



COMELETRIC

Specialized rotary and control switches

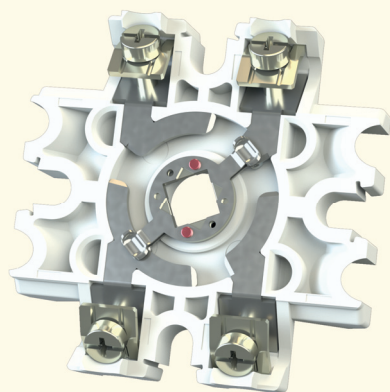
Series R16-DR16



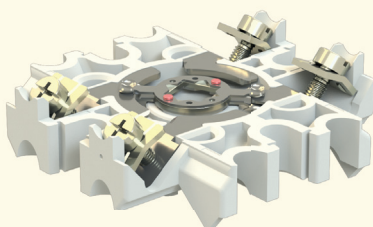


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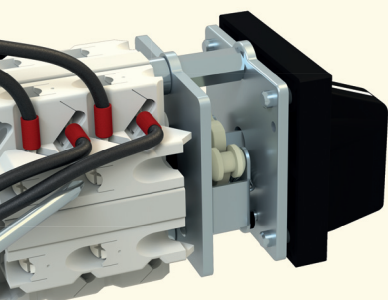
R16 TRADITION IN EVOLUTION



Double bridge Rotor contact Knife type.
Fixed contacts with self-cleaning action.
Contatto mobile a doppio ponte contatti
fissi a coltello con azione strisciante
autopulente.



Insulating discs with layout designed to
reduce the depth of the control switch.
Diaframma isolante con layout
progettato per ridurre la profondità del
commutatore.



IP20 terminal screw. Easy access to
screws even when the switch is wired.
Morsetto con protezione IP20. L'accesso
alla vite è garantito anche a
commutatore cablato.

■ R16 Control Switches are the result of a perfect match between tradition and technological innovation. COMELETRIC products have been outstanding for more than 50 years thanks to their quality. Their historical qualitative characteristics now successfully coexist with an ultra-compact and up-to-date design that makes R16 series switches highly functional and effective.

■ The layout of the insulating discs has been specifically designed to reduce to the minimum the amount of space taken by R16 Control Switches in terms of depth, making them particularly suitable for LCC panels, boxes, withdrawable boxes and for all those applications in which extremely small spaces are involved.

■ The main shaft and structure are in steel with high resistance zinc surface treatment (tropicalization) and the contacts are silver plated (gold plated on request), suitable for fitting in aggressive environments. All these treatments protect the equipments from surrounding atmospheric conditions, heat, humidity, salt, etc.

■ Contact system with self-cleaning action on both sides of the contacts. This makes the control switches extremely reliable in highly aggressive environments with high percentages of saline dust and corrosive agents.

■ Easy access to the terminal screws. It is not necessary to remove the wires to have access to the single screw (free screws system).

■ Thanks to its layout and special materials, the notching mechanism is designed to guarantee both reliability and a long-lasting mechanical life. Up to 23 packets of contacts can be assembled in single shaft switch.

R16 TRADIZIONE IN EVOLUZIONE

■ I commutatori R16 sono nati dal perfetto connubio tra tradizione ed evoluzione tecnologica. In un solo prodotto convivono le caratteristiche qualitative che contraddistinguono i prodotti COMELETRIC da oltre 50 anni, sommate ad un design ultracompatto che rende il commutatore moderno con prestazioni e caratteristiche altamente funzionali.

■ Il layout del diaframma isolante è stato appositamente studiato per garantire il minimo ingombro in profondità e rendere quindi il commutatore R16 particolarmente idoneo al fissaggio nei quadri LCC, in cassette, nei cassettei estraibili o in quelle applicazioni in cui gli spazi dovessero essere particolarmente ristretti.

■ L'albero principale e la struttura sono in acciaio con zincatura superficiale ad alta resistenza (tropicalizzazione) ed i contatti sono argentati (dorati su richiesta), adatti per l'utilizzo in ambienti aggressivi. Questi trattamenti proteggono il commutatore anche ove vi siano condizioni ambientali con alte temperature, forte umidità, alto tasso di salinità, ecc.

■ Sistema di contatto strisciante con effetto autopulente su entrambe le superfici. Questo rende i commutatori particolarmente idonei ad essere utilizzati in ambienti altamente aggressivi, con presenza di polveri, alto tasso salino, ecc.

■ Facile accesso alle viti dei terminali anche a commutatore cablato (sistema a viti libere). Non è necessario rimuovere i cavi precedentemente cablati per accedere al terminale.

■ Gruppo scatto progettato per elevati cicli di commutazione. Grazie al layout ed ai materiali impiegati, la lunga durata ed affidabilità sono garantiti negli anni. Fino a 23 pacchi di contatti possono essere assemblati in commutatori a singolo albero.

- Terminals with IP20 protection, in accordance with the international standard IEC 60529/CEI EN 60529. Terminals with screws at 40° tilt angle, facilitating the access to the terminals from the rear of the switch.

- Low contact resistance (5mΩ) makes R16 Control Switches suitable also for low currents and low voltage electronic circuits.

- Shaft and main structure entirely made of zinc plated steel and specifically designed for the usage of the switch in tropical environments.

- Numbered plastic cover customizable and replaceable in case of failure without removing the wires to the switch.

- R16 Control Switch can be provided with different front accessories (handles, operating keys, key locks, padlockable systems). Escutcheon plates of two sizes (mm. 48X48 'Q4', mm.64X64 'Q7').

- Insulating disc made of latest generation polymer PA66 with excellent mechanical resistance, high electrical characteristics and self-extinguishing UL94V0.

- Stationary and rotor contacts are silver plated (standard) and can be gold plated on demand.

- Available with a wide range of different electrical switching schemes.

- Captive plus/minus terminal M3 screw with self-lifting plate.

- High resistance to shocks and vibrations, thanks to the specific design of the contacts.

- Escutcheon plate engraved and customizable by LASER MARKER.

- Morsetti con protezione IP20, in riferimento alla norma IEC 60529/CEI EN 60529. Morsetti con viti inclinate a 40°. Agevola l'accesso ai terminali dal retro del commutatore.

- Bassa resistenza di contatto [5mΩ), rende il commutatore R16 adatto all'impiego anche in circuiti per l'elettronica con bassi valori di corrente e voltaggio.

- Albero e struttura portante interamente in acciaio zincato elettroliticamente, specificatamente studiati per l'impiego del commutatore in ambienti tropicali.

- Tegolino con numerazione morsetti personalizzabile e sostituibile in caso di errore senza scablare il commutatore.

- Il commutatore R16 può essere corredato da diversi attuatori di comando (manopole, chiavi di comando, serrature di blocco, sistemi lucchettabili), frontali in due dimensioni (mm.48X48 'Q4', mm.64X64 'Q7').

- Diaframma isolante in tecnopolimero di ultima generazione PA66 con ottima resistenza meccanica, elevate caratteristiche elettriche ed autoestinguente UL94V0.

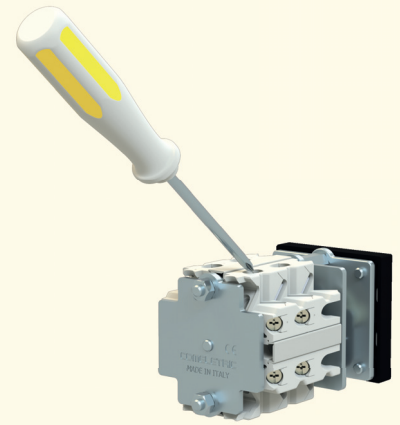
- Contatti sia fissi che mobili argentati (standard) o dorati su richiesta.

- Ampia gamma di schemi elettrici realizzabili.

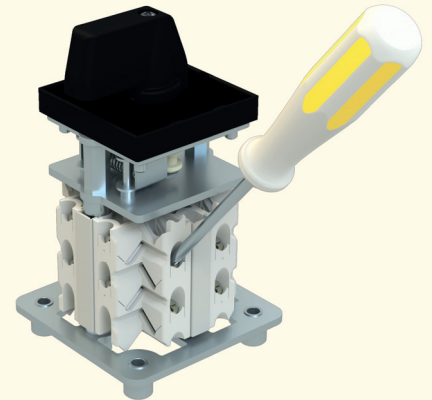
- Vite M3 con cavaliere serrafilo autosollevante e viti captive taglio +/-.

- Elevata resistenza a shock e vibrazioni, grazie allo speciale design dei contatti.

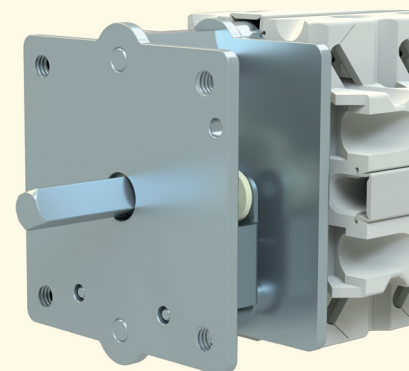
- Mostrine frontali incise e personalizzabili mediante INCISIONE LASER.



Terminals with screws at 40° tilt angle, facilitating the access to the terminals from the rear of the switch. Morsetti con viti inclinate a 40°. Agevola l'accesso ai terminali dal retro del commutatore.



The access to screws is also available from the front of the switch. Disponibile anche l'accesso alle viti dal fronte del commutatore.

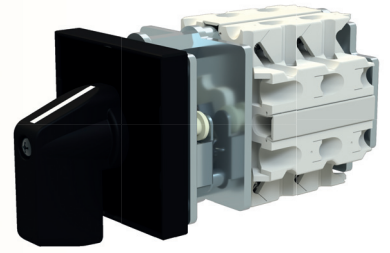


Shaft and main structure entirely made of zinc plated steel. Albero e struttura portante interamente in acciaio zincato elettroliticamente.

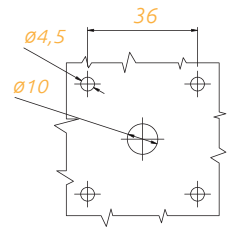
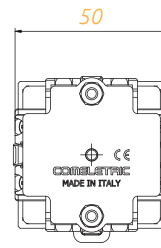
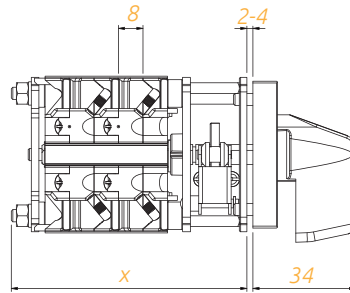
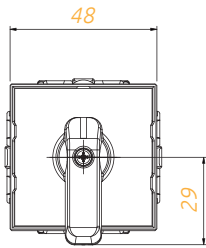
R601 Model:

It can have from 2 to 8 positions fixed or with automatic return.
It may be supplied with frontplate size 48X48 mm (Q4) or 64X64 mm (Q7) Standard Type or Padlockable.

Realizza da 2 a 8 posizioni sia fisse che con molla di ritorno.
Può essere fornito con mostrina frontale 48x48 mm (Q4) o 64x64 mm (Q7) in versioni standard o Lucchettabili.



Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Length (mm)	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203	211	219	227	235	243

R601 Frontplates R601 Mostrine

COLOR **CODE**

h f

W002

W006

W042

W022

W018

48 mm

COLOR **CODE**

h f

W010

W014

W044

W030

W026

64 mm

COLOR **CODE**

h f

Y002

Y006

--

Y022

Y018

48 mm

COLOR **CODE**

h f

P002

P006

--

P022

P018

48 mm

COLOR **CODE**

h f

V010

V214

--

V030

V026

64 mm

COLOR **CODE**

h f

N002

N006

N033

N022

N018

48 mm

COLOR **CODE**

h f

P010

P014

--

P030

P026

64 mm

COLOR **CODE**

h f

L011

L017

L018

L019

L020

48 mm

COLOR **CODE**

h f

L002

L013

L014

L015

L016

48 mm

COLOR **CODE**

h f

Y010

Y011

Y033

Y030

Y026

64 mm

COLOR **CODE**

h f

V002

V006

V035

V022

V018

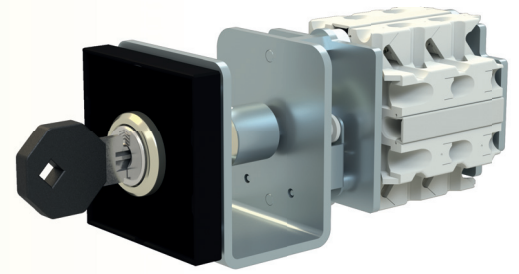
48 mm

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Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

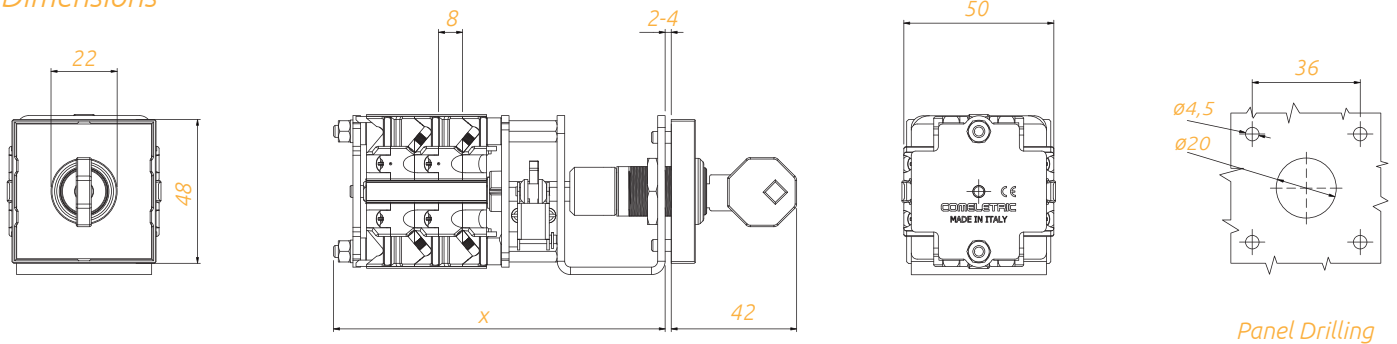
R602 Model:

Key Operated rotary switch.
Available with keys equal to each other and up to 200 different combinations.

Commutatore con operatore a chiave
Disponibile con chiavi uguali tra loro e fino a 200 combinazioni diverse tra loro.

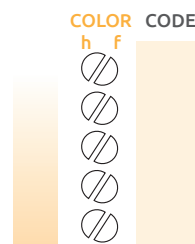
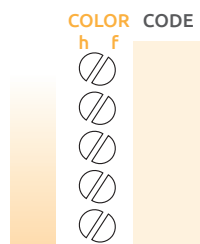
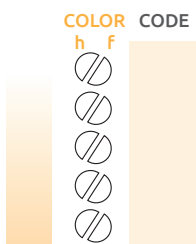
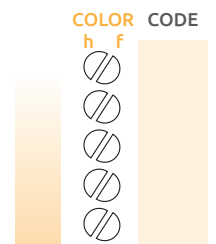
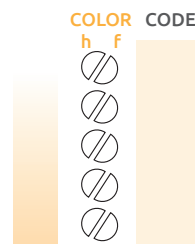
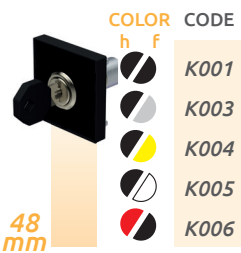


Dimensions



N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length (mm)	87	95	103	111	119	127	135	143	151	159	167	175

R602 Frontplates R602 Mostrine

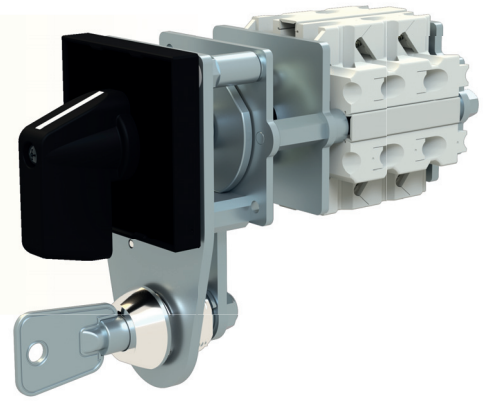


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Frontplate dimension on page 35/36
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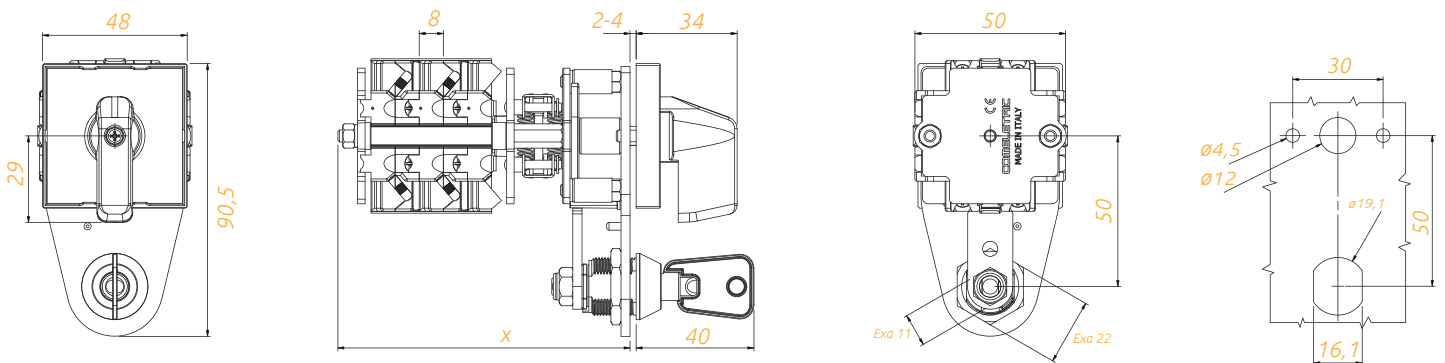
R603 Model:

Key Lock rotary switch.
Available with keys, that can be both equals or different one from the other (up to 500 different numbers).
MASTER KEY System is also available.

