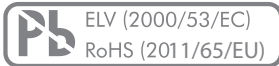


MAIN FEATURES

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

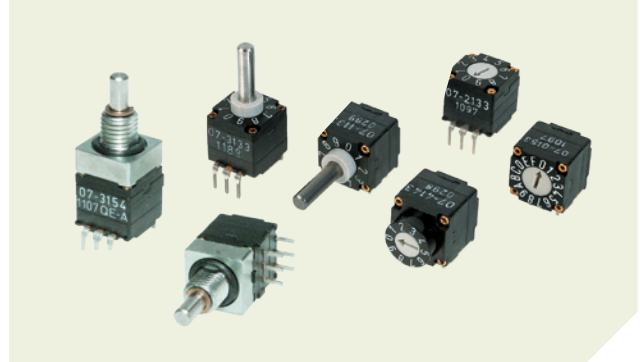
POSSIBLE CUSTOMIZATIONS

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

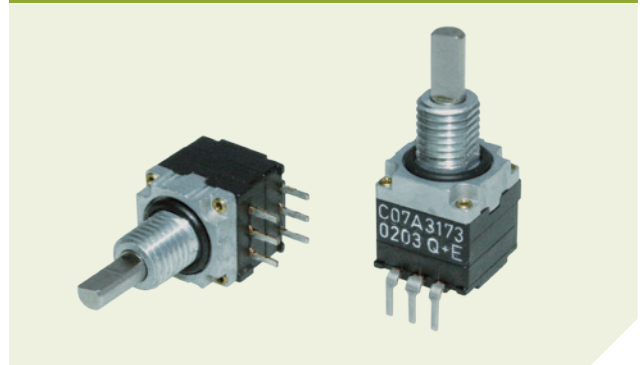
TYPICAL APPLICATIONS

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

TYPE 07



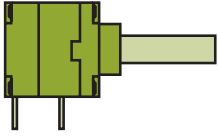
TYPE C07A (THREADED BUSHING & COMPACT SIZE)



1 PREFERENCE TYPES SELECTION CHARTS

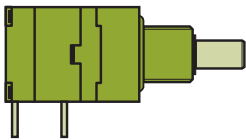
¹ For other types/options, see type key.

07 HORIZONTAL



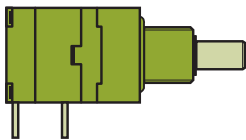
WITH SHAFT, WITHOUT THREADED BUSHING

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



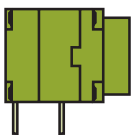
WITH SHAFT, WITH THREADED BUSHING, IP68, WITH END-STOP

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



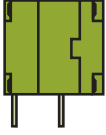
WITH SHAFT, WITH THREADED BUSHING, IP68, ENDLESS ROTATING

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

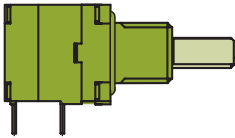


SCREWDRIVER WITH BEZEL / FRONT PANEL OPERATION

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

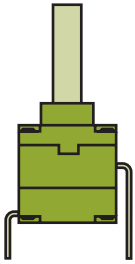
CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER WITH END-STOP	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-0133	
	Non-shorting	10 (0-9)	36°	07-0134	07-0034
BCD compl.	Shorting	10 (0-9)	36°	07-0143	
Hex	Shorting	16 (0-F)	22.5°	07-0153	07-0053
	Non-shorting	16 (0-F)	22.5°	07-0154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

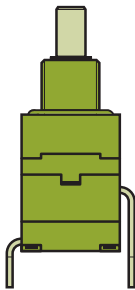
CODED SWITCHES TYPE 07 & C07A

07 VERTICAL



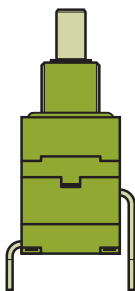
WITH SHAFT, WITHOUT THREADED BUSHING

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



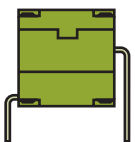
WITH SHAFT, WITH THREADED BUSHING, IP68, WITH END-STOP

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

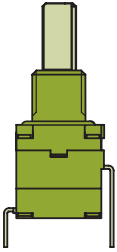
CODING	SWITCHING MODE	POSITIONS	INDEXING ANGLE	PART NUMBER ENDLESS ROTATING
BCD	Shorting	10 (0-9)	36°	07-3033-300000
	Non-shorting	10 (0-9)	36°	07-3034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3043-300000
Hex	Shorting	16 (0-F)	22.5°	07-3053-300000
	Non-shorting	16 (0-F)	22.5°	07-3054-300000
Hex compl.	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 _{rms} max. @ 10 to 2000 Hz
Flammability:	UL94-HB

