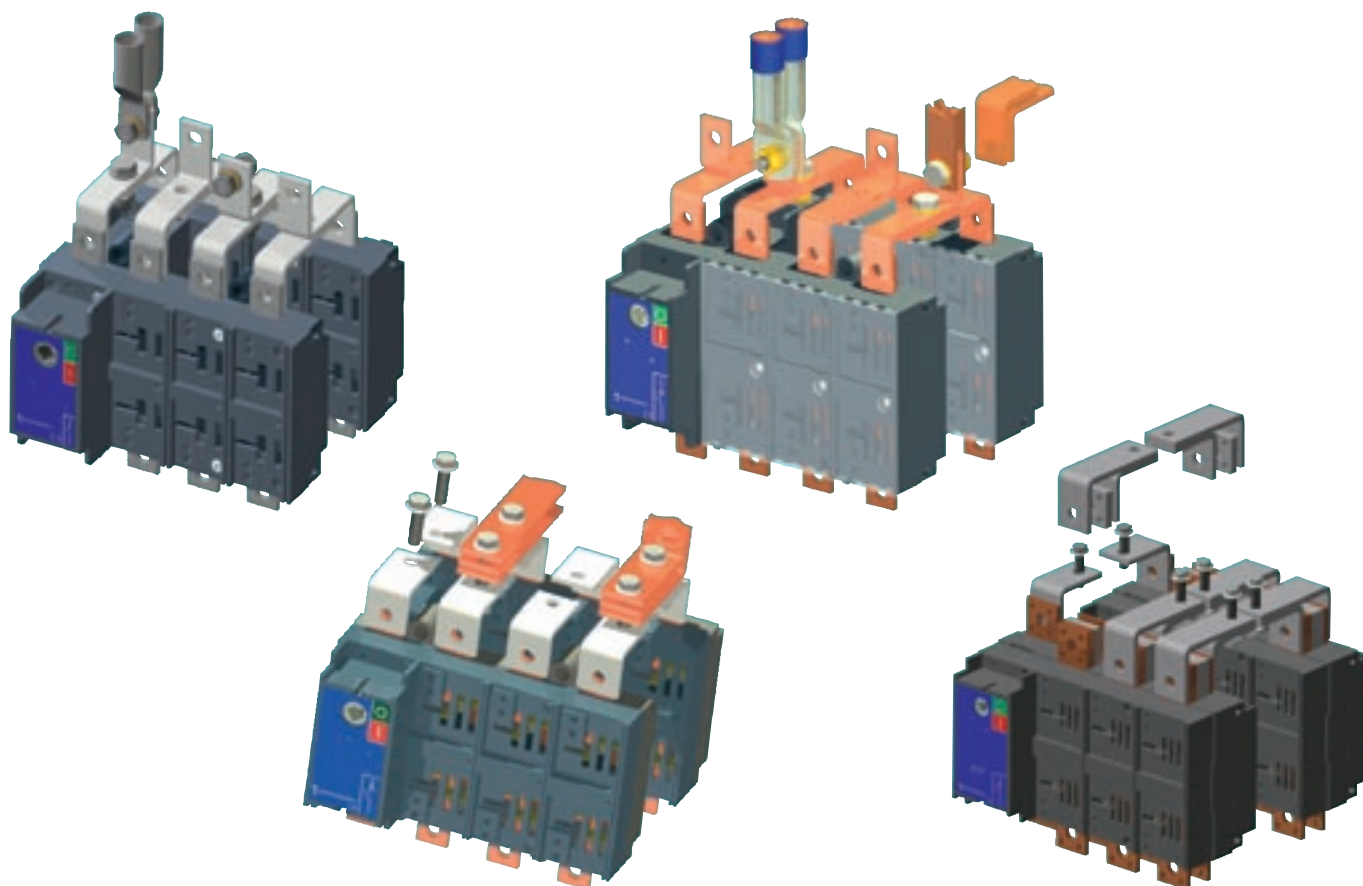
Piatti per terminali sezionatori \ Terminal plates for switches



Tipo \ Type	CO - CS 5	CO - CS 5
piatto \ plate	4 mm	6 mm
Codice \ Code	18138	18139

per il montaggio vedere pag II-38 / for mounting page II-38

Esempi di montaggio
Mounting example





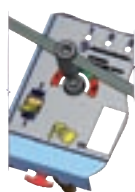
Visualizzazione delle posizioni "1", "0", "2", a indice meccanico, blocco a lucchetto (max. 3 lucchetti). Con il blocco lucchetto inserito sono interdette le manovre manuali e elettriche.
Commutatore tipo CS2 MSX MSX1 MSY

Display of position "1", "0", "2" by mechanical indicator, padlock (max. 3), with the padlock on both manual and electrical operations are prevented.
Change-over type CS2 MSX MSX1 MSY



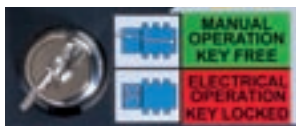
Visualizzazione delle posizioni "1", "0", "2" a mezzo display e indice meccanico, con il blocco lucchetto inserito sono interdette le manovre manuali e elettriche.
Commutatore tipo CO MS - CS MS.

Display of position "1", "0", "2" by means of digital display and mechanical indicator, with the padlock on both manual and electrical operations are prevented.
Change-over type CO MS - CS MS.



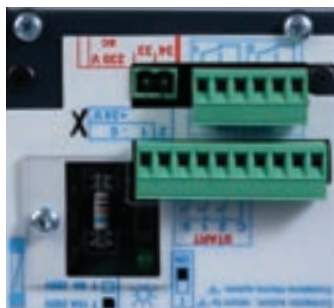
Visualizzazione delle posizioni "1", "0", "2" a mezzo display e indice meccanico, con il blocco lucchetto inserito sono interdette le manovre manuali e elettriche.
Commutatore tipo GT MS.

