

Data Sheets

Rotary Switches

Type CRS
Knobs for Rotary Switches

Data Sheet

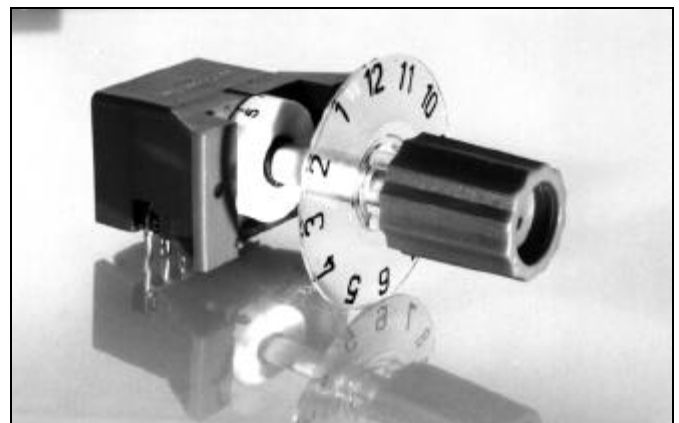
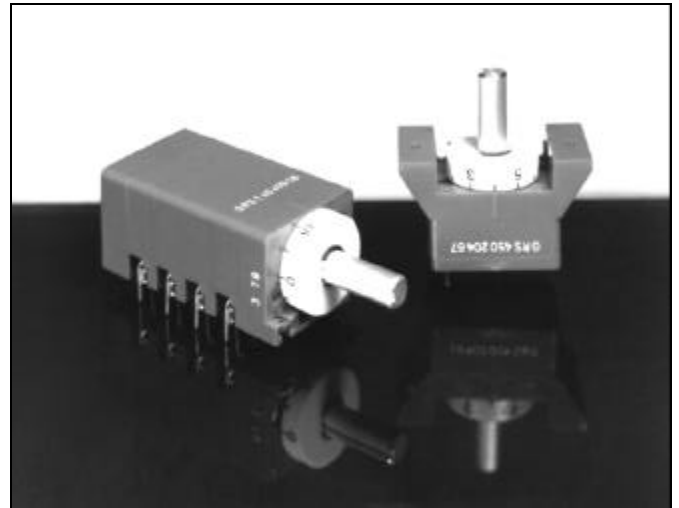
Rotary Switches, Type CRS

CRS Rotary Switches are supplied as coding or as stepping devices having 8, 10, 12, 16 or 24 positions; suitable for horizontal or vertical PCB or frontpanel mounting.

Up to 14 contacts are possible per plane; two of which are used as poles. Each switch can be configured with make-before-break or break-before-make contacts and can be assembled with a combination of the two types of contact.

Operation is via a 6 mm diameter anodised aluminium spindle.

End-stops are available for any required number of positions.



Technical Data

Max. current 0,1 A
Max. voltage 50 V=/50 V



also suitable for dry switching.

Max. power rating 5 W/5 VA
Insulation resistance $> 10^4 \text{ M}\Omega$
Overall resistance (new state) $< 100 \text{ M}\Omega$
Test voltage 500 V
Intercontact capacitance ca. 1.5 pF

Operating moment
at 8 x 45° switching angle ap. 8.0 Ncm
at 10 x 36° switching angle ap. 10.0 Ncm
at 12 x 30° switching angle ap. 8.5 Ncm
at 16 x 22.5° switching angle ap. 7.0 Ncm
at 24 x 15° switching angle ap. 5.0 Ncm

