

BRITISH STANDARDS INSTITUTION

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BS CECC 41 301 - 007

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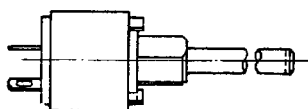
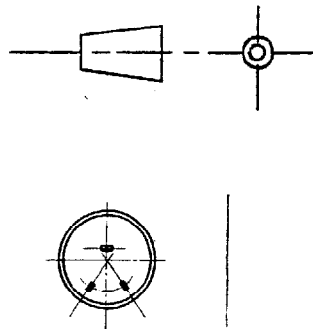
SPECIFICATION AVAILABLE FROM: AS SHOWN IN PD 9002,
CECC 00 200, AND CITEC LIMITED
CHENEY MANOR
SWINDON
WILTSHIRE

MANUFACTURER'S TYPE NUMBER
L1
SEE PD 9002 AND CECC 00 200

ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL
SPECIFICATION IN ACCORDANCE WITH
BS CECC 41 000 1977
BS CECC 41 300 1979

LOW POWER
SINGLE TURN
ROTARY POTENTIOMETERS

OUTLINE AND DIMENSIONS:
FIRST ANGLE PROJECTION
SEE APPENDIX A



CONSTRUCTION:
RESISTIVE ELEMENT:
CARBON COMPOSITION
SPINDLE: INSULATED FROM
RESISTIVE
ELEMENT
SEALING: SPINDLE SEALED

ASSESSMENT LEVEL "S"

All dimensions in millimetres

TABLE 1

Style	Rated Dissipation (W at 70°C)		Limiting element voltage (V d.c. or a.c. r.m.s.)	Isolation voltage (V d.c. or a.c. peak)	
	Resistance law A	Resistance laws B & C		Normal air pressure	Low air pressure
L	0.5	0.25	350	500	300

1) RATING AND CHARACTERISTICS

Resistance laws

Law A (linear). Resistance laws B & C
not applicable.

Resistance range

The range of values available in each law
and in each style is given in the Qualified
Products List.

Standard selection tolerances

±20% or 10%

Temperature characteristic of
resistance (20°C to 70°C)

[Above 470K ohms $\Delta R/R \leq 6.5\% (\Delta R/R/\Delta T \leq 1300 \text{ppm}/^\circ\text{C})$
[Below 470K ohms $\Delta R/R \leq 7.5\% (\Delta R/R/\Delta T \leq 1500 \text{ppm}/^\circ\text{C})$

Climatic category

55/085/21

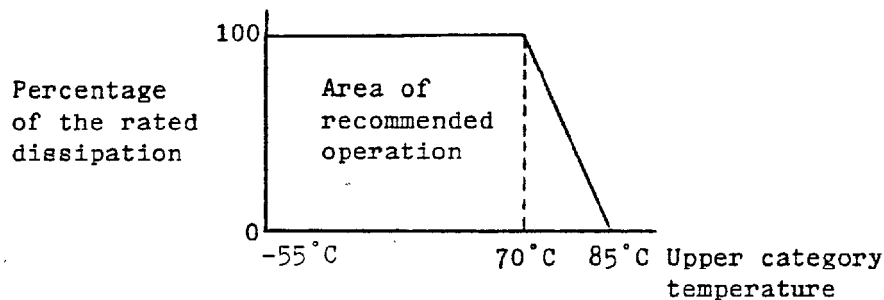
The preferred values are those of the E6 series of IEC 63. Where the use of
intermediate values is essential, they should, wherever possible, be chosen from
a series in that document.

Refer to Qualified Products List PD 9002 and/or CECC 00 200 for details of
manufacturers approved to this specification.

Vibration severity	10 Hz to 500 Hz; 0,75 mm or 98 m/s ² (whichever is the less)
Bump severity	390 m/s ² ; 4000 bumps
Low air pressure	8,5 k Pa (85 mbar)
Limits of resistance change (after 1,000 h electrical endurance test)	+ 15% - 15%
Starting torque	7,5 mN.m to 42 mN.m
Limiting slider current	$I = \sqrt{\frac{0.50}{\text{Rated Resistance}}}$ or 50 mA (whichever is lesser)
Terminal Resistance	[< 15R for R ≤ 1K, ≤ 25R for R > 1K & < 15K, [< 35R for R > 15K

1.1 Derating

Potentiometers covered by this specification are derated according to



2) Marking

2.1 The following marking information, in the order of importance given below, is required:

- 1) Rated resistance.
- 2) Tolerance on rated resistance.
- 3) Resistance law (if other than linear).
- 4) Detail specification and style.
- 5) Date of acceptance. A nationally approved code may be used.
- 6) Details of spindle and bush (if not implicit in (4) above). This may be in code form.
- 7) Manufacturer's name and trade mark.

