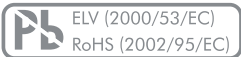


Coded Switches Type 07 & C07A

- 2 to 16 positions BCD, hex or gray coding
- For rugged environments
- Up to 3.5 Ncm switching torque
- Gold plated contacts
- THT (reflow version on request)
- Washable (sealed contact system)
- Optional IP68 front panel sealing (up to 5 bar)
- Operating temperature range: -40 to +85°C
- Various options and customization



Standard Product Variety

- Vertical or horizontal mounting
- Bushing style
- BCD, hex or gray coding
- Number of positions
- 3.2 or 3.5 Ncm switching torque
- With end stop or endless rotating
- IP60 or IP68 front panel sealing
- Various shaft styles and lengths

Possible Customization

- Shaft dimensions and shape
- Bushing, mounting
- Switching torque
- Others

Typical Applications

- Frequency and channel selection for two way radios
- Target aiming devices
- Aircraft transponders
- Medical equipment
- Industrial automation

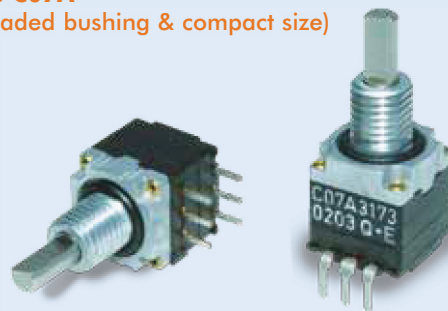
Examples of Customization

- Stainless steel bushing with 5 bar sealing
- 1/4" double-D shape shaft with tap screw
- High/low torque function "on/off"

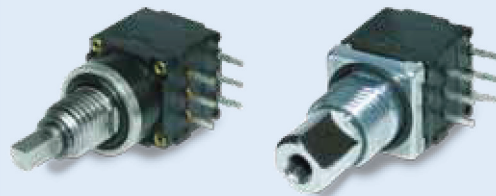
Type 07



Type C07A (threaded bushing & compact size)



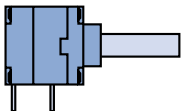
Examples of Customization



Coded Switches Type 07 & C07A

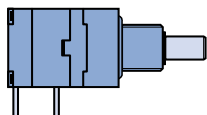
Preference Types Selection Chart¹

07 Horizontal



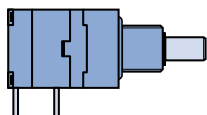
Basic Style

Coding	Switching Mode	Positions	Indexing Angle	With End Stop	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-1133	07-1033
	Non-shorting	10 (0-9)	36°	07-1134	07-1034
BCD compl.	Shorting	10 (0-9)	36°	07-1143	07-1043
Hex	Shorting	16 (0-F)	22.5°	07-1153	07-1053
	Non-shorting	16 (0-F)	22.5°	07-1154	07-1054
Hex compl.	Shorting	16 (0-F)	22.5°	07-1163	07-1063
Gray	Shorting	16 (0-F)	22.5°	07-1173	07-1073



Threaded Bushing, IP68, with End Stop

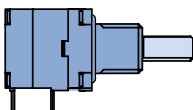
Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	07-1133-300000
	Non-shorting	10 (0-9)	36°	07-1134-300000
BCD compl.	Shorting	10 (0-9)	36°	07-1143-300000
Hex	Shorting	16 (0-F)	22.5°	07-1153-300000
	Non-shorting	16 (0-F)	22.5°	07-1154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-1163-300000
Gray	Shorting	16 (0-F)	22.5°	07-1173-300000



Threaded Bushing, IP68, Endless Rotating

Coding	Switching Mode	Positions	Indexing Angle	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-1033-300000
	Non-shorting	10 (0-9)	36°	07-1034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-1043-300000
Hex	Shorting	16 (0-F)	22.5°	07-1053-300000
	Non-shorting	16 (0-F)	22.5°	07-1054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-1063-300000
Gray	Shorting	16 (0-F)	22.5°	07-1073-300000

C07A Horizontal



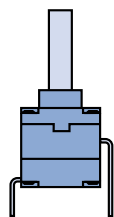
Threaded Bushing, IP68, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop
Hex	Shorting	16 (0-F)	22.5°	C07A1153-300000
	Non-shorting	16 (0-F)	22.5°	C07A1154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	C07A1163-300000
Gray	Shorting	16 (0-F)	22.5°	C07A1173-300000

¹ For other types/options, see type key.

