



Schemi commutatori a camme serie GX e GN

Circuit schemes rotary cam switches GX and GN series

Lovato electric

ENERGY AND AUTOMATION



al servizio del cliente

at the customer's service

Ufficio vendite

Tel 035 4282421
Fax 035 4282460
E-mail vendite@LovatoElectric.com

Sales Office

Tel +39 035 4282354
Fax +39 035 4282400
E-mail sales@LovatoElectric.com

Servizio Clienti
Technical Support and Customer Care

Tel +39 035 4282422
Fax +39 035 4282295
E-mail service@LovatoElectric.com

Informazioni on line
On line information

www.LovatoElectric.com
Sito internet ufficiale LOVATO Electric
Official LOVATO Electric website

Sede principale
Head Office

Via Don E. Mazza, 12
24020 GORLE, BERGAMO (Italy)
Tel +39 035 4282111
Fax +39 035 4282200
E-mail info@LovatoElectric.com

I prodotti descritti in questo documento sono suscettibili in qualsiasi momento di evoluzioni o di modifiche. Le descrizioni ed i dati a catalogo e listino prezzi non possono pertanto avere nessun valore contrattuale. Si ricorda altresì che i prodotti stessi devono essere utilizzati da personale qualificato e comunque nel rispetto delle vigenti normative impiantistiche di installazione e ciò allo scopo di evitare danni a persone e cose.

The products illustrated in this publication are subject to be revised or improved at any moment. Catalogue descriptions, technical and operational data as well as other details herein specified do not have any contractual value so must be considered only as indication. The products must be installed and used by qualified personnel and in compliance with the regulations in force for electrical systems in order to avoid damages and safety hazards.

Lovato electric





indice
index



GX...



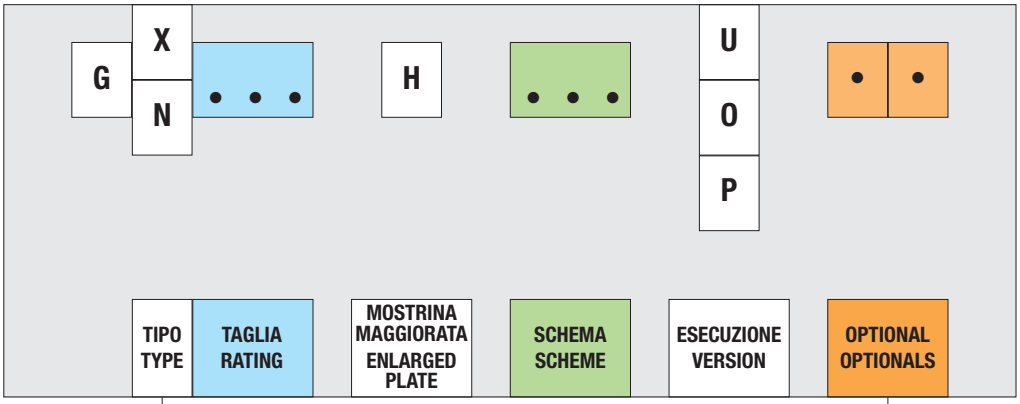
GN...

Pag. / Page

Modalità di codifica / Order code structure 4
Tabella schemi speciali / Special circuit scheme form 5
Interruttori con angolo di rotazione 60° /
On-Off switches with 60° switching 6
Interruttori con angolo di rotazione 90° /
On-Off switches with 90° switching 7
Interruttori ad impulso con angolo di rotazione 30° con ritorno a "0" /
Switches-spring return with 30° switching 8
Commutatori con angolo di rotazione 60° /
Changeover switches with "0" - 60° switching 9
Deviatori con angolo di rotazione 90° /
Changeover switches without "0" - 90° switching 10
Commutatori multivie senza "0" / Multi-step switches without "0" . 11
Commutatori multivie con "0" / Multi-step switches with "0" 14
Commutatori a gruppi / Gang switches 21
Commutatori voltmetrici / Voltmeter switches 24
Commutatori amperometrici / Ammeter switches 25
Commutatori voltmetrici-amperometrici /
Voltmeter-ammeter switches 27
Interruttori (con posizioni ad impulso) /
Control switches (with spring return) 30
Invertitori di marcia / Motor reversing switches 32
Commutatori stella-triangolo / Star-delta switches 34
Commutatori di polarità (Dahlander) /
Motor control switches (Dahlander) 37
Commutatori di polarità con inversione di marcia (Dahlander) /
Motor control switches (Dahlander) - pole changing with reversing 38
Commutatori per motori (avvolgimenti separati) /
Motor control switches (separate windings) 39
Commutatori di poli per motore a 3 velocità /
Switches for 3-speed motor control 41
Invertitori di marcia con fase ausiliaria / Start and run switches . . . 43
Dimensioni / Dimensions 44
Caratteristiche tecniche / Technical characteristics 46

Modalità di codifica
Order code structure

Modalità di codifica
Order code structure



GX
Protezione/Protection:
Frontale/Front = IP65
Contatti/Contacts = IP20

GN
Protezione/Protection:
Frontale/Front = IP40
Contatti/Contacts = IP00

GX	GN
16A	12A
20A	20A
32A	25A
40A	32A
	40A
	63A
	125A

es./e.g.
90
91
10
92
99
100

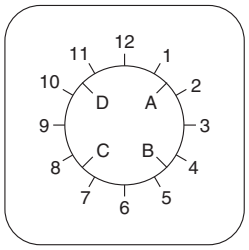
U = montaggio frontale
front mounting

O = montaggio da fondo quadro
rear mounting

P = in cassetta
in enclosure

11	Montaggio frontale fissaggio centrale Ø22mm Front mount, with handle operation, for central 22mm fixing
12	A chiave montaggio frontale fissaggio centrale Ø22mm Front mount, with key operation, for central 22mm fixing
18	Fissaggio su guida DIN 35mm DIN rail mounting (IEC/EN 60715)
25	Maniglia lucchettabile giallo/rossa Red-yellow padlockable handle
48	Modulare fissaggio su guida DIN Modular service cover, 35mm DIN rail mounting
4V	Montaggio frontale fissaggio a 4 viti Front mount, with 4-screw fixing
51	Protezione frontale IP65 (solo GN) IP65 front protection, for GN only
65	Maniglia lucchettabile giallo/rossa Red-yellow padlockable handle
68	Bloccoporta Door coupling
78	Bloccoporta (escluso GN125) Door coupling (GN125 excluded)
79	Bloccoporta (solo GN125) Door coupling, for GN125 only
88	Maniglia lucchettabile giallo/rossa, bloccoporta Door coupling, with red-yellow padlockable handle
98	Maniglia lucchettabile giallo/rossa, bloccoporta (escluso GN125) Door coupling, with red-yellow padlockable handle (GN125 excluded)
99	Maniglia lucchettabile giallo/rossa, bloccoporta (solo GN125) Door coupling, with red-yellow padlockable handle, for GN125 only

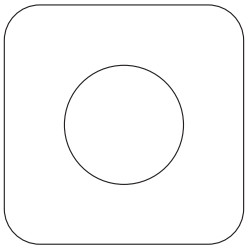
Tabella schemi speciali
Special circuit scheme form



1	4	5	8	9	12	13	16	17	20	21	24	25	28	29	32	33	36	37	40	41	44	45	48
2	3	6	7	10	11	14	15	18	19	22	23	26	27	30	31	34	35	38	39	42	43	46	47

Simbologa mostrina Plate indication	pos.																								
		7																							
	C																								
		8																							
		9																							
		10																							
	D																								
		11																							
		12																							
		1																							
	A																								
		2																							
		3																							
		4																							
	B																								
		5																							
		6																							

Mostrina frontale
Front plate



1								X					X						X						
																X									
2									X				X											X	

	Conttatti in sovrapposizione Overlapping contacts	Contatto chiuso in 2 o più posizioni Closed contact in 2 or more positions	Contatto aperto Open/passing contact	Contatto chiuso Closed contact	Autoritorno Spring return

Corpo / Body shape: ☐ Quadrato / Square - GX❶ ☐ Rotondo / Round - GN

Versione / Version: ☐ Montaggio frontale / Front mount ☐ Montaggio sul retro / Rear mount ☐ In cassetta Enclosed

Finitura / Finish: ☐ Standard❷ / Standard❷ ☐ Maniglia rosso/gialla / Red/yellow padlockable ☐ Altro / Other _____

Fissaggio / Fixing: ☐ 2 viti / 2 screw ☐ 4 viti / 4 screw ☐ Speciale / Special _____

Corrente nominale / _____ Amp rating

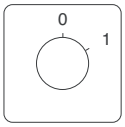
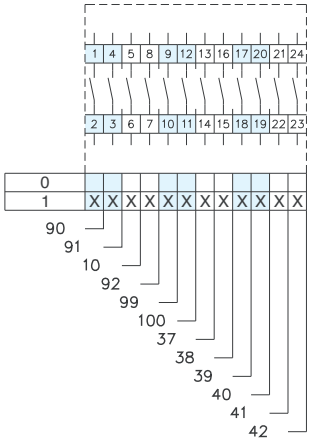
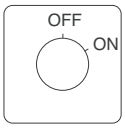
Q.tà / Qty: _____ Ragione sociale e persona di riferimento / Company name and contact details: _____

❶ 40A nominali massimi per serie GX / Maximum 40A rating for GX series.
❷ La finitura standard ha la mostrina frontale grigia, le indicazioni 0-12 e la mapola neri. Altre tipologie sono considerate speciali / Standard finish is grey front plate, 0-12 indication and a blacke handle; any other is considered special.

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

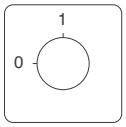
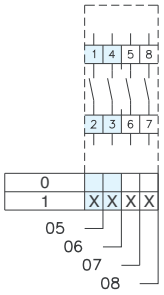
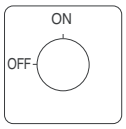
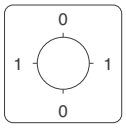
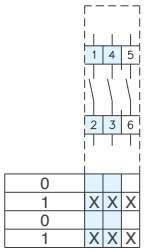
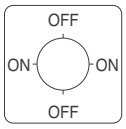
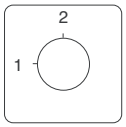
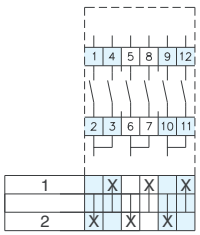
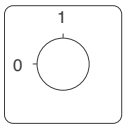
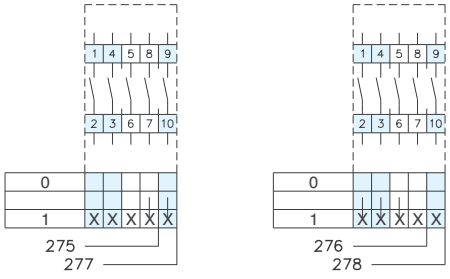
Interruttori con angolo di rotazione 60°

On-Off switches with 60° switching

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole		90	1	
2 poli 2 pole		91	1	
3 poli 3 pole		10	2	
4 poli 4 pole		92	2	
5 poli 5 pole		99	3	
6 poli 6 pole		100	3	
7 poli 7 pole		37	4	
8 poli 8 pole		38	4	
9 poli 9 pole		39	5	
10 poli 10 pole		40	5	
11 poli 11 pole		41	6	
12 poli 12 pole		42	6	
1 polo 1 pole		D90	1	
2 poli 2 pole		D91	1	
3 poli 3 pole		D10	2	
4 poli 4 pole		D92	2	
5 poli 5 pole		D99	3	
6 poli 6 pole		D100	3	

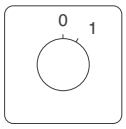
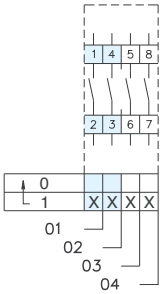
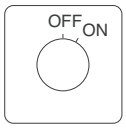
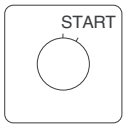
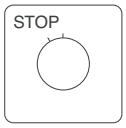
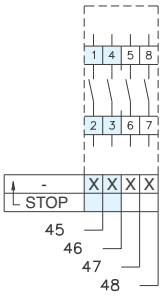
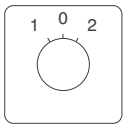
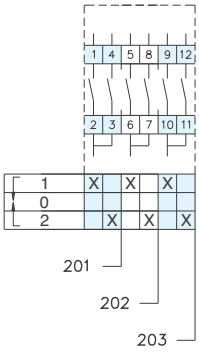
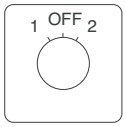
Interruttori con angolo di rotazione 90°

On-Off switches with 90° switching

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		05 06 07 08	1 1 2 2	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		C05 C06 C07 C08	1 1 2 2	
3 poli (rotazione 360°) 3 pole (360° rotation)		09	2	
3 poli (rotazione 360°) 3 pole (360° rotation)		C09	2	
3 poli deviatore 3 pole current changeover switch		57	3	
4 poli 1 polo con chiusura anticipata 4 pole 1 pole early-make 5 poli 2 poli con chiusura anticipata 5 pole 2 pole early-make 4 poli 3 poli con chiusura anticipata 4 pole 3 pole early-make 5 poli 3 poli con chiusura anticipata 5 pole 3 pole early-make		275 277 276 278	2 3 2 3	

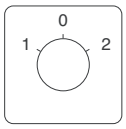
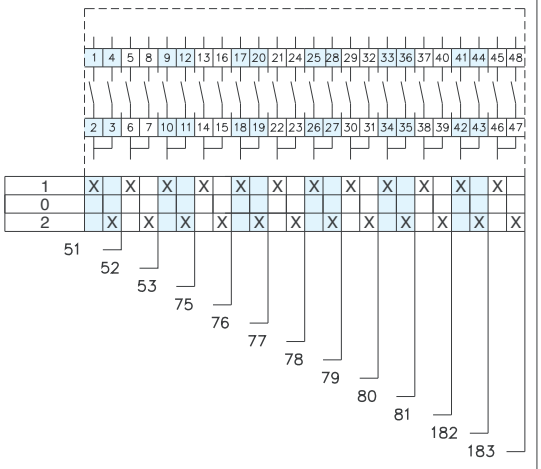
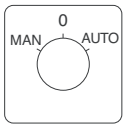
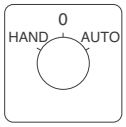
Interruttori a impulso con angolo di rotazione 30° con ritorno a “0”

Switches-spring return with 30° switching

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		01 02 03 04	1 1 2 2	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		C01 C02 C03 C04	1 1 2 2	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		D01 D02 D03 D04	1 1 2 2	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole		45 46 47 48	1 1 2 2	
1 polo 1 pole con ritorno a “0” 2 poli 2 pole with spring return to “0” 3 poli 3 pole		201 202 203	1 2 3	
1 polo 1 pole con ritorno a “0” 2 poli 2 pole with spring return to “0” 3 poli 3 pole		C201 C202 C203	1 2 3	

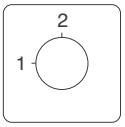
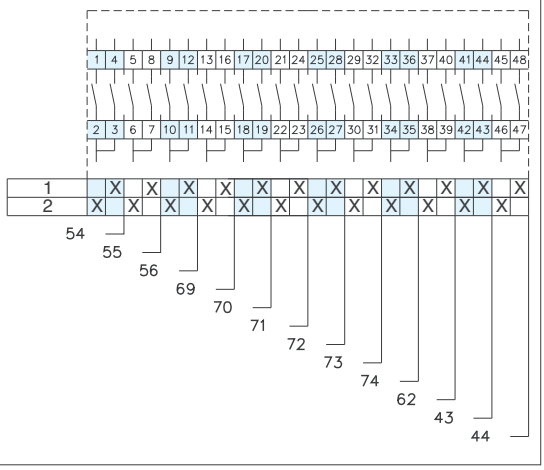
Commutatori con angolo di rotazione 60°