Commutatore con serratura di blocco.
Disponibile con chiavi uguali tra loro o fino a 500 combinazioni diverse tra loro.
Disponibile anche con MASTER KEY.



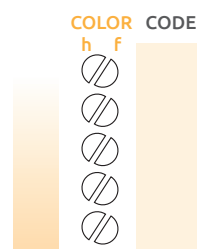
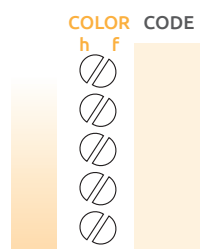
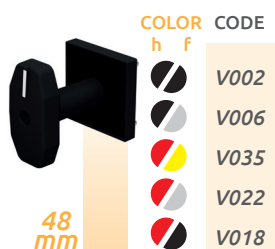
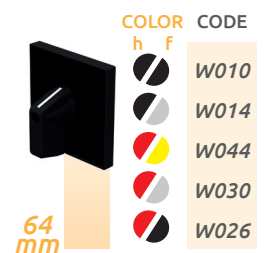
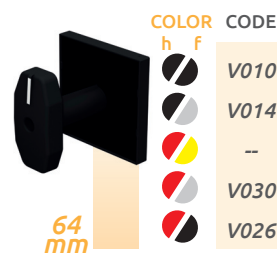
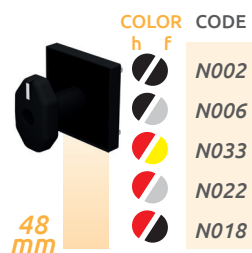
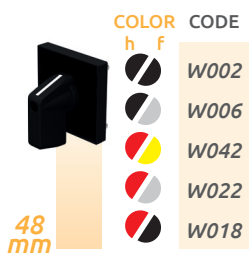
Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Length (mm)	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265

R603 Frontplates R603 Mostrine

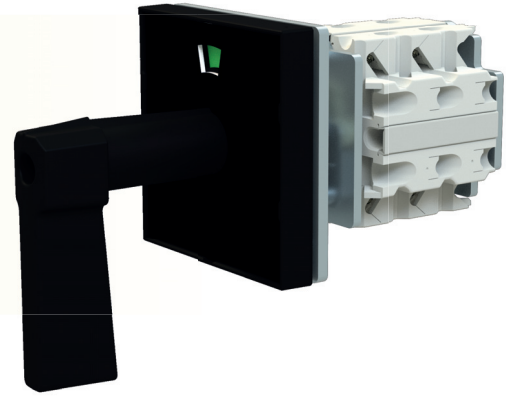


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Frontplate dimension on page 35/36
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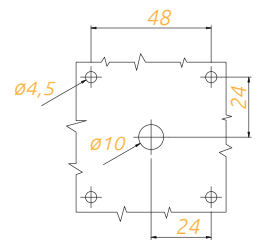
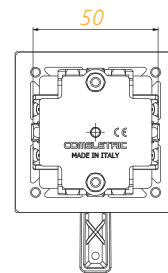
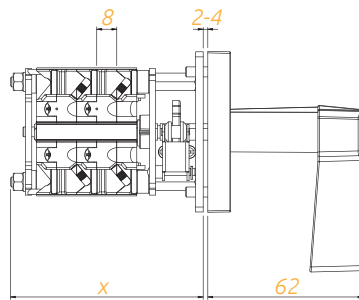
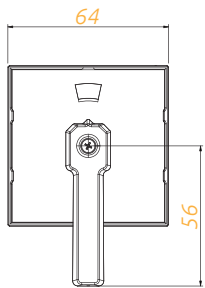
R619 Model:

The Mechanical trip Indicator shows the indication of the last given command.

Il dispositivo meccanico di avvenuta manovra indica l'ultimo comando effettuato dal commutatore.



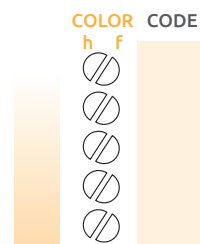
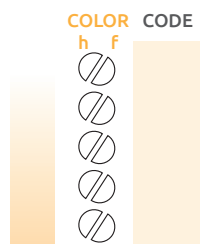
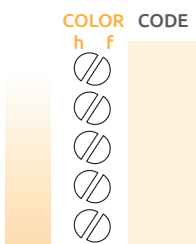
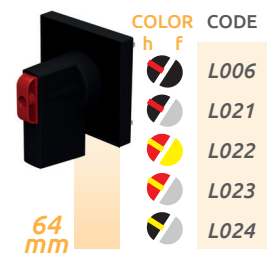
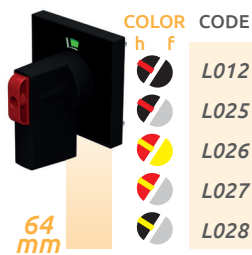
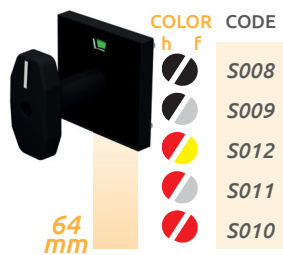
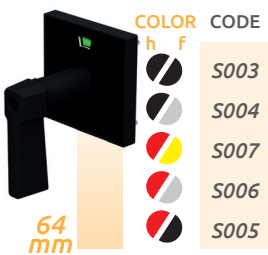
Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Length (mm)	53	61	69	77	85	93	101	109	117	125	133	141	149	157	165	173	181	189	197	205	213	221	229	237	245

R619 Frontplates R619 Mostrine

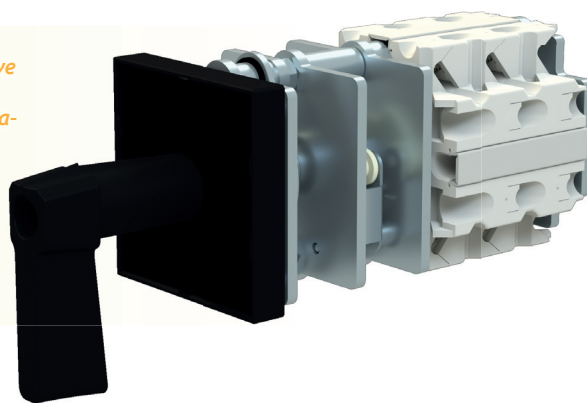


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Frontplate dimension on page 35/36
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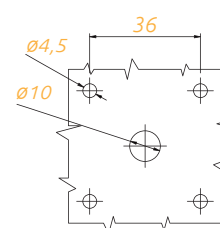
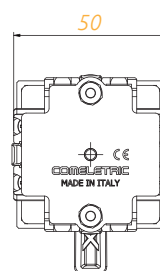
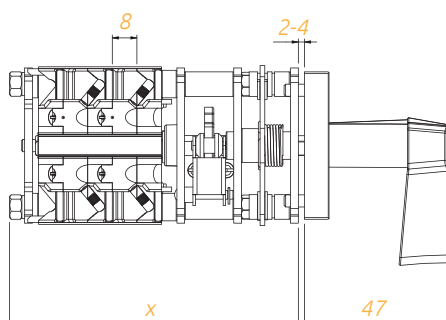
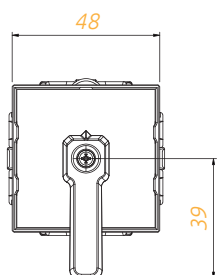
R615 push to operate **R616** pull to operate Models:

This Switch is mainly used to avoid involuntary operations. It can be handled only by **PUSHING** (R615) or **PULLING** (R616) the knob of the switch.

Questo dispositivo di sicurezza serve per evitare manovre accidentali. Il commutatore può essere manovrato solamente **PREMENDO** (R615) o **TIRANDO** (R616) la manopola del commutatore.



Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length [mm]	70	78	86	94	102	110	118	126	134	142	150	158

R615-R616 Frontplates R615-R616 Mostrine

48 mm

COLOR	CODE
h f	
	Z073
	Z074
	Z075
	Z076
	Z077

48 mm

COLOR	CODE
h f	
	Z002
	Z034
	--
	Z018
	--

48 mm

COLOR	CODE
h f	
	Z010
	Z042
	--
	Z026
	Z050

64 mm

COLOR	CODE
h f	
	Z014
	Z046
	--
	Z030
	Z054

48 mm

COLOR	CODE
h f	
	Z046
	Z065
	Z060
	Z067
	Z068

64 mm

COLOR	CODE
h f	
	Z060
	Z069
	Z070
	Z071
	Z072

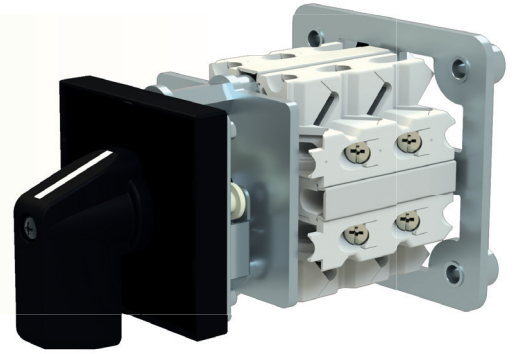
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h f	

h=handle; f=frontplate
 h=manopola; f=mostrina
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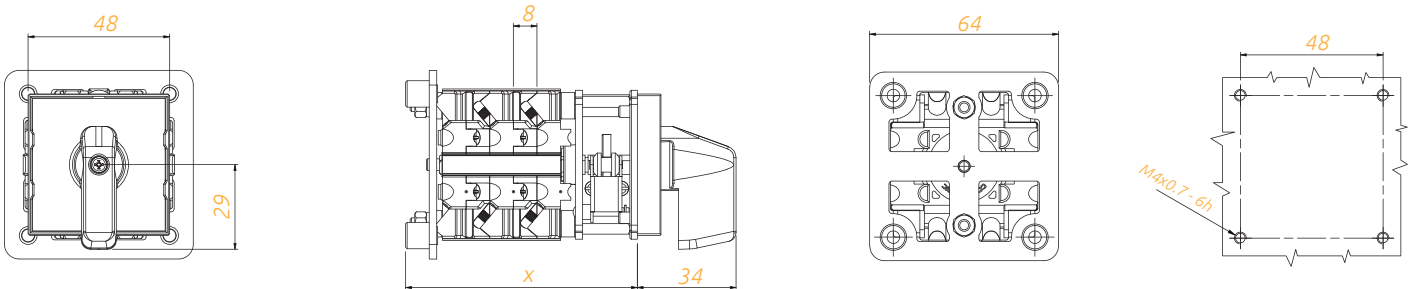
R612 Model:

Switch suitable for fitting at the bottom of the panel.
Access to screw from the front of the switch.

Commutatore idoneo al montaggio sul fondo del quadro.
L'accesso alle viti avviene dal fronte del commutatore.



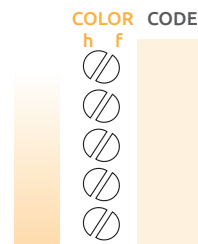
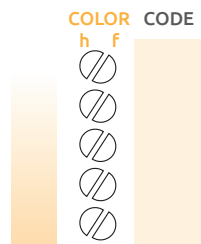
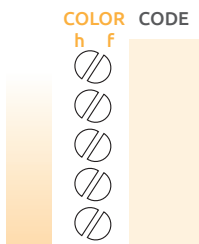
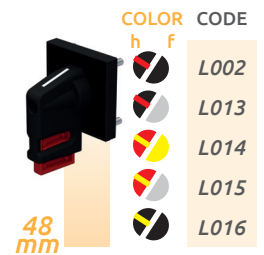
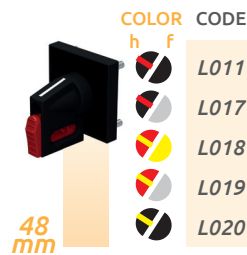
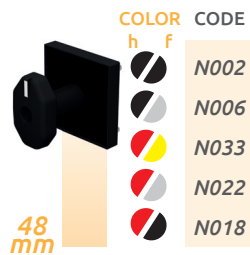
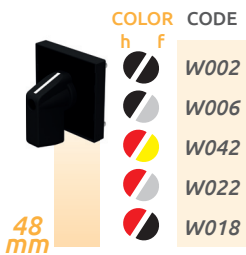
Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length [mm]	55	63	71	79	87	95	103	111	119	127	135	143

R612 Frontplates R612 Mostrine

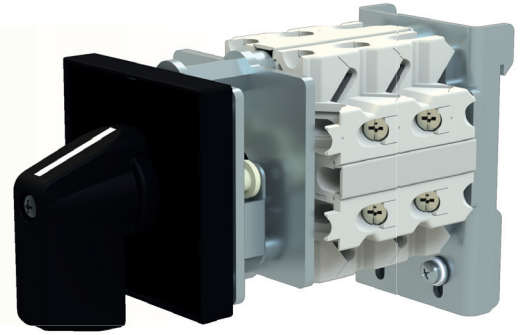


h=handle; f=frontplate
h=manopola; f=mostrina
Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

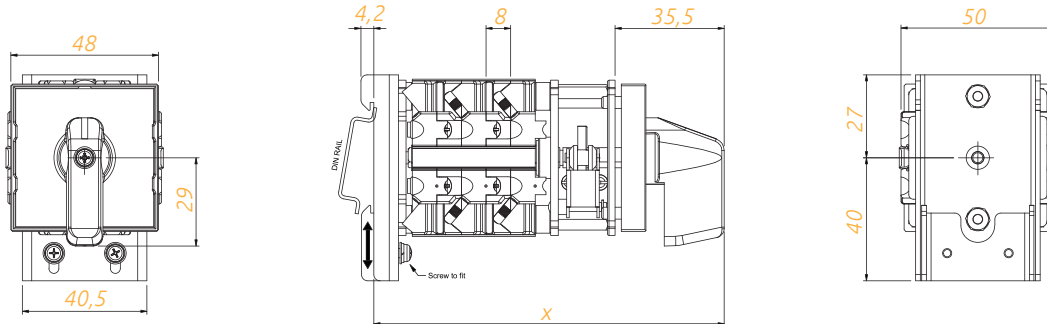
R632 Model:

Switch suitable for fitting on DIN-Rail.
Access to screw from the front of the switch.

Commutatore idoneo al montaggio su guida DIN.
L'accesso alle viti avviene dal fronte del commutatore.

