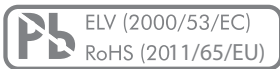


# MULTI ROTARY SWITCH MR50

## MAIN FEATURES

### 1/2" SELECTOR SWITCH

- Dimensions Ø 1/2" (12.7 mm)
- Switching mode: Shorting or non-shorting
- 10, 12 and 16 selector switch positions
- Switching torque up to 6 Ncm
- Gold plated contacts
- Rugged design
- Sealing up to IP68
- Operating temperature range: -45 to +85°C
- Not ITAR related
- Various options and customizations



### MR50



## PRODUCT VARIETY

- Number of selector positions/indexing angles
- Shaft styles
- Shorting or non-shorting
- Front panel sealing IP60 and IP68
- Switching torque with 3 or 6 Ncm

## POSSIBLE CUSTOMIZATIONS

- Shaft style and material
- Bushing style
- Switching torque
- Number of poles
- End position

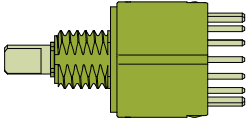
## TYPICAL APPLICATIONS

- Target aiming devices
- Night vision devices
- Weapon lights
- Two way radios
- Cockpit applications (aircraft, automotive, nautic, construction-machines, military vehicles)
- Portable devices (communication, medical, rescue, sports, transportation, measuring, photo/video)
- Test equipment

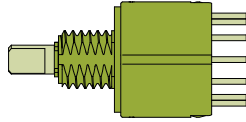
**1 PREFERENCE TYPES SELECTION CHARTS**

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

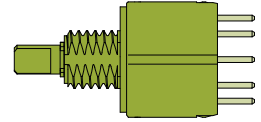
**16 POSITIONS**



**12 POSITIONS**



**10 POSITIONS**



IP SEALING	SWITCHING MODE	POSITIONS / INDEXING ANGLES	TORQUE	PART NUMBER
IP68	Shorting	16 / 22.5°	3 Ncm	MR50-A11B-B113
			6 Ncm	MR50-A11B-D113
		12 / 30°	3 Ncm	MR50-B11B-B113
			6 Ncm	MR50-B11B-D113
		10 / 36°	3 Ncm	MR50-C11B-B113
			6 Ncm	MR50-C11B-D113
	Non-shorting	16 / 22.5°	3 Ncm	MR50-A21B-B113
			6 Ncm	MR50-A21B-D113
		12 / 30°	3 Ncm	MR50-B21B-B113
			6 Ncm	MR50-B21B-D113
		10 / 36°	3 Ncm	MR50-C21B-B113
			6 Ncm	MR50-C21B-D113

## SPECIFICATIONS

### MECHANICAL DATA (at 25°C ± 2°C)

Positions/Indexing:	16/22.5°; 12/30°; 10/36° with End-Stop between position 1 and the last position
Poles:	1
Switching torque (new condition):	3 or 6 Ncm (± 30%)
Rotational life:	20'000 cycles min.
End-stop strength:	85 Ncm min.
Fastening torque of nut (front panel mounting):	170 Ncm max.

### ELECTRICAL DATA (at 25°C ± 2°C)

Contact resistance (new condition):	50 mΩ
Electrical ratings:	200 mA @ 28 VDC resistive load max. 100 mA @ 28 VDC inductive load max. 100 mA @ 28 VDC lamp load max.
Dielectric withstanding voltage:	500 VDC during 60 seconds (pin to pin, pin to housing)
Insulation resistance (new condition):	1 GΩ min. @ 500 VDC
Switching mode:	Shorting or non-shorting

### MATERIAL DATA

Shaft:	Stainless steel 1.4305
Snap-Ring:	Spring steel, nickel plated
Housing:	Zinc diecast, nickel plated
Contact wafer:	Fiber enforced plastic (UL94-V0)
Nut:	Brass, nickel plated
Contact system:	CuBe alloy, AuCo plated (hard gold)
Soldering leads:	Copper alloy, nickel-tin plated
Shaft sealing (o-ring):	FPM 70 shore A (Viton)
Front panel sealing:	MVQ silikon, 60 shore

### ENVIRONMENTAL DATA

Operating temperature range:	-45 to +85°C (IEC 60068-2-14)
Storage temperature range:	-50 to +125°C (IEC 60068-2-14)
Humidity (non-condensing):	93% RH max. MIL-STD-202G, method 103B, condition B
IP sealing:	IP60, IP68 (2 bar, 1 h)
Vibration:	10 G <sub>RMS</sub> max.@ 10Hz - 2000Hz MIL-STD-202G, method 214B, condition 1/C
Shock:	100 G max. MIL-STD-202G, method 214B, condition C
Flammability:	UL94-V0 (sealings are UL94-HB)

### PACKAGING QUANTITY

Tray:	Antistatic tray (50 pcs).
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### SOLDERING CONDITIONS

