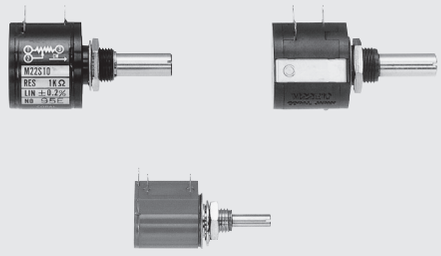
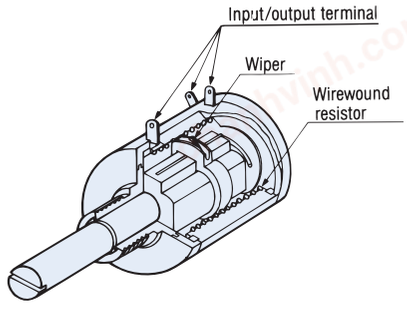
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WIREWOUND MULTITURN TYPE M series

RoHS compliant



Basic construction
Wirewound multiturn type



FEATURES

- Line-up includes products ranging from 3 to 10 turns
- Cost effective (M-22E10) in house comparison
- Dial can be attached (M-22 series only)
- RoHS compliant

PART NUMBER DESIGNATION

M - 1 3 0 3 1 0 0

Series name
M-1303, M-1305, M-22S10
M-22E10, M-22E10-050

(Ω) Nominal resistance value
100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k

LIST OF PART NUMBERS

Item / No. of turn	Nominal resistance value (Ω)	Part number	
3 turns	100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k	M-1303	Resistance value ※ 1
5 turns		M-1305	Resistance value
10 turns	100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k	M-22S10	Resistance value
		M-22E10 M-22E10-050	Resistance value ※ 2

※ 1: M-1303 200 Ω model is manufactured upon receipt of order basis.

※ 2: For M-22E10 series, plese refer to the drawing for its mount size.

※ Verify the above part numbers when placing orders.

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M series
POTENTIOMETERS

STANDARD SPECIFICATIONS

Item \ Part number		M-13 series		M-22 series	
		M-1303	M-1305	M-22S10	M-22E10
Resistance torelance	%	± 5			
Independent linearity	%	± 0.5		± 0.2	
End resistance, maximum		2 % or 4 Ω, whichever is greater		0.5 % or 1 Ω, whichever is greater	
Effective electrical angle		1080°	1800°	3600°	
Mechanical angle		1080° $^{\pm 10°}$	1800° $^{\pm 10°}$	3600° $^{+10°}_{0}$	
Power rating	W	0.75	1	2	
Dielectric strength	Vrms	1000 1 min			
Insulation resistance	MΩ minimum	1000 (at DC 500 V)			
Rotational torque	mN·m {gf·cm} maximum	14.7 {150}		9.81 {100}	
Strength of tighten screw	N·m {kgf·cm} maximum	0.98 {10}		M-22E10-000 0.784 {8}	M-22E10-050 0.588 {6}
Stop strength	N·m {kgf·cm} maximum	0.147 {1.5}		0.196 {2}	
Peak noise	Ω maximum	20 (at 4 min^{-1})			
Temp. coefficient of resistance	ppm/°C	± 50			
Operating temp. range	°C	–40 ~ 85			
Rotational life		15000 cycles		25000 cycles	
Net weight	g	Approx. 7		Approx. 19	Approx. 17
Protection grade		IP40			

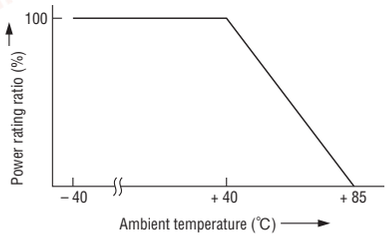
NOMINAL RESISTANCE • RESOLUTION • RATED VOLTAGE • RATED CURRENT

Nominal resistance value (Ω)	(%) Resolution		(V) Rated voltage		(mA) Rated current	
	M-22S10	M-22E10	M-22S10	M-22E10	M-22S10	M-22E10
100	0.041		14.1		141.8	
200	0.036		20.0		100.0	
500	0.029		31.6		63.2	
1 k	0.025		44.7		44.7	
2 k	0.020		63.2		31.6	
5 k	0.014		100.0		20.0	
10k	0.018		141.1		14.1	
20 k	0.014		200.1		10.1	
50 k	0.011		316.2	200.0	6.3	
100 k	➔ 0.009		➔ 450.0	➔ 200.0	➔ 4.47	

