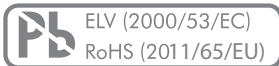
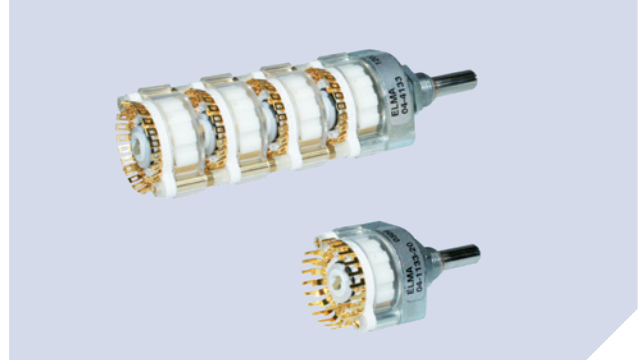


MAIN FEATURES

VERY ROBUST, MULTI WAFER, UP TO 24 POSITIONS

- › 25'000 switching cycles with up to 20 Ncm switching torque
- › Gold plated contacts: 3 micron
- › Optional IP68 front panel sealing
- › Operating temperature range: -40 °C to +85 °C
- › Various options and customizations

**TYPE 04****Product variety**

- Soldering eyelets or pins for PCB
- From 1 x 24 to 6 x 3 poles x positions per wafer
- Up to 8 wafers
- Indexing angle 15° or 30°
- Shorting or non-shorting
- Switching torque 1.5, 8, 15 or 20 Ncm
- Front panel sealing IP60 or IP68
- Configurable end-stops
- Shaft diameter: 6 mm or 1/4"
- Shaft length

Possible customizations

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

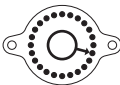


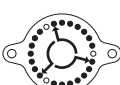


Typical applications

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

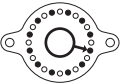
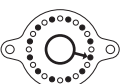
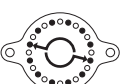
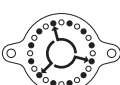


1 STANDARDTYPEN

¹ for other types / options see type key

INDEXING ANGLE 15°, SHORTING (ONLY)

CONTACT ARRANGEMENT	NUMBER OF WAFERS	FUNCTION (POLES X POSITIONS)	PART NUMBER	
			WITH SOLDER EYELETS	WITH PINS FOR PCB
	1—H	1 x 24, endless rotating	04-1103	04-1103-20
	2—HH	2 x 24, endless rotating	04-2103	-
	3—HHH	3 x 24, endless rotating	04-3103	-
	4—HHHH	4 x 24, endless rotating	04-4103	-
	1—H	1 x 24	04-1133	04-1133-20
	2—HH	2 x 24	04-2133	-
	3—HHH	3 x 24	04-3133	-
	4—HHHH	4 x 24	04-4133	-
	1—H	2 x 11	04-1213	04-1213-20
	2—HH	4 x 11	04-2213	-
	3—HHH	6 x 11	04-3213	-
	4—HHHH	8 x 11	04-4213	-
	1—H	3 x 7	04-1373	04-1373-20
	2—HH	6 x 7	04-2373	-
	3—HHH	9 x 7	04-3373	-
	4—HHHH	12 x 7	04-4373	-
	1—H	4 x 5	04-1453	04-1453-20
	2—HH	8 x 5	04-2453	-
	3—HHH	12 x 5	04-3453	-
	4—HHHH	16 x 5	04-4453	-
	1—H	6 x 3	04-1633	04-1633-20
	2—HH	12 x 3	04-2633	-
	3—HHH	18 x 3	04-3633	-
	4—HHHH	24 x 3	04-4633	-

INDEXING ANGLE 30°, NON-SHORTING (SHORTING ON REQUEST)

CONTACT ARRANGEMENT	NUMBER OF WAFERS	FUNCTION (POLES X POSITIONS)	PART NUMBER	
			WITH SOLDER EYELETS	WITH PINS FOR PCB
	1—H	1 x 12, endless rotating	04-1104	04-1104-20
	2—HH	2 x 12, endless rotating	04-2104	-
	3—HHH	3 x 12, endless rotating	04-3104	-
	4—HHHH	4 x 12, endless rotating	04-4104	-
	1—H	1 x 12	04-1124	04-1124-20
	2—HH	2 x 12	04-2124	-
	3—HHH	3 x 12	04-3124	-
	4—HHHH	4 x 12	04-4124	-
	1—H	2 x 6	04-1264	04-1264-20
	2—HH	4 x 6	04-2264	-
	3—HHH	6 x 6	04-3264	-
	4—HHHH	8 x 6	04-4264	-
	1—H	3 x 4	04-1344	04-1344-20
	2—HH	6 x 4	04-2344	-
	3—HHH	9 x 4	04-3344	-
	4—HHHH	12 x 4	04-4344	-
	1—H	4 x 3	04-1434	04-1434-20
	2—HH	8 x 3	04-2434	-
	3—HHH	12 x 3	04-3434	-
	4—HHHH	16 x 3	04-4434	-
	1—H	6 x 2	04-1624	04-1624-20
	2—HH	12 x 2	04-2624	-
	3—HHH	18 x 2	04-3624	-
	4—HHHH	24 x 2	04-4624	-

