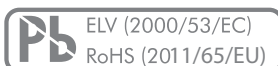


Product description

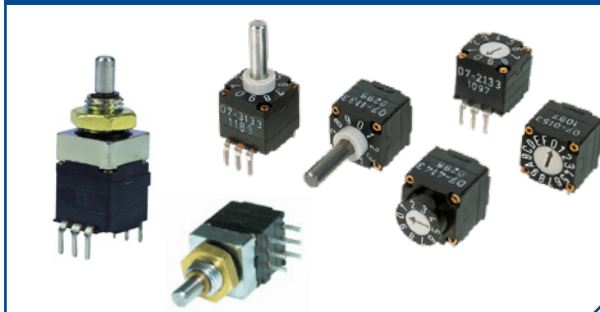
MAIN FEATURES

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 vertical or horizontal
- › IP68 front panel sealing (up to 5 bar)
- › Operating temperature range: -40 to +85 °C
- › Various options and customizations



07



C07A threaded bushing and compact size



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 and 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

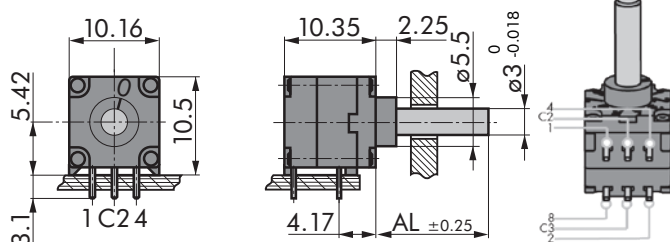
- Frequency and channel selection for two way radios
- Target aiming devices
- Aircraft transponders
- Medical equipments
- Industrial automation

