

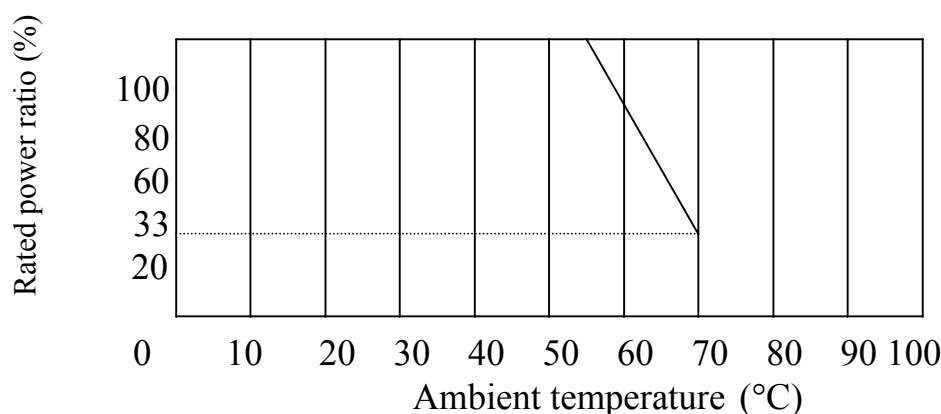
CARBON COMPOSITION POTENTIOMETER SPECIFICATION

1. Dimensions Appendix A

2. Electrical characteristics

No	ITEM	STANDARD	CONDITION SUBSTANCE
1	Total resistance (KΩ)	5 10 20 50 100 200 250	The total resistance with the shaft (lever) placed at the end of terminal 1 or 3, shall be determined by measuring the resistance between the resistor terminals 1 and 3 unless otherwise specified.
2	Total resistance tolerance	±20%	
3	Resistance taper	A B C Resistance taper: Appendix A and B	The resistance taper with the shaft (lever) placed in the specified position, shall be determined by measuring the voltage between the specified terminals (between terminals 1 and 2 or between terminals 2 and 3) and calculating the percentage in reference to the voltage between the voltage between terminals 1 and 3. Reference: Standard resistance tapers in reference to rotational angles (travels) are as shown below.
4	Ratings power	0.125 W	By power rating means the maximum value of electric power that can be applied continuously to the whole area of a resistor (between terminals 1 and 3) at the rated ambient temperature. Meanwhile, assuming that the rated ambient temperature of a carbon film resistor is 50°C, then the maximum power at an ambient temperature of 50°C÷70°C can be obtained by multiplying the rated power by the rated power ratio determined from the derating curve shown below.

Derating curve:



NO	ITEM	STANDARD	CONDITION SUBSTANCE
5	Maximum operating voltage	100 VAC	The rated voltage corresponding to the rated power shall be determined by the following equation. When the resulting rated voltage exceeds the maximum operating voltage of a specific resistor, the maximum operating voltage shall be taken as the rated voltage.
6	Residual resistance	$R1'2 \leq 10 \Omega$ $R2'3 \leq 10 \Omega$	The residual resistance, with the shaft (lever) placed at the end of terminal 1, shall be measured between the terminals 1 and 2 Next, with the shaft (lever) placed at the end of terminal 3, the resistance shall be measured between the terminals 2 and 3. If there are tapped terminals the shaft (lever) shall be turned (moved) and the resulting minimum resistance between the tapped terminal and the terminal 2 shall be measured.
7	Slider noise	Less than 47 mV	The slider noise shall be measured by connecting the resistor to the amplifier having frequency characteristics specified in JIS C6443, applying DC voltage of 20V between the terminals 1 and 3 (if rated voltage is 20V or less, this voltage shall be applied) and by rotating (moving) the shaft (lever) at a speed of about 30 cycles per minute.
8	Gang error		The gang error, with the shaft (lever) placed in the specified position, shall be determined by applying test voltage of 2 to 15V (sine-wave RMS value) between the terminals 1 and 3 at 1,000±200Hz and measuring the voltage between the resistor terminal 2 and the specified terminal (terminal 1 or 3), and shall be calculated by the following equation. Meanwhile, unless otherwise specified, DC test voltage may be applied.

Gang error = 20 LogV2/V1

NO	ITEM	STANDARD	CONDITION SUBSTANCE
9	Insulation resistance	100MΩ min at 250 VDC	The insulation shall be measured with a megger by applying specified voltage to the specified locations. The undermentioned spots shall be tested unless otherwise specified, However if the section concerned is so constructed as to conduct, that particular part shall not be tested.
10	Withstand Voltage	300 VAC for 1 minute	The voltage proof shall be measured by applying AC voltage to the specified spot for a minute to check for arc, burning dielectric breakdown and other abnormal-Lities. Respective terminals may be tested in group. The locations described below shall be tested unless otherwise specified. However, if the section concerned is so constructed as to conduct, that particular part shall not be tested.