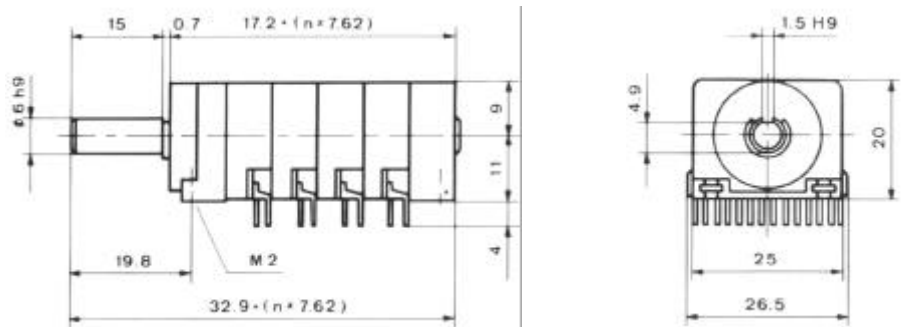
Life expectancy at 5 W/50 V,
resistive load. 100,000 operations

Ambient temperature -25 to +70°C
IEC climatic category 68-1 25/070/21
Materials: Housing Polycarbonate, red
PC substrate Epoxy-glass
Traces Copper 1.8 μm hard gold plated over 2 μm nickel
Spring Bronze Cu Sn 6, Contact Au Ag Ni 71/26/3 rolled to a thickness of 10 μm
Soldering Suitable for mechanical soldering (using a protective foil where necessary)

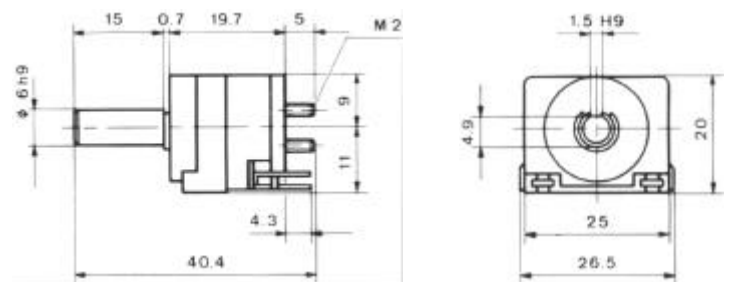
Specifications are subject to change without notice.

