
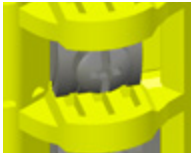








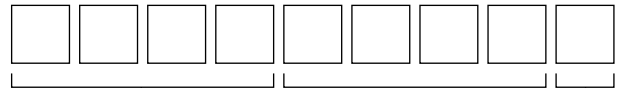
C025... / C032... / C040... CX25... / CX32... / CX40...

CAM SWITCHES SIZES: 25 A / 32 A / 40 A

	C025... C032... C040...	CX25... CX32... CX40...
Specifications	p.2	p.2
Terminal protection class	 IP20	 IP10

R Rear panel mounting	 p.5	 p.6
B Base mounting	 p.7	 p.8

Code reading

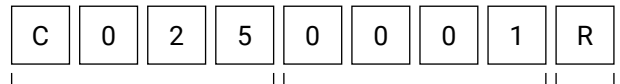


Cam switch electrical scheme (see p.9)

Cam switch series (this datasheet)

Cam switch mounting type

Code example



Cam switch series

Cam switch electrical scheme

Cam switch mounting type

SEE AVAILABLE ACTUATORS ON p.15

SPECIFICATIONS

General characteristics

Protection class	control	EN 60529 UL50 / NEMA	IP65 Type 1 - 4 - 4X
	control with knob only		IP40
	terminals		C025... / C032... / C040... CX25... / CX32... / CX40... IP20 IP10
Material group		EN 60947-1	II
Pollution grade		EN 60947-1	3
Flammability		UL94	V0 (live electrical parts)
Ambient temperature	operating		-40 ... +85°C
	storage		-40 ... +70°C
Climate withstand		IEC 68 part 2-3 IEC 68 part 2-30	damp heat, steady state damp heat, cyclic
Terminal screw identification	conforming to		EN50013
Connections	terminal block caliber	EN60947-1	A5
	terminal screw		M4
	tightening torque	EN60947-1 UL508	1.2 N·m (10.6 lb·in) 12 lb·in (1.4 N·m)
Connectable section	flexible conductors		2 × 2.5 ... 10 mm ² AWG 14 ... 6
	solid conductors		2 × 2.5 ... 10 mm ² AWG 14 ... 6
Contacts			double breaking
Opening angles			30° - 45° - 60° - 90°
Mechanical lifetime	@ 120 operations / hour		1 million cycles
Electrical lifetime	@ 120 operations / hour		C025... / CX25... 1 million cycles C032... / CX32... 0.75 million cycles C040... / CX40... 0.75 million cycles

EN 60947-3 characteristics

		C025... / CX25...	C032... / CX32...	C040... / CX40...
Rated operating voltage	U _e	690 V	690 V	690 V
Rated insulation voltage	U _i	690 V	690 V	690 V
Rated impulse withstand voltage (sectionable)	U _{imp}	6 kV	6 kV	6 kV
Rated thermal current	I _{th}	32 A	40 A	50 A
Rated enclosed thermal current	I _{the}	25 A	32 A	40 A
Frequency		50/60 Hz	50/60 Hz	50/60 Hz

Alternate current

Rated operating current		le		C025... / CX25...	C032... / CX32...	C040... / CX40...			
AC-21A	Switching of resistive loads, including moderate overloads		690 V	25 A	32 A	40 A			
AC-22A	Switching of mixed resistive and inductive loads, including moderate overloads		690 V	25 A	32 A	40 A			
AC-23A	Switching of motor loads or other highly inductive loads	1 phase - 1 pole	110 V	25 A	1.5 kW	30 A	2.2 kW	35 A	3 kW
			230 V	25 A	4 kW	30 A	5.5 kW	35 A	6.5 kW
		3 phases - 3 poles	230 V	25 A	7.5 kW	30 A	9 kW	35 A	11 kW
			400 V	22 A	11 kW	24 A	15 kW	32 A	18.5 kW
			500 V	22 A	11 kW	27 A	18.5 kW	32 A	22 kW
690 V	20 A	15 kW	22 A	18.5 kW	25 A	22 kW			
AC-3	Squirrel-cage motors: starting, switches off motors during running time	1 phase - 1 pole	110 V	22 A	1.1 kW	25 A	1.5 kW	30 A	2.5 kW
			230 V	22 A	3.7 kW	25 A	4 kW	30 A	5.5 kW
		3 phases - 3 poles	230 V	18 A	5.5 kW	23 A	7.5 kW	27 A	9 kW
			400 V	18 A	7.5 kW	23 A	11 kW	27 A	15 kW
			500 V	18 A	11 kW	23 A	15 kW	27 A	18.5 kW
690 V	14 A	11 kW	18 A	15 kW	20 A	18.5 kW			
AC-23A	Nominal breaking capacity (cosφ 0.45)		230 V	200 A	240 A	280 A			
			400 V	176 A	216 A	256 A			
			500 V	176 A	216 A	256 A			
			690 V	160 A	176 A	200 A			

Direct current

Rated operating current		le		C025... / CX25...	C032... / CX32...	C040... / CX40...
DC-21A	Switching resistive loads with light overloads	1 phase	50 V	20 A *	25 A *	32 A *
DC-22A	Switching resistive loads with light overloads	1 phase	30 V	16 A *	20 A *	25 A *

* Values not reported on the IMQ files.

