



C063... / C080...

CAM SWITCHES SIZES: 63 A / 80 A

Code reading

--	--	--	--	--	--	--	--	--

Cam switch
electrical scheme
(see p.7)

Cam switch series
(this datasheet)

Cam switch mounting type

Code example

C	0	6	3	0	0	0	1	R
---	---	---	---	---	---	---	---	---

Cam switch series

Cam switch electrical scheme

Cam switch mounting type

SEE AVAILABLE ACTUATORS ON p.12

C063...
C080...

Specifications

p.2

Terminal
protection class



IP00

R
Rear panel
mounting



p.5

B
Base mounting



p.6

SPECIFICATIONS

General characteristics

Protection class	control	EN 60529	IP65
	control with knob only		IP40
	terminals		IP00
Material group		EN 60947-1	II
Pollution grade		EN 60947-1	3
Flammability		UL94	V0 (live electrical parts)
Ambient temperature	operating		-40 ... +70°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	A7
	terminal screw		2 × M4
	tightening torque	EN60947-1 UL508	1.2 N·m (10.6 lb·in) 10.62 lb·in (1.2 N·m)
Connectable section	flexible conductors		2.5 ... 35 mm ² AWG 14 ... 3
	solid conductors		2.5 ... 35 mm ² AWG 14 ... 3
Contacts			double breaking
Opening angles			45° - 60° - 90°
Mechanical lifetime	@ 120 operations / hour		1 million cycles
Electrical lifetime	@ 120 operations / hour		C063... 0.5 million cycles C080... 0.25 million cycles

EN 60947-3 characteristics

		C063...	C080...
Rated operating voltage	U _e	690 V	690 V
Rated insulation voltage	U _i	690 V	690 V
Rated impulse withstand voltage (sectionable)	U _{imp}	8 kV	8 kV
Rated thermal current	I _{th}	85 A	100 A
Rated enclosed thermal current	I _{the}	85 A	100 A
Frequency		50/60 Hz	50/60 Hz

Alternate current

Rated operating current		I _e		C063...		C080...	
AC-21A	Switching of resistive loads, including moderate overloads		690 V	63 A		80 A	
AC-22A	Switching of mixed resistive and inductive loads, including moderate overloads		690 V	63 A		80 A	
AC-23A	Switching of motor loads or other highly inductive loads	1 phase - 1 pole	110 V	45 A	4 kW	63 A	5.5 kW
			230 V	45 A	7.5 kW	63 A	11 kW
		3 phases - 3 poles	230 V	50 A	15 kW	58 A	18.5 kW
			400 V	40 A	22 kW	54 A	30 kW
			500 V	40 A	30 kW	54 A	37 kW
			690 V	32 A	30 kW	40 A	37 kW
AC-3	Squirrel-cage motors: starting, switches off motors during running time	1 phase - 1 pole	110 V	36 A	3.7 kW	45 A	4 kW
			230 V	36 A	6.5 kW	45 A	7.5 kW
		3 phases - 3 poles	230 V	37 A	11 kW	47 A	15 kW
			400 V	35 A	18.5 kW	44 A	22 kW
			500 V	35 A	22 kW	44 A	30 kW
			690 V	25 A	22 kW	32 A	30 kW
AC-23A	Nominal breaking capacity (cosφ 0.45)		230 V	400 A		464 A	
			400 V	320 A		432 A	
			500 V	320 A		432 A	
			690 V	256 A		320 A	

Short circuit characteristics

		C063...	C080...
Rated short-time short circuit withstand current (1 s) I_{cw}		1200 A	1200 A
Rated short circuit making capacity	I_{cm}	2000 A	2000 A
Conditional rated short circuit withstand current		10 kA	10 kA
Fuse rating (type gG)	690 V	100 A	100 A

UL 508 characteristics

			C063...	C080...
General use	600 V AC		63 A	85 A
Standard motor load	1 phase - 2 poles	120 V AC	5 HP	5 HP
		240 V AC	56 FLA	56 FLA
	3 phases - 3 poles	240 V AC	7.5 HP	10 HP
		480 V AC	40 FLA	50 FLA
		600 V AC	15 HP	20 HP
			42 FLA	54 FLA
			30 HP	40 HP
			40 FLA	52 FLA
			40 HP	50 HP
			41 FLA	52 FLA

