

Engineering Bulletin No RW25 Rotary Wafer Switches - Model MU-MA

General Information These versatile miniature switches have 25.4 mm diameter moulded wafers and are available in

2 versions, 36° indexing - having 18 clip positions and 30° indexing - having 22 such positions. 15°, 45° and 60° indexing are variations of the latter. Optional features include concentric shafts, panel and

spindle seals, printed circuit termination's and momentary contact models.

Characteristics. Electrical, Maximum working voltage, 300Vdc/ac (rms).

Contact rating, Current carrying 2amp continuous.

Current breaking with a resistive/non-reactive load.

Proof Voltage. 150mA at 250Vac (rms)..

1000Vrms at sea level.

Insulation resistance. Not less than 500 megohms at 500Vdc.

(between any 2 parts requiring electrical insulation)

Contact resistance (initial). 10 milliohms maximum at 100mV (rms). 100mA.max.

Mechanical.

End stop strength. $0.8 \pm 0.1 \text{ Nm} (114 \text{oz.in.})$

Temperature range. -40° C. to $+100^{\circ}$ C.

Maximum Switching Per Wafer

No. of Poles.	36° MU-MA (b)	30° MU-MA (a)	45° MU-MA (c)	60° MU-MA (d)	15° MU-MG
	10 Positions.	12 Positions.		2 wafers	
1 Pole.	2 to 10 ways	2 to 12 ways	2 to 8 ways	2 to 6 ways	providing 1 pole
2 Pole.	2 to 5 ways	2 to 7 ways	(fixed stop at	2 to 6 ways	24 way
3 Pole.	2 to 4 ways	2 to 5 ways	positions 3, 5,	2 or 3 ways	switching.
4 Pole.	2 or 3 ways	2 to 4 ways	and 7 ways)	2 or 3 ways	
5 Pole.	-	2 to 3 ways		2 ways only	
6 Pole.	-	2 ways only		on-off	
7 Pole.	-	2 ways only		-	

Index Mechanism.

The Type MU mechanism provides indexing angles of 30° , 36° , 45° and 60° ,

(see Bulletin RW36 for full technical details).

The low friction moulded cam followers in the assembly ensures a smooth indexing action. Balance pressure springs provide consistent and readily reproducible total switch torque values within the following ranges.

Light 7 to $18 \times 10^{-2} \text{ Nm}(10 \text{ to } 26 \text{ oz, ins,})$ Medium $14 \text{ to } 32 \times 10^{-2} \text{ Nm } (20 \text{ to } 46 \text{ oz, ins,})$

High $28 \text{ to } 56 \text{ x } 10^{-2} \text{ Nm } (40 \text{ to } 80 \text{ oz, ins,})$

Type A indexing mechanism may also be used as an alternative where a simpler, space saving mechanism is required. The switch then becomes model A-MA. 30° indexing only.

Contacts & Standard. Silver plated brass.

Termination's. Alternatives. - Hard gold plated or silver contacts are available at extra cost as are contacts with

gold flash.

Termination's. - Forward, standard: Straight, alternative.

Rotor Blades. Standard. - Shorting. (make before break. MBB.)

Alternative. - Non-shorting. (break before make. BBM.)

Insulation. Stator. - Moulded glass fibre loaded diallylphthalate (DAP)

Rotor. - Polycarbonate.

Finish. Index Springs, Stainless steel: other metal parts, passivated zinc plated. Finishes to order.

Mounting Details. Imperial (standard). Metric (alternative)

Bush 3/8" x 32TPI (Whit.) M10 x 0.75. Shaft 0.25" dia. 6mm, dia. Nut 0.525" A/F. 14mm A/F.

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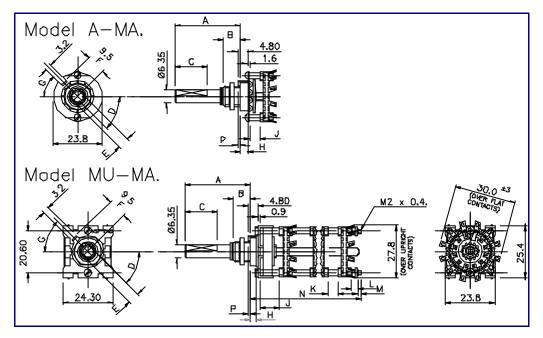
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RW25 MU-MA

- Variations. 1.
 - 1. Biased indexing is available giving momentary contact on positions 8 to 7, 5 to 4, 4 to 3, 3 to 2 and 2 to 1 as well as 3 position biased to centre.
 - 2. Concentric shafts dual concentric shafts and mechanisms for dual switching applications. (Not available for 36° indexing).
 - 3. Insulated shafts.
 - Electrostatic shields.
 - 5. Printed circuit termination's 2 types are available giving a variation in mounting height of the wafer above the P.C.board.
 - Adjustable stops 2 types are available.
 Front can be set without dismantling the switch and are available on models MU-MA (a),(d) and A-MA with imperial bush.

Rear - for use with all other indexing variations both Imperial and Metric versions.



Dimensions Are In Millimetres

Key To Details

- A. Shaft length: optional ± 0.40 (0.016")
- Bushing thread length: preferred standard 9.5 (0.375"); 6.35 (0.250") available as an alternative. Special lengths if necessary
- C. Flat length: length to specification. Tolerance \pm 0.40 (0.016"). Special shaft termination's may be provided to special requirements.
- D. Angle of flat: to specification ± 2°; specify position of flat, with switch shaft in **fully anti-clockwise** position when viewed from front or knob end.
- E. Flat thickness: standard 5.55 ± 0.15 for grub screws; 4.95 ± 0.05 for push-on knobs.
- F. Distance of locating lug from shaft, centre line to centre line.
- G. Angle of locating lug: type MU mechanism; 45°,135°,225° and 315° from horizontal centre line; the alternative "A" type mechanism also includes 0° and 180° as viewed.

- H. Bushing shoulder; standard 3,2 (0.125")
- J. Front spacer, minimum dimension: MU-MA 9,5 (0.375"), A-MA 5
- K. Other spacers: minimum dimensions.

Clips facing same direction NIL.
Clips facing away or flat clips NIL.
Clips facing each other 3

- If no spacer 2,4. Any length spacer desired may be inserted at this point.
- M Thread extension: typically 3 x M2 x 0,4 any lengthdesired.
- P. Standard locating lug lengths: unsealed, projects 1.6 beyond mounting face; sealed, 0.05 / 0.15 below mounting face;

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