PACKAGING QUANTITY

Tray:	50 or 200 pcs. (antistatic tray: 100 pcs.)
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¹ 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

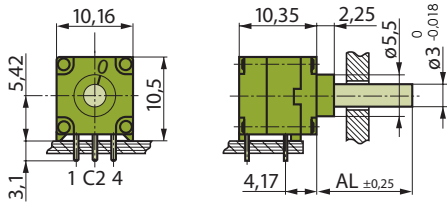
For all available Coding please see technical explanations at the end of the catalog

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

DRAWINGS

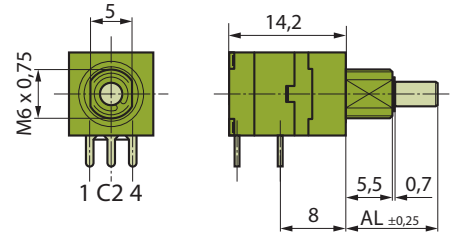
07 HORIZONTAL

WITH SHAFT, WITHOUT THREADED BUSHING

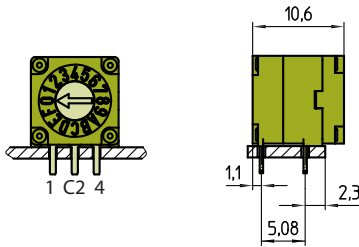


AL: See type key

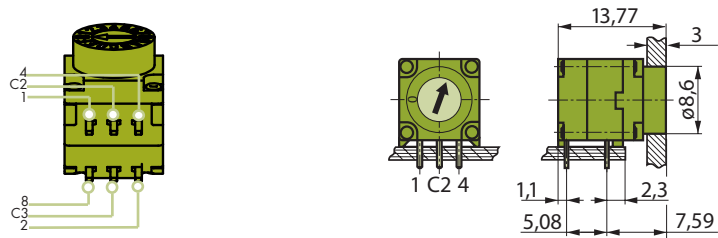
WITH SHAFT, WITH THREADED BUSHING



SCREWDRIVER WITHOUT BEZEL



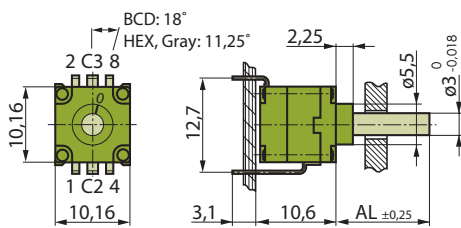
SCREWDRIVER WITH BEZEL



DRAWINGS

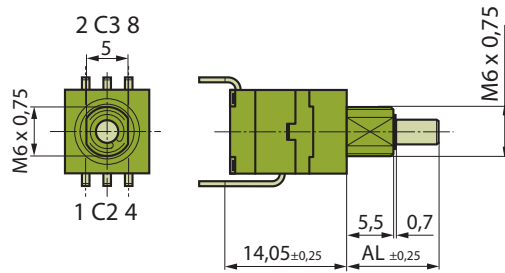
07 VERTICAL

WITH SHAFT, WITHOUT THREADED BUSHING

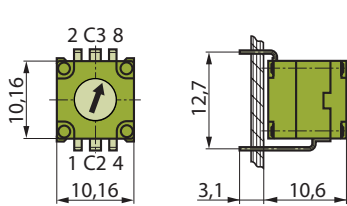


AL: See type key

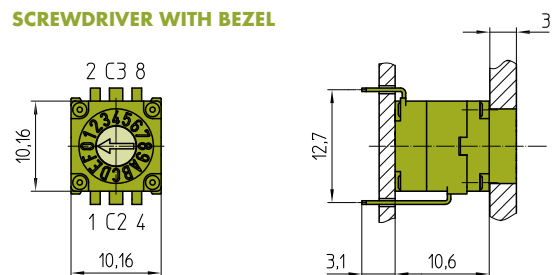
WITH SHAFT, WITH THREADED BUSHING



SCREWDRIVER WITHOUT BEZEL



SCREWDRIVER WITH BEZEL



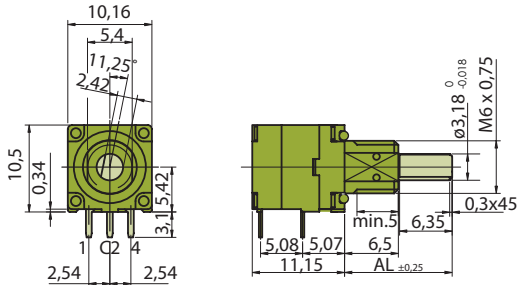
CODED SWITCHES TYPE 07 & C07A

DRAWINGS

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

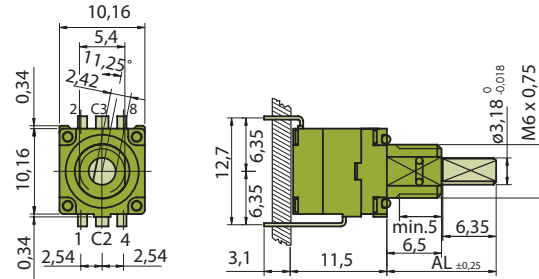
C07A

HORIZONTAL



AL: See type key

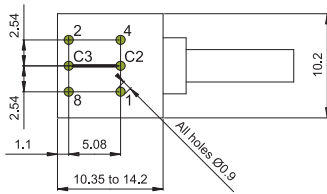
VERTICAL



07 & C07A DRILLING DIAGRAMS

HORIZONTAL 07

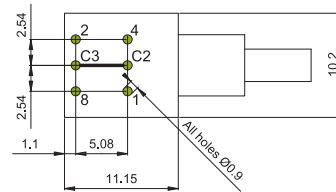