Changeover switches with “0” - 60° switching

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole		51	1	
2 poli 2 pole		52	2	
3 poli 3 pole		53	3	
4 poli 4 pole		75	4	
5 poli 5 pole		76	5	
6 poli 6 pole		77	6	
7 poli 7 pole		78	7	
8 poli 8 pole		79	8	
9 poli 9 pole		80	9	
10 poli 10 pole		81	10	
11 poli 11 pole		182	1	
12 poli 12 pole		183	12	
1 polo 1 pole		D51	1	
2 poli 2 pole		D52	2	
3 poli 3 pole		D53	3	
4 poli 4 pole		D75	4	
5 poli 5 pole		D76	5	
6 poli 6 pole		D77	6	
1 polo 1 pole		E51	1	
2 poli 2 pole		E52	2	
3 poli 3 pole		E53	3	
4 poli 4 pole		E75	4	
5 poli 5 pole		E76	5	
6 poli 6 pole		E77	6	

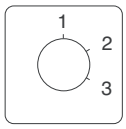
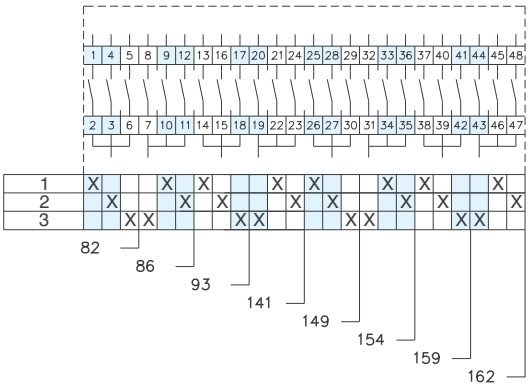
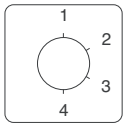
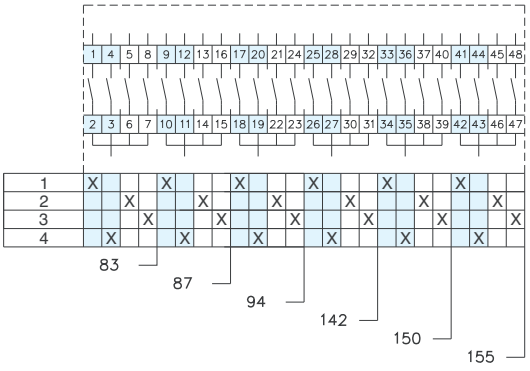
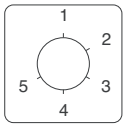
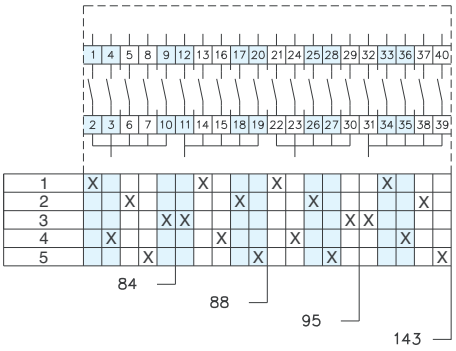
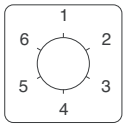
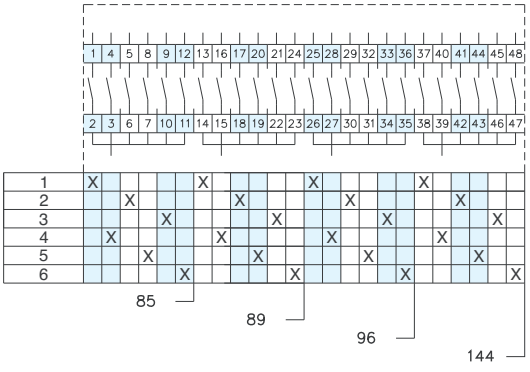
Deviatori con angolo di rotazione 90°

Changeover switches without “0” - 90° switching

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole		54	1	
2 poli 2 pole		55	2	
3 poli 3 pole		56	3	
4 poli 4 pole		69	4	
5 poli 5 pole		70	5	
6 poli 6 pole		71	6	
7 poli 7 pole		72	7	
8 poli 8 pole		73	8	
9 poli 9 pole		74	9	
10 poli 10 pole		62	10	
11 poli 11 pole		43	11	
12 poli 12 pole		44	12	

Commutatori multivie senza “0”

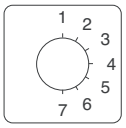
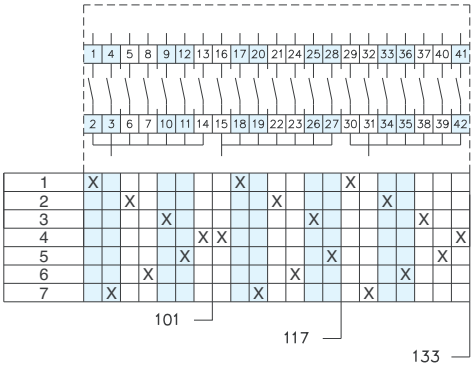
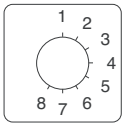
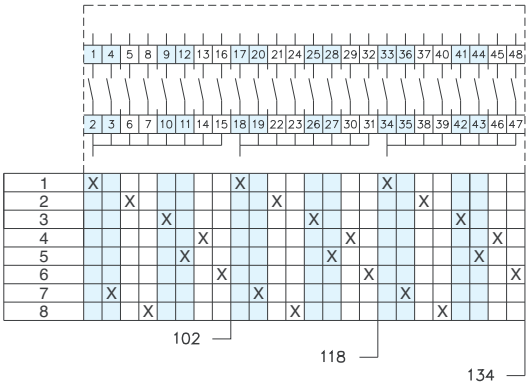
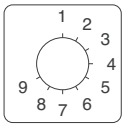
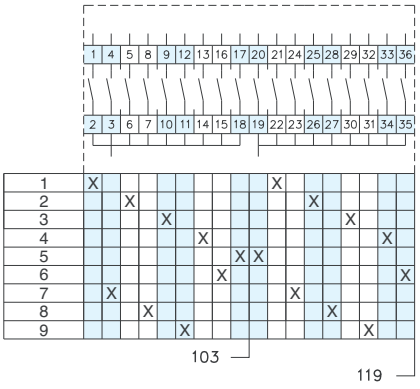
Multi-step switches without “0”

FUNZIONE FUNCTION		Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole 5 poli 5 pole 6 poli 6 pole 7 poli 7 pole 8 poli 8 pole	3 posizioni 3 positions		82 86 93 141 149 154 159 162	2 3 5 6 8 9 11 12	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole 5 poli 5 pole 6 poli 6 pole	4 posizioni 4 positions		83 87 94 142 150 155	2 4 6 8 10 12	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole	5 posizioni 5 positions		84 88 95 143	3 5 8 10	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole	6 posizioni 6 positions		85 89 96 144	3 6 9 12	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

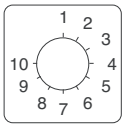
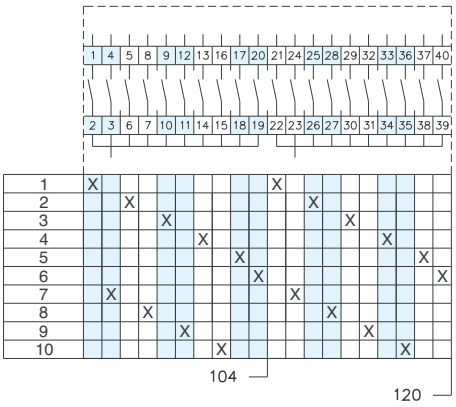
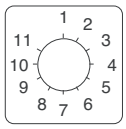
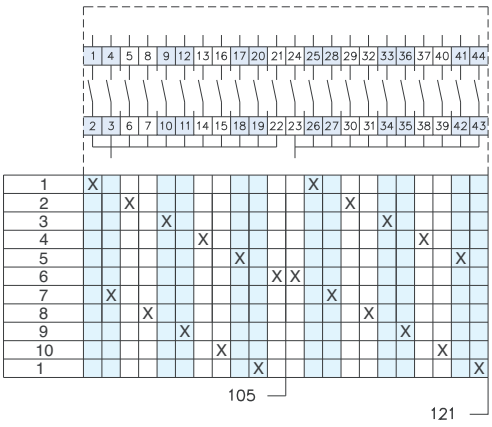
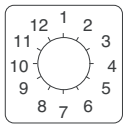
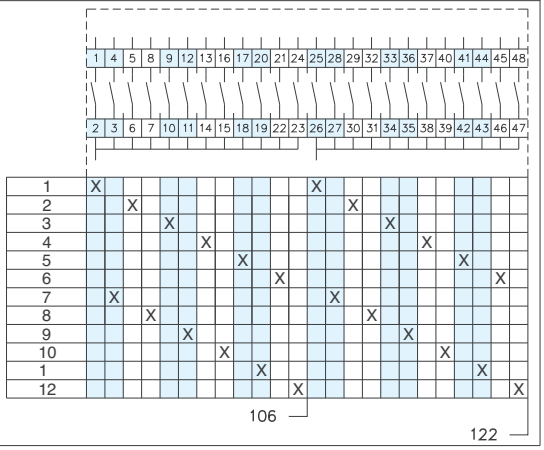
Commutatori multivie senza “0”

Multi-step switches without “0”

FUNZIONE FUNCTION		Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole	7 posizioni 7 positions		101 117 133	4 7 11	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole	8 posizioni 8 positions		102 118 134	4 8 12	
1 polo 1 pole 2 poli 2 pole	9 posizioni 9 positions		103 119	5 9	

Commutatori multivie senza “0”

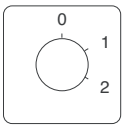
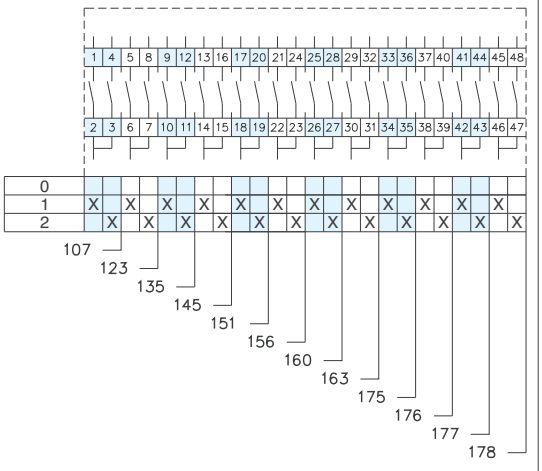
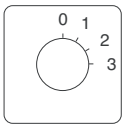
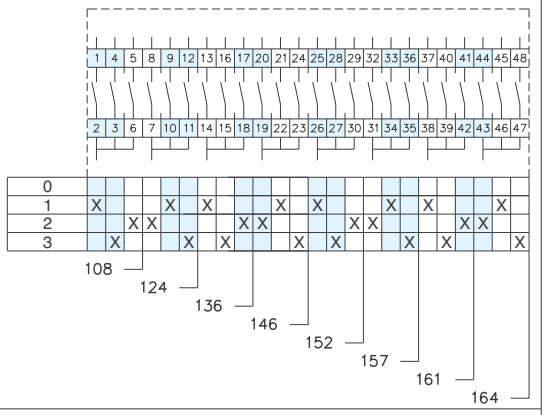
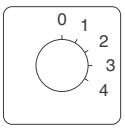
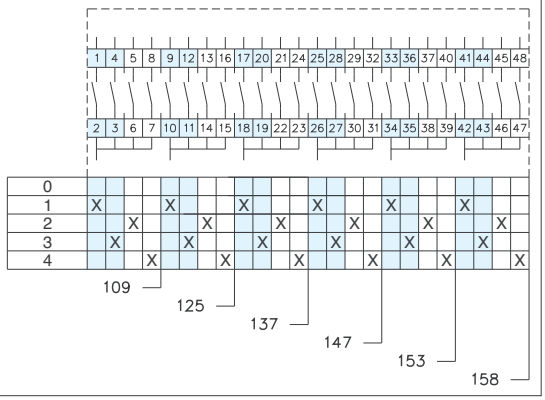
Multi-step switches without “0”

FUNZIONE FUNCTION		Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole	10 posizioni 10 positions		104 120	5 10	
1 polo 1 pole 2 poli 2 pole	11 posizioni 11 positions		105 121	6 11	
1 polo 1 pole 2 poli 2 pole	12 posizioni 12 positions		106 122	6 12	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

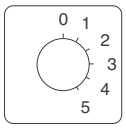
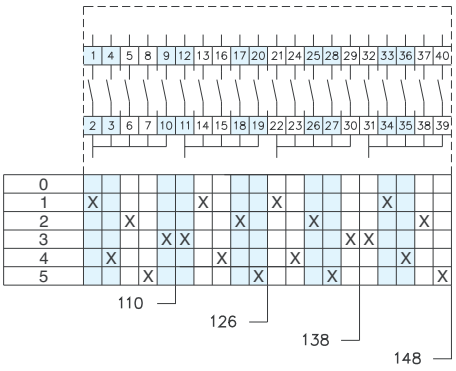
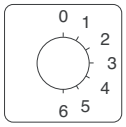
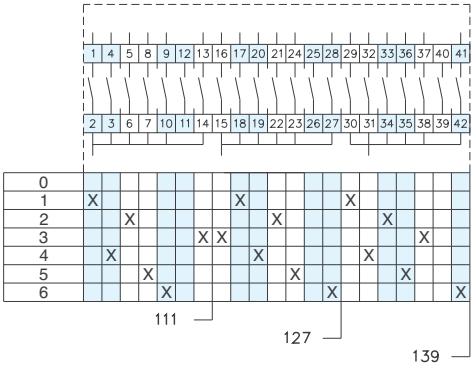
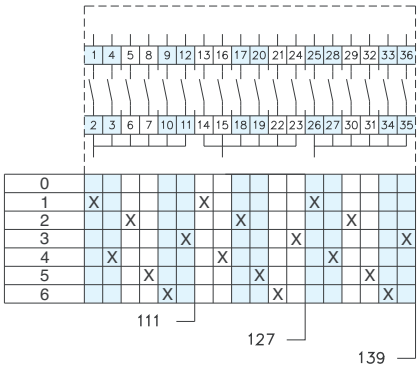
Commutatori multivie con “0”

Multi-step switches with “0”

FUNZIONE FUNCTION		Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole 5 poli 5 pole 6 poli 6 pole 7 poli 7 pole 8 poli 8 pole 9 poli 9 pole 10 poli 10 pole 11 poli 11 pole 12 poli 12 pole	2 posizioni 2 positions		107 123 135 145 151 156 160 175 176 177 178	1 2 3 4 5 6 7 8 9 10 11 12	
1 polo 1 pole 2 polna 2 pole 3 polna 3 pole 4 polna 4 pole 5 polna 5 pole 6 polna 6 pole 7 polna 7 pole 8 polna 8 pole	3 posizioni 3 positions		108 124 136 146 152 157 161 164	2 3 5 6 8 9 11 12	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole 5 poli 5 pole 6 poli 6 pole	4 posizioni 4 positions		109 125 137 147 153 158	2 4 6 8 10 12	