STOP SCREWS AND BUSHING NUT

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

	PACKAGING SIZE	PART NUMBER
Stop screw M1.4	10 pcs.	4124-21
Stop screw M1.4	100 pcs.	4124-20
Hex nut M10 x 0.75	10 pcs.	4124-41

SPECIFICATIONS**MECHANICAL DATA**

Resolution:	24 positions max. (15° indexing); shorting 12 positions max. (30° indexing); non-shorting
Switching torque (new condition):	1.5, 8, 15 or 20 Ncm (+/- 25%), additional wafers may increase switching torque
Rotational life:	25'000 switching cycles min.
End-stop strenght:	300 Ncm 100 Ncm for factory end-stops
Fastening torque of nut:	300 Ncm max.

ELECTRICAL DATA

Function:	From 1 x 24 to 6 x 3 poles / positions per wafer (max. 8 wafers; > 8 wafers are available on request)
Switching mode:	Shorting (for 15° indexing) Non-shorting (for 30° indexing)
Load current:	2 A max. (resistive load)
Switching voltage:	42 VDC max.
Contact resistance (new condition):	10 mΩ max.
Insulation resistance (new condition):	10 ¹² Ω min. (contact to contact / housing)
Switching capacity:	1 pF max. (contact to contact)
Dielectric withstanding voltage:	500 VDC during 60 s

MATERIAL DATA

Shaft:	Stainless steel
Bushing/housing:	Zinc diecast, zinc plated and passivated
Nut:	Brass, zinc plated and passivated
Contact plating:	Gold; 3 μm
Insulation material:	Wafer: PEEK, rotor: Polybutylene (PB)
Soldering leads:	Alloy copper, gold plated

ENVIRONMENTAL DATA

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

PACKAGING QUANTITY

Tray:	10 pcs.
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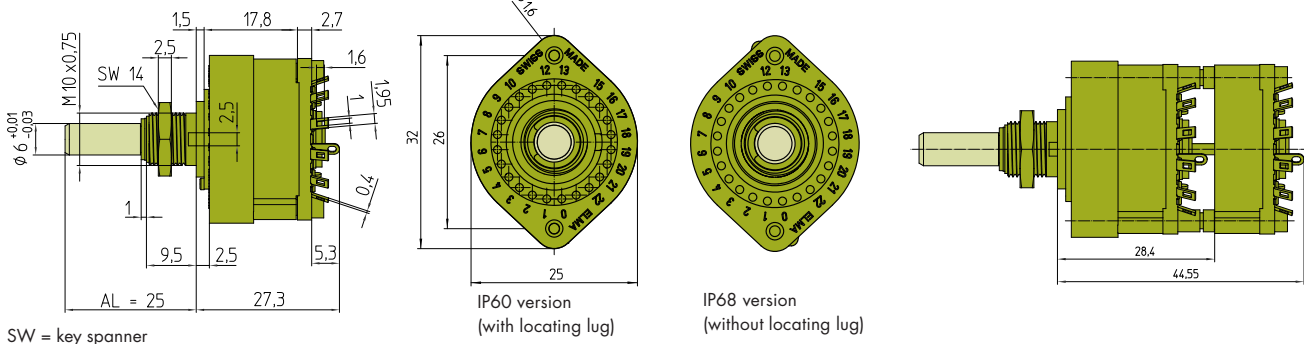
SOLDERING CONDITIONS

Hand soldering:	340 °C max. during 2 s max.
Wave soldering:	280 °C max. peak temperature during 5 s max.

DRAWINGS

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

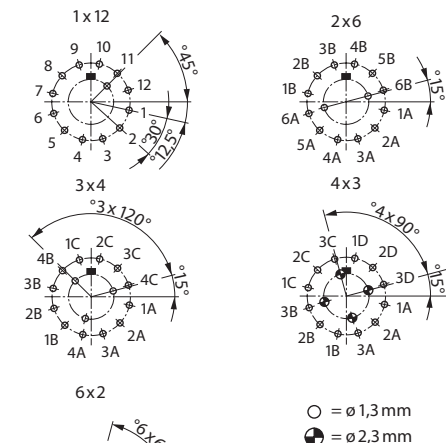
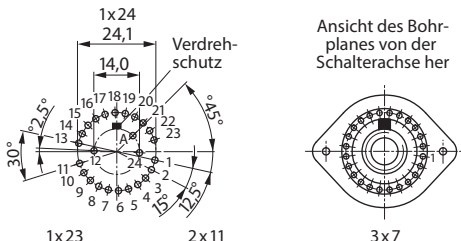
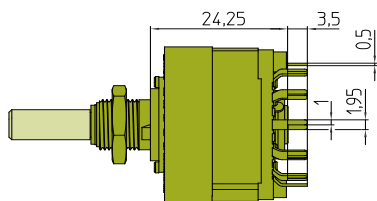
WITH SOLDER EYELETS



