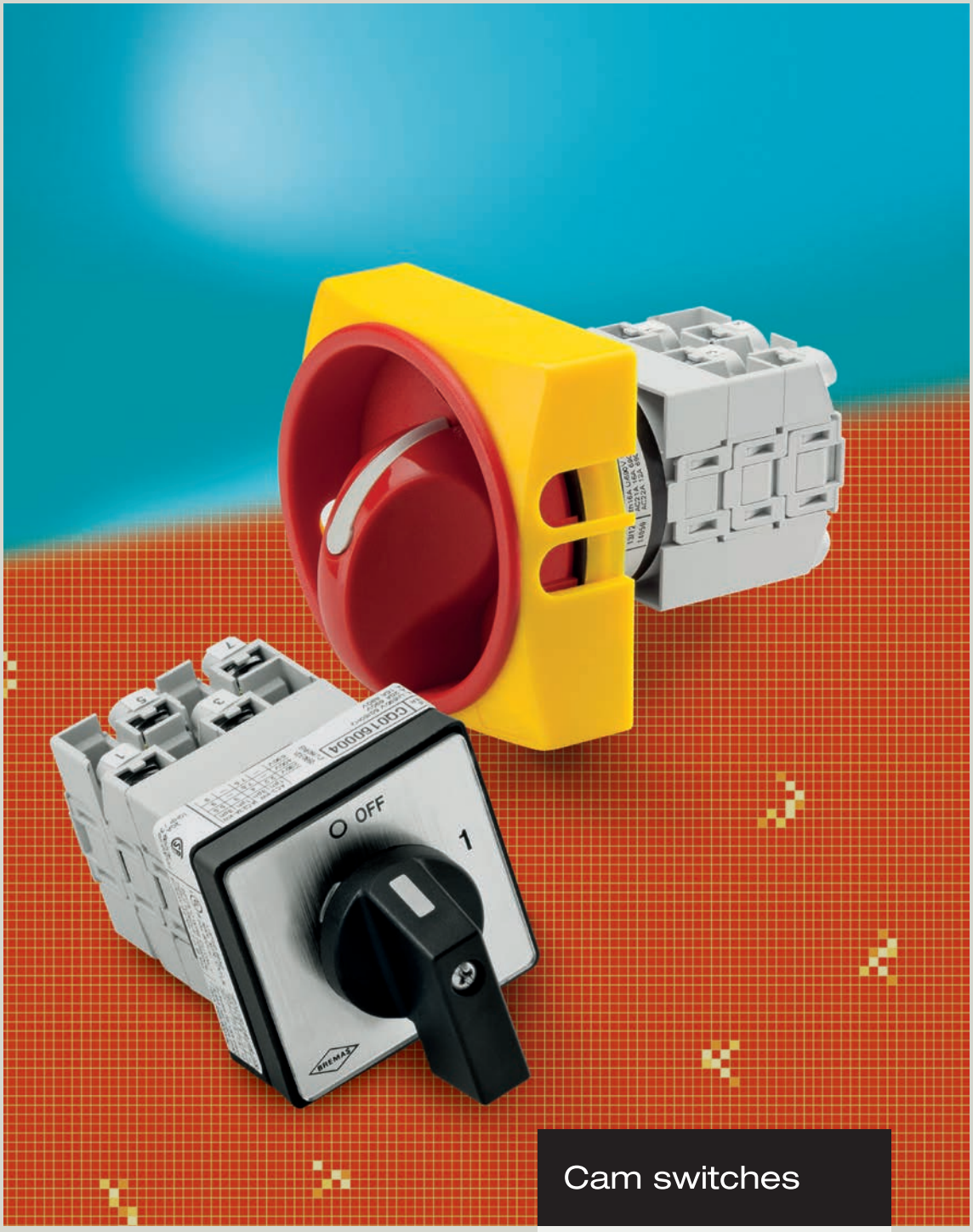


Cam switches

CQ
series

Technical data IEC 947-3 EN 60947-3

Rated insulation voltage	
Rated operating voltage	
Rated impulse withstand voltage	
Rated thermal current for open switch	
Rated thermal current for enclosed switch	
Rated operation frequency	
Power dissipation for each pole	
Rated operating current Ie	
AC-21A Switching resistive loads, including moderate overloads	
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	
AC-20A Connecting and disconnecting under no load conditions	
Rated operating power	
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	
AC-3 Squirrel cage motors: starting, switching off motors during running 3 phase - 3 pole	
AC-4 Squirrel cage motors: starting, plugging, inching	
AC-15 Control of a.c. elettromagnetic loads ≥ 72 VA	
Rated breaking capability in category in AC-23A (cos φ= 0,45)	
Short circuit protection	
Rated short time withstand current (1s)	
Rated short-circuit make capacity	
Rated conditional short-circuit current	
With fuses class gG	