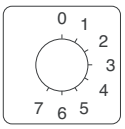
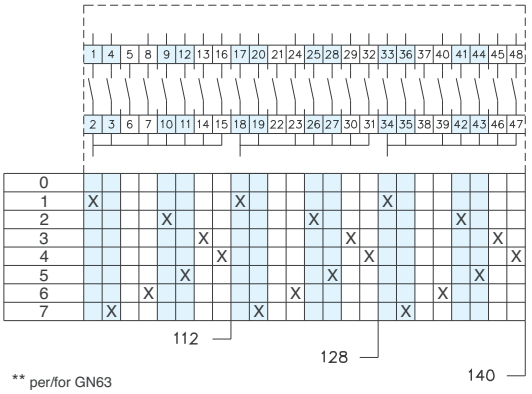
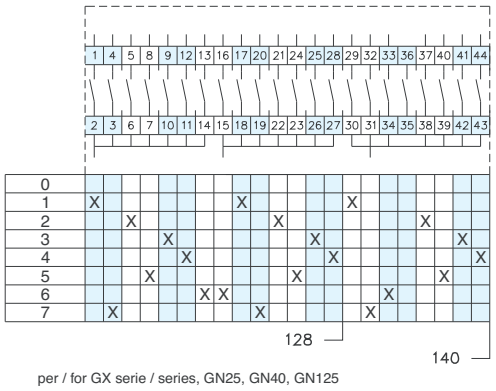
Commutatori multivie con “0”

Multi-step switches with “0”

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 4 poli 4 pole 5 posizioni 5 positions		110 126 138 148	3 5 8 10	
1 polo 1 pole 2 poli 2 pole 3 poli 3 pole 6 posizioni 6 positions		111 127 139	4 7 11	 per / for GN63
		111 127 139	3 6 9	 per / for GX serie / series, GN12 - GN40, GN125

Commutatori multivie con “0”

Multi-step switches with “0”

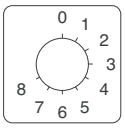
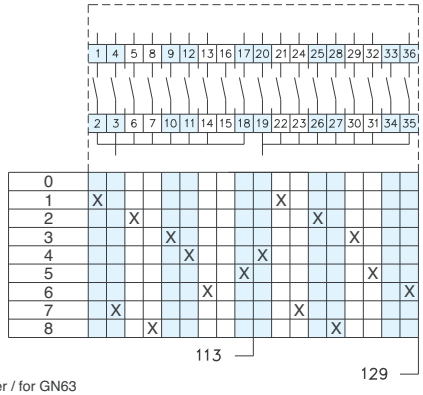
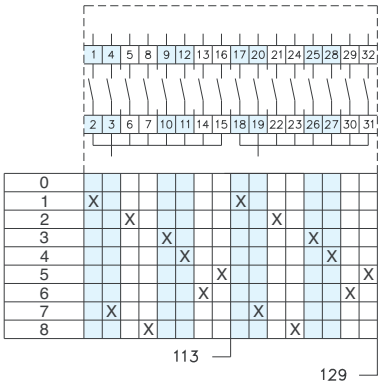
FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 poli 2 pole 3 poli 3 pole 7 posizioni 7 positions		112 128** 140**	4 8 12	
		128 140	7 11	

** per/for GN63

per / for GX serie / series, GN25, GN40, GN125

Commutatori multivie con “0”

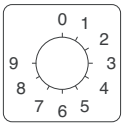
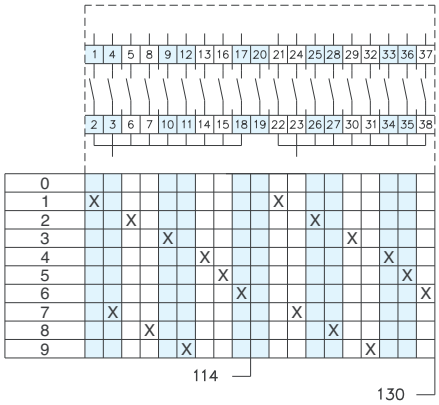
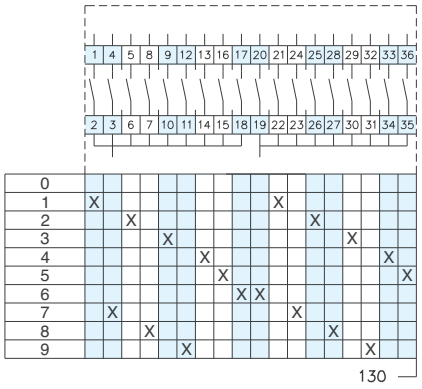
Multi-step switches with “0”

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 8 posizioni 8 positions		113 129	5 9	 per / for GN63
		113 129	4 8	 per / for GX serie / series, GN12 - GN40, GN125

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

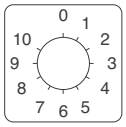
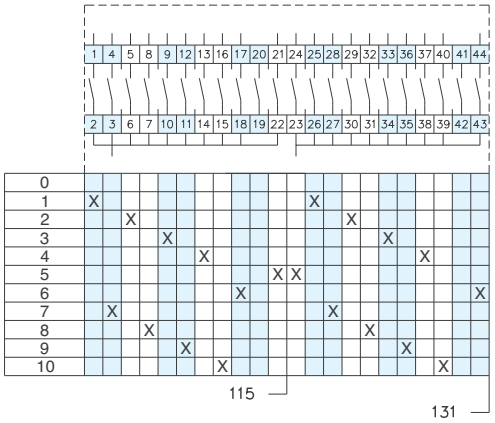
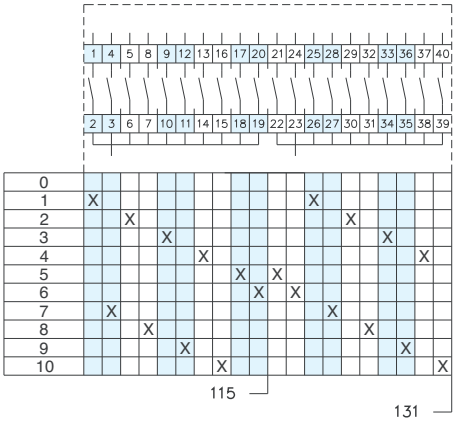
Commutatori multivie con “0”

Multi-step switches with “0”

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 9 posizioni 9 positions		114	5	
		130**	10	** per / for GN63
		130	9	
				per / for GX serie / series, GN12 - GN40, GN125

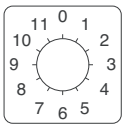
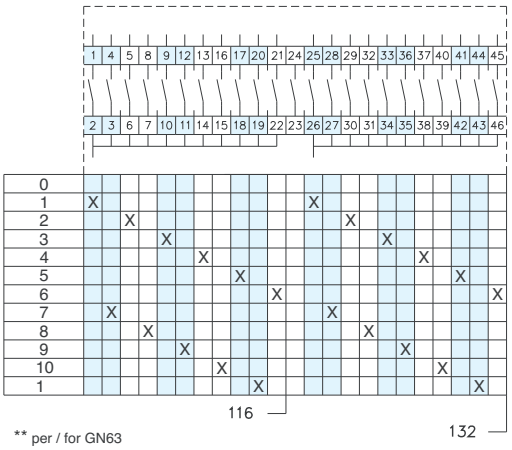
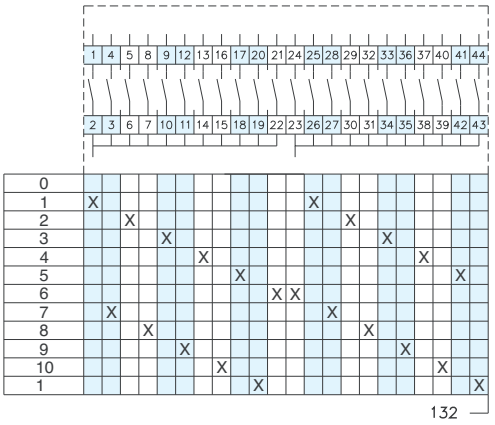
Commutatori multivie con “0”

Multi-step switches with “0”

FUNZIONE FUNCTION		Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole	10 posizioni 10 positions		115 131	6 11	 per / for GN63
			11 131	5 10	 per / for GX serie / series, GN12 - GN40, GN125

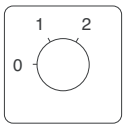
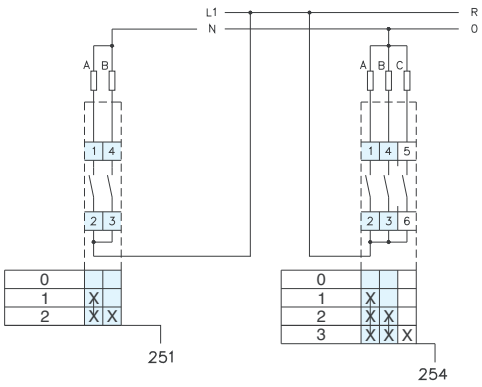
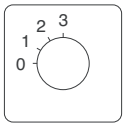
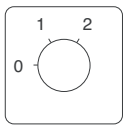
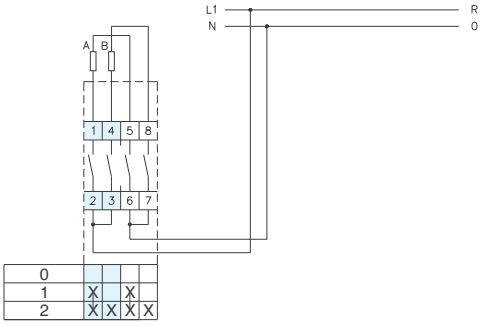
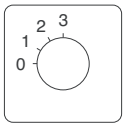
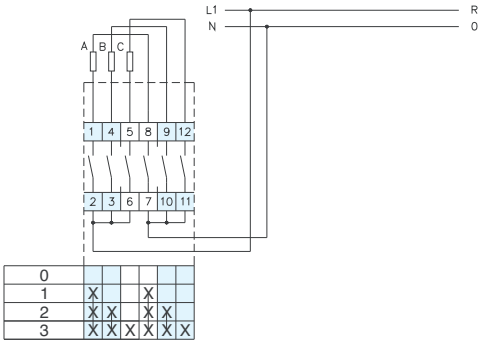
Commutatori multivie con “0”

Multi-step switches with “0”

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole 2 poli 2 pole 11 posizioni 11 positions		116 132**	6 12	 ** per / for GN63
		132	11	 per / for GX serie / series, GN12 - GN40, GN125

Commutatori a gruppi

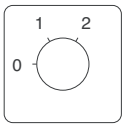
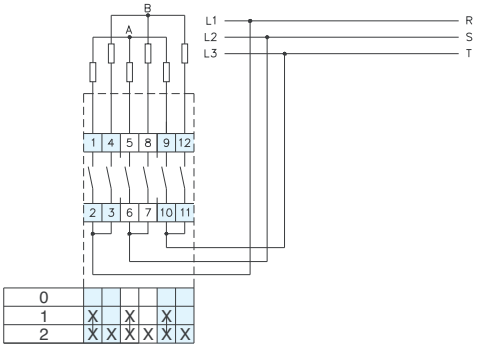
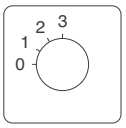
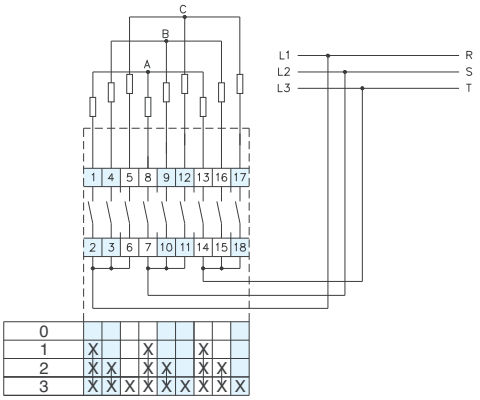
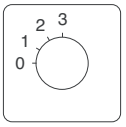
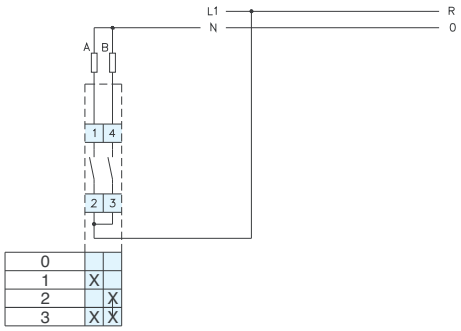
Gang switches

	FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 polo 1 pole	2 GRUPPI Sequenza: 0, A, A+B 2 GANG Switching sequence: 0, A, A+B		251	1	
1 polo 1 pole	3 GRUPPI Sequenza: 0, A, A+B, A+B+C 3 GANG Switching sequence: 0, A, A+B, A+B+C		254	2	
2 poli 2 pole	2 GRUPPI Sequenza: 0, A, A+B 2 GANG Switching sequence: 0, A, A+B		252	2	
2 poli 2 pole	3 GRUPPI Sequenza: 0, A, A+B, A+B+C 3 GANG Switching sequence: 0, A, A+B, A+B+C		255	3	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

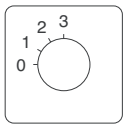
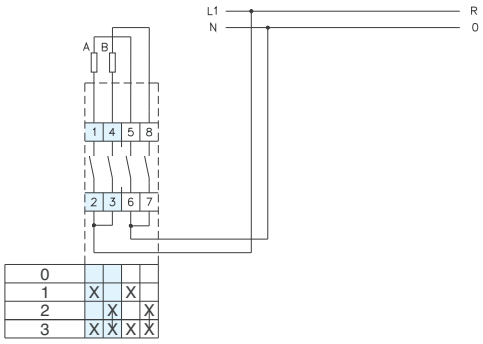
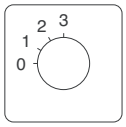
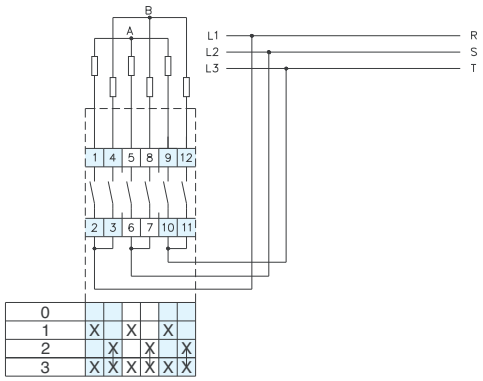
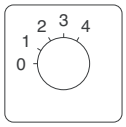
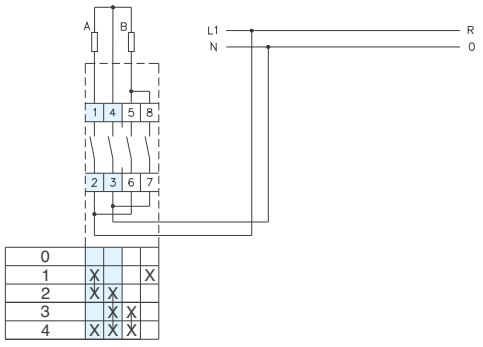
Commutatori a gruppi

Gang switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 poli 3 pole 2 GRUPPI Sequenza: 0, A, A+B 2 GANG Switching sequence: 0, A, A+B		253	3	
3 poli 3 pole 3 GRUPPI Sequenza: 0, A, A+B, A+B+C 3 GANG Switching sequence: 0, A, A+B, A+B+C		256	5	
1 polo 1 pole 2 GRUPPI Sequenza: 0, A, B, A+B 2 GANG Switching sequence: 0, A, B, A+B		257	1	