Dimensions and pin assignment

SWITCH DESIGN AND PIN ASSIGNMENT

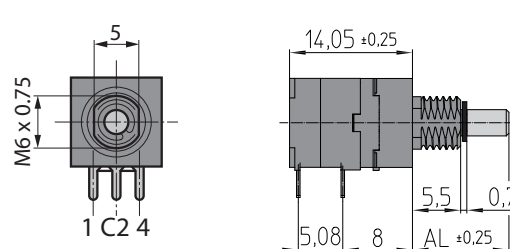
07 HORIZONTAL

With shaft, without threaded bushing



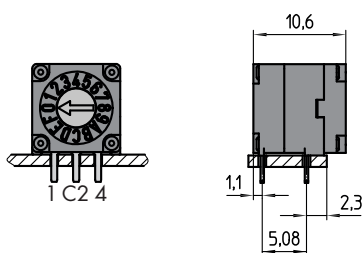
AL: See type key

With shaft, with threaded bushing

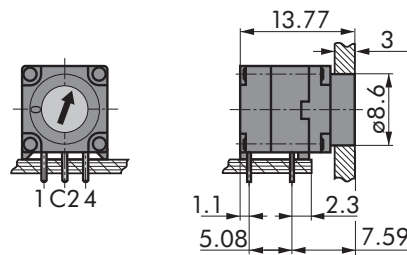


AL: See type key

Screwdriver without bezel

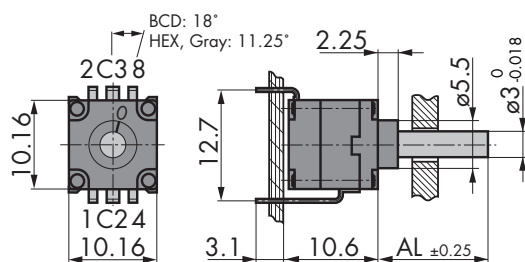


Screwdriver with bezel, front panel operation



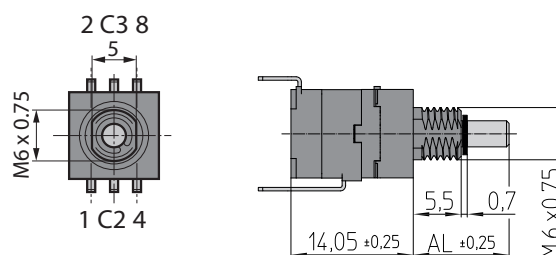
07 VERTICAL

With shaft, without threaded bushing



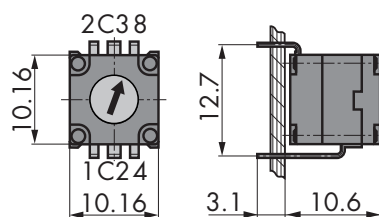
AL: See type key

With shaft, with threaded bushing

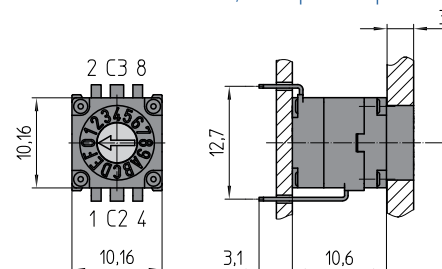


AL: See type key

Screwdriver without bezel



Screwdriver with bezel, front panel operation



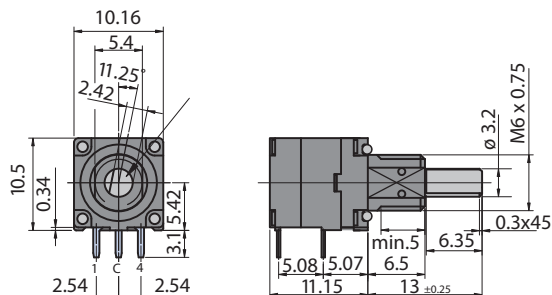
Dimensions in mm
Tolerances according to DIN ISO 2768-1 (m), unless otherwise specified

Dimensions and pin assignment

SWITCH DESIGN AND PIN ASSIGNMENT

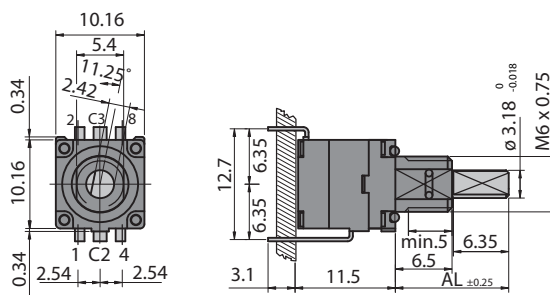
C07A HORIZONTAL AND VERTICAL

Horizontal with threaded bushing



AL: See type key

Vertical with threaded bushing

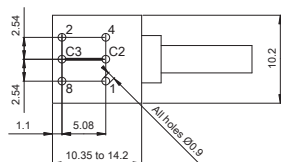


AL: See type key

DRILLING DIAGRAM AND FOOTPRINT

07 HORIZONTAL

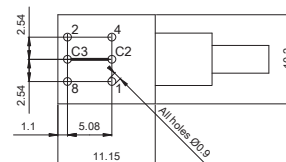
View from component side of the PCB



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

07 HORIZONTAL

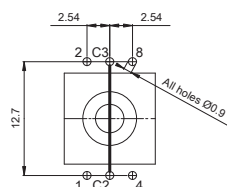
View from component side of the PCB



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

07 & C07A VERTICAL

View from component side of the PCB



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

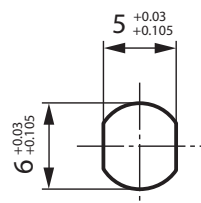
Dimensions in mm

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

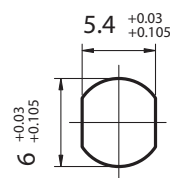
Dimensions and pin assignment

FRONT PANEL CUT OUT

07 THREADED BUSHING

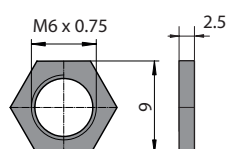


C07A

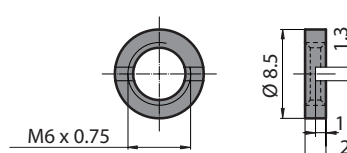


NUT

HEX NUT (SUPPLIED)



SLOTTED NUT



Ordering information

ORDERING CODE

07	-	-	-	-	-	-	-	-	-	-	-
C07A	A										

STYLE¹

- 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

¹ C07A only available in style 1 and 3

END STOP

- 0** Endless rotating (not for C07A, BCD code)
- 1** With end stop

CODING²

- 3** BCD (max. 10 positions)
- 4** BCD complementary (max. 10 positions)
- 5** Hex
- 6** Hex complementary
- 7** Gray

Explanation see chapter «Technical explanations»
² C07A only available with code 5, 6 and 7

SWITCHING MODE³

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

Explanation see chapter «Technical explanations»
³ Non-shorting not possible with Gray code, BCD complementary and Hex complementary

NUMBER OF POSITIONS⁴

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

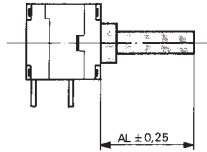
⁴ C07A only available with standard number of positions

SHAFT LENGTH (AL)

000 With shaft without threaded bushing: 12.8 mm
 With shaft with threaded bushing: 11.5 mm
 With shaft with C07A-bushing: 13 mm

