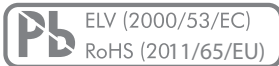


Product description

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
- › Operating temperature range: -40 to +85 °C
- › Various options and customizations



PRODUCT VARIETY

- From 1 x 12 to 4 x 3 poles x positions per wafer
- Up to 8 wafers
- Shorting or non-shorting
- Switching torque: 3, 6 or 9 Ncm
- Configurable end stops

08

POSSIBLE CUSTOMIZATIONS

- Shaft dimension and shape
- Switching torque
- Hollow shaft, inner shaft
- Others

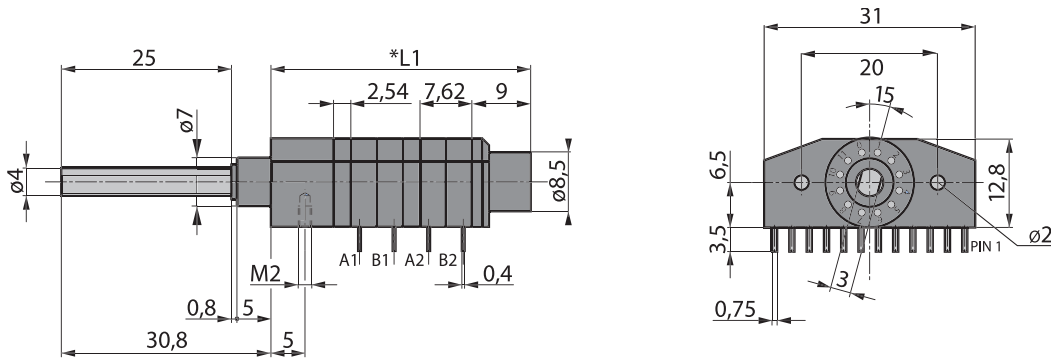
TYPICAL APPLICATIONS

- Industrial controls
- Avionics systems
- Test and measurement devices
- Medical and audio equipment

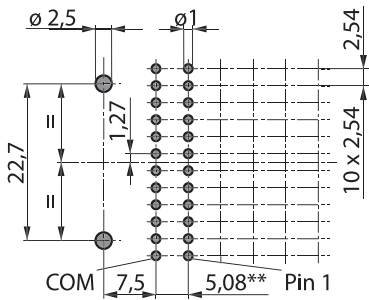
Dimensions and pin assignment

SWITCH DESIGN AND DRILLING DIAGRAM

SWITCH WITH 2 WAFERS



Ax = Common contact wafer of x
Bx = Switching contact wafer of x



- * L1 1 wafer 28.25 mm ±0.3 mm
- 2 wafers 38.32 mm ±0.3 mm
- 3 wafers 48.40 mm ±0.3 mm
- 4 wafers 58.45 mm ±0.3 mm
- per additional wafer +10.08 mm
- ** All further steps are in 5.08 mm pitch

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

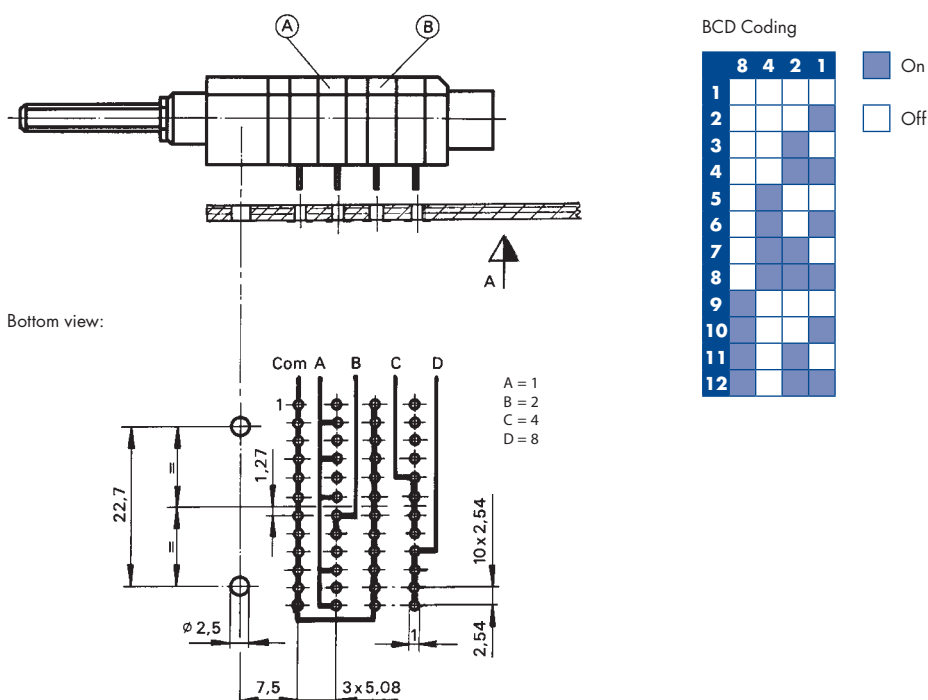
Dimensions and pin assignment

SWITCH DESIGN AND DRILLING DIAGRAM

SWITCH WITH BCD CODING

12 Position 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 x 4) and B (1 x 12) have to be ordered. Limiting to 10 positions (BCD) is done with a stop screw M1.2 x 2.5.