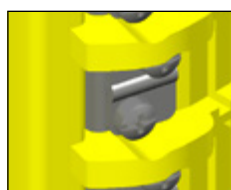
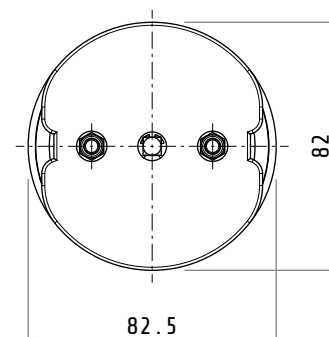
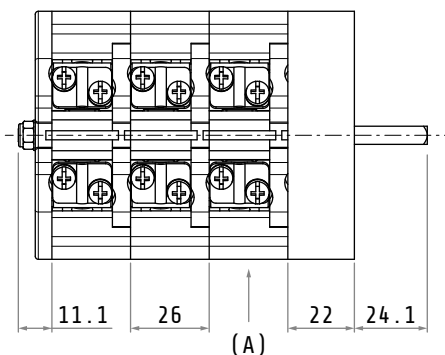
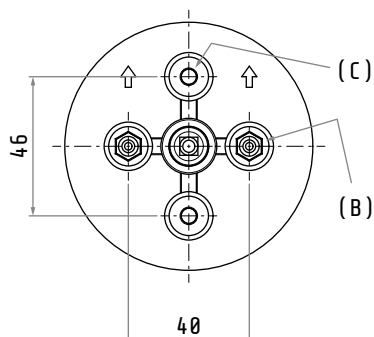
Marking

Compliance by passed test	Approved
	 

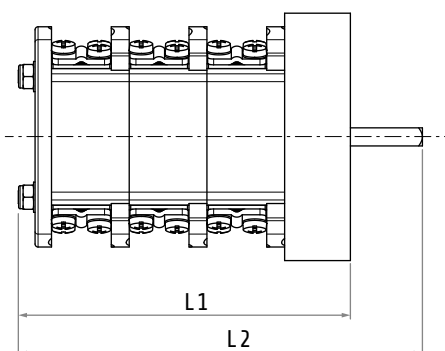
OVERALL DIMENSIONS

Rear panel mounting

C063... / C080...



Terminal
protection class
IP00



Dimensions in mm
Illustrations NOT in scale

- | | |
|-----|-------------------------------|
| (A) | wafer (thickness = 26 mm) |
| (B) | metric screw (M5) fixing hole |
| (C) | metric screw (M5) fixing hole |

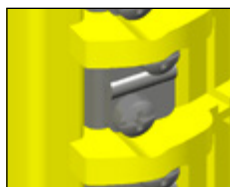
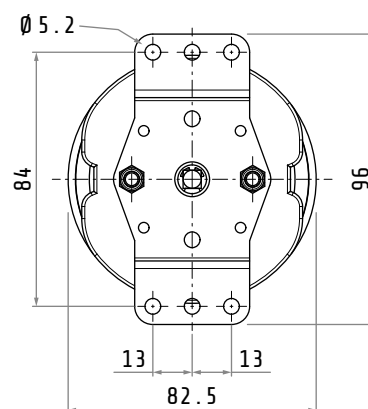
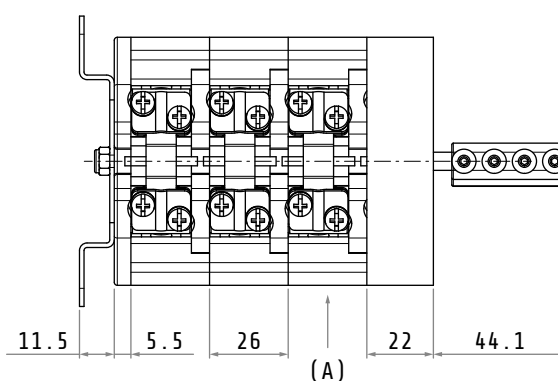
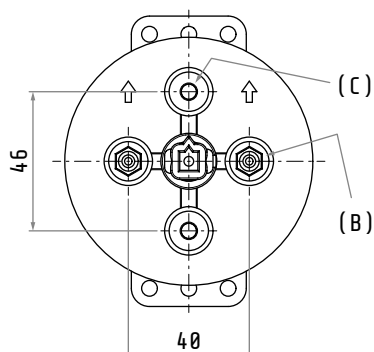
Some dimensions depend on the number of wafers of the cam switch and can be calculated with these formulas:

