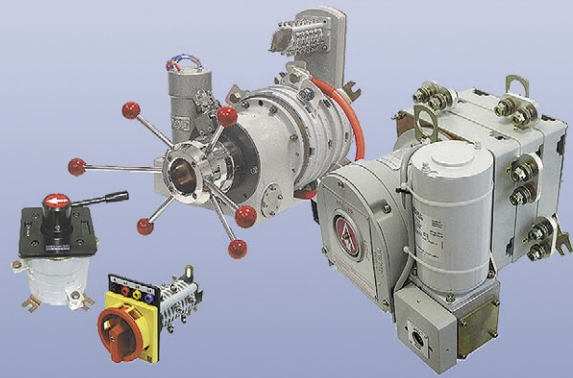


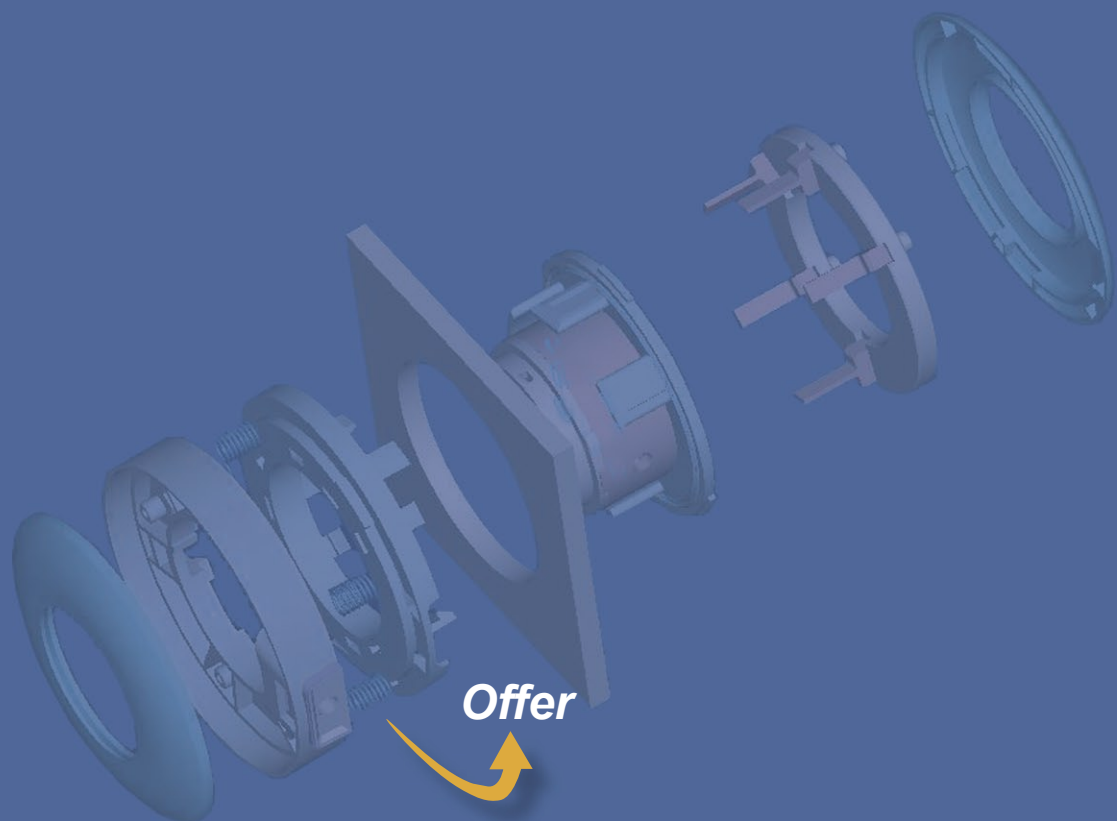
# C400 Switches



## Contents

Select your chapter

- Characteristics
- Manual units  
(16 A to 400 A)
- Remote-control units  
(64 A, 125 A, 200 A, 400 A)
- Remote-control or Manual units  
(800 A, 1250 A, 1600 A)



# C400 Snap-action switches



## General characteristics

These are 4-position rotary switches, fitted with a snap-action mechanism providing fast breaking and making between the contacts. Consequently, these units can be used both for direct and alternating current, even in circuits with high inductance.

Despite their compact size, numerous electrical combinations are possible, for simple applications (inverters or on-off switches) or for starting up complex motors.

The modular architecture of the basic components makes it possible to offer a wide range of variants, in the types of control and mounting. (Manual or remote control, flush-mounted or projecting or split mounting...)

## Environment characteristics (all ratings)

<b>Certifications</b>	Compliant with standards IEC & NF EN 60 947-1 and IEC & NF EN 60 947-3
<b>Protective finish</b>	Tropicalisation (operating at + 65 °C with 95% humidity)
<b>Vibration resistance</b>	Per section E508, French Navy : Category 5 Per IEC & NF EN 61 373
<b>Ambient temperature (air)</b>	Storage: - 60°C to + 70°C Operating: - 25°C to + 65°C (- 40° possible on request, except for Type K4)
<b>Shock resistance</b>	Per section E508, French Navy : "alpha" test machine Per IEC & NF EN 61 373
<b>Resistance to salt spray</b>	Per section E508, French Navy : Category 5 (250 hrs) Per IEC & NF EN 61 373
<b>Degree of protection</b>	IP 40 per IEC & NF EN 60 529. IP 55 for the front panel on request (special gasket). Housed in casing, on request.

## Operating power (ratings from 16 to 400 A)

Operating category per IEC & NF EN 60 947-3

Alternating current				
Rating	Voltage	Combination of resistive and inductive loads, including moderate overloads		
		AC 21	AC 22	AC 23
16 A	380 V	16 A	16 A	16 A
	500 V	16 A	16 A	10 A
32 A	380 V	32 A	32 A	32 A
	500 V	32 A	32 A	25 A
	660 V	32 A	32 A	15 A
64 A	380 V	64 A	64 A	64 A
	500 V	64 A	64 A	50 A
	660 V	64 A	64 A	30 A
125 A	380 V	125 A	125 A	125 A
	500 V	125 A	125 A	100 A
	660 V	125 A	100 A	60 A
200 A	380 V	200 A	200 A	200 A
	500 V	200 A	200 A	150 A
	660 V	200 A	150 A	100 A
400 A	380 V	200 A	200 A	200 A
	500 V	200 A	200 A	150 A
	660 V	200 A	150 A	100 A

Direct current			
Voltage	Resistive loads, including moderate overloads		Highly inductive loads (motors)
	DC 21	DC 23	Current
Connection types			
220 V	1	2	16 A
440 V	2	3	16 A
220 V	1	2	32 A
440 V	2	3	32 A
220 V	1	2	64 A
440 V	2	3	64 A
220 V	1	2	125 A
440 V	2	3	125 A
220 V	1	2	200 A
440 V	2	3	200 A
220 V	4	5	400 A
440 V	5	5	400 A
750 V	5	5	50 A

Contact us for configurations of the "motor starter" type.

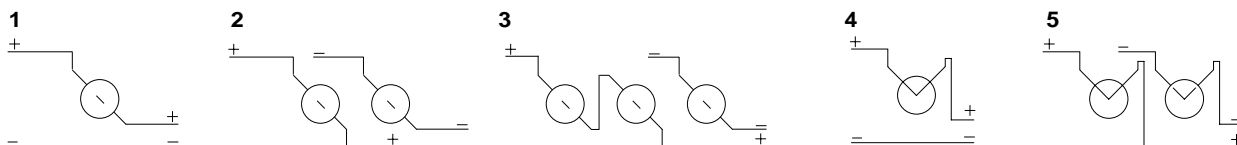
# C400 Snap-action switches

## Operating power (Ratings from 800 to 1600 A)

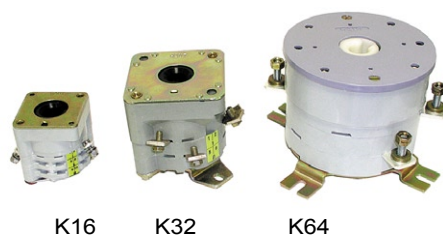
Operating category per IEC & NF EN 60 947-3

Rating	Double-pole alternating current			Double-pole direct current			
	Voltage	AC 22	AC 23	Voltage	DC 21 (2)	DC 23 (2)	Type of connection
800 A	24 V - 60Hz (1-ph)	800 A	800 A	24 V	800 A	800 A	2
	115 V - 60Hz (1 or 3-ph)	800 A	800 A	115 V	800 A	800 A	2
	440 V - 60Hz (3-ph)	800 A	800 A	440 V	800 A	400 A	2
1250 A	24 V - 60Hz (1-ph)	1250 A	1250 A	24 V	1250 A	1250 A	2
	115 V - 60Hz (1 or 3-ph)	1250 A	1250 A	115 V	1250 A	1250 A	2
	440 V - 60Hz (3-ph)	1250 A	1250 A	440 V	1250 A		2
1600 A	24 V - 60Hz (1-ph)	1600 A	1600 A	24 V	1600 A	1600 A	2
	115 V - 60Hz (1 or 3-ph)	1600 A	1600 A	115 V	1600 A	1600 A	2
	440 V - 60Hz (3-ph)	1600 A	1600 A	440 V	1600 A		2

Connection types (direct current)



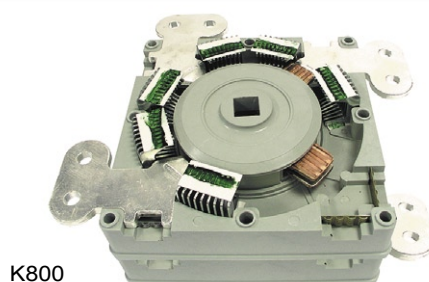
## Electrical power units (Ratings 16 A, 32 A, 64 A )