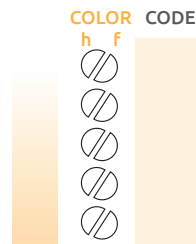
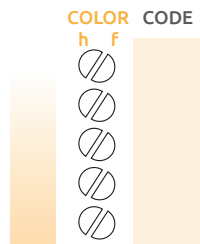
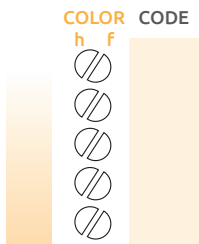
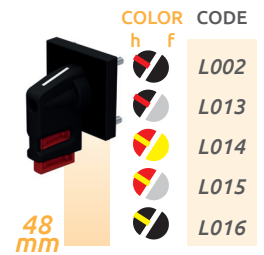
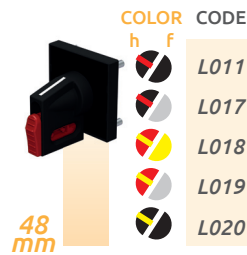
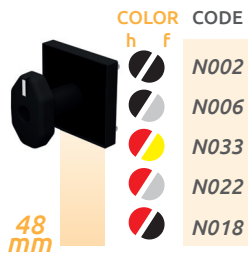
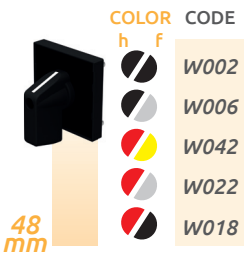


Dimensions



N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length [mm]	90	98	106	114	122	130	138	146	154	162	170	178

R632 Frontplates R632 Mostrine

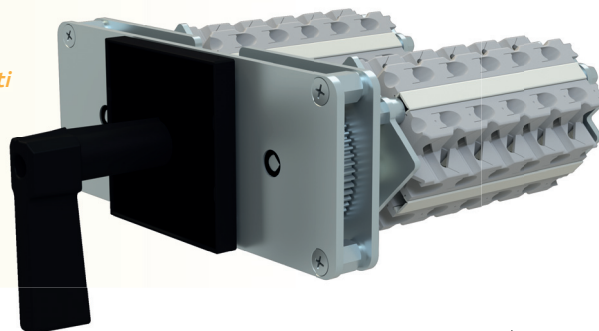


h=handle; f=frontplate
h=manopola; f=mostrina
Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

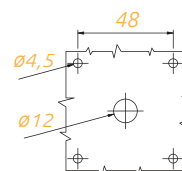
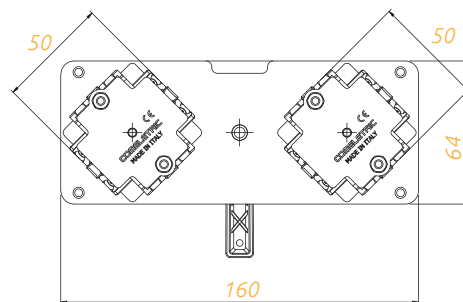
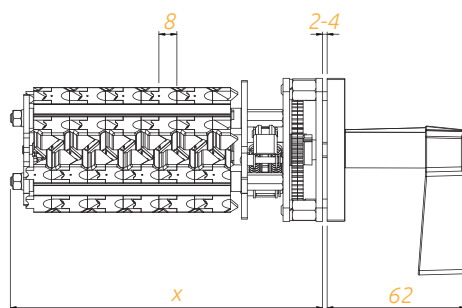
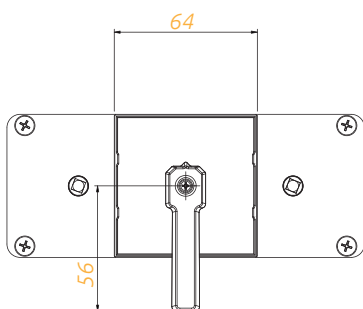
TR601 Model:

This device is used to connect several switches so that they can be operated simultaneously, thanks to this system a large number of contacts can be obtained in a minimal space.

Questo dispositivo viene utilizzato per collegare più commutatori in modo che possano essere manovrati contemporaneamente. Grazie a questo sistema si può ottenere un elevato numero di contatti riducendo al minimo l'ingombro in profondità.



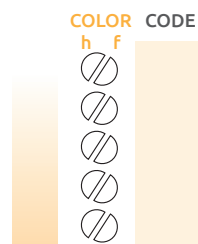
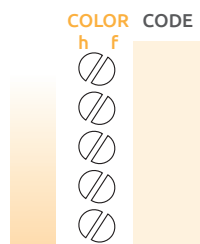
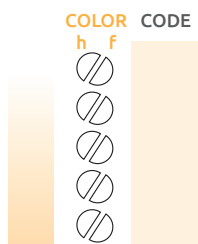
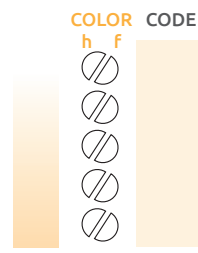
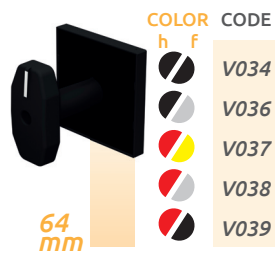
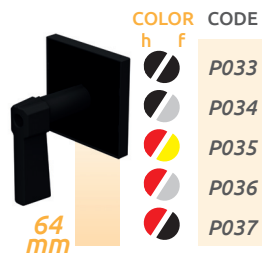
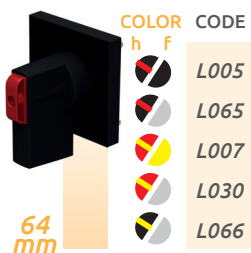
Dimensions



Panel Drilling

N° of packets	10+10	11+11	12+12	13+13	14+14	15+15	16+16	17+17	18+18	19+19	20+20	21+21	22+22	23+23	24+24	25+25
Length (mm)	140	148	156	164	172	180	188	196	204	212	220	228	236	244	252	260

TR601 Frontplates TR601 Mostrine



h=handle; f=frontplate
h=manopola; f=mostrina
Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

Metodo di ordinazione commutatori R16

In questo Catalogo si possono trovare alcuni schemi e le istruzioni per comporre autonomamente i codici d'ordinazione dei commutatori Serie R16 standard.

Per schemi Speciali o schemi non presenti in questo catalogo utilizzare il form. a pag. 34.

Gli schemi del presente catalogo ed il loro utilizzo nei codici sono applicabili esclusivamente alle serie di commutatori R16 e non per le altre Serie.

Codice prodotto

Esempio commutatore a manopola	R601	202002			-	W002
Esempio commutatore con chiave	R602	202002	07	D	-	K001
	①	②	③	④		⑤

① Modello del Commutatore.

Come n° di Modello si intende il montaggio e la forma costruttiva univoca di ogni commutatore
questo riferimento identifica la specifica costruzione meccanica del commutatore .

Questo n° di **Modello** viene indicato nel catalogo insieme al relativo disegno di ingombro e della foratura del pannello.

② Schema elettrico.

Questo numero rappresenta l'indicazione dello schema del commutatore richiesto.

Esso comprende lo schema elettrico ed il movimento della manopola , in riferimento agli schemi di seguito rappresentati.

③ Programma Bloccaggio/Estrazione chiave o altro.

Questo numero viene utilizzato solamente nei commutatori con chiave di comando , serratura di blocco, commutatore lucchettabile e commutatori con manopola estraibile.

Esso rappresenta la posizione in cui il commutatore può essere bloccato.

Il bloccaggio dei commutatori con chiave di comando o serratura di blocco avviene mediante l'estrazione della chiave dallo stesso.

Nei modelli con manopola estraibile la posizione il bloccaggio è la medesima di quelli a chiave , nei modelli lucchettabili il riferimento è invece la posizione dove viene data la possibilità di inserire il lucchetto.

La tabella di riferimento per il N° di programma di bloccaggio è presente a pag. 33 del presente catalogo e deve essere conforme allo spostamento della manopola previsto nello schema di riferimento del commutatore.

④ Chiave uguali tra di loro o chiavi differenti tra di loro.

Questo numero viene utilizzato solamente nei commutatori con chiave di comando , serratura di blocco.

Esso rappresenta se le chiavi dei commutatori devono essere uguali tra loro o Differenti tra loro.

La lettera "D" è l'indicazione di chiavi diverse tra di loro , quindi ogni commutatore ordinato avrà una chiave unica , quindi non è possibile manovrare altri commutatori con la medesima chiave.

Se non indicata i commutatori vengono forniti tutti con medesima chiave .

⑤ Tipo dimensione e colore Finitura (parte frontale)

Questo numero indica il tipo la dimensione ed il colore delle manopole e Finiture frontali del commutatore

Method for coding of R16 switches

In the present catalogue you will find examples of diagrams and the instruction enabling you to the creation by yourself of the ordering codes of R16 switches (standard).

For all the other special diagrams or any scheme which is not present in this catalogue, please use the form on page 34. The diagrams represented in this catalogue and their use in the codes are strictly related to R16 switches and not to all the others.

Switch code

Example Switch with Knob	R601	202002			- W002
Example Switch with Key	R602	202002	07	D	- K001
	①	②	③	④	⑤

① Switch model

As switch model it is meant the kind of fitting and the mechanical structure of each specific switch. This reference is mentioned in the catalogue along with the dimensional drawing and the cutout of the panel.

② Electrical diagram

This reference is referred to the electrical diagram of the switch. It includes the diagram and the movement of the knob, with reference to diagrams present in the following pages of the catalogue.

③ Locking/extraction program of keys or any other locking facility.

This reference is not used in those switches key operated, with ey lock, padlockable or with removable knob. It gives the positions where the switch must be blocked. The locking of any type of key switch is done by removing the key in the required position, the same for the switches with removable handle. On the contrary, for switches with padlockable devices, this code reference will state where the padlockable could be inserted and blocking the rotation of the knob. The table with locking references is on page 33 of this catalogue and it must be conform to the switching positions foreseen in the electrical diagram referred to the switch.

④ Alike or different key references.

This reference is present only in codes of switches with a key device. It states if the switches must be equipped with keys with same references or all different ones. Letter "D" at the end of the code means all different key references, so each switch will be provided with a unique key, the key of one switch could not be used for operating any other switch of the same supply. If not clearly mentioned in the order, the switches will be provided keys all alike.

⑤ Dimension and front colour

This is referred to the dimension of the frontplate and its and knob's colour.

Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
On/Off Switches				
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201019 202019 203019 204019 205019 206019 207019 208019 209019 210019 211019 212019	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201020 202020 203020 204020 205020 206020 207020 208020 209020 210020 211020 212020	

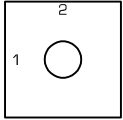
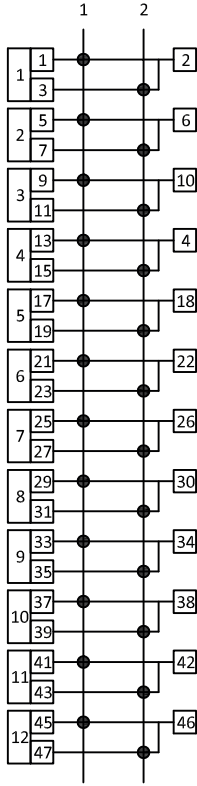
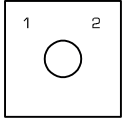
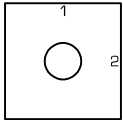
Double Throw Switch Without "0" position.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201001 202001 203001 204001 205001 206001 207001 208001 209001 210001 211001 212001	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201002 202002 203002 204002 205002 206002 207002 208002 209002 210002 211002 212002	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201003 202003 203003 204003 205003 206003 207003 208003 209003 210003 211003 212003	

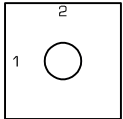
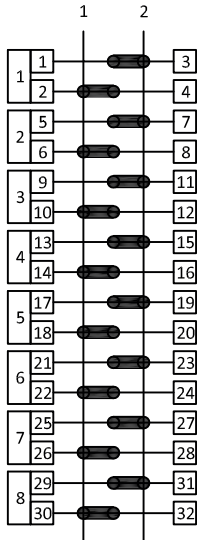
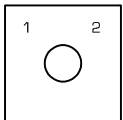
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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2 Positions switch with 1 input & 2 Output in each deck

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201007 202007 203007 204007 205007 206007 207007 208007 209007 210007 211007 212007	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201008 202008 203008 204008 205008 206008 207008 208008 209008 210008 211008 212008	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	201009 202009 203009 204009 205009 206009 207009 208009 209009 210009 211009 212009	

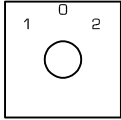
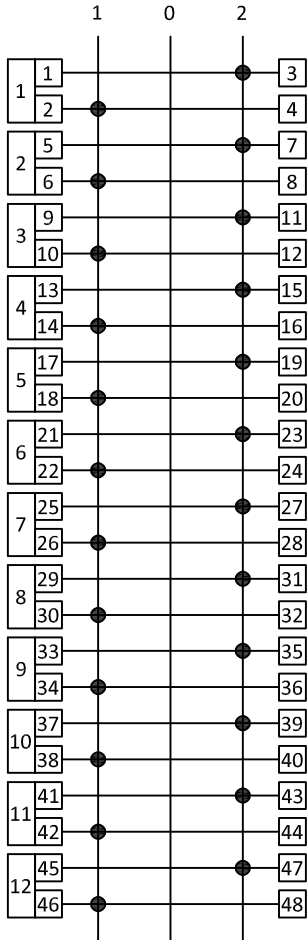
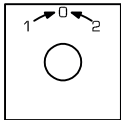
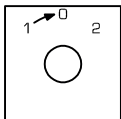
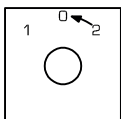
2 Positions switch with Make before Break Contacts

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	201055 202055 203055 204055 205055 206055 207055 208055	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	201056 202056 203056 204056 205056 206056 207056 208056	

Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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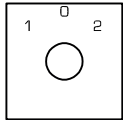
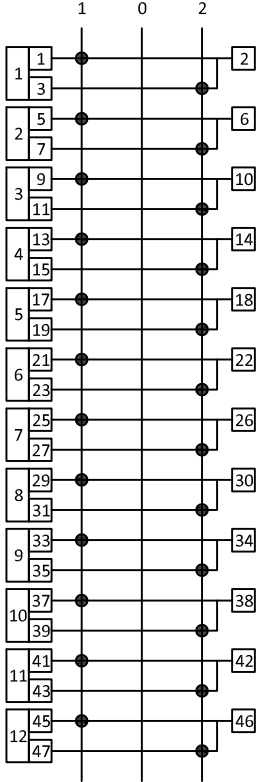
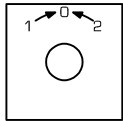
3 pos. switch with "0" Position with electrically isolated contacts

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	301001 302001 303001 304001 305001 306001 307001 308001 309001 310001 311001 312001	
With Spring return to "0" position from pos."1" & pos."2". 1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	M301001 M302001 M303001 M304001 M305001 M306001 M307001 M308001	
With Spring return to "0" position from pos."1". 1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	301012 302012 303012 304012 305012 306012 307012 308012	
With Spring return to "0" position from pos."2". 1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	301020 302020 303020 304020 305020 306020 307020 308020	

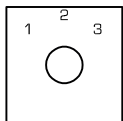
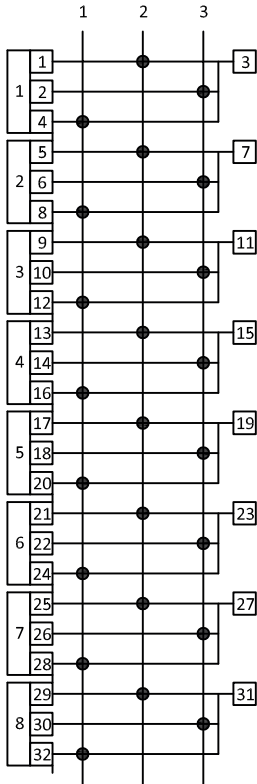
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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3 pos. switch with "0" Position with 1 input and 2 output in each deck.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	301003 302003 303003 304003 305003 306003 307003 308003 309003 310003 311003 312003	
With Spring return to "0" position from pos."1" & pos."2". 1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	M301003 M302003 M303003 M304003 M305003 M306003 M307003 M308003	

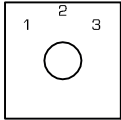
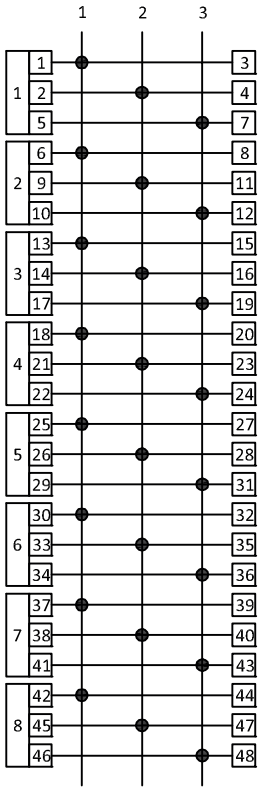
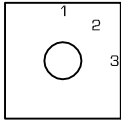
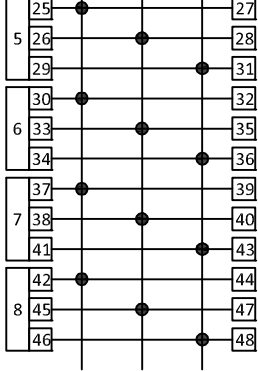
3 pos. switch without "0" Position with 1 input and 3 output in each deck.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	301004 302004 303004 304004 305004 306004 307004 308004 309004 310004 311004 312004	
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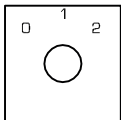
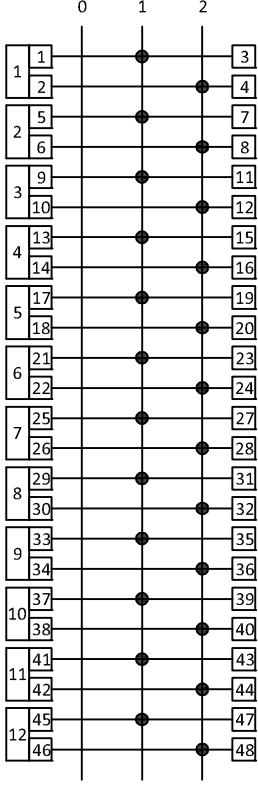
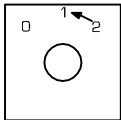
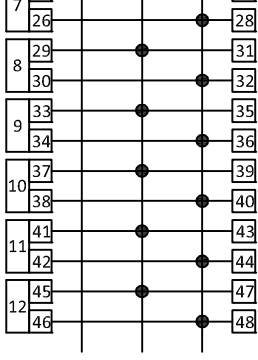
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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3 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		2 3 5 6 8 9 11 12	302078 303078 305078 306078 308078 309078 311078 312078	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		2 3 5 6 8 9 11 12	302134 303134 305134 306134 308134 309134 311134 312134	

