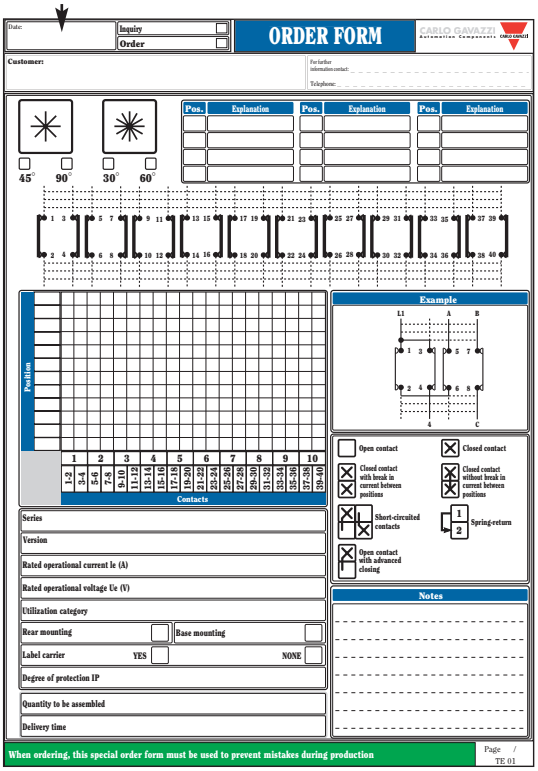
Cam Switches

CN Series Overview

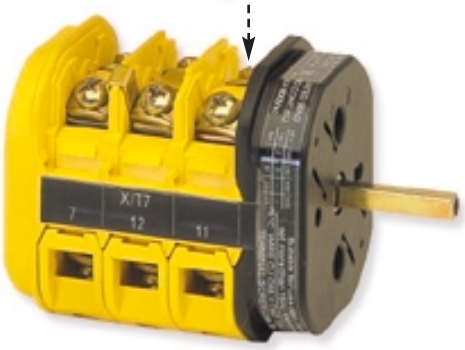
- The CN Series represents the latest generation of manually-operated switching devices
- Available with 12, 16, 20, 25 and 32 Amp rating
- Manufactured from heat resistant and class V2 halogen free and self-extinguishing materials, providing a high mechanical life

- Special arrangements available upon



- Screws provided with captive self-lifting cable clamp, which are supplied in open position, for quick and easy wiring

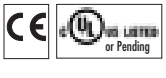
- IP20 Finger safe protection of the terminals

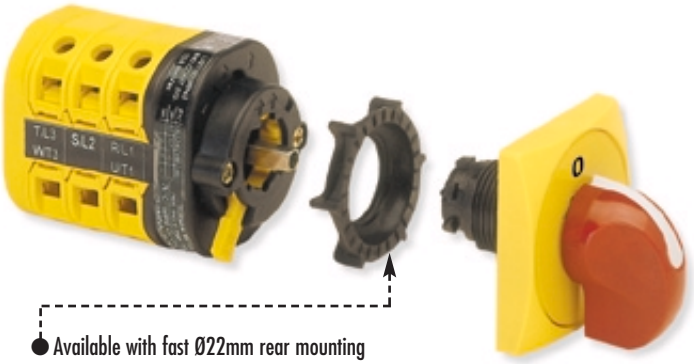


- New modular and shaft extensions

- 30°, 45°, 60° and 90° Switching angles

- IP65 rated operating handle





- Available with fast Ø22mm rear mounting

Cam Switches

Selection Table / Versions

How to order

CN										

Range	Diagram Number	Type
012 = 12 A	See Data Sheet	(mounting plate)
016 = 16 A	**0001** = 01	
020 = 20 A	**0002** = 02	
025 = 25 A	**0003** = 03	
032 = 32 A	etc. etc.	