Short circuit characteristics

		C025... / CX25...	C032... / CX32...	C040... / CX40...
Rated short-time short circuit withstand current (1 s) I_{cw}		500 A	500 A	500 A
Rated short circuit making capacity	I_{cm}	2840 A	2840 A	2840 A
Conditional rated short circuit withstand current		10 kA	10 kA	10 kA
Fuse rating (type gG)	500 V	40 A	40 A	40 A

UL 508 characteristics

			C025... / CX25...	C032... / CX32...	C040... / CX40...
General use	600 V AC		25 A	32 A	20 A
Standard motor load	1 phase - 2 poles	120 V AC	1.5 HP 20 FLA	2 HP 24 FLA	3 HP 34 FLA
		240 V AC	3 HP 17 FLA	5 HP 28 FLA	5 HP 28 FLA
	3 phases - 3 poles	200 V AC	7.5 HP 25.3 FLA	7.5 HP 25.3 FLA	10 HP 32.2 FLA
		240 V AC	7.5 HP 22 FLA	7.5 HP 22 FLA	10 HP 28 FLA
		480 V AC	15 HP 21 FLA	20 HP 27 FLA	20 HP 27 FLA
		600 V AC	15 HP 17 FLA	20 HP 22 FLA	20 HP 22 FLA

Marking

Compliance by passed test

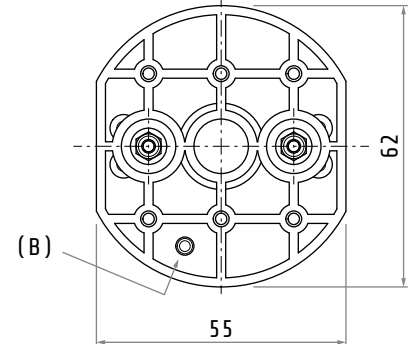
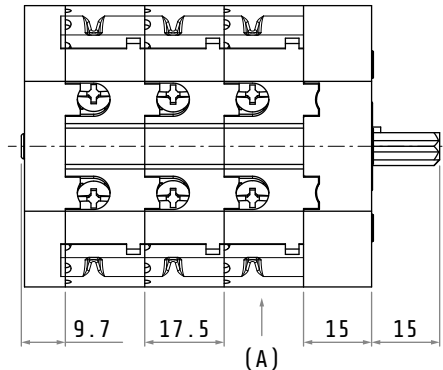
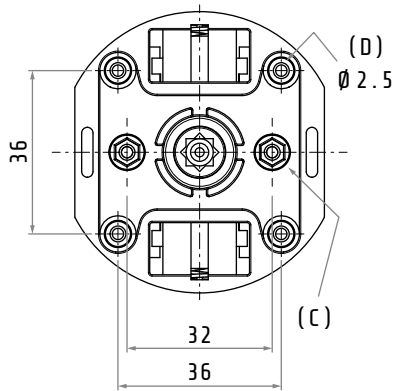
Approved



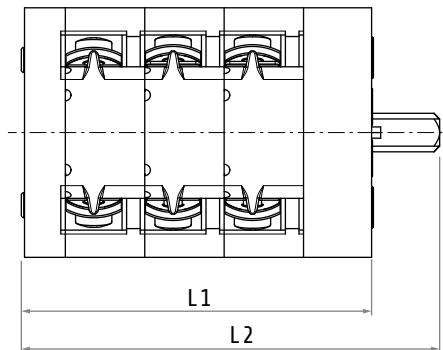
OVERALL DIMENSIONS

Rear panel mounting

C025... / C032... / C040...



Terminal
protection class
IP20



Dimensions in mm
Illustrations NOT in scale

- (A) wafer (thickness = 17.5 mm)
- (B) reference notch
- (C) metric screw (M3) fixing hole
- (D) self tapping screw (Ø 3.2) fixing hole

Some dimensions depend on the number of wafers of the cam switch and can be calculated with these formulas:

$$L1 \text{ [mm]} = 9.7 + (17.5 \times \text{n. of wafers}) + 15$$

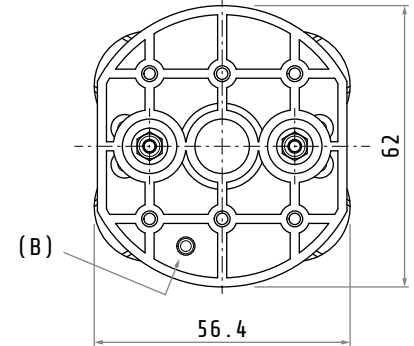
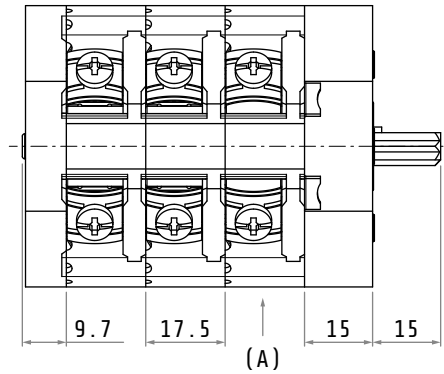
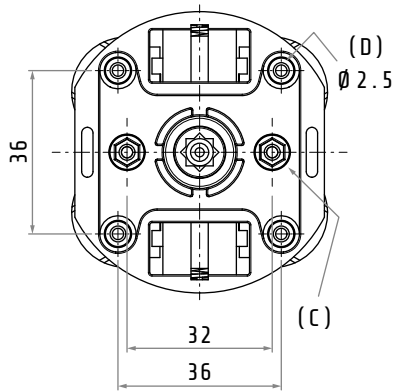
$$L2 \text{ [mm]} = L1 + 15$$

Examples:

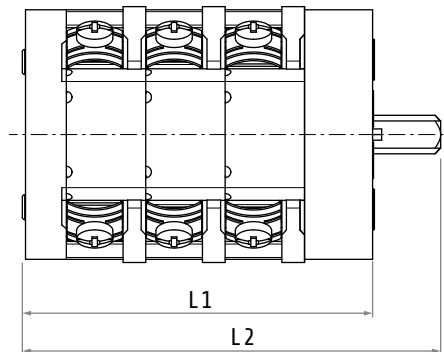
n. of wafers	1	2	3	4	5	6
L1 [mm]	42.2	59.7	77.2	94.7	112.2	129.7
L2 [mm]	57.2	74.7	92.2	109.7	127.2	144.7

Rear panel mounting

CX25... / CX32... / CX40...