Commutatori a gruppi

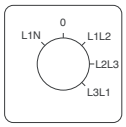
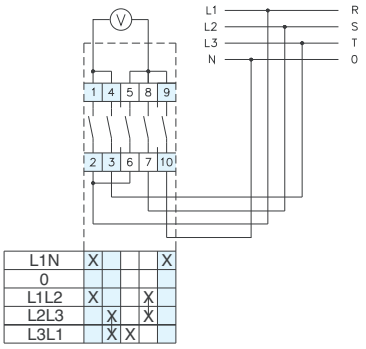
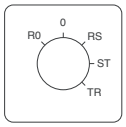
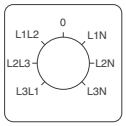
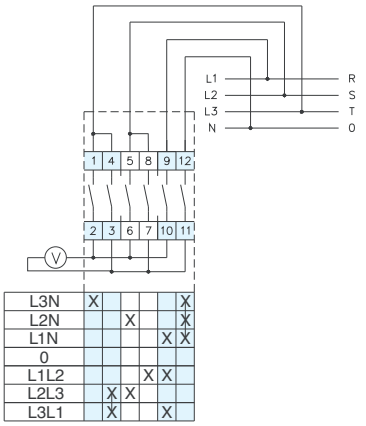
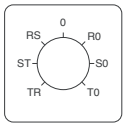
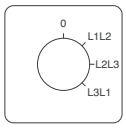
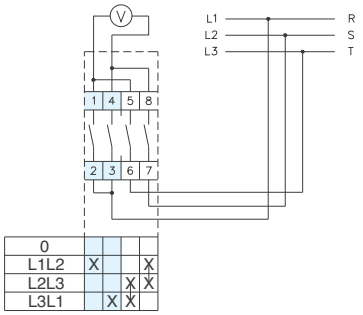
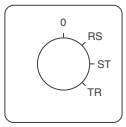
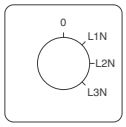
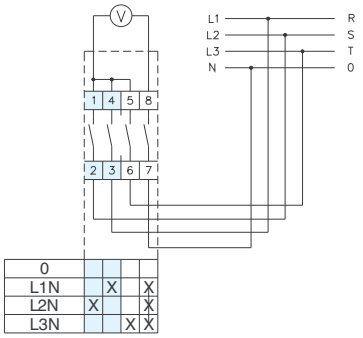
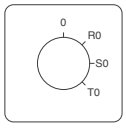
Gang switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 poli 2 pole 2 GRUPPI Sequenza: 0, A, B, A+B 2 GANG Switching sequence: 0, A, B, A+B		258	2	
3 poli 3 pole 2 GRUPPI Sequenza: 0, A, B, A+B 2 GANG Switching sequence: 0, A, B, A+B		259	3	
2 poli 2 pole 2 GRUPPI Sequenza: 0, A+B serie, A, B, A+B parallelo 2 GANG Switching sequence: 0, A+B series, A, B, A+B parallel		260	2	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

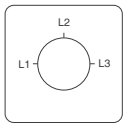
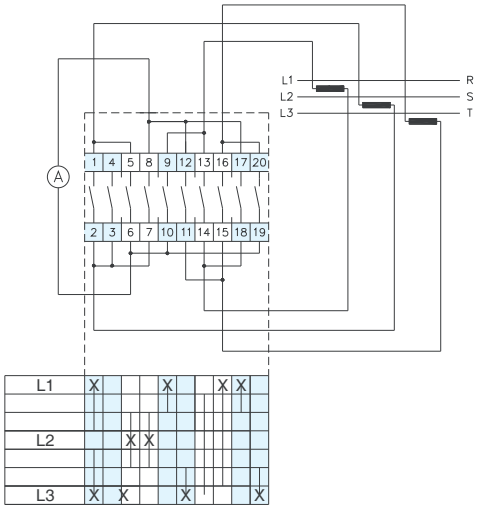
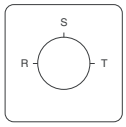
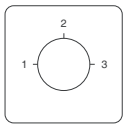
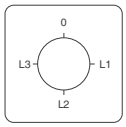
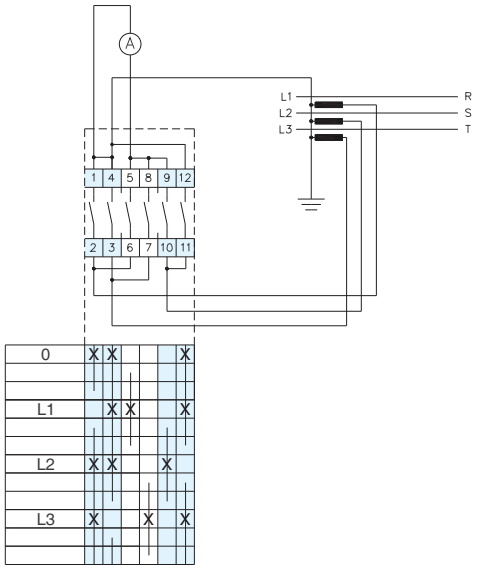
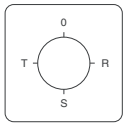
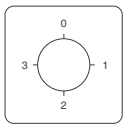
Commutatori voltmetrici

Voltmeter switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 tensioni di linea 1 tensione di fase 3 line voltage and 1 phase voltage		60	3	
		C 60	3	
3 tensioni di linea 3 tensioni di fase 3 line voltage and 3 phase voltage		66	3	
		C 66	3	
3 tensioni di linea 3 line voltage		67	2	
		C 67	2	
3 tensioni di fase 3 phase voltage		68	2	
		C 68	2	

Commutatori amperometrici

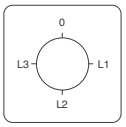
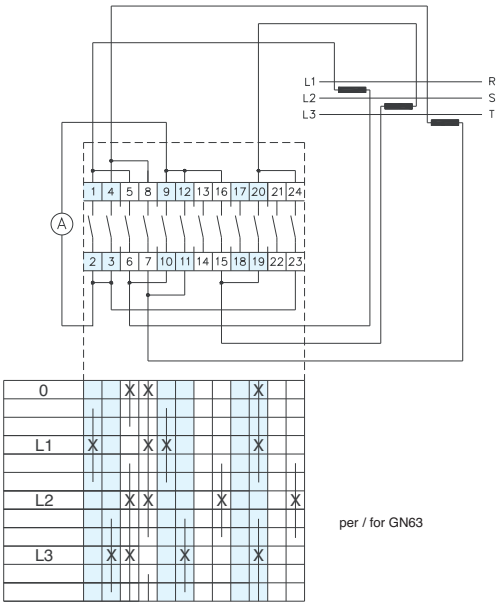
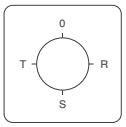
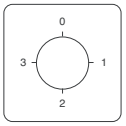
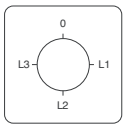
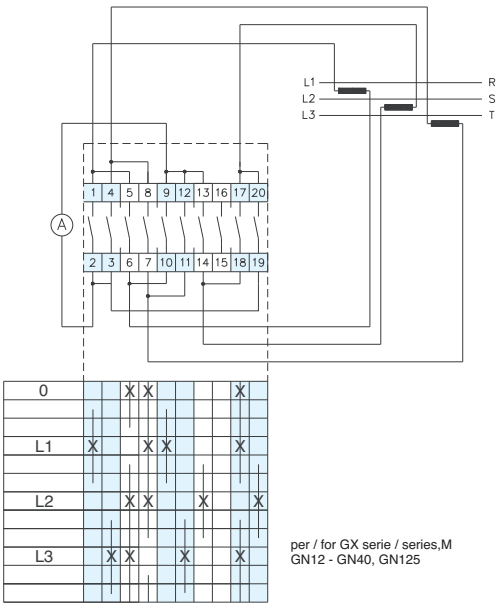
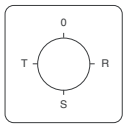
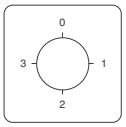
Ammeter switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N elem. N of wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 poli 3 correnti (con o senza trasformatore di corrente) 2 pole 3 currents (with or without current transformers)		58	5	
		C 58	5	
		E 58	5	
1 polo 3 correnti (con trasformatore di corrente) 1 pole 3 currents (with current transformer)		98	4	
		C 98	4	
		E 98	4	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

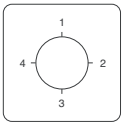
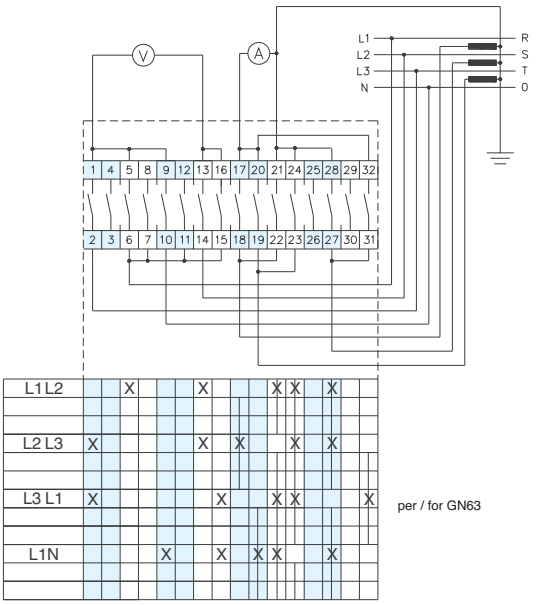
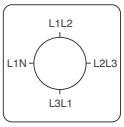
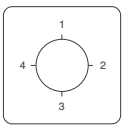
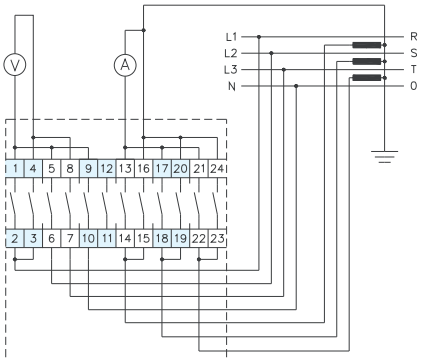
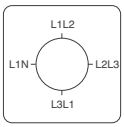
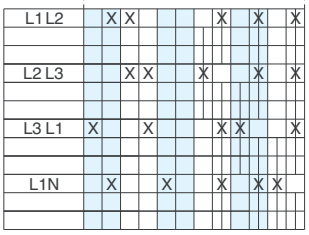
Commutatori amperometrici

Ammeter switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 poli posizione 0 3 correnti (con o senza trasformatore di corrente) 2 pole 0-position 3 currents (with or without current transformers)		97	6	 per / for GN63
		C 97	6	
		E 97	6	
		97	5	 per / for GX serie / series,M GN12 - GN40, GN125
		C 97	5	
		E 97	5	

Commutatori voltmetrici-amperometrici

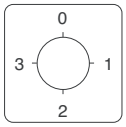
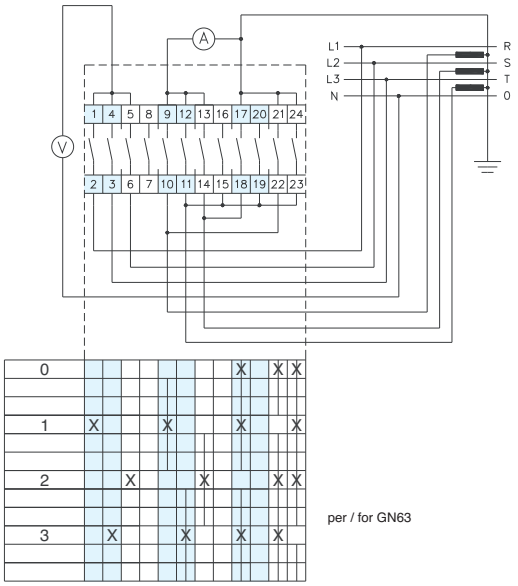
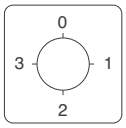
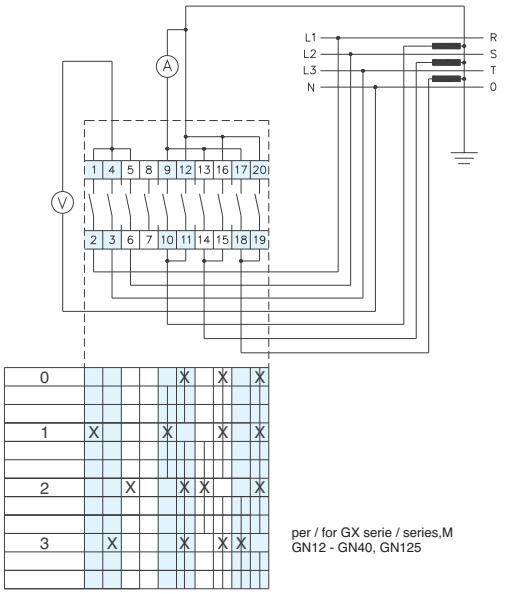
Voltmeter-ammeter switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 tensioni di linea 1 tensione di fase 3 correnti 3 line voltage 1 phase voltage 3 current		61	8	
		C 61	8	per / for GN63
		61	6	
		C 61	6	 per / for GX serie / series,M GN12 - GN40, GN125

Pos.	Tensione/M Voltage	Corrente/M Current
1	L1L2	–
2	L2L3	L1
3	L3L1	L2
4	L1N	L3

Commutatori voltmetrici-amperometrici

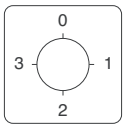
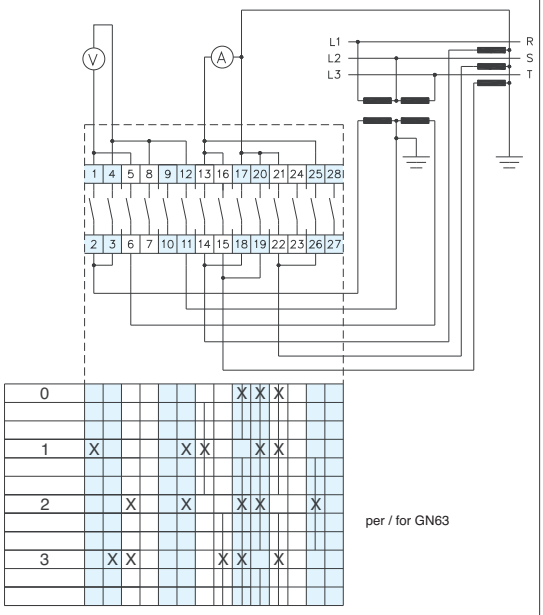
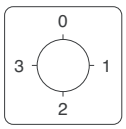
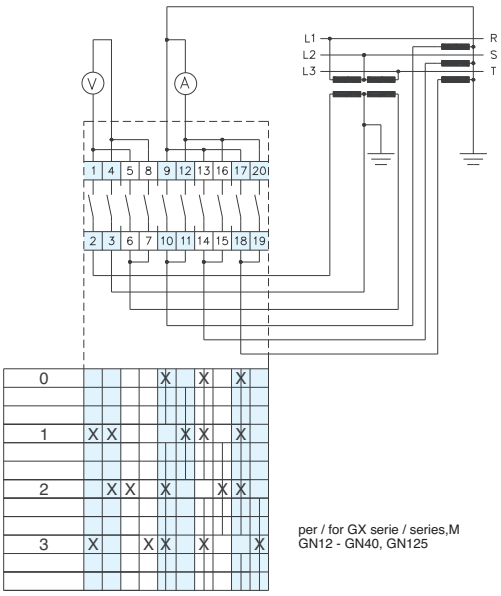
Voltmeter-ammeter switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 tensioni di fase 3 correnti 3 phase voltage 3 current		64	6	 per / for GN63
		64	5	 per / for GX serie / series,M GN12 - GN40, GN125

Pos.	Tensione M Voltage	Corrente M Current
0	–	–
1	L1N	L1
2	L2N	L2
3	L3N	L3

Commutatori voltmetrici-amperometrici

Voltmeter-ammeter switches

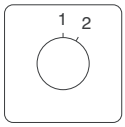
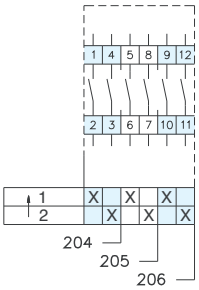
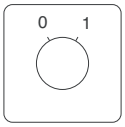
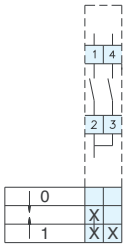
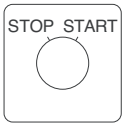
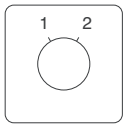
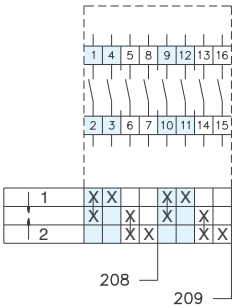
FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 tensioni di linea 3 correnti 3 line voltage 3 current		65	7	 per / for GN63
		65	5	 per / for GX serie / series,M GN12 - GN40, GN125

