

# 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

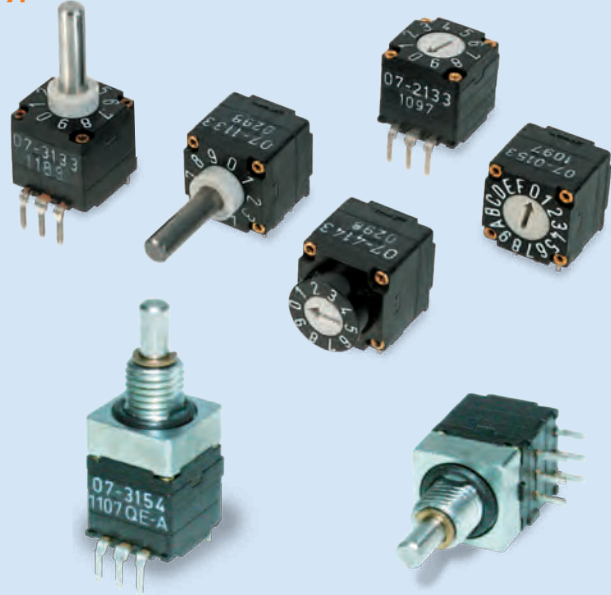
## Typical Applications

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

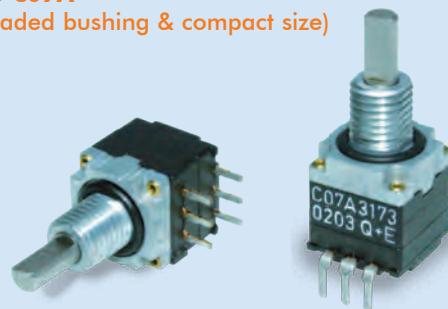
## Examples of Customization

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

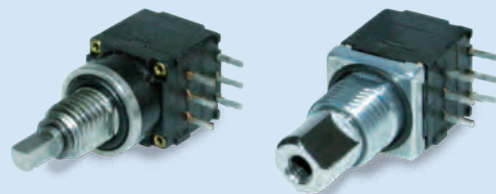
### Type 07



### Type C07A (threaded bushing & compact size)



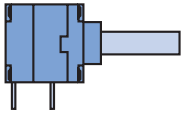
### Examples of Customization



# Coded Switches Type 07 & C07A

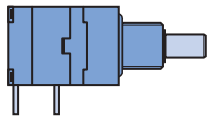
## Preference Types Selection Chart<sup>1</sup>

### 07 Horizontal



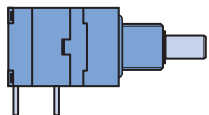
#### Basic Style

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

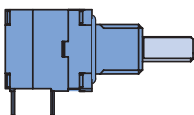
Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	07-1133-300000
	Non-shorting	10 (0-9)	36°	07-1134-300000
BCD compl.	Shorting	10 (0-9)	36°	07-1143-300000
Hex	Shorting	16 (0-F)	22.5°	07-1153-300000
	Non-shorting	16 (0-F)	22.5°	07-1154-300000
Hex compl.	Shorting	16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



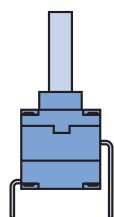
#### Threaded Bushing, IP68, with End Stop

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

<sup>1</sup> For other types/options, see type key.

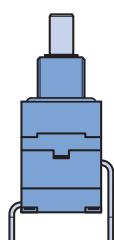
# Coded Switches Type 07 & C07A

## 07 Vertical



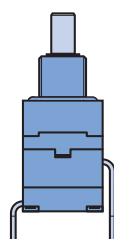
### Basic Style

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

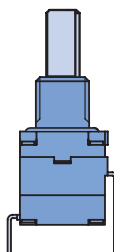
Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	07-3133-300000
	Non-shorting	10 (0-9)	36°	07-3134-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3143-300000
Hex	Shorting	16 (0-F)	22.5°	07-3153-300000
	Non-shorting	16 (0-F)	22.5°	07-3154-300000
Hex compl.	Shorting	16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