Terminal
protection class
IP10



Dimensions in mm
Illustrations NOT in scale

- (A) wafer (thickness = 17.5 mm)
- (B) reference notch
- (C) metric screw (M3) fixing hole
- (D) self tapping screw (Ø 3.2) fixing hole

Some dimensions depend on the number of wafers of the cam switch and can be calculated with these formulas:

$$L1 \text{ [mm]} = 9.7 + (17.5 \times \text{n. of wafers}) + 15$$

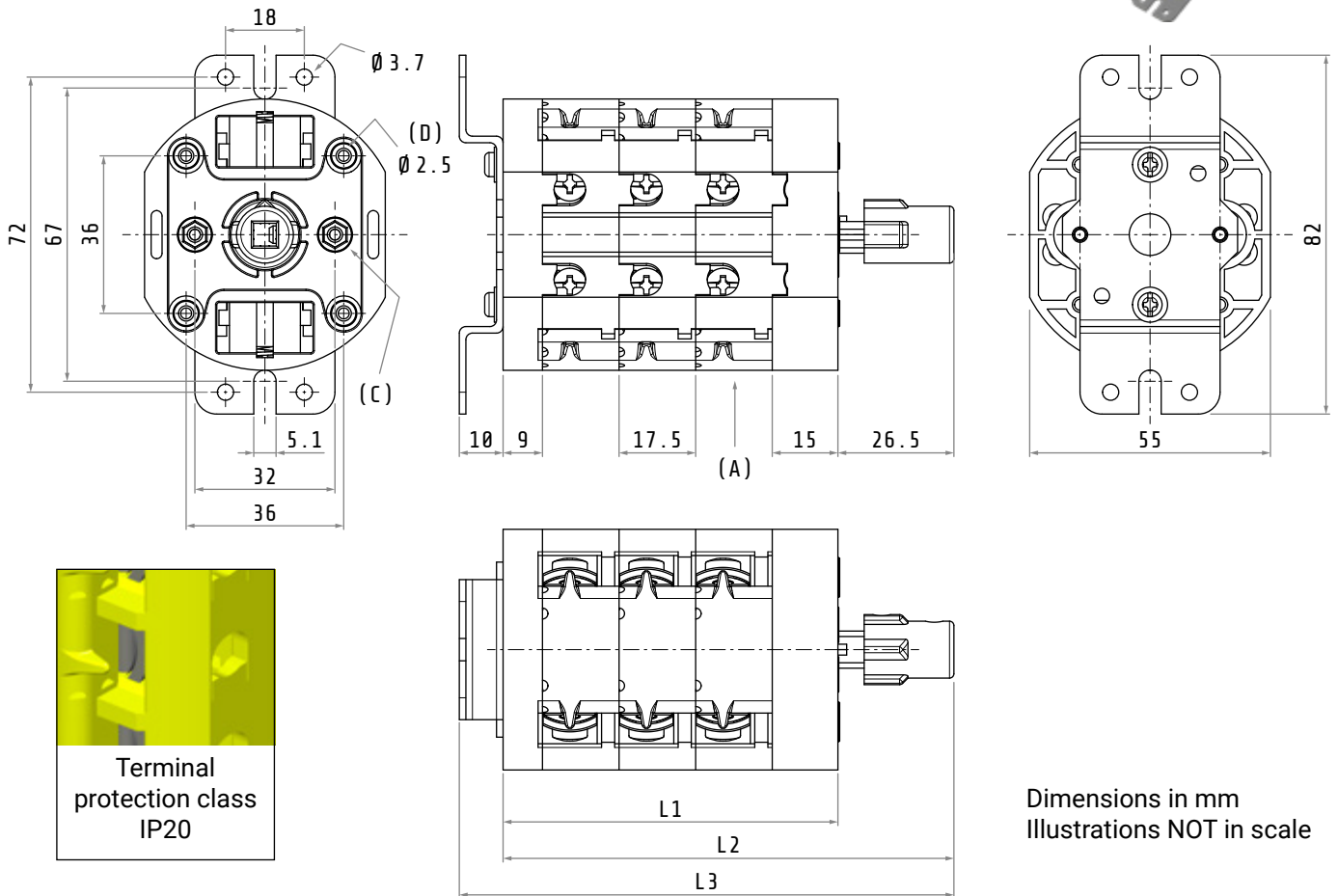
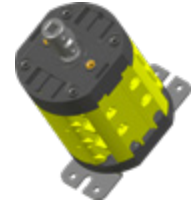
$$L2 \text{ [mm]} = L1 + 15$$

Examples:

N. of wafers	1	2	3	4	5	6
L1 [mm]	42.2	59.7	77.2	94.7	112.2	129.7
L2 [mm]	57.2	74.7	92.2	109.7	127.2	144.7

Base mounting

C025... / C032... / C040...



