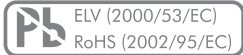


Selector Switch Type 04

- **Very robust and versatile**
 - 24 positions multi wafer selector switch**
- **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 to +85°C**
- **Various options and customization**



Standard Product Variety

- Soldering eyelets or pins for PCB
- From 1 x 24 to 6 x 3 poles/positions per wafer
- Up to 8 wafers
- 15 or 30° indexing angle
- Shorting or non-shorting
- 1.5, 8.0, 15 or 20 Ncm switching torque
- IP60 or IP68 front panel sealing
- Configurable end stops
- Shaft diameter: 6 mm or 1/4"

Possible Customization

- Shaft dimensions and shape
- Bushing dimensions
- Switching torque
- Hollow shaft, inner shaft
- Others

Typical Applications

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

Examples of Customization



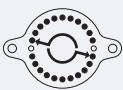
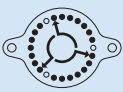
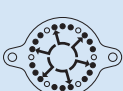
Examples of Customization

- High-end audio solution with gold plated housing and PCB
- Momentary function to left and right side with center rest
- Dual concentric switch arrangement with two 04s

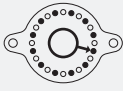
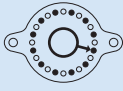
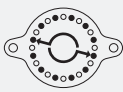
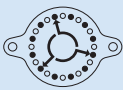
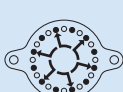
Selector Switch Type 04

Preference Types Selection Chart¹

Indexing Angle 15°, Shorting

Contact Arrangement	Construction	Poles x Positions	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

Contact Arrangement	Construction	Poles x Positions	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 Unit			Order Number
	Stop screw M1.4	10 pcs.		4124-21
	Stop screw M1.4	100 pcs.		4124-20
	Bushing nut	10 pcs.		4124-41

¹ For other types/options, see type key.

Specifications

Mechanical Data

Resolution:24 positions max. (15° indexing); shorting
12 positions max. (30° indexing); non-shorting
Switching torque (new condition):.....1.5, 8.0, 15 or 20 Ncm (+/- 25%), additional wafers may increase switching torque
Rotational life:25,000 switching cycles min.
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 mOhms max.
Insulation resistance:10¹² Ohms min. (contact to contact/housing)
Switching capacitance: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
Nut:Brass, zinc plated and passivated
Contact plating:.....AuCo (hard gold); 3 µm
Insulation material:Wafer: HF ceramic, rotor: Polybutylene (PBTB)
Soldering leads:.....Alloy copper, AuCo plated (hard gold)

Environmental Data

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

Packaging Sizes

Tray:10 pcs.

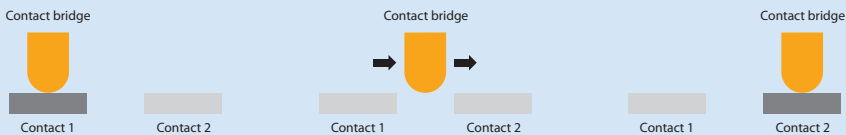
Soldering Conditions

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

Switching Modes

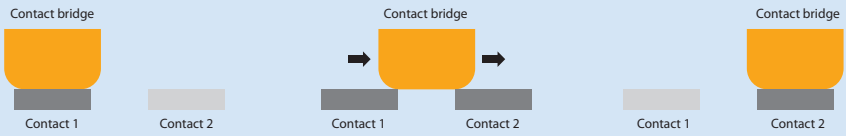
Non-Shorting

(break before make)



Shorting

(make before break)

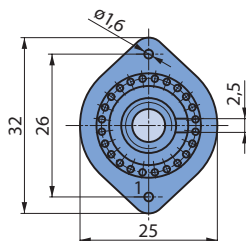
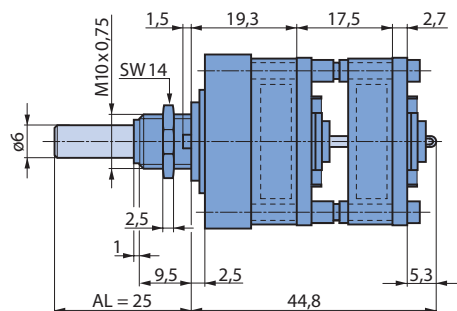


