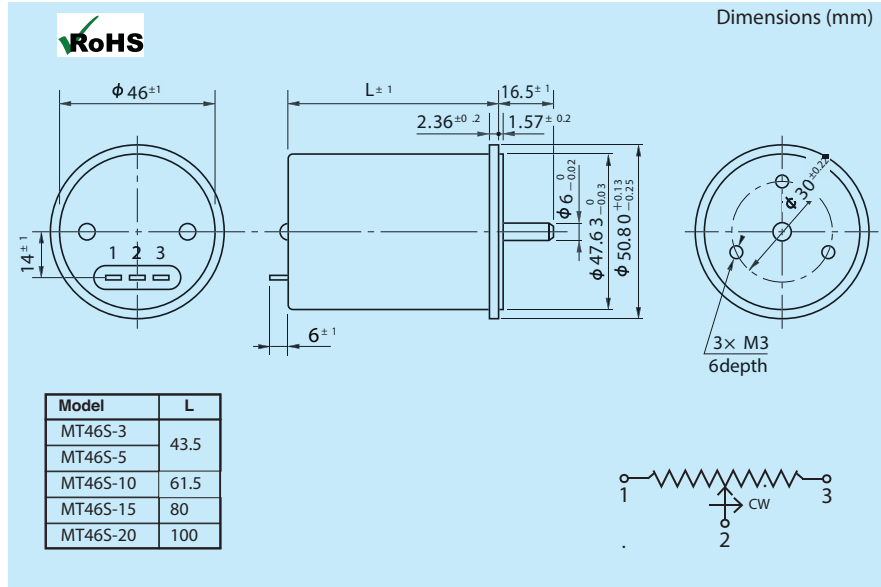


Multi-Turn Wirewound Potentiometer

Series MT46S



Standard Model Nos.

MT46S-3 (3-turn)
MT46S-5 (5-turn)
MT46S-10 (10-turn)
MT46S-15 (15-turn)
MT46S-20 (20-turn)

General Specifications (Note 1)

Standard Resistance

Range: 50, 100, 200, 500, 1k, 2k, 5k
10k, 20k Ω

Max. Practical

Resistance Value: 50k, 100k Ω (3-turn)
50k, 100k Ω (5-turn)
50k, 100k, 200k Ω (10,15-turn)
50k, 100k, 200k, 500k Ω (20-turn)

Total Resistance

Tolerance: Standard Class $\pm 3\%$ ($\pm 5\% < 1k$)
Precision Class $\pm 1\%$

Independent Linearity

Tolerance:

	3,5-turn	10,15,20-turn
Standard Class	$\pm 0.4\%$	$\pm 0.3\%$
Precision Class	$\pm 0.2\%$	$\pm 0.1\%$
($< 5k\Omega$)	($\pm 0.25\%$)	($\pm 0.15\%$)

Power Rating:

2.0W (3-turn)
2.5W (5-turn)
5.0W (10-turn)
7.5W (15-turn)
10.0W (20-turn)

Noise:

Within 100 Ω E.N.R.

Electrical Travel:

$360^\circ \times n \pm 5^\circ$ (n: No. of turns)

Mechanical Travel:

$360^\circ \times n \begin{matrix} +30^\circ \\ -0^\circ \end{matrix}$ (n: No. of turns)

Rotational Life:

600,000 (3-turn)
1,000,000 (5-turn)
2,000,000 (10,15,20-turn)

Protection Grade:

IP40 (IP54 optional)

Operating Temp.:

$-55^\circ\text{C} \dots +105^\circ\text{C}$

Insulation Resistance:

Over 100M Ω at 1000V.D.C.

Dielectric Strength:

1 minute at 1000V.A.C.

Starting Torque:

Within 20mN \cdot m (200gf \cdot cm)

Stopper Strength:

Approx. 0.9N \cdot m (9kgf \cdot cm)

Resist. Temperature

$\pm 20\text{p.p.m./}^\circ\text{C}$

Coefficient of Wire:

15G / 10Hz to 2,000Hz 12 hours

Vibration:

50G / 11ms 18 times

Shock:

Approx. 90g (3,5-turn)

Mass:

Approx. 120g (10-turn)

Approx. 150g (15-turn)

Approx. 180g (20-turn)

Special Specifications Available

30-turn type (MT46-30), lower resistance values, multi-ganged (up to 2 gangs), shaft with front and rear extension (rear shaft with 6mm dia. and 28mm length), special shaft machining (flat, pin hole, length, dia., etc.), sealed housing and o-ring shaft seal for IP54 protection grade (torque increases), limit switch adaptor

Note 1: Customers should test and verify device performance in any given application. General specifications are measured at temperatures of $+15^\circ\text{C} \sim +35^\circ\text{C}$. Specifications subject to change without notice.

• Resolution Chart (%)

Resist Value (Ω)	10	20	50	100	200	500	1k	2k	5k
MT46S-3	0.18	0.15	0.10	0.084	0.067	0.048	0.04	—	—
MT46S-5	*	0.11	0.08	0.078	0.048	0.035	0.029	—	—
MT46S-10	*	*	0.05	0.04	0.031	0.023	0.019	0.015	—
MT46S-15	*	*	0.039	0.031	0.024	0.018	0.013	0.011	—
MT46S-20	*	*	0.033	0.026	0.020	0.014	0.011	0.008	0.007
Resist Wire Used	Cu-Ni System								

Resist Value (Ω)	2k	5k	10k	20k	50k	100k	200k	500k
MT46S-3	0.043	0.031	0.026	0.019	0.015	0.012	—	—
MT46S-5	0.031	0.024	0.017	0.013	0.009	0.008	—	—
MT46S-10	—	0.015	0.012	0.009	0.007	0.005	0.004	—
MT46S-15	—	0.011	0.009	0.007	0.005	0.004	0.003	—
MT46S-20	—	—	0.008	0.006	0.004	0.003	0.0026	0.0018
Resist Wire Used	Ni-Cu System							

Note: Mark *shows the pot. with a single-wire resistive element, which gives an essentially infinite solution.