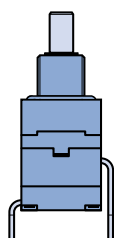
Coded Switches Type 07 & C07A

07 Vertical



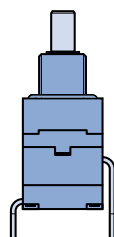
Basic Style

Coding	Switching Mode	Positions	Indexing Angle	With End Stop	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-3133	07-3033
	Non-shorting	10 (0-9)	36°	07-3134	07-3034
BCD compl.	Shorting	10 (0-9)	36°	07-3143	07-3043
Hex	Shorting	16 (0-F)	22.5°	07-3153	07-3053
	Non-shorting	16 (0-F)	22.5°	07-3154	07-3054
Hex compl.	Shorting	16 (0-F)	22.5°	07-3163	07-3063
Gray	Shorting	16 (0-F)	22.5°	07-3173	07-3073



Threaded Bushing, IP68, with End Stop

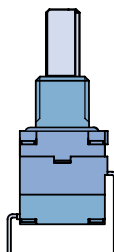
Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	07-3133-300000
	Non-shorting	10 (0-9)	36°	07-3134-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3143-300000
Hex	Shorting	16 (0-F)	22.5°	07-3153-300000
	Non-shorting	16 (0-F)	22.5°	07-3154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-3163-300000
Gray	Shorting	16 (0-F)	22.5°	07-3173-300000



Threaded Bushing, IP68, Endless Rotating

Coding	Switching Mode	Positions	Indexing Angle	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-3033-300000
	Non-shorting	10 (0-9)	36°	07-3034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3043-300000
Hex	Shorting	16 (0-F)	22.5°	07-3053-300000
	Non-shorting	16 (0-F)	22.5°	07-3054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-3063-300000
Gray	Shorting	16 (0-F)	22.5°	07-3073-300000

C07A Vertical



Threaded Bushing, IP68, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop
Hex	Shorting	16 (0-F)	22.5°	C07A3153-300000
	Non-shorting	16 (0-F)	22.5°	C07A3154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	C07A3163-300000
Gray	Shorting	16 (0-F)	22.5°	C07A3173-300000

Coded Switches Type 07 & C07A

Specifications

Mechanical Data

Resolution:BCD: 10 positions max. (36° indexing)
 Other codings: 16 positions max. (22.5° indexing)
 End stops are factory settable from 2 to 16 (10) positions

Switching torque (new condition):.....BCD: 2.2 or 3.5 Ncm (+/- 25%)
 Other codings: 3.2 or 3.5 Ncm (+/- 25%)

Rotational life:10,000 cycles min.

End stop strength:BCD: 45 Ncm min.
 Other codings: 35 Ncm min.

Fastening torque of nut (front panel mounting):100 Ncm max.

Electrical Data

Coding/output:BCD, BCD complementary, hex, hex complementary or gray

Contact resistance (new condition):50 mOhms max.

Dielectric withstanding voltage:500 VDC during 60 seconds (pins to pins, pins to housing)

Material Data

Shaft:Stainless steel

Housing:Zinc diecast, fiber enforced high performance plastic

Nut:Brass

Contact system:CuBe alloy, AuCo plated (hard gold)

Soldering leads:CuBe alloy, tin plated

O-rings:NBR (Nitril), 70 shore

Environmental Data

Operating/storage temperature range:-40 to +85°C max.

IP sealing:IP60, optional IP68 (2 bar, 1 hour) shaft/front panel sealing (5 bar, 4 hours on request)
 Washable (sealed contact system)

Vibration:10 Grms max. @ 10 to 2000 Hz

Flammability:UL94-HB

Packaging Sizes

Tray:50 or 200 pcs. (antistatic tray: 100 pcs.)