$$L1 \text{ [mm]} = 11.1 + (26 \times \text{n. of wafers}) + 22$$

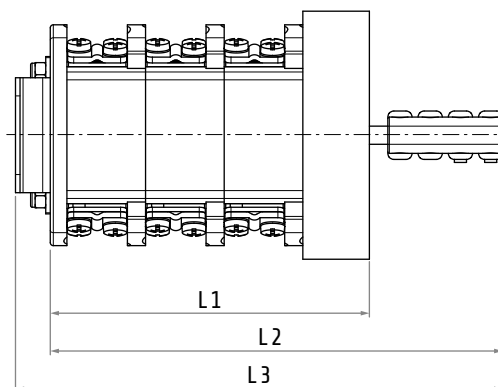
$$L2 \text{ [mm]} = L1 + 24.1$$

Examples:

n. of wafers	1	2	3	4	5	6
L1 [mm]	59.1	85.1	111.1	137.1	163.1	189.1
L2 [mm]	83.2	109.2	135.2	161.2	187.2	213.2



Terminal
protection class
IP00



Dimensions in mm
Illustrations NOT in scale

- | | |
|-----|-------------------------------|
| (A) | wafer (thickness = 26 mm) |
| (B) | metric screw (M5) fixing hole |
| (C) | metric screw (M5) fixing hole |

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

L1 [mm]	$5.5 + (26 \times \text{n. of wafers}) + 22$
---------	--

L2 [mm]	$L1 + 44.1$
---------	-------------

L3 [mm]	$L2 + 11.5$
---------	-------------

Examples:

N. of wafers	1	2	3	4	5	6
L1 [mm]	53.5	79.5	105.5	131.5	157.5	183.5
L2 [mm]	97.6	123.6	149.6	175.6	201.6	227.6
L3 [mm]	109.1	135.1	161.1	187.1	213.1	239.1

ELECTRICAL SCHEMES

Code checking pattern

Series			Function				Mounting	

Example: cam switch
on catalog

C	0	6	3	0	0	0	1	R
---	---	---	---	---	---	---	---	---

Example: cam switch
NOT on catalog

C	0	6	3	0	0	0	1	B
---	---	---	---	---	---	---	---	---



C063
C080

C063
C080

Function	N. of wafers	R	B
ON-OFF switches 0-1 p.8			
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
Changeover switches 1-0-2 p.8			
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.9			
0012 Reversing switch 3 poles	3	x	-
0013 Reversing switch 3 poles with spring return to zero	3	-	-
0014 Dahlander pole changing two speed switch	4	x	-
Step switches p.10			
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	-
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	-

ON-OFF switches 0-1

1/1

0001 • 1 pole



90°



1				
	1-2			x
W	CNT	0		1

0002 • 2 poles



90°



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

0003 • 3 poles



90°



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

0004 • 4 poles



90°



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

0005 • 5 poles



90°



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



90°



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

Changeover switches 1-0-2

1/1

0008 • 1 pole



45°



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

0009 • 2 poles



45°



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

0010 • 3 poles



45°



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

0011 • 4 poles



45°

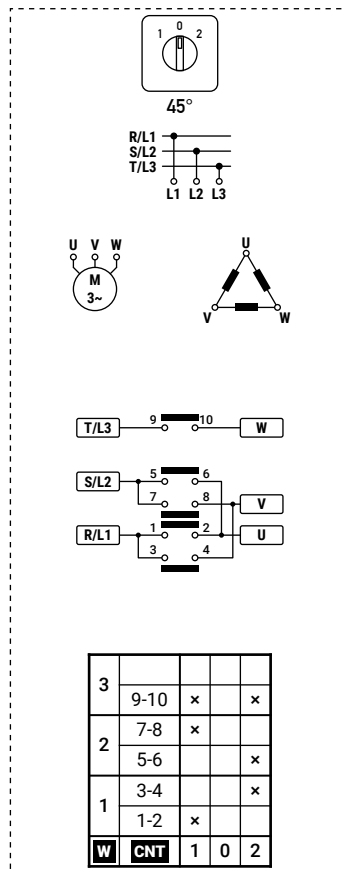


4	15-16			x
	13-14	x		
3	11-12			x
	9-10	x		
2	7-8			x
	5-6	x		
1	3-4			x
	1-2	x		
W	CNT	1	0	2

