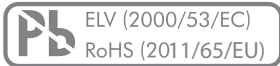


## MAIN FEATURES

### COMPACT

- 2 to 16 positions BCD, Hex or Gray coding
- Switching mode: Shorting or non-shorting
- For rugged environments
- Switching torque up to 3.5 Ncm
- 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 customizations



### PRODUCT VARIETY

- Vertical or horizontal mounting
- Bushing style
- BCD, Hex or Gray coding
- Shorting or non-shorting
- Number of positions
- Switching torque BCD: 2.2 or 3.5 Ncm
- Switching torque Hex & Gray: 3.2 or 3.5 Ncm
- With end-stop or endless rotating
- Front panel sealing IP60 or IP68
- Various shaft styles and lengths

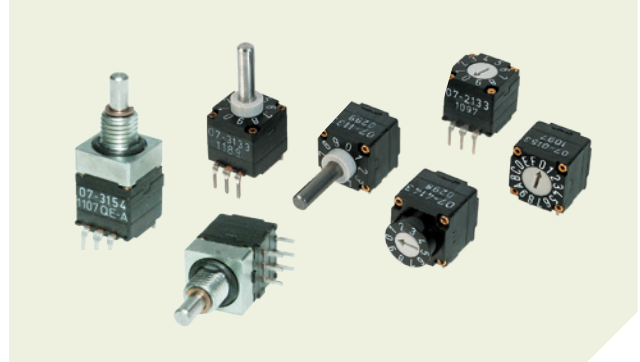
### POSSIBLE CUSTOMIZATIONS

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

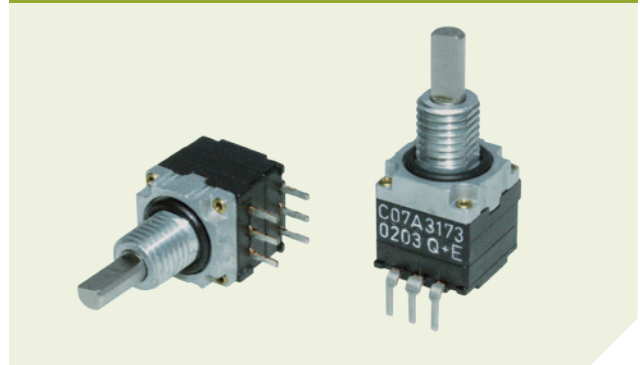
### TYPICAL APPLICATIONS

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

### TYPE 07



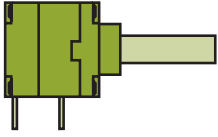
### TYPE C07A (THREADED BUSHING & COMPACT SIZE)



**1 PREFERENCE TYPES SELECTION CHARTS**

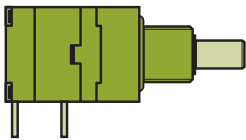
<sup>1</sup> For other types/options, see type key.

**07 HORIZONTAL**



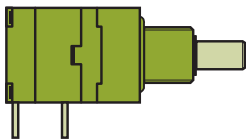
**WITH SHAFT, WITHOUT THREADED BUSHING**

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER 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



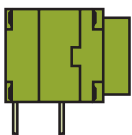
**WITH SHAFT, WITH THREADED BUSHING, IP68, WITH END-STOP**

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER 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



**WITH SHAFT, WITH THREADED BUSHING, IP68, ENDLESS ROTATING**

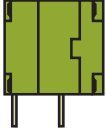
CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-1033-300000
	Non-shorting	10 (0-9)	36°	07-1034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-1043-300000
Hex	Shorting	16 (0-F)	22.5°	07-1053-300000
	Non-shorting	16 (0-F)	22.5°	07-1054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-1063-300000
Gray	Shorting	16 (0-F)	22.5°	07-1073-300000



**SCREWDRIVER WITH BEZEL / FRONT PANEL OPERATION**

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-4133	07-4033
	Non-shorting	10 (0-9)	36°	07-4134	07-4034
BCD compl.	Shorting	10 (0-9)	36°	07-4143	07-4043
Hex	Shorting	16 (0-F)	22.5°	07-4153	07-4053
	Non-shorting	16 (0-F)	22.5°	07-4154	07-4054
Hex compl.	Shorting	16 (0-F)	22.5°	07-4163	07-4063
Gray	Shorting	16 (0-F)	22.5°	07-4173	07-4073