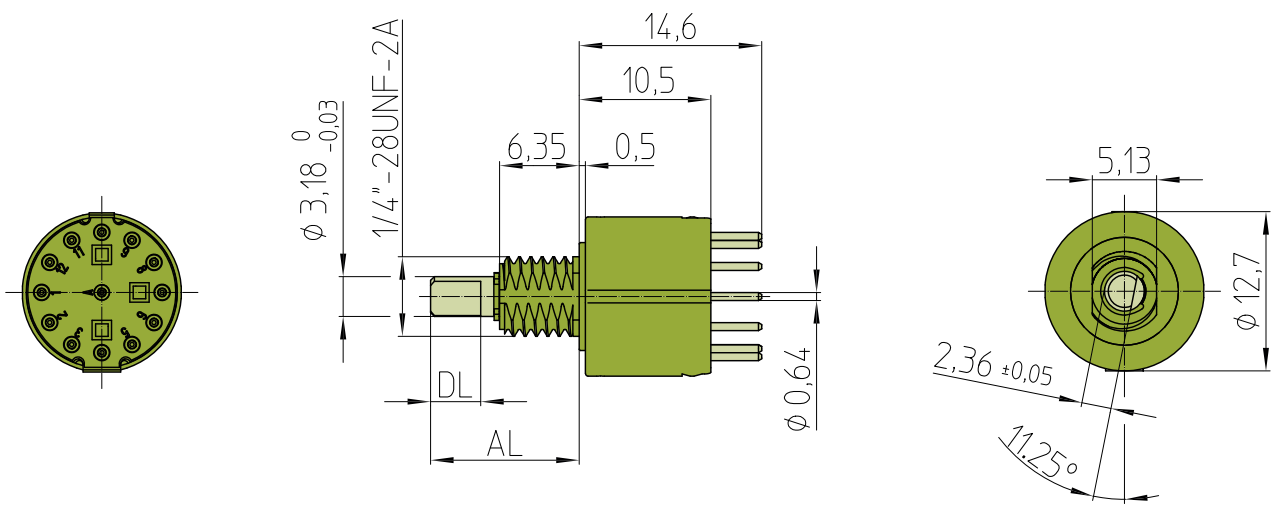
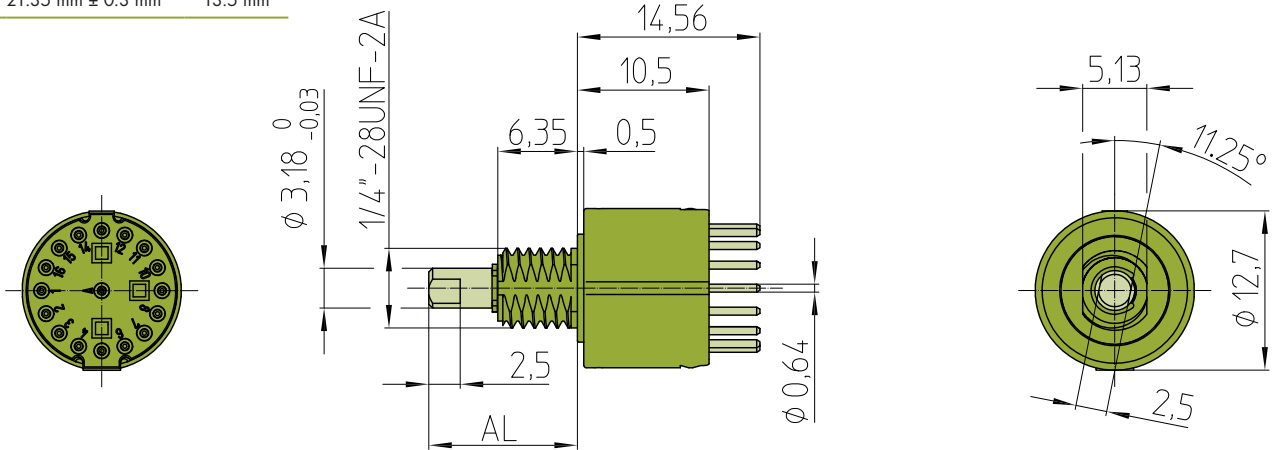
Hand soldering:	300°C max. during 3 s max.
Wave soldering:	280°C max. during 5 s max.

**DRAWINGS**

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

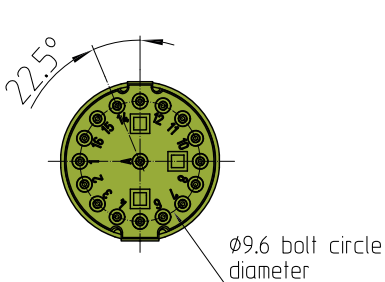
SWITCH DESIGN

	<b>DL</b>	
	11.85 mm ± 0.3 mm	4 mm
<b>AL</b>	16.35 mm ± 0.3 mm	8.5 mm
	21.35 mm ± 0.3 mm	13.5 mm