Technical data UL/CSA

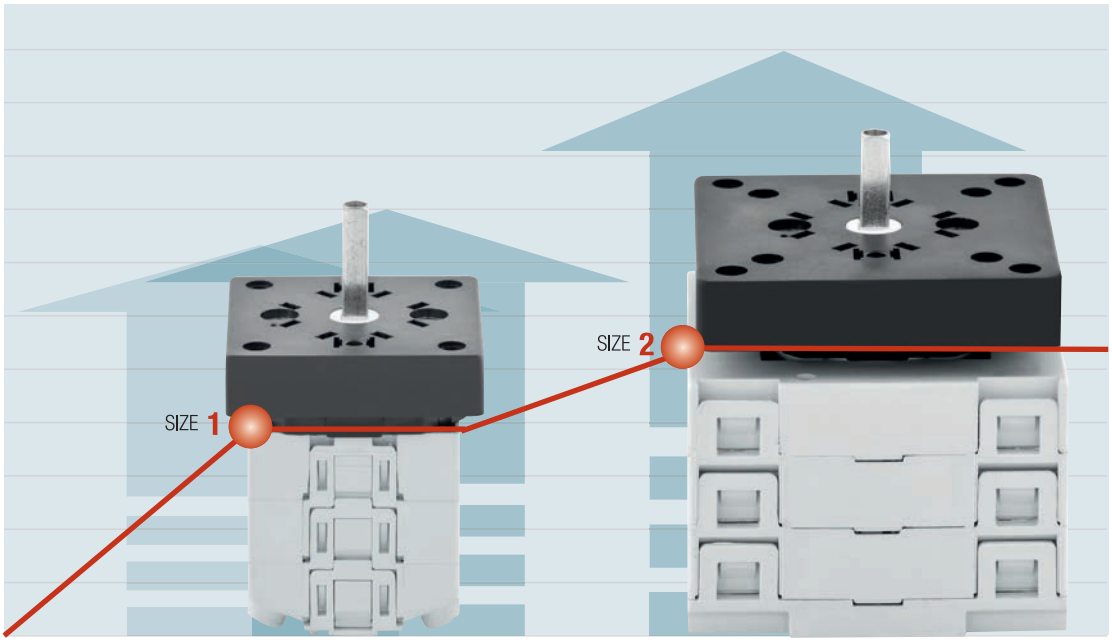
Rated insulation voltage	
Rated operating voltage	
General Use Current	
Rated operating power	
1 phase - 2 pole	
3 phase - 3 pole	

Mechanical characteristics

Mechanical life	
Connections according to IEC 9471-1 and EN 60947-1	
Connecting capability	Connecting capability with flexible wires
	Connecting capability with solid wires
Connection terminal screw dimensions	
Screw tightening torque	
Protection degree IEC 529 EN 60529	
Terminals	
Ambient conditions	
Operating ambient temperature	
Storage ambient temperature	
Withstand to constant humid according to IEC 60068	
Withstand to cyclic humid according to IEC 60068	