XXX⁵ Customized shaft length (AL)
 Not available for C07A
 (shaft length rounded to next 0.5 mm,
 e.g. 10.3 mm = 10.5 mm or 10 mm)

⁵ 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** Non (type 07 only)
- 20** Threaded (nut supplied)
- 30** Threaded | IP68 (hex nut supplied)

SWITCHING TORQUE | PACKAGING

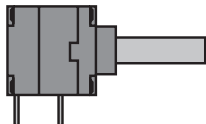
- 3.2 Ncm (BCD: 2.2 Ncm) | tray (50 or 200 pieces)
- V** 3.2 Ncm (BCD: 2.2 Ncm) | antistatic tray (100 pieces)
- T** 3.5 Ncm (BCD: 3.5 Ncm) | tray (50 or 200 pieces)
- S** 3.5 Ncm (BCD: 3.5 Ncm) | antistatic tray (100 pieces)

Ordering information

PREFERENCE TYPES SELECTION CHART¹

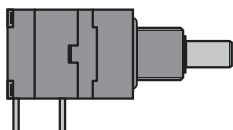
07 HORIZONTAL

With shaft, without threaded bushing



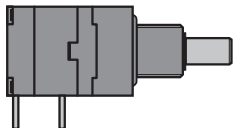
CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER	
				WITH END STOP	ENDLESS ROTATING
BCD	Shorting	36°	10 (0 – 9)	07-1133	07-1033
	Non-shorting	36°	10 (0 – 9)	07-1134	07-1034
BCD complementary	Shorting	36°	10 (0 – 9)	07-1143	07-1043
Hex	Shorting	22.5°	16 (0 – F)	07-1153	07-1053
	Non-shorting	22.5°	16 (0 – F)	07-1154	07-1054
Hex complementary	Shorting	22.5°	16 (0 – F)	07-1163	07-1063
Gray	Shorting	22.5°	16 (0 – F)	07-1173	07-1073

With shaft, with threaded bushing, IP68, with end stop



CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER	
				WITH END STOP	ENDLESS ROTATING
BCD	Shorting	36°	10 (0 – 9)	07-1133-300000	
	Non-shorting	36°	10 (0 – 9)	07-1134-300000	
BCD complementary	Shorting	36°	10 (0 – 9)	07-1143-300000	
Hex	Shorting	22.5°	16 (0 – F)	07-1153-300000	
	Non-shorting	22.5°	16 (0 – F)	07-1154-300000	
Hex complementary	Shorting	22.5°	16 (0 – F)	07-1163-300000	
Gray	Shorting	22.5°	16 (0 – F)	07-1173-300000	

With shaft, with threaded bushing, IP68, endless rotating



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

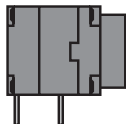
¹ For other Types | options see type key

Ordering information

PREFERENCE TYPES SELECTION CHART¹

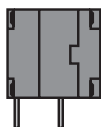
07 HORIZONTAL

Screwdriver with bezel front panel operation



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

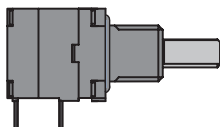
Screwdriver without bezel



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

C07A HORIZONTAL

Threaded bushing, IP68, with end stop



CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER	
				WITH END STOP	
Hex	Shorting	22.5°	16 (0 – F)	C07A1153-300000	
	Non-shorting	22.5°	16 (0 – F)	C07A1154-300000	
Hex complementary	Shorting	22.5°	16 (0 – F)	C07A1163-300000	
Gray	Shorting	22.5°	16 (0 – F)	C07A1173-300000	

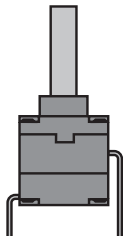
¹ For other Types | options see type key

Ordering information

PREFERENCE TYPES SELECTION CHART¹

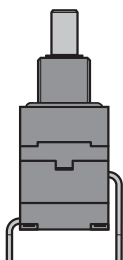
07 VERTICAL

With shaft, without threaded bushing



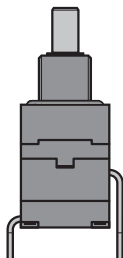
CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER	
				WITH END STOP	ENDLESS ROTATING
BCD	Shorting	36°	10 (0 – 9)	07-3133	07-3033
	Non-shorting	36°	10 (0 – 9)	07-3134	07-3034
BCD complementary	Shorting	36°	10 (0 – 9)	07-3143	07-3043
Hex	Shorting	22.5°	16 (0 – F)	07-3153	07-3053
	Non-shorting	22.5°	16 (0 – F)	07-3154	07-3054
Hex complementary	Shorting	22.5°	16 (0 – F)	07-3163	07-3063
Gray	Shorting	22.5°	16 (0 – F)	07-3173	07-3073

