

# Data Sheets

# Rotary Switches

Type CRS  
Knobs for Rotary Switches

# Data Sheet

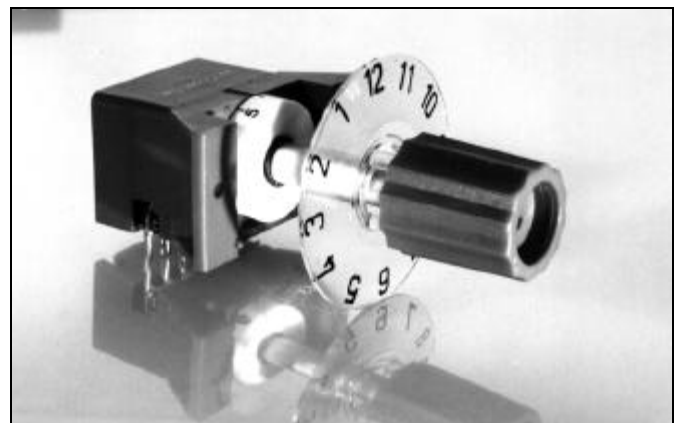
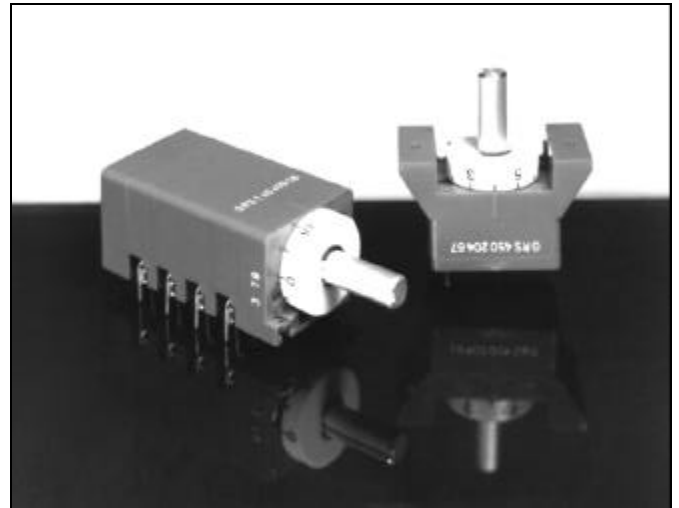
## Rotary Switches, Type CRS

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

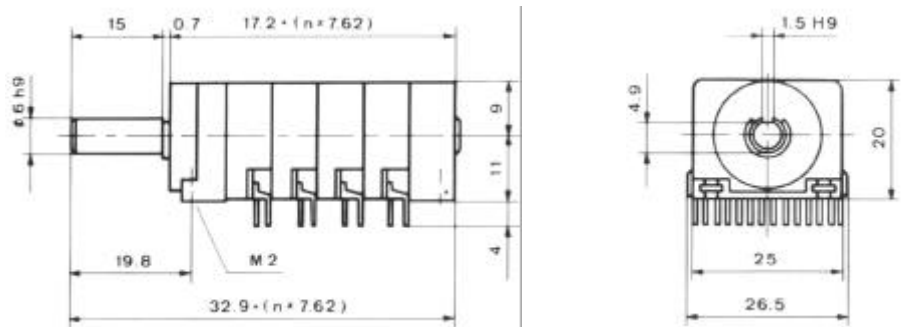
Operating moment  
at 8 x 45° switching angle ap. 8.0 Ncm  
at 10 x 36° switching angle ap. 10.0 Ncm  
at 12 x 30° switching angle ap. 8.5 Ncm  
at 16 x 22.5° switching angle ap. 7.0 Ncm  
at 24 x 15° switching angle ap. 5.0 Ncm

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

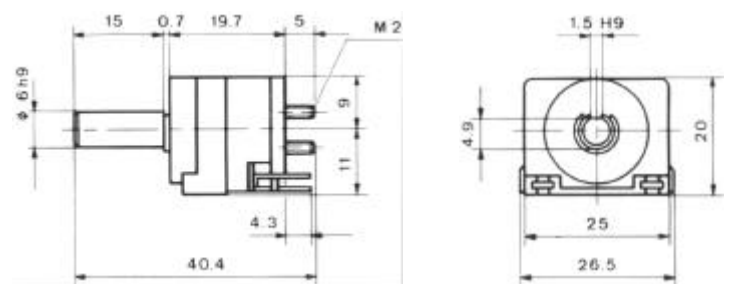
Ambient temperature -25 to +70°C  
IEC climatic category 68-1 25/070/21  
Materials: Housing Polycarbonate, red  
PC substrate Epoxy-glass  
Traces Copper 1.8  $\mu\text{m}$  hard gold plated over 2  $\mu\text{m}$  nickel  
Spring Bronze Cu Sn 6, Contact Au Ag Ni 71/26/3 rolled to a thickness of 10 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

