

# SELECTOR SWITCH TYPE 08



#### **MAIN FEATURES**

HORIZONTAL, MULTI WAFER, PCB MOUNTING, UP TO 12 POSITIONS

- > For PCB mounting
- 25'000 switching cycles with up to 9 Ncm switching torque
- > Gold plated contacts: 3 micron
- > Robust metal housing with metal shaft
- $\rightarrow$  Operating temperature range: -40° to +85°
- Various options and customizations



# **PRODUCT VARIETY**

- From  $1 \times 12$  to  $4 \times 3$  poles x positions per wafer
- Up to 8 wafers
- Shorting or non-shorting
- Switching torque 3, 6 or 9 Ncm
- Configurable End-Stops



# **POSSIBLE CUSTOMIZATIONS**

- Shaft dimension and shape
- Switching torque
- Hollow shaft, inner shaft (see page 106)
- Others

#### TYPICAL APPLICATIONS

- Industrial controls
- Avionics, instrumentation, test systems
- Medical and audio equipment







## <sup>1</sup> PREFERENCE TYPES SELECTION CHART

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

CONTACT ARRANGEMENT COMMON WAFER PART CONTACT	T SWITCHING WAFER PART CONTACT	NUMBER OF WAFERS	FUNCTION (POLES X POSITIONS)	PART NUMBER SHORTING	non-shorting
		1	1 x 12, endless rotating	08-1103	08-1104
		2	2 x 12, endless rotating	08-2103	08-2104
		3	3 x 12, endless rotating	08-3103	08-3104
* 1	1211 10 9 8 7 6 5 4 3 2 1	4	4 x 12, endless rotating	08-4103	08-4104
		1	1 x 12	08-1113	08-1114
		2	2 x 12	08-2113	08-2114
		3	3 x 12	08-3113	08-3114
* 1211 10 9 8 7 6 5 4 3 2 1 1	1211 10 9 8 7 6 5 4 3 2 1	4	4 x 12	08-4113	08-4114
		1	2 x 6	08-1263	08-1264
		2	4 x 6	08-2263	08-2264
		3	6 x 6	08-3263	08-3264
* b 1 a 1	12 11 10 9 8 7 6 5 4 3 2 1	4	8 x 6	08-4263	08-4264
<u> </u>		1	3 x 4	08-1343	08-1344
	2 6×4	6 x 4	08-2343	08-2344	
		3	9 x 4	08-3343	08-3344
* C 1 b 1 a 1	1211 10 9 8 7 6 5 4 3 2 1	4	12 x 4	08-4343	08-4344
	1 4 x 3 08-1433 08-1434 2 8 x 3 08-2433 08-2434	08-1434			
		2	8 x 3	08-2433	08-2434
		3	12 x 3	08-3433	08-3434
*	1211 10 9 8 7 6 5 4 3 2 1	4	16 x 3	08-4433	08-4434

 $<sup>^{\</sup>star}$  Common interconnection to be made on PCB.

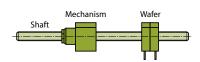
## STOP AND FIXING SCREWS

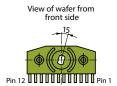
Configurable stop screws can be set at any position between 2 and the maximum. Stop screws have to be ordered separately.

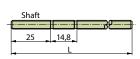
	PACKAGING SIZE	PART NUMBER
Stop screw M1.2	10 pcs.	4224-11
Stop screw M1.2	100 pcs.	4224-10
Fixing screw M2 x 6	10 pcs.	4224-01

### **AVAILABLE IN KIT FORM**

Mechanism, wafer and shaft are supplied separately. This offers more possibilities to place the switch onto the PC-board.







## WAFER

FUNCTIONS (POLES X POSITIONS)	PART NUMBER SHORTING	PART NUMBER NON-SHORTING
1 x 12	4217-10	4218-10
2 x 6	4217-11	4218-11
3 x 4	4217-13	4218-13
4 x 3	4217-12	4218-12

#### SWITCH MECHANISM

NUMBER OF POLES	POSITIONS	TORQUE	PART NUMBER
≤ 6	12	6 Ncm	4214-10
> 6	12	9 Ncm	4214-12

# SHAFT INCLUDING ASSEMBLY MATERIAL

LENGTH L	NO. OF HOUSINGS	PART NUMBER
75 mm	3	4211-05
100 mm	5	4211-10
125 mm	7	4211-15
150 mm	9	4211-20