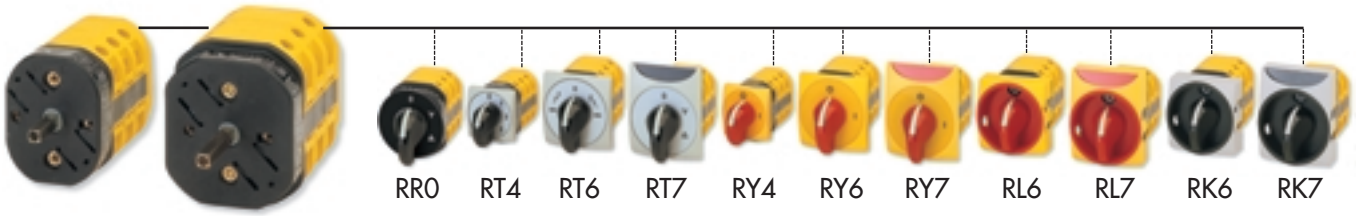
R Type switch body for rear mounting

G Type switch body for Ø22mm rear center mounting

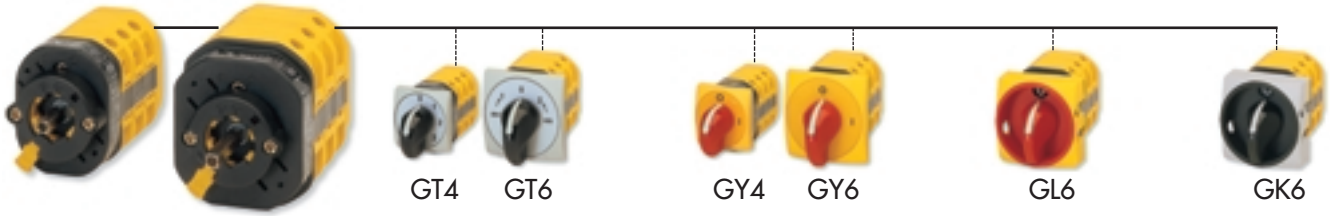
B Type switch body for base mounting

PREFIX		IEC 947-3				UL508		
	Size	I_{th} A	AC21A A	AC23A kW (400V)	AC3 kW (400V)	I_{th} A	3 x 240 V HP	3 x 480 V HP
CN012...	1	12	12	4	3.5	12	2	3
CN016...	1	16	16	7.5	5.5	16	3	7.5
CN020...	1	20	20	9	7.5	20	7.5	10
CN025...	2	25	32	15	10	32	10	15
CN032...	2	40	40	18.5	15	40	15	20

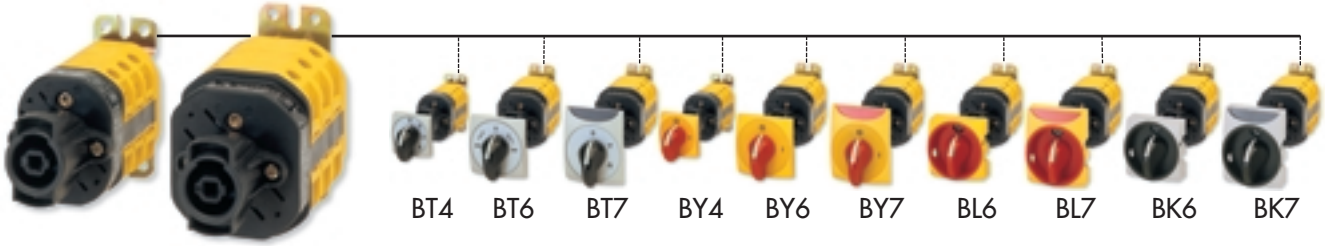
Rear Mounting Cam Switches



Ø22mm Rear Center Mounting Cam Switches



Base Mounting Cam Switches *(with door interlocking)*



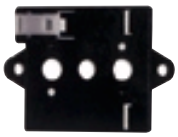
Accessories for Cam Switches and Rotary Disconnects

Shaft extensions
- Adapts the switches with door interlocking device
- Different mounting lengths, up to 8 inches (200mm)

Modular extensions
- Adapts the switches with door interlocking device to different mounting lengths
- Includes four forms that overlap
- Approximately 1/2" (12mm) per extension fitting

Single handle
- Red or black

Reversible black or red label for engraving
- For front trim plates with legend label carrier



Various Mounting Plates
- For DIN rail or base mounting

Protection shrouds for disconnect terminals
- Increase the degree of protection

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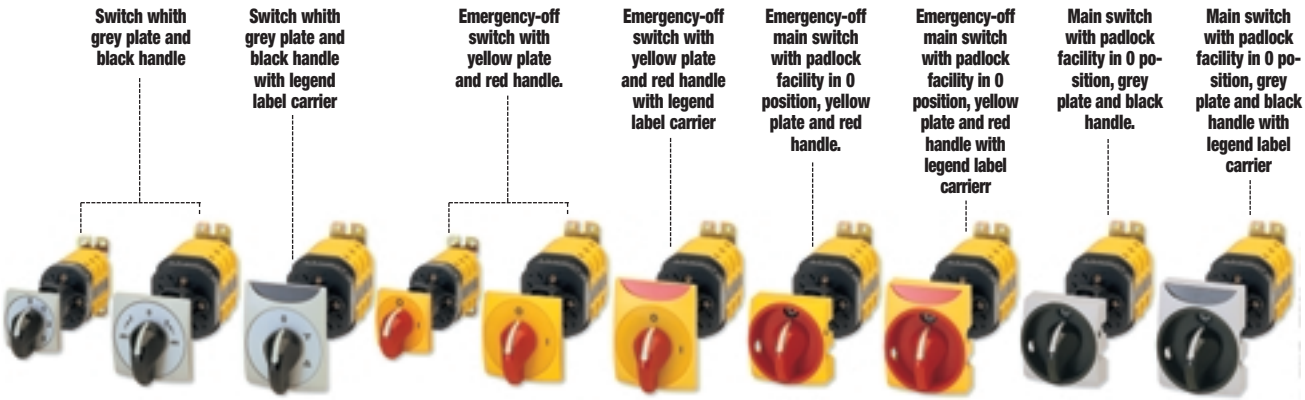
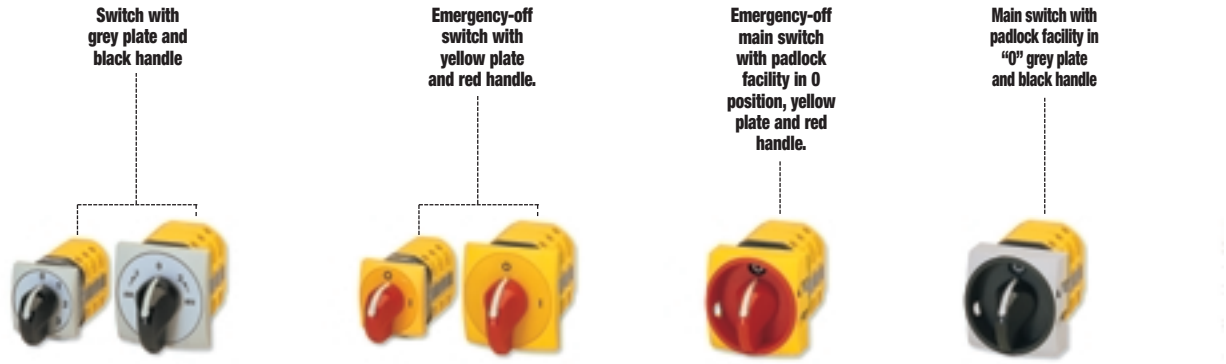
Selection table / Versions