## Product Overview and Dimensions

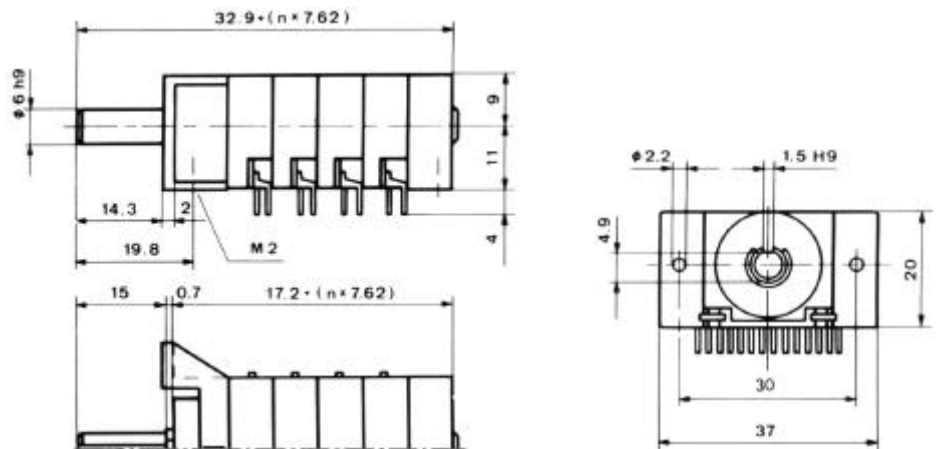
**Shape 1:**  
For horizontal PCB mounting



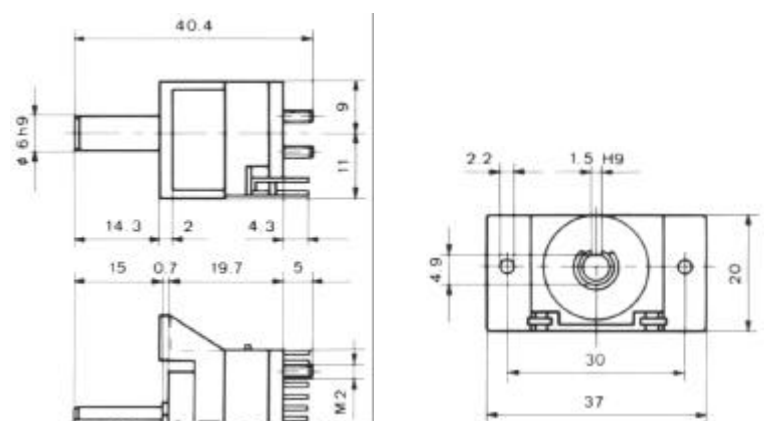
**Shape 2:**  
For vertical PCB mounting