## Electrical power units (Ratings 125 A, 200 A, 400 A )



## Electrical power units (Ratings 800 A, 1250 A, 1600 A )



# C400 Snap-action switches



## General characteristics

Description	Units	K16	K32	K64	K125	K200	K400	K800	K2000
<b>Operating principle</b>									
Friction contacts (Rotating moving contacts with two blades one close on either side of the fixed contacts)		Moving flexible contact blade	Moving flexible contact blade	Yes	Yes	Yes	Yes	Yes	Yes with "cam follower" for increased contact pressure
Operating of moving contacts		Snap-action	Snap-action	Snap-action	Snap-action	Snap-action	Snap-action	Snap-action	Snap-action
Shape of moving contacts (for selecting the schematics)		Right-angle straight T-shaped	Right-angle straight T-shaped	Right-angle straight T-shaped	Right-angle straight T-shaped	Right-angle straight T-shaped	Right-angle	Right-angle straight T-shaped	Right-angle straight
Max. number of positions per turn		4 (8 also poss.)	4	4	4	4(8 also poss.)	4(8 also poss.)	4	4
<b>Electrical characteristics</b>									
Rated continuous thermal current (Ith) at 65° ambient	A	16	32	64	125	200	400	800 (at 45°C for AC)	2000
Average heat rise in the contacts at Ith	°C	20	20	15	20	20	35	40 for DC 60 for AC	
Rated insulation voltage (resistance) as per IEC 60947-1 (pollution degree 3, overvoltage category III)	V	500	750	1000	1000	1000	1000	1000	1000
Dielectric strenght	KV	2.5	2.5	2.5	2.5	2.5	2.5	3.5	2.5
Insulation resistance	MΩ	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
Resistance between terminals	μΩ	2500	800	200	100	70	60	50	
Closing on short-circuit current	KA	0.4 (t ≤ 0.5s) 3 switchovers	0.8 (t ≤ 0.5s) 3 switchovers	5 (t ≤ 0.5s) 3 switchovers	10 (t ≤ 0.5s) 3 switchovers	20 (t ≤ 0.5s) 3 switchovers	30 (t ≤ 0.5s) 3 switchovers	50 RMS (t ≤ 0.3s)	
Resistance to short-circuit currents (contacts closed)	KA	0.8 (t ≤ 0.25s) 0.4 (t ≤ 1s)	1.2 (t ≤ 0.25s) 0.8 (t ≤ 1s)	10 (t ≤ 0.25s) 5 (t ≤ 1s)	20 (t ≤ 0.25s) 10 (t ≤ 1s)	40 (t ≤ 0.25s) 20 (t ≤ 1s)	60 (t ≤ 0.25s) 40 (t ≤ 1s)	100 RMS (t ≤ 0.25s) 50 RMS (t ≤ 1s)	
Rated making and breaking capacity in single-pole configuration (see NB)	A	16 (AC22) 500Vac 4 (110Vdc, L/R 30 ms)	32 (AC22) 500Vac 8 (110Vdc, L/R 30 ms)						
Electrical durability - number of state changes. (rated making and breaking ops. above)		80 000 80 000	60 000 60 000						
Silver-nickel stud contact for improved electrical endurance <sup>(1)</sup>				Possible	Possible	Possible	Standard	Standard	Standard
Possibility of auxiliary contacts		no	no	K16 tiers (at rear)	K16 tiers (at rear)	K16 tiers (at rear) or on countershaft	K16 tiers (at rear) or on countershaft	K32 tiers (at rear)	
<b>Mechanical characteristics</b>									
Max. number of tier capable of being juxtaposed		16	16	12	15	15	12	12 4 for K400 mech.	
Mechanical life expectancy-number of state changes		80 000 (4 tiers) 40 000 (8 tiers)	60 000 (4 tiers)						
Contact changeover time	ms	2 approx. (4 tiers)	5 approx. (4 tiers)	6 approx. (1 tiers) 10 approx.(4 tiers)	10 approx. (4 tiers)	18 approx. (4 tiers)			
Connection		M4 washer head screw (2)	M5 with spring washer (2)	M6 stud and lock nut (2)	M 8 stud and nut (2)	M 8 stud and nut			6 x M 12 nuts
Possibility of thick contacts (on request)		Yes	Yes	Yes	No	Yes			no
Comments		More than 16 tiers poss. with special mechanism	For more tiers contact us	For more tiers contact us	For more tiers contact us	For more tiers contact us	For more tiers contact us	<b>Ratings:</b> 1250 A = 2 tiers in // 1600 A = 3 tiers in //	<b>Special unit on request only</b>

NB: Contact us for making and breaking capacity in other configurations (two-pole)

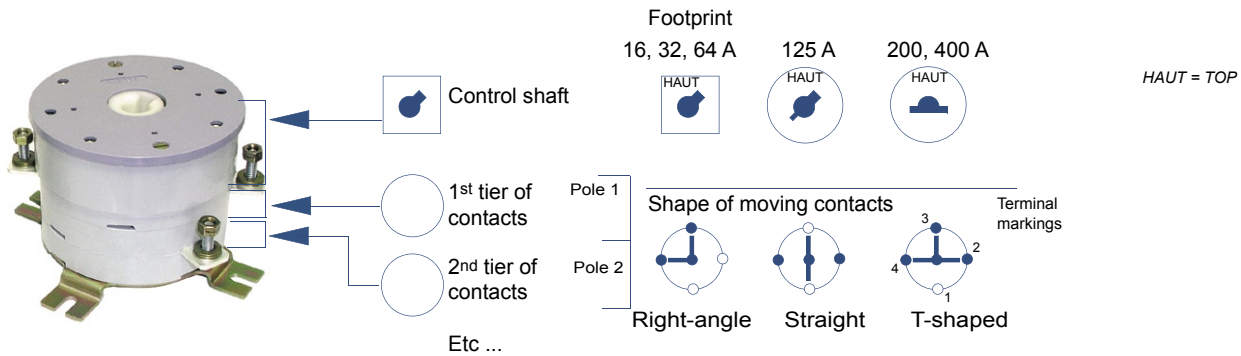
(1) Selected by MAFELEC according to the conditions of use specified by the customer.

(2) Stud with spring washer and lock nut also possible.

# C400 Snap-action switches

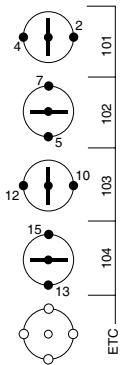
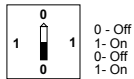


## Structure of a standard electrical power unit

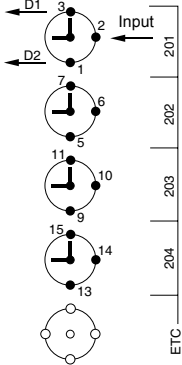
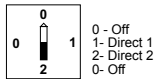


## Standard schematics

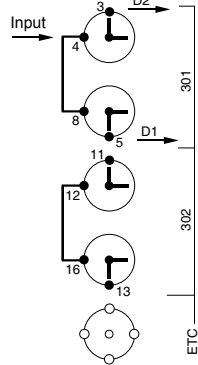
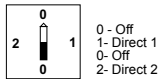
0.1.0.1  
switch  
Schematic No 100



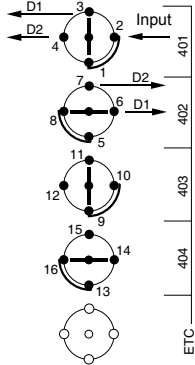
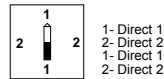
2D 0.1.2.0  
switch  
Schematic No 200



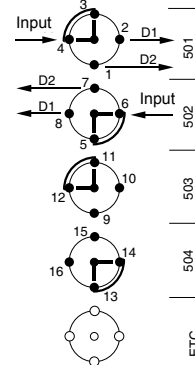
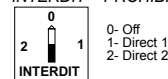
2D 0.1.0.2  
switch  
Schematic No 300



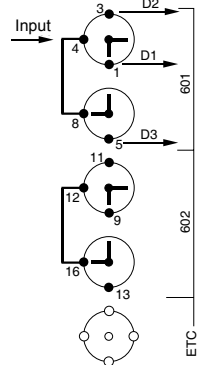
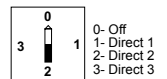
1.2.1.2  
switch  
Schematic No 400



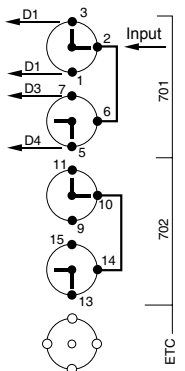
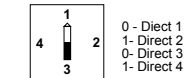
2D 0.1.2.INTERDIT \*  
switch  
Schematic No 500  
\* INTERDIT = PROHIBITED



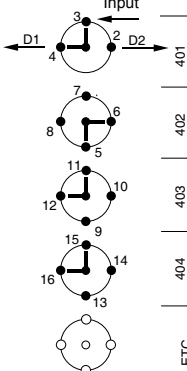
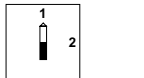
3D 0.1.2.3  
switch  
Schematic No 600



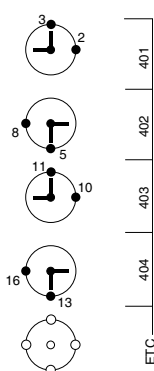
4D 1.2.3.4  
switch  
Schematic No 700



Schematic No 400  
for K400

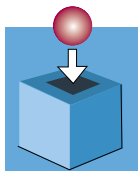
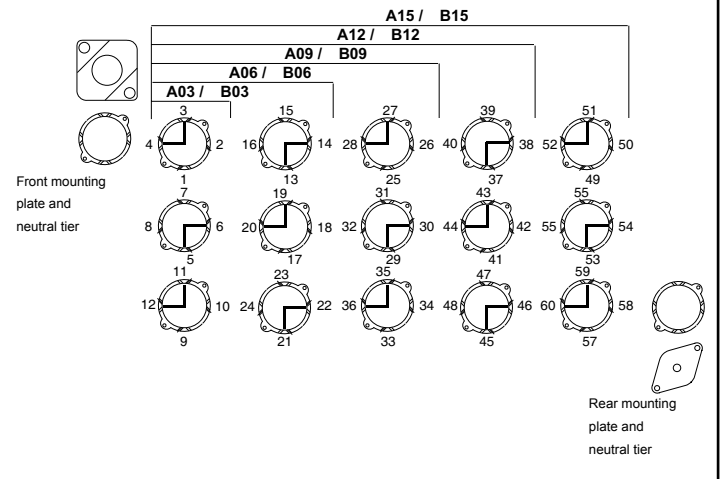


Schematic No 900  
for K400



## Auxiliary contacts of the K16 / K32 types

P/N A... = Auxiliary K16  
P/N B... = Auxiliary K32  
Delivered in modules of three (15 tiers maximum).



Contact us for other schematics and special schematics

# C400 Snap-action switches

Manual units (ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)



## Constituent Parts

### Switching block

#### Creating a Part Number

Some options are specifically related to a given activity segment

(e.g.: silver contact studs on military switches)

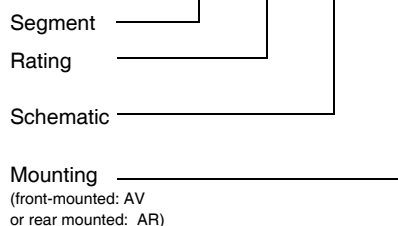
The Part Number indicates the activity.