Base mounting (with door interlocking)



	□ 48	□ 67	67x82	□ 48	□ 67	67x82	□ 67	67x82	□ 67	67x82
	BT4	**BT6**	**BT7**	**BY4**	**BY6**	**BY7**	**BL6**	**BL7**	**BK6**	**BK7**
12 A	CN012....BT4	CN012....BT6	CN012....BT7	CN012....BY4	CN012....BY6	CN012....BY7	CN012....BL6	CN012....BL7	CN012....BK6	CN012....BK7
16 A	CN016....BT4	CN016....BT6	CN016....BT7	CN016....BY4	CN016....BY6	CN016....BY7	CN016....BL6	CN016....BL7	CN016....BK6	CN016....BK7
20 A	CN020....BT4	CN020....BT6	CN020....BT7	CN020....BY4	CN020....BY6	CN020....BY7	CN020....BL6	CN020....BL7	CN020....BK6	CN020....BK7
25 A		CN025....BT6	CN025....BT7		CN025....BY6	CN025....BY7	CN025....BL6	CN025....BL7	CN025....BK6	CN025....BK7
32 A		CN032....BT6	CN032....BT7		CN032....BY6	CN032....BY7	CN032....BL6	CN032....BL7	CN032....BK6	CN032....BK7

Rear center mounting Ø22



	□ 48	□ 67	□ 48	□ 67	□ 67	□ 67
	GT4	**GT6**	**GY4**	**GY6**	**GL6**	**GK6**
12 A	CN012....GT4	CN012....GT6	CN012....GY4	CN012....GY6	CN012....GL6	CN012....GK6
16 A	CN016....GT4	CN016....GT6	CN016....GY4	CN016....GY6	CN016....GL6	CN016....GK6
20 A	CN020....GT4	CN020....GT6	CN020....GY4	CN020....GY6	CN020....GL6	CN020....GK6
25 A		CN025....GT6		CN025....GY6	CN025....GL6	CN025....GK6
32 A		CN032....GT6		CN032....GY6	CN032....GL6	CN032....GK6

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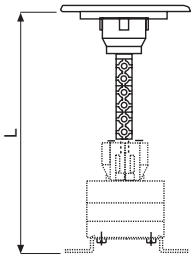
Accessories

Shaft extensions

- *Allows adapting the switches whith door interlocking device to the different mounting lengths*

code	type	length
BR508300	**B - GNAP0**	100 mm
BR508600	**B - GNAP1**	150 mm
BR508900	**B - GNAP2**	200 mm

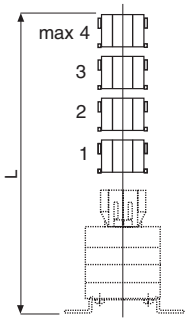


		CN012 - CN016 - CN020				CN025 - CN032			
L=(mm)		1	2	3	+	1	2	3	+
H=100mm	min	181	194	206	+ 12.2	216	232	248	+ 16.2
	max	191	203	215		225	242	258	
H=150mm	min	231	244	256	+ 12.2	266	282	298	+ 16.2
	max	241	253	265		275	292	308	
H=200mm	min	281	294	306	+ 12.2	316	332	348	+ 16.2
	max	291	303	315		325	342	358	

Modular extensions

- *Allows adapting the switches whith door interlocking device to the different mounting lengths*
- *Includes 4 forms that overlap*

code	type	length
BR508000	**B - GNAM0**	-

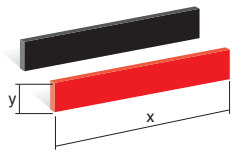


		CN012 - CN016 - CN020				CN025 - CN032			
L=(mm)		1	2	3	+	1	2	3	+
1	min	101	114	126	+ 12.2	111	127	143	+ 16.2
	max	111	123	135		120	137	153	
2	min	126	139	151	+ 12.2	136	152	168	+ 16.2
	max	136	148	160		145	162	178	
3	min	151	164	176	+ 12.2	161	177	193	+ 16.2
	max	161	173	185		170	187	203	
3	min	176	189	201	+ 12.2	186	202	218	+ 16.2
	max	186	198	210		195	212	228	