**Shape 3:**  
For horizontal PCB and front panel mounting

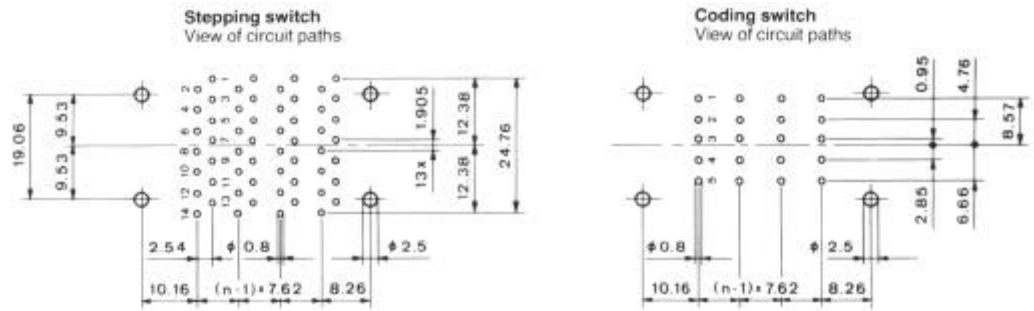


**Shape 4:**  
For vertical PCB and front panel mounting

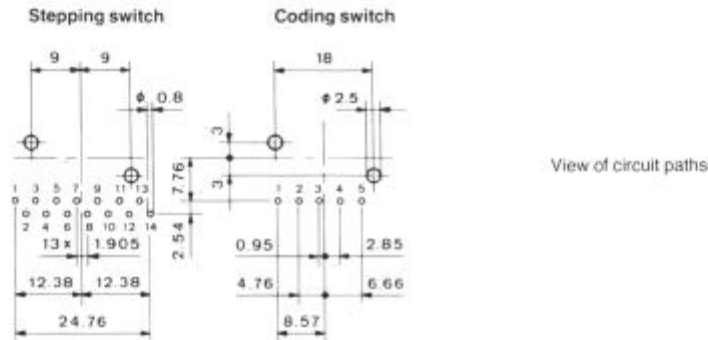


## Hole pattern

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	01	4	1	4	02 End-stop 03 End-stop 04 End-stop 05 End-stop 06 End-stop 07 End-stop 08 End-stop 09 End-stop 10 End-stop 00 End-stop	5	1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9 1-10 1-10	6	-	8
			8	2	5						
			12	3	6						
			16	4	7						
2 4	BCD compl. 10-position 0-9 or 1-10	02	4	1	4	02 End-stop 03 End-stop 04 End-stop 05 End-stop 06 End-stop 07 End-stop 08 End-stop 09 End-stop 10 End-stop 00 End-stop	5	1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9 1-10 1-10	6	-	8
			4	1	4						
			8	2	5						
			12	3	6						
1 3	Hexadecimal 16-position 0-9A-F or 0-15	06	4	1	4	08 End-stop 09 End-stop 10 End-stop 11 End-stop 12 End-stop 13 End-stop 14 End-stop 15 End-stop 16 End-stop 00 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
			8	2	5						
			12	3	6						
			16	4	7						
2 4	Hexadecimal compl. 16-position 0-9A-F or 0-15	15	4	1	4	08 End-stop 09 End-stop 10 End-stop 11 End-stop 12 End-stop 13 End-stop 14 End-stop 15 End-stop 16 End-stop 00 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
			8	2	5						
			12	3	6						
			16	4	7						
2 4	Hexadecimal compl. 16-position 0-9A-F or 0-15	15	4	1	4	08 End-stop 09 End-stop 10 End-stop 11 End-stop 12 End-stop 13 End-stop 14 End-stop 15 End-stop 16 End-stop 00 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
			8	2	5						

## 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	7	8			
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	1	1	1	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			
					15 End-stop	0-14		1-15			
					16 End-stop	0-15		1-16			
					17 End-stop	0-16		1-17			
					18 End-stop	0-17		1-18			
					19	0-18		1-19			
					20 End-stop	0-19		1-20			
					21 End-stop	0-20		1-21			
					22 End-stop	0-21		1-22			
					23 End-stop	0-22		1-23			
					24	0-23		1-24			
1 3	Step-up switch 12-position 0-11 or 1-12	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			
					08 End-stop	0-7		1-8			
					09 End-stop	0-8		1-9			
					10 End-stop	0-9		1-10			
					11 End-stop	0-10		1-11			
					12	0-11		1-12			
					00 End-stop	0-11		1-12			
2 4	Step-up switch 12-position 0-11 or 1-12	1	1	1	02 End-stop	0-1	5	1-2	6	7	8
					03 End-stop	0-2		1-3			
					04 End-stop	0-3		1-4			
					05 End-stop	0-4		1-5			
					06 End-stop	0-5		1-6			
					07 End-stop	0-6		1-7			
					08 End-stop	0-7		1-8			
					09 End-stop	0-8		1-9			
					10 End-stop	0-9		1-10			
					11 End-stop	0-10		1-11			
					12	0-11		1-12			
					00 End-stop	0-11		1-12			
1 3	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
		4	2	4	03 End-stop	0-2		1-3			
		6	3	6	04 End-stop	0-3		1-4			
		8	4	8	05 End-stop	0-4		1-5			
					06 End-stop	0-5		1-6			
					02 End-stop	0-1	5	1-2	6	7	8
					03 End-stop	0-2		1-3			
					04 End-stop	0-3		1-4			
					05 End-stop	0-4		1-5			
					06 End-stop	0-5		1-6			
					02 End-stop	0-1	5	1-2	6	7	8
					03 End-stop	0-2		1-3			
					04 End-stop	0-3		1-4			
					05 End-stop	0-4		1-5			
					06 End-stop	0-5		1-6			
					02 End-stop	0-1	5	1-2	6	7	8
					03 End-stop	0-2		1-3			
					04 End-stop	0-3		1-4			
					05 End-stop	0-4		1-5			
					06 End-stop	0-5		1-6			