**K:** Industry and Railways

**MNK:** Military (ratings 16 A to 32 A)

**AMNK:** Military (ratings 64 A and above)

E. g. : P/N **K 16 103 AV**



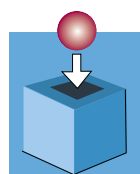
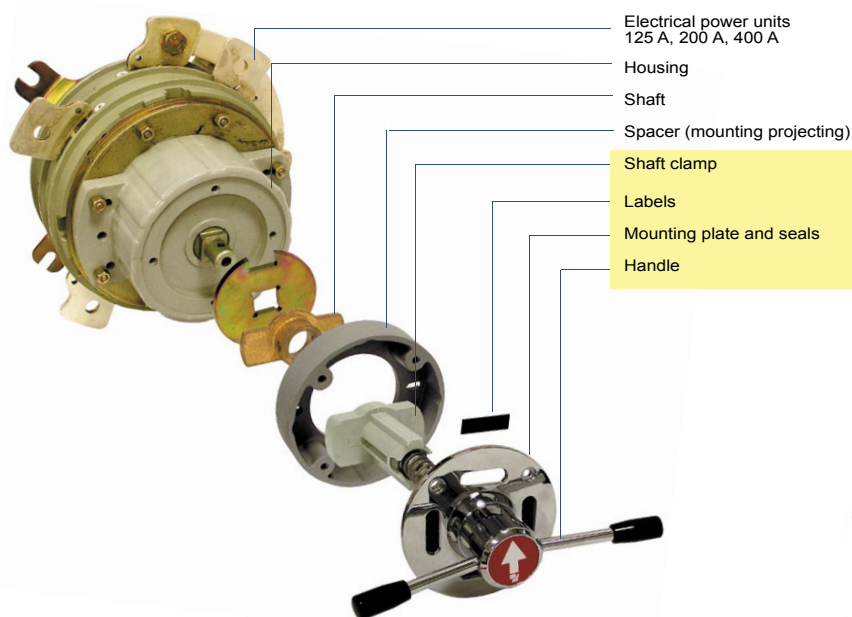
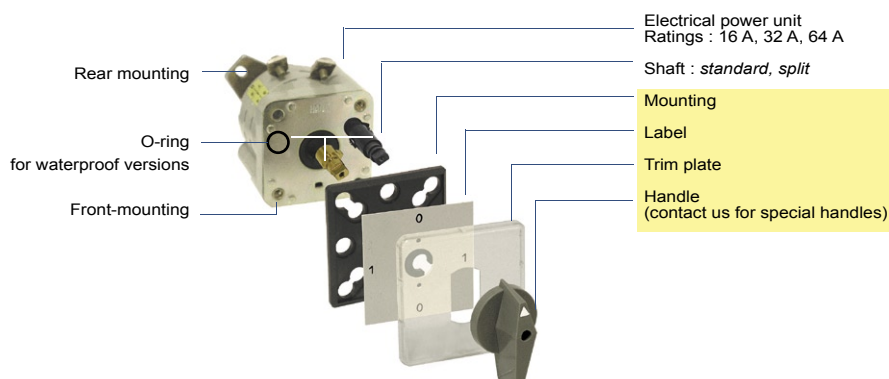
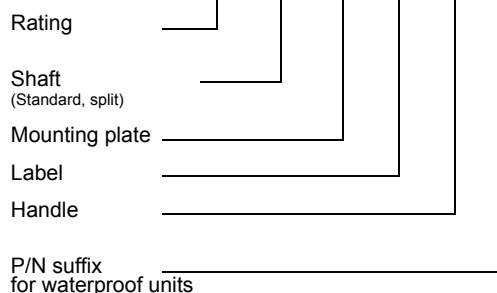
### Handle block

#### Rating identifier:

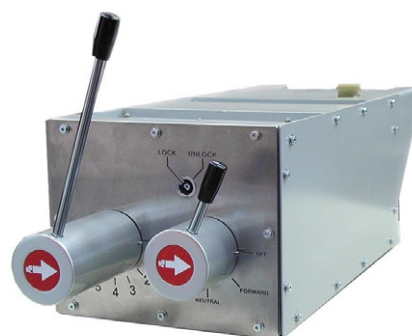
**A:** 16A - **B:** 32A - **C:** 64A - **D:** 125A - **E:** 200A

**F:** 400A - **G:** 800A

E. g. : P/N **A CN P1 E1 M1 ET**



Special units, specific schematics, adapted handles ... contact us.





# C400 Snap-action switches

Manual units (ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)



## Adaptation chart

	K16 (16 A)	K32 (32 A)	K64 (64 A)	K125 (125 A)	K200 (200 A)	K400 (400 A)
<b>Mounting</b>						
- Flush-mounted (CN)	●	●	●	●		
- Projecting (CN)	●	●	●	●	●	●
- Split mounting (CR)	●	●	●	●	●	●
<b>Accessories</b>						
- Mounting plates, labels with plastic or metal Trim plates	●	●	●			
- Handles: paddles, with a lever, with a lock, or a padlock.	●	●	●			
- Steel stems, ball grips, control wheel				●	●	●
<b>Inhibited positions</b>						
- Blocked by a stop prohibiting switching to one or more consecutive positions	●	●	●	●	●	●
<b>Weight (kg)</b>						
N = number of tier						
Normal mounting (CN)	0.20 + 0.03 N	0.68 + 0.1 N	1.3 + 0.33 N	3.5 + 0.67 N	5.6 + 1.25 N	7.1 + 2.39 N
Split mounting (CR)	0.20 + 0.03 N	0.68 + 0.1 N	1.3 + 0.33 N	3.5 + 0.67 N	5.3 + 1.25 N	6.8 + 2.39 N
<b>OPTIONS</b>						
Single rotation direction (right or left)	●	●	●	●	●	●
Automatic return (+ 22 mm dimensions)	●					
Switching action dependent on the contacts (contact us)	●					
Locking :						
- manual	●	●	●	●	●	●
- electric		●	●	●	●	●
In an enclosure :						
- plastic (3 tiers max.)	●	●				
- waterproof steel (3 tiers max.)			●			
- waterproof steel (4 tiers max.)				●	●	●
With auxiliary contacts at the rear			(1)	(1)	(2)	(1)
Various couplings		●	●			
Controlled by a motor		●	●	●	●	●

(1) See page 5 for schematics

(2) 3 or 6 active tiers for the standard version + 2 neutral plugs. See remote-controlled 200A for dimensions. See page 5 for schematics.

# C400 Snap-action switches

*Manual units (ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)*



## Control devices (Ratings 16 A, 32 A, 64 A)

### Handles

Description	Colour	Part Number	Weight kg
Standard plastic paddle 45 x 22	Grey Black	<b>M 1</b> <b>M 1 N</b>	0.005
Standard plastic paddle 60 x 30	Grey Black	<b>M 2</b> <b>M 2 N</b>	0.010
Standard plastic paddle 85 x 40	Grey Black	<b>M 3</b> <b>M 3 N</b>	0.030



Lever with ball grip Steel stem	Chrome with black ball	<b>M5</b>	0.130
------------------------------------	---------------------------	-----------	-------



Plastic handle	Grey Black	<b>M4</b> <b>M4 N</b>	0.020
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Plastic handle locking device: standard 620 key	Grey	<b>M6</b>	0.150
--	------	-----------	-------



Plastic handle with plunger lock with 1,2,3 padlocks	Grey	<b>M7</b>	
--	------	-----------	--



### Control shafts

Description	Part Number	Weight kg
Normal shaft for projecting or flush mounting	<b>CN</b>	0.020



Split shaft Handle mounted on a moving support (door, removable front panel, ...)	<b>CR</b>	0.015
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### Mounting plate

Description	Colour	Part Number	Weight kg
Plastic mounting plate and transparent Trim plate for 16 A, & 32 A ratings	Grey Black	<b>P1</b> <b>P1 N</b>	0.035



Plastic mounting plate and transparent Trim plate for 64 A rating	Grey Black	<b>P3</b> <b>P3 N</b>	0.055
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Metal Trim plate for P3 P/N only	Black	<b>J6</b>	0.060
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# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

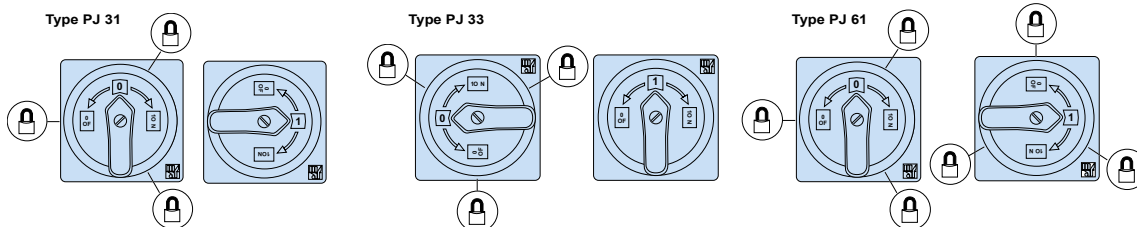
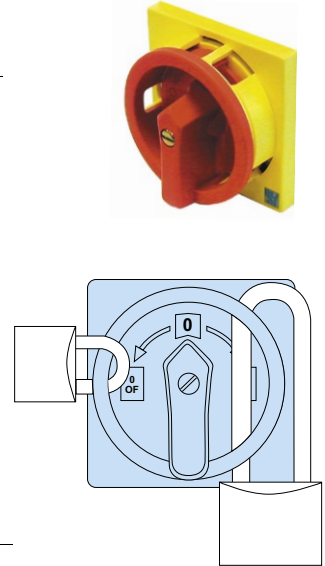


## Control devices (Ratings 16 A, 32 A, 64 A)

### Padlockable mounting plate and handle for K16 and K32 switches

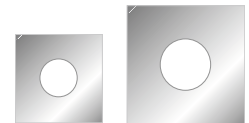
Mounting plate and paddle can be padlocked in 1 or 2 positions, in standard IP409 or waterproof (add **ET** to the P/N) IP699 versions. Positions visible both from the front and from the side. Plastic material.

Description	Part Number	Weight kg
<b>1 padlockable position:</b>		
<b>For K16 switch</b>		
Normal shaft	ACN PJ31 MR ACN PJ31 MR ACN PJ33 MR	0.56
Split shaft	ACR PJ31 MR ACR PJ31 MR ACR PJ33 MR	0.56
<b>For K32 switch</b>		
Normal shaft	BCN PJ31 MR BCN PJ31 MR BCN PJ33 MR	0.56
Split shaft	BCR PJ31 MR BCR PJ31 MR BCR PJ33 MR	0.56
<b>2 padlockable positions:</b>		
<b>For K16 switch</b>		
Normal shaft	ACN PJ61 MR	0.56
<b>For K32switch</b>		
Normal shaft	BCN PJ61 MR	0.56



### Aluminium Labels

Description	Colour	Part Number	Weight kg
Blank label (to be engraved) 63 x 63 (P1 mounting plate)	Grey, satin finish	E1	0.002
Blank label (to be engraved) 77 x 77 (P3 mounting plate)	Grey, satin finish	E3	0.003



### PVC Labels

Description	Colour	Part Number	Weight kg
Blank label 63 x 63	Grey	E1-1	0.001
Blank label 77 x 77	Grey	E3-1	0.002



Label with standard markings  
Use the P/N root as follows:  
**E1** or **E3** for the size of the label and the dash number corresponding to the required marking

Greyu background  
black text

<b>E1-2</b> <b>E3-2</b>		<b>E1-5</b> <b>E3-5</b>		<b>E1-8</b> <b>E3-8</b>		<b>E1-11</b> <b>E3-11</b>	
<b>E1-3</b> <b>E3-3</b>		<b>E1-6</b> <b>E3-6</b>		<b>E1-9</b> <b>E3-9</b>			
<b>E1-4</b> <b>E3-4</b>		<b>E1-7</b> <b>E3-7</b>		<b>E1-10</b> <b>E3-10</b>			

# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)



## Control devices (Ratings 125 A, 200 A, 400 A)

### Handles

Description	Colour	Part Number	Weight kg
Two-armed lever with ball grips	Chrome black ball grips	<b>M10</b>	0.665
	Black oxide black ball grips	<b>M10 N</b>	
Single-armed lever with ball grip	Chrome black ball grip	<b>M11</b>	0.600
	Black oxide black ball grips	<b>M11 N</b>	
Bakelite control wheel	Black	<b>M13</b>	1.260