Reduction disk

- Allow the reduction of the fixing holes from 32 to 28 mm

code	type	length
BR507100	**B - G1468**	-

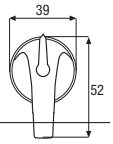


Black label - red label for engraving blank

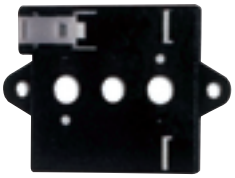
- *For front trim plates with legend label carrier*

code	type	length
BR506800	**B - 6429**	-

Single handle



code	type	length
BR507400	**B - G1470N** (black)	-
BR507700	**B - G1470R** (red)	-



DIN rail fixing-plate

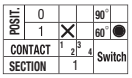
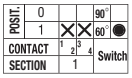
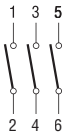
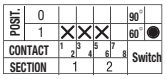
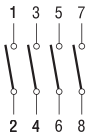
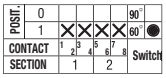
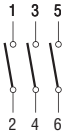
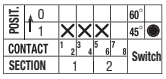
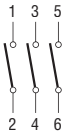
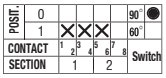
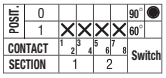
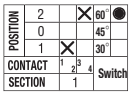
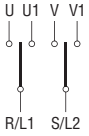
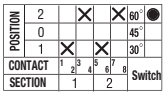
- *instead of metal fixing plate box version*

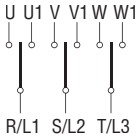
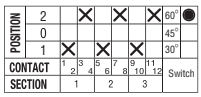
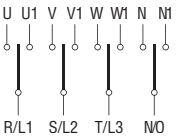
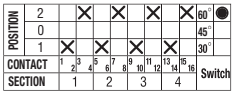
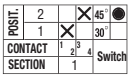
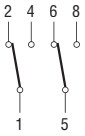
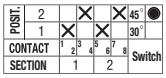
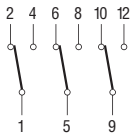
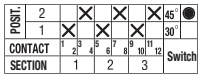
code	type	
VB824200	**B - G540**	CN012…
		CN016…
		CN025…
		CN032…

Cam Switches

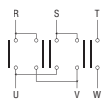
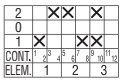
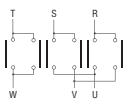
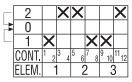
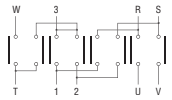
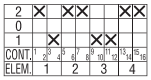
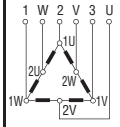
Circuit diagrams

Switches

Text sheet Diagram no.	Circuit diagrams	Description of contacts and sections
01	*1-pole switch* 	
02	*2-pole switch* 	
03	*3-pole switch* 	
04	*4-pole switch* 	
35	*3-pole switch with spring-return to 0 position* 	
G3	*3-pole switch* 	
G4	*4-pole switch* 	
05	*1-pole change-over switch* 	
06	*2-pole change-over switch* 	

Text sheet Diagram no.	Circuit diagrams	Description of contacts and sections
07	3-pole change-over switch 	
39	4-pole change-over switch 	
D001	*1-pole double-way switch* 	
D002	*2-pole double-way switch* 	
D003	*3-pole double-way switch* 	

Switches

Text sheet Diagram no.	Circuit diagrams	Description of contacts and sections	L1 L2 L3 — R S T
08	*3 pole reversing switch* 		
36	*3 pole reversing switch with spring return to "O"* 		
09	*Dahlander pole changing switch* 		

Cam Switches

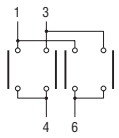
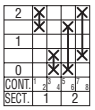
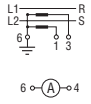
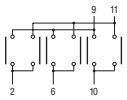
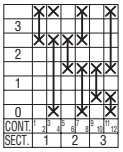
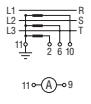
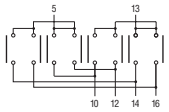
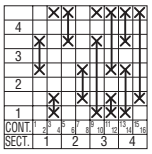
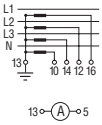
Circuit diagrams