- (A) wafer (thickness = 17.5 mm)
- (C) metric screw (M3) fixing hole
- (D) self tapping screw (Ø 3.2) fixing hole

Some dimensions depend on the number of wafers of the cam switch and can be calculated with these formulas:

$$L1 \text{ [mm]} = 9 + (17.5 \times \text{n. of wafers}) + 15$$

$$L2 \text{ [mm]} = L1 + 26.5$$

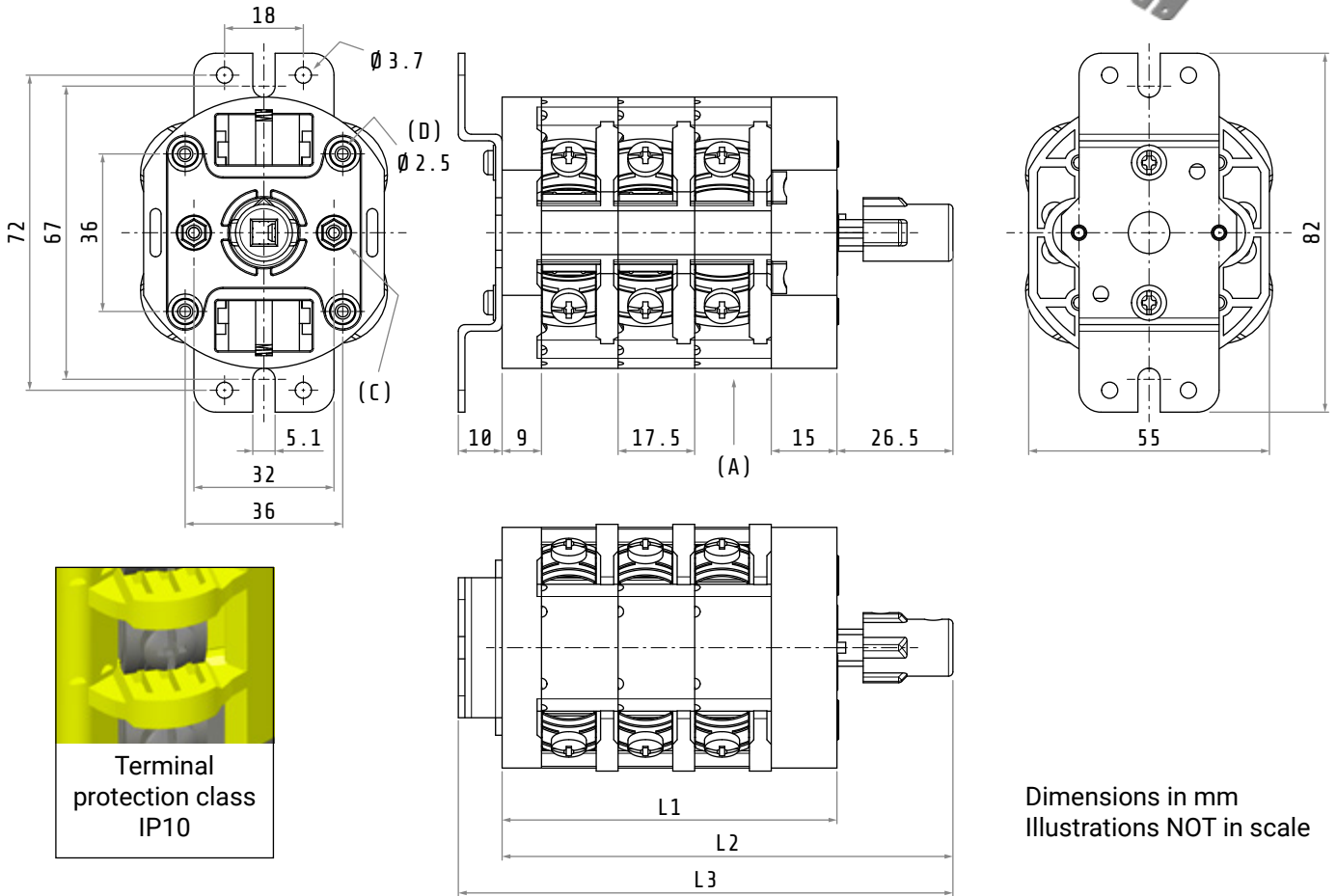
$$L3 \text{ [mm]} = L2 + 10$$

Examples:

N. of wafers	1	2	3	4	5	6
L1 [mm]	41.5	59	76.5	94	111.5	129
L2 [mm]	68	85.5	103	120.5	138	155.5
L3 [mm]	78	95.5	113	130.5	148	165.5

Base mounting

CX25... / CX32... / CX40...