		CQ012	CQ016	CQ025	CQ032
Ui	V	690	690	690	690
Ue	V	690	690	690	690
Uimp	kV	6	6	4	4
Ith	A	16	20	32	40
Ithe	A	16	20	25	32
	Hz	50	50	50	50
	W	0,4	0,6	0,85	1,3
Ie	A	16	20	32	40
Ie	A	12	16	25	32
-	-	-	-	-	-
230V	Kw (A)	4 (13)	5,5 (17)	9 (28)	11 (35)
400V	Kw (A)	7,5 (14)	9 (16)	15 (27)	18,5 (33)
500V	Kw (A)	7,5 (11)	9 (13)	15 (22)	18 (27)
690V	Kw (A)	7,5 (8)	9 (9)	15 (16)	18,5 (19)
230V	Kw (A)	2,8 (9)	4 (13)	6,5 (20)	8,5 (26)
400V	Kw (A)	5,5 (10)	7,5 (14)	11 (21)	15 (27)
500V	Kw (A)	5,5 (8)	7,5 (11)	11 (16)	14 (20)
690V	Kw (A)	5,5 (6)	7,5 (8)	11(12)	14 (15)
230V	Kw (A)	1,1 (3)	1,5 (4)	3,7 (12)	4 (12)
400V	Kw (A)	1,75 (3)	2,2 (4)	4 (7)	5,5 (10)
230V	A	5	6	8	10
400V	A	3	4	6	8
230V	A	112	128	240	280
400V	A	112	128	216	264
Icw	A	200	240	500	640
Icm	A	1000	1000	2000	2000
-	kA	5	5	10	10
500V	A	20	20	50	50
Ui	UL/CSA V	600	600	-	-
Ue	UL/CSA V	600	600	-	-
Ie	UL/CSA A	16	20	-	-
120V	UL/CSA Hp	0,5/0,5	1,5 /0,5	-	-
240V	UL/CSA Hp	1,5/1,5	3/1,5	-	-
200V	UL/CSA Hp	2/2	5/3	-	-
240V	UL/CSA Hp	3/3	7,5/5	-	-
480V	UL/CSA Hp	5/5	7,5/7,5	-	-
600V	UL/CSA Hp	7,5/7,5	10/10	-	-
-	cycles x 10^6	2	2	2	1,5
-	cycles/hour	120	120	120	120
Min-Max	mm^2	2x1,5-2,5	2x1,5-2,5	2x2,5-6	2x2,5-6
Min-Max	AWG	16-12	16-12	14-10	14-10
Min-Max	mm^2	2x1,5-4	2x1,5-4	2x2,5-10	2x2,5-10
-	Type	M3,5	M3,5	M5	M5
-	Nm	1,0	1,0	2,8	2,8
	IP	20			
	°C	-25 ÷ +55			
	°C	-30 ÷ +70			
		sec. IEC60068 2-78 part			
		sec. IEC60068 2-30 part			