WITH PINS FOR PCB MOUNTING

DRILLING DIAGRAM FOR 15° INDEXING ANGLE

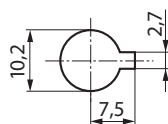
DRILLING DIAGRAM FOR 30° INDEXING ANGLE



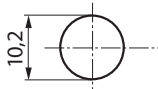
○ = $\varnothing 1,3$ mm
 ⊕ = $\varnothing 2,3$ mm

FRONT PANEL CUT OUT

IP60-Version (with locating lug)

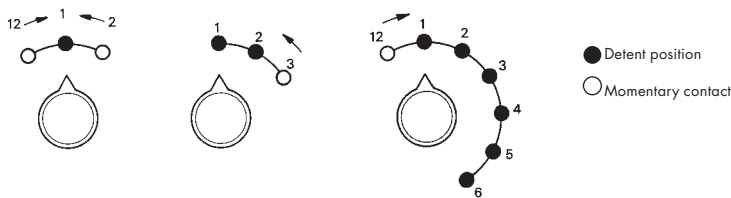


IP68-Version (without locating lug)

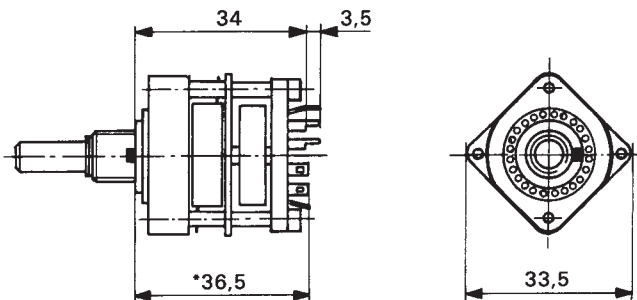


SWITCH WITH MOMENTARY CONTACT (CUSTOMIZED SOLUTION)

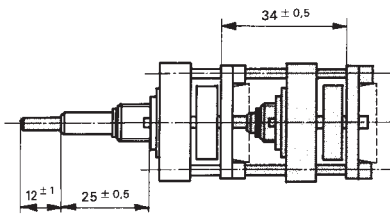
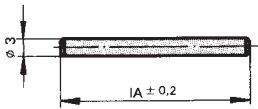
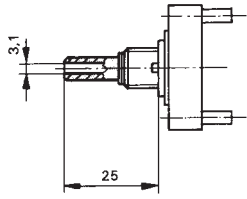
EXAMPLES



DIMENSIONS



HOLLOW SHAFT SYSTEM (CUSTOMIZED SOLUTION)



HOLLOW SHAFT

Available for switches up to 5 wafers; inner shaft (∅ 3 mm) to be ordered separately.

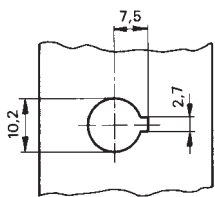
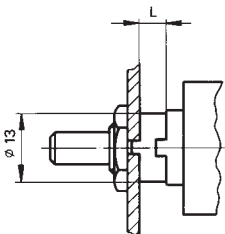
INNER SHAFT

For switches with mounting plate or hollow shaft; hollow shaft has to be ordered separately. Please state exact length.

SWITCHES WITH CONCENTRIC SHAFTS

Consisting of a hollow outer and inner shaft. The inner shaft driving a maximum of 3 wafers with 6 wipers each. Please give type description of each switch.

SPACERS



Spacers can be used in many cases instead of shortened bushes; made of glass-fibre reinforced plastic to compensate the front panel thickness; available in two standard lengths.

Can not be used for IP68 versions.

LENGTH L	PACKAGING UNIT	PART NUMBER
3.5 mm	10 pieces.	4124-31
3.5 mm	100 pieces.	4124-30
5.5 mm	10 pieces.	4124-36
5.5 mm	100 pieces.	4124-35

TYPE KEY



PART NUMBER
(see page 2)

NUMBER OF WAFERS
(max. 8)
> 8 on request

NUMBER OF POLES
Number of Poles per Wafer

FACTORY SET CHARACTER
Defined by Elma
(see page 2, is composed of switching mode, poles and positions)

SWITCHING MODE
3 Shorting
4 Non-shorting (not for 15° index. angle)

TORQUE
- 15 Ncm (standard)
M 8 Ncm
N 20 Ncm
R 1.5 Ncm

PIN STYLE; IP SEALING
00 Eyelets; IP60
20 Pins for PCB; IP60
30 Eyelets; IP68
70 Pins for PCB; IP68

SHAFT DIAMETER
0 6 mm (standard)
Z ¼" (6.35 mm)

FACTORY SET END-STOP
00 24 positions (standard)
23 23 positions
22 22 positions
21 21 positions
20 20 positions
19 19 positions
18 18 positions
17 17 positions
16 16 positions
15 15 positions
14 14 positions
13 13 positions
12 12 positions
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 25 mm (standard)
¹ xxx Custom shaft length. (AL)
(round custom shaft lengths to 0.5 mm accuracy eg. 10.3mm => 10.5mm or 10.00mm)

¹ Customized shaft length (AL)
AL: measured from top of housing (see picture below).

Max shaft length (AL):
Ø ¼" = 25 mm
Ø 6 mm = 50 mm

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