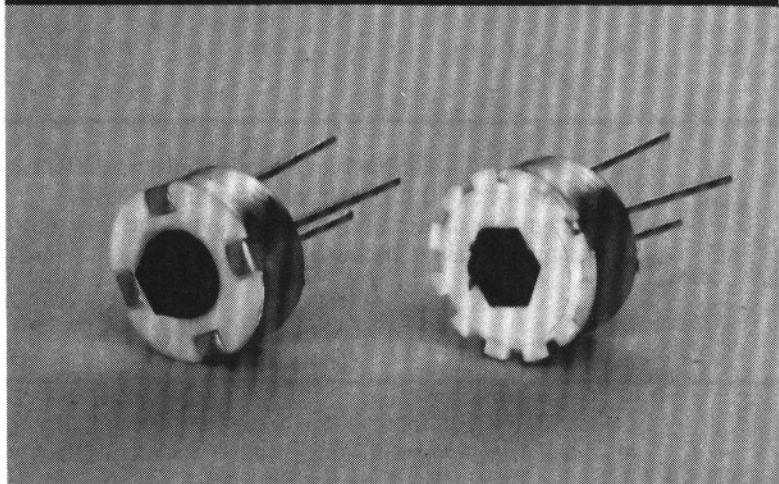


Type Y
**Hot-Molded
Trimming Potentiometers**



Features

- Thumbwheel/Screwdriver Adjustment ..
- Linear and Non-Linear Tapers
- 5000 Mechanical Cycles
- Snap-In Panel Mount

Benefits

- Versatility
- Versatility
- Very Long Rotational Life
- Versatility

AVAILABILITY

Groupings

The Type Y Hot-Molded Trimming Potentiometers are available as follows.

OEM standard components—These OEM components (Resistance Value listed in the table on Page 288).are stocked as components at our manufacturing facilities. They offer a wider range of possible combinations than

the distributor stocked final assemblies but do require assembly.

All custom components—All other components listed are available. Since they are not stocked, they require **both** fabrication and assembly.

SPECIFICATIONS

General

Temperature range — -55°C to $+100^{\circ}\text{C}$.

Total resistance range — 100 ohms to 5 Megohms.

Total resistance tolerances — $\pm 20\%$ or $\pm 10\%$.

Tapers— See chart on Page 286 for explanation of tapers. Special tapers, where practical, can be supplied.

End resistance— See chart on Page 286.

Electrical

Power — 0.25 watt maximum for “U” linear taper at +50°C provided voltage rating is not exceeded.

Power derating — Derate power linearly from +50°C to zero at +100°C. Derate power 50 percent for resistors with “A”, “B”, “S”, and “DB” tapers. For rheostat applications, derate power directly with shaft or actuator position.

Voltage — 350 volts maximum working voltage (RMS or DC), or as determined by $E_{max.} = \sqrt{PR}$, whichever is less (at sea level).

Dielectric withstanding voltage — Will withstand a one second test of 750 volts (RMS or DC) at sea level or 350 volts (RMS or DC) at 3.4 inches (86,36 mm) mercury.

Insulation resistance — 1000 megohms minimum for clean and dry conditions at +25°C.

Voltage characteristic — 0.005 percent per volt or 0.5 ohm, whichever is greater.

Operational

Load Life — 10 percent maximum change in total resistance as a result of a 1000 hour test at rated power across entire element in still air at +50°C (1.5 hours “ON”, 0.5 “OFF”).

Rotational life — Maximum change in total resistance as a result of 5000 mechanical cycles under load is 10 percent for values above 500K ohms and less than 5 percent for values below 500K ohms.

Mechanical

Shafts — Thumbwheel or screwdriver adjustment, refer to DIMENSIONS on following pages.

Rotation — Mechanical rotation is $295^\circ \pm 5^\circ$. Electrical rotation is 270° nominal.

Turning torque — 0.25 to 3 inch-ounces (0,018 to 0,22 kgf-cm) at +25°C.

Backlash — Maximum of 3 degrees.

Stop torque — 2 inch-pounds (2,31 kgf-cm) minimum.

Construction — Materials are corrosion resistant and essentially non-magnetic. Enclosure is dust and splash resistant. Terminals are treated for easy soldering.

Standard marking — Clarostat part number and nominal resistance value. Other marking possible, limited to maximum of 16 characters in each of two lines for Types YR, YC and YN. 8 characters in each of two lines for Types YH and YS. “Type Y” always included.

Environmental

Vibration — 3 percent maximum change in total resistance or setting. (Tested per EIA Standard RS-186B, Method 7, Type 1 and Method 8, Type I.)

Shock, medium impact — 3 percent maximum change in total resistance or setting after a 50G, 11 millisecond test.