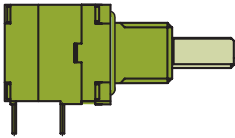
## 07 HORIZONTAL



## SCREWDRIVER WITHOUT BEZEL

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-0133	
	Non-shorting	10 (0-9)	36°	07-0134	07-0034
BCD compl.	Shorting	10 (0-9)	36°	07-0143	
Hex	Shorting	16 (0-F)	22.5°	07-0153	07-0053
	Non-shorting	16 (0-F)	22.5°	07-0154	07-0054
Hex compl.	Shorting	16 (0-F)	22.5°	07-0163	
Gray	Shorting	16 (0-F)	22.5°	07-0173	07-0073

## C07A HORIZONTAL

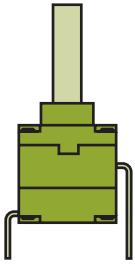


## THREADED BUSHING, IP68, WITH END-STOP

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER 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

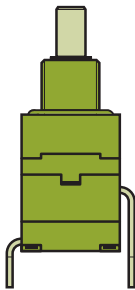
# CODED SWITCHES TYPE 07 & C07A

## 07 VERTICAL



### WITH SHAFT, WITHOUT THREADED BUSHING

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER 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



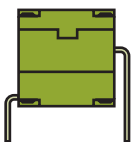
### WITH SHAFT, WITH THREADED BUSHING, IP68, WITH END-STOP

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER 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



### WITH SHAFT, WITH THREADED BUSHING, IP68, ENDLESS ROTATING

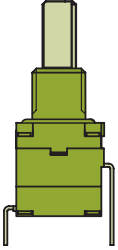
CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-3033-300000
	Non-shorting	10 (0-9)	36°	07-3034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3043-300000
Hex	Shorting	16 (0-F)	22.5°	07-3053-300000
	Non-shorting	16 (0-F)	22.5°	07-3054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-3063-300000
Gray	Shorting	16 (0-F)	22.5°	07-3073-300000



### SCREWDRIVER WITHOUT BEZEL

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-2133	07-2033
	Non-shorting	10 (0-9)	36°	07-2134	07-2034
BCD compl.	Shorting	10 (0-9)	36°	07-2143	
Hex	Shorting	16 (0-F)	22.5°	07-2153	07-2053
	Non-shorting	16 (0-F)	22.5°	07-2154	
Hex compl.	Shorting	16 (0-F)	22.5°	07-2163	07-2063
Gray	Shorting	16 (0-F)	22.5°	07-2173	

**C07A** VERTICAL



**THREADED BUSHING, IP68, WITH END-STOP**

CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER 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 Coding: 16 positions max. (22.5° indexing) End-Stop can be set from 2 to 16 (10) positions
Switching torque (new condition):	BCD: 2.2 or 3.5 Ncm (+/- 25%) Other Coding: 3.2 or 3.5 Ncm (+/- 25%)
Rotational life:	10'000 cycles min.
End-stop strength:	BCD: 45 Ncm min. Other Coding: 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
Switching mode:	Shorting or non-shorting
Contact resistance (new condition):	50 mΩ
Insulation resistance (new condition):	1 GΩ min. @ 500 VDC
Max. switching/breaking capacity:	5 VA
Switching current:	0.2 A (resistive load) max.
Switching voltage:	42 V (resistive load) max.
Dielectric withstanding voltage:	500 VDC during 60 seconds (pin to pin, pin 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 (nitrile), 70 shore

### ENVIRONMENTAL DATA

Operating/storage temperature range:	-40 to +85°C max.
IP sealing:	IP60, optional IP68 (2 bar, 1 h) shaft/front panel sealing (up to 5 bar, 4 h on request) Washable (sealed contact system)
Vibration:	10 G <sub>rms</sub> max. @ 10 to 2000 Hz
Flammability:	UL94-HB

### PACKAGING QUANTITY

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

<sup>1</sup> The packaging size depends on shipment quantity. If the shipment quantity is  
 < 200 pcs. then standard tray 50 pcs.  
 ≥ 200 pcs. then standard tray 200 pcs.