- (A) wafer (thickness = 17.5 mm)
- (C) metric screw (M3) fixing hole
- (D) self tapping screw (Ø 3.2) fixing hole

Some dimensions depend on the number of wafers of the cam switch and can be calculated with these formulas:

$$L1 \text{ [mm]} = 9 + (17.5 \times \text{n. of wafers}) + 15$$

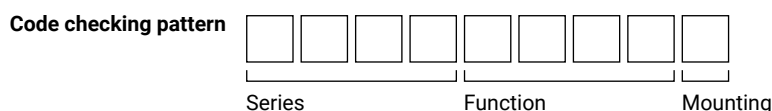
$$L2 \text{ [mm]} = L1 + 26.5$$

$$L3 \text{ [mm]} = L2 + 10$$

Examples:

N. of wafers	1	2	3	4	5	6
L1 [mm]	41.5	59	76.5	94	111.5	129
L2 [mm]	68	85.5	103	120.5	138	155.5
L3 [mm]	78	95.5	113	130.5	148	165.5

ELECTRICAL SCHEMES

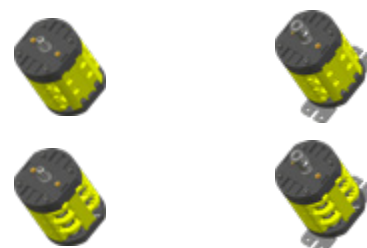


Example: cam switch on catalog

C	0	2	5	0	0	0	1	R
---	---	---	---	---	---	---	---	---

Example: cam switch NOT on catalog

C	0	2	5	0	0	0	1	B
---	---	---	---	---	---	---	---	---

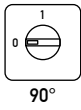


C025 / CX25 C032 / CX32 C040 / CX40	C025 / CX25 C032 / CX32 C040 / CX40
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Function	N. of wafers	R	B
ON-OFF switches 0-1 p.10			
0001 ON-OFF switch 1 pole	1	x	-
0002 ON-OFF switch 2 poles	1	x	x
0003 ON-OFF switch 3 poles	2	x	x
0004 ON-OFF switch 4 poles	2	x	x
0005 ON-OFF switch 5 poles	3	x	-
0006 ON-OFF switch 6 poles	3	x	x
0007 ON-OFF switch 3 poles with spring return to zero	2	x	-
Changeover switches 1-0-2 p.10			
0008 Changeover switch 1 pole	1	x	x
0009 Changeover switch 2 poles	2	x	x
0010 Changeover switch 3 poles	3	x	x
0011 Changeover switch 4 poles	4	x	x
Motor switches p.11			
0012 Reversing switch 3 poles	3	x	-
0013 Reversing switch 3 poles with spring return to zero	3	x	-
0014 Dahlander pole changing two speed switch	4	x	-
0015 Star-delta starter switch	4	x	-
0016 Reversing switch single phase with centrifugal cut-out	3	x	-
0031 Reversing-dahlander pole changing two speed switch	6	x	-
Step switches p.12			
0025 Step switch 1-2 positions without zero 1 pole	1	x	-
0026 Step switch 1-2 positions without zero 2 poles	2	x	-
0027 Step switch 1-2 positions without zero 3 poles	3	x	-
0038 Step switch 1-2-3 positions without zero 1 pole	2	x	-
0039 Step switch 1-2-3 positions without zero 2 poles	3	x	-
0040 Step switch 1-2-3 positions without zero 3 poles	5	x	-
0041 Step switch 1-2-3-4 positions without zero 1 pole	2	x	-
0042 Step switch 1-2-3-4 positions without zero 2 poles	4	x	-
0043 Step switch 1-2-3-4 positions without zero 3 poles	6	x	-
0028 Step switch 0-1-2 positions with zero 1 pole	1	x	-
0032 Step switch 0-1-2 positions with zero 2 poles	2	x	-
0033 Step switch 0-1-2 positions with zero 3 poles	3	x	-
0029 Step switch 0-1-2-3 positions with zero 1 pole	2	x	-
0034 Step switch 0-1-2-3 positions with zero 2 poles	3	x	-
0035 Step switch 0-1-2-3 positions with zero 3 poles	5	x	-
0030 Step switch 0-1-2-3-4 positions with zero 1 pole	2	x	-
0036 Step switch 0-1-2-3-4 positions with zero 2 poles	4	x	-
0037 Step switch 0-1-2-3-4 positions with zero 3 poles	6	x	-

ON-OFF switches 0-1

0001 • 1 pole



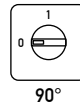
1				
	1-2			x
W	CNT	0		1

0002 • 2 poles



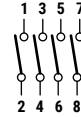
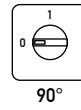
1	3-4			x
	1-2			x
W	CNT	0		1

0003 • 3 poles



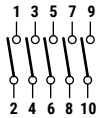
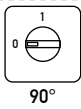
2				
	5-6			x
1	3-4			x
	1-2			x
W	CNT	0		1

0004 • 4 poles



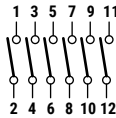
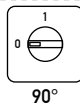
2	7-8			x
	5-6			x
1	3-4			x
	1-2			x
W	CNT	0		1

0005 • 5 poles



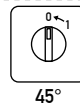
3				
	9-10			x
2	7-8			x
	5-6			x
1	3-4			x
	1-2			x
W	CNT	0		1

0006 • 6 poles



3	11-12			x
	9-10			x
2	7-8			x
	5-6			x
1	3-4			x
	1-2			x
W	CNT	0		1

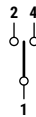
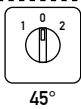
0007 • 3 poles with spring return to zero



2				
	5-6			x
1	3-4			x
	1-2			x
W	CNT	0		1

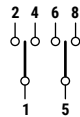
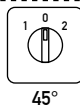
Changeover switches 1-0-2

0008 • 1 pole



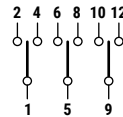
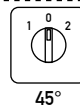
1	3-4			x
	1-2	x		
W	CNT	1	0	2

0009 • 2 poles



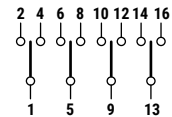
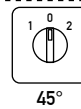
2	7-8			x
	5-6	x		
1	3-4			x
	1-2	x		
W	CNT	1	0	2