### 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

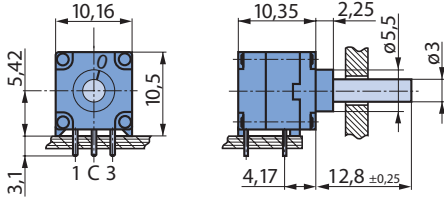
	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

# Coded Switches Type 07 & C07A

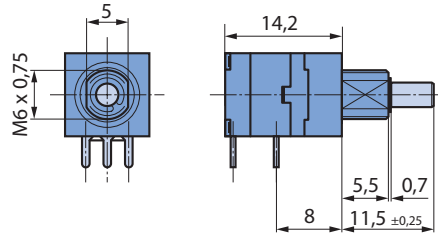
## Drawings

### 07 - Horizontal

#### Basic Style

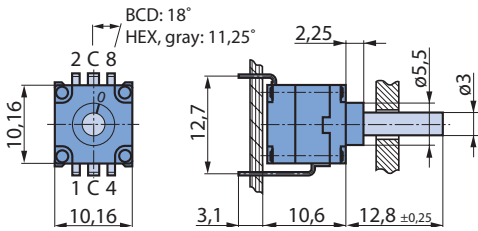


#### Threaded Bushing

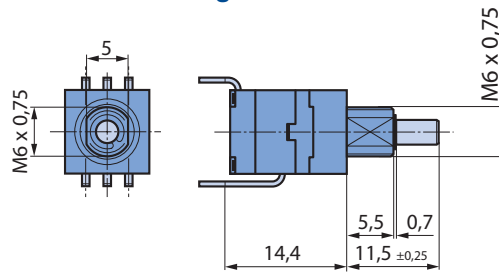


### 07 - Vertical

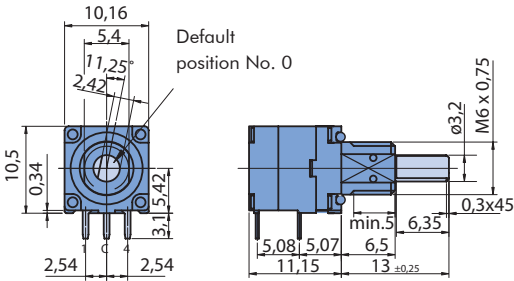
#### Basic Style



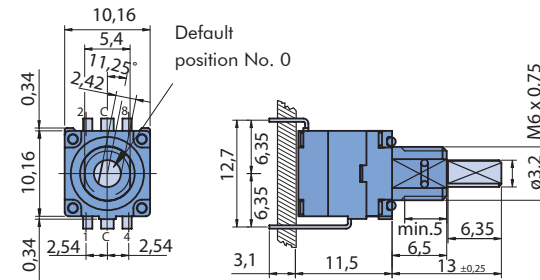
#### Threaded Bushing



### C07A - Horizontal



### C07A - Vertical

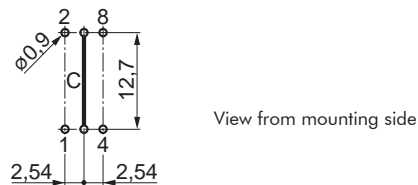


## Drilling Diagrams (07 & C07A)

### Horizontal

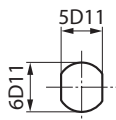


### Vertical

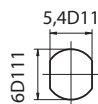


## Front Panel Cut Out

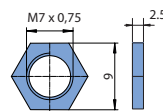
### 07 (Threaded Bushing)



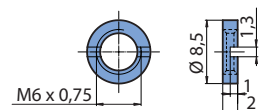
### C07A



### Hex Nut (supplied)



### Slotted Nut



Ordering number (50 pcs. bags):  
Brass: 4424-28  
Stainless steel: 4424-30

# Coded Switches Type 07 & C07A

## 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 Positions<sup>1</sup>**

- 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)

<sup>1</sup> 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 - Custom<sup>2</sup> (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.)

### <sup>2</sup> Customized Shaft Length

Please state shaft length (AL) measured from mounting face (max. AL basic style: 30 mm, threaded bushing: 28.7 mm, C07A: 30.2 mm).