Product Overview and Dimensions

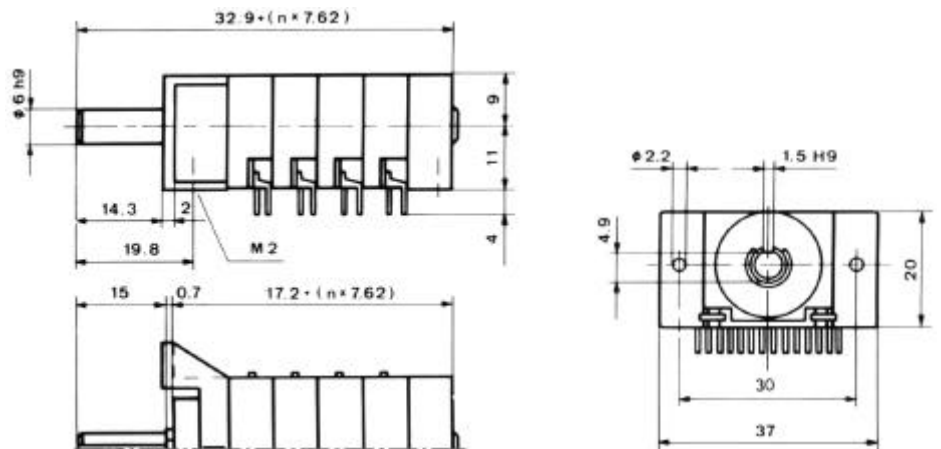
Shape 1:
For horizontal PCB mounting



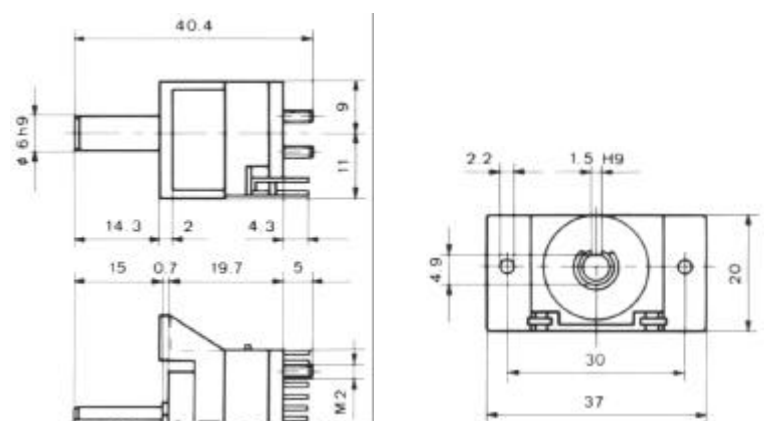
Shape 2:
For vertical PCB mounting



Shape 3:
For horizontal PCB and front panel mounting

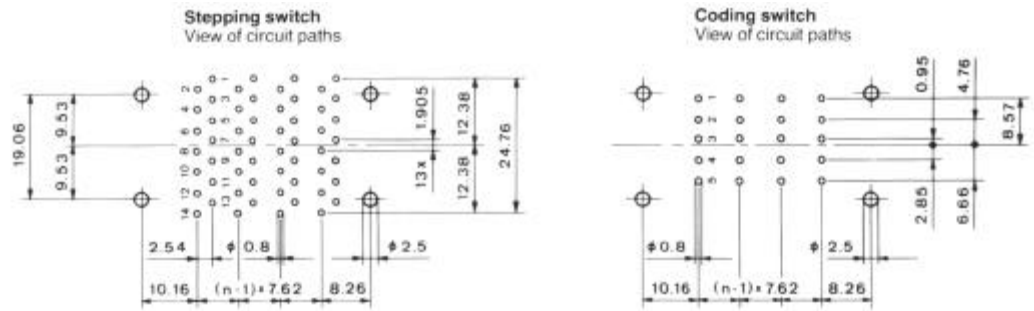


Shape 4:
For vertical PCB and front panel mounting

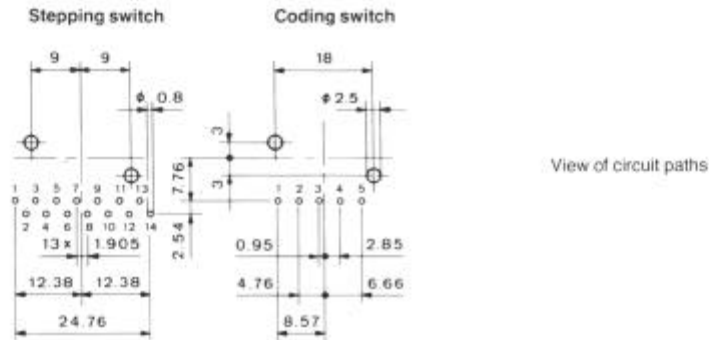


Hole pattern

Style 1 + 3



Style 2 + 4



Order Number Configuration

Type CRS ①

Shape ②	Switching function ③	Active poles	Number of planes	Code ④	Active switch positions ⑤	Figure dial ⑥		Contacts ⑦		
						b-b-m	m-b-b			
1 3	BCD 10-position 0-9 or 1-10	4 8 12 16	1 2 3 4	4 5 6 7	02 End-stop	5	1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9 1-10	6	-	8
					03 End-stop					
					04 End-stop					
					05 End-stop					
2 4	BCD compl. 10-position 0-9 or 1-10	4	1	4	06 End-stop	5	1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9 1-10	6	-	8
					07 End-stop					
					08 End-stop					
					09 End-stop					
1 3	Hexadecimal 16-position 0-9A-F or 0-15	4 8 12 16	1 2 3 4	4 5 6 7	10 End-stop	5	0-7 0-8 0-9 0-A 0-B 0-C 0-D 0-E 0-F 0-15	6	-	8
					11 End-stop					
					12 End-stop					
					13 End-stop					
2 4	Hexadecimal compl. 16-position 0-9A-F or 0-15	4	1	4	14 End-stop	5	0-7 0-8 0-9 0-A 0-B 0-C 0-D 0-E 0-F 0-15	6	-	8
					15 End-stop					
					16 End-stop					
					00 End-stop					

