

## DATA SHEET

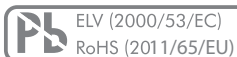
## CODED SWITCH TYPE 07PL

ELMA  
Your Solution Partner

## MAIN FEATURES

## PUSH BUTTON FUNCTION

- Integrated push-button function
- Push-button forces up to 14 N
- 10 positions BCD coding with End-Stop
- 16 positions Hex or Gray coding with End-Stop
- Shorting or non-shorting
- For rugged environments
- Switching torque up to 3.5 Ncm
- Gold plated contacts
- THT (reflow version on request)
- Optional IP68 front panel sealing (up to 5 bar)
- Operating temperature range: -40 to +85°C
- Various options and customizations



## PRODUCT VARIETY

- Shaft length
- Shorting or non-shorting
- Push-button force
- Hex or Gray coding; BCD coding
- Switching torque: 3.2 or 3.5 Ncm
- IP60 or IP68 front panel sealing

## TYPE 07PL



## POSSIBLE CUSTOMIZATIONS

- Shaft dimension and shape
- Bushing, mounting
- IP sealing
- Push-button force
- Switching torque
- BCD-Coding

## TYPICAL APPLICATIONS

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

## 1 PREFERENCE TYPES SELECTION CHART

1 For other types/options, see type key.

## STANDARD SHAFT LENGTH, IP68; HEX NUT SUPPLIED, SHORTING

CODING	POSITIONS/ INDEXING ANGLES	TORQUE	PUSH-BUTTON FORCE	PART NUMBER
Hex	16 (0-F) / 22.5°	3.2	3N	07PL-1530-113S
			5N	07PL-2530-113S
Hex compl.	16 (0-F) / 22.5°	3.2	3N	07PL-1630-113S
			5N	07PL-2630-113S
Gray	16 (0-F) / 22.5°	3.2	3N	07PL-1730-113S
			5N	07PL-2730-113S

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## CODED SWITCHES TYPE 07PL

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## SPECIFICATIONS

## MECHANICAL DATA

Resolution:	Hex or Gray: 16 positions max. (22.5° indexing); BCD: 10 positions max. (36° indexing)
Push-button force:	3, 5, 10, 14 N
Switching torque (new condition):	BCD, Hex or Gray: 2.2 or 3.5 Ncm (+/- 25%)
<sup>2</sup> Rotational life:	10'000 cycles min.
End-stop position:	Between Pos.0 and Pos.F
End-stop strength:	BCD, Hex or Gray: 35 Ncm min.
Fastening torque of nut:	100 Ncm max.

## ELECTRICAL DATA

Coding/output:	BCD, BCD complementary, Hex, Hex complementary or Gray (shorting or non-shorting)
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:	1500 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 (nitrile), 70 shore

## ENVIRONMENTAL DATA

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

## ADDITIONAL DATA FOR PUSH BUTTON FUNCTION

## MECHANICAL DATA

Push button actuation force (new condition):	3, 5, 10, 14 N (+/- 30%)
Push button switch travel:	0.5 (+/- 0.2) mm
Residual push button actuation force (end of life):	90% typ.
<sup>2</sup> Push button switch life:	200'000 actuations min.

## ELECTRICAL DATA

Load current:	10 mA max. (resistive load, 15 VDC max. voltage)
Contact bouncing time:	2 ms max.
Contact resistance:	1 Ω max.
Dielectric withstanding voltage to housing/shaft:	500 VDC during 60 seconds (MIL-STD-202G, method 301)

## SOLDERING CONDITIONS

Reflow Profile (to comply with IPC/JEDEC J-STD-020C)

Hand soldering:	280°C max. during 2 sec max.
Wave soldering:	280°C max. during 2 sec max. during 4 s max.

## PACKAGING QUANTITY

<sup>1</sup> Standard tray:	50 pcs. 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.

<sup>2</sup> Rotational/actuation life is tested at room condition (+25°C, 50 to 60% RH). Operating speed is 12 cycles per minute and 2 Hz (push button). Different operating conditions may decrease life expectation dramatically.