Pos.	Tensione M Voltage	Corrente M Current
0	–	–
1	L1L2	L1
2	L2L3	L2
3	L3L1	L3

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

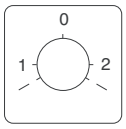
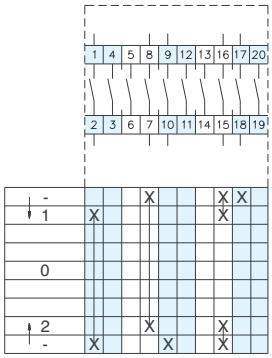
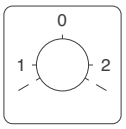
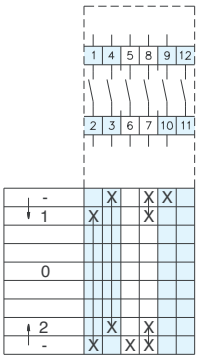
Interruttori (con posizioni ad impulso)

Control switches (with spring return)

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
1 apertura e 1 chiusura 1 make and 1 break 2 aperture e 2 chiusure 2 makes and 2 breaks 3 aperture e 3 chiusure 3 makes and 3 breaks		204 205 206	1 2 3	
1 chiusura a destra e 1 apertura a sinistra 1 make right and 1 break left		207	1	
		C207	1	
1 chiusura, 1 apertura a destra 1 chiusura, 1 apertura a sinistra 1 make, 1 break right 1 make, 1 break left 2 chiusure, 2 aperture a destra 2 chiusure, 2 aperture a sinistra 2 makes, 2 breaks right 2 makes, 2 breaks left		208 209	2 4	

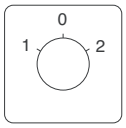
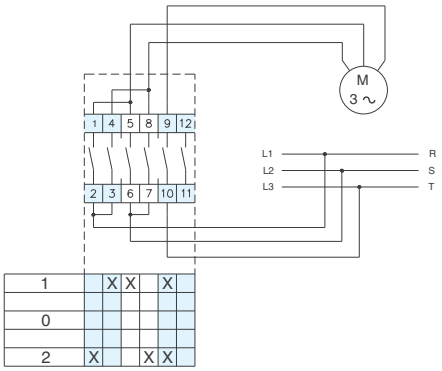
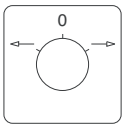
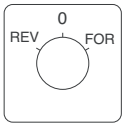
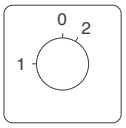
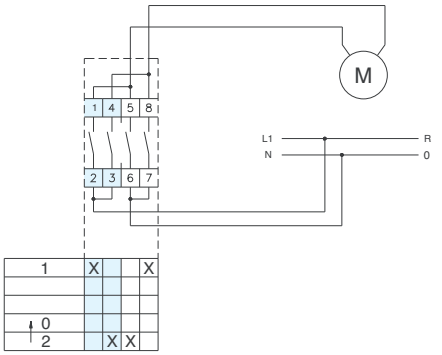
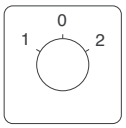
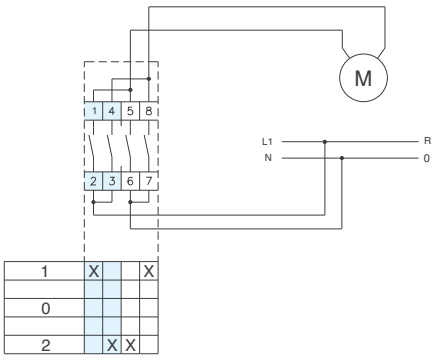
Interruttori (con posizioni ad impulso)

Control switches (with spring return)

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
Interruttore con impulso di ritorno a sinistra e destra Switch with spring return left and right		210	5	 per / for GN63
		210	3	 per / for GX serie / seriesM GN12 - GN40, GN125

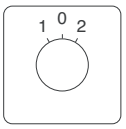
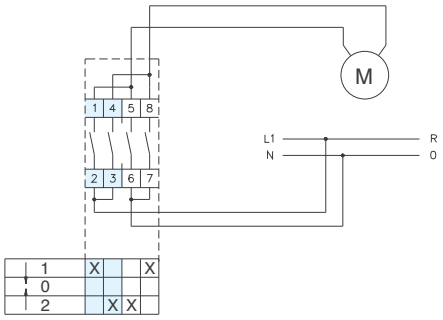
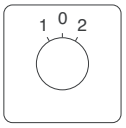
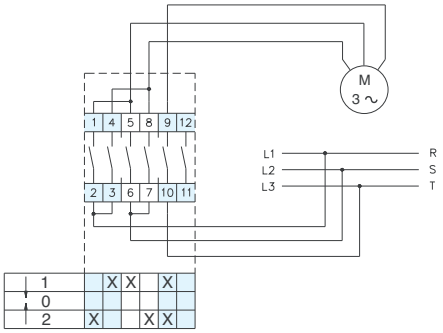
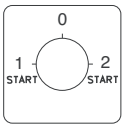
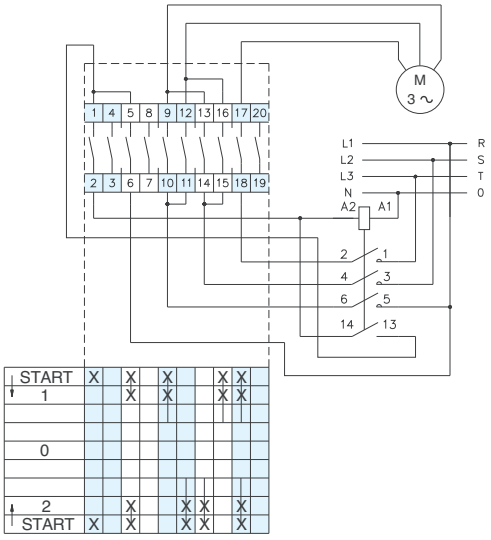
Invertitori di marcia

Motor reversing switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 poli 3 pole		11	3	
		C11	3	
		D11	3	
2 poli ritorno da 2 a "0" 2 pole return from 2 to "0"		14	2	
2 poli 2 pole		24	2	

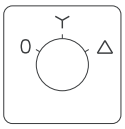
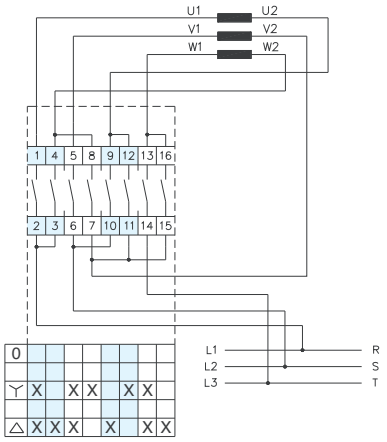
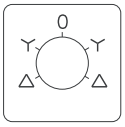
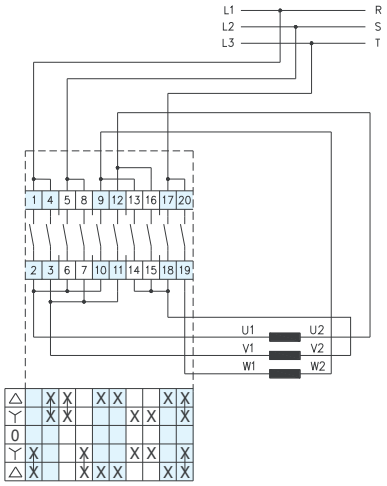
Invertitori di marcia

Motor reversing switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 pol1 ritorno a "0" 2 pole return to "0"		25	2	
3 poli ritorno a "0" 3 pole return to "0"		26	3	
3 poli con contattore 3 pole with contactor		27	5	

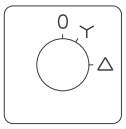
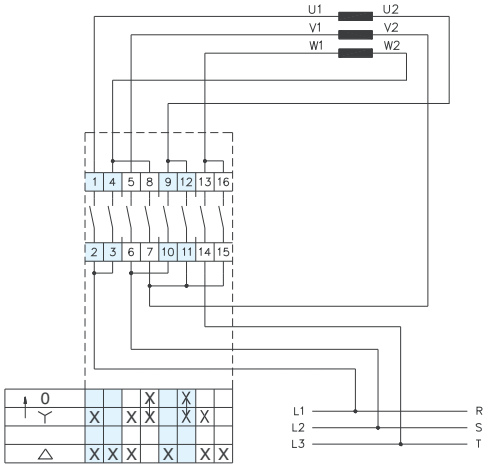
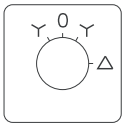
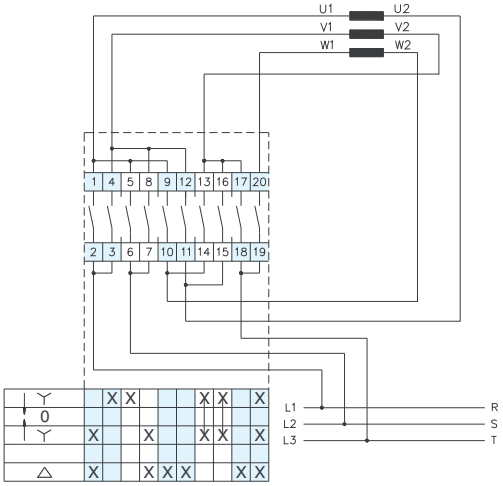
Commutatori stella-triangolo

Star-delta switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
Versione standard Standard version		12	4	
Invertitore di marcia Reversing		21	5	

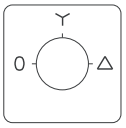
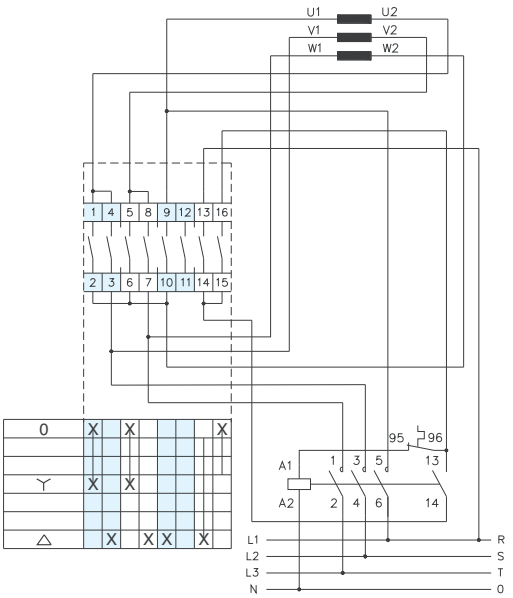
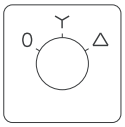
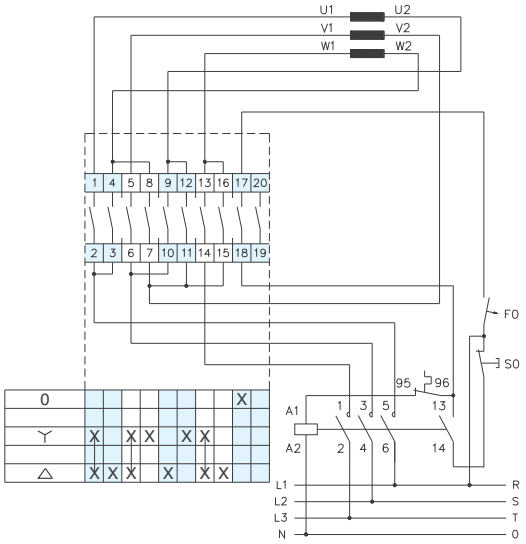
Commutatori stella-triangolo

Star-delta switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
Ritorno da "Y" a "0" Return from "Y" to "0"		28	4	
Frenatura in controcorrente Counter current braking		29	5	

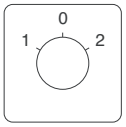
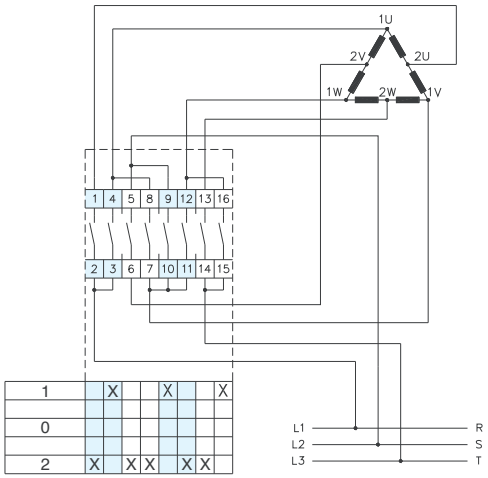
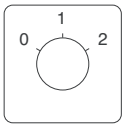
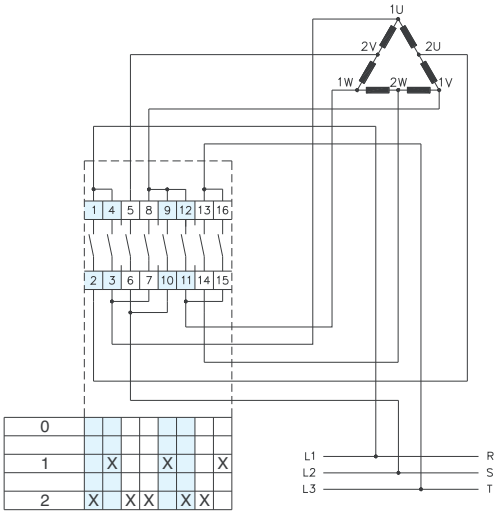
Commutatori stella-triangolo

Star-delta switches

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
Con contattore With contactor		31	4	
Con contatto in posizione "0" With contact in "0" position		49	5	

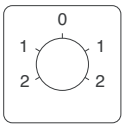
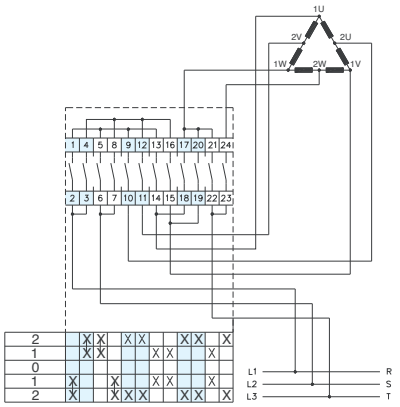
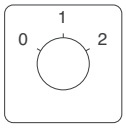
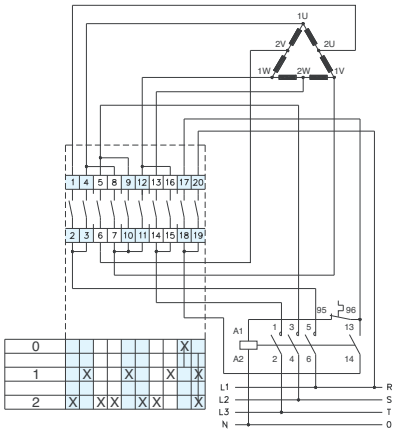
Commutatori di polarità (Dahlander)

Motor control switches (Dahlander)

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
Con "0" centrale (△ - 0 - YY) With center "0" (△ - 0 - YY)		13	4	
Versione standard (0 - △ - YY) Standard version (0 - △ - YY)		19	4	