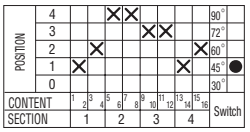
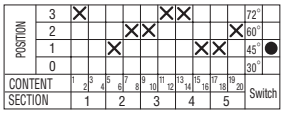
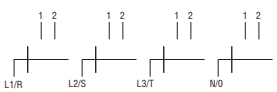
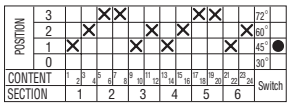
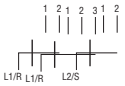
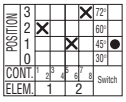
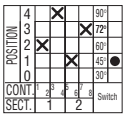
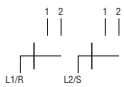
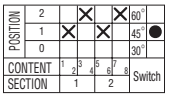
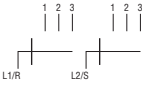
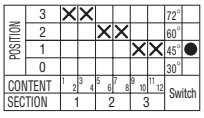
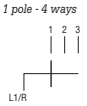
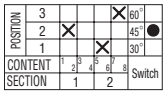
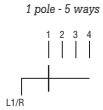
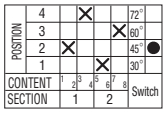
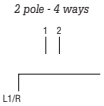
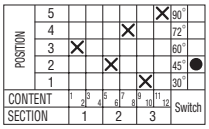
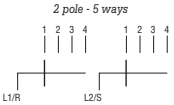
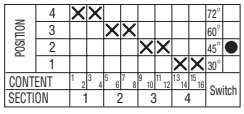
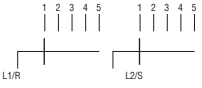
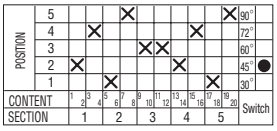
Text sheet Diagram no.	Curcuit diagrams	Description of contacts and sections	
10	*Star-delta starter*		
11	*reversing pole changing switch*		
12	*reversing star-delta starter switch*		
13	*Pole changing switch with star-delta starting*		
29	*Change-over switch for reversing with spring return to A - M*		
30	*Change-over switch for reversing starters with return to A - M*		
31	*Switch for single-phase motor with auxiliary phase*		
32	*Change-over switch for single-phase motor with auxiliary phase*		
33	*Pole changing switch for single-phase motors with auxiliary phase to start on the first speed*		

Text sheet Diagram no.	Circuit diagrams	Description of contacts and sections	
34	*Reversing starter for single-phase motors with centrifugal cut-out*		
	Voltmeter switches		
15	*Voltmeter switch 3 for measurements between each phase and neutral*		
16	*Voltmeter switch for measurements between each phase and phase*		
17	*Voltmeter switch for measurements between each phase and phase + 1 phase and neutral*		
18	*Voltmeter switch for measurements between each phase and phase + 1 phase and neutral*		
19	*Voltmeter switch for measurements between each phase and phase + 1 phase and neutral*		
	Ammeter switches		
14	*Ammeter switch for direct measurements*		
20	*Ammeter switch for direct measurements between 1-pole 1 current transformer*		

Cam Switches

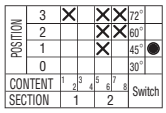
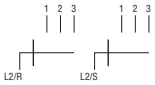
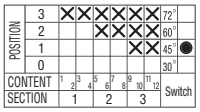
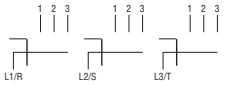
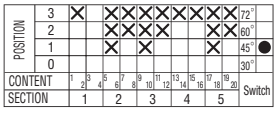
Circuit diagrams

Text sheet Diagram no.	Circuit Diagrams	Description of contacts and sections	L1 L2 L3 — R S T
21	*Ammeter switch for direct measurements between 1-pole 2 current transformer* 		
Ammeter switches			
22	Ammeter switch for measurements 1-pole 3 current transformers 		
23	Ammeter switch for measurements between 1-pole 4 current transformers 		

Tex sheet Diagram no.	Circuit diagrams	Description of contacts and sections
MZ24	*2 pole - 4 ways* 	
MZ33	*3 pole - 3 ways* 	
MZ43	*4 pole - 3 ways* 	
Multi-step change-over with 0 position		
MZ12	*1 pole - 2 ways* 	
MZ13	*1 pole - 3 ways* 	
MZ14	*1 pole - 4 ways* 	
MZ22	*2 pole - 2 ways* 	
MZ23	*2 pole - 3 ways* 	
Multi-step change-over switches without 0 position		
M013	*1 pole - 4 ways* 	
M014	*1 pole - 5 ways* 	
M015	*2 pole - 4 ways* 	
M024	*2 pole - 5 ways* 	
M025		