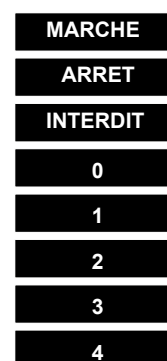
### Mounting plate

Description	Colour	Part Number	Weight kg
Square mounting plate with windows, in light alloy, bright chrome or black oxide	Chrome	<b>P10</b>	0.225
	Black	<b>P10 N</b>	
Round mounting plate with windows, in light alloy, bright chrome or black oxide	Chrome	<b>P11</b>	0.160
	Black	<b>P11 N</b>	



### Dilophane labels

Description	Colour		Part Number	Weight kg
Blank label 13 x 39 mm for P10 or P11 mounting plates	Black background		E10-1	0.001
Label with standard markings, 13 x 39 mm for P10 or P11 mounting plates	Black background white text	ON	E10- 2	0.001
		OFF	E10- 3	
		PROHITED	E10- 4	
			E10- 5	
			E10- 6	
			E10- 7	
			E10- 8	
			E10- 9	



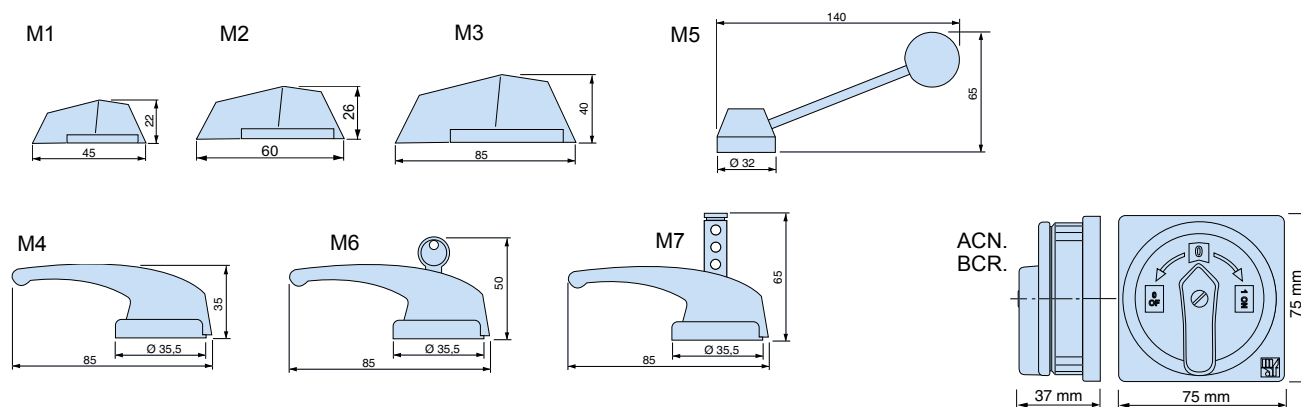
# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

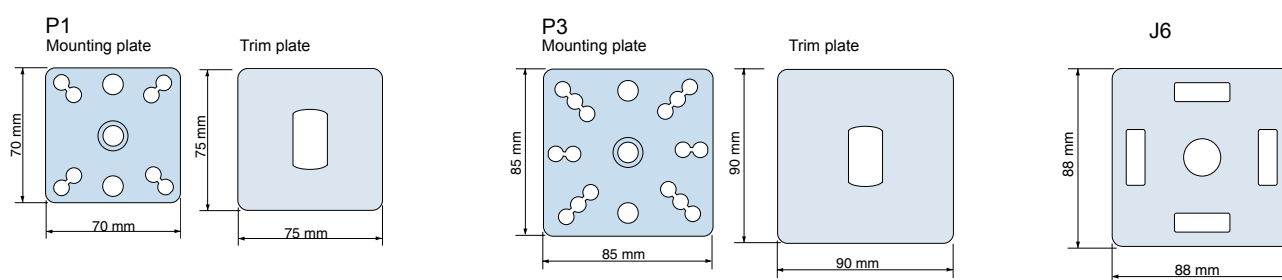


## Dimensions of handles and mounting plates

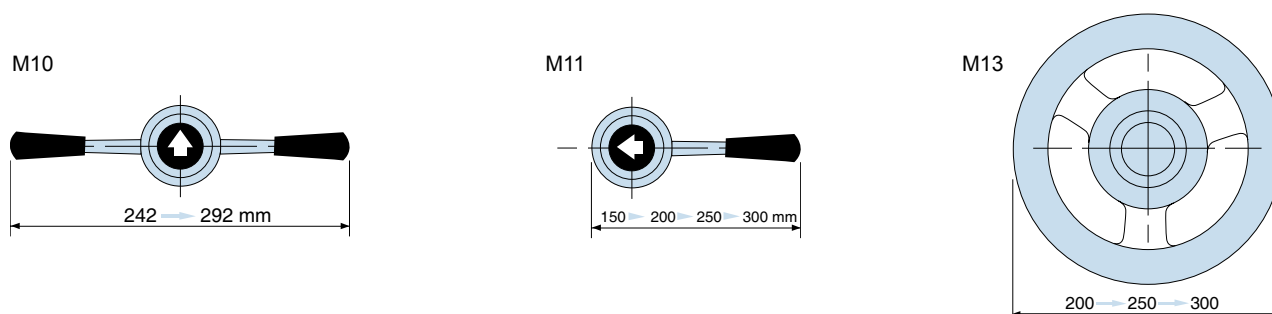
Handles for ratings: 16 A, 32 A, 64 A



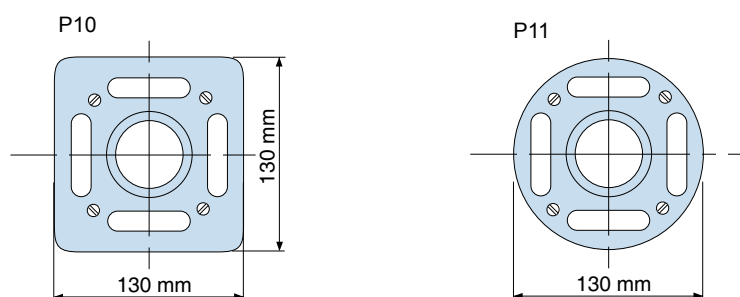
Mounting plates for ratings: 16 A, 32 A, 64 A



Handles for ratings: 125 A, 200 A, 400 A



Mounting plates for ratings: 125 A, 200 A, 400 A



# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

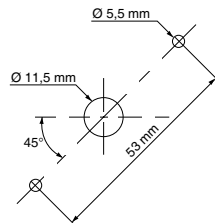
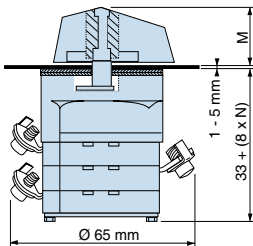


## Dimensions and panel cutouts

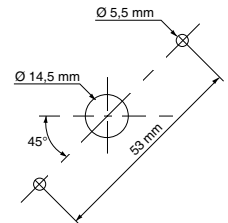
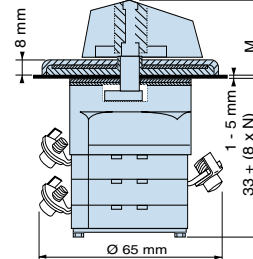
### 16 A Rating

#### Flush mounting (Unit attached via the front panel, from the front)

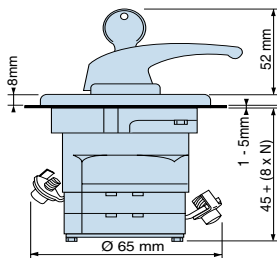
Without mounting plate



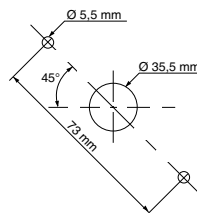
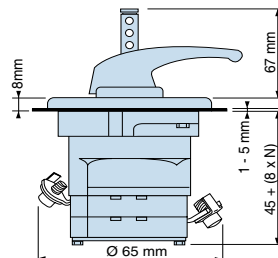
With mounting plate



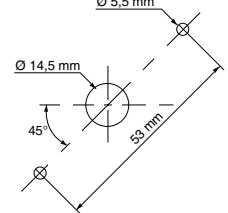
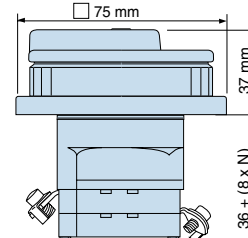
Handle with a lock



Handle with plunger lock

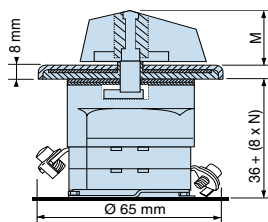


With ACR. or ACN. paddles

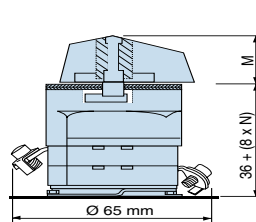


#### Projecting mounting (Unit attached via the rear plate)

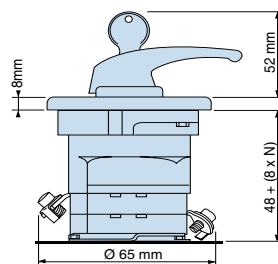
Without mounting plate



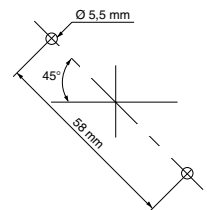
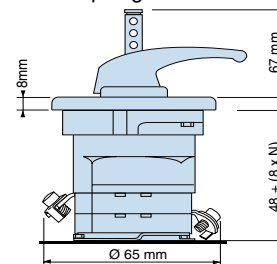
With mounting plate



Handle with a lock

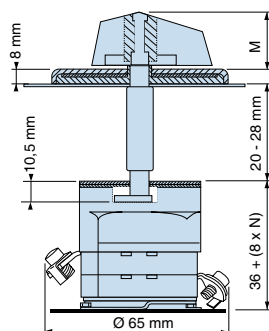


Handle with plunger lock

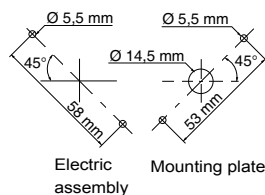
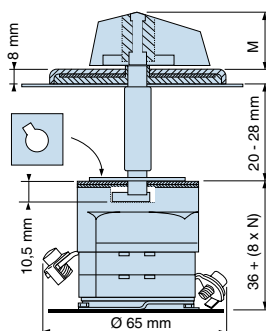


#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

With mounting plate



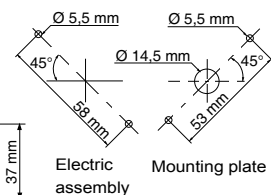
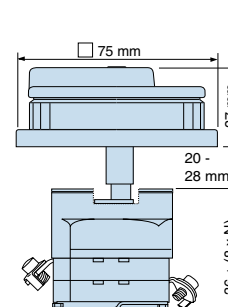
With door lock



Electric assembly

Mounting plate

With ACR. or ACN. paddles



Electric assembly

Mounting plate

NB: Contact us for attachment and dimensions for split-mounted units with key or plunger locks.

# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

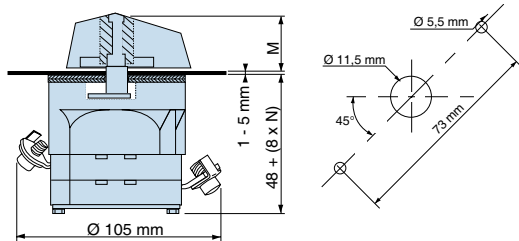


## Dimensions and panel cutouts

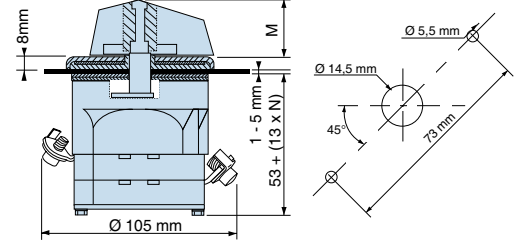
### 32 A Rating

#### Flush mounting (Unit attached via the front panel, from the front)

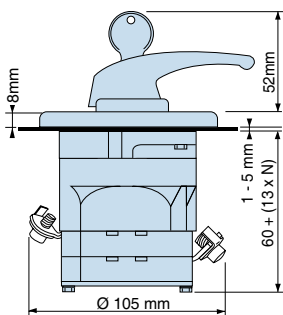
Without mounting plate



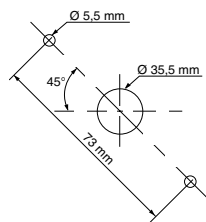
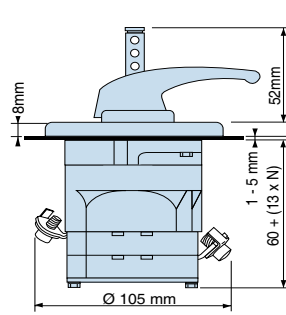
With mounting plate



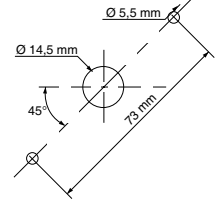
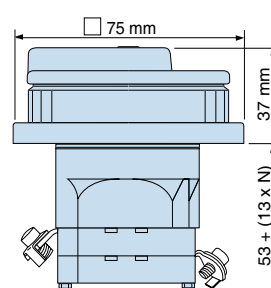
Handle with a lock



Handle with plunger lock

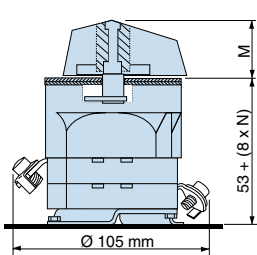


With ACR. or ACN. paddles

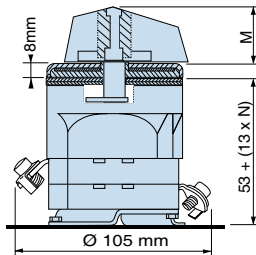


#### Projecting mounting (Unit attached via the rear plate)

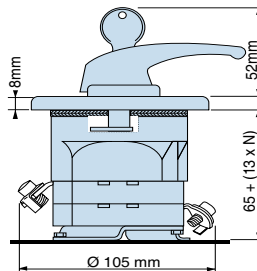
Without mounting plate



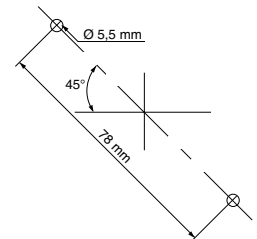
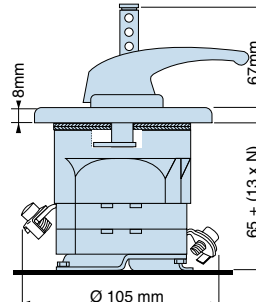
With mounting plate



Handle with a lock

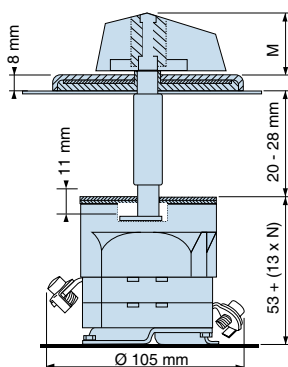


Handle with plunger lock

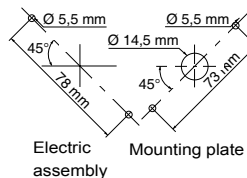
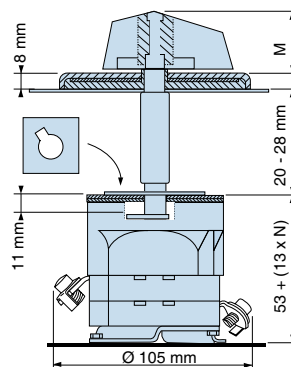


#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

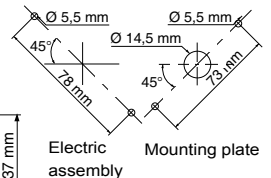
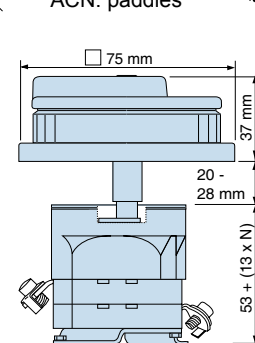
With mounting plate



With door lock



With ACR. or ACN. paddles



NB: Contact us for attachment and dimensions for split-mounted units with key or plunger locks.

# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

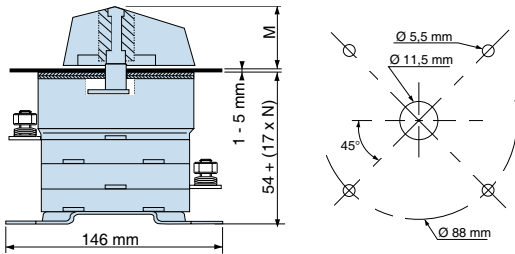


## Dimensions and panel cutouts

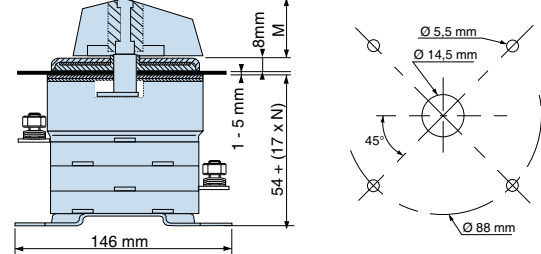
### 64 A Rating

#### Flush mounting (Unit attached via the front panel, from the front)

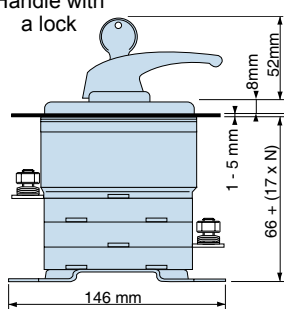
Without mounting plate



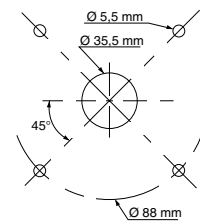
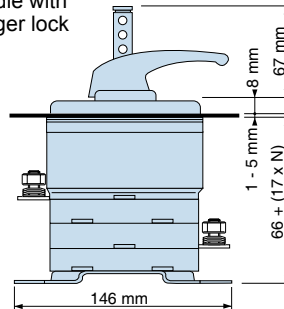
With mounting plate



Handle with a lock

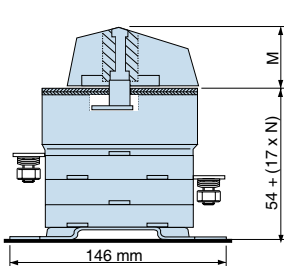


Handle with plunger lock

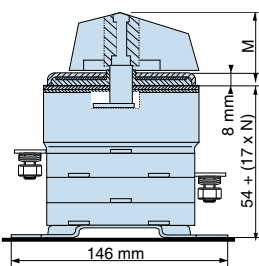


#### Projecting mounting (Unit attached via the rear plate)

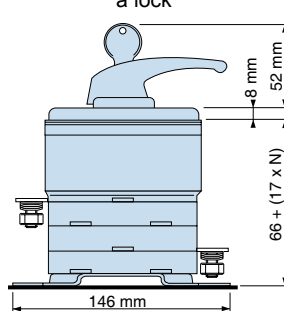
Without mounting plate



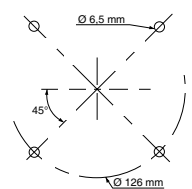
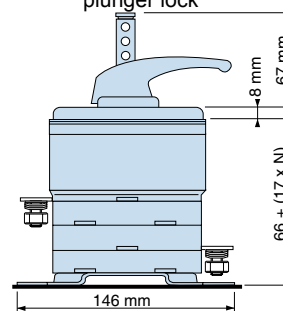
With mounting plate



Handle with a lock

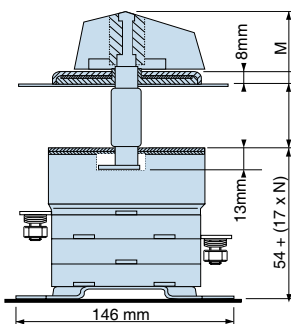


Handle with plunger lock

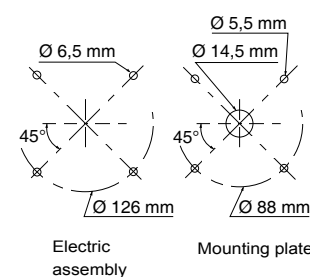
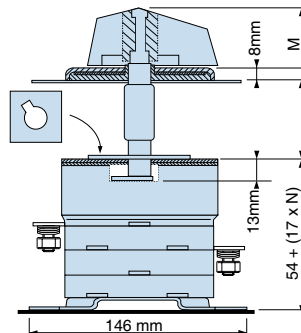


#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

With mounting plate



With door lock



Electric assembly

Mounting plate

NB: Contact us for attachment and dimensions for split-mounted units with key or plunger locks.



# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

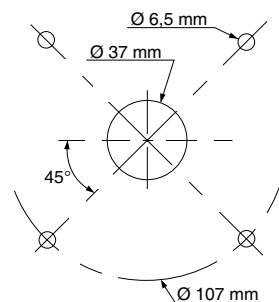
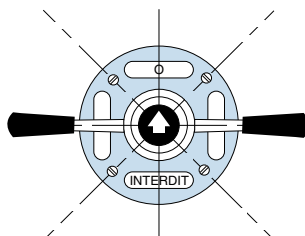
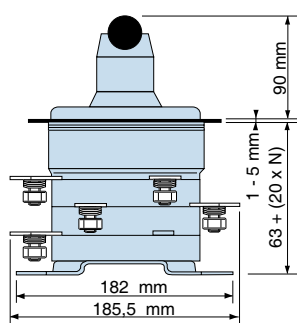


## Dimensions and panel cutouts

### 125 A Rating

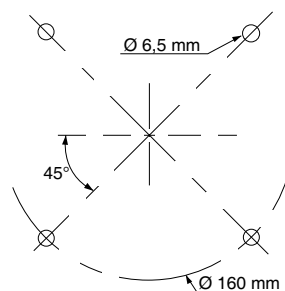
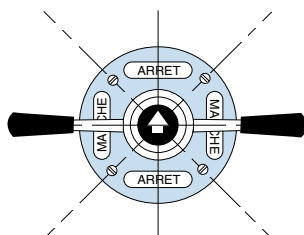
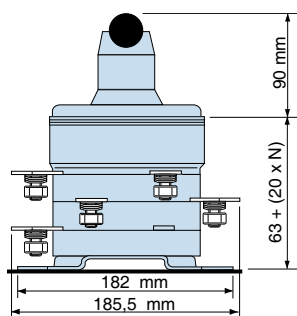
#### Flush mounting (Unit attached via the front panel, from the front)

With mounting plate



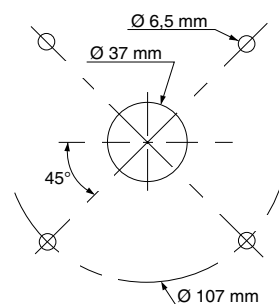
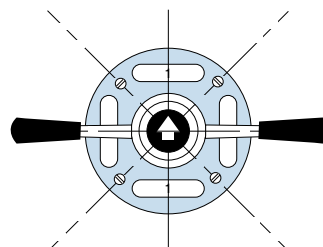
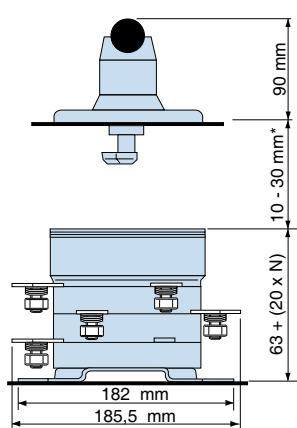
#### Projecting mounting (Unit attached via the rear plate)

With mounting plate



#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

With mounting plate



# C400 Snap-action switches

Manual units (Ratings 16A, 32A, 64 A, 125 A, 200A, 400 A)

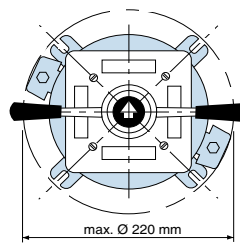
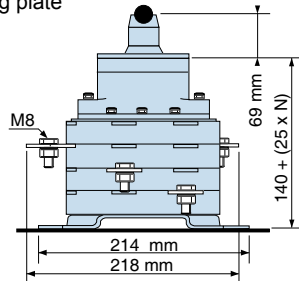


## Dimensions and panel cutouts

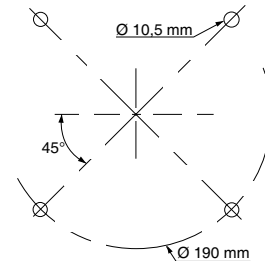
### 200 A Rating

#### Flush mounting (Unit attached via the front panel, from the front)

With mounting plate

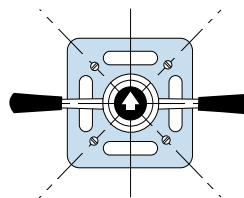
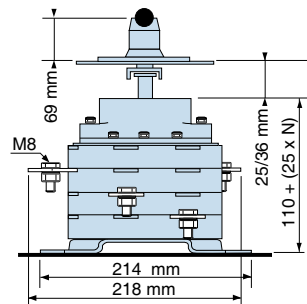


Drilling template for rear plate attachment

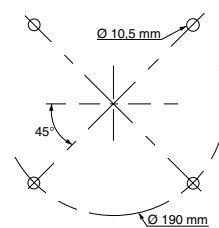


#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

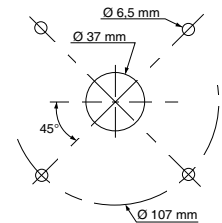
With mounting plate



Drilling template for rear plate attachment



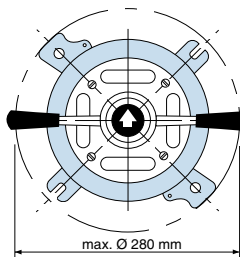
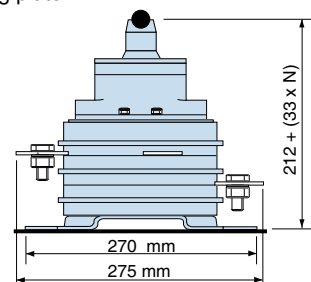
Drilling template mobile front panel



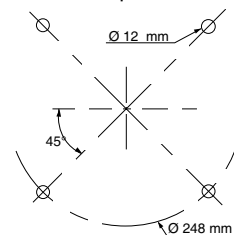
### 400 A Rating

#### Flush mounting (Unit attached via the front panel, from the front)

With mounting plate

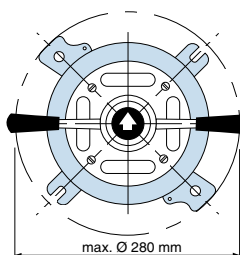
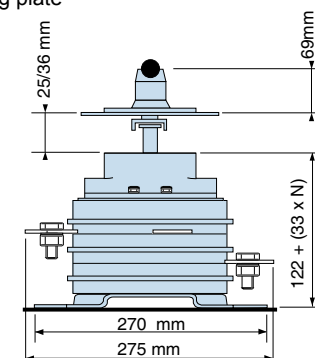


Drilling template for rear plate attachment

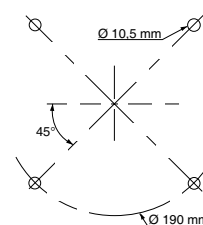


#### Split mounting (Unit attached via the rear plate, and mounting plate/handle on mobile front panel)

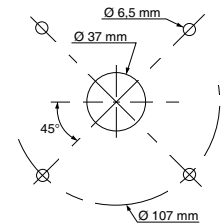
With mounting plate



Drilling template for rear plate attachment



Drilling template mobile front panel



# C400 Snap-action switches

## Remote-control units (calibres 64 A, 125 A, 200A, 400 A)



### Constituent parts and specifications

**Handle** The handle is used as an emergency manual control should the motor or power supply fail.  
Safety: when the handle is inserted, a micro-contact isolates the motor remote control (optional for 64 A and 125 A).

**Window / mounting plate** Where the switch is flush-mounted, the positions on the mounting plate are visible through the window fixed on the front panel of the cabinet, and the manual control is accessed by opening the window.

**Drive motor** Several types of motor can be used:

Rating	Alternating current				Direct current	
	24V	48V	72V	110V	115V/ 60Hz triple-phase	220V/ 50Hz single-phased
64 A	●	●				●
125 A	●	●				●
200 A	●	●	●	●	●	●
400 A	●	●	●	●	●	●

**Gearbox** This consists of the following items assembled on one housing:  
- A snap-action mechanism  
- A gearbox  
Depending on the electrical schematic desired, the gearbox can be fitted with 1 or 2 mechanical stops to inhibit switching to one or several positions.  
Options:  
- A handle micro-contact (opens the circuit as soon as the handle is inserted)  
- A pre-cutoff micro-contact (activated at the start of operation both for electrical and manual control)

**Electric power assembly** This consists of a stack of several tiers put together and selected according to the schematics of the unit. (characteristics of a contact element)  
Depending on the required wiring, the terminals can be commoned together by tier shunts and inter-tier shunts.  
The fixed and moving contacts are fitted with Ag-Ni contact studs to improve the electric performance.

**K16 Auxiliary** All remote-controlled switches are fitted with a K16 auxiliary used mainly to servo-control the motor, consisting of 3, 6, 9 or 12 electric tiers.  
It may be mounted:  
- On the end of the shaft, fitted straight onto the shaft of the electric power assembly, and attached to the rear plate (all ratings)  
- On the countershaft housing, driven by a gearwheel system, controlled by the shaft of the electric power assembly, all fixed on the rear plate. In this case, the K16 auxiliary is oriented towards the front (K200 and K400 only).

Each unit has its own specific alphanumerical part number, according to the required characteristics.

- Operating current

Voltage

L / R or power factor

Number of tiers

Power and auxiliary (optional)

Unit function

Micro-contacts for the handle, for the pre-cut-off

Mounting method (projecting or cabinet)

Various control devices (mounting plate, handle, window / mounting plate, handle window)

- Engraving on mounting plate

Text for the labels, designation of prohibited positions A.B.C.D

- Electrical schematic

Power, auxiliary, remote control part.

- Choice of motor

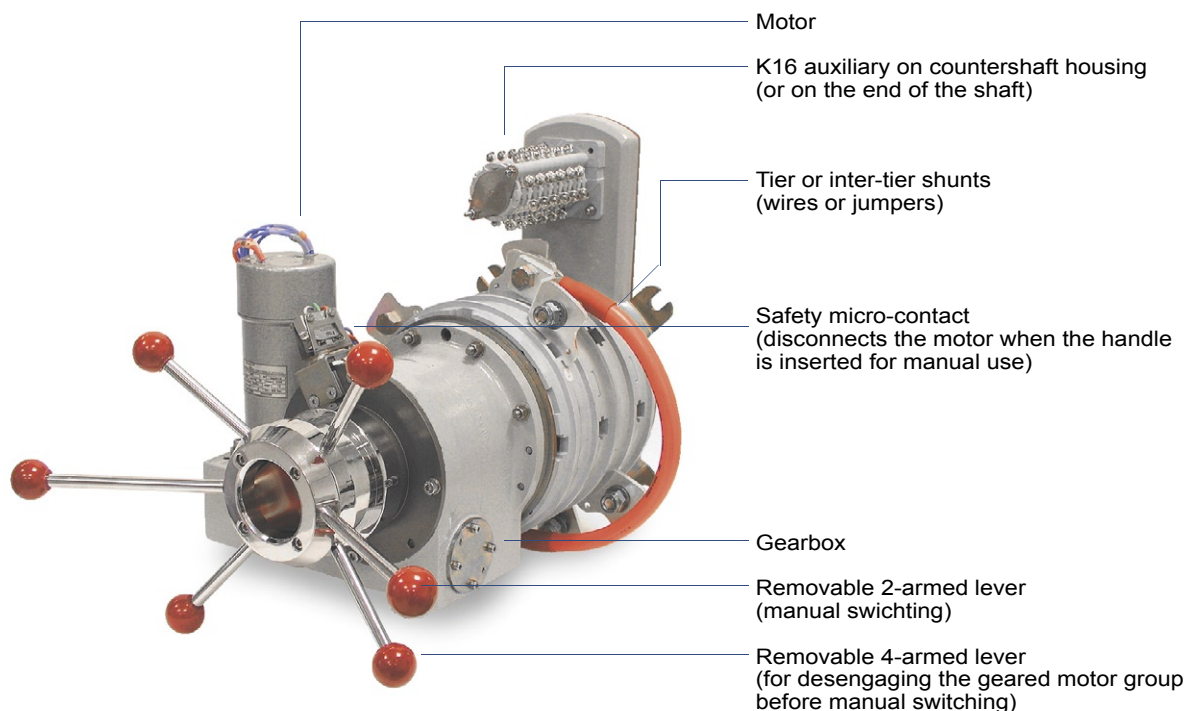
Voltage and type of current, motor protection fuses.

# C400 Snap-action switches

Remote-control units (Ratings 64 A, 125 A, 200A, 400 A)



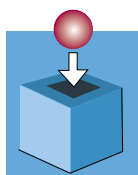
## Constituent parts



motor-driven K64



motor driven K200



Contact us for special units, specific schematics, adapted levers...