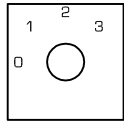
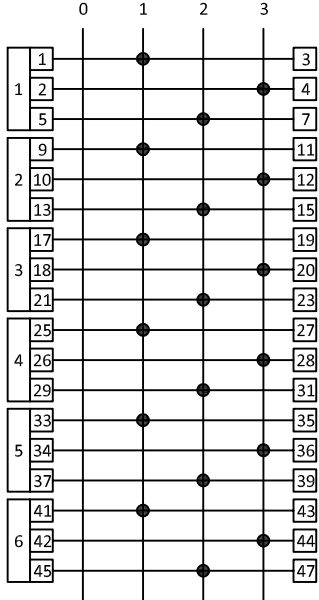
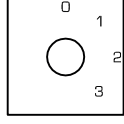
3 pos. switch with "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole		1 2 3 4 5 6 7 8 9 10 11 12	301016 302016 303016 304016 305016 306016 307016 308016 309016 310016 311016 312016	
With Spring return to "0" position from pos. "2". 1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	301048 302048 303048 304048 305048 306048 307048 308048	

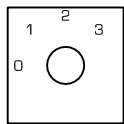
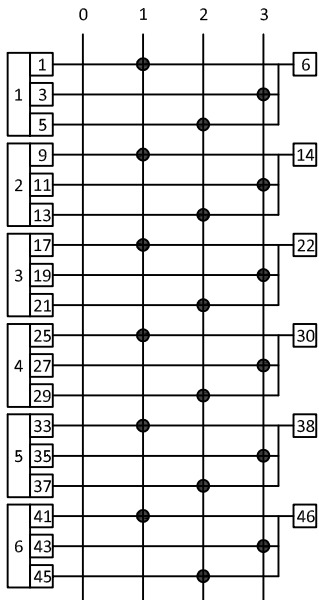
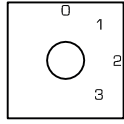
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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4 pos. switch With "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402008 404008 406008 408008 410008 412008	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402087 404087 406087 408087 410087 412087	

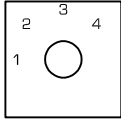
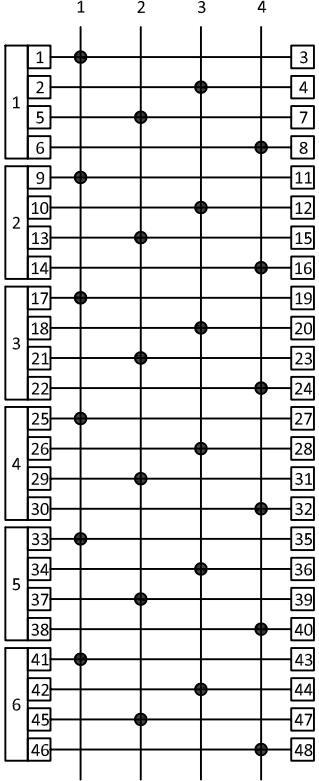
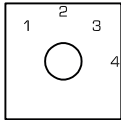
4 pos. switch with "0" Position, with 1 Input and 3 output per Pole.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402011 404011 406011 408011 410011 412011	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402088 404088 406088 408088 410088 412088	

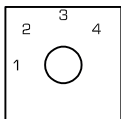
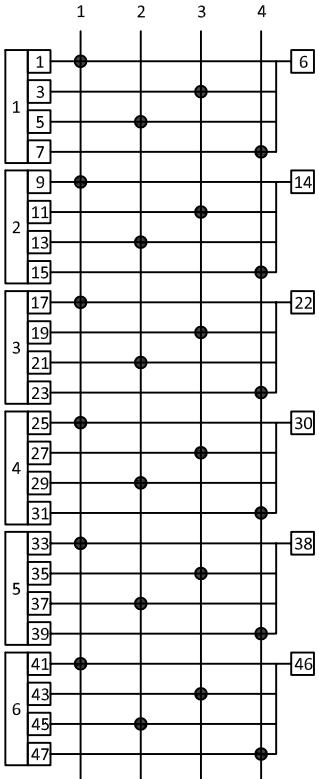
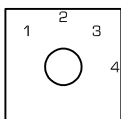
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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4 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402003 404003 406003 408003 410003 412003	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402017 404017 406017 408017 410017 412017	

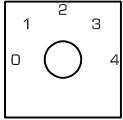
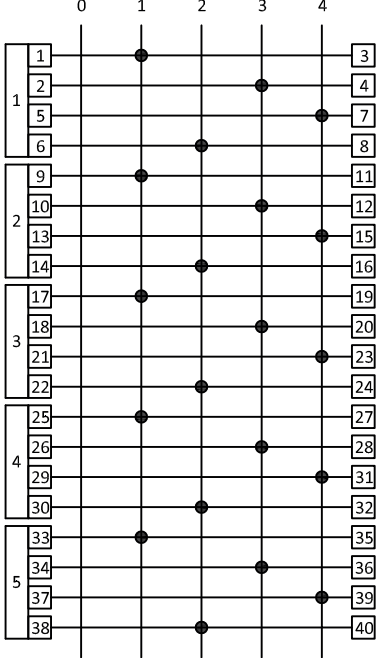
4 pos. switch without "0" Position, with 1 Input and 4 output per Pole.

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402007 404007 406007 408007 410007 412007	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		2 4 6 8 10 12	402089 404089 406089 408089 410089 412089	

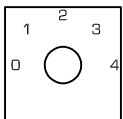
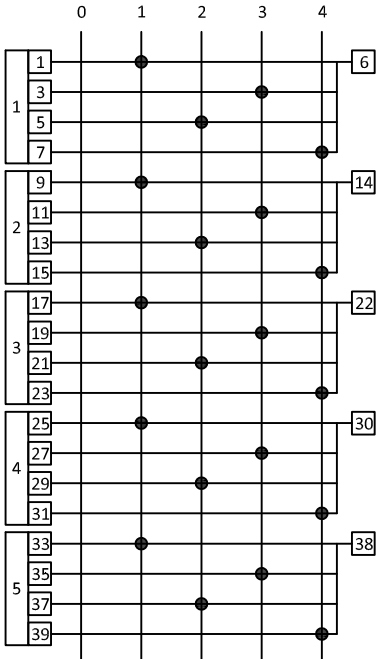
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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5 pos. switch With "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole 5 pole		2 4 6 8 10	502020 504020 506020 508020 510020	
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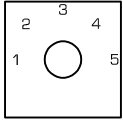
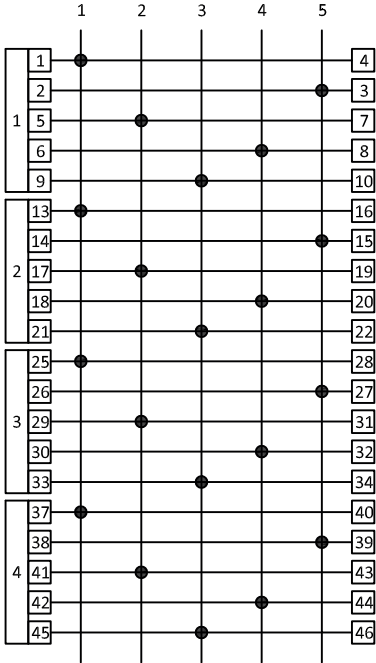
5 pos. switch with "0" Position, with 1 Input and 4 output per Pole.

1 pole 2 pole 3 pole 4 pole 5 pole		2 4 6 8 10	502010 504010 506010 508010 510010	
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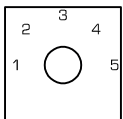
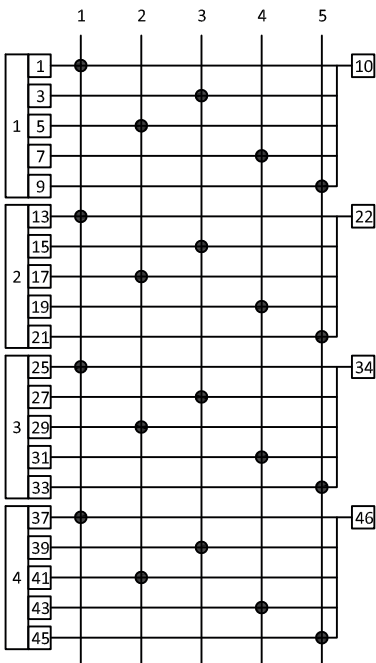
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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5 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	503018 506018 509018 512018	
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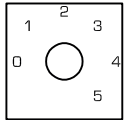
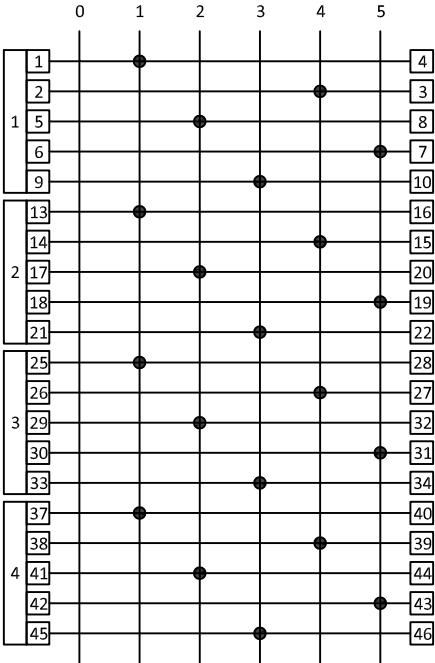
5 pos. switch without "0" Position, with 1 Input and 5 output per Pole.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	503013 506013 509013 512013	
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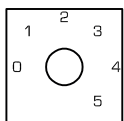
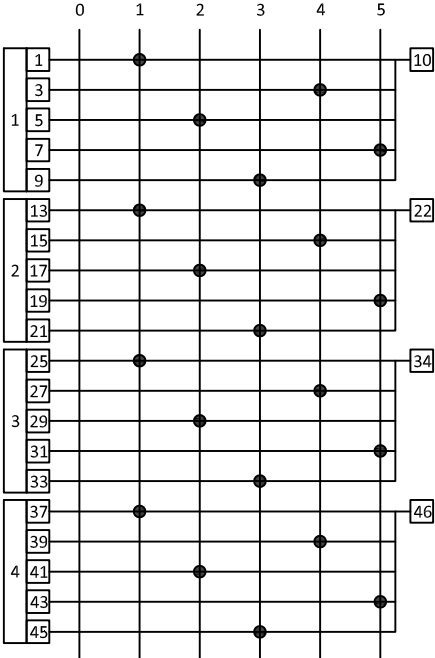
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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6 pos. switch With "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	603009 606009 609009 612009	
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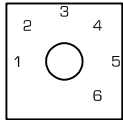
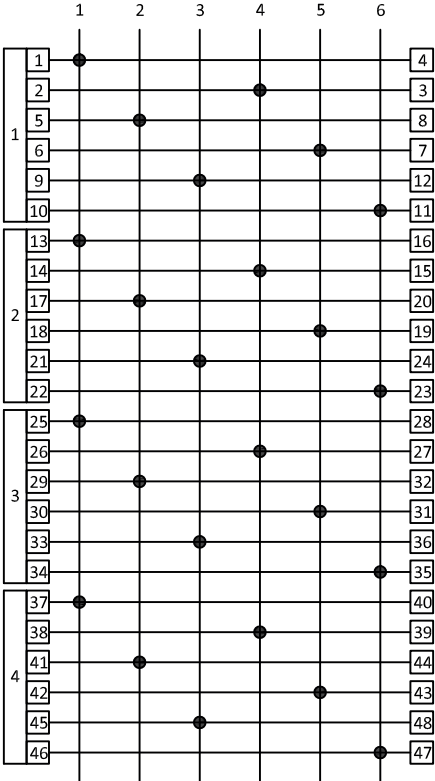
6 pos. switch with "0" Position, with 1 Input and 5 output per Pole.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	603003 606003 609003 612003	
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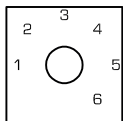
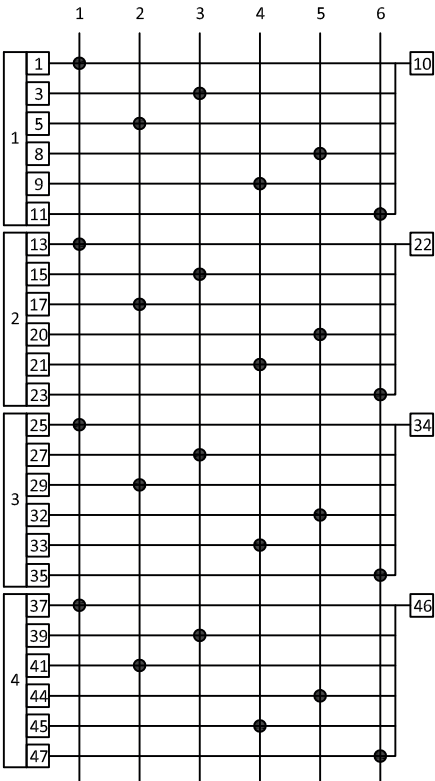
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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6 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	603008 606008 609008 612008	
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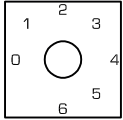
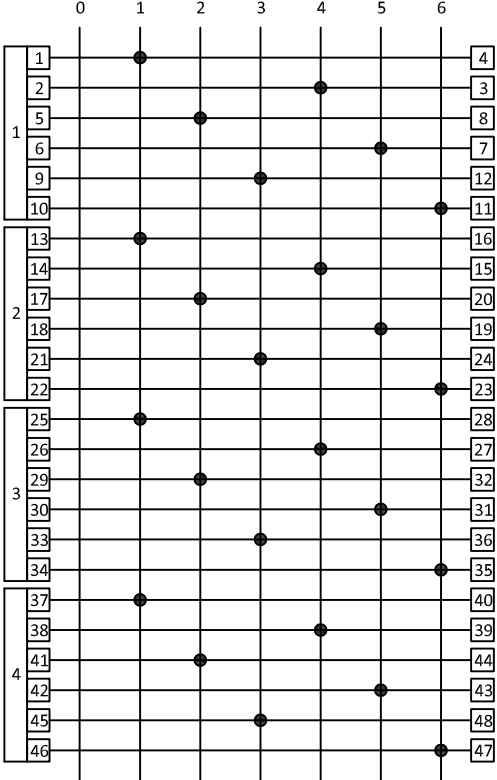
6 pos. switch without "0" Position, with 1 Input and 6 output per Pole.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	603004 606004 609004 612004	
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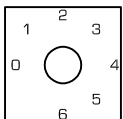
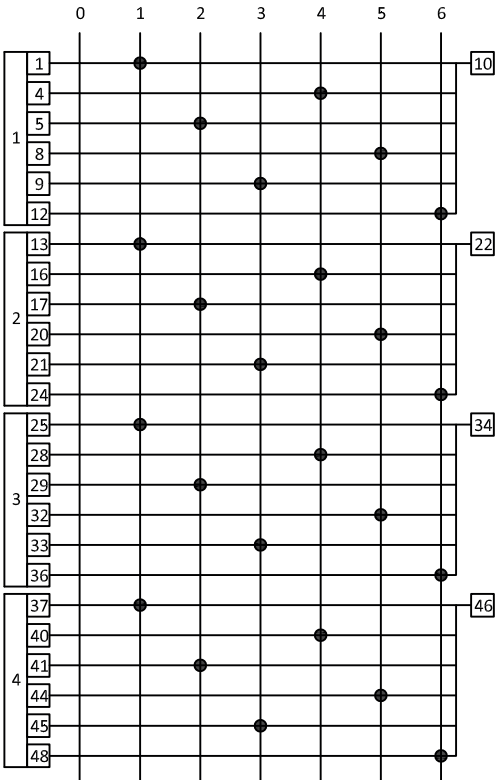
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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7 pos. switch With "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	703012 706012 709012 712012	
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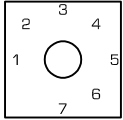
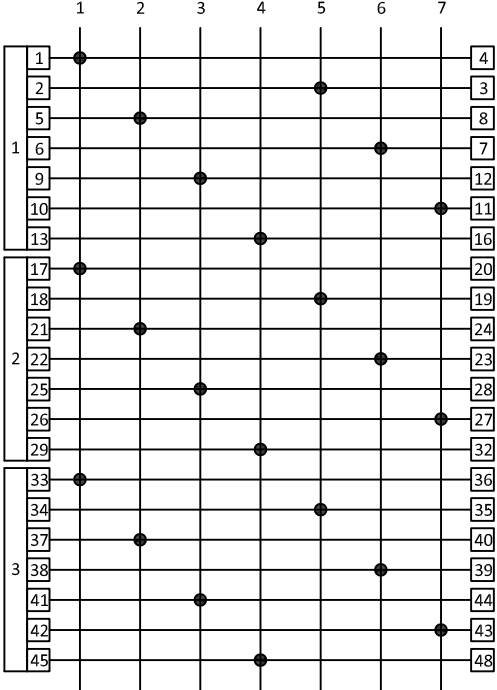
7 pos. switch with "0" Position, with 1 Input and 6 output per Pole.