Order Number Configuration

Type CRS ①

Shape ②	Switching function ③	Active poles	Number of planes	Code ④	Active switch positions ⑤	Figure dial ⑥				Contacts ⑦		
						b-b-m	m-b-b					
1 3	Step-up switch 8-position 0-7 or 1-8	20	1	1	1	02 End-stop	0-1	5	1-2	6	7	8
			2	2	2	03 End-stop	0-2		1-3			
			3	3	3	04 End-stop	0-3		1-4			
			4	4	4	05 End-stop	0-4		1-5			
2 4	Step-up switch 8-position 0-7 or 1-8	20	1	1	1	06 End-stop	0-5		1-6			
			2	2	2	07 End-stop	0-6		1-7			
			3	3	3	08	0-7		1-8			
			4	4	4	00 End-stop	0-7		1-8			
1 3	Step-up switch 10-position 0-9 or 1-10	25	1	1	1	02 End-stop	0-1	5	1-2	6	7	8
			2	2	2	03 End-stop	0-2		1-3			
			3	3	3	04 End-stop	0-3		1-4			
			4	4	4	05 End-stop	0-4		1-5			
						06 End-stop	0-5		1-6			
						07 End-stop	0-6		1-7			
2 4	Step-up switch 10-position 0-9 or 1-10	25				08 End-stop	0-7		1-8			
						09 End-stop	0-8		1-9			
						10	0-9		1-10			
						00 End-stop	0-9		1-10			

Ordering Key

①	②	③	④	⑤	⑥	⑦
C	R	S				

- ① Type
- ② Shape
- ③ Switching function
- ④ Active poles
- ⑤ Active switch positions
- ⑥ Figure dial
- ⑦ Contacts (Break-before-make/Make before break)

Order number (example)

Rotary switch CRS, shape 2, code 20, 1 pole, 6 active switch positions, figure dial with zero, break-before-make contacts

C	R	S	2	2	0	2	0	6	5	7
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Order Number Configuration

Type CRS ①

Shape ②	Switching function ③	Active poles	Number of planes	Code ④	Active switch positions ⑤	Figure dial ⑥				Contacts ⑦	
						b-b-m	m-b-b				
1 3	Step-up switch 24-position 0-23 or 1-24	1	2	1	13 End-stop	0-12	5	1-13	6	7	8
		2	4	2	14 End-stop	0-13	1-14				
1 3	Step-up switch 12-position 0-11 or 1-12	1	1	1	15 End-stop	0-14		1-15		7	8
		2	2	2	16 End-stop	0-15	1-16				
1 3	Step-up switch 12-position 0-11 or 1-12	3	3	3	17 End-stop	0-16	1-17			7	8
		4	4	4	18 End-stop	0-17	1-18				
2 4	Step-up switch 12-position 0-11 or 1-12	1	1	1	19	0-18	1-19			7	8
		1	1	1	20 End-stop	0-19	1-20				
2 4	Step-up switch 12-position 0-11 or 1-12	1	1	1	21 End-stop	0-20	1-21			7	8
		1	1	1	22 End-stop	0-21	1-22				
1 3	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	23 End-stop	0-22	1-23			7	8
		4	2	4	24	0-23	1-24				
1 3	Step-up switch 2 x 6-position 0-5 or 1-6	6	3	6	02 End-stop	0-1	5	1-2	6	7	8
		8	4	8	03 End-stop	0-2	1-3				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	04 End-stop	0-3	1-4			7	8
		2	1	2	05 End-stop	0-4	1-5				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	06 End-stop	0-5	1-6			7	8
		2	1	2	07 End-stop	0-6	1-7				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	08 End-stop	0-7	1-8			7	8
		2	1	2	09 End-stop	0-8	1-9				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	10 End-stop	0-9	1-10			7	8
		2	1	2	11 End-stop	0-10	1-11				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	12	0-11	1-12			7	8
		2	1	2	00 End-stop	0-11	1-12				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	02 End-stop	0-1	5	1-2	6	7	8
		2	1	2	03 End-stop	0-2	1-3				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	04 End-stop	0-3	1-4			7	8
		2	1	2	05 End-stop	0-4	1-5				
2 4	Step-up switch 2 x 6-position 0-5 or 1-6	2	1	2	06 End-stop	0-5	1-6			7	8
		2	1	2	06 End-stop	0-5	1-6				