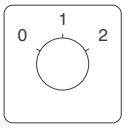
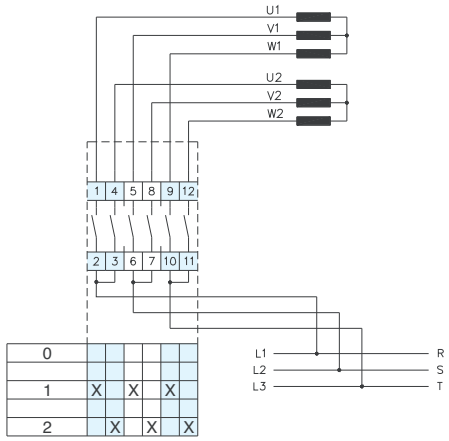
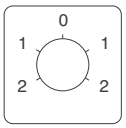
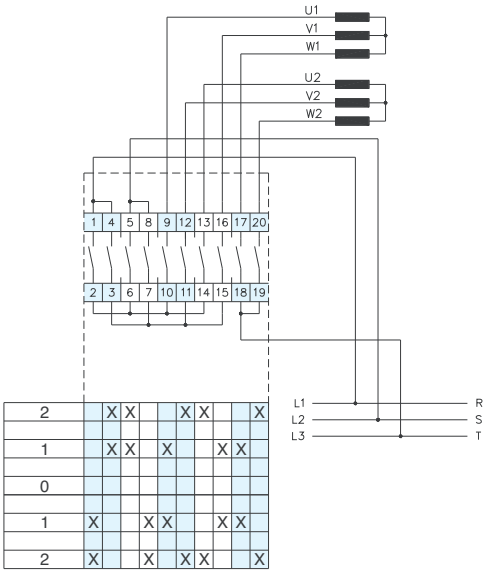
Commutatori di polarità con inversione di marcia (Dahlander)

Motor control switches (Dahlander) - pole changing with reversing

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
Commutazione Sequenza: YY - △ - 0 - △ - YY Reversing Switching sequence: YY - △ - 0 - △ - YY		20	6	
Con contattore Sequenza: 0 - △ - YY With contactor Switching sequence: 0 - △ - YY		32	5	

Commutatori per motori (avvolgimenti separati)

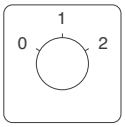
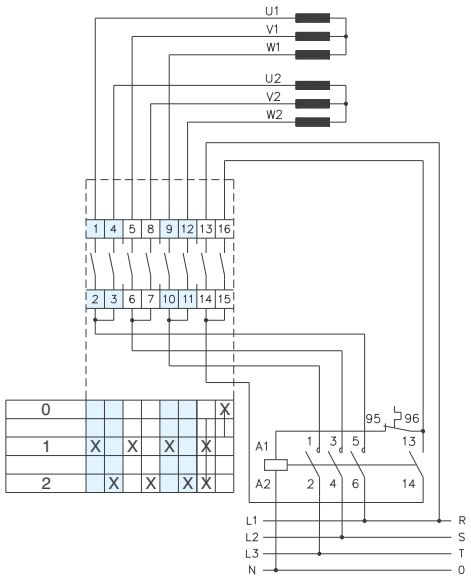
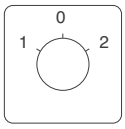
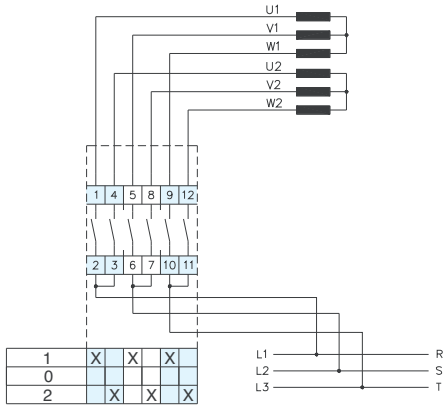
Motor control switches (separate windings)

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 velocità, 2 avvolgimenti 2 speed, 2 winding		22	3	
2 velocità, 2 commutazioni 2 avvolgimenti 2 speed, reversing, 2 windings		23	5	

Schemi commutatori a camme serie GX e GN
Circuit schemes rotary cam switches GX and GN series

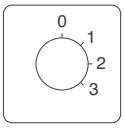
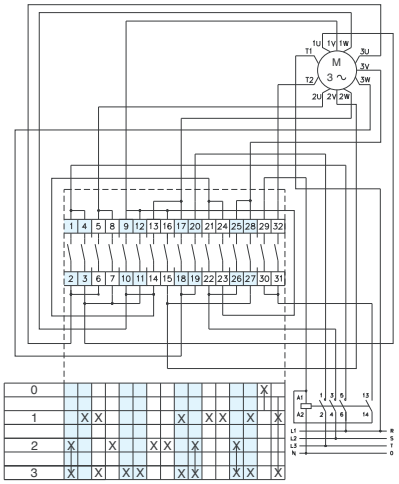
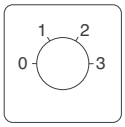
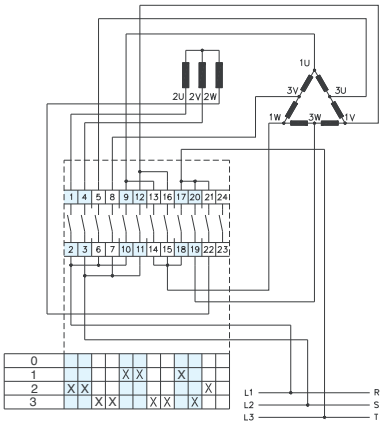
Commutatori per motori (avvolgimenti separati)

Motor control switches (separate windings)

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
2 velocità, 2 avvolgimenti con contattore 2 speed, 2 winding with contactor		33	4	
2 velocità, 2 avvolgimenti 2 speed, 2 winding		53	3	

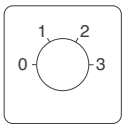
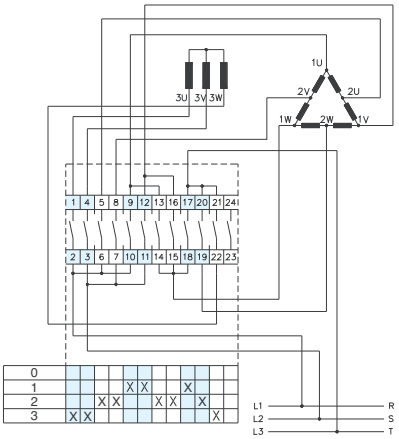
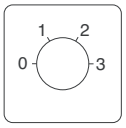
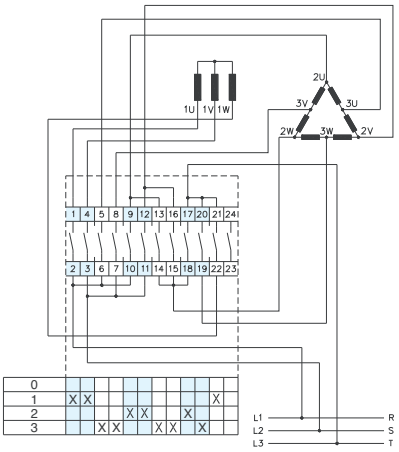
Commutatori di poli per motore a 3 velocità

Switches for 3-speed motor control

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 velocità, con contattore (ventilatore) (0-Y-Y-YY) 3 speed, with contactor (ventilator run) (0-Y-Y-YY)		18	8	
3 velocità, 2 avvolgimenti (1. e 3. velocità Dahlander) (0 - △ - Y - YY) 3 speed, 2 winding (1. and 3. speed Dahlander) (0 - △ - Y - YY)		34	6	

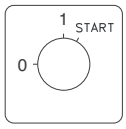
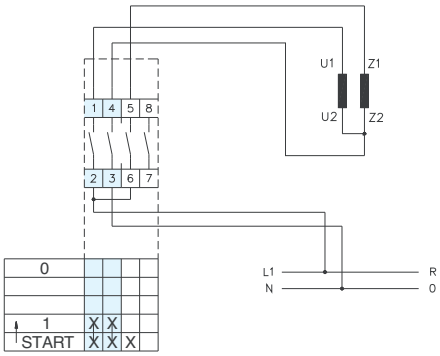
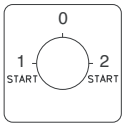
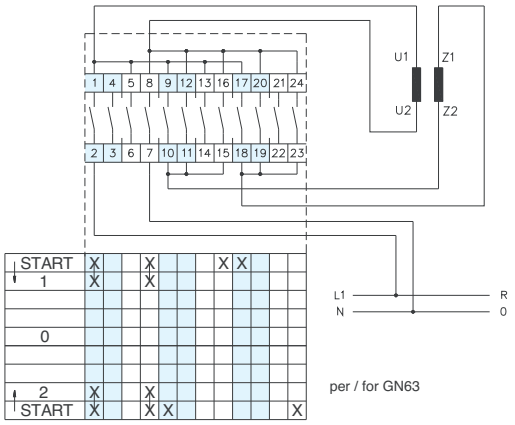
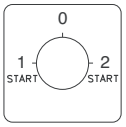
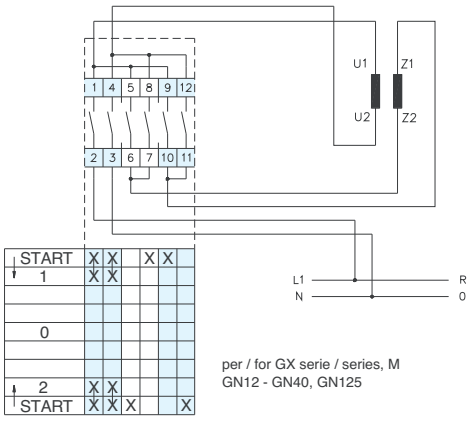
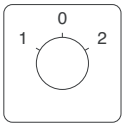
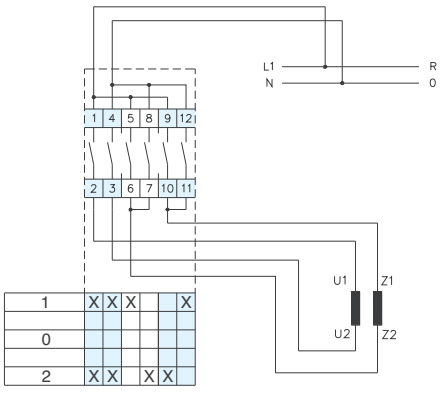
Commutatori di poli per motore a 3 velocità

Switches for 3-speed motor control

FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° ofM wafers	DIAGRAMMA / CONTACT CONFIGURATION
3 velocità, 2 avvolgimenti (1. e 2. velocità Dahlander) (0 - △- YY - Y) 3 speed, 2 winding (1. and 2. speed Dahlander) (0 - △- YY - Y)		35	6	
3 velocità, 2 avvolgimenti (2. e 3. velocità Dahlander) (0 - Y - △- YY) 3 speed, 2 winding (2. and 3. speed Dahlander) (0 - Y - △- YY)		36	6	

Invertitori di marcia con fase ausiliaria

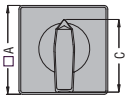
Start and run switches

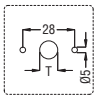
FUNZIONE FUNCTION	Mostrina Front plate	Schema Scheme	N°M elem.M N° of M wafers	DIAGRAMMA / CONTACT CONFIGURATION
Versione standard Standard version		15	2	
Invertitore di marcia Reversing		16	6	
		16	3	
Invertitore di marcia con avvolgimento di avviamento permanente Reversing permanent start winding		17	3	

Dimensioni (mm) / Dimensions [mm]

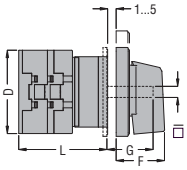
Commutatori a camme serie GX
Rotary cam switches, GX series

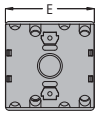
Montaggio frontale / Front mounting





Foratura fissaggio a 2 viti
Drilling for 2-screw fixing



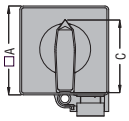


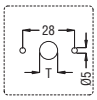
Vista retro
Rear

Tipo Type	Dimensioni / Dimensions								L [mm]					
	□ A	C	D	E	F	G	□ I	T	1 elem. 1 wafer	2 elem. 2 wafers	3 elem. 3 wafers	4 elem. 4 wafers	5 elem. 5 wafers	6 elem. 6 wafers
GX16 U	48	39.5	45	48	26.5	23.5	6	12	42.5	51	59.5	68	76.5	85
GX16 U25	48	31❶	45	48	34	23.5	6	12	39.5	48	56.5	65	73.5	82
GX20 U	48	39.5	45	48	26.5	23.5	6	12	42.5	51	59.5	68	76.5	85
GX20 U25	48	31❶	45	48	34	23.5	6	12	39.5	48	56.5	65	73.5	82
GX32 U	65	53	58	66	34.5	26	7	14	47.5	59.5	71.5	83.5	95.5	107.5
GX32 U25	65	45❶	58	66	38	26	7	14	48	60	72	84	96	108
GX40 U	65	53	58	66	34.5	26	7	14	47.5	59.5	71.5	83.5	95.5	107.5
GX40 U25	65	45❶	58	66	38	26	7	14	48	60	72	84	96	108

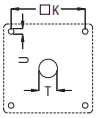
❶ Manopola lucchettabile / Padlockable handle.

Montaggio blocco-porta esecuzione O / Door coupling O version

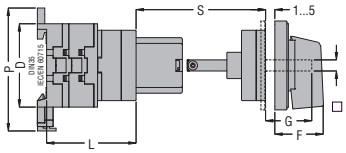


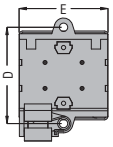


Foratura fissaggio dispositivo bloccoporta
Coupling and front plate fixing on the door



Foratura fissaggio a 4 viti
Drilling for 4-screw wafer fixing on mounting surface



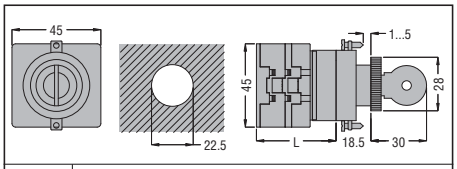


Vista retro

Tipo Type	Dimensioni / Dimensions												L [mm]					
	□ A	C	D	E	F	G	□ K	□ N	O	P	S	T	1 elem. 1 wafer	2 elem. 2 wafers	3 elem. 3 wafers	4 elem. 4 wafers	5 elem. 5 wafers	6 elem. 6 wafers
GX16 O88	48	31❷	45	48	34	23.5	36	6	52	66.5	45-55	12	40	48.5	57	65.5	74	82.5
GX20 O88	48	31❷	45	48	34	23.5	36	6	52	66.5	45-55	12	40	48.5	57	65.5	74	82.5
GX32 O88	65	45❷	58	66	38	26	48	7	68	78	45-55	14	48.7	60.7	72.7	84.7	96.7	108.7
GX40 O98	65	45❷	58	66	38	26	48	7	68	78	45-55	14	48.7	60.7	72.7	84.7	96.7	108.7

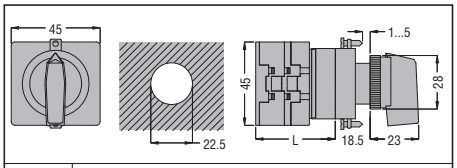
❷ Manopola lucchettabile / Padlockable handle.