Soldering Conditions

Hand soldering:340°C max. during 2 s max.

Wave soldering:280°C max. peak temperature during 5 s max.

Codings

BCD

	8	4	2	1
0				
1				■
2			■	
3			■	■
4			■	■
5		■		■
6		■	■	
7		■	■	■
8	■			
9	■	■		

■ On
 □ Off

BCD Complementary

	8	4	2	1
0	■	■	■	■
1	■	■	■	□
2	■	■	□	■
3	■	■	■	■
4	■	■	■	■
5	■	■	□	■
6	■	■	■	□
7	■	■	■	■
8	□	■	■	■
9	□	■	■	■

Hex

	8	4	2	1
0				
1				■
2			■	
3			■	■
4			■	■
5		■		■
6		■	■	
7		■	■	■
8	■			
9	■	■		
A				
B				■
C			■	
D			■	■
E		■		
F		■	■	

Hex Complementary

	8	4	2	1
0	■	■	■	■
1	■	■	■	□
2	■	■	□	■
3	■	■	■	■
4	■	■	■	■
5	■	■	□	■
6	■	■	■	□
7	■	■	■	■
8	□	■	■	■
9	□	■	■	■
A	■	■		■
B	■	■		□
C	■	■	■	■
D	■	■	■	■
E	■	□		■
F	■	■	■	■

Gray

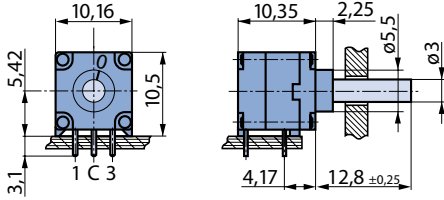
	8	4	2	1
0				
1				■
2			■	
3			■	■
4			■	■
5		■		■
6		■	■	
7		■	■	■
8	■			
9	■	■		
A				
B				■
C			■	
D			■	■
E		■		
F		■	■	