Ordering Key

①	②	③	④	⑤	⑥	⑦
C	R	S				

- ① Type
- ② Shape
- ③ Switching function
- ④ Active poles
- ⑤ Active switch positions
- ⑥ Figure dial
- ⑦ Contacts (Break-before-make/Make before break)

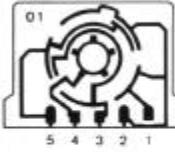
Order number (example)

Rotary switch CRS, shape 1, code 50, 2 poles, 2 active switch positions, figure dial with zero, break-before-make contacts

C	R	S	1	5	0	2	0	2	5	7
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Coding tables (Connection numbers)


Code 01



Switch position	Pole connected to:				C
	1	2	4	8	
0	1				
1	2	■			
2	3		■		
3	4	■	■		
4	5			■	
5	6	■			
6	7		■		
7	8	■	■		
8	9			■	
9	10	■			

Pin-out: 4 5 2 1 | 3

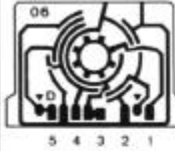
Code 02



Switch position	Pole connected to:				C
	1	2	4	8	
0	1				
1	2	■			
2	3		■		
3	4	■	■		
4	5			■	
5	6	■			
6	7		■		
7	8	■	■		
8	9			■	
9	10	■			

Pin-out: 4 5 1 3 | 2


Code 06



Switch position	Pole connected to:				C
	1	2	4	8	
0	0				
1	1	■			
2	2		■		
3	3	■	■		
4	4			■	
5	5	■			
6	6		■		
7	7	■	■		
8	8			■	
9	9	■			
A	10		■		
B	11	■			
C	12		■		
D	13	■	■		
E	14			■	
F	15	■			

Pin-out: 1 2 5 4 | 3

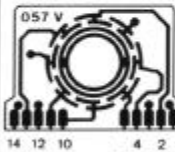
Code 15



Switch position	Pole connected to:				C
	1	2	4	8	
0	0	■			
1	1		■		
2	2	■	■		
3	3			■	
4	4	■			
5	5		■		
6	6	■	■		
7	7			■	
8	8	■			
9	9		■		
A	10	■			
B	11		■		
C	12	■	■		
D	13			■	
E	14	■			
F	15		■		

Pin-out: 2 4 5 3 | 1

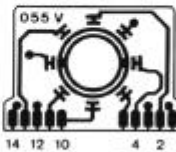
Code 20
make-before-break



Switch position	Pole connected to:								C
	1	2	3	4	5	6	7	8	
0	1	■							
1	2		■						
2	3			■					
3	4				■				
4	5					■			
5	6						■		
6	7							■	
7	8								■

Pin-out: 2 3 4 5 10 11 12 13 | 14

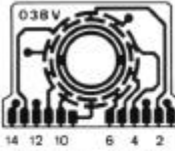
Code 20
break-before-make



Switch position	Pole connected to:								C
	1	2	3	4	5	6	7	8	
0	1	■							
1	2		■						
2	3			■					
3	4				■				
4	5					■			
5	6						■		
6	7							■	
7	8								■

Pin-out: 2 3 4 5 10 11 12 13 | 14

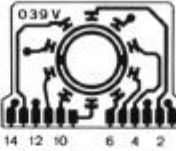
Code 25
make-before-break



Switch position	Pole connected to:										C
	1	2	3	4	5	6	7	8	9	10	
0	1	■									
1	2		■								
2	3			■							
3	4				■						
4	5					■					
5	6						■				
6	7							■			
7	8								■		
8	9									■	
9	10										■