### Ordering Key

①	②	③	④	⑤	⑥	⑦
C	R	S				

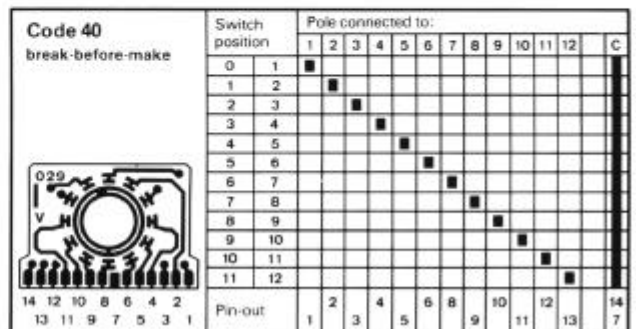
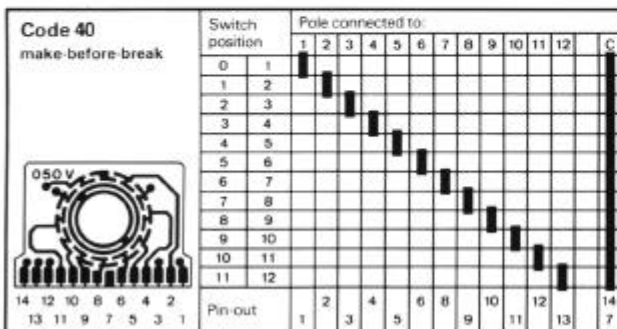
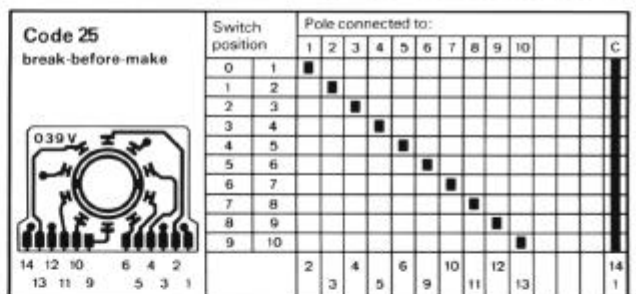
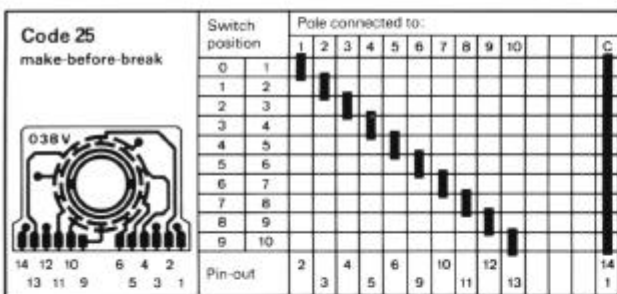
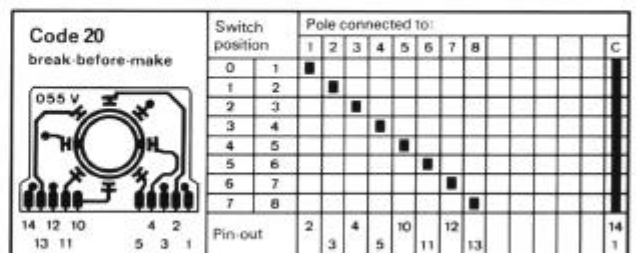
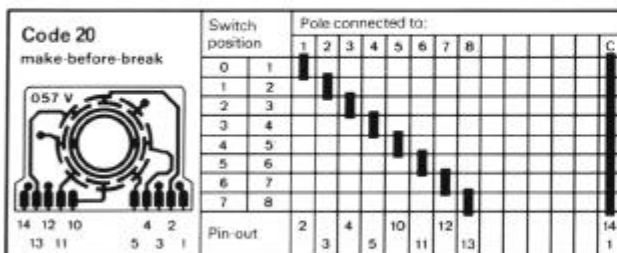
