

**Carbon potentiometer specifications**

TESTS	Piher typical test results 95% LOTS $\Delta R$ (%)	Value CEI 393-1 (formerly DIN std 41450) $\Delta R$ (%)	TEST METHOD CEI 393-1 (formerly DIN STD 41450)
Resistance to soldering heat	< $\pm 1\%$	< $\pm 2\%$	a) Subject component to a temperature of 55° C and $\leq 20\%$ RH for 24 hours, after recovery measure total R. b) Immerse terminals in a molten lead free solder bath at 350° C to within 3mm of the body for 2 sec (potentiometer mounted on a p.c.b. of 1.5 mm thickness). c) Measure total R after 24 hours at normal ambient temperature.**
Solderability	95% of treated surface covered with solder		Bath in flux for 2-4 sec. then immerse terminals in a molten lead free solder bath at 235° C for 10 sec.
Temperature cycling	< $\pm 2.5\%$	< $\pm 5\%$	a) Precondition* for 24 h, measure total R. b) 16 h. at 85° C $\pm 2^\circ$ C c) Precondition* for 2 hours. d) 2 h. at -25° C $\pm 2^\circ$ C e) 16 h. at normal ambient temperature. **
Temperature coefficient	100 $\Omega$ to 100 k $\Omega$ $\pm 300$ ppm/ $^\circ$ C Rn > 100k +300 -500	100 $\Omega$ to 22 k $\Omega$ $\pm 1000$ ppm/ $^\circ$ C > 22 k $\Omega$ to 4.7 M $\Omega$ +300/-1000 ppm/ $^\circ$ C	a) Subject component to a temperature of 55° C and $\leq 20\%$ RH for 24 h and recovery. b) Measure total R after 1/2 h. at -25° C, +70° C and normal ambient temp.** (all at $\leq 50\%$ RH)
Damp Heat	< $\pm 5\%$	< $\pm 15\%$	a) Precondition* for 24 h. measure total R b) 500 h. at 40° C. 90-95% RH. c) Measure total R after 24 h. at normal ambient temperature.**
Mechanical Life	> 100 $\Omega$ < $\pm 3\%$ > 1M $\Omega$ < $\pm 5\%$	100 $\Omega$ to 100 k $\Omega$ < $\pm 5\%$ > 100 k $\Omega$ to 4.7 M $\Omega$ < $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) Apply 1000 cycles*** at speed of 10-15 r.p.m. c) Measure total R.
Electrical Life	< $\pm 5\%$	< $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) 1000 h. at 50° C $\pm 2^\circ$ C applying $W_R$ without exceed $V_p$ 1.5h ON c) Measure total R. 0.5h OFF
Resistance to cleaning Fluids and Solvents	< $\pm 5\%$	< $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) Immerse for 10 minutes in each of the following fluids @ 60°C: isopropyl alcohol and soapy water c) Measure total R after 24 h. at normal ambient temperature.**
Vibration	< $\pm 2\%$	< $\pm 3\%$	2 hour cycles in each of the X, Y and Z planes (6 hours). The wiper is set at mid point (50%). Frequency 10 Hz. - 55Hz.
Storage	< $\pm 2.5\%$	< $\pm 5\%$	a) Precondition* for 24 h. measure total R b) Store for 6 months at normal ambient temperature.** c) Precondition* for 24 h. measure total R at normal ambient temperature.**

\* Preconditioning: store the samples at 23°  $\pm 2^\circ$  C and 50  $\pm 5\%$  RH.  
\*\* Normal ambient: temperature of 23°  $\pm 2^\circ$  C and 45% to 70% RH.  
\*\*\* 1 cycle = go and return over the total mechanical angle.

**Cermet potentiometer specifications**

TESTS	Piher typical test results 95% LOTS $\Delta R$ (%)	Value CEI 393-1 (formerly DIN std 41450) $\Delta R$ (%)	TEST METHOD CEI 393-1 (formerly DIN STD 41450)
Resistance to soldering heat	< $\pm 1\%$	< $\pm 2\%$	a) Subject component to a temperature of 55° C and $\leq 20\%$ RH for 24 hours, after recovery measure total R. b) Immerse terminals in a molten lead free solder bath at 350° C to within 3mm of the body for 2 sec. (potentiometer mounted on a p.c.b. of 1.5 mm thickness). c) Measure total R after 24 hours at normal ambient temperature.**
Solderability	95% of treated surface covered with solder		Bath in flux for 2-4 sec. then immerse terminals in a molten lead free solder bath at 235° C for 10 sec.
Temperature cycling	< $\pm 2\%$	< $\pm 10\%$	a) Precondition* for 24 h, measure total R. b) 16 h. at 105° C $\pm 2^\circ$ C c) Precondition* for 2 hours. d) 2 h. at -40° C $\pm 2^\circ$ C e) 16 h. at normal ambient temperature. **
Temperature coefficient	< $\pm 100$ ppm/ $^\circ$ C	100 $\Omega$ to 22 k $\Omega$ $\pm 1000$ ppm/ $^\circ$ C > 22 k $\Omega$ to 4.7 M $\Omega$ +300/-1000 ppm/ $^\circ$ C	a) Subject component to a temperature of 55° C and $\leq 20\%$ RH for 24 h and recovery. b) Measure total R after 1/2 h. at -40° C, 90 ° C and normal ambient temp.** (all at $\leq 50\%$ RH).
Damp Heat	< $\pm 2\%$	< $\pm 15\%$	a) Precondition* for 24 h. measure total R b) 500 h. at 40° C. 90-95% RH. c) Measure total R after 24 h. at normal ambient temperature.**
Mechanical Life	< $\pm 2\%$	100 $\Omega$ to 100 k $\Omega$ < $\pm 5\%$ > 100 k $\Omega$ to 4.7 M $\Omega$ < $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) Apply 1000 cycles*** at speed of 10-15 r.p.m. c) Measure total R.
Electrical Life	< $\pm 2\%$	< $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) 1000 h. at 70° C $\pm 2^\circ$ C applying $W_R$ without exceed $V_p$ 1.5h ON c) Measure total R. 0.5h OFF
Resistance to cleaning Fluids and Solvents	< $\pm 1\%$	< $\pm 10\%$	a) Precondition* for 24 h. measure total R. b) Immerse for 10 minutes in each of the following fluids @ 60°C: isopropyl alcohol and soapy water c) Measure total R after 24 h. at normal ambient temperature.**
Vibration	< $\pm 2\%$	< $\pm 3\%$	2 hour cycles in each of the X, Y and Z planes (6 hours). The wiper is set at mid point (50%). Frequency 10 Hz. - 55 Hz.
Storage	< $\pm 2\%$	< $\pm 5\%$	a) Precondition* for 24 h. measure total R b) Store for 6 months at normal ambient temperature.** c) Precondition* for 24 h. measure total R at normal ambient temperature.**

\* Preconditioning: store the samples at 23°  $\pm 2^\circ$  C and 50  $\pm 5\%$  RH.  
\*\* Normal ambient: temperature of 23°  $\pm 2^\circ$  C and 45% to 70% RH.  
\*\*\* 1 cycle = go and return over the total mechanical angle.