Pin-out: 2 3 4 5 6 9 10 11 12 13 | 14

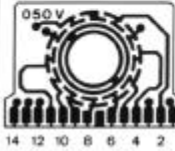
Code 25
break-before-make



Switch position	Pole connected to:										C
	1	2	3	4	5	6	7	8	9	10	
0	1	■									
1	2		■								
2	3			■							
3	4				■						
4	5					■					
5	6						■				
6	7							■			
7	8								■		
8	9									■	
9	10										■

Pin-out: 2 3 4 5 6 9 10 11 12 13 | 14

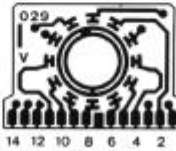
Code 40
make-before-break



Switch position	Pole connected to:												C
	1	2	3	4	5	6	7	8	9	10	11	12	
0	1	■											
1	2		■										
2	3			■									
3	4				■								
4	5					■							
5	6						■						
6	7							■					
7	8								■				
8	9									■			
9	10										■		
10	11											■	
11	12												■

Pin-out: 1 2 3 4 5 6 8 9 10 11 12 13 | 14

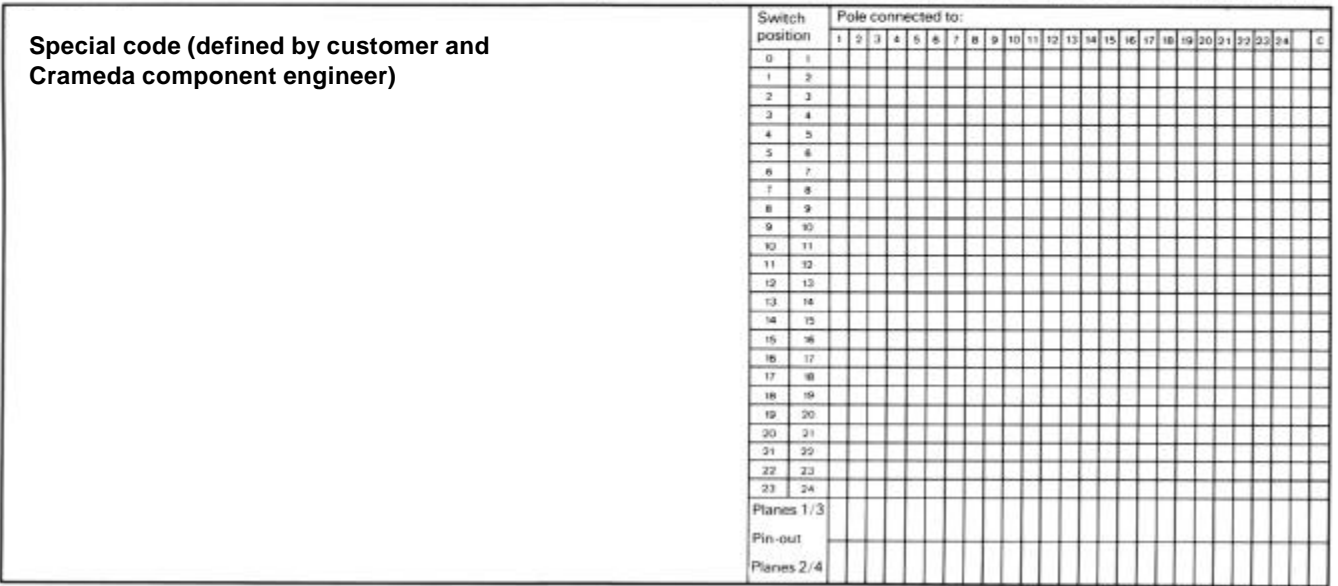
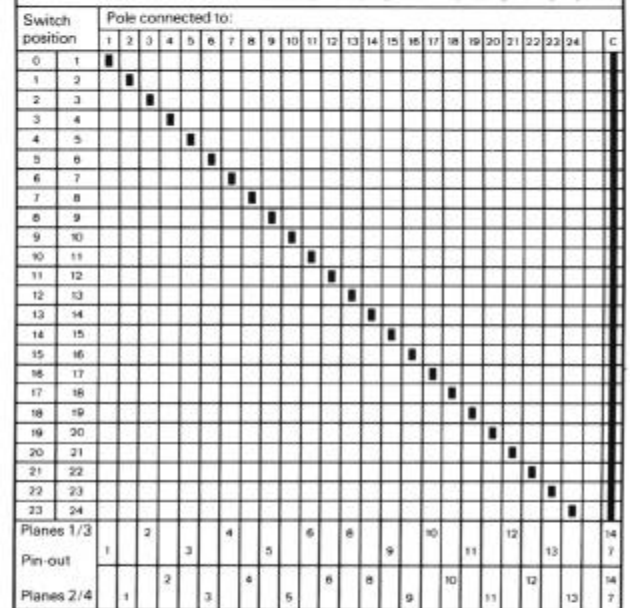
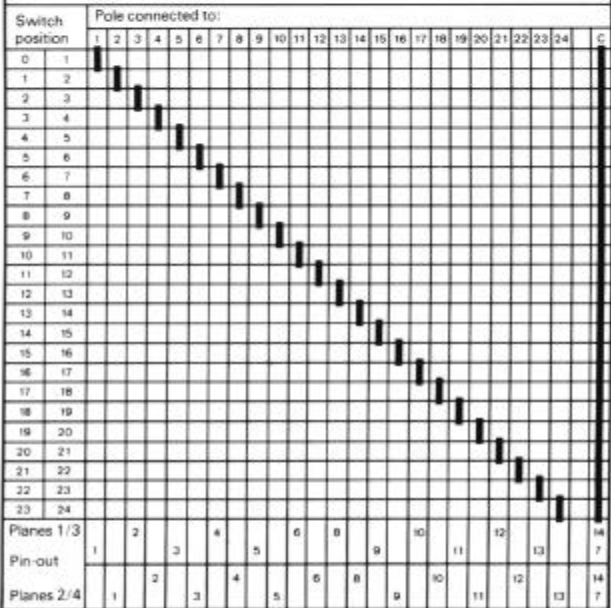
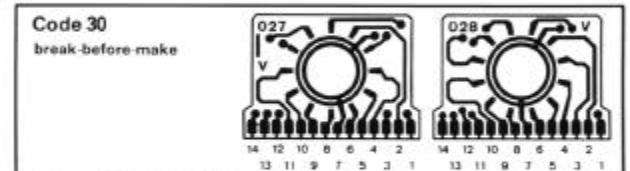
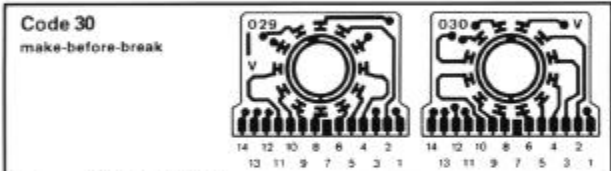
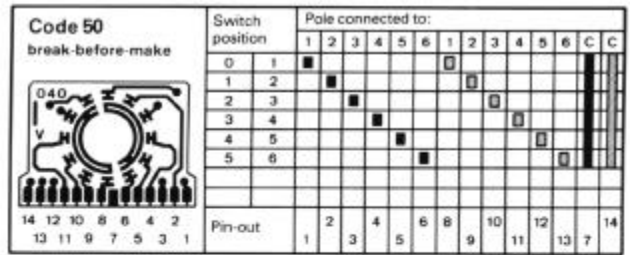
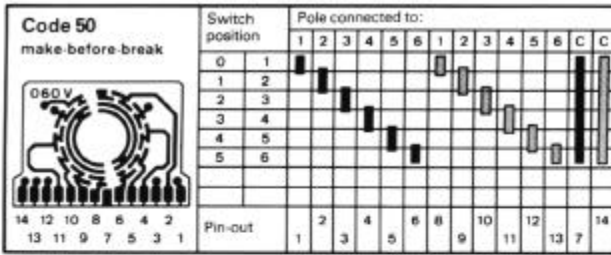
Code 40
break-before-make