Montaggio frontale Ø22mm / Front mounting Ø22mm



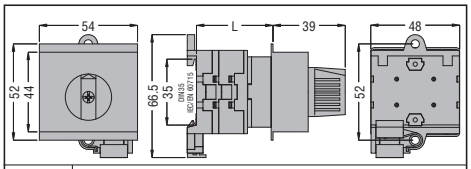
Tipo Type	L [mm]			
	1 elemento 1 wafer	2 elementi 2 wafers	3 elementi 3 wafers	4 elementi 4 wafers
GX16	35	43.5	52	60.5

Montaggio frontale Ø22mm / Front mounting Ø22mm



Tipo Type	L [mm]			
	1 elemento 1 wafer	2 elementi 2 wafers	3 elementi 3 wafers	4 elementi 4 wafers
GX16	35	43.5	52	60.5

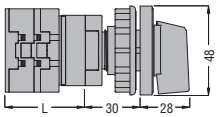
Montaggio modulare / Modular mounting



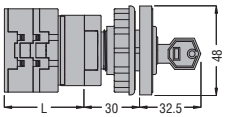
Tipo Type	L [mm]		
	3 elementi 3 wafers	4 elementi 4 wafers	5 elementi 5 wafers
GX16	50	58.5	67

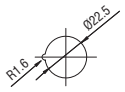
Montaggio a scatto / Snap on mount

GX...U47



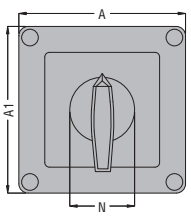
GX...U29D

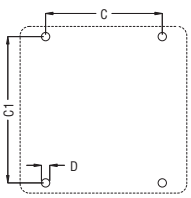




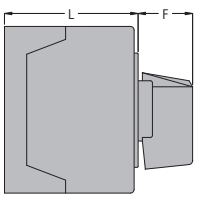
Tipo Type	L [mm]			
	1 elemento 1 wafer	2 elementi 2 wafers	3 elementi 3 wafers	4 elementi 4 wafers
GX20	35	43.5	52	60.5

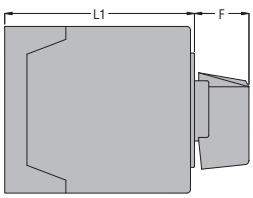
Montaggio in cassetta / Mounting in enclosure

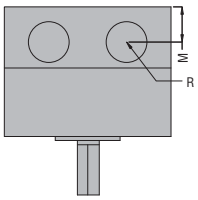




Foratura fissaggio in cassetta a superficie
Drilling for enclosure fixing







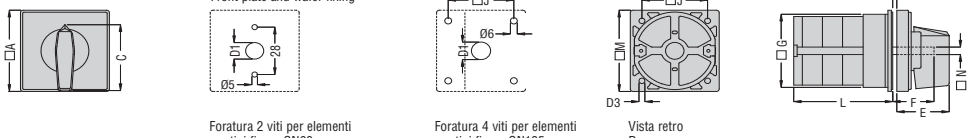
Tipo Type	Dimensioni cassetta Enclosure size	Numero elementi Number of wafers L	L1	A	A1	C	C1	F	M	N	L	L1	Protezione Protection degree	Pressacavi Cable glands R
GX16 GX20	90x90	1-2 1-2	3-5 3-5	90	90	79	63	25❸	19	30	71.3	98.3	IP65	4xPG 16
GX32 GX40	110x110	1-2 1-2	3-4 3-4	110	110	98.4	83	32❹	21	39.5	85.5	119.5	IP65	4xPG 21

❸ 28 per tipo P25 con maniglia lucchettabile / 28 for ...P25 type.
❹ 38,5 per tipo P25 con maniglia lucchettabile / 38.5 for ...P25 type.

Dimensioni (mm) / Dimensions [mm]

Commutatori a camme serie GN
Rotary cam switches, GN series

Montaggio frontale / Front mounting



Foratura 2 viti per elementi per tipi fino a GN63
Drilling for 2-screw fixing up to GN63

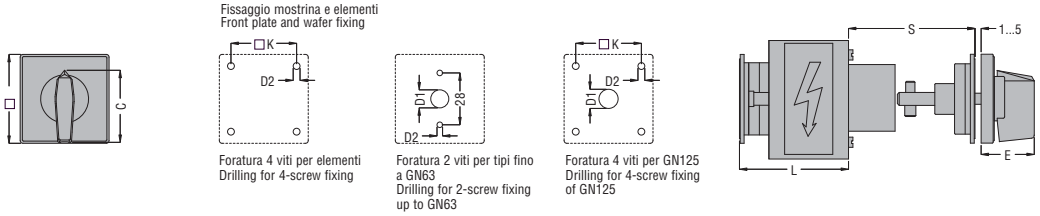
Foratura 4 viti per elementi per tipi fino a GN125
Drilling for 4-screw fixing up to GN125

Vista retro
Rear

Tipo Type	Dimensioni / Dimensions										L					
	□ A	C	D1	D3	E	F	□ G	□ J	□ M	□ N	1 elem. 1 wafer	2 elem. 2 wafers	3 elem. 3 wafers	4 elem. 4 wafers	5 elem. 5 wafers	6 elem. 6 wafers
GN12	48	39.5	12	4.3	26.5	23.5	39	36	48	6	36.1	45.8	55.5	65.2	74.9	84.6
GN12❻	65	53	14	4.3	34.5	26	58	48	65	7	36.6	46.3	56	65.7	75.4	85.1
GN20	48	39.5	12	4.3	26.5	23.5	39	36	48	6	36.1	45.8	55.5	65.2	74.9	84.6
GN20❻	65	53	14	4.3	34.5	26	58	48	65	7	36.6	46.3	56	65.7	75.4	85.1
GN25	48	39.5	12	4.3	26.5	23.5	39	36	48	6	40.5	54.1	67.7	81.3	94.9	108.5
GN25❻	65	53	14	4.3	34.5	26	58.5	48	65	7	41	54.6	68.2	81.8	95.4	109
GN32	65	53	14	4.3	34.5	26	58.5	48	65	7	46.5	61.6	76.7	91.8	106.9	122
GN40	65	53	14	4.3	34.5	26	58.5	48	65	7	46.5	61.6	76.7	91.8	106.9	122
GN63	65	53	14	4.3	34.5	26	62	48	65	7	50.3	68.4	86.5	104.6	122.7	140.8
GN125	90	70.5	16	5.3	41.5	28	84	68	90	9	67.3	96.4	125.5	154.6	183.7	212.8

❶ Dimensioni per esecuzioni U06 e U25
Dimensions for U06 and U25 versions

Montaggio blocco-porta / Door coupling O version



Foratura 4 viti per elementi
Drilling for 4-screw fixing

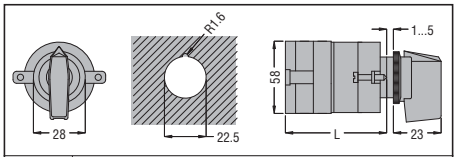
Foratura 2 viti per tipi fino a GN63
Drilling for 2-screw fixing up to GN63

Foratura 4 viti per GN125
Drilling for 4-screw fixing of GN125

Tipo Type	Dimensioni / Dimensions								L			
	□ A	C	D1	D2	E	□ K	N	S	1 elem. 1 wafer	2 elem. 2 wafers	3 elem. 3 wafers	4 elem. 4 wafers
GN12-088	65	53	14	5	38.5❻	48	28	45...55	37.58	47.1	56.7	66.3
GN20-088	65	53	14	5	38.5❻	48	28	45...55	38.1	47.8	57.5	67.2
GN25-088	65	53	14	5	38.5❻	48	28	45...55	42.5	56.1	65.7	83.2
GN32-O...	65	53❷	14	5	34.5❹	48	28	45...55	49.2	62.8	76.4	90
GN40-O...	65	53❷	14	5	34.5❹	48	28	45...55	45.9	59.5	73.1	86.7
GN63-O...	65	53❷	14	6	34.5❹	48	28	45...55	54.3	72.4	90.5	108.6
GN125-O...	90	70.5❸	16	6	41.5❻	68	36	45...55	74.8	103.9	133	162.1

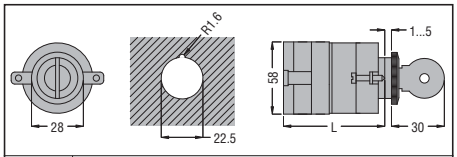
❷ 45 per tipi O88 e O98❻
45 for O88 and O98 types❻.
❸ 65 per tipo O99❻
65 for O99 types❻.
❹ 38,5 per tipi O88 e O98❻
38.5for O88 and O98 types❻.
❺ 49 per tipo O99❻
49 for O99 types❻.
❻ Maniglia lucchettabile
Padlockable handle.

Montaggio frontale Ø22mm / Front mounting Ø22mm



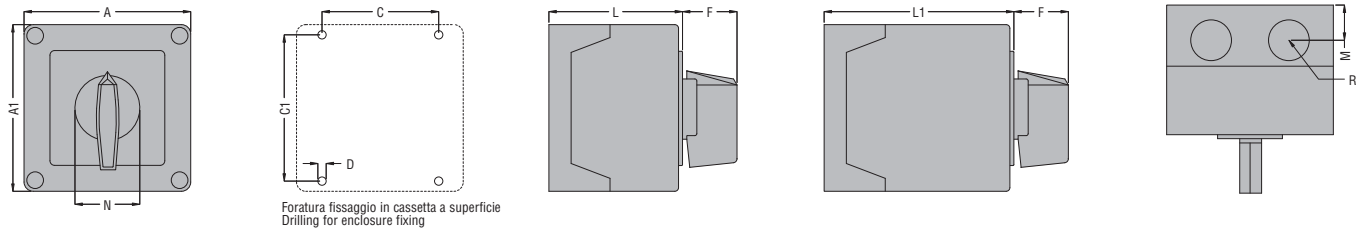
Tipo Type	L [mm]			
	1 elemento 1 wafer	2 elementi 2 wafers	3 elementi 3 wafers	4 elementi 4 wafers
GN12	41.5	51.1	60.7	70.3
GN20	42.1	51.8	61.5	71.2
GN25	46.5	60.1	73.7	87.3

Montaggio frontale Ø22mm / Front mounting Ø22mm



Tipo Type	L [mm]			
	1 elemento 1 wafer	2 elementi 2 wafers	3 elementi 3 wafers	4 elementi 4 wafers
GN12	41.5	51.1	60.7	70.3
GN20	42.1	51.8	61.5	71.2
GN25	46.5	60.1	73.7	87.3

Montaggio in cassetta / Mounting in enclosure



Foratura fissaggio in cassetta a superficie
Drilling for enclosure fixing

Tipo Type	Numero elementi Number of wafers L	L1	Dimensioni cassetta Enclosure size	A	A1	C	C1	D	F	M	N	L	L1	Protezione Protection degree	Pressacavi Cable glands R
GN12 GN20 GN25	1-2 1-2 1	3-4 3-4 2-3	75x75	75	75	64	50	4.5	19❼	14	28	57.5	79.8	IP65	4xPG 13.5
GN20 GN25 GN32 GN40	1-3 1-2 1-2 1	4-6 3-4 3-4 2-3	90x90	90	90	63	79	4.5	25❼	19	30	71.3	98.3	IP65	4xPG 16
GN32 GN40 GN63	1-3 1-2 1-2	4-5 3-4 3-4	110x110	110	110	98.4	83	4.5	32❽	21	39.5	85.5	119.5	IP65	4xPG 21

❼ 28 per tipo P25 con maniglia lucchettabile.
28 for P25 type with padlockable handle.
❽ 38,5 per tipo P25/P65 con maniglia lucchettabile.
38.5 for P25 type with padlockable handle.

Caratteristiche tecniche

Commutatori a camme serie GX e GN

GUIDA ALLA SCELTA

La scelta del commutatore e il suo dimensionamento devono fare riferimento, oltre che allo schema funzionale, al tipo di impiego previsto.

Le norme IEC forniscono una chiara e rapida classificazione delle varie categorie d'impiego riscontrabili più frequentemente:

AC1: Inserzione e disinserzione di carichi resistivi ($\cos\varphi \geq 0{,}95$)
AC21: Forni a resistenze
AC3: Inserzione e disinserzione di motori
AC23: Inserzione e disinserzione di carichi fortemente induttivi
AC15: Comando di circuiti ausiliari, elettromagneti.

Per applicazioni in corrente continua i commutatori sono utilizzati per l'inserzione e la disinserzione di carichi minori o in circuiti di comando, quali:

DC13: Comando di elettromagneti in corrente continua
DC21: Manovra di carichi resistivi con sovraccarichi di modesta entità (DC21A è per utilizzo con operazioni frequenti).
DC23: Manovra di carichi altamente induttivi (DC23A è per utilizzo con operazioni frequenti).

Ulteriori prescrizioni e raccomandazioni sull'utilizzo dei commutatori per l'equipaggiamento delle macchine elettriche sono dettate dalle normative IEC/EN 60204-1, e più precisamente quanto indicato alla voce impieghi.

IMPIEGHI

INTERRUTTORE GENERALE CON FUNZIONI DI EMERGENZA:
- manopola di colore rosso su sfondo giallo
- lucchettabile in posizione di aperto.

INTERRUTTORE DI EMERGENZA:
- manopola di colore rosso su sfondo giallo
- funzionamento indipendente e prevalente sulle altre funzioni
- la portata nominale deve tener conto della somma delle correnti nominali di esercizio di tutte le apparecchiature
- potere d'interruzione pari alla corrente motore a rotore bloccato più la corrente totale assorbita da altri carichi presenti.

INTERRUTTORE GENERALE CON FUNZIONI DI SEZIONAMENTO:
- utilizzato per separare l'apparecchiatura dalla rete di alimentazione
- distanza in aria dei contatti rispondente alla norma IEC/EN 60947-3
- possibilità di blocco con lucchetto in posizione di aperto
- dimensionamento per interruzione di correnti previste dalle categorie AC1 e AC21.

TIPO				GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Tensione nominale di isolamento❶ Ui	IEC/EN		V	690	690	690	690	690	690	690	690	690	690	690
	UL/CSA		V	600	600	600	600	600	600	600	600	600	600	600
Tensione nominale di tenuta ad impulso❶ Uimp	IEC/EN 60947-3		kV	6	6	6	6	6	6	6	6	6	6	8
Corrente termica nominale Ith	IEC/EN		A	16	20	32	40	16	20	25	32	40	63	125
	UL/CSA (general purpose)		A	12	15	32	40	15	20	30	40	50	60	130
Tensione nominale di impiego (interruttore sezionatore) ❶			V	440	440	440	440	480	480	480	480	480	480	690
Tensione nominale di tenuta a impulso (interruttore sezionatore)			kV	4	4	4	4	4	4	4	4	4	4	6
Max. calibro fusibili per protezione da corto circuito In (gG)		10kA	A	20	20	40	40	16	20	25	32	40	63	125
		25kA	A	16	16	35	35	10	16	25	32	40	63	100
		50kA	A	–	–	32	35	–	–	–	32	40	63	100
		63kA	A	–	–	–	35	–	–	–	–	40	63	100
Corrente nominale di breve durata ammissibile Icw		1sec	A	250	250	800	800	200	250	400	800	1000	1200	2100
Correnti nominali di esercizio Ie	AC1/AC21A (IEC/EN)		A	16	20	32	40	16	20	25	32	40	63	125
	AC15 (IEC/EN)	110V	A	10	10	25	25	10	10	16	25	25	32	40
		220...230V	A	8	8	20	22	8	8	12	20	22	25	28
		380...400V	A	4	6	10	12	4	6	8	10	12	15	15
		660...690V	A	3	3,7	5,5	7,5	1,5	1,5	2	2	2	4	5
Interruttori per motori in categorie di impiego in corrente alternata														
AC3	(IEC/EN)	220...230V	kW	3,5	3,7	7,5	7,5	2,5	3	5,5	7,5	8	11	18,5
	3 fasi	380...440V	kW	4,5	5,5	11	15	4	5,5	7,5	11	15	18,5	37
		500...690V	kW	5,5	5,5	11	15	5,5	5,5	7,5	11	15	18,5	33
	1 fase (2 poli)	110V	kW	0,55	0,75	1,8	2,2	0,8	0,8	1,5	2,2	3	3,7	5
		220...230V	kW	1,5	1,8	3,5	4,4	1,5	2,2	3	4	6,5	6,5	11
		380...440V	kW	2,2	3	5,5	7	2,2	3	5,5	6,5	8	11,5	15
AC23A	(IEC/EN)	220...230V	kW	3,7	4	8	9	3	5	6,5	8	8	12,5	30
	3 fasi	380...440V	kW	6,5	7,5	15	18,5	5,5	7,5	11	15	18,5	30	45
		500...690V	kW	7,5	7,5	15	15	7,5	7,5	11	18,5	22	30	37
	1 fase (2 poli)	110V	kW	0,75	0,75	2,2	3	0,8	0,8	1,5	2,2	3	3,7	5
		220...230V	kW	1,8	2,2	3,5	5,2	1,7	2,5	3,7	4	6	7,5	11
		380...440V	kW	3	3,5	6	7,5	3	3,7	5,5	7,5	11	12,5	15

❶ Validi per sistemi con neutro e terra, categoria di sovratensione III, grado di inquinamento 3.