Display of position "1", "0", "2" by means of digital display and mechanical indicator, with the padlock on both manual and electrical operations are prevented.
Change-over type GT MS.



Blocco elettrico a chiave per la selezione della manovra manuale o elettrica.

Electrical key lock for selection of manual or electrical operation.



Vano fusibile; sulla scheda di alimentazione è posto il microinterruttore per la scelta della logica di funzionamento:

1. funzionamento ad impulso (min. 150ms)
ON. funzionamento CONTATTORE, (contatto mantenuto) ritorno automatico in "0", led acceso.

Fuse block; on the supply board there is the micro switch to select the logic of the operation:
1. operation by impulse (min. 150ms)
ON. operation type CONTACTOR (maintained contact), automatic return to "0", led switch-on

Ricambio Replacement



Maniglia per la manovra manuale di emergenza. Commutatore tipo CS MSX/Y, taglia 2 codice 18048, taglie 3 e 4 codice 18049
Handle for emergency manual operation. Change-over switch type MSX/Y size 2 code 18048, size 3 and 4 code 18049

Maniglia per il comando manuale d'emergenza in dotazione standard
Handle is supplied with the change over switch



Maniglia per la manovra manuale di emergenza con impugnatura scorrevole. Commutatore tipo CS - CO - GT, taglie 5 e 6 codice 18072
Handle for emergency manual operation with sliding grip suitable. Change-over switch type CS - CO - GT size 5 and 6 code 18072

Maniglia per il comando manuale d'emergenza in dotazione standard
Handle is supplied with the change over switch



TMC Strumento di controllo rete-generatore sviluppato da Technoelectric. Accoppiabile a tutta la gamma di commutatori motorizzati serie CMO, permette la commutazione automatica tra una sorgente di linea rete ed un generatore.

PRINCIPIO DI FUNZIONAMENTO TMC

La centralina di controllo generatore è un dispositivo che permette la commutazione automatica tra una sorgente di linea-rete ed un generatore. Quando viene a mancare la rete principale la centralina fornisce un consenso per l'avviamento del generatore. Quando il generatore è a regime, tensione e frequenza sono stabili entro i parametri stabiliti, automaticamente è comandata la commutazione verso il generatore. Al rientro della tensione rete principale, sempre in automatico, viene comandata la commutazione verso la rete e quindi il generatore viene fermato.

TIPI DI FUNZIONAMENTO TMC

Manuale - in modalità manuale tutte le soglie di intervento ed i tempi di attesa delle commutazioni sono disabilitate ed in questa configurazione non viene rilevato né gestito nessun tipo di allarme. La commutazione del carico avviene a mezzo selettore chiave e sono disponibili le visualizzazioni delle tensioni di Rete o Gruppo.
Automatico - in modalità automatico, le funzioni di controllo e di commutazione sono gestite esclusivamente dal software; non è quindi possibile manovrare in manuale dal fronte apparecchio. In questa modalità le visualizzazioni inseguono lo stato del sistema. Vengono rilevate: tensioni, correnti e frequenza (quest'ultima solo del generatore).

MANUALE D'USO SCARICABILE DAL SITO www.technoelectric.it

TMC Control unit powerline-generator developed by Technoelectric. Fits with the full range of motorized switches of the CMO series. Allows automatic switching between a powerline grid source and a generator.

DESCRIPTION

The generator control unit is a device that allows for automatic switching between the sources grid and generator. Whenever the grid powerline fails, the control unit provides the input to start the generator. When the generator's state is steady, voltage and frequency are stable within the established parameters and the changeover is automatically switched into the generator position. Upon the return of power to the grid, the commutation into grid position is again automatically commanded and the generator stopped.

TMC OPERATION MODES

Manual - in manual mode all the thresholds of intervention and waiting times of the commutations are disabled and in this mode is not detected or managed any kind of alarm. The commutation of the load is done by key selector and the voltages of either grid or generator are displayed.
Auto - in automatic mode control functions and switching are handled exclusively by the software and it is not possible to switch manually from the front part of the device. In this mode the display is showing the state of the system. Values displayed: tension, current and frequency (the latter only of the generator).

MANUAL DOWNLOAD www.technoelectric.it

Specifiche elettriche centralina \ Electrical power

tensione di alimentazione \ voltage	9-30 VDC
tensioni misurabili \ measurable voltage	208 1ph 208 3ph 230 1ph 230 3ph \ 400 1ph 400 3ph 440 1ph 440 3ph
frequenza nominale \ rated frequency	45 ± 65 Hz
range tensione (lato generatore e lato rete) \ range voltage (generator side and network side)	0 ± 500 VAC
accuratezza misure \ accuracy measures	+/- 2%
11 12 14 contatto relay di allarme \ 11 12 14 relay contact alarm	8 A 250 V max
Ag1 Ag2 Ar1 Ar2 controllo contatti ausiliari teleruttori \ Ag1 Ag2 Ar1 Ar2 network\generator auxiliary contacs	8 ± 36 VDC
contatto avviamento generatore \ contact start-up generator	5 A 10 ± 30 VDC
contatto teleruttore rete \ contact remote network	5 A 230 VAC
contatto avviamento generatore \ contact start-up generator	5 A 230 VAC



Tipo \ Type	Codice \ Code
TMC	18901
kit presenza tensione fasi CS2 MS \ phase detection kit	18906
kit presenza tensione fasi CS3 MS \ phase detection kit	18907
kit presenza tensione fasi CS4 MS \ phase detection kit	18908