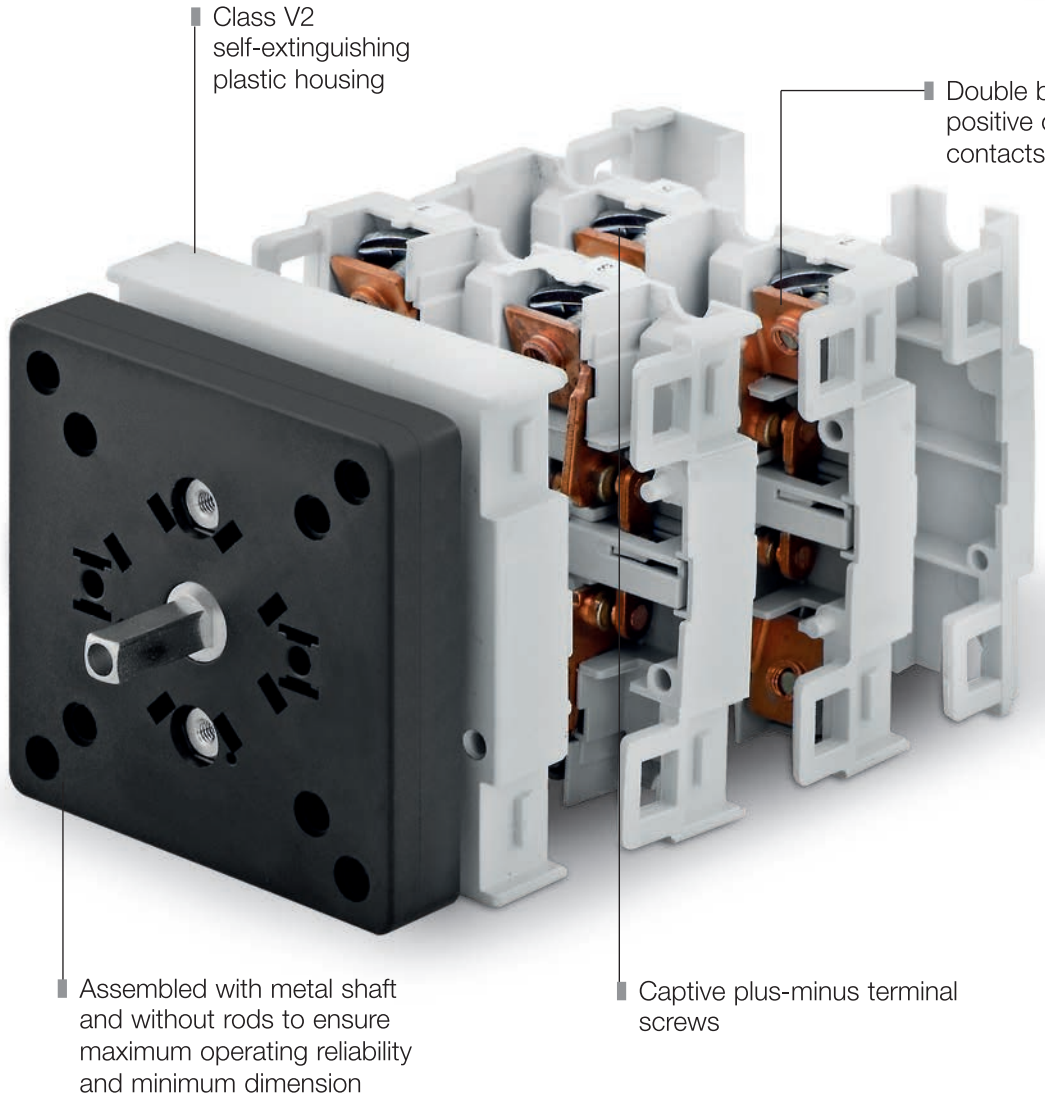
CQ 012...032



CQ 012-016 | CQ 025-032

CQ series

- Terminal protection degree: IP20
- Class V2 self-extinguishing housing
- Metal shaft
- Captive plus-minus terminal screws
- Rear mounting and Base mounting
- Simplified wiring



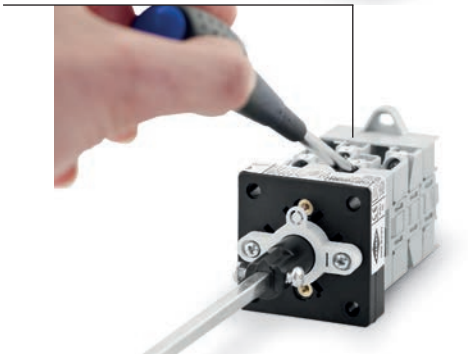
Overview

The range of cam switches **CQ series** includes ratings from 12 to 32A with insulation voltage of 690V. According to the latest industrial application standards, CQ series offers IP 20 terminals protection degree and up to IP66 handle protection degree.
Available with different mounting systems: rear panel with screws, base mounting with screws or snap mounting on DIN rail (EN 50022) with escutcheon plate for 45mm standard knock-out.
Available diagrams for every application: ON-OFF switches, line switches, cam switches for motor control, ammeter and voltmeter switches.

Easy made wiring

- Rear access to terminals screws for rear mounting versions

- Front access to terminals screws for base mounting versions



Escutcheon plate for 45mm (1.77”) standard knock-out

45mm (1.77”) plate for fixing in standard panel/distribution boards slots.
Available diagrams for ON-OFF switches, line switches, ammeter and voltmeter switches.

Rear mounting

4-screw fixing: □ 36mm (1.42”)

RV4

4-screw fixing: □ 36mm (1.42”) / □ 48mm (1.89”)

RV6

ON-OFF switch 2 pole

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
0 OFF 1 ON 0002	1 3 / 2 4	S1	12A	CQ0120002RV4	1		
			16A	CQ0160002RV4	1	CQ0160002RV6	1
		S2	25A			CQ0250002RV6	1
			32A				

ON-OFF switch 3 pole

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
0 OFF 1 ON 0003	1 3 5 / 2 4 6	S1	12A	CQ0120003RV4	1	CQ0120003RV6	1
			16A	CQ0160003RV4	1	CQ0160003RV6	1
		S2	25A			CQ0250003RV6	1
			32A			CQ0320003RV6	1

ON-OFF switch 4 pole

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
0 OFF 1 ON 0004	1 3 5 7 / 2 4 6 8	S1	12A	CQ0120004RV4	1	CQ0120004RV6	1
			16A	CQ0160004RV4	1	CQ0160004RV6	1
		S2	25A			CQ0250004RV6	1
			32A			CQ0320004RV6	1

Change-over switch 1 pole

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
0 OFF 1 2 0005	U U1 / R/L1	S1	12A	CQ0120005RV4	1	CQ0120005RV6	1
			16A				
		S2	25A				
			32A				

standard article

Rear mounting

4-screw fixing: □ 36mm (1.42")

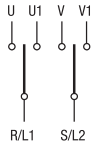
RV4

4-screw fixing: □ 36mm (1.42") / □ 48mm (1.89")

RV6

Change-over switch 2 pole

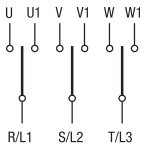
0006



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120006RV4	1		
	16A	CQ0160006RV4	1	CQ0160006RV6	1
S2	25A			CQ0250006RV6	1
	32A			CQ0320006RV6	1