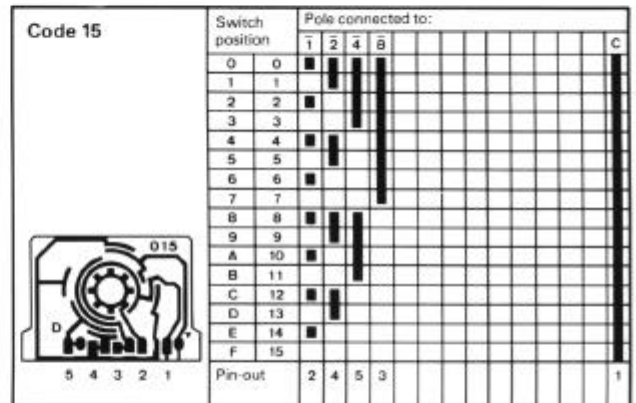
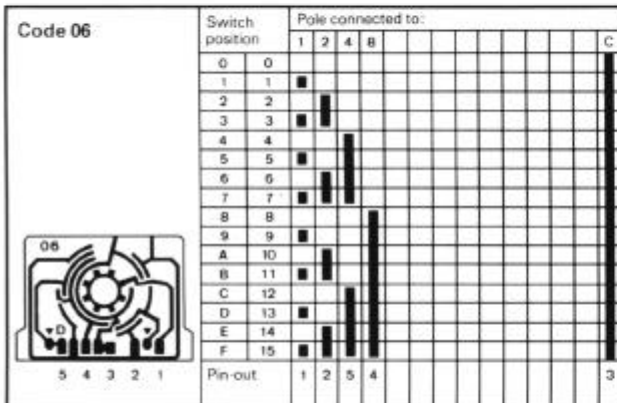
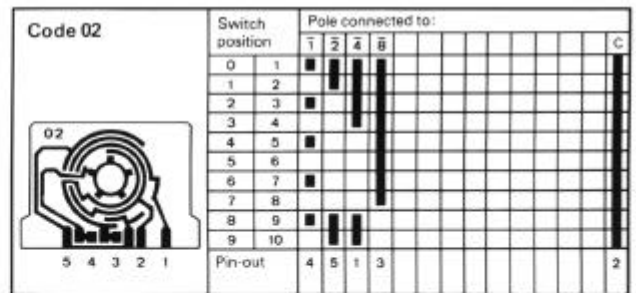
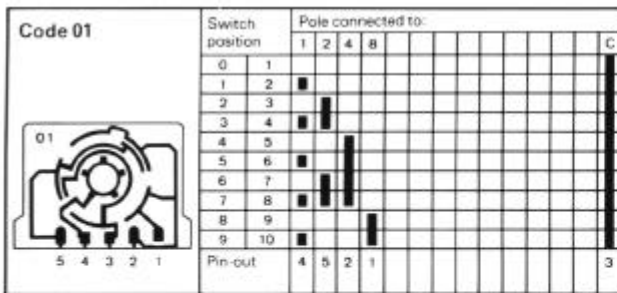
- ① Type
- ② Shape
- ③ Switching function
- ④ Active poles
- ⑤ Active switch positions
- ⑥ Figure dial
- ⑦ Contacts (Break-before-make/Make before break)