Coded Switches Type 07 & C07A

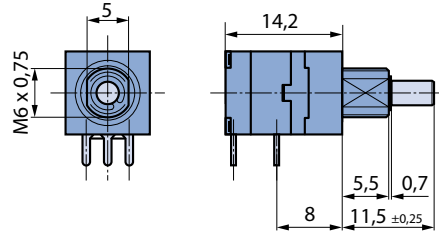
Drawings

07 - Horizontal

Basic Style

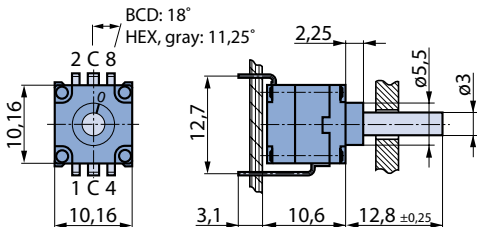


Threaded Bushing

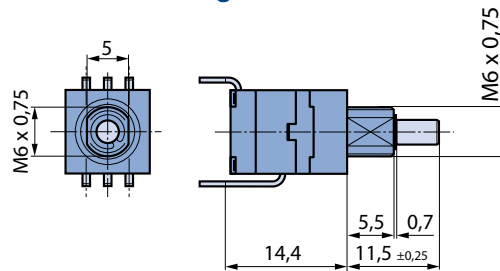


07 - Vertical

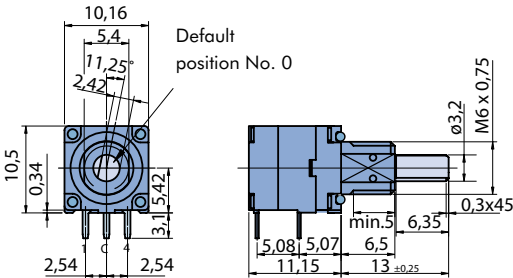
Basic Style



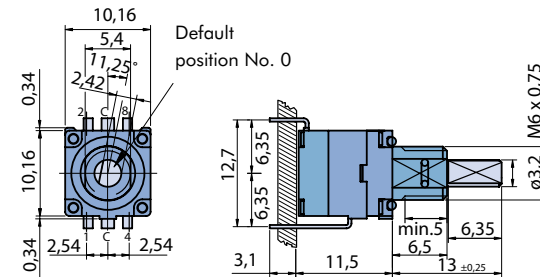
Threaded Bushing



C07A - Horizontal

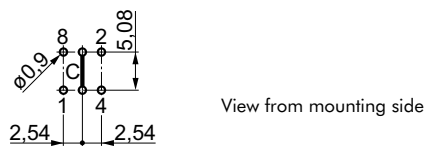


C07A - Vertical

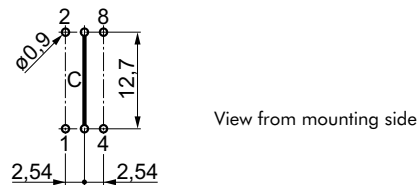


Drilling Diagrams (07 & C07A)

Horizontal

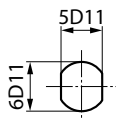


Vertical

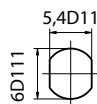


Front Panel Cut Out

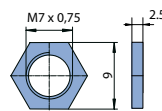
07 (Threaded Bushing)



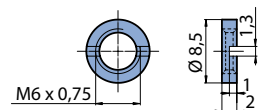
C07A



Hex Nut (supplied)



Slotted Nut



Ordering number (50 pcs. bags):
 - Brass: 4424-28
 - Stainless steel (cross slot): 4424-31

Type Key

0 7 (C07A) - X X X X - X X X X X X

Style

- 0 - Horizontal (screwdriver)
- 1 - Horizontal (shaft)
- 2 - Vertical (screwdriver)
- 3 - Vertical (shaft)
- 4 - Horizontal (screwdriver with bezel)
- 5 - Vertical (screwdriver with bezel)

End Stop

- 0 - Endless rotating
- 1 - With end stop

Coding

- 3 - BCD (max. 10 pos.)
- 4 - BCD compl. (max. 10 pos.)
- 5 - Hex
- 6 - Hex compl.
- 7 - Gray

Switching Mode

- 3 - Shorting
- 4 - Non-shorting

Number of Positions¹

- 0 - Standard (10 or 16 pos.)
- E - 15 pos. (0 – E)
- D - 14 pos. (0 – D)
- C - 13 pos. (0 – C)
- B - 12 pos. (0 – B)
- A - 11 pos. (0 – A)
- 9 - 10 pos. (0 – 9)
- 8 - 9 pos. (0 – 8)
- 7 - 8 pos. (0 – 7)
- 6 - 7 pos. (0 – 6)
- 5 - 6 pos. (0 – 5)
- 4 - 5 pos. (0 – 4)
- 3 - 4 pos. (0 – 3)
- 2 - 3 pos. (0 – 2)
- 1 - 2 pos. (0 – 1)

¹ C07A; only available with standard number of positions

Shaft Length (AL)

- 000 - Basic style: 12.8 mm (Threaded bushing: 11.5 mm, C07A: 13 mm)
- xxx - Custom² (e.g. 10.5 mm = 105; not available for C07A)

Bushing, IP Sealing

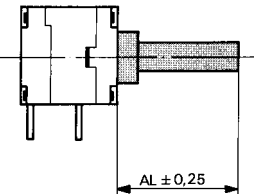
- 00 - None (type 07 only)
- 20 - Threaded (nut supplied)
- 30 - Threaded, IP68 (nut supplied)

Torque, Packaging

- - 3.2 Ncm (BCD: 2.2 Ncm), tray (50/200 pcs.)
- V - 3.2 Ncm (BCD: 2.2 Ncm), antistatic tray (100 pcs.)
- T - 3.5 Ncm (BCD: 3.5 Ncm), tray (50/200 pcs.)
- S - 3.5 Ncm (BCD: 3.5 Ncm), antistatic tray (100 pcs.)

² Customized Shaft Length

Please state shaft length (AL) measured from mounting face (max. AL basic style: 30 mm, threaded bushing: 26 mm, C07A: 20 mm).



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[2011A](#)