Change-over switch 3 pole

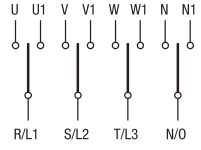
0007



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120007RV4	1	CQ0120007RV6	1
	16A	CQ0160007RV4	1	CQ0160007RV6	1
S2	25A			CQ0250007RV6	1
	32A			CQ0320007RV6	1

Change-over switch 4 pole

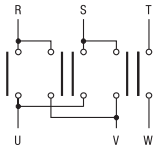
0039



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120039RV4	1		
	16A	CQ0160039RV4	1	CQ0160039RV6	1
S2	25A			CQ0250039RV6	1
	32A			CQ0320039RV6	1

Reversing switch 3 pole

0008



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120008RV4	1	CQ0120008RV6	1
	16A	CQ0160008RV4	1	CQ0160008RV6	1
S2	25A			CQ0250008RV6	1
	32A			CQ0320008RV6	1

standard article

Rear mounting

4-screw fixing: □ 36mm (1.42”)

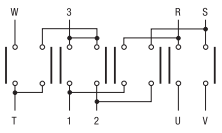
RV4

4-screw fixing: □ 36mm (1.42”) / □ 48mm (1.89”)

RV6

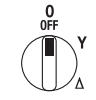
Changing switch Dahlander pole

0009



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120009RV4	1	CQ0120009RV6	1
	16A	CQ0160009RV4	1	CQ0160009RV6	1
S2	25A			CQ0250009RV6	1
	32A			CQ0320009RV6	1

STAR-DELTA Starter



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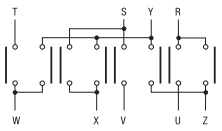
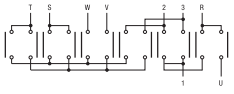


Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A				
	16A	CQ0160010RV4	1	CQ0160010RV6	1
S2	25A			CQ0250010RV6	1
	32A			CQ0320010RV6	1

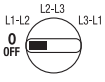
Reversing switch pole changing

0011

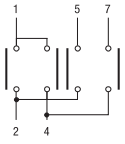


Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A				
	16A	CQ0160011RV4	1		
S2	25A				
	32A				

Voltmeter switch 3 concatenated voltages



0016



Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120016RV4	1	CQ0120016RV6	1
	16A				
S2	25A				
	32A				

standard article

Rear mounting

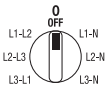
4-screw fixing: □ 36mm (1.42")

RV4

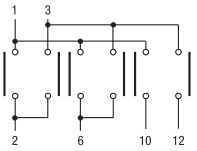
4-screw fixing: □ 36mm (1.42") / □ 48mm (1.89")

RV6

Voltmeter switch 3 concatenated voltages and 3 phase voltages

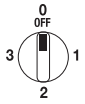


0018

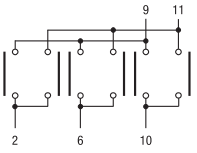


Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120018RV4	1	CQ0120018RV6	1
	16A				
S2	25A				
	32A				

Ammeter switch 1 pole 3 current transformers



0022



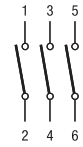
Size	I_e	Part no.	Pack	Part no.	Pack
S1	12A	CQ0120022RV4	1	CQ0120022RV6	1
	16A				
S2	25A				
	32A				

standard article

	Rear mounting 4-screw fixing: 36mm (1.42")** / 48mm (1.89")***	Base mounting* 4-screw fixing: 36mm (1.42")** / 48mm (1.89")***
		

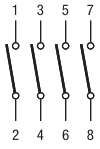
ON-OFF switch 3 pole with padlockable handle

00G3

Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
	S1	12A	CQ01200G3RL6S	1	CQ01200G3BL6S	1
		16A	CQ01600G3RL6S	1	CQ01600G3BL6S	1
	S2	25A	CQ02500G3RL6S	1	CQ02500G3BL6S	1
		32A	CQ03200G3RL6S	1	CQ03200G3BL6S	1

ON-OFF switch 4 pole with padlockable handle

00G4

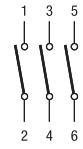
Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
	S1	12A	CQ01200G4RL6S	1	CQ01200G4BL6S	1
		16A	CQ01600G4RL6S	1	CQ01600G4BL6S	1
	S2	25A	CQ02500G4RL6S	1	CQ02500G4BL6S	1
		32A	CQ03200G4RL6S	1	CQ03200G4BL6S	1