0010 • 3 poles



3	11-12			
	9-10	x		
2	7-8			x
	5-6	x		
1	3-4			x
	1-2	x		
W	CNT	1	0	2

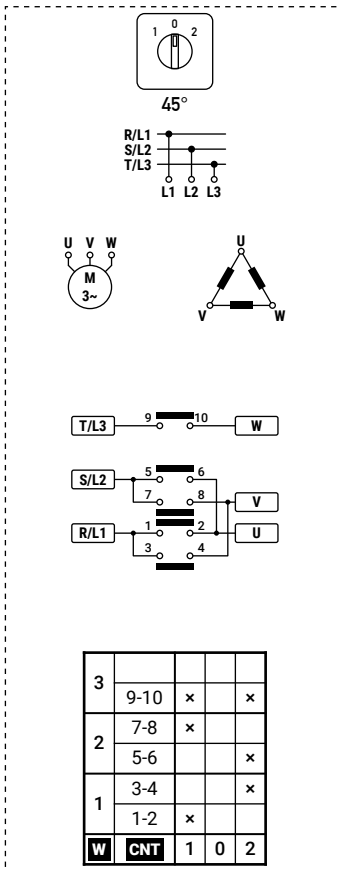
0011 • 4 poles



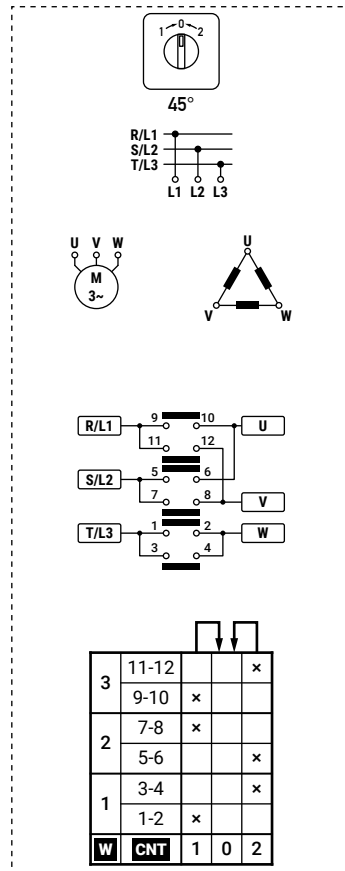
4	15-16			x
	13-14	x		
3	11-12			x
	9-10	x		
2	7-8			x
	5-6	x		
1	3-4			x
	1-2	x		
W	CNT	1	0	2

Motor switches

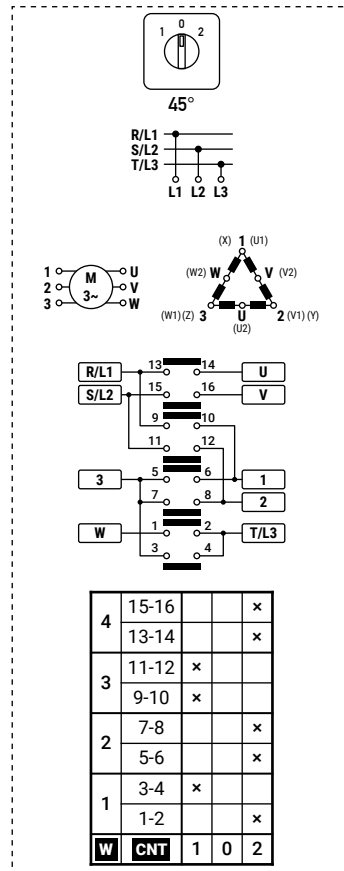
0012 • Reversing switch 3 poles



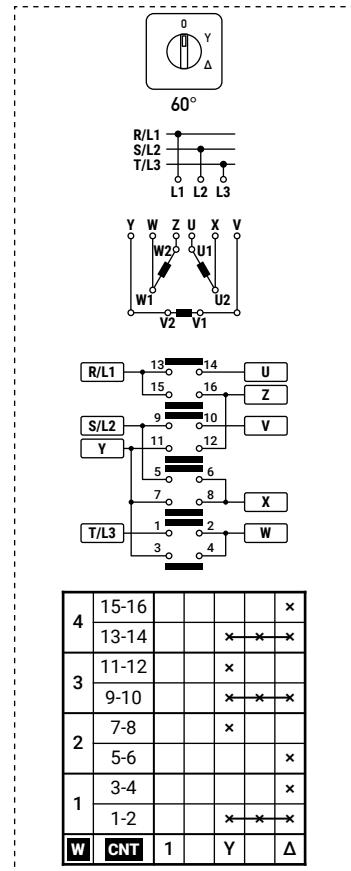
0013 • Reversing switch 3 poles with spring return to zero



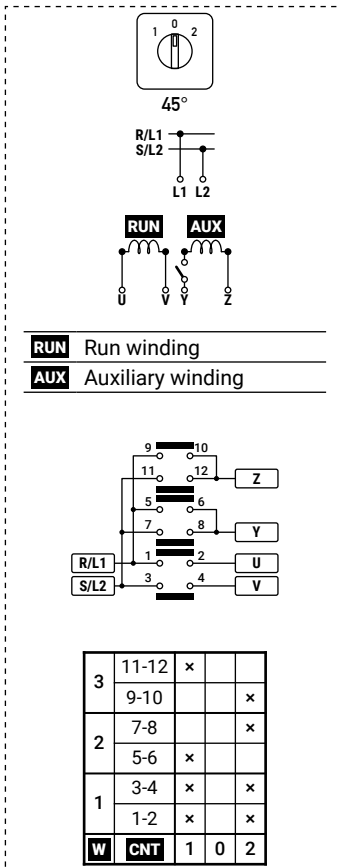
0014 • Dahlander pole changing two speed switch