# C400 Snap-action switches

## Remote-control units (Ratings 64 A, 125 A, 200A, 400 A)



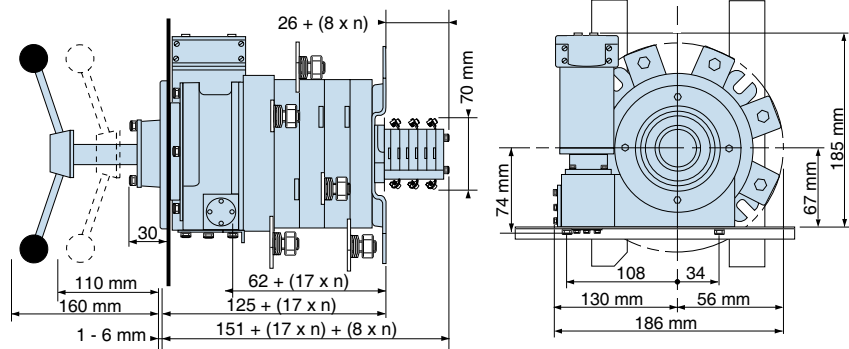
### Dimensions and panel cut-outs

#### 64 A Rating

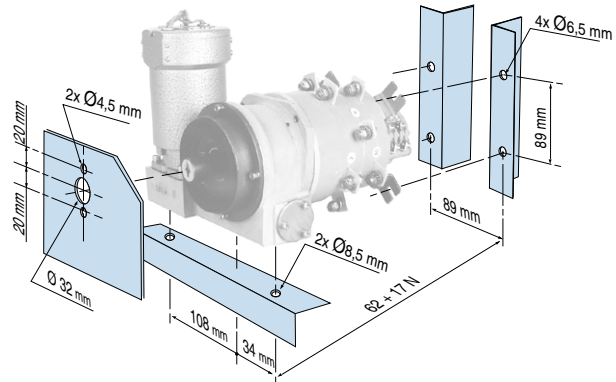
N = number of active power / auxiliary tiers  
n = number useful auxiliary tiers  
(the 26 mm dimension includes 2 neutral tiers)

With K16 auxiliary aligned with the shaft

Weight (Kg):  $7.3 + 0.76 N$   
(with handle and mounting plate)



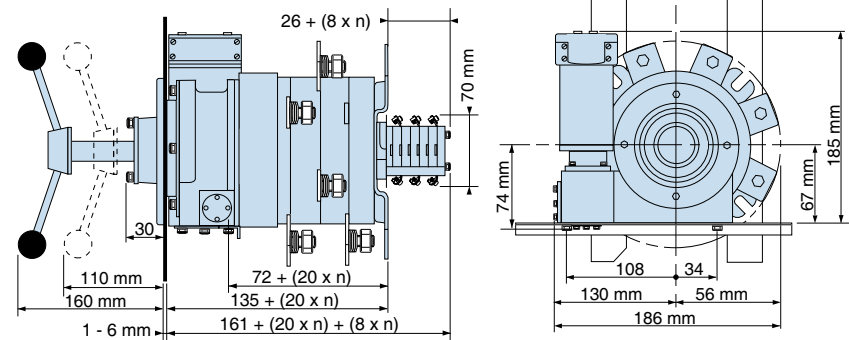
#### Drilling template



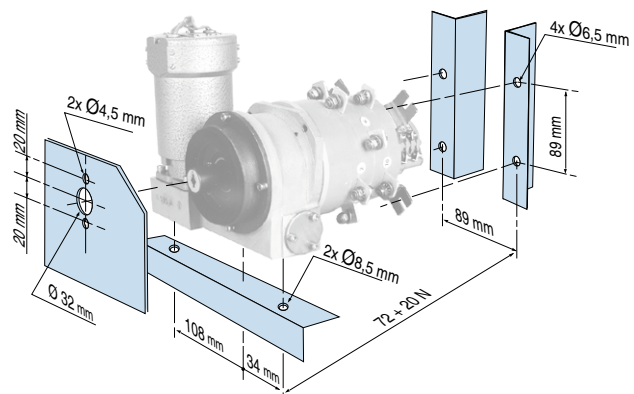
#### 125 A Rating

With K16 auxiliary aligned with the shaft

Weight (Kg):  $7.3 + 0.76 N$   
(with handle and mounting plate)



#### Drilling template



# C400 Snap-action switches

## Remote-control units (Ratings 64 A, 125 A, 200A, 400 A)



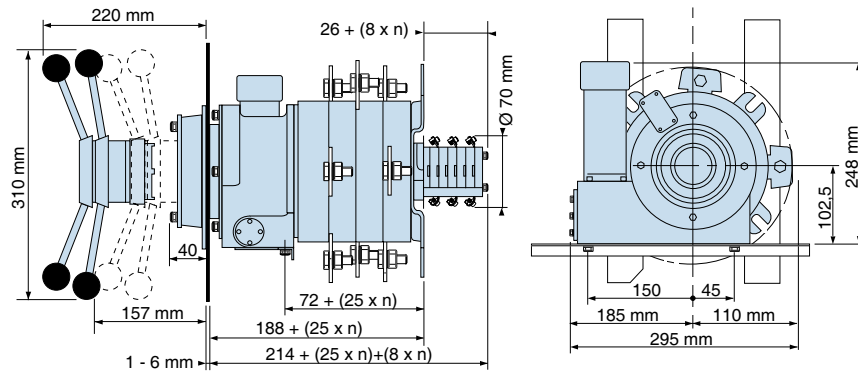
### Dimensions and panel cut-outs

#### 200 A Rating

N = number of active power / auxiliary tiers  
 n = number useful auxiliary tiers  
 (the 26 mm dimension includes 2 neutral tiers)

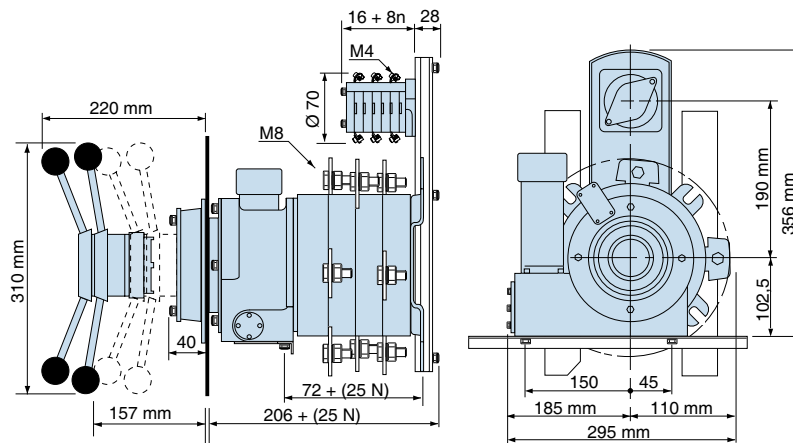
With K16 auxiliary aligned with the shaft

Weight (Kg):  $20.4 + 1.25 N$  (with handle and mounting plate)

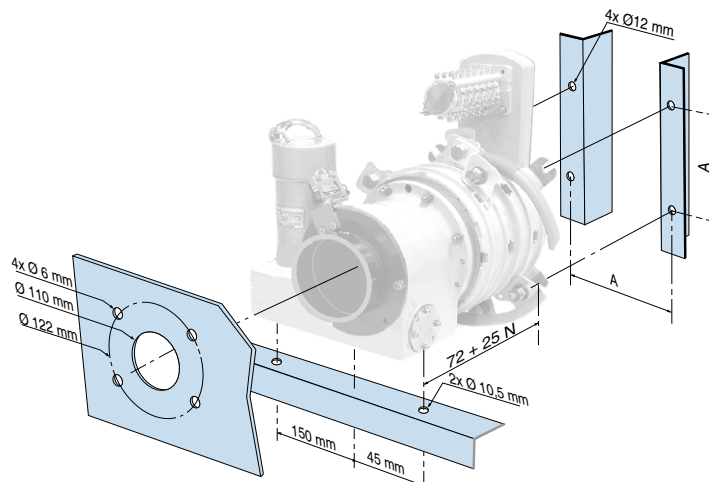


With K16 auxiliary on the countershaft housing

Weight (Kg):  $22.9 + 1.25 N$  (with handle and mounting plate)



### Drilling template



Auxiliary on the shaft

A= 135 x 135

Auxiliary on the countershaft housing

A= 175 x 175



# C400 Snap-action switches

Remote-control units (Ratings 64 A, 125 A, 200A, 400 A)



## Dimensions and panel cut-outs

### 400A Rating

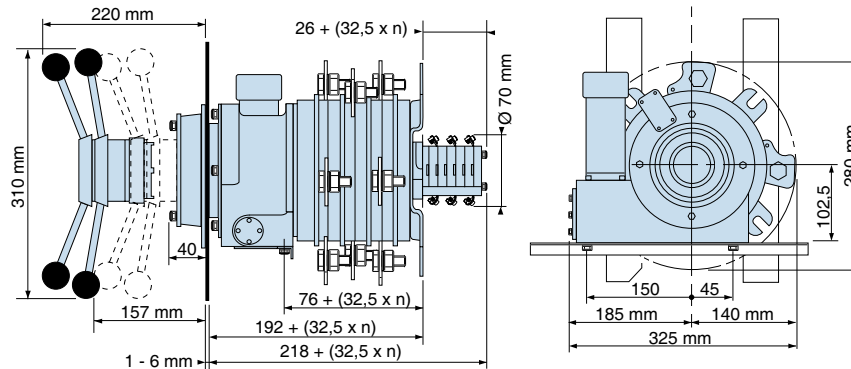
N = number of useful power tiers

n = number useful auxiliary tiers

(the 26 mm dimension includes 2 neutral tiers)

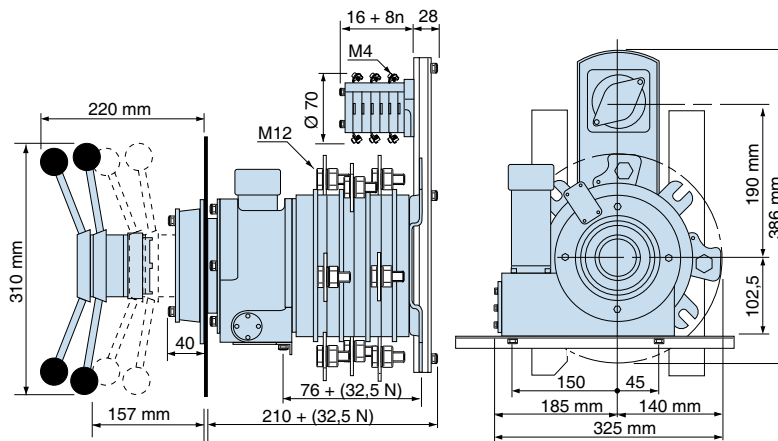
With K16 auxiliary aligned with the shaft

Weight (Kg):  $20.5 + 2.39 \text{ N}$  (with handle and mounting plate)

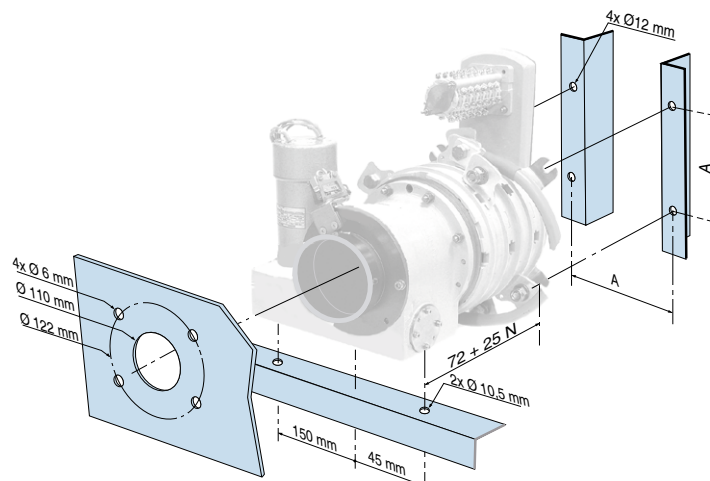


With K16 auxiliary on the countershaft housing

Weight (Kg):  $22.5 + 2.39 \text{ N}$  (with handle and mounting plate)



## Drilling template



Auxiliary on the shaft

A= 135 x 135

Auxiliary on the countershaft housing

A= 175 x 175

# C400 Snap-action switches

## Manual and remote-control units (Ratings 800 A, 1250 A, 1600A)



### Constituent parts

#### Crank

The crank is used as an emergency control for motor-driven units, and as a manual control for units not driven by a motor.