* Base mounting switches are supplied with standard 175mm (6.89") shaft
** Fixing 36mm by 4 screws
*** Fixing 48mm by 4 screws and fixing adapter (included in the package)

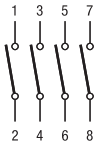
standard article

	Rear mounting 4-screw fixing: 36mm (1.42")** / 48mm (1.89")***	Base mounting* 4-screw fixing: 36mm (1.42")** / 48mm (1.89")***
	 **RK6S**	 **BK6S**

ON-OFF switch 3 pole with padlockable handle

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
 **00G3**		S1	12A	CQ01200G3RK6S	1	CQ01200G3BK6S	1
			16A	CQ01600G3RK6S	1	CQ01600G3BK6S	1
		S2	25A	CQ02500G3RK6S	1	CQ02500G3BK6S	1
			32A	CQ03200G3RK6S	1	CQ03200G3BK6S	1

ON-OFF switch 4 pole with padlockable handle

	Circuit diagram	Size	I_e	Part no.	Pack	Part no.	Pack
 **00G4**		S1	12A	CQ01200G4RK6S	1	CQ01200G4BK6S	1
			16A	CQ01600G4RK6S	1	CQ01600G4BK6S	1
		S2	25A	CQ02500G4RK6S	1	CQ02500G4BK6S	1
			32A	CQ03200G4RK6S	1	CQ03200G4BK6S	1

* Base mounting switches are supplied with standard 175mm (6.89") shaft
** Fixing 36mm by 4 screws
*** Fixing 48mm by 4 screws and fixing adapter (included in the package)

standard article

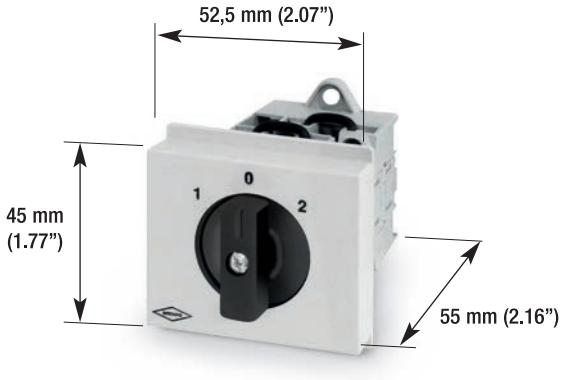
Optional shafts

Part no.	Description	Pack
PALBL300	Shaft L=300mm Ø5	5
PALBL500	Shaft L=500mm Ø5	5
PALBL055	Shaft L=55mm Ø5	5
PALBL075	Shaft L=75mm Ø5	5
PALBL095	Shaft L=95mm Ø5	5
PALBL115	Shaft L=115mm Ø5	5
PALBL135	Shaft L=135mm Ø5	5
PALBL155	Shaft L=155mm Ø5	5
PALBL175	Shaft L=175mm Ø5	5

standard article

Construction data

DDN is the solution proposed by Bremas for mounting the switch in panel/distribution boards standard slots, with 45mm (1.77”) plate.
The main mounting system is snap mount on DIN rail, otherwise it’s possible to fix the switch with screws with 48mm (1.89”) interaxis between the holes.
Available diagrams for ON-OFF switches, line switches, ammeter and voltmeter switches.
Grey escuteon plate, black knob, IP40.