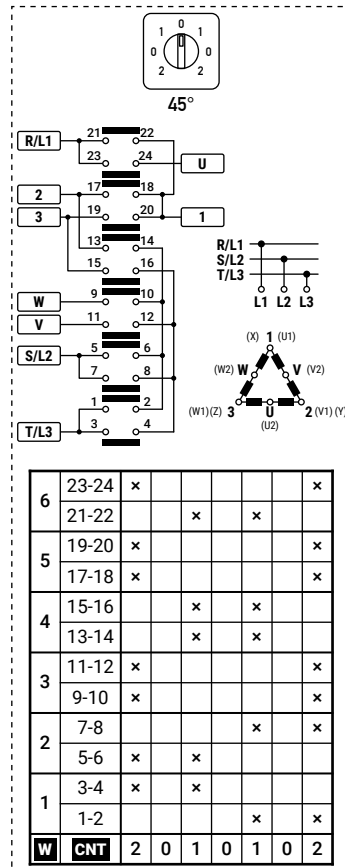
0015 • Star-Delta starter switch



0016 • Reversing switch single phase with centrifugal cut-out

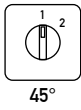


0031 • Reversing-Dahlander pole changing two speed switch



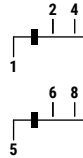
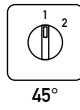
Step switches

0025 • Step switch 1-2 positions without zero 1 pole



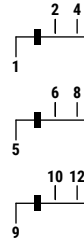
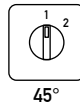
1	3-4		x
	1-2	x	
W	CNT	1	2

0026 • Step switch 1-2 positions without zero 2 poles



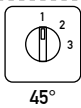
2	7-8		x
	5-6	x	
1	3-4		x
	1-2	x	
W	CNT	1	2

0027 • Step switch 1-2 positions without zero 3 poles



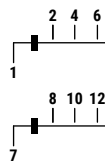
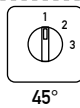
3	11-12		x
	9-10	x	
2	7-8		x
	5-6	x	
1	3-4		x
	1-2	x	
W	CNT	1	2

0038 • Step switch 1-2-3 positions without zero 1 pole



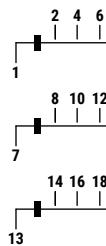
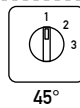
2	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3

0039 • Step switch 1-2-3 positions without zero 2 poles



3	11-12			x
	9-10		x	
2	7-8	x		
	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3

0040 • Step switch 1-2-3 positions without zero 3 poles

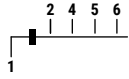
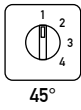


5	17-18			x
4	15-16		x	
	13-14	x		
3	11-12			x
	9-10		x	
2	7-8	x		
	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3

Step switches

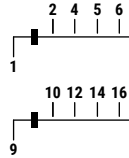
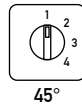
2/3

0041 • Step switch 1-2-3-4 positions without zero 1 pole



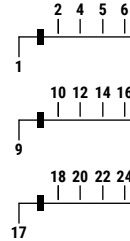
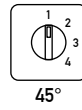
2	7-8			x	
	5-6		x		
1	3-4	x			
	1-2	x			
W	CNT	1	2	3	4

0042 • Step switch 1-2-3-4 positions without zero 2 poles



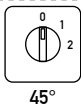
4	15-16			x	
	13-14		x		
3	11-12	x			
	9-10	x			
2	7-8			x	
	5-6		x		
1	3-4	x			
	1-2	x			
W	CNT	1	2	3	4

0043 • Step switch 1-2-3-4 positions without zero 3 poles



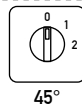
6	23-24			x	
	21-22		x		
5	19-20	x			
	17-18	x			
4	15-16			x	
	13-14		x		
3	11-12	x			
	9-10	x			
2	7-8			x	
	5-6		x		
1	3-4	x			
	1-2	x			
W	CNT	1	2	3	4

0028 • Step switch 0-1-2 positions with zero 1 pole



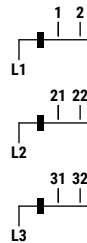
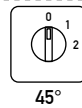
1	3-4			x
	1-2		x	
W	CNT	0	1	2

0032 • Step switch 0-1-2 positions with zero 2 poles



2	7-8			x
	5-6		x	
1	3-4			x
	1-2		x	
W	CNT	0	1	2

0033 • Step switch 0-1-2 positions with zero 3 poles

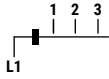
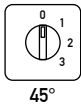


3	11-12			x
	9-10		x	
2	7-8			x
	5-6		x	
1	3-4			x
	1-2		x	
W	CNT	0	1	2

Step switches

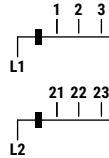
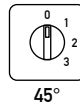
3/3

0029 • Step switch 0-1-2-3 positions with zero 1 pole



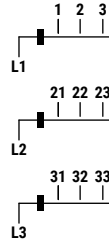
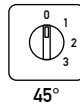
2	7-8			x	
	5-6	x			
1	1-2		x		
W	CNT	0	1	2	3

0034 • Step switch 0-1-2-3 positions with zero 2 poles



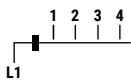
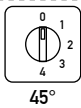
3	11-12			x	
	9-10	x			
2	7-8		x		
	5-6		x		
1	3-4			x	
	1-2	x			
W	CNT	0	1	2	3