1 pole 2 pole 3 pole 4 pole		3 6 9 12	703006 706006 709006 712006	
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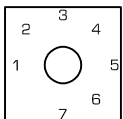
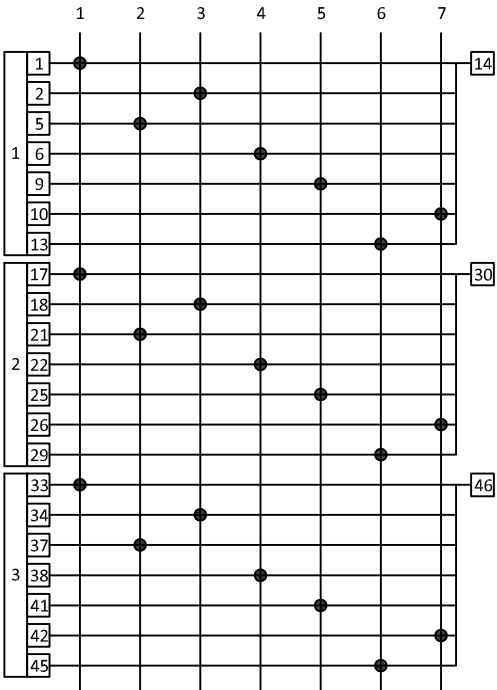
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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7 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole		4 8 12	704001 708001 712001	
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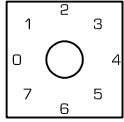
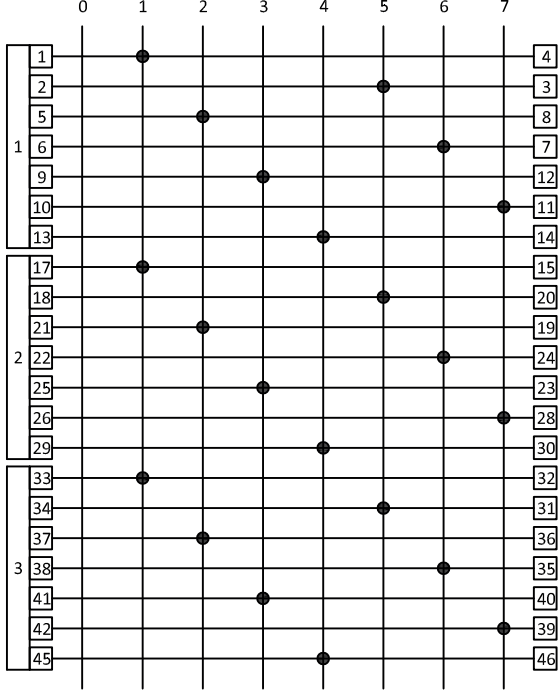
7 pos. switch Without "0" Position, with 1 Input and 7 output per Pole.

1 pole 2 pole 3 pole		4 8 12	704013 708013 712013	
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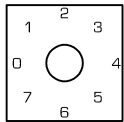
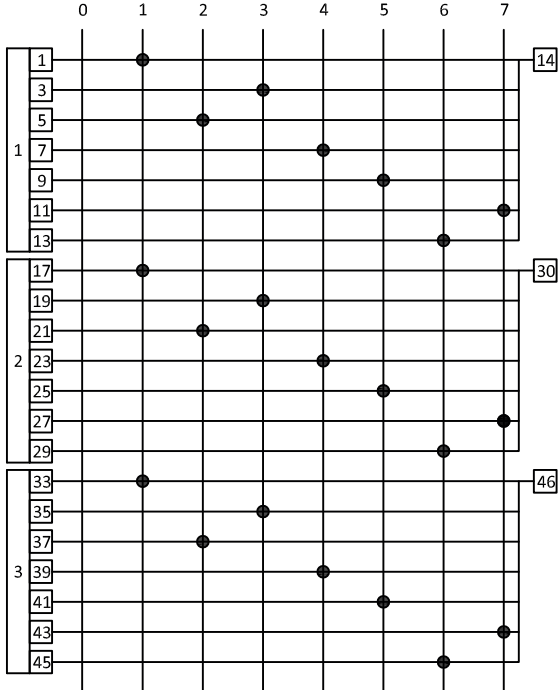
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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8 pos. switch With "0" Position, with electrically isolated contacts.

<p>1 pole 2 pole 3 pole</p>		<p>4 8 12</p>	<p>804003 808003 812003</p>	
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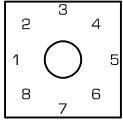
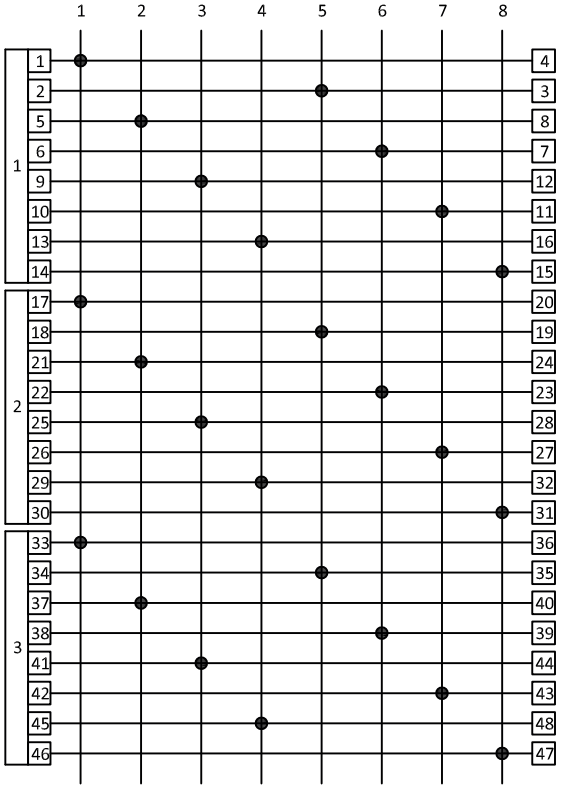
8 pos. switch with "0" Position, with 1 Input and 7 output per Pole.

<p>1 pole 2 pole 3 pole</p>		<p>4 8 12</p>	<p>804005 808005 812005</p>	
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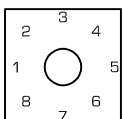
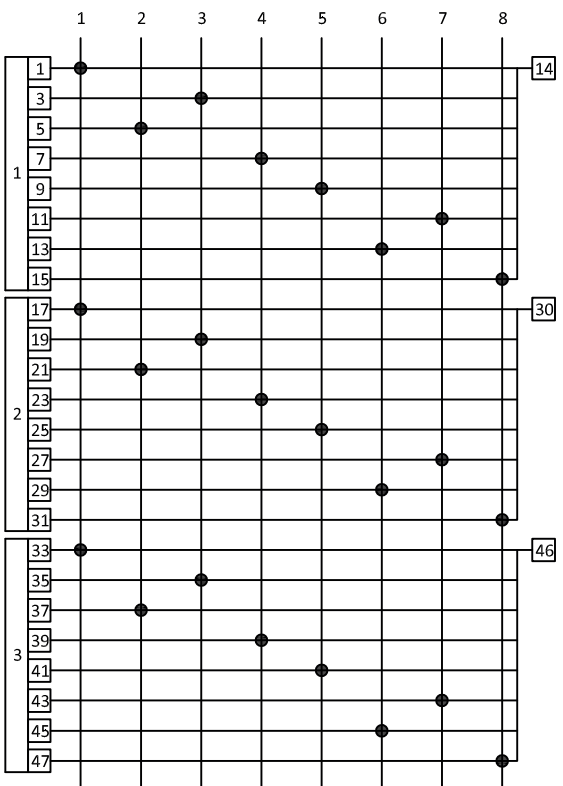
Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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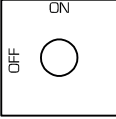
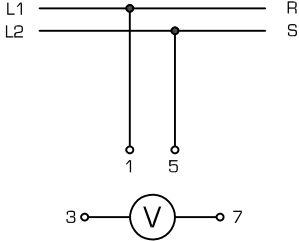
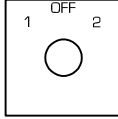
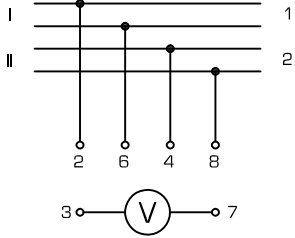
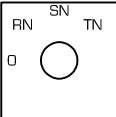
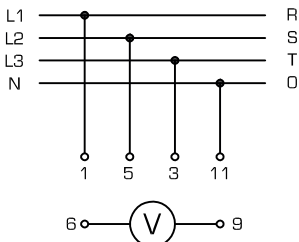
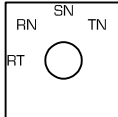
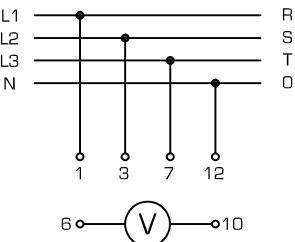
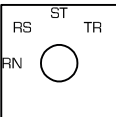
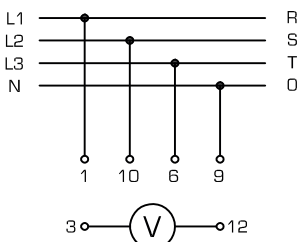
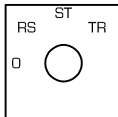
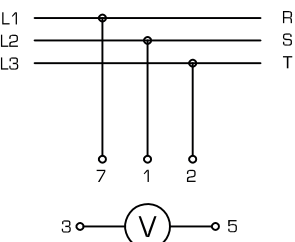
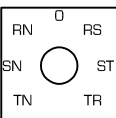
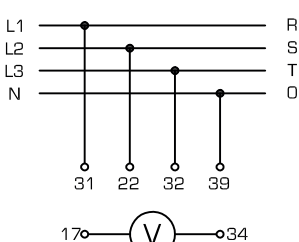
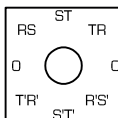
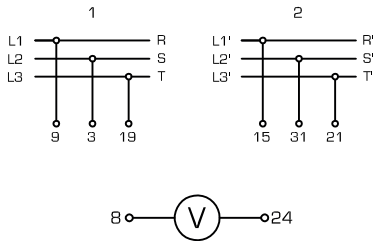
8 pos. switch Without "0" Position, with electrically isolated contacts.

1 pole 2 pole 3 pole		4 8 12	804001 808001 812001	
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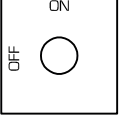
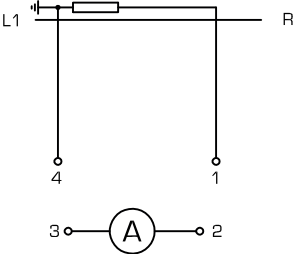
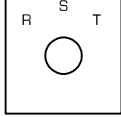
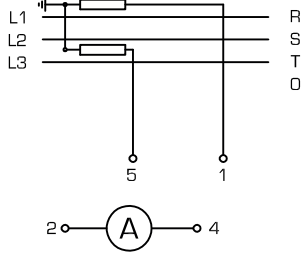
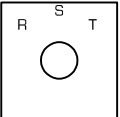
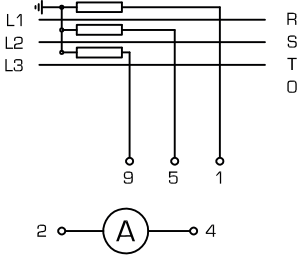
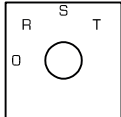
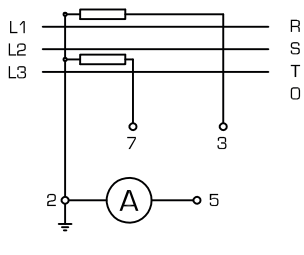
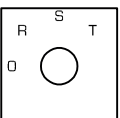
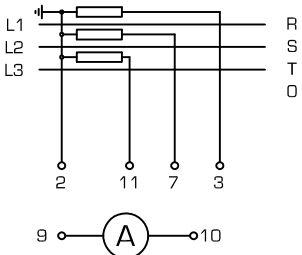
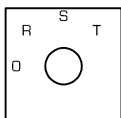
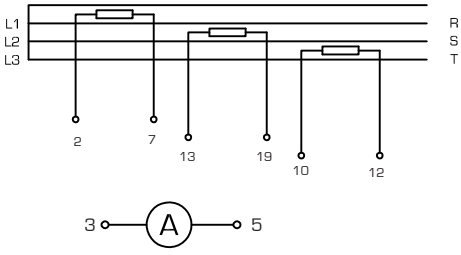
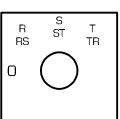
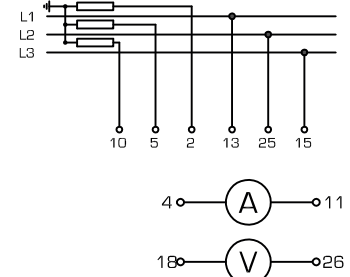
8 pos. switch without "0" Position, with 1 Input and 8 output per Pole.

1 pole 2 pole 3 pole		4 8 12	804002 808002 812002	
----------------------------	---	--------------	----------------------------	--

Switch Function and Configuration

<p>Diagram n° 202V</p> 	<p>VOLTMETER SWITCH: 2 wire Single Phase or DC</p> 	<p>Diagram n° 302V10</p> 	<p>VOLTMETER SWITCH: 4 wire two Phases or two separate DC circuits</p> 
<p>Diagram n° 403V15</p> 	<p>VOLTMETER SWITCH: 3 Phase Voltage</p> 	<p>Diagram n° 403V16</p> 	<p>VOLTMETER SWITCH: 1 Phase to Phase and 3 phases Voltage.</p> 
<p>Diagram n° 403V17</p> 	<p>VOLTMETER SWITCH: 1 Phase Voltage and 3 Phase to Phase</p> 	<p>Diagram n° 402V09</p> 	<p>VOLTMETER SWITCH: 3 Phase to Phase</p> 
<p>Diagram n° 705V12</p> 	<p>VOLTMETER SWITCH: 3 Phase and 3 Phase to Phase</p> 	<p>Diagram n° 8S08</p> 	<p>VOLTMETER SWITCH: 3 Phase to Phase in two 3 Phase circuits.</p> 

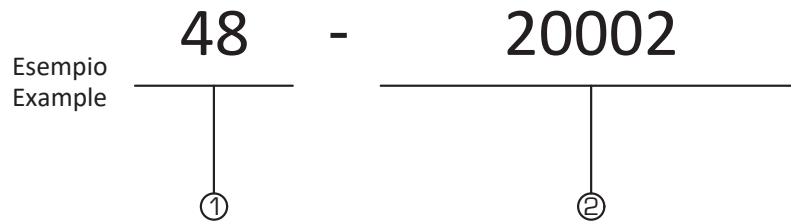
Switch Function and Configuration

<p>Diagram n° 2G02</p> 	<p>AMMETER SWITCH: 1 phase Current Transformer with "0" Pos.</p> 	<p>Diagram n° 302A01</p> 	<p>AMMETER SWITCH: 3 Current Measurements with 2 CT without "0"</p> 
<p>Diagram n° 303A11</p> 	<p>AMMETER SWITCH: 3 Current Measurements with 3 CT without "0"</p> 	<p>Diagram n° 402A06</p> 	<p>AMMETER SWITCH: 3 Current Measurements with 2 CT with "0"</p> 
<p>Diagram n° 403A08</p> 	<p>AMMETER SWITCH: 3 Current Measurements with 3 CT with "0"</p> 	<p>Diagram n° 405A02</p> 	<p>AMMETER SWITCH: 3 Current Measurements with 3 CT with "0" crossing Currents.</p> 
<p>Diagram n° 407AV01</p> 	<p>VOLT-AMMETER SWITCH: 3 Current Measurements with 3 CT with "0" For Voltages and Currents Measurements</p> 		

Standard Escutcheon Plate Ordering

La mostrina si intende parte integrante del commutatore in quanto necessaria per il fissaggio al pannello dello stosso, se non specificata nessuna incisione essa verrà fornita Neutra, codice 00000.