Ordering information

ORDERING CODE

08	-	-	-	-	-	-	-	-	-	-
----	---	---	---	---	---	---	---	---	---	---

BASIC CODE

See standard types

NUMBER OF WAFERS

See standard types

NUMBER OF POLES

See standard types

FACTORY SET CHARACTER

See standard types

SWITCHING MODE

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

SWITCHING TORQUE

- 6 Ncm (standard)
- M** 3 Ncm
- N** 9 Ncm

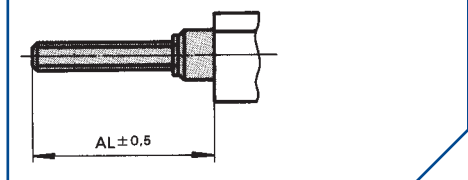
NUMBER OF POSITIONS

- 00** Standard
- 11** 11 positions
- 10** 10 positions
- 09** 9 positions
- 08** 8 positions
- 07** 7 positions
- 06** 6 positions
- 05** 5 positions
- 04** 4 positions
- 03** 3 positions
- 02** 2 positions

SHAFT LENGTH (AL)

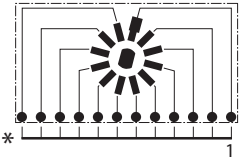
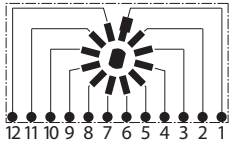
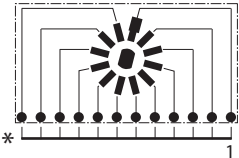
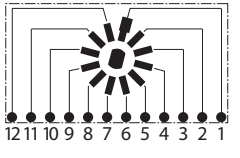
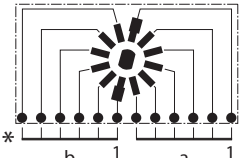
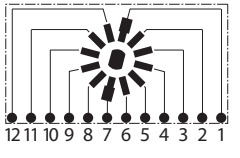
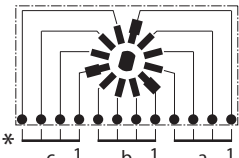
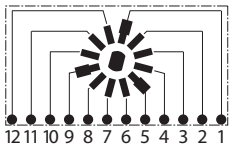
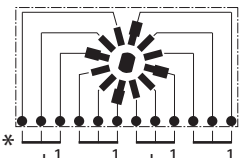
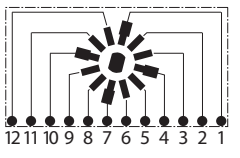
- 000** 30.8 mm
- xxx¹** Customized
(shaft length rounded to next 0.5 mm,
e.g. 10.3 mm = 10.5 mm or 10 mm)

¹ Customized shaft length (AL)
AL measured from mounting face (see picture below)
Max. shaft length (AL): 30.8 mm



Ordering information

PREFERENCE TYPES SELECTION CHART¹

CONTACT ARRANGEMENT		NUMBER OF WAFERS	FUNCTION (POLES X POSITIONS)	PART NUMBER	
COMMON WAFER PART CONTACT	SWITCHING WAFER PART CONTACT			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
		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
		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
		4	8 x 6	08-4263	08-4264
		1	3 x 4	08-1343	08-1344
		2	6 x 4	08-2343	08-2344
		3	9 x 4	08-3343	08-3344
		4	12 x 4	08-4343	08-4344
		1	4 x 3	08-1433	08-1434
		2	8 x 3	08-2433	08-2434
		3	12 x 3	08-3433	08-3434
		4	16 x 3	08-4433	08-4434

PACKAGING

Foam polystyrene box:

Quantity depends on switch configuration

ACCESSORIES AND SPARE PARTS

Fixing screw M2 x 6:

Stop screw M1.2:

Stop screw M1.2:

Stop screw:

Part number 4224-01 (10 pieces / bag), steel

Part number 4224-11 (10 pieces / bag), steel

Part number 4224-10 (100 pieces / bag), steel

Configurable stop screws can be attached at any position between two and the maximum. Stop screws must be ordered separately.