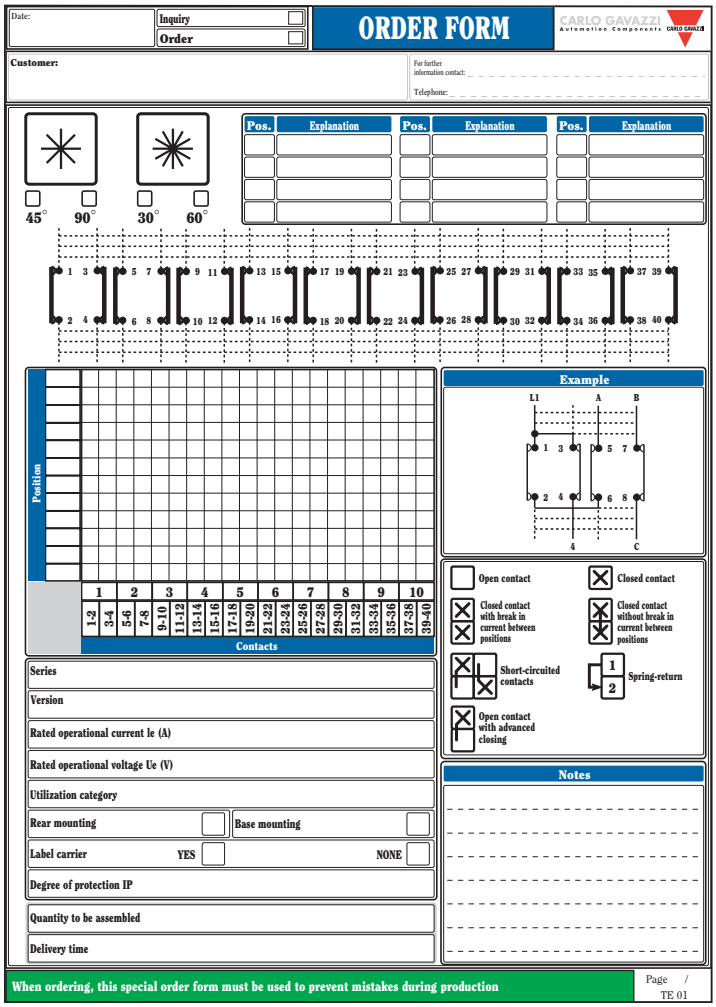
Cam Switches

Multi-step cumulative change-over switches with “0” position

Tex sheet Diagram no.	Circuit diagrams	Description of contacts and sections
	Multi-step cumulative change-over switches with 0 position	
GZ13	*1 pole - 3 ways* 	
GZ23	*2 pole - 3 ways* 	
GZ33	Commutatore tripolare a 3 vie *3 pole - 3 ways* 	

					
	2 way	***3 way***	***4 way***	***5 way***	**6 vie-*6 ways***
1-pole	GZ12	GZ13	GZ14	GZ1 5	GZ16
2-pole	GZ22	GZ23	GZ24	GZ25	GZ26
3-pole	GZ32	GZ33	GZ34	GZ35	GZ36
4-pole	GZ42	GZ43	GZ44	GZ45	GZ46

					
	7 way	***8 way***	***9 way***	***10 way***	***11 way***
1-pole	GZ17	GZ18	GZ19	GZ00	GZ01
2-pole	GZ27	GZ28	GZ29	GZ02	GZ03
3-pole	GZ37	GZ38	GZ39	GZ04	GZ05
4-pole	GZ47	GZ48	GZ49	GZ06	GZ07

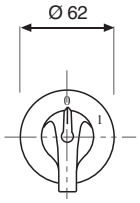
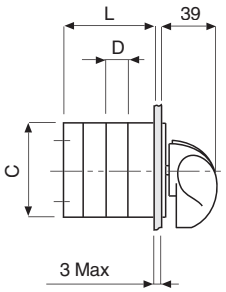
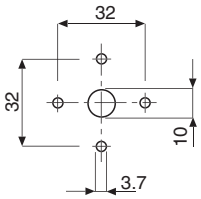
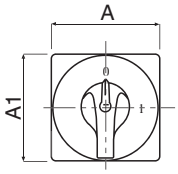
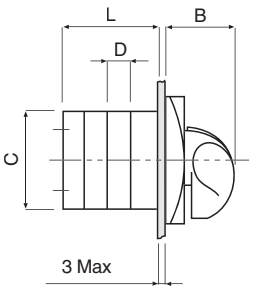
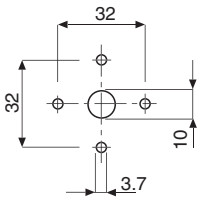
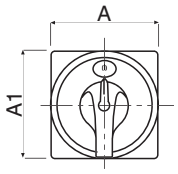
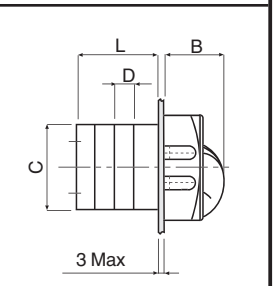
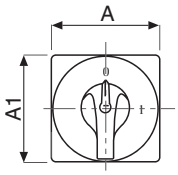
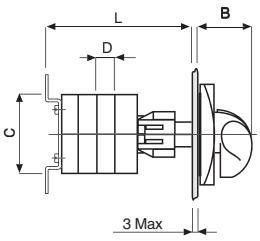
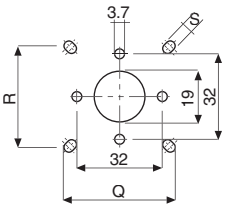
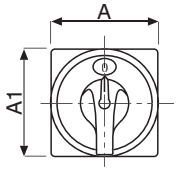
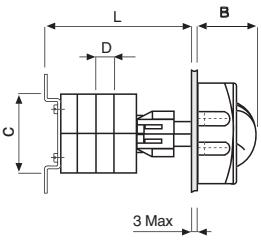
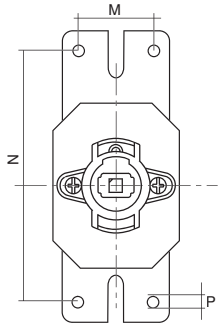


The circuit diagrams you use probably already exist among the more than 9000 special diagrams memorized in our CAD system

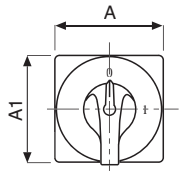
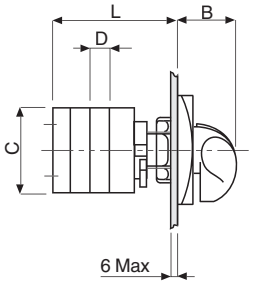
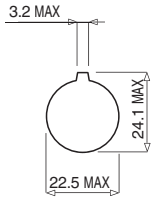
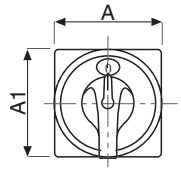
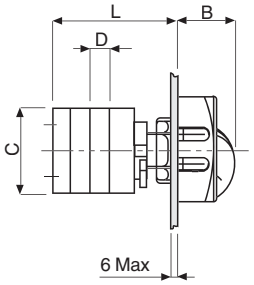
The special versions have to be definite after having contacted our Technical Service directly or sent the special order form shown sideways.