The Escutcheon plate is strictly necessary for fitting the switch to the panel, if none engraving is specified, the frontplate will be supplied Blank, code 00000. The engraving listed below, are only a little part of those available, require the code of the needed one if not present.



① Dimensions of the Escutcheon Plate.

48= 48x48mm
64= 64x64mm

②

2 Positions

1 O	AUT. MAN	MAN. ALIT.	ALIT. MAN.	1 2	INCL. ESQ.	DIST. LOC.	2 1	REMOTE LOCAL	I E	L R	LOC. REM.	TE T1	OFF ON
20002	20004	20006	20007	20008	20010	20012	20013	20016	20022	20028	20030	20035	20036
R L	REM. LOC.	ON OFF	AUTO O	MAN. O	LOC. DIST.	OFF ON	AUT. MAN	PROVA SERVIZIO	LOC. SUPV.	EMERGENCY NORMAL	B A	SHIP SHORE	HAND AUTO
20037	20041	20050	20054	20055	20059	20068	20070	20106	20187	20160	20065	20085	20184
PARALLEL INDIVIDUAL	REM. SUPV.	MANUAL AUTO	IN OUT	TRIP ALARM	MANUAL AUTO	SERV. TRIP	NORMAL TEST	TR1 TR2	ATA ATB	MAIN A B INVA	WINTER SUMMER	LOC. SCADA	OUTBOARD SHORE
20116	20404	20231	20322	20505	20463	20058	20138	20174	20196	20277	20289	20429	20341
NORMAL TRANSFER	REM. SUPV.	GIS L	BYPASS SERVICE	M A	O 1	OUT IN	TRIP NORMAL	DG1 DG2	HAND AUTO	AUTO MANUAL			
20346	20404	20161	20510	20021	20001	20464	20553	20279	20152	20205			

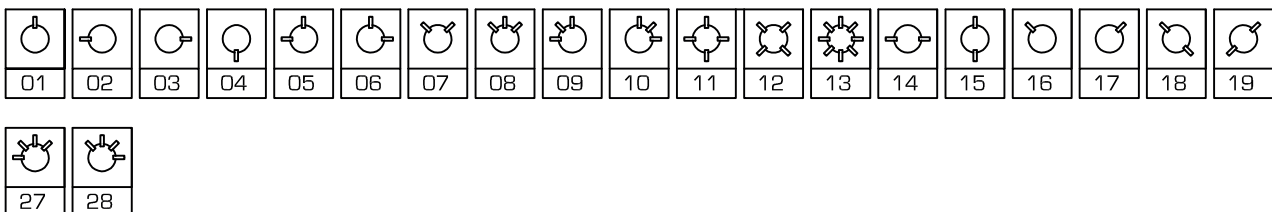
3 Positions

MAN. O AUT.	AUT. O MAN.	M O A	CH. O AP.	DIM. O ALUM.	AP. O CH.	1 O 2	TEST O TRIP	O 1 2	LOC. O DIST.	1 2 3	ALUM. O DIM.	OPEN O CLOSE	CLOSE O OPEN	
30003	30004	30005	30010	30011	30012	30013	30014	30015	30016	30017	30019	30024	30031	
A C B	START O STOP	TRIP O CLOSE	LOC. O REM.	LOC. O AUT.	2 1 O 3	O MAN. AUT.	O MAN	O LITY	O 1 O 2	TRIP - CLOSE CLOSE	TEST O STOP	EM. LOC. REM.	ON OFF TEST	RAISE O LOWER
30032	30050	30052	30057	30060	30082	30083	30084	30385	30085	30086	30078	30079	30087	
SCADA SCS	INCR. O DECR.	COLD O HEAT	G1 O G2	A/B B	OFF O ON	L O R	O 1 1+3	TRIP NEUTRAL CLOSE	1 OFF 2	RS ST TR	RY YB BR	R S T	R Y B	
30088	30089	30090	30040	30047	30055	30062	30172	30120	30561	30630	30631	30632	30633	
TEST LOC. REM.	A B C	TEST TRIP N.O.	AUTO OFF MAN.	LOWER OFF RAISE	OLVRE O FERME	LOC. REM. SUPV.	SHORE OFF GEN.	IN O OUT	AUTO O HAND	LOC. OFF REM.	PARALL TR2	T1 T1+T2 T2	MAN. LOC. REM.	
30025	30114	30371	30080	30113	30154	30165	30634	30626	30635	30467	30476	30486	30192	
IN NORMAL OUT	BYPASS OFF CHECK	O L1 L2	S P M	AUTO O MAN.										
30609	30608	30183	30526	30108										

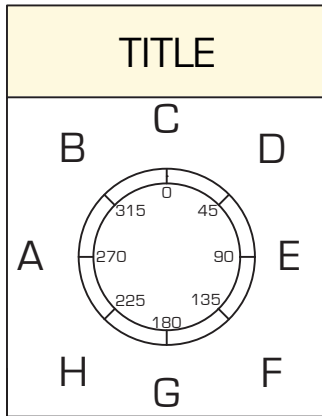
4 Positions													
5 Positions													
6 Positions													
7 Positions													
8 Positions													
Blank													

Locking Programs

La linea di riferimento indica la posizione in cui il commutatore è bloccato e la chiave è estratta.
The reference line shows where the switch is blocked and the key is withdrawn.



Form for special diagram



Position Engraving	
Position	Engraving
TITLE	
A	
B	
C	
D	
E	
F	
G	
H	

Lock in Pos.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spring Return	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Positions									
A	B	C	D	E	F	G	H		

Contacts	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

Switch Action :

Stayput Spring return Stayput and Spring return

Specification:.....

Model number:

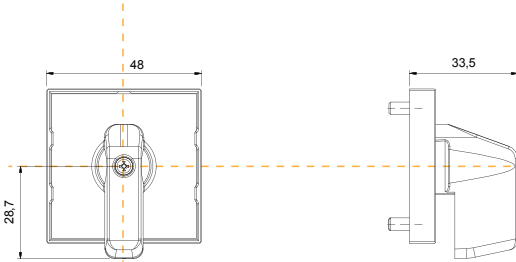
Ordering Code : (it will provided by COMELETIC)

Accessories / Informations:

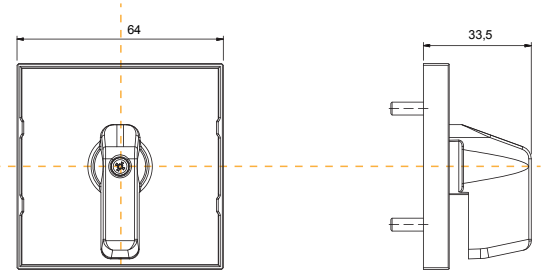
Panel Mounting <input type="checkbox"/>	Pistol Grip Handle <input type="checkbox"/>	Key Lock (Different Keys) <input type="checkbox"/>
Base Mounting <input type="checkbox"/>	Padlockable <input type="checkbox"/>	Electromechanical interlock <input type="checkbox"/>
Gilded Contacts <input type="checkbox"/>	Mechanical Indicator (only for Spring Return Switches) <input type="checkbox"/>	Led Indicator <input type="checkbox"/>
IP55 Front Protection <input type="checkbox"/>	Key Lock (Same Keys) <input type="checkbox"/>	
Push to Operate <input type="checkbox"/>	Pull to Operate <input type="checkbox"/>	Master Key <input type="checkbox"/>

Legenda Symbols			
	Closed Contact		Spring Return
	Closed Contact Two consecutive Positions		Spring Return from Left and Right
	Make Before Break Contacts		

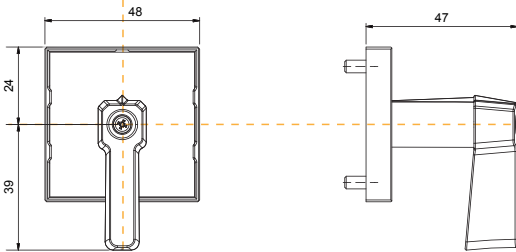
Wing Handle 48x48
Manopola Wing 48x48



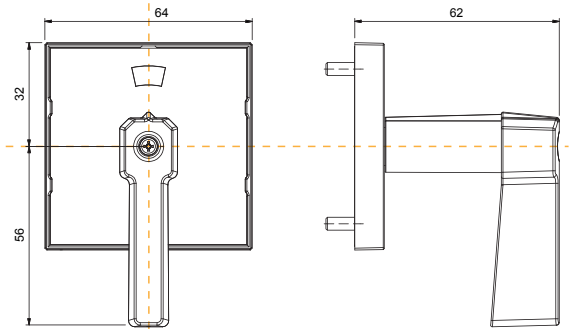
Wing Handle 64x64
Manopola Wing 64x64



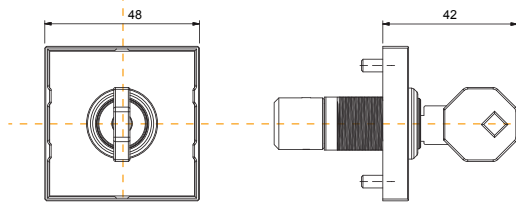
Pistol Grip Handle 48x48
Manopola Pistola 48x48



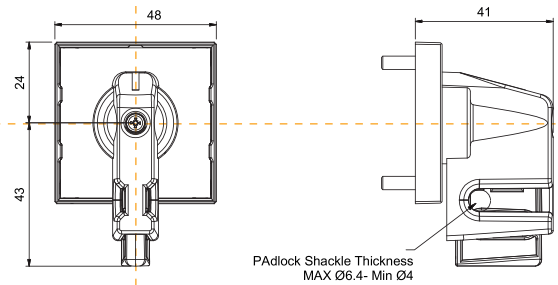
Big Pistol Grip Handle 64x64 (Trip Indicator)
Manopola Pistola Grande 64x64



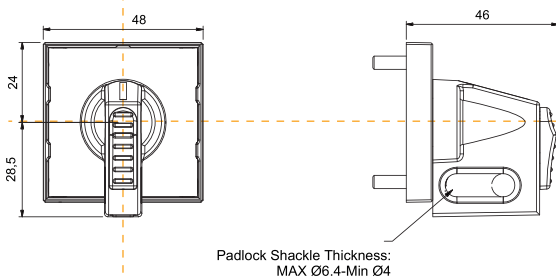
Key Operated 48x48
Operatore a Chiave 48x48



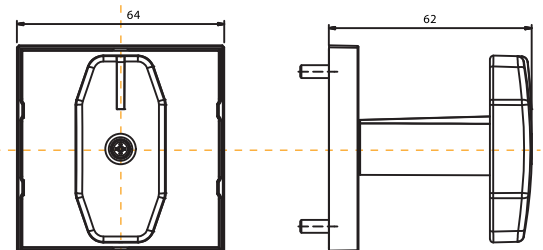
Padlockable 48x48
Manopola Lucchettabile 48x48



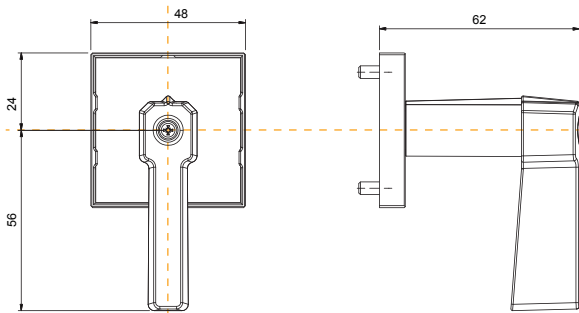
Small Padlockable 48x48
Lucchettabile Piccola 48x48



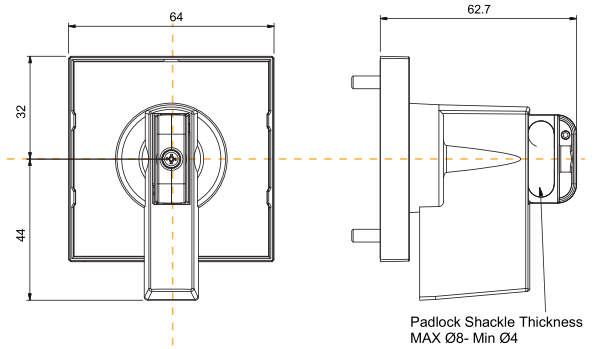
Big Oval Handle 64x64
Manopola Ovale Grande 64x64



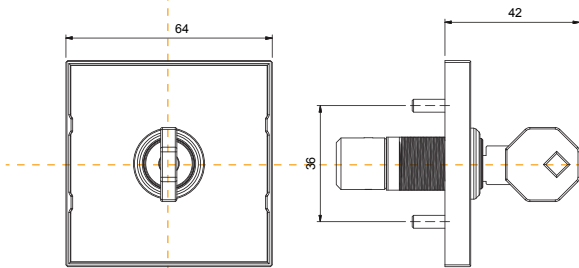
Big Pistol Grip Handle 48x48
 Manopola a Pistola Grande 48x48



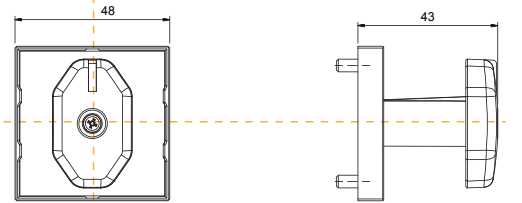
Big Padlockable Handle 64x64
 Manopola Lucchettabile Grande 64x64



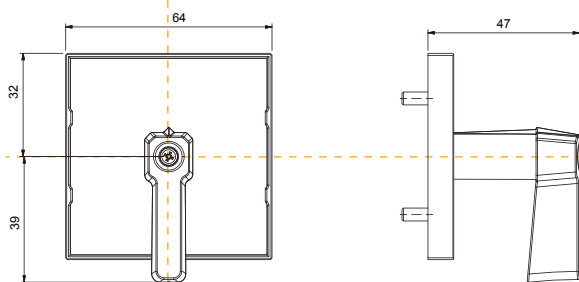
Key Operated 64x64
 Operatore a Chiave 64x64



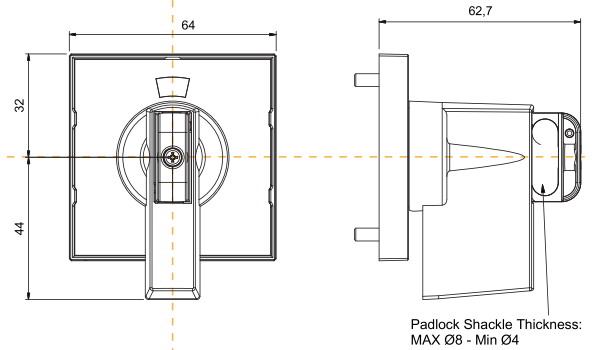
Small Oval Handle 48x48
 Manopola Ovale Piccola 48x48



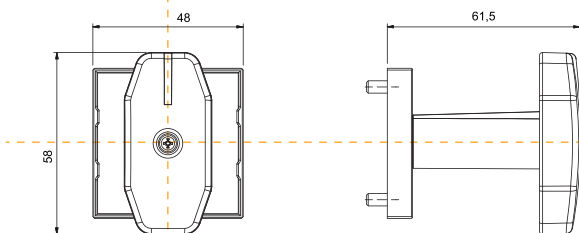
Small Pistol Grip Handle 64x64
 Manopola a Pistola Piccola 64x64



Big Padlockable Handle 64x64 (Trip Indicator)
 Manopola Lucchettabile Grande 64x64