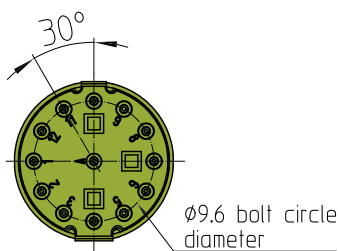


REAR VIEW

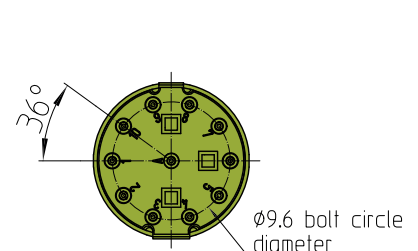
**16 POSITIONS / 1 POLE**



**12 POSITIONS / 1 POLE**

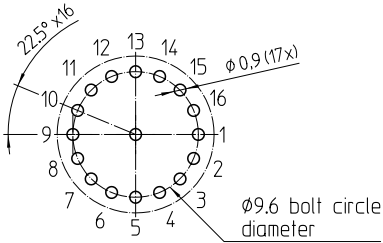


**10 POSITIONS / 1 POLE**



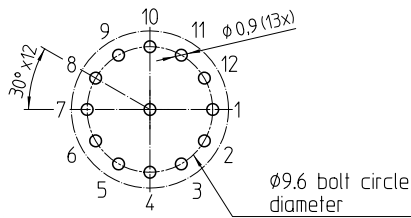
DRILLING DIAGRAMS

**16 POSITIONS / 1 POLE**



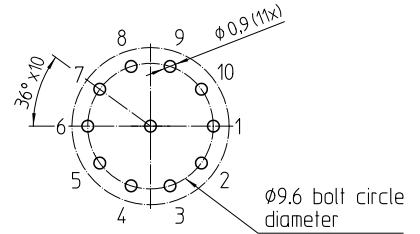
View from component side of the PCB

**12 POSITIONS / 1 POLE**



View from component side of the PCB

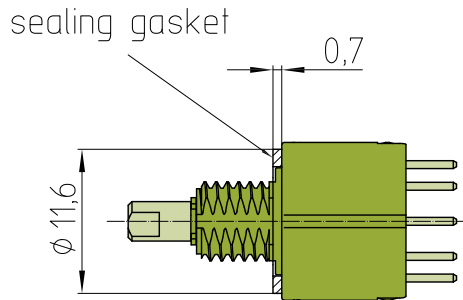
**10 POSITIONS / 1 POLE**



View from component side of the PCB

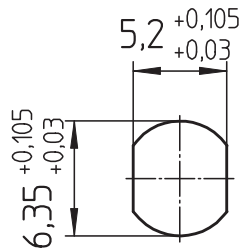
**DRAWINGS**

FRONT PANEL SEALING IP68

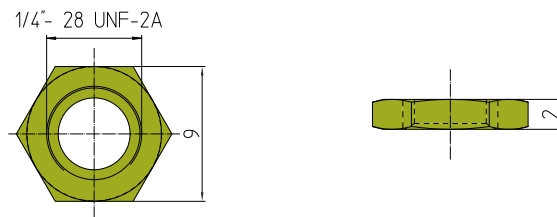


FRONT PANEL CUT OUT

**FOR BUSHING 1/4" - 28 UNF - 2A**



HEX-NUT (SUPPLIED)



Spare Part:  
Part Number (50 pcs. bag): Brass, nickel plated: 4516-50

**TYPE KEY**



**SWITCH TYPE; RESOLUTION; SWITCHING MODE**

**A1** Selector:  
16 pos. (22,5° indexing); Shorting

**A2** Selector:  
16 pos. (22,5° indexing); Non- Shorting

**B1** Selector:  
12 pos. (30° indexing); Shorting

**B2** Selector:  
12 pos. (30° indexing); Non-Shorting

**C1** Selector:  
10 pos. (36° indexing); Shorting

**C2** Selector:  
10 pos. (36° indexing); Non-Shorting

**XX** Ask for customized solution

(Explanation: see chapter technical explanation at the end of the catalog)

**NUMBER OF POSITIONS**

**0** No end position

**1** Standard; End position between position 1 and last position

**X** Ask for customized solution

**MOUNTING; SWITCH ORIENTATION; STOP CONTACTS; SEALING**

(Hex nut supplied)

**A** ¼"-28 UNF-2A x 6.35 mm;  
Vertical THT; PCB-assembly; IP60

**B** ¼"-28 UNF-2A x 6.35 mm;  
Vertical THT; PCB-assembly; IP68

(bushing dimension and shape see drawing)

**X** Ask for customized solution

¼" = 6.35 mm

**PACKAGING**

- Antistatic tray (50 pcs.)

**SHAFT STYLE (AL) & MATERIAL**

**12** Ø 1/8" x 11.85 mm, round; Stainless steel

**13** Ø 1/8" x 11.85 mm, D-shaft; Stainless steel

**16** Ø 1/8" x 16.35 mm, round; Stainless steel

**17** Ø 1/8" x 16.35 mm, D-shaft; Stainless steel

**21** Ø 1/8" x 21.35 mm, round; Stainless steel

**22** Ø 1/8" x 21.35 mm, D-shaft; Stainless steel

(shaft dimension and shape see drawing)

**XX** Ask for customized solution

1/8" = 3.18 mm

**POLES**

**1** 1 Pole (Standard)

**X** Ask for customized solution

**TORQUE**

**B** 3 Ncm

**D** 6 Ncm

**X** Ask for customized solution