With shaft, with threaded bushing, IP68, with end stop



CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER	
				WITH END STOP	
BCD	Shorting	36°	10 (0 – 9)	07-3133-300000	
	Non-shorting	36°	10 (0 – 9)	07-3134-300000	
BCD complementary	Shorting	36°	10 (0 – 9)	07-3143-300000	
Hex	Shorting	22.5°	16 (0 – F)	07-3153-300000	
	Non-shorting	22.5°	16 (0 – F)	07-3154-300000	
Hex complementary	Shorting	22.5°	16 (0 – F)	07-3163-300000	
Gray	Shorting	22.5°	16 (0 – F)	07-3173-300000	

With shaft, with threaded bushing, IP68, endless rotating



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

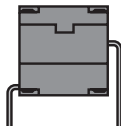
¹ For other Types | options see type key

Ordering information

PREFERENCE TYPES SELECTION CHART¹

07 VERTICAL

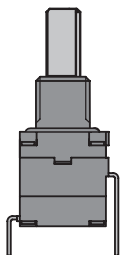
Screwdriver without bezel



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

C07A VERTICAL

Threaded bushing, IP68, with end stop



CODING	SWITCHING MODE	INDEXING ANGLE	POSITIONS	PART NUMBER
				WITH END STOP
Hex	Shorting	22.5°	16 (0 – F)	C07A3153-300000
	Non-shorting	22.5°	16 (0 – F)	C07A3154-300000
Hex complementary	Shorting	22.5°	16 (0 – F)	C07A3163-300000
Gray	Shorting	22.5°	16 (0 – F)	C07A3173-300000

PACKAGING

Foam polystyrene box:

50 or 200 pieces (depending on shipment quantity)

ACCESSORIES AND SPARE PARTS

Hex nut M6 x 0.75:

Part number 4424-22 (50 pieces / bag), brass

Slotted nut M6 x 0.75:

Part number 4424-28 (50 pieces / bag), brass

Part number 4424-31 (50 pieces / bag), stainless steel (cross slot)

¹ For other Types | options see type key

Specifications

MECHANICAL DATA

Detent angle positions:	22.5° detent angle 16 positions 36° detent angle 10 positions
Rotary limitation end stop:	Configurable
Switching torque:	22.5°: 3.2 or 3.5 Ncm (±25 % in new condition) 36°: 2.2 or 3.5 Ncm (±25 % in new condition)
Rotational life:	> 10'000 cycles (tested at room temperature)
Rotational stop strength:	22.5° detent angle: > 35 Ncm 36° detent angle: > 45 Ncm
Fastening torque of nut (front panel mounting):	M6 x 0.75: < 100 Ncm

ELECTRICAL DATA

Electrical connection:	Pins 0.4 x 0.7 mm
Switching voltage:	< 42 VDC (resistive load)
Switching current:	< 200 mA (resistive load)
Contact resistance:	< 50 mΩ (in new condition)
Switching breaking capacity:	< 5 VA
Signal coding:	10 positions: BCD or BCD complementary 16 positions: Hex, Hex complementary or Gray
Switching mode:	Shorting or non-shortng (non-shortng with Gray, BCD complementary and Hex complementary not possible)
Dielectric strength:	500 VDC during 60 s (pin-to-pin, pin-to-housing)
Insulation resistance:	> 1 GΩ at 500 VDC (pin-to-pin, pin-to-housing, in new condition)

MATERIALS

Shaft:	Stainless steel 1.4305
Bushing housing:	Zinc die casting, fiberglass reinforced high performance plastic
Contact surface:	Cu alloy (Au plated)
Soldering leads:	Cu alloy (tin plated)
Hex nut:	Brass
Slotted nut:	Brass or stainless steel
O-rings:	NBR (nitrile rubber), 70 shore A

ENVIRONMENTAL DATA

Operating temperature:	-40 to +85 °C (IEC 60068-2-14)
Storage temperature:	-40 to +85 °C (IEC 60068-2-14)
IP sealing against front panel:	IP60 without sealing IP68 with shaft and front panel sealing (2 bar, 1 h)
Vibration:	10 G _{RMS} at 10 to 2'000 Hz
Flammability:	UL94-HB

SOLDERING CONDITIONS

Hand soldering:	< 280 °C during 2 s
Wave soldering:	< 280 °C during 2 s

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United States: +1 510 656 3400