### SOLDERING CONDITIONS

Hand soldering:	280°C max. during 2 sec max.
Wave soldering:	280°C max. peak temperature during 2 sec max.

## CODING

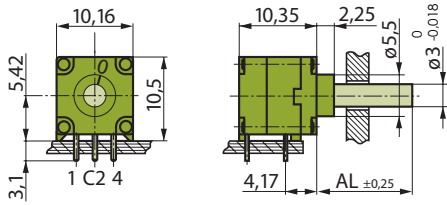
For all available Coding please see technical explanations at the end of the catalog

Tolerances unless otherwise specified DIN ISO 2768-1 (m)

**DRAWINGS**

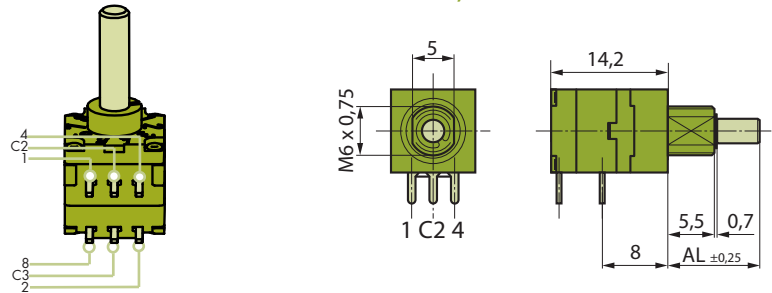
**07 HORIZONTAL**

**WITH SHAFT, WITHOUT THREADED BUSHING**

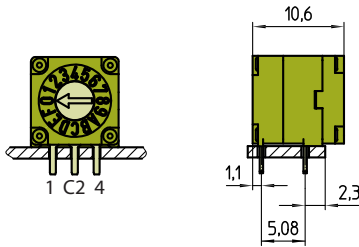


AL: See type key

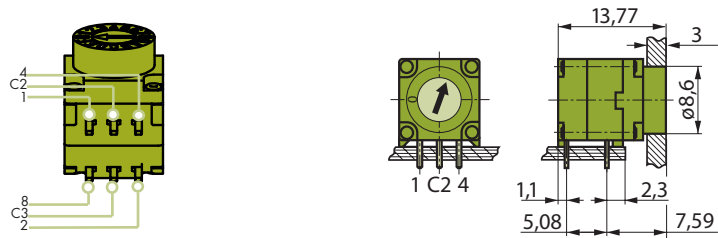
**WITH SHAFT, WITH THREADED BUSHING**



**SCREWDRIVER WITHOUT BEZEL**



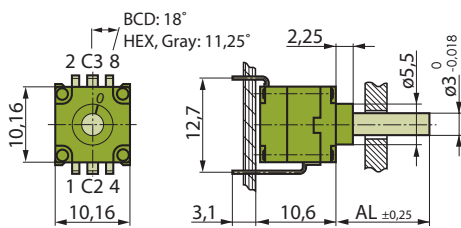
**SCREWDRIVER WITH BEZEL**



**DRAWINGS**

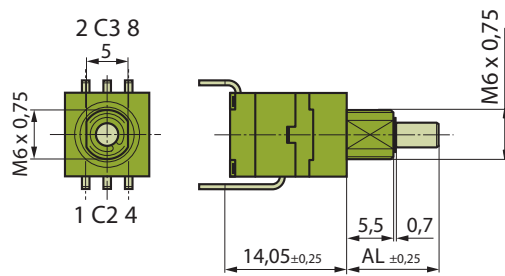
**07 VERTICAL**

**WITH SHAFT, WITHOUT THREADED BUSHING**

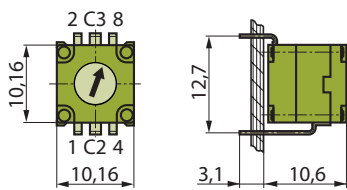


AL: See type key

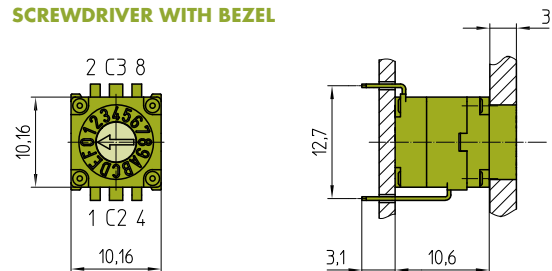
**WITH SHAFT, WITH THREADED BUSHING**



**SCREWDRIVER WITHOUT BEZEL**



**SCREWDRIVER WITH BEZEL**



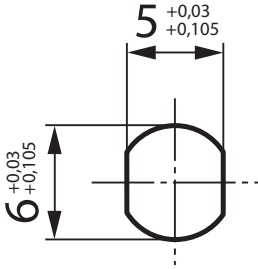




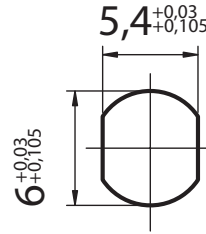
**DRAWINGS**

FRONT PANEL CUT OUT

**07 (THREADED BUSHING)**

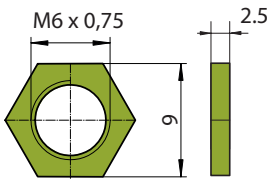


**C07A**

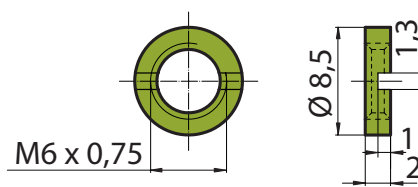


NUT

**HEX NUT (SUPPLIED)**



**SLOTTED NUT**



Spare Part  
Part Number (50 pcs. bag)  
- Brass: 4424-22

Part Number (50 pcs. bag)  
- Brass: 4424-28  
- Stainless steel (cross slot): 4424-31

# CODED SWITCHES TYPE 07 & C07A

## TYPE KEY



### 2 STYLE

- 0** Horizontal; screwdriver without bezel
- 1** Horizontal; with shaft
- 2** Vertical; screwdriver without bezel