2.2 The potentiometer shall be clearly marked with (1) and (2) above using, where practicable, one of the coding methods specified in IEC Publication 62, and with as many of the remaining items as is practicable.

2.3 The package containing the potentiometer shall be clearly marked with (1) to (7).

2.4 Any additional marking shall be so applied that no confusion can arise.

3) Related Documents

BS CECC 40 000 : 1977

BS CECC 41 300 : 1979

CECC 00 200 Qualified Products List

4) Ordering Information

Orders for potentiometers covered by this specification shall contain the following minimum information:

- 1) Resistance value and tolerance
- 2) Resistance law
- 3) Number of the detail specification and style reference
- 4) Spindle and bush dimensions, if not implicit in the style reference (See Appendix A and B).
- 5) Quantity.

5) Certified Test Records

National Authorised Institutions shall indicate in this clause whether Certified Test Records shall be prepared in accordance with 3.5 of CECC 41 000.

6) Delayed Delivery

The provisions of 3.6 of CECC 41 000 shall apply except that the Inspection Level shall be reduced to S-2 and (except for carbon compositions types) the period shall be extended to two years. The period for carbon composition types shall remain at one year.

7) Additional Information (Not for inspection purposes)

8) Inspection Requirements (See Table 2)

When drying is called for, Procedure 1 of 4.2 of CECC 41 000 shall be used.

The values representative of the whole approved range shall be tested within one year (Groups A, B & C only).

TABLE 2

Clause Number and Test (See Note 1)	D or ND	Conditions of Test	IL (See Note 2)	AQL	Performance Requirements (See Note 1)								
<u>GROUP A INSPECTION</u> To be conducted on a sampling basis, lot by lot													
<u>Sub Group A1</u> 4.3.1 Visual Inspection	ND		II	4.0%	As in 4.3.1								
<u>Sub Group A2</u> 4.3.2 Marking 4.5 Element resistance	ND		II	1.0%	As in 4.3.2 As in 4.5.1								
<u>Sub Group A3</u> 4.3.3 Dimensions (gauging) 4.3.5 Total Mechanical travel	ND		S-2	4.0%	As specified in Appendix A 295° ± 10°								
<u>Sub Group A4</u> 4.6 Terminal Resistance 4.15 Rotational noise 4.12 Voltage Proof	ND	Resistance <u>a</u> to <u>b</u> Resistance <u>b</u> to <u>c</u> Method B Insulated styles only	S-2	4.0%	<table><tr><th>TR</th><th>Value</th></tr><tr><td>≤15R</td><td>≤ 1KΩ</td></tr><tr><td>≤25R</td><td>1KΩ-15K</td></tr><tr><td>≤35R</td><td>> 15K</td></tr></table> Ren: ≤2% of resistive element As in 4.12.5	TR	Value	≤15R	≤ 1KΩ	≤25R	1KΩ-15K	≤35R	> 15K
TR	Value												
≤15R	≤ 1KΩ												
≤25R	1KΩ-15K												
≤35R	> 15K												

Clause Number and Test (See Note 1)	D or ND	Conditions of Test	IL (See Note 2)	AQL	Performance Requirements (See Note 1)
<u>GROUP B INSPECTION</u>					
To be conducted on a sampling basis, lot by lot					
<u>Sub Group B1</u> 4.16 Starting Torque - Sealing	D	Room temperature Appendix B to this document shall be used.	S-2	1.5%	7,5 mN.m to 42 mN.m As given in Appendix B
<u>Sub Group B2</u> 4.23.1 Soldering - solder- ability	ND	Soldering iron method: Soldering iron: size B Duration: 2 + 0,5 s At 300°C to 350°C	S-2	1,5%	The termin- ations shall be examined for good tin- ning as evid- ence by free flowing of the solder with wetting of terminations.
<u>GROUP C INSPECTION</u>					
To be conducted on a sampling basis, at the periodicity given in column "P".					
<u>Sub Group C1</u> 4.18 End stop torque 4.20 Thrust and pull on the spindle			Sample size & criterion of acceptability (See Note 3)		
			P	n	c
	D	Visual examination a) As specified in 4.20.2 Continuity (3 specimens) b) As specified in 4.20.3 (3 specimens) c) As specified in 4.20.4 (2 specimens) 40N Thrust/Pull Visual examination	3	8	1
			$\geq 225 \text{ mN.m}$ As in 4.20.2 $\Delta \frac{V_{ab}}{V_{ac}} \leq 3\%$ No apparent damage		