0035 • Step switch 0-1-2-3 positions with zero 3 poles



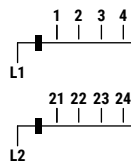
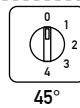
5	19-20			x	
4	15-16			x	
	13-14	x			
3	11-12			x	
	9-10	x			
2	7-8		x		
	5-6		x		
1	3-4			x	
	1-2	x			
W	CNT	0	1	2	3

0030 • Step switch 0-1-2-3-4 positions with zero 1 pole



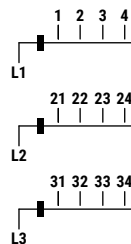
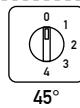
2	7-8			x		
	5-6	x				
1	3-4			x		
	1-2		x			
W	CNT	0	1	2	3	4

0036 • Step switch 0-1-2-3-4 positions with zero 2 poles



4	15-16			x		
	13-14	x				
3	11-12			x		
	9-10		x			
2	7-8			x		
	5-6	x				
1	3-4			x		
	1-2		x			
W	CNT	0	1	2	3	4

0037 • Step switch 0-1-2-3-4 positions with zero 3 poles
















6	23-24			x		
	21-22	x				
5	19-20			x		
	17-18		x			
4	15-16			x		
	13-14	x				
3	11-12			x		
	9-10		x			
2	7-8			x		
	5-6	x				
1	3-4			x		
	1-2		x			
W	CNT	0	1	2	3	4

ACTUATORS

Cam switches / actuators matrix



























Check the "Operation schemes matrix" (p.16) to identify the available operation scheme for each operator.


























Series and size		C025 C032 C040	CX25 CX32 CX40	C025 C032 C040	CX25 CX32 CX40
Terminal protection class		IP20	IP10	IP20	IP10
Mounting type		R		B	
48x48	Grey/Black	-	-		-
screw	IP65	-	-	-	-
Ø 22	IP65	-	-	-	095/...
48x48	Yellow/Red	-	-		-
screw	IP65	-	-	-	-
Ø 22	IP65	-	-	-	070/...
48x48	Grey/Black padlock in 0		-		-
screw	IP65 / 4-4X	003/...	-	005/...	-
Ø 22	IP65 / 4-4X	-	-	077/...	-
Ø 22	IP65	-	-	-	-
48x48	Yellow/Red padlock in 0		-		-
screw	IP65 / 4-4X	004/...	-	006/...	-
Ø 22	IP65 / 4-4X	-	-	069/...	-
Ø 22	IP65	-	-	-	-
64x64	Grey/Black		-		-
screw	IP65	007/...	-	021/...	-
64x64	Yellow/Red		-	-	-
screw	IP65	008/...	-	-	-
67x67	Grey/Black max 3 padlocks		-		-
screw	IP65 / 4-4X	009/...	-	011/...	-
Ø 22	IP65 / 4-4X	-	-	063/...	-
Ø 22	IP65	-	-	-	-
67x67	Yellow/Red max 3 padlocks		-		-
screw	IP65 / 4-4X	010/...	-	012/...	-
Ø 22	IP65 / 4-4X	-	-	064/...	-
Ø 22	IP65	-	-	-	-

Operation schemes matrix

Actuator code example: 003/0001

		ON-OFF switches 0-1			Changeover switches 1-0-2 / Motor switches					
										
		90°	90°	45°	45°	45°	45°	60°	45°	45°
	003/...	0001	0001-1	0007	0008	0017	0013	0015	0018	0031
	004/...	0001	0001-1	0007	0008	0017	0013	0015	0018	0031
	005/...	0001	0001-1	-	0008	-	-	-	-	-
	006/...	0001	0001-1	-	0008	-	-	-	-	-
	007/...	0001	0001-1	0007	0008	-	0013	0015	-	0031
	008/...	0001	0001-1	0007	0008	-	-	0015	-	0031
	009/...	0001	0001-1	-	0008	0017	0013	0015	0018	0031
	010/...	0001	0001-1	0007	0008	0017	0013	0015	0018	0031
	011/...	0001	0001-A	-	0008	-	-	-	-	-
	012/...	0001	0001-2	-	0008	-	-	-	-	-
	021/...	0001	-	-	0008	-	-	-	-	-
	063/...	0001	0001-1	-	0008	-	-	-	-	-
	064/...	0001	0001-1	-	0008	-	-	-	-	-
	069/...	0001	-	-	0008	-	-	-	-	-
	070/...	0001	-	-	0008	-	-	-	-	-
	077/...	0001	-	-	0008	-	-	-	-	-
	095/...	0001	-	-	0008	-	-	-	-	-

		Step switches					
							
		45°	45°	45°	45°	45°	45°
	003/...	-	-	-	-	-	-
	004/...	-	-	-	-	-	-
	005/...	-	-	-	-	-	-
	006/...	-	-	-	-	-	-
	007/...	0025	0028	0038	0029	0041	0030
	008/...	-	-	-	-	-	-
	009/...	-	-	-	-	-	-
	010/...	-	-	-	-	-	-
	011/...	-	-	-	-	-	-
	012/...	-	-	-	-	-	-
	021/...	-	-	-	-	-	-
	063/...	-	-	-	-	-	-
	064/...	-	-	-	-	-	-
	069/...	-	-	-	-	-	-
	070/...	-	-	-	-	-	-
	077/...	-	-	-	-	-	-
	095/...	-	-	-	-	-	-