- 3** Vertical; with shaft
- 4** Horizontal; screwdriver with bezel
- 5** Vertical; screwdriver with bezel

<sup>2</sup> C07A only available in style 1 and 3

### END-STOP

- 0** Endless rotating (not for C07A, BCD)
- 1** With End-Stop

### 3 CODING

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

[Explanation: see chapter technical explanation at the end of the catalog]

<sup>3</sup> C07A only available with code 5, 6 and 7

### 4 SWITCHING MODE

- 3** Shorting
- 4** Non-shorting

[Explanation: see chapter technical explanation at the end of the catalog]

<sup>4</sup> Non-shorting not possible with "Gray Code"

### 1 NUMBER OF POSITIONS

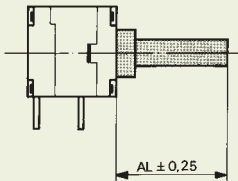
- 0** Standard (10 or 16 pos.)
- E** 15 pos. (0 – E)
- D** 14 pos. (0 – D)
- C** 13 pos. (0 – C)
- B** 12 pos. (0 – B)
- A** 11 pos. (0 – A)
- 9** 10 pos. (0 – 9)
- 8** 9 pos. (0 – 8)
- 7** 8 pos. (0 – 7)
- 6** 7 pos. (0 – 6)
- 5** 6 pos. (0 – 5)
- 4** 5 pos. (0 – 4)
- 3** 4 pos. (0 – 3)
- 2** 3 pos.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

<sup>1</sup> C07A; only available with standard number of positions.

### SHAFT LENGTH (AL)

- 000** With shaft, without threaded bushing: 12.8 mm  
With shaft, with threaded bushing: 11.5 mm  
With shaft, with C07 bushing: 13 mm
- XXX** <sup>2</sup> Custom (e.g. 10.5 mm = 105; not available for C07A)

<sup>2</sup> Customized shaft length/shaft length (AL) description measured from mounting face (see picture below). (max. shaft length: 30 mm, for threaded bushing: 26 mm, for C07A: 20 mm).



### BUSHING, IP SEALING

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