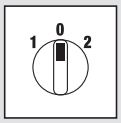
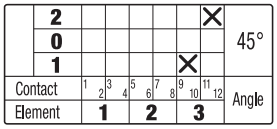
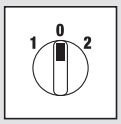
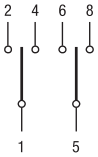
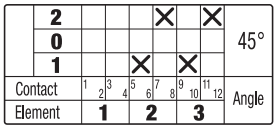
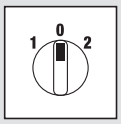
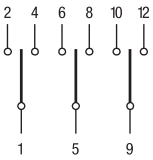
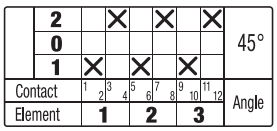
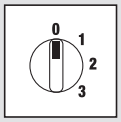
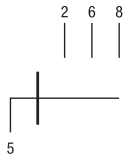
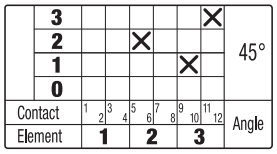
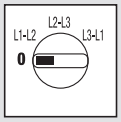
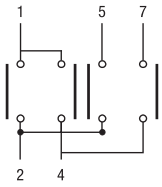
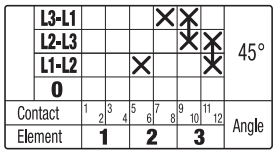
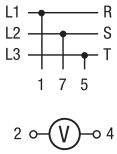
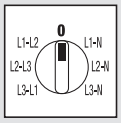
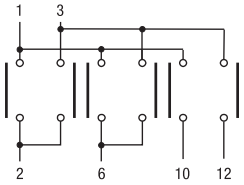
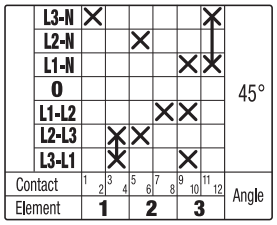
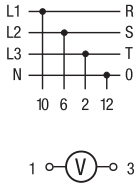
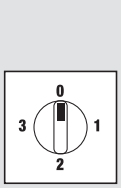
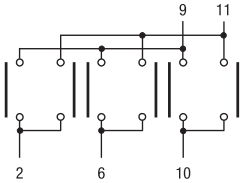
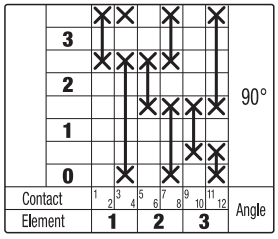
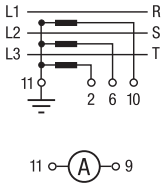


DDN version

Circuit diagram	Rated nominal current 12A Part no.	12A Pack	16A Part no.	16A Pack
DN07	CQ012DN07DDN	1	CQ016DN07DDN	1
DN08	CQ012DN08DDN	1	CQ016DN08DDN	1
DN09	CQ012DN09DDN	1	CQ016DN09DDN	1
DN10	CQ012DN10DDN	1	CQ016DN10DDN	1
DN16	CQ012DN16DDN	1		
DN18	CQ012DN18DDN	1		
DN22	CQ012DN22DDN	1		

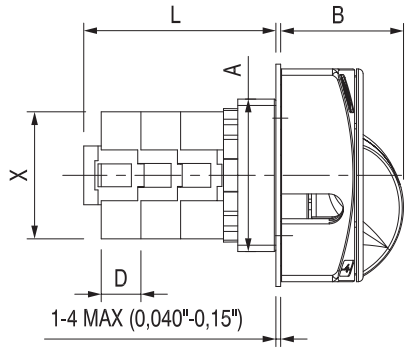
standard article

Switches

plate	circuit diagram	function	circuit diagram	contact/element description
	**DN07**	Change-over switch 1 pole		
	**DN08**	Change-over switch 2 pole		
	**DN09**	Change-over switch 3 pole		
	**DN10**	Multi step switch 1 pole 3 steps with “OFF”		
	**DN16**	Voltmeter switch 3 concatenated voltages		 
	**DN18**	Voltmeter switch 3 concatenated voltages and 3 phase voltages		 
	**DN22**	Ammeter switch 1 pole 3 current transformers		 

Rear mounting (RT - RY - RL6 - RK6 - RR0 - RV - RW - RR)

Measures in mm (in)



Handle	B	
	mm	in
RT4-RY4	37	1,45
RT6-RY6	39	1,53
RL6-RK6	39	1,53
RV4-RW4	30	1,18
RV6-RW6	36	1,42
RR0	34	1,34

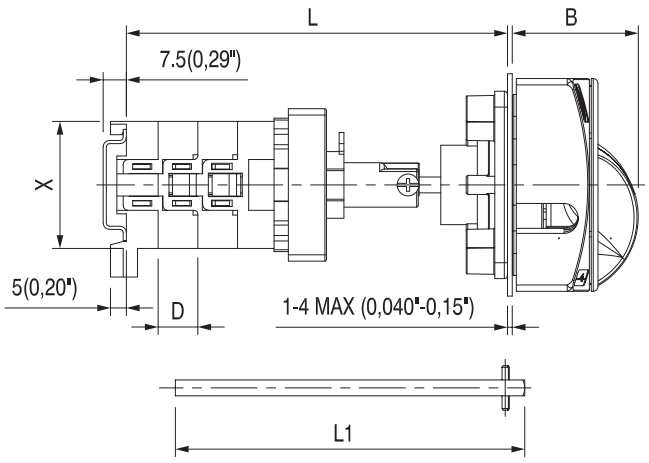
Switch dimensions

Series	X	A	D		N° Stages					
					1	2	3	4	5	6
CQ 012-016	40x40 1,57"x1,57"	□ 48 □ 1,89"	12,5 0,49"	L (mm)	48	60,5	73	85,5	98	110,5
				L(in)	1,89	2,38	2,87	3,36	3,85	4,35
CQ 025-032	63x62 2,48"x 2,44"	□ 60 □ 2,36"	12,5 0,49"	L (mm)	49,5	62	74,5	87	99,5	112
				L(in)	1,94	2,44	2,93	3,42	3,92	4,40