¹ For other types | options see ordering code

*The common connection is to be connected on printed circuit boards

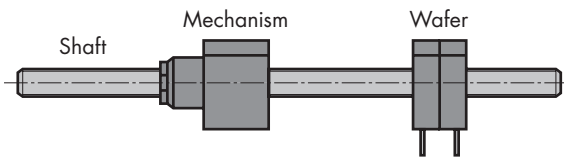
Ordering information

ACCESSORIES AND SPARE PARTS

Available in kit form:

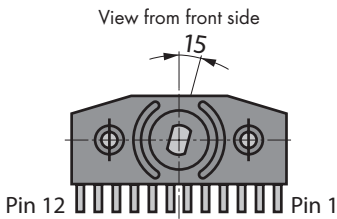
Mechanism, wafer and shaft are supplied separately. This offers more possibilities to place the switch onto the PC board.

Wafer



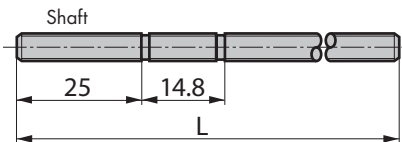
FUNCTION (POLES X POSITIONS)	PART NUMBER	
	SHORTING	NON-SHORTING
1 x 12	4217-10	4218-10
2 x 6	4217-11	4218-11
3 x 4	4217-13	4218-13
4 x 3	4217-12	4218-12

Switch mechanism



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

Shaft including assembly material

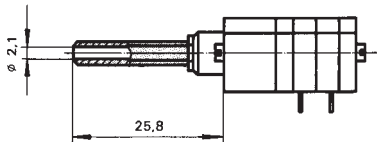


LENGTH L	NUMBER OF HOUSINGS	PART NUMBER
75 mm	3	4211-05
100 mm	5	4211-10
125 mm	7	4211-15
150 mm	9	4211-20

Customized solutions

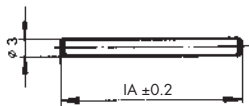
HOLLOW SHAFT SYSTEM

HOLLOW SHAFT



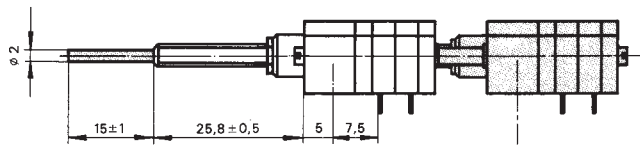
Available for switches up to 4 wafers.
Inner shaft (Ø 2 mm) must be ordered separately.

INNER SHAFT



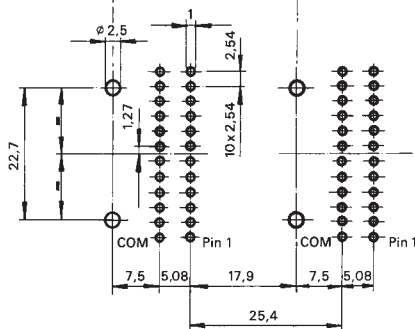
Must be ordered separately for switches with hollow shaft.

SWITCH WITH CONCENTRIC SHAFTS



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

Top view:



Specifications

MECHANICAL DATA

Detent angle positions:	30° detent angle 12 positions
Rotary limitation end stop:	Configurable
Switching torque:	3, 6 or 9 Ncm ($\pm 25\%$ in new condition)
Rotational life:	> 25'000 cycles (tested at room temperature)

ELECTRICAL DATA

Electrical connection:	Pins 0.4 x 0.75 mm
Switching voltage:	< 42 VDC (resistive load)
Switching current:	< 1'500 mA (resistive load)
Contact resistance:	< 20 m Ω (in new condition)
Switching capacity:	< 1 pF (between the contacts)
Switching function:	1 x 12 to 4 x 3 poles x positions per wafer, max. 8 wafers
Switching mode:	Shorting or non-shorting
Dielectric strength:	500 VDC during 60 s (pin-to-pin, pin-to-housing)
Insulation resistance:	> 1 G Ω at 500 VDC (pin-to-pin, pin-to-housing, in new condition)

MATERIALS

Shaft:	Stainless steel 1.4305
Bushing housing:	Zinc die casting (zinc plated and passivated)
Contact surface:	Cu alloy (Au plated)
Insulation material:	Wafer: PA6/6T Rotor: Polyacetal (POM)
Soldering leads:	Cu alloy (tin plated)

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 only shaft sealing
Vibration:	10 G _{RMS} at 10 to 2'000 Hz
Flammability:	UL94-HB

SOLDERING CONDITIONS

Hand soldering:	< 340 °C during 2 s
Wave soldering:	< 280 °C during 5 s

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