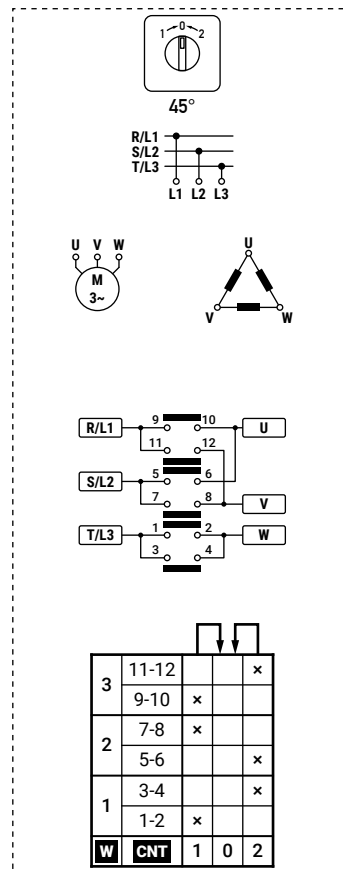
Motor switches

1/1

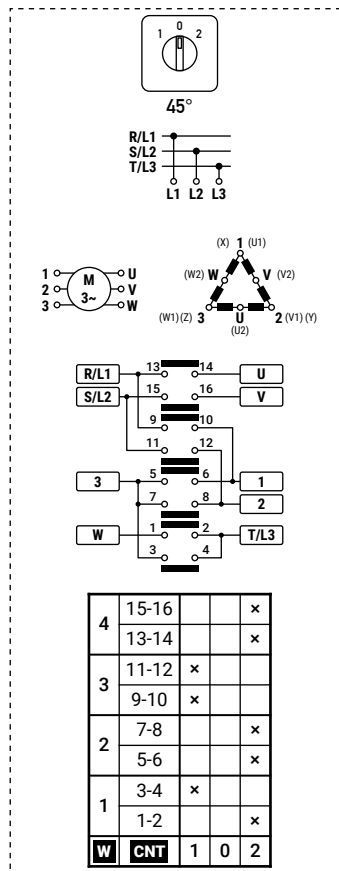
0012 • Reversing switch 3 poles



0013 • Reversing switch 3 poles with spring return to zero



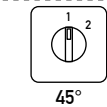
0014 • Dahlander pole changing two speed switch



Step switches

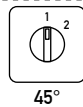
1/2

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



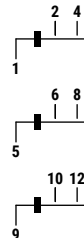
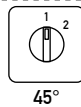
1	3-4		x
	1-2	x	
W	CNT	1	2

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



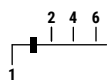
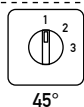
2	7-8		x
	5-6	x	
1	3-4		x
	1-2	x	
W	CNT	1	2

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



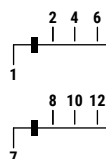
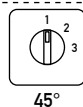
3	11-12		x
	9-10	x	
2	7-8		x
	5-6	x	
1	3-4		x
	1-2	x	
W	CNT	1	2

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



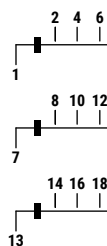
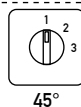
2				
	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3

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

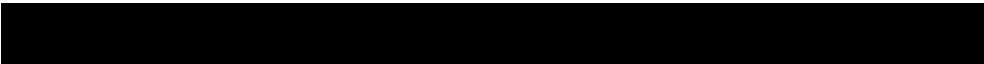


3	11-12			x
	9-10		x	
2	7-8	x		
	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3