3. Durability

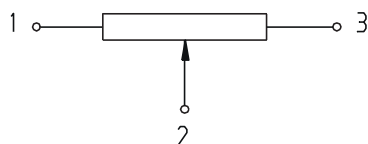
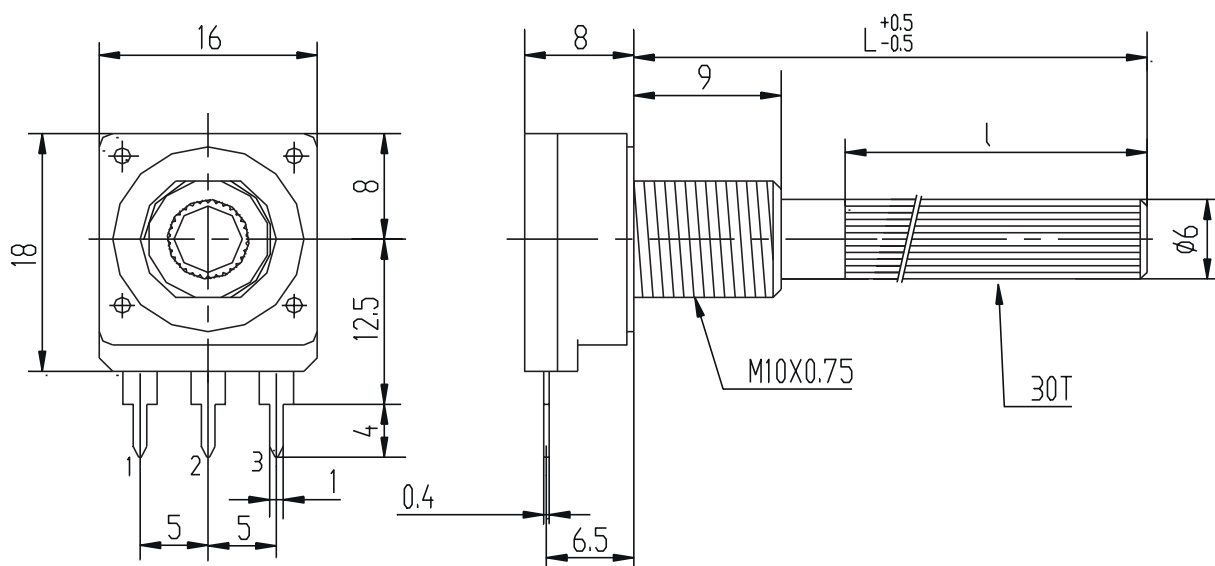
NO	ITEM	STANDARD	CONDITION SUBSTANCE
1	Rotation life	10,000 cycles	<p>The shaft (lever) shall be turned at a speed of 600 cycles per hour (counting 1 reciprocating motion as 1 cycle) and 5,000÷8,000 cycles a day over 90% of the effective rotational angle (total travel).</p> <p>Unless otherwise specified, the following requirements shall be met after the test is completed:</p> <p>Variation in total resistance: $\pm 15\%$</p> <p>Slider noise: less than 150mV</p>
2	Push lock mechat amism		

4. Mechanical characteristics

NO	ITEM	STANDARD	CONDITION SUBSTANCE
1	Total rotational angle	300±5°	The total rotational angle (lever travel) shall be determined by measuring the rotational angle (travel) when the shaft (lever) is turned (moved) from the end position of terminal 1 to the end position of terminal 3
2	Rotation torque	At room temperature (5°C to 35°C) 20 to 200 g f. cm	The rotational torque (operating force) shall be determined by measuring the torque (operating force) necessary to turn (move) the shaft (lever). Unless otherwise specified, measurement shall be made at ambient temperature of 5 to 35, and the shaft rotational speed shall be 60 per second and the lever traveling speed 20mm per second.
3	Shaft stopper strength	>3 Kg f. cm	With the shaft (lever) placed at the end of terminal 1 a specified torsional moment (force) shall be applied in that direction for 10 seconds. Next, the shaft (lever) shall be placed at the end of terminal 3 and a specified torsional moment (force) shall be applied similarly, to check the operating part and other related sections for deformation, breakage, etc.

Standard Resistance LIN	VALORE OHM
ART. 02/01056-00	470
ART. 02/01058-00	1K
ART. 02/01059-00	2K2
ART. 02/01060-00	4K7
ART. 02/01062-00	10K
ART. 02/01063-00	22K
ART. 02/01064-00	47K
ART. 02/01066-00	100K
ART. 02/01067-00	220K
ART. 02/01068-00	470K
ART. 02/01070-00	1M
ART. 02/01071-00	2M2

Standard Resistance LOG	VALORE OHM
ART. 02/01082-00	10K
ART. 02/01083-00	22K
ART. 02/01084-00	47K
ART. 02/01086-00	100K



L	l
45	31.5
35	10
24	8.5
19	8.5
16	6

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1				4			
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