# DATA SHEET **SELECTOR SWITCH TYPE 08**



## **SPECIFICATIONS**

SPECIFICATIONS .	
MECHANICAL DATA	
Resolution:	12 positions max. (30° indexing)
Switching torque (new condition):	3, 6 or 9 Ncm (+/- 25%), additional wafers may increase switching torque
Rotational life:	25'000 switching cycles min.
Fastening torque of nut:	200 Ncm max.
ELECTRICAL DATA	
Function:	From 1 x 12 to 4 x 3 poles/positions per wafer
Switching mode:	Shorting or non-shorting
Load current:	1.5 A max. (resistive load)
Switching voltage:	42 VDC max.
Contact resistance (new condition):	20 mΩ max.
Insulation resistance (new condition):	$10^{13}~\Omega$ min. (contact to contact / housing)
Switching capacity:	1 pF max. (contact to contact)
Dielectric withstanding voltage:	500 VDC during 60 seconds
MATERIAL DATA	
Shaft:	Stainless steel
Bushing/housing:	Zinc diecast, zinc plated and passivated
Contact plating:	Gold; 3 µm
Insulation material:	Wafer: PA6/6T, rotor: Polyacetal (POM)
Soldering leads:	Alloy copper, tin plated
ENVIRONMENTAL DATA	
Operating/storage temperature range:	-40° to +85°C
IP sealing:	IP60 shaft/front panel sealing
Vibration:	10 G <sub>rms</sub> max. @ 10 to 2000 Hz
Flammability:	UL94-HB
PACKAGING QUANTITY	
Тгау:	10 pcs.
SOLDERING CONDITIONS	
Hand soldering:	340°C max. during 2 sec max.
Wave soldering:	280°C max. peak temperature during 5 sec max.

# **SWITCHING MODES**

For information about switching mode please see technical explanations at the end of the catalog



### DATA SHEET

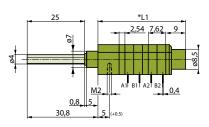
# **SELECTOR SWITCH TYPE 08**



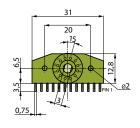
### **DRAWINGS**

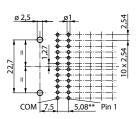
Tolerances unless otherwise specified DIN ISO 2768-1 (m)

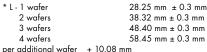
SWITCH WITH 2 WAFERS



Ax = Common contact water of xBx = Switching contact wafer of x

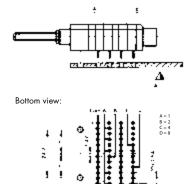






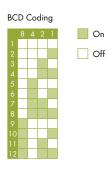
per additional wafer + 10.08 mm
\*\* All further steps are in 5.08 mm pitch

## **SWITCH WITH BCD CODING**

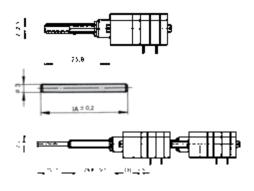


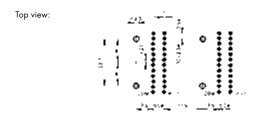
#### BCD CODING

For 12 positions, the coding will be made according to the layout on the left (on the printed circuit). If the switch is composed of component parts, the housings A (3  $\times$  4) and B (1  $\times$  12) have to be ordered. Limiting to 10 positions (BCD) is done with a stop screw M1.2  $\times$  2.5.



## **HOLLOW SHAFT SYSTEM (CUSTOMIZED SOLUTION)**





### **HOLLOW SHAFT**

Available for switches up to 4 wafers; inner shaft ( $\varnothing$  2 mm) to be ordered separately.

#### **INNER SHAFT**

Must be ordered separately for switches with hollow shaft.

## SWITCH WITH CONCENTRIC SHAFTS

Consisting of a hollow outer and inner shaft, the inner shaft driving a maximum of 3 wafers with 4 wipers each. Please indicate type of each switch.





# SELECTOR SWITCH TYPE 08

# **TYPE KEY** 08 **PART NUMBER FACTORY SET END-STOP** (see page 108) **00** 12 pos. (standard) 11 11 pos. 10 10 pos. 09 09 pos. 08 08 pos. 07 07 pos. **NUMBER OF WAFERS 06** 06 pos. (max. 8) **05** 05 pos. > 8 on request **04** 04 pos. **03** 03 pos. **02** 02 pos. **NUMBER OF POLES** Number of poles per wafer **SHAFT LENGTH (AL)** 000 30.8 mm 1xxx Custom (e.g. 18.5 mm = 185) **FACTORY SET CHARACTER** Defined by Elma 1 Customized shaft length (see page 108, is composed of switching mode, poles and positions)) Shaft length (AL) description measured from mounting face (see picture below). **SWITCHING MODE** 4 Non-shorting ALTOS Max. shaft length (AL): 30.8mm **TORQUE** 6 Ncm M 3 Ncm N 9 Ncm