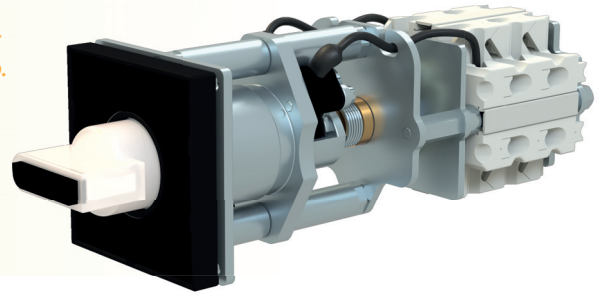
Big Oval Handle 48x48
 Manopola Ovale Grande 48x48



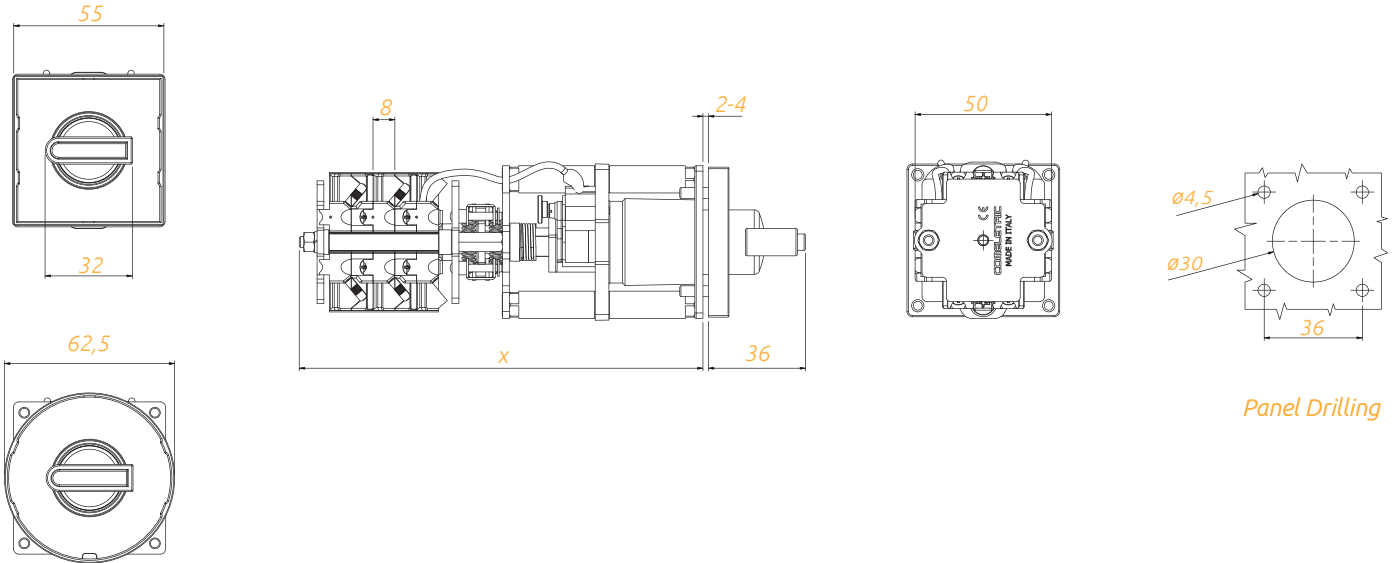
DR601 Model:

Discrepancy switch.
The fitting system is simplified by the 5 holes. Escutcheon plates available in different colours.

Manipolatore comando conferma.
Il sistema di fissaggio al pannello a 5 fori agevola l'operazione di fissaggio. Targhette disponibili in varie colorazioni.



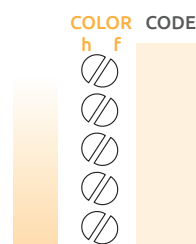
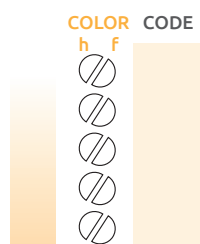
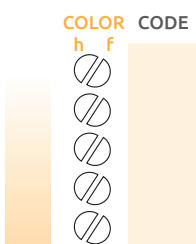
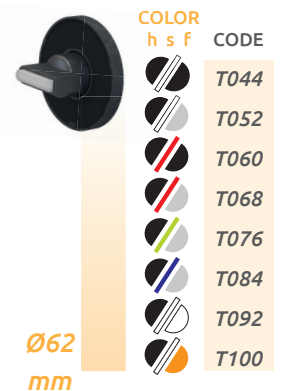
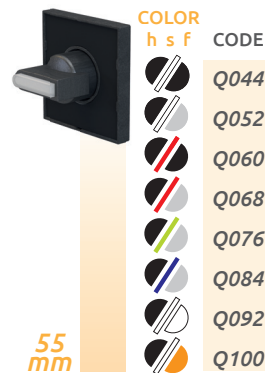
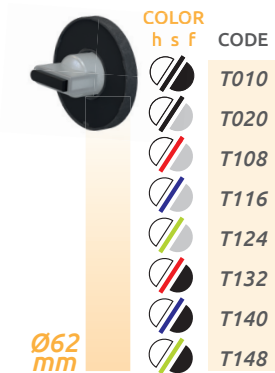
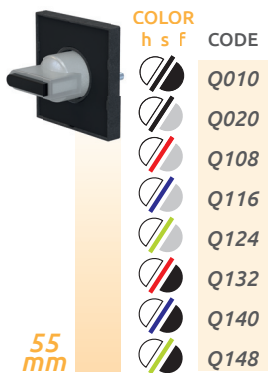
Dimensions



Panel Drilling

N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length (mm)	132	140	148	156	164	172	180	188	196	204	212	220

DR601 Frontplates DR601 Mostrina

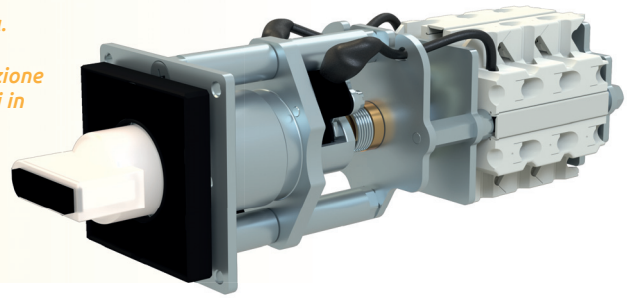


h=handle; f=frontplate
h=manopola; f=mostrina
Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

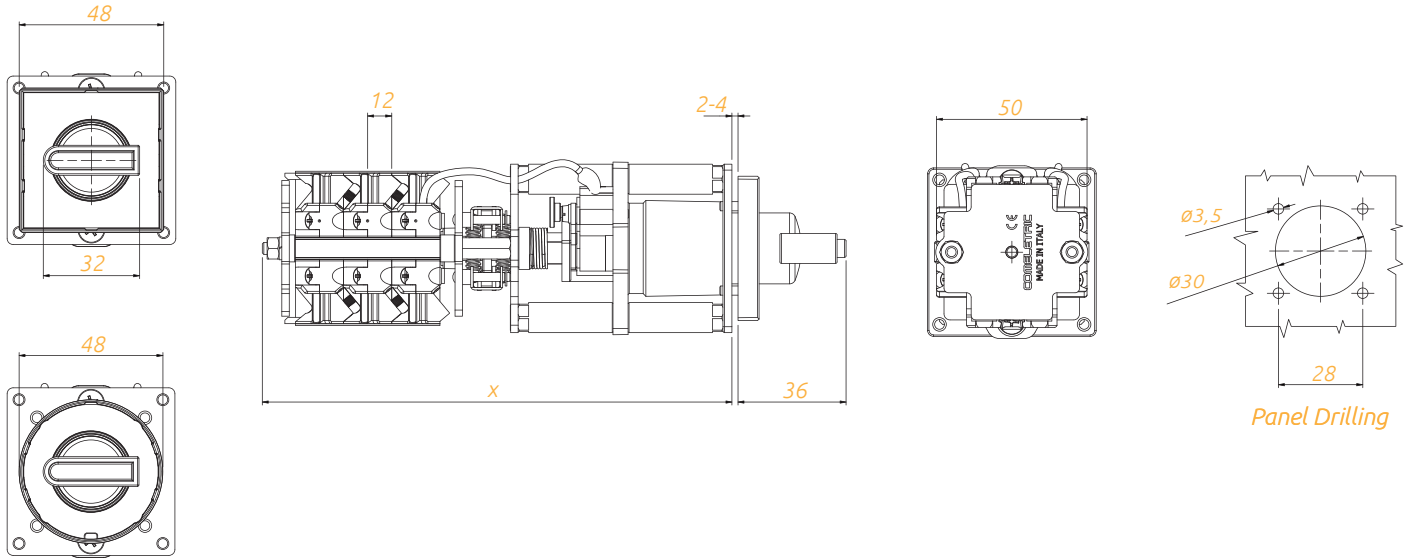
DR615 Model:

Discrepancy switch.
New fitting system facilitated by the 5 holes. Escutcheon plates available in different colours.
Frontplate size mm 48x48 or Ø mm 48

Manipolatore comando conferma.
Il nuovo sistema di fissaggio al pannello a 5 fori agevola l'operazione di fissaggio. Targhette disponibili in varie colorazioni.
Misure mostrine 48x48 mm oppure Ø 48 mm


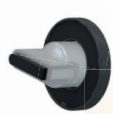

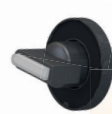


Dimensions



N° of packets	1	2	3	4	5	6	7	8	9	10	11	12
Length (mm)	132	140	148	156	164	172	180	188	196	204	212	220

DR615 Frontplates DR615 Mostrine

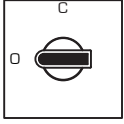
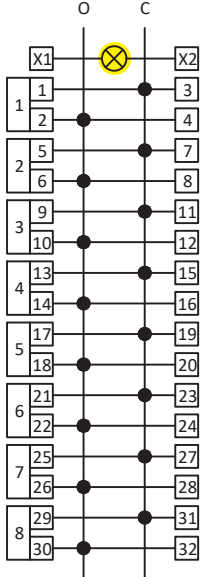
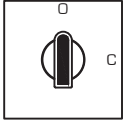
 <p>48 mm</p>	<p>COLOR h s f</p> <p>CODE</p> <p>Q028</p> <p>Q203</p> <p>Q212</p> <p>Q163</p> <p>Q171</p> <p>Q179</p> <p>Q187</p> <p>Q195</p>	 <p>Ø48 mm</p>	<p>COLOR h s f</p> <p>CODE</p> <p>T028</p> <p>T203</p> <p>T212</p> <p>T163</p> <p>T171</p> <p>T179</p> <p>T187</p> <p>T195</p>	 <p>48 mm</p>	<p>COLOR h s f</p> <p>CODE</p> <p>Q036</p> <p>Q156</p> <p>Q164</p> <p>Q172</p> <p>Q180</p> <p>Q188</p> <p>Q196</p> <p>Q204</p>	 <p>Ø48 mm</p>	<p>COLOR h s f</p> <p>CODE</p> <p>T036</p> <p>T156</p> <p>T164</p> <p>T172</p> <p>T180</p> <p>T188</p> <p>T196</p> <p>T204</p>
<p>COLOR h f</p> <p>CODE</p>	<p>COLOR h f</p> <p>CODE</p>	<p>COLOR h f</p> <p>CODE</p>					

h=handle; f=frontplate
h=manopola; f=mostrina
Frontplate dimension on page 35/36
Dimensioni frontali a pag. 35/36

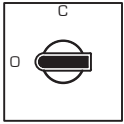
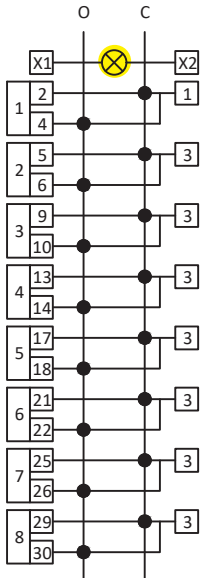
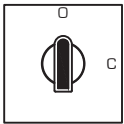
Discrepancy Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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Indication the position of the CB or DS

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	A01001 A02001 A03001 A04001 A05001 A06001 A07001 A08001	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	A01003 A02003 A03003 A04003 A05003 A06003 A07003 A08003	

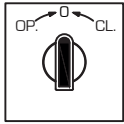
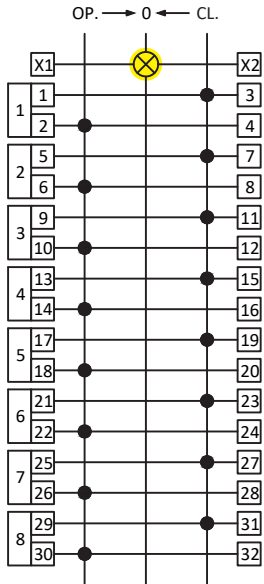
Indication the position of the CB or DS

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	B01001 B02001 B03001 B04001 B05001 B06001 B07001 B08001	
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	B01003 B02003 B03003 B04003 B05003 B06003 B07003 B08003	

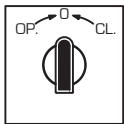
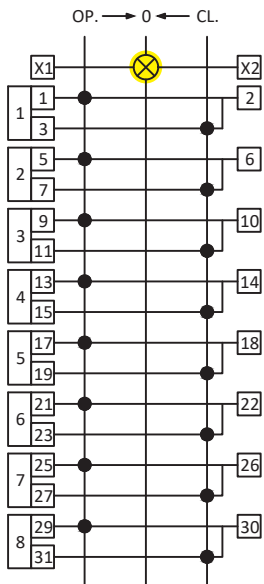
Discrepancy Switch Function and Configuration

Function	Handle Movements	Decks	Code	Connection Diagram
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Control and indication of CB or DS

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	C01001 C02001 C03001 C04001 C05001 C06001 C07001 C08001	
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Control and indication of CB or DS

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole		1 2 3 4 5 6 7 8	C01003 C02003 C03003 C04003 C05003 C06003 C07003 C08003	
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Discrepancy Switch Function and Configuration

Principio di operazione Tipo : D ed E

I manipolatori con l'azionamento tipo D ed E sono tipicamente chiamati Manipolatori di comando e segnalazione di discordanza.

Questi Manipolatori Hanno 2pos. con spostamento di 90° e 2 extra impulsi di 45° per il comando di Apertura e di chiusura.

La manopola viene ruotata di 90° per comandare il relativo Interruttore /Sezionatore.

Questa tuttavia e' solamente una fase di preselezione del comando , il comando viene confermato tramite la pressione della manopola e la relativa rotazione , una volta rilasciata la manopola essa ritorna automaticamente nella relativa posizione.

Principle of operation Type : D and E

The switches with the movements type D and E are basically called control discrepancy switches.

The control discrepancy switch has two fixed positions with a movement of 90° and two extra impulses of 45° on the positions of open and close.

The knob is first rotated by 90° to command the relative Disconnector Switch/Circuit Breaker.

This is however, a "pre-selection" phase of the desired command , the operation is confirmed by pressing and rotating the knob by 45°, which, once released, will return automatically into position.

Handle Movements	Code	Connection Diagram	Handle Movements	Code	Connection Diagram
	D02001			D02006	
	D02008			D02009	
	D03001			D03002	
	D03008			D03015	
	D0300621			D0300612	
	D0301821			D0301812	

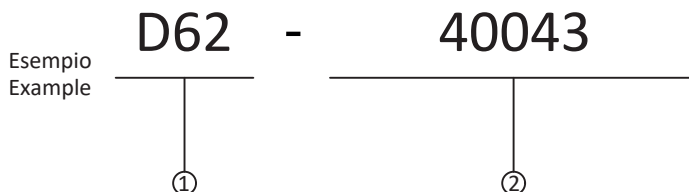
Discrepancy Switch Function and Configuration

Handle Movements	Code	Connection Diagram	Handle Movements	Code	Connection Diagram
	D04001			D04002	
	D04008			D04015	
	E04001			D05008	
	XXXXX			D05001	
	D05002			D06008	
	D05015			D06001	
	D06002			E06001	
	D06015			XXXXXX	
	D06001			D06001	

Discrepancy Switches Escutcheon Plate Ordering

La mostrina si intende parte integrante del commutatore in quanto necessaria per il fissaggio al pannello dello stesso, se non specificata nessuna incisione essa verrà fornita Neutra, codice 00000.

The Escutcheon plate is strictly necessary for fitting the switch to the panel, if none engraving is specified, the frontplate will be supplied Blank, code 00000. The engraving listed below, are only a little part of those available, require the code of the needed one if not present.



① Dimensions and shape of the Escutcheon Plate for Discrepancy Switches.