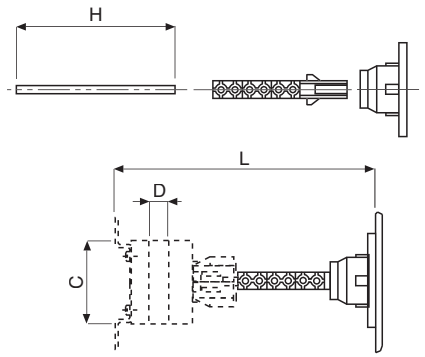
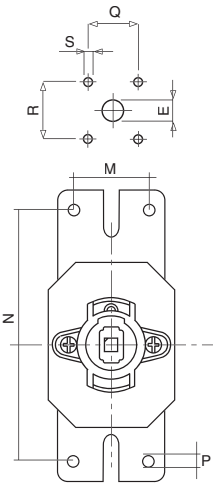
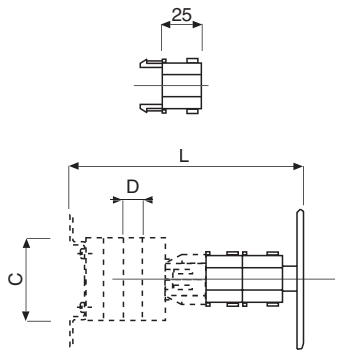
Cam Switches

Overall dimensions (mm)

Version	Front view	Side view	Hole layout	Dimensions (mm)
RR0				*"L" RELATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* C D 1 2 3 4 5 ... CN012 / CN016 / CN020: 53x43 12.2 38 50 62 74 86 CN025 / CN032: 64x54 16.2 44 60 76 93 109 *...For additional sections add D value*
RT4-RY4 RT6-RY6 RT7-RY7				*"L" RELATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* C D 1 2 3 4 5 ... CN012 / CN016 / CN020: 53x43 12.2 38 50 62 74 86 CN025 / CN032: 64x54 16.2 44 60 76 93 109 *...For additional sections add D value*
RK6-RL6 RK7-RL7				A A1 B RT4-RY4: 48 48 37 RT6-RY6 / RK6-RL6: 67 67 39 RT7-RY7 / RK7-RL7: 67 82 39
BT4-BY4 BT6-BY6 BT7-BY7				*"L" RELATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* C D 1 min/max 2 min/max 3 min/max 4 min/max ... CN012 / CN016 / CN020: 53x43 12.2 76 86 89 98 100 110 113 122 CN025 / CN032: 64x54 16.2 86 95 102 112 118 128 134 144 *...For additional sections add D value*
BH6-BL6 BK7-BL7				A A1 B Q R S BT4-BY4: 48 48 37 - - - BT6-BY6 / BK6-BL6: 67 67 39 36/38 36/38 3.2 BT7-BY7 / BK7-BL7: 67 82 39 36/48 36/48 3.7 M N P CN012 / CN016 / CN020: 18 58 4.3 CN025 / CN032: 18 72 4.3

Overall dimensions (mm)

Version	Front view	Side view	Hole layout	Dimensions (mm)
GT4-GY4 GT6-GY6				*"L" RELATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* C D 1 2 3 4 5 6 CN012 / CN016 / CN020: 53x43 12.2 65 77 89 102 … … MAX 6 CN025 / CN032: 64x54 16.2 71 87 103 MAX 3 *…For additional sections add D value*
GK6-GL6				A A1 B GT4-GY4: 48 48 37 GT6-GY6: 67 67 39 GK6-GL6: 67 67 39

Version	Accessories	Hole layout	Dimensions (mm)
GNAP0 GNAP1 GNAP2	*Shaft extensions* 		CN012 - CN016 - CN020 *"L" RELEATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* H / 1 min/max / 2 min/max / 3 min/max GNAP0 100: 181 191 194 203 206 215 GNAP1 150: 231 241 244 253 256 265 GNAP2 200: 281 291 294 303 306 315 CN025 - CN032 H / 1 min/max / 2 min/max / 3 min/max GNAP0 100: 216 225 232 242 248 258 GNAP1 150: 266 275 282 292 298 308 GNAP2 200: 316 325 332 342 348 358 *…For additional sections add D value* C D Q R S E M N P CN012 / CN016 / CN020: 53X43 12.2 36 36 3.2 19 18 58 4.3 CN025 / CN032: 64X54 16.2 36 36 3.2 19 18 72 4.3
GNAM0	*No. Modules* 		*"L" RELEATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* CN012 - CN016 - CN020 No. Modules / 1 min/max / 2 min/max / 3 min/max GNAM0: 1: 101 111 114 123 126 135 2: 126 136 139 148 151 160 3: 151 161 164 173 176 185 4: 176 186 189 198 201 210 *"L" RELATED NUMBER OF SECTIONS, SEE CIRCUIT DIAGRAMS* CN025 - CN032 No. Modules / 1 min/max / 2 min/max / 3 min/max GNAM0: 1: 111 120 127÷137 143 153 2: 136 145 152÷162 168 178 3: 161 170 177÷187 193 203 4: 186 195 202÷212 218 228 *…For additional sections add D value*