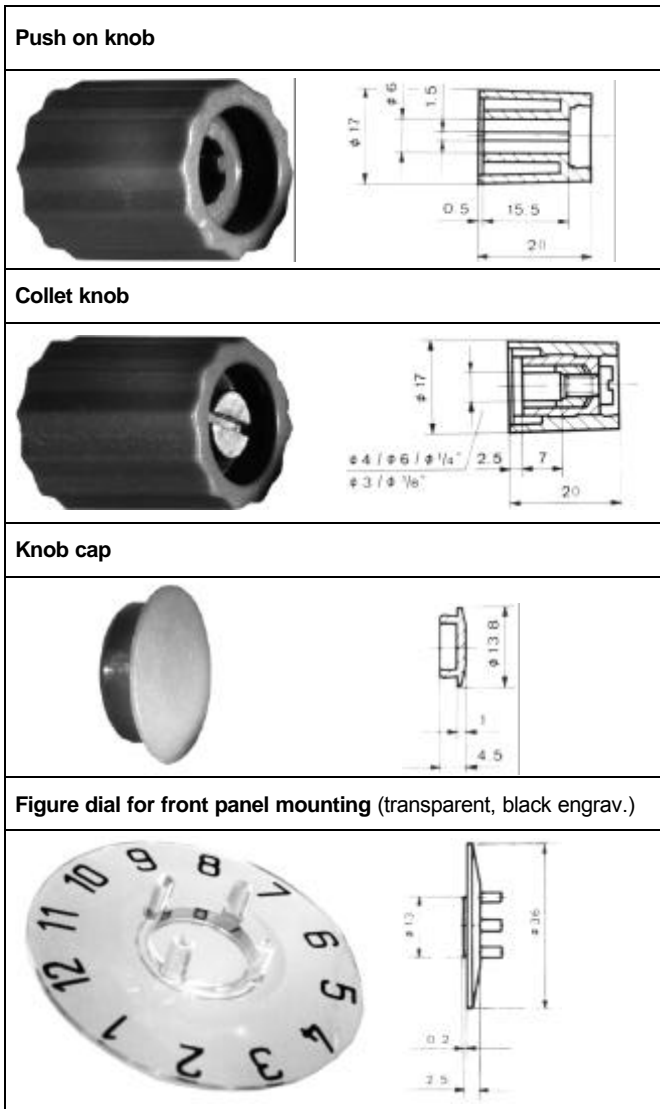
Switch position	Pole connected to:												C
	1	2	3	4	5	6	7	8	9	10	11	12	
0	1	■											
1	2		■										
2	3			■									
3	4				■								
4	5					■							
5	6						■						
6	7							■					
7	8								■				
8	9									■			
9	10										■		
10	11											■	
11	12												■

Pin-out: 1 2 3 4 5 6 8 9 10 11 12 13 | 14

Coding tables (Connection numbers)



Knobs and Accessories



Item code ①	Collet code ②	Colour/Engraving code ③	
826	0	black 00 red 02 grey 08	–
826	1 = Ø 4 mm 2 = Ø 6 mm 3 = Ø 1/4" 4 = Ø 3 mm 5 = Ø 1/8"	black 00 red 02 grey 08	–
828	0	black 00 red 02 yellow 04 green 05 blue 06 grey 08	–
827	0	–	plain 00 0–9 01 1–10 02 0–11 03 1–12 04 0–15 05 0–23 06 1–24 07 0–9/A–F 08 0–7 14 1–8 15

Ordering Key

① ② ③



- ① Item
- ② Collet code
- ③ Colour/Engraving code



Order Number (example)

Push on knob, red

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