Effect of soldering — 2 percent maximum change in total resistance as a result of immersing the terminals in +350°C solder to within 0.125 inch (3,18 mm) of the resistor for a maximum of 3 seconds. (Tested per EIA Standard RS-186B, Method 10.)

Steady state humidity — Maximum temporary resistance change 10 percent. (Tested for 96 hours per EIA Standard RS-186B, Method 1.)

Salt spray — No evidence of corrosion damage. (Tested for 96 hours per EIA Standard RS-186B, Method 5, using Type I [20%] salt solution.)

Temperature cycling — 3 percent maximum change in total resistance as a result of the temperature cycling test. (Five cycles -55°C to $+100^\circ\text{C}$.)

Low temperature operation — 2 percent maximum change in total resistance as a result of the low temperature operation test. (-55°C for two hours without load and 45 minutes with rated load.)

Low temperature storage — 2 percent maximum change in the total resistance as a result of the storage test. (24 hours at -63°C .)

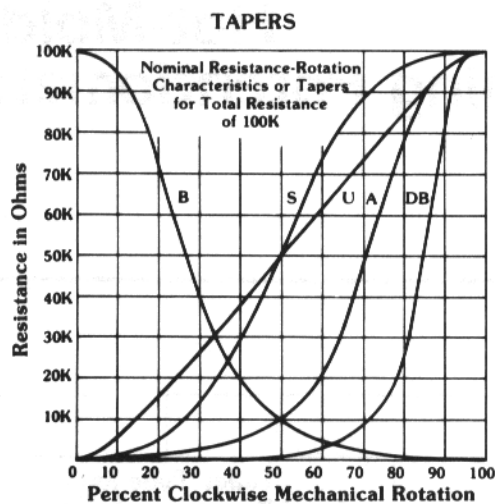
Temperature characteristics — Maximum percent temporary total resistance change from the +25°C value. See table below.

Washability — Performance of Type Y Trimmers may be adversely affected if subjected to conventional after-solder boardwash processes.

Nominal Resistance	Degrees Celsius — “U” Linear Taper						
	-55°	-25°	0°	$+25^\circ$	$+55^\circ$	$+85^\circ$	$+100^\circ$
100 Ohms	+4.5	+2.5	+1.5	0	± 1.0	± 1.5	+2.0
1,000 Ohms	+5.5	+3.0	+1.5	0	± 1.0	± 2.0	+2.5
10,000 Ohms	+7.0	+3.5	+2.0	0	± 1.0	± 2.5	+2.7
100,000 Ohms	+8.0	+4.0	+2.0	0	± 1.5	± 3.0	+3.2
1 Megohm	+10.0	+5.0	+2.5	0	± 1.5	± 3.5	+4.0

For “S”, “A”, “B” and “DB” tapers multiply percentage figures shown above by 1.25.

Taper Data



Tapers A, DB, S and U are measured between the wiper and the counter-clockwise terminals; taper B is measured between the wiper and the clockwise terminals.

END RESISTANCE

TAPER	MINIMUM RESISTANCE BETWEEN TERMINALS 1 and 2	MINIMUM RESISTANCE BETWEEN TERMINALS 2 and 3
U & S	1	1
A	1	2
B	2	1
DB	3	2

1 Less than .004% of total resistance, or less than 15 ohms whichever is greater.

2 Less than 1% of total resistance or less than 15 ohms whichever is greater.

3 Less than 15 ohms.

Hot-Molded Trimming Potentiometers

Explanation of Part Numbers

YR102M

Basic Type

- YR** — Pin terminals
- YC** — Pin terminals, slotted and notched actuator
- YH** — Pin terminals and horizontal mounting base
- YS** — Pin terminals, slotted and notched actuator, and horizontal mounting base
- YN** — Lug terminals and snap-in panel mounting bushing

Resistance Value

First two digits are significant figures and the third indicates the number of zeros following the first two digits —

Examples: 101 = 100 Ohms
501 = 500 Ohms
255 = 2.5 Megohms

Taper Type and Total Resistance Tolerance

- U** — Linear (U), $\pm 10\%$
- M** — Linear (U), $\pm 20\%$
- A** — Clockwise Modified Logarithmic (A), $\pm 10\%$
- R** — Clockwise Modified Logarithmic (A), $\pm 20\%$
- B** — Counterclockwise Modified Logarithmic (B), $\pm 10\%$
- T** — Counterclockwise Modified Logarithmic (B), $\pm 20\%$
- D** — Clockwise Exact Logarithmic (DB), $\pm 10\%$
- K** — Clockwise Exact Logarithmic (DB), $\pm 20\%$
- S** — Modified Linear (S), $\pm 10\%$
- Y** — Modified Linear (S), $\pm 20\%$

1 THESE CONFIGURATIONS ARE AVAILABLE AS A SPECIAL ORDER ONLY.