Base mounting - (BL - BK - BT - BY)

Switching angle 90°, padlockable (max 3 padlocks)

Measures in mm (in)



Handle	B	
	mm	in
BL6-BK6	39	1,53
BT4L-BY4L	40	1,57
BT6L-BY6L	40	1,57

Switch dimensions

Series	X	D	L1	N° Stages: 2	
				Lmin **	Lmax
CQ 012-016	40x40 1,57"x1,57"	12,5 0,49"	175 (6,89")*	115 (4,52")	259 (10,20")
			300 (11,81")	115 (4,52")	384 (15,12")
			500 (19,69")	115 (4,52")	584 (23,00")
CQ 025-032	63x62 2,48"x 2,44"	12,5 0,49"	175 (6,89")*	117 (4,60")	261 (10,27")
			300 (11,81")	117 (4,60")	386 (15,20")
			500 (19,69")	117 (4,60")	586 (23,07")

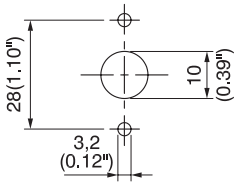
Overall length (min-max)** for different shaft lengths (L1)

* Standard shaft, bundled

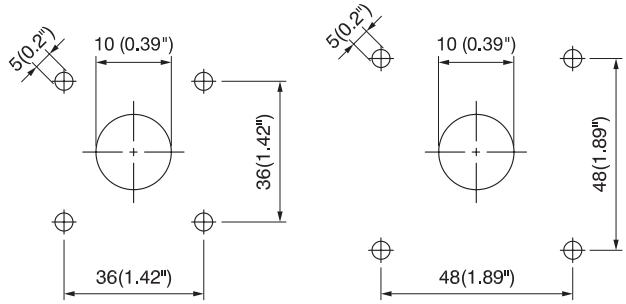
** Minimum length is obtainable by cutting the shaft

Rear mounting

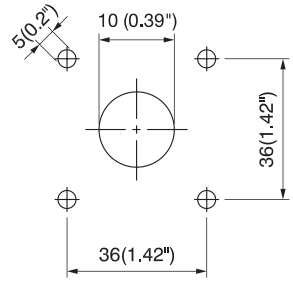
(RT - RY - RL6 - RK6 - RR0) - Measures in mm (in)



(RV6/RV6-T - RW6/RW6-T)



(RV4/RV4-T - RW4/RW4-T)

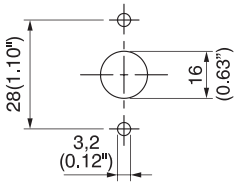


Base mounting

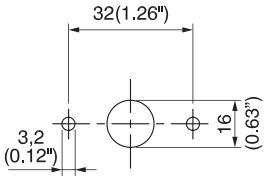
(BL - BK - BT - BY) - Measures in mm (in)

Escutcheon plate mounting options:

1) 2 holes with vertical distance 28mm (1.10")



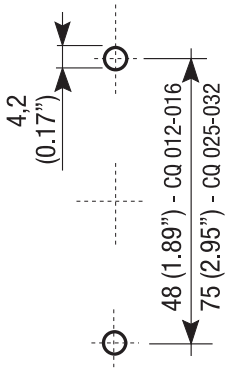
2) 2 holes with horizontal distance 32mm (1.26")



Switch mounting options:

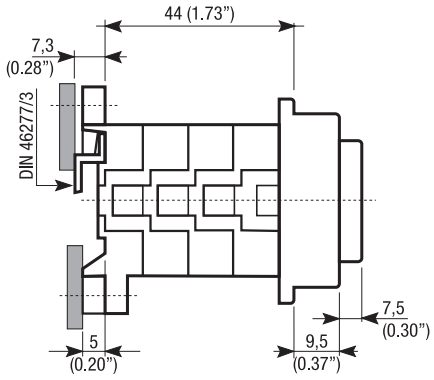
1) 2 holes with distance 58mm (2.28") - 72mm (2.83")

2) snap mount on DIN 46277/3 rail



Base mounting - DDN

Measures in mm (in)



Drilling templates - DDN

Measures in mm (in)