### Order number (example)

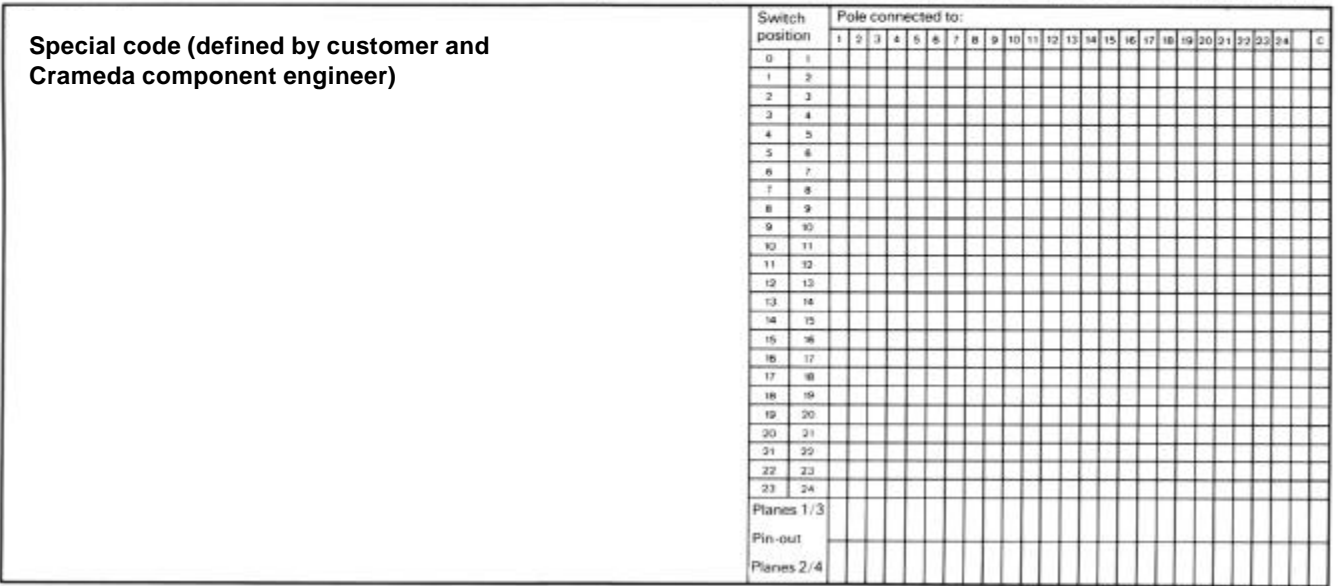
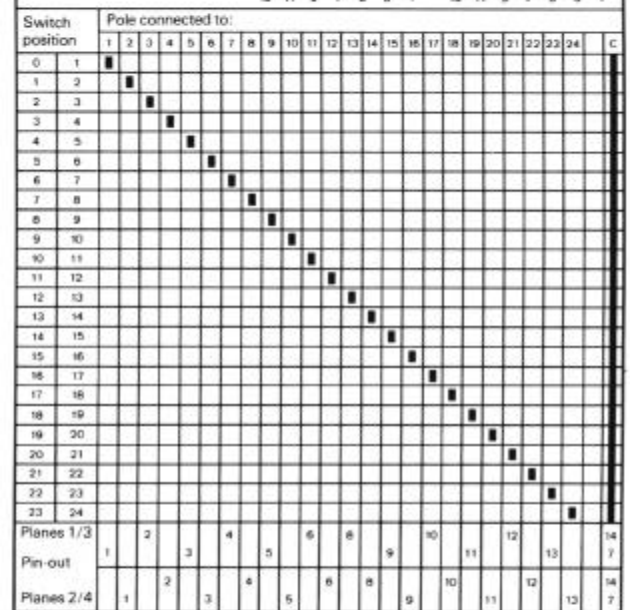
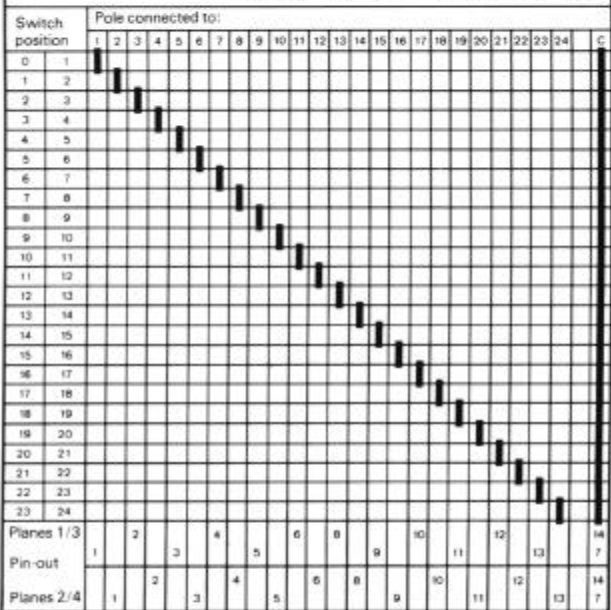
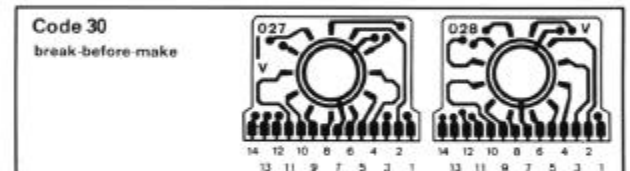
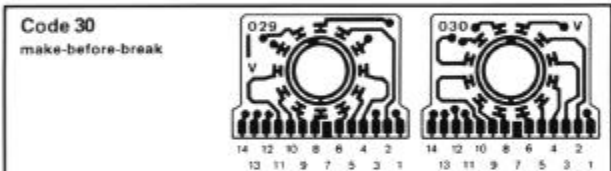
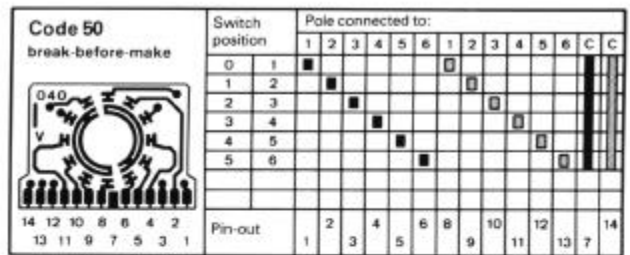
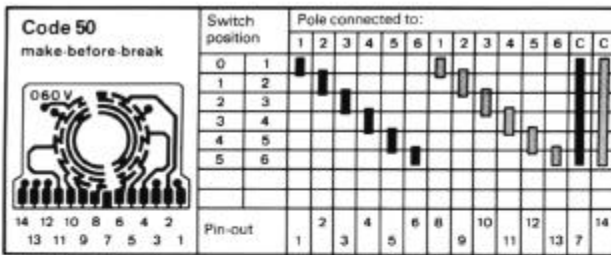
Rotary switch CRS, shape 1, code 50, 2 poles,  
2 active switch positions, figure dial with zero,  
break-before-make contacts