Selector Switch Type 04

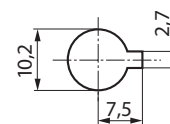
Drawings

With Solder Eyelets

SW = key spanner



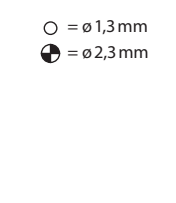
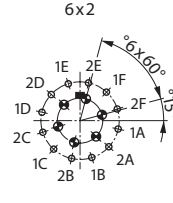
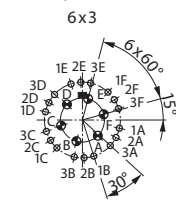
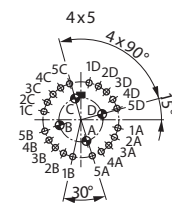
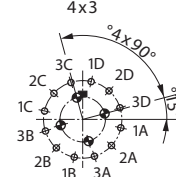
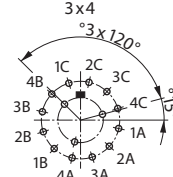
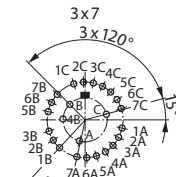
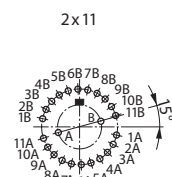
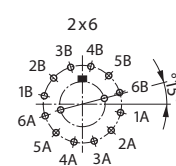
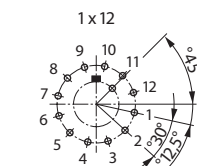
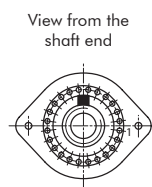
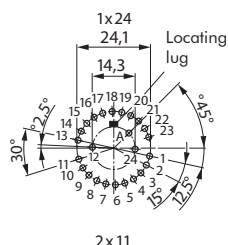
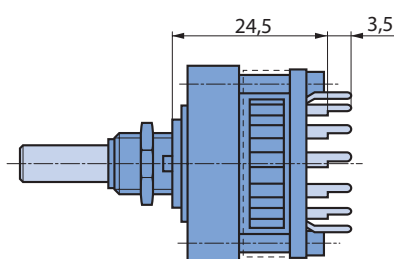
Front panel cut out



With Pins for PCB Mounting

Drilling diagram 15° for indexing angle

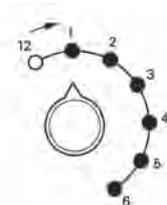
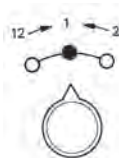
Drilling diagram 30° for indexing angle



○ = $\varnothing 1,3\text{ mm}$
● = $\varnothing 2,3\text{ mm}$

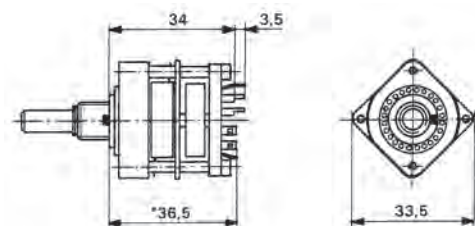
Switch with Momentary Contact

Examples



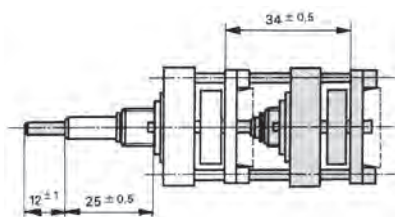
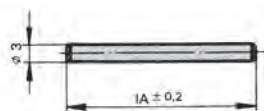
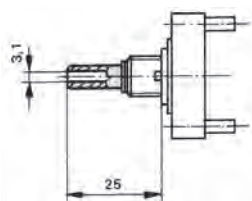
● Detent position
○ Momentary contact

Dimensions



*17.5 mm extra per wafer

Hollow Shaft System



Hollow Shaft

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

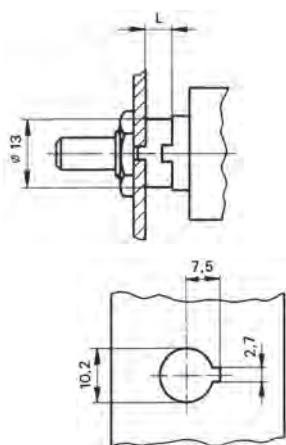
Inner Shaft

For switches with mounting plate or hollow shaft, inner shafts must be ordered separately. Please state exact length.

Switches with 2 Drive Shafts

Consisting of a hollow outer plus 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 in place of shortened bushes; made of glass-fibre reinforced plastic to compensate the front panel thickness; available in two standard lengths.

Length L	Packaging Unit	Order Number
3.5 mm	10 pcs.	4124-31
3.5 mm	100 pcs.	4124-30
5.5 mm	10 pcs.	4124-36
5.5 mm	100 pcs.	4124-35

Selector Switch Type 04

Type Key

0	4	-	X	X	X	X	-	X	X	X	X	X	X	X	X
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Wafer Type

- HF ceramic
- P - PCB

Number of Wafers

Number of Poles per Wafer

Factory set character

Switching Mode

- 3 - Shorting
- 4 - Non-shorting

Torque

- 15 Ncm
- M - 8.0 Ncm
- N - 20.0 Ncm
- R - 1.5 Ncm

Shaft Diameter

- 0 - 6 mm
- Z - 1/4"

Factory Set End Stop

- 00 - Standard
- 23 - 23 pos.
- 22 - 22 pos.
- 21 - 21 pos.
- 20 - 20 pos.
- 19 - 19 pos.
- 18 - 18 pos.
- 17 - 17 pos.
- 16 - 16 pos.
- 15 - 15 pos.
- 14 - 14 pos.
- 13 - 13 pos.
- 12 - 12 pos.
- 11 - 11 pos.
- 10 - 10 pos.
- 09 - 9 pos.
- 08 - 8 pos.
- 07 - 7 pos.
- 06 - 6 pos.
- 05 - 5 pos.
- 04 - 4 pos.
- 03 - 3 pos.
- 02 - 2 pos.

Shaft Length (AL)

- 000 - 25 mm
- xxx - Custom¹
(e.g. 18.5 mm = 185)

Pin Style, IP Sealing

- 00 - Eyelets
- 20 - Pins for PCB
- 30 - Eyelets, IP68
- 70 - Pins for PCB, IP68

¹ Customized Shaft Length

Please state shaft length (AL) measured from mounting face (max. AL = 50 mm).