Commons (C2, C3) must be connected together on the PCB



View from component side of the PCB

HORIZONTAL C07A

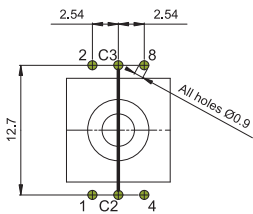
Commons (C2, C3) must be connected together on the PCB



View from component side of the PCB

VERTICAL 07 & C07A

Commons (C2, C3) must be connected together on the PCB

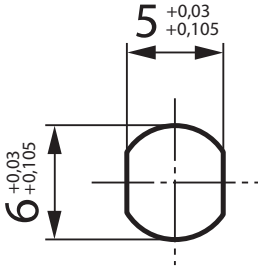


View from component side of the PCB

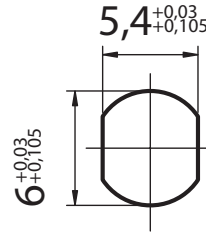
DRAWINGS

FRONT PANEL CUT OUT

07 (THREADED BUSHING)

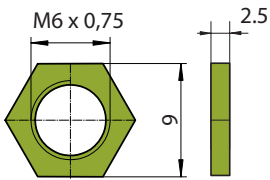


C07A

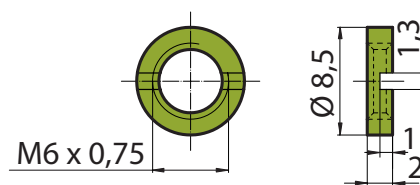


NUT

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

² 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]

³ 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]

⁴ Non-shorting not possible with "Gray Code"

1 NUMBER OF POSITIONS

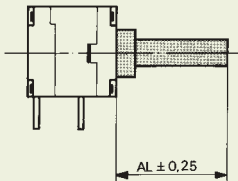
- 0** Standard (10 or 16 pos.)
- E** 15 pos. (0 – E)
- D** 14 pos. (0 – D)
- C** 13 pos. (0 – C)
- B** 12 pos. (0 – B)
- A** 11 pos. (0 – A)
- 9** 10 pos. (0 – 9)
- 8** 9 pos. (0 – 8)
- 7** 8 pos. (0 – 7)
- 6** 7 pos. (0 – 6)
- 5** 6 pos. (0 – 5)
- 4** 5 pos. (0 – 4)
- 3** 4 pos. (0 – 3)
- 2** 3 pos.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

¹ 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** ² Custom (e.g. 10.5 mm = 105; not available for C07A)

² 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.)