TIPO			GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Interruttori per motori													
Comando diretto	120V	HP	1,5	1,5	3	5	–	–	–	–	–	–	–
(UL/CSA-DOL)	230V	HP	3	3	7,5	10	3	3	–	–	–	–	–
3 fasi	480V	HP	5	5	15	15	–	–	10	15	20	25	50
	600V	HP	5	5	15	15	–	–	–	–	–	–	40
1 fase (2 poli)	120V	HP	0,75	0,75	1,5	2	–	–	–	–	–	–	–
	230V	HP	1	1,5	3	5	–	–	–	–	–	–	–
Interruttori per motori in categoria di impiego in corrente continua													
DC21A	48V	A	16	20	32	40	12	20	25	32	40	63	125
	60V	A	16	20	32	40	12	20	25	32	40	50	80
le	110V	A	4	4	5	6	4	4	4	6	6	8	10
	220V	A	0,5	0,6	0,8	0,8	0,6	0,6	0,7	0,9	0,9	1	1,2
	440V	A	0,25	0,25	0,25	0,25	0,25	0,25	-	-	-	-	-
DC23A	24V	A	16(1)	20(1)	32(1)	40(1)	10(1)	20(1)	25(1)	32(1)	40(1)	50(1)	125(1)
	48V	A	16(2)	20(2)	32(2)	40(1)	10(2)	20(2)	25(2)	32(2)	40(2)	50(2)	125(2)
le	60V	A	16(3)	20(3)	32(3)	40(3)	10(3)	20(3)	25(3)	32(3)	40(3)	50(3)	125(3)
Collegare in serie il n° dei	110V	A	10(3)	10(3)	15(3)	20(3)	5(3)	10(3)	12(3)	15(3)	20(3)	25(3)	50(3)
contatti indicati tra parentesi	220V	A	7(4)	8(4)	12(4)	12(4)	5(4)	8(4)	10(4)	12(4)	12(4)	15(4)	20(4)
DC13	24V	A	16	20	32	40	12	20	25	32	40	63	125
	48V	A	14	16	25	32	10	16	20	25	32	40	100
	60V	A	12	12	16	16	8	12	16	16	16	28	50
le	110V	A	0,8	1	3	3	1	1	1,5	3	3	3,3	4
	220V	A	0,3	0,4	0,5	0,5	0,4	0,4	0,4	0,5	-	-	-
	440V	A	0,15	0,15	0,15	0,15	0,15	0,15	-	-	-	-	-
Potenza dissipata		w/polo	0,6	0,6	1,6	1,6	0,8	0,8	1,1	1,5	2,0	3,4	6,3
Durata meccanica		cicli	$5x10^6$5x10^6	$5x10^6$	$5x10^6$	$3x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$1x10^6$	
Vite del morsetto		M	3	3	4	4	3	3	3,5	4	4	5	2x5
Coppia di serraggio	max	Nm	0,5	0,8	1,2	1,2	0,5	0,5	0,8	1,2	1,2	2	2
Sezione conduttore	max. r/f	$2xmm^2$	2,5/2,5	2,5/2,5	10/6	10/6	2,5/2,5	2,5/2,5	4/4	6/4	10/6	16/10	50/50
		2xAWG	14/14	14/14	8/10	8/10	12/14	12/14	10/12	8/10	8/10	6/8	1/0 / 1/0
r: rigido	min. r/f	$2xmm^2$	0,5/0,5	0,5/0,5	1,5/1,5	1,5/1,5	0,5/0,5	0,5/0,5	0,5/0,5	1,5/1,5	1,5/1,5	2,5/2,5	2,5/2,5
f: flessibile		2xAWG	20/20	20/20	16/16	16/16	20/20	20/20	20/20	16/16	16/16	14/14	14/14
CONDIZIONI AMBIENTALI													
Temperatura di impiego		°C	-25...+55										
Temperatura di stoccagggio		°C	-40...+70										

Technical characteristics

Rotary cam switches

SELECTION GUIDE

The choice of a rotary cam switch and the relative type are based on the functional diagram and the type of application as well.

IEC standards provide a comprehensible and quick classification of the most frequent utilisation categories:

AC1: Connection and disconnection of non-inductive or slightly inductive loads ($\cos\varphi \geq 0.95$)
AC21: Resistance furnaces
AC3: Starting and switching off motors during running
AC23A: Switching of motor loads or other highly inductive loads
AC15: Control of electromagnetic loads

For DC applications. the rotary cam switches are used for the switching of minor loads or in control circuits. such as:

DC13: Control of electromagnets
DC21A: Switching of resistive loads
DC23: Switching of highly inductive loads

Other prescriptions and recommendations concerning the use of cam switches as auxiliary equipment of electrical machines are given in IEC/EN 60204-1 standards and specifically as given under utilisation.

UTILISATION

MAIN SUPPLY DISCONNECTING SWITCH WITH EMERGENCY-STOP OPERATION:
- Red operating handle with yellow background
- Lockable in open position (OFF).

EMERGENCY-STOP SWITCH
- Red operating handle with yellow background
- Independent operation and the breaking of the load circuit of switching devices before the opening of its main contacts
- Rated capacity is to be sufficient in order to break the sum of the rated operating currents of all the connected equipment
- Breaking capacity equal to the current of the largest motor when stalled (locked rotor) together with the total of the normal running currents of the other motors or loads.

MAIN SUPPLY DISCONNECTING SWITCH
- Used to disconnect all live electrical equipment from the power supply circuit
- Contact clearance distance is to comply with IEC/EN 60947-3 standards
- Provided with a means in order to be locked in the OFF position
- Selection of current breaking according to IEC AC1 and AC21 utilisation categories.

TYPE			GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Rated insulation voltage❶ Ui IEC/EN		V	690	690	690	690	690	690	690	690	690	690	690
UL/CSA		V	600	600	600	600	600	600	600	600	600	600	600
Rated impulse withstand voltage ❶ Uimp IEC/EN 60947-3		kV	6	6	6	6	6	6	6	6	6	6	8
Conventional free air thermal current Ith IEC/EN		A	16	20	32	40	16	20	25	32	40	63	125
UL/CSA (general purpose use)		A	12	15	32	40	15	20	30	40	50	60	130
Rated operating voltage (switch disconnect) ❶		V	440	440	440	440	480	480	480	480	480	480	690
Operatioanl impulse voltage (switch disconnect)		kV	4	4	4	4	4	4	4	4	4	4	6
Maximum fuse size for short-circuit protection In (gG)	10kA	A	20	20	40	40	16	20	25	32	40	63	125
	25kA	A	16	16	35	35	10	16	25	32	40	63	100
	50kA	A	–	–	32	35	–	–	–	32	40	63	100
	63kA	A	–	–	–	35	–	–	–	–	40	63	100
Short-time withstand current Icw	1sec	A	250	250	800	800	200	250	400	800	1000	1600	2100
Rated operational current Ie AC1/AC21A (IEC/EN)		A	16	20	32	40	16	20	25	32	40	63	125
AC15 (IEC/EN)	110V	A	10	10	25	25	10	10	16	25	25	32	40
	220...230V	A	8	8	20	22	8	8	12	20	22	25	28
	380...400V	A	4	6	10	12	4	6	8	10	12	15	15
	660...690V	A	3	3.7	5.5	7.5	1.5	1.5	2	2	2	4	5
Motor power for switches in AC utilisation categories AC3 (IEC/EN)	220...230V	kW	3.5	3.7	7.5	7.5	2.5	3	5.5	7.5	8	11	18.5
3 phases	380...440V	kW	4.5	5.5	11	15	4	5.5	7.5	11	15	18.5	37
	500...690V	kW	5.5	5.5	11	15	5.5	5.5	7.5	11	15	18.5	33
1 phase (2 poles)	110V	kW	0.55	0.75	1.8	2.2	0.8	0.8	1.5	2.2	3	3.7	5
	220...230V	kW	1.5	1.8	3.5	4.4	1.5	2.2	3	4	6.5	6.5	11
	380...440V	kW	2.2	3	5.5	7	2.2	3	5.5	6.5	8	11.5	15
AC23A (IEC/EN)	220...230V	kW	3.7	4	8	9	3	5	6.5	8	8	12.5	30
3 phases	380...440V	kW	6.5	7.5	15	18.5	5.5	7.5	11	15	18.5	30	45
	500...690V	kW	7.5	7.5	15	15	7.5	7.5	11	18.5	22	30	37
1 phase (2 poles)	110V	kW	0.75	0.75	2.2	3	0.8	0.8	1.5	2.2	3	3.7	5
	220...230V	kW	1.8	2.2	3.5	5.2	1.7	2.5	3.7	4	6	7.5	11
	380...440V	kW	3	3.5	6	7.5	3	3.7	5.5	7.5	11	12.5	15

❶ Valid for systems with earthed neutral, overvoltage category III, pollution degree 3.

TYPE			GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Motor power for direct-on-line control (UL/CSA-DOL) 3 phases	120V	HP	1.5	1.5	3	5	–	–	–	–	–	–	–
	230V	HP	3	3	7.5	10	3	3	–	–	–	–	–
	480V	HP	5	5	15	15	–	–	10	15	20	25	50
	600V	HP	5	5	15	15	–	–	–	–	–	–	40
1 phase (2 poles)	120V	HP	0.75	0.75	1.5	2	–	–	–	–	–	–	–
	230V	HP	1	1.5	3	5	–	–	–	–	–	–	–
Motor power for switches in DC utilisation categories													
1 contact DC21A	48V	A	16	20	32	40	12	20	25	32	40	63	125
	60V	A	16	20	32	40	12	20	25	32	40	50	80
Ie	110V	A	4	4	5	6	4	4	4	6	6	8	10
	220V	A	0.5	0.6	0.8	0.8	0.6	0.6	0.7	0.9	0.9	1	1.2
	440V	A	0.25	0.25	0.25	0.25	0.25	0.25	-	-	-	-	-
DC23A	24V	A	16(1)	20(1)	32(1)	40(1)	10(1)	20(1)	25(1)	32(1)	40(1)	50(1)	125(1)
	48V	A	16(2)	20(2)	32(2)	40(1)	10(2)	20(2)	25(2)	32(2)	40(2)	50(2)	125(2)
Ie	60V	A	16(3)	20(3)	32(3)	40(3)	10(3)	20(3)	25(3)	32(3)	40(3)	50(3)	125(3)
No. of contacts connected in series are indicated in brackets	110V	A	10(3)	10(3)	15(3)	20(3)	5(3)	10(3)	12(3)	15(3)	20(3)	25(3)	50(3)
	220V	A	7(4)	8(4)	12(4)	12(4)	5(4)	8(4)	10(4)	12(4)	12(4)	15(4)	20(4)
	24V	A	16	20	32	40	12	20	25	32	40	63	125
DC13	48V	A	14	16	25	32	10	16	20	25	32	40	100
	60V	A	12	12	16	16	8	12	16	16	16	28	50
Ie	110V	A	0.8	1	3	3	1	1	1.5	3	3	3.3	4
	220V	A	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.5	-	-	-
	440V	A	0.15	0.15	0.15	0.15	0.15	0.15	-	-	-	-	-
Power dissipation		W/pole	0.6	0.6	1.6	1.6	0.8	0.8	1.1	1.5	2.0	3.4	6.3
Mechanical life		cycles	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$3x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$1x10^6$
Terminal screw		M	3	3	4	4	3	3	3.5	4	4	5	2x5
Tightening torque	max	Nm	0.5	0.8	1.2	1.2	0.5	0.5	0.8	1.2	1.2	2	2
Conductor cross section	max. r/f	2 mm^2	2.5/2.5	2.5/2.5	10/6	10/6	2.5/2.5	2.5/2.5	4/4	6/4	10/6	16/10	50/50
		2 AWG	14/14	14/14	8/10	8/10	14/16	12/14	10/12	8/10	8/10	6/8	1/0 / 1/0
r: rigid/solid f: flexible/stranded	min. r/f	2 mm^2	0.5/0.5	0.5/0.5	1.5/1.5	1.5/1.5	0.5/0.5	0.5/0.5	0.5/0.5	1.5/1.5	1.5/1.5	2.5/2.5	2.5/2.5
		2 AWG	20/20	20/20	16/16	16/16	20/20	20/20	20/20	16/16	16/16	14/14	14/14

AMBIENT CONDITIONS		
Operating temperature	°C	-25...+55
Storage temperature	°C	-40...+70

Indice schemi

Index circuit schemes

Schema Schemes	Pagina Page
1	8
2	8
3	8
4	8
5	7
6	7
7	7
8	7
9	7
10	6
11	33
12	35
13	38
14	33
15	44
16	44
17	45
18	42
19	38
20	39
21	35
22	40
23	40
24	32
25	34
26	34
27	34
28	36
29	36
30	35
31	37
32	39
33	41
34	42
35	43
36	43
37	6
38	6
39	6
40	6
41	6
42	6
43	10
44	10
45	8
46	8
47	8
48	8
49	37
50	45
51	9

Schema Schemes	Pagina Page
52	9
53	9
53	41
54	10
55	10
56	10
57	7
58	26
60	24
61	28
62	10
63	7
64	29
65	30
66	24
67	25
68	25
69	10
70	10
71	10
72	10
73	10
74	10
75	9
76	9
77	9
78	9
79	9
80	9
81	9
82	10
83	11
84	11
85	11
86	10
87	11
88	11
89	11
90	6
91	6
92	6
93	10
94	11
95	11
96	11
97	27
98	26
99	6
100	6
101	12
102	12

Schema Schemes	Pagina Page
103	12
104	13
105	13
106	13
107	14
108	14
109	14
110	15
111	15
112	16
113	17
114	18
115	19
116	20
117	12
118	12
119	12
120	13
121	13
122	13
123	14
124	14
125	14
126	15
127	15
128	16
129	17
130	18
131	19
132	20
133	12
134	12
135	14
136	14
137	14
138	15
139	15
140	16
141	10
142	11
143	11
144	11
145	14
146	14
147	14
148	15
149	10
150	11
151	14
152	14
153	14

Schema Schemes	Pagina Page
154	10
155	11
156	14
157	14
158	14
159	10
160	14
161	14
162	10
163	14
164	14
165	17
166	33
171	9
172	9
173	9
174	9
175	14
176	14
177	14
178	14
179	15
182	9
183	9
201	8
202	8
203	8
204	31
205	31
206	31
207	31
208	31
209	31
210	32
251	21
252	21
253	22
254	21
255	21
256	22
257	22
258	23
259	23
260	23
270	7
271	7
275	7
276	7
277	7
278	7

Lovato electric

ENERGY AND AUTOMATION

www.LovatoElectric.com

LOVATO ELECTRIC S.P. A.

via Don E. Mazza, 12
24020 Gorle (Bergamo) Italia

Tel +39 035 4282111
Fax +39 035 4282200
info@LovatoElectric.com

Seguici su

I230 IGB 04 17