Technical data

General specifications						CN012	CN016	CN020	CN025	CN032
Rated insulation voltage		Ui	IEC947		V	500	500	690	690	690
		UL		V	-	690	600/300/690	690	690	690
Rated impulse withstand voltage		Uimp	IEC947		kV	4	4	6	6	6
Rated thermal current	free air	Ith	IEC947		A	16	20	20		40
			UL		A	12	16	20	32	40
	enclosed	Ithe	IEC/VDE/BS		A	16	20	20	32	40
	Category AC21A	Ie	IEC947	690 V	A	12 ●	16 ●	20	32	40
Rated operational current	Category AC22A	Ie	IEC947	690 V	A	12 ●	16 ●	16	25	32
	Category AC20	Ie			A					
Max ratings for application on motors										
Category AC3	3-phase / 3-pole	IEC947	230 V	kW (A)	2.2 (7)	3.7 (12)	4 (14)	5.5 (18)	7.5 (23)	
				400 V	kW (A)	3.5 (7)	5.5 (10)	7.5 (14)	10 (18)	15 (27)
				500 V	kW (A)	-	-	7.5 (11)	10 (14)	15 (22)
				690 V	kW (A)	-	-	7.5 (8)	15 (19)	18.5 (19)
	1-phase / 2-pole	IEC947	110 V	kW (A)	0.37 (4)	0.75 (9)	1.1 (13)	1.5 (17)	2.2 (25)	
				230 V	kW (A)	1.1 (6)	1.5 (8)	2.2 (12)	3.7	5.5 (30)
Category AC23A	3-phase / 3-pole	IEC947	230 V	kW (A)	3 (9)	4 (14)	5.5 (17	8.5 (27)	10 (32)	
				400 V	kW (A)	4 (9)	7.5 (14)	9 (16)	15 (27)	18.5 (30)
				500 V	kW (A)	-	-	9 (13)	15 (22)	18.5 (27)
				690 V	kW (A)	-	-	9 (9)	15 (16)	18.5 (19)
	1-phase / 2-pole	IEC947	110 V	kW (A)	0.75 (8.5)	1.1 (12)	1.1(8.5)	2.2 (25)	3 (34)	
				230 V	kW (A)	1.5 (8.5)	1.5 (8)	3 (17)	4 (22)	5.5 (30)
Category AC4	3-phase / 3-pole	IEC947	230 V	kW (A)	-	-	1.5	2.2 (7)	3 (10)	
				400 V	kW (A)	-	-	2.2	3 (5.5)	5.5 (10)
Standard motor load	3-phase / 3-pole	UL/CSA	200 V	HP	1.5	-2	5-	7.5	10	
				240 V	HP	2	3	7.5	10	15
				480 V	HP	3	7.5	10	15	20
				600 V	HP	5	7.5	10	15	20
	1-phase / 2-pole	UL/CSA	120 V	HP	0.5	1	1.5	2	3	
				240 V	HP	1.5	2	3	5	7.5
Category AC15			IEC947	230 V	A	4	6	7	8	10
				400 V	A	3	4	5	6	8
Rated short-time withstand current (1s)		Icw			A	150	240	240	400	500
Rated short-circuit making capacity		Icm			A	-	-	1500	2000	2000
Rated conditional short-circuit current			IEC947-3	500 V	kA eff.	4	4	5	10	10
With fuses class gG				500 V	A	16	20	20	35	-
Connecting capacity	Rigid cables		min-max		mm^2	2x1.5-4	2x1.5-4	2x1.5-4	2x2.5-10	2x2.5-10
	Flexible cables	min-max			mm^2 2x1.5-2.5	2x1.5-2.5	2x1.5-2.5	2x2.5-6	2x2.5-6	
					AWG	16-12	16-12	16-12	14-10	14-10
Rated breaking capacity in category AC23 (cosφ 0.45)			IEC947	230 V	A	72	112	136	216	256
			400 V	A	72	112	128	216	240	
Average power dissipation for each pole				W	0.27	0.5	0.4	1	1.3	
Mechanical life			cycles 10^6			2	2	2	1.5	1.5
			cycles per hour		120	120	120	120	120	

Normal service conditions				
Temperatura ambiente/Air ambient temperature	Storage	°C	-30 to 70	
	Operational	°C	-25 to 55	
Resistance to climate	constant hot-damp climate, according to IEC 68 Part:		2-8	
	cyclic hot-damp climate, according to IEC 68 Part:		2-30	

● - a 400 V