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



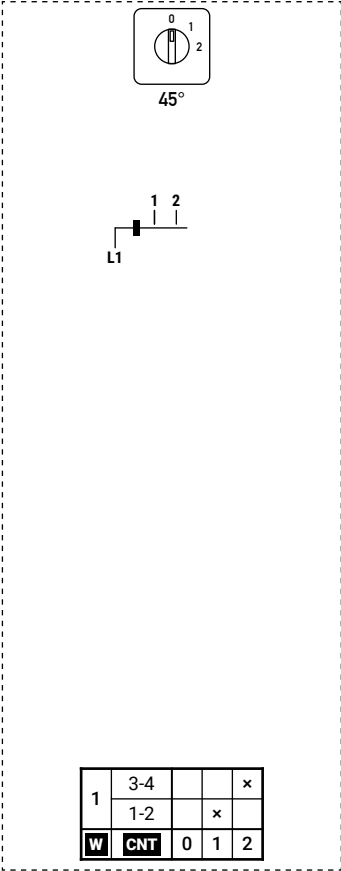
5	17-18			x
4	15-16		x	
	13-14	x		
3	11-12			x
	9-10	x		
2	7-8	x		
	5-6			x
1	3-4		x	
	1-2	x		
W	CNT	1	2	3



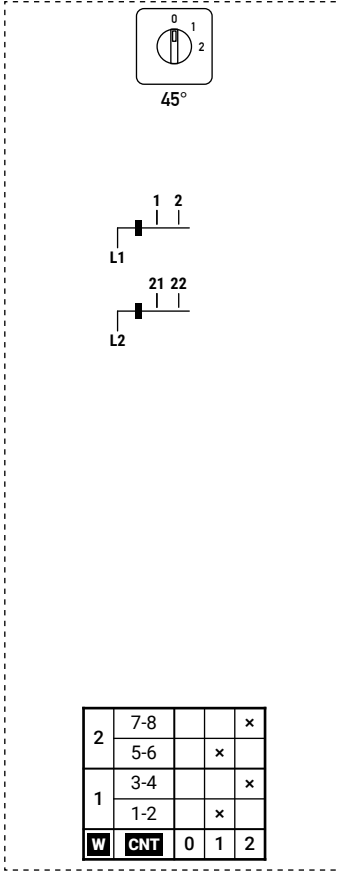
Step switches

2/2

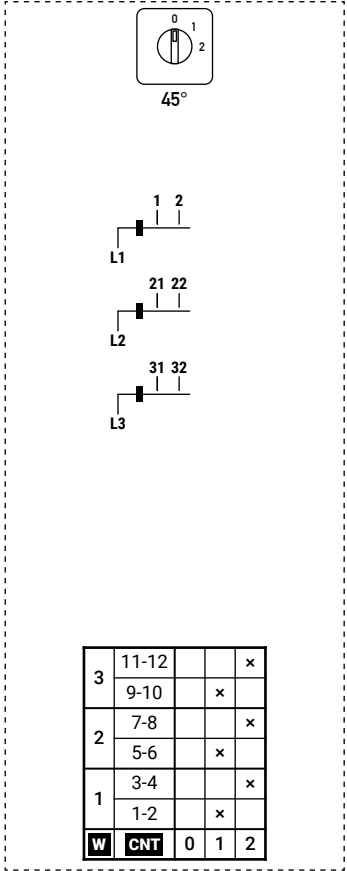
0028 • Step switch 0-1-2 positions with zero 1 pole



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



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



ACTUATORS

Cam switches / actuators matrix

Check the "Operation schemes matrix" (p.12) to identify the available operation scheme for each operator.



Series and size	C063 C080	C063 C080
Terminal protection class	IP00	IP00
Mounting type	R	B

88×88	Grey/Black		
screw	IP65	201/...	220/...
92×92	Grey/Black max 3 padlocks		
screw	IP65	209/...	211/...
92×92	Yellow/Red max 3 padlocks		
screw	IP65	210/...	212/...

Operation schemes matrix

Actuator code example: 201/0001

	ON-OFF switches 0-1			Changeover switches 1-0-2 / Motor switches	Step switches			
	 90°	 90°	 45°		 45°	 45°	 45°	 45°
 201/...	0001	0001-1	-	0008	0025	0028	0038	0029
 209/...	0001	0001-1	-	0008	-	-	-	-
 210/...	0001	0001-1	-	0008	-	-	-	-
 211/...	0001	0001-1	-	0008	-	-	-	-
 212/...	0001	0001-1	-	0008	-	-	-	-
 220/...	0001	-	-	0008	-	-	-	-