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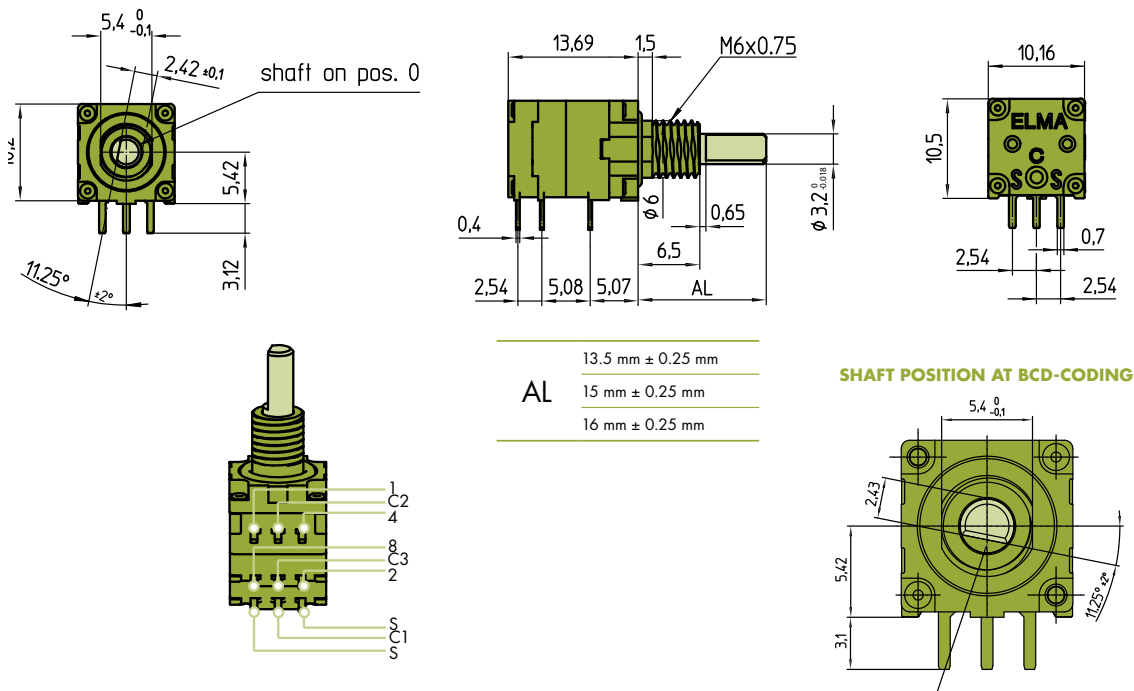
**CODED SWITCH** TYPE 07PL



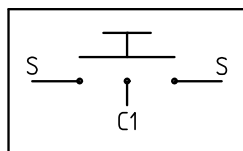
**DRAWINGS**

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

**SWITCH DESIGN**

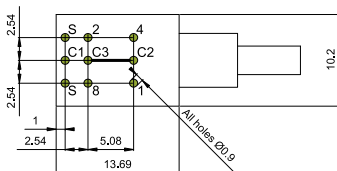


**PUSH BUTTON FUNCTION**

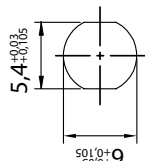


**DRILLING DIAGRAM**

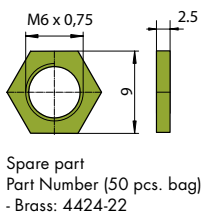
Commons (C2, C3) must be connected together on the PCB



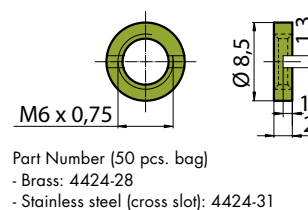
**FRONT PANEL CUT OUT**



**HEX NUT**



**SLOTTED NUT**



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## TYPE KEY

STANDARD: HORIZONTAL SHAFT, WITH END-STOP (HEX OR GRAY: 16 POS.)