Nominal resistance value (Ω)	(%) Resolution		(V) Rated voltage		(mA) Rated current	
	M-1303	M-1305	M-1303	M-1305	M-1303	M-1305
100	0.190	0.137	8.7	10.0	86.2	100.0
200	➔ 0.154	0.095	➔ 12.2	14.1	➔ 61.5	70.9
500	0.115	0.078	19.4	22.4	38.7	44.6
1 k	0.072	0.057	27.4	31.6	28.5	31.6
2 k	0.056	0.047	38.7	44.7	19.4	22.4
5 k	0.069	0.051	61.2	70.7	12.3	14.1
10 k	0.053	0.039	86.6	100.0	8.7	10.0
20 k	0.038	0.032	122.5	141.4	6.1	7.1

The products indicated by ➔ mark are manufactured upon receipt of order basis.

RATED POWER DERATING CURVE



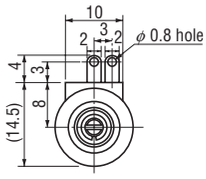
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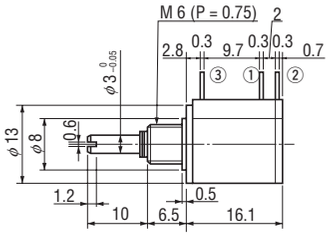
M series
POTENTIOMETERS

OUTLINE DIMENSIONS

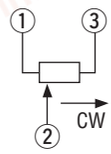
(Unit: mm)

● M-1303 (3 turns)
● M-1305 (5 turns)

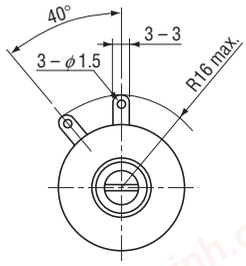


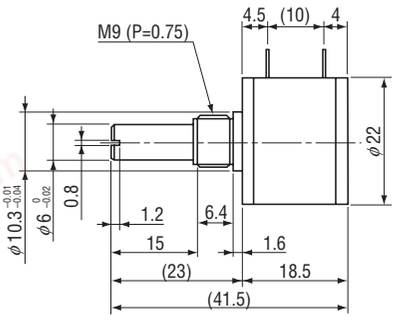


Wiring diagram

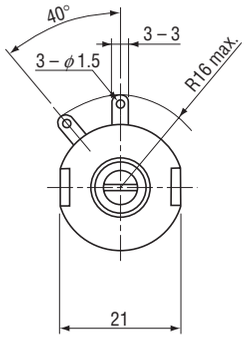


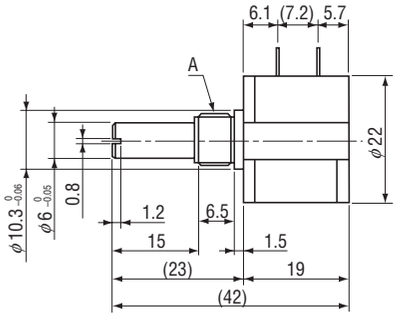
● M-22S10 (10 turns)





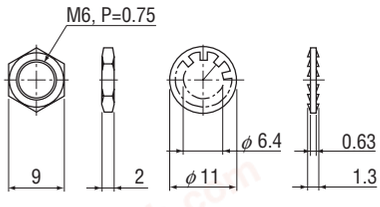
● M-22E10 (10 turns)



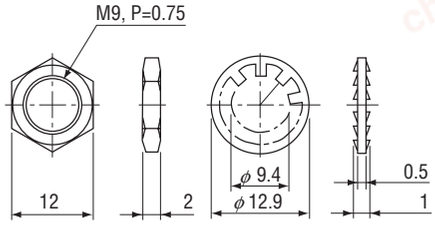


Part number \ Mark	A
M-22E10	3/8” 32 UNEF
M-22E10-050	M 9 (P = 0.75)

● MC1003, JC10, M-1303, M-1305 in common



● For mm size (M-22E10-050, M-22S10 in common)



● For inch size (M-22E10)