Approximately 16 complete turns are required to arm the spring to rotate the shaft.

#### Windows / mounting plate

The switch index and the positions on the mounting plate are visible through the window fixed on the front panel of the cabinet.

The manual control window allows access for the crank, once plug is removed.

#### Drive motor

Several types of motor can be used:

Rating	Alternating current				Direct current	
	24V	48V	72V	110V	115V/ 60Hz triple-phase	220V/ 50Hz single-phase
800 A	●	●	●	●		●
1250 A	●	●	●	●		●
1600 A	●	●	●	●		●

#### Gearbox

This consists of the following items assembled on a single housing:

- A snap-action mechanism

- A gearbox

Depending on the electrical schematic desired, the gearbox can be fitted with 1 or 2 mechanical stops preventing switching to one or several positions.

Options:

- 1 or 2 crank micro-contacts (opens the circuit as soon as the crank is inserted)

- From 2 to 4 position micro-contacts.

- 1 equipped terminal block depending on the number of position and crank micro-contacts and the type of motor used

#### Electric power assembly

This consists of a stack of several tiers put together and selected according to the schematics of unit (characteristics of a contact element)

Depending on the electric schematic desired, the terminals can be commoned together by tier shunts and inter-shunts (flat, right-angled or tubular shunts of various lengths)

The fixed and moving contacts are fitted with Ag-Ni contact studs to improve the electric performance.

**Note:** The 1250 A and 1600 A rating units are produced by installing two or three 800 A tiers in parallel using tubular shunts.

#### K32 auxiliary

Adapting a K32 auxiliary at the rear is optional. It may have 3, 6, 9, 12 or 15 useful tiers, however, for more than 15, an adaptation on a support chassis can be prepared (contact us)

#### Technical file

Each unit has its own specific alphanumeric part number, according to the various file elements.

- Operating characteristics

Operating current

Voltage

L / R or power factor

Type of the circuit (inductive, resistive)

Load or no-load breaking

Overcurrent (duration, if applicable)

Switching frequency (O.C.O)

Number of tiers

Power and auxiliary (optional)

Unit function

Mounting method (projecting or cabinet)

Various control devices (mounting plate, crank, window / mounting plate, handle window)

- Engraving on mounting plate

Text for labels, designation of prohibited positions A.B.C.D

- Electrical schematic

Power, auxiliary, remote control part.

- Choice of motor

Voltage and type of current, motor protection fuses.

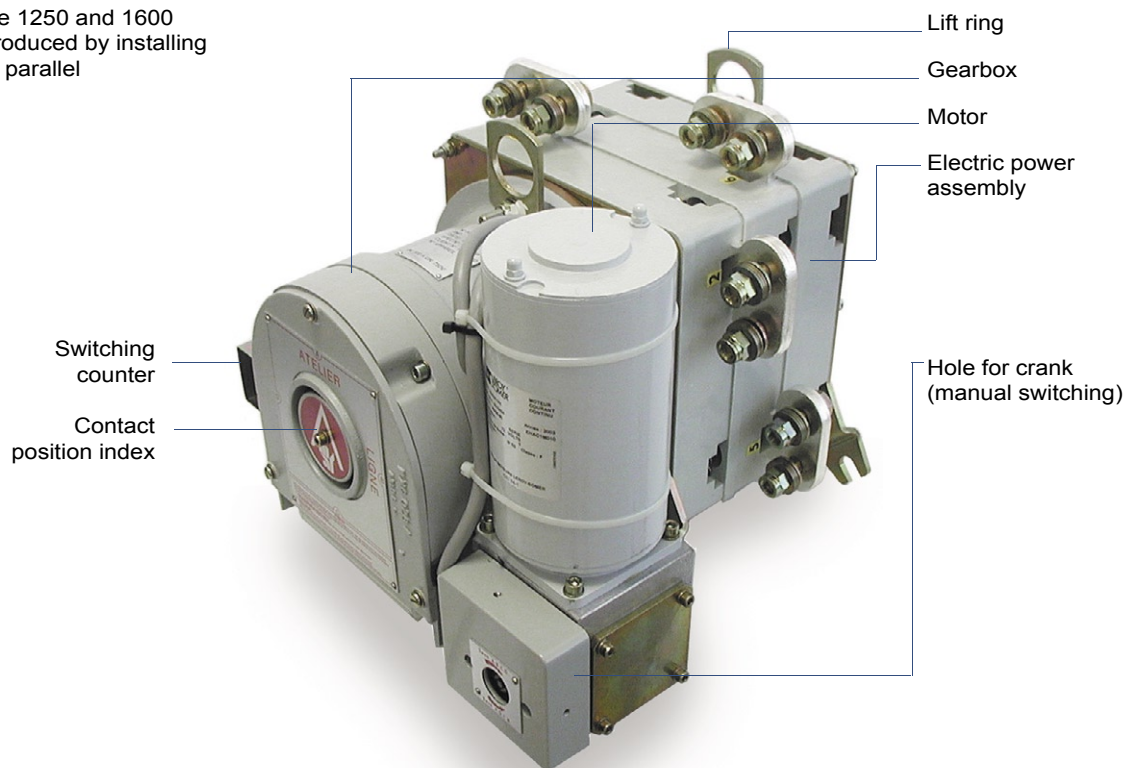
# C400 Snap-action switches

Manual and remote-control units (Ratings 800 A, 1250 A, 1600A)

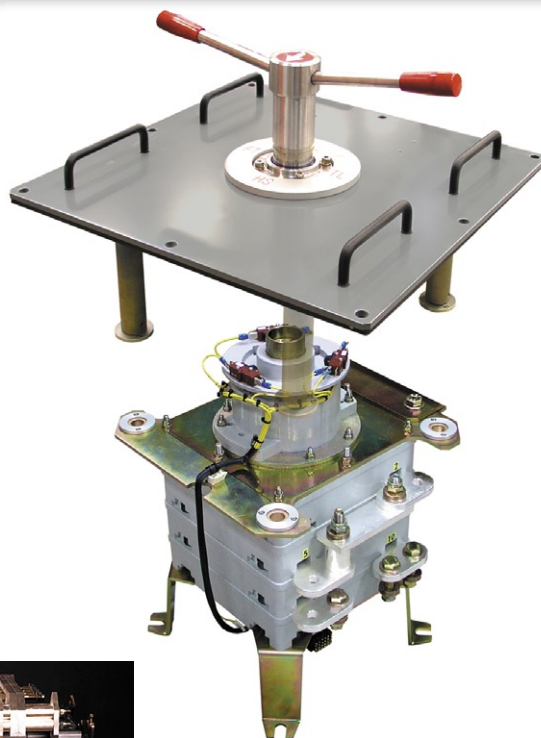


## Constituent parts

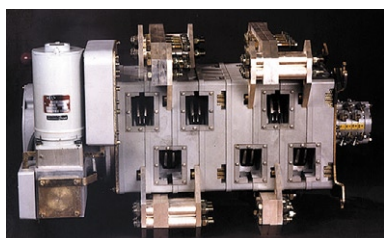
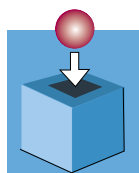
Reminder: the 1250 and 1600 ratings are produced by installing 2 or 3 tiers in parallel



## Special units



K 800 for manual control, for railway application.



Contact us for special units, specific schematics, adapted handles, special mechanisms, mounting in cabinet... up to 4000 A

# C400 Snap-action switches

Manual and remote-control units (Ratings 800 A, 1250 A, 1600A)



## Dimensions and panel cut-outs

### 800A Rating

N = number of useful power tiers

n = number of useful auxiliary tiers

(the 26 mm dimension includes 2 neutral tiers)

Weight (Kg):

(with window, crank, mounting plate and for most common schematics)

examples:  
double-pole units

K800 N = 2

K1250 N = 4

K1600 N = 6

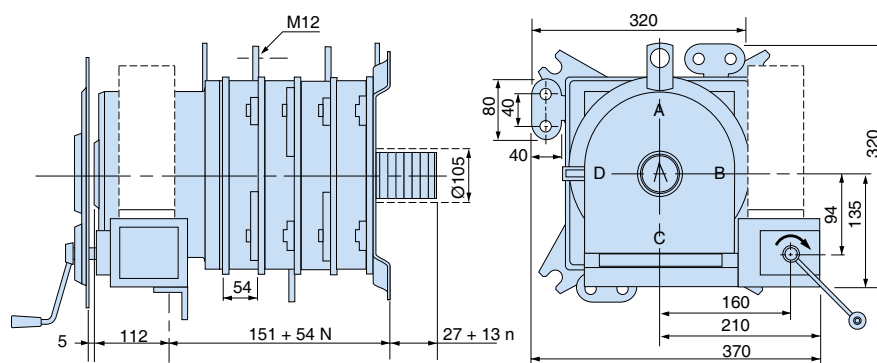
### Manually controlled units with K32 auxiliary aligned with the shaft

Rating	Weight of unit without electrical tiers	Weight of the electrical tiers (per type of tier) x N			
K800	28,5	7.1 N	6.7 N	6 N	5.4 N
K1250	28,5	7.6 N	7.2 N	6.4 N	5.7 N
K1600	28,5	7.8 N	7.4 N	6.5 N	5.75 N

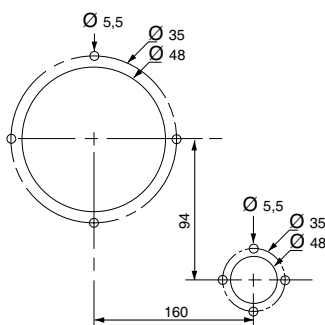
### Remote-controlled units with K32 auxiliary aligned with the shaft

Rating	Weight of unit without electrical tiers	Weight of the electrical tiers (per type of tier) x N			
K800	32,5	7.1 N	6.7 N	6 N	5.4 N
K1250	32,5	7.6 N	7.2 N	6.4 N	5.7 N
K1600	32,5	7.8 N	7.4 N	6.5 N	5.75 N

### Dimensions: Manual or motor-driven units



### Front panel drilling template



### Drilling template for supports