48= 48x48mm Square / Quadra

D48= 48mm Round / Tonda

55= 55x55mm Square / Quadra

D62= 62.5mm Round / Tonda

②

2 Positions

 20002	 20256	 20264	 20299	 20584	 20585	 20586	 20587	 20588	 20589
 20590	 20022	 20001	 20591	 20488	 20592	 20593	 20594	 20595	

3 Positions

 30012	 30065	 30024	 30667	 30154	 30021	 30140	 30052	 30010	 30186
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4 Positions

 40043	 40044	 40058	 40059	 40060	 40079	 40094	 40097	 40103	 40126
 40252	 40121	 40095	 40175	 40127	 40156	 40088	 40253	 40254	 40257
 40258	 40227	 40256	 40259	 40255	 40260				

Gilded Contacts
Contatti Dorati

Description
Descrizione

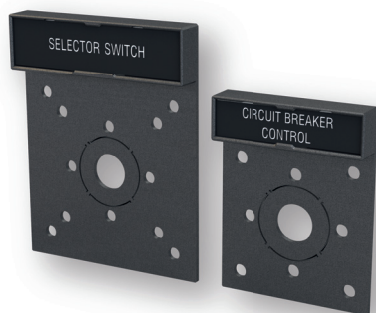


To Improve the reliability and the performances, even in the most aggressive environments, contacts can be supplied with special surface treatments, such as gold with thickness certificate.

Per migliorare l'affidabilità e le prestazioni anche negli ambienti più aggressivi, è possibile fornire i contatti con speciali trattamenti superficiali, con spessori Certificati (es. oro).

Legend Label
Mostrina Addizionale Titolo

Description
Descrizione



It shows the function of the switch. Available for frontplates sized mm.48x48 and mm.64x64. It does not require any extra drilling on the panel.

Indica la funzione specifica del singolo commutatore disponibile per mostrina mm.48x48 e per mostrina mm.64x64. Non necessita nessuna foratura pannello supplementare per il fissaggio.

Led Indicator
Indicatori a Led

Description
Descrizione

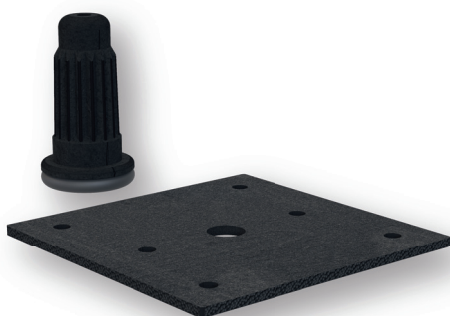


On demand it can be supplied with 1 or 2 LED positioned on the plate, suitable for a light indication.

Su richiesta possono essere forniti 1 o 2 indicatori LED applicati sulla mostrina da utilizzare come indicazione luminosa.

IP55 Protection
Guarnizioni IP55

Description
Descrizione



To ensure IP55 degree protection in the front of the switch, a gum plate is provided to be fitted below the frontplate Holder (not available for R308/R309).

Per assicurare il grado di protezione IP55 sul fronte del commutatore, viene fornita una guarnizione in gomma posta sotto il portamostrina (non disponibile per R308/R309).

**STANDARD UTILIZATION CATEGORIES
CATEGORIE DI UTILIZZO NORMALIZZATE**

Kind of current Tipo di corrente	Category Categoria	Typical applications Applicazioni tipiche
Alternative current Corrente alternata	AC14	Control of small electromagnetic load with rated power = 72VA Comando di piccoli carichi elettromagnetici con potenza = 72VA
	AC15	Control of electromagnetic load with rated power > 72VA Comando di carichi elettromagnetici con potenza > 72VA
Direct current Corrente continua	DC13	Control of electromagnets Comando di elettromagneti
	DC14	Control of electromagnetic loads having economy resistor in circuit Comando di carichi elettromagnetici aventi resistori economizzatori nel circuito

NORMAL CONDITIONS
CONDIZIONI NORMALI

Utilization category Categoria utilizzazione	Make Chiusura	Break Interruzione	U/Ue	cos Φ
	I/Ie	I/Ie		
AC14	6	1	1	0.3
AC15	10	1	1	0.3

ABNORMAL CONDITIONS
CONDIZIONI ANOMALE

Utilization category Categoria utilizzazione	Make Chiusura	Break Interruzione	U/Ue	cos Φ
	I/Ie	I/Ie		
	6	6	1.1	0.7
	10	10	1.1	0.3

				T _{0.95} [ms]
				6xP
DC13	1	1	1	6xP
DC14	10	1	1	15

				T _{0.95} [ms]
				6xP
	1.1	1.1	1.1	6xP
	10	10	1.1	15

- I/Ie : Current to be made or broken and Rated operational current ratio.
Rapporto tra la corrente che l'apparecchiatura è in grado di stabilire o interrompere e la corrente d'impiego.
- U/Ue : Voltage before make and Rated operational voltage ratio.
Rapporto tra la tensione prima della chiusura e la tensione d'impiego.
- T_{0.95} : Time to reach 95% of the steady-state current.
Tempo per raggiungere il 95% della corrente di regime.
- P=Ue x Ie: Steady-state power consumption in W.
Potenza assorbita a regime in W.

The value "6xP" result from empirical relationship which is found to represent most d.c. magnetics loads to an upper limit of P =50W, i.e. 6 x P=300 ms. Load having power-consumption greater than 50W are assumed to consist of smaller loads in parallel. Therefore, 300 ms is to be an upper limits irrespective of the power. (REFERENCE STANDARD IEC 60947-5-1 tab. 5).

La relazione matematica "6xP" è valida per tutti carichi induttivi rappresentativi fino ad un massimo di P pari a 50W cioè 6xP =300ms. Si assume che i carichi aventi una potenza assorbita superiore a 50W siano costituiti da piccoli carichi collegati in parallelo, di conseguenza 300ms è il valore massimo a prescindere dalla potenza assorbita. (RIFERIMENTO NORMA IEC 60947-5-1 tab. 5)

**RATED ELECTRICAL CHARACTERISTICS
CARATTERISTICHE ELETTRICHE NOMINALI**

According to standards Conformità alle norme	IEC 60947-1 - IEC 60947-1/A1 - IEC60947-5-1 - IEC60947-5-1/A1 - EN 60947 -1/A1 - EN 60947-5-1 EN 60947-5-1/A1 - VDE 0660-100 - VDE 0660-200 - 2006/95/EC (LOW VOLTAGE DIRECTIVE), 2004/108/EC (EMC DIRECTIVE), 2011/65/EU (ROHS DIRECTIVE).	
Conventional free air thermal current Corrente convenzionale termica in aria	(I _{th})	20A
Rated insulation voltage Tensione di isolamento nominale	(U _i)	690V
Rated impulse withstand voltage Tensione di tenuta ad impulso nominale	(U _{imp})	4Kv
Frequency Frequenza di impiego		50/60Hz

**RELEVANT INFORMATION ABOUT THE ASSOCIATED SHORT CIRCUIT PROTECTIVE DEVICE
DATI RELATIVI AL DISPOSITIVO DI PROTEZIONE CONTRO IL CORTO CIRCUITO ASSOCIABILE**

Corrente di corto circuito condizionata nominale (I _{cc}) Conditional short-circuit	1000A
Fuse Type Tipo fusibile	Gg 20A-400V
Contact resistance Resistenza di contatto	mΩ5


**MAKING AND BREAKING CAPACITIES
POTERI DI CHIUSURA ED INTERRUZIONE**

Categoria di utilizzazione Utilization Category	(U _e)	(I _e)
AC14	400V	10A
AC15	400V	6V
DC13 L/R 50 ms	220V	1,5A
DC13 L/R ≤ 1 ms	220V	3A

**RESISTANCE TO SHOCK AND VIBRATION (IEC 61373 - CEI EN 61373 Railway applications, Rolling stock equipment)
RESISTENZA VIBRAZIONI E URTI (IEC 61373 - CEI EN 61373 Applicazioni ferroviarie, materiale rotabile).**

Vibration resistance Vibration Range: 5 to 150Hz, Acceleration: 5,72m/s², Time: 5h (in 3 directions)
Resistenza alla vibrazione Range di frequenza da 5 a 15Hz, Accelerazione: 5,72m/s², Tempo: 5h (in 3 direzioni)

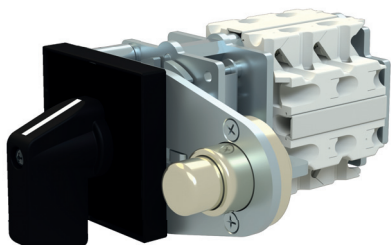
Shock resistance Acceleration: 50m/s² (in 6 directions) , Time: 30ms
Resistenza agli urti Accelerazione: 50m/s² (in 6 direzioni) , Tempo: 30ms

	Recommended tightening torque to avoid thread stripping Don't exceed torque more than indicated.	Coppia di serraggio consigliata per evitare di rovinare il filetto della vite Non superare la coppia più di quanto indicato.
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Conneting screw Vite di contatto terminale		M3
Tightening torque Coppia serraggio viti	(Nm)	1.2
Permissible wire gage Sezione del conduttore		
Single - core or standed wire cavo rigido o intrecciato	(mm ²)	2 x 2.5 2 x AWG13
Flexible wire Cavo flessibile	(mm ²)	2 x 2.5 2 x AWG13

ENVIRONMENTAL DATA (IEC 60947-1 - CEI EN 60947-1) DATI AMBIENTALI	
Temperature range Temperatura ambientale	
Operating temperature Esercizio	-25°C +60°C
Storage temperature Stoccaggio	-40°C +80°C
Pollution degree Grado di inquinamento	PLDG 2

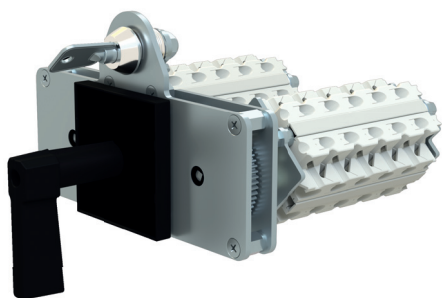
R633 Push Button Interlock Switch
R633 Interblocco a Pulsante



The switch can be handled only by pressing the push button (2 hands operation).

Il commutatore può essere manovrato solo premendo il pulsante di blocco (operazione a 2 mani).

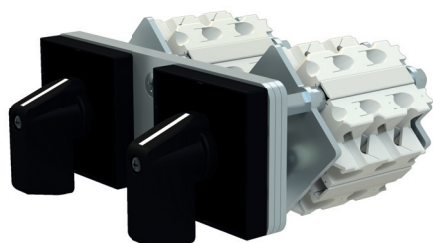
TR602 Tandem Switch with Key Lock
TR602 Commutatore Tandem con Blocco a Chiave



Switch similar to the model TR601 of page 12 of this catalogue but with key lock.

Commutatore come il modello TR601 di pagina 12 ma con blocco a chiave.

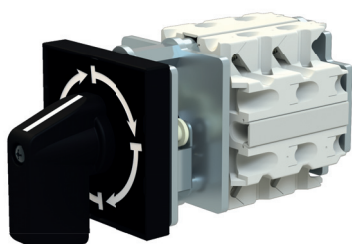
R655 Interlock Between Switches
R655 Commutatori Interbloccati



The operation of one switch is dependent on the position of the other switch.

Grazie a questo dispositivo si può bloccare l'operazione di uno dei due commutatori in relazione alla posizione dell'altro.

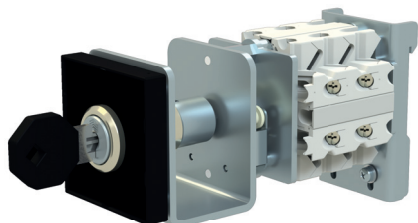
R601 Unidirectional Switch
R601 Rotazione unidirezionale



Available for switches with 4 positions at 90° or 8 positions at 45°. It can be handled only clockwise or counterclockwise.

Disponibile per commutatori a 4 posizioni a 90° o 8 posizioni a 45°. Abilita la rotazione solamente in senso orario o antiorario.

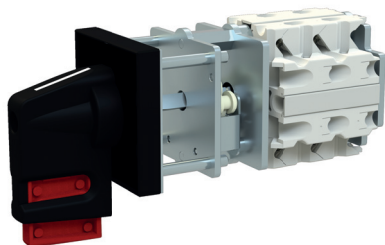
R643 DIN Rail Key Switch
R643 Comando a chiave per guida DIN



Key Operated Switch suitable for fitting on DIN-Rail. Access to screw from the front of the switch.

Commutatore con comando a chiave idoneo al montaggio su guida DIN. L'accesso alle viti avviene dal fronte del commutatore.

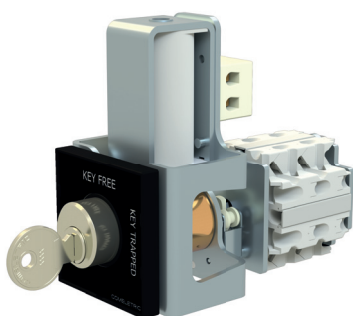
R601K Switch with longer shaft
R601K Commutatore con albero prolungato



Model suitable for special mounting or for mimic tile system panels.

Versione per montaggi speciali o su pannelli sinottici a mosaico.

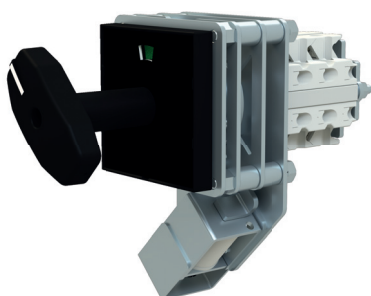
SR602 Solenoid Lock Switch
SR602 Interblocco Elettromeccanico



It is used as interlocking device for disconnecter, circuit breaker, earth switches or to control the access to dangerous areas such as capacitor banks, etc.. The switch can be activated manually through a push button integrated in the front plate that controls the coil. At the end of this operation it is possible to remove the key. REFER TO INTERLOCKING DEVICE CATALOGUE.

L'apparecchio viene utilizzato come interblocco elettromagnetico per sezionatori, interruttori, sezionatori di terra o per regolamentare l'accesso a zone pericolose come banchi di condensatori, ecc.. Il commutatore può essere azionato tramite comando manuale di un pulsante integrato nella mostrina che eccita la bobina, a fine operazione diventa possibile l'estrazione della chiave. FARE RIFERIMENTO AL CATALOGO INTERBLOCCHI.

LR604 Lock-Out Relay
LR604 Relè di Blocco



The Lock-Out Relays are high-speed control Relays used as auxiliary Relays in applications requiring up to 50 contacts of 20 Amps. When a failure occurs, the Lock-Out Relay trips the contacts and locks the system keeping all the critical circuits isolated until the malfunction is solved. REFER TO THE LOCK-OUT RELAY CATALOGUE.

Il Relè di Blocco è un dispositivo automatico ultraveloce utilizzato per commutare simultaneamente fino a 50 contatti da 20 Ampere. In caso di emergenza e/o situazione critica, il relè commuta e isola tutti i circuiti critici del sistema e li tiene isolati finché il guasto non viene eliminato. FARE RIFERIMENTO AL CATALOGO RELE' DI BLOCCO.



COMELETRIC was established in 1960 in Milan as leading company for the design and the manufacturing of selector and control switches, discrepancy switches, lockout relays, interlocking devices, LED Pilot lights and semaphore indicators.

With its more than 50 years of experience, **COMELETRIC** has become trusted partner for the most renowned Electric and Railways Utilities all over the world.

Thanks to a skilled design team, advanced technologies, strict industrial control procedures and strong and long term suppliers relationships, **COMELETRIC** is able to develop and manufacture customized products with very flexible delivery terms.

COMELETRIC is daily pursuing the firm choice of providing tailor made products.

All Company activities are in full accordance with ISO 9001:2015 Standard.

COMELETRIC è stata fondata a Milano nel 1960 come azienda leader per la progettazione e la produzione di selettori e commutatori, manipolatori, relè di blocco, sistemi di interblocco, indicatori e segnalatori di posizione a LED.

Con gli oltre 50 anni di esperienza, **COMELETRIC** è divenuta il partner affidabile per le più rinomate aziende Elettriche e Ferroviarie nel mondo.

Grazie ad una esperta squadra di progettisti, a tecnologie avanzate, a rigide procedure di controllo industriale, a forte e duratura relazione con i fornitori, **COMELETRIC** è in grado di sviluppare e produrre prodotti personalizzati con tempi di consegna molto flessibili.

COMELETRIC persegue quotidianamente la ferma scelta di fornire prodotti su misura.

Tutte le attività aziendali sono in totale conformità con le norme ISO 9001:2015.

C-R16 12/18

Via Ernesto Rizzi 13/H
20077 Melegnano (MI) Italia
T +39 02.98119791
info@comeletric.it
P iva 00868300153

COMELETRIC.IT