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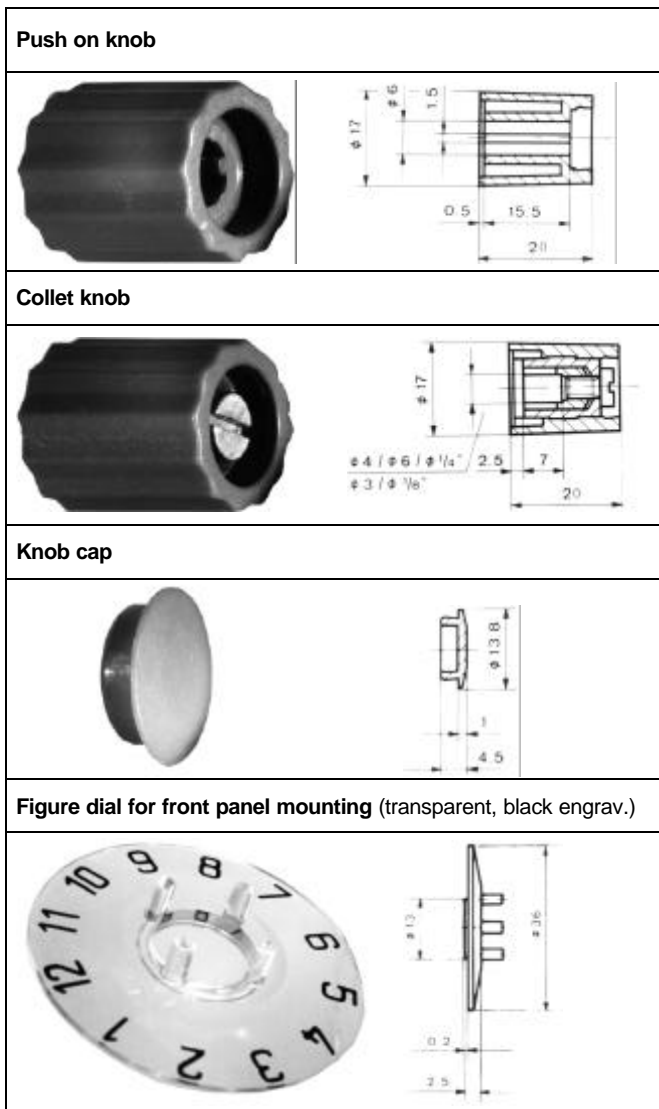
## Coding tables (Connection numbers)



### 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



Special engraving of the figure dial (max. of 24 characters) available on request

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