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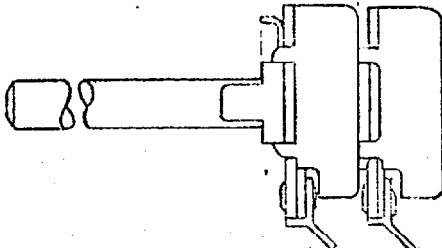
BRITISH STANDARDS INSTITUTION 2, PARK STREET, LONDON, W1A 2BS	BS.CECC 41302 003 ISSUE A. MARCH, 1980. ISSUE B. JULY, 1980. ISSUE C. NOVEMBER, 1980 ISSUE 1. MARCH, 1981. 
Specification available from:-- EGEN ELECTRIC LIMITED, CHARFLEETS INDUSTRIAL ESTATE, CANVEY ISLAND, ESSEX.	MANUFACTURER'S TYPE NUMBER SEE TABLE 1 AND PD9002 and CECC 00200 FOR PATTERNS AVAILABLE IN THIS STYLE SEE TABLE IV
	For ordering information see CLAUSE 4. DOUBLE GANGED SINGLE TURN LOW POWER ROTARY POTENTIOMETER WITHOUT SWITCH. NON-WIREWOUND SPINDLE INSULATED FROM RESISTANCE ELEMENT. NON SEALED. ADDITIONAL ASSESSMENT. CLAUSE 4.10 (SUB-GROUP A2)
Mounting Variants : Appendix A. Outline Dimensions : See Appendix - A. Spindle & Bush Dimensions : See Table IV & App-B & C. Marking Information : See Clause 2.	ASSESSMENT LEVEL 'M'

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 AC PEAK)	
	RESISTANCE LAW A	RESISTANCE LAWS B & C		NORMAL AIR PRESSURE.	LOW AIR PRESSURE.
EC	0.125	0.0625	500	1000	N/A.

1. RATINGS & CHARACTERISTICS.

* RESISTANCE LAWS }
 " " RANGE } SEE TABLE III

A.B.C.

The range of values available in each
 law is given in the qualified products list.

STANDARD SELECTION TOLERANCE :- $\pm 20\%$
 TEMPERATURE CHARACTERISTIC :- $\Delta R/R : \leq \pm 0.1\%$
 of RESISTANCE (20°C to 70°C) :- $\Delta R/R \Delta T : \leq \pm 1000 \text{ ppm/}^\circ\text{C}$
 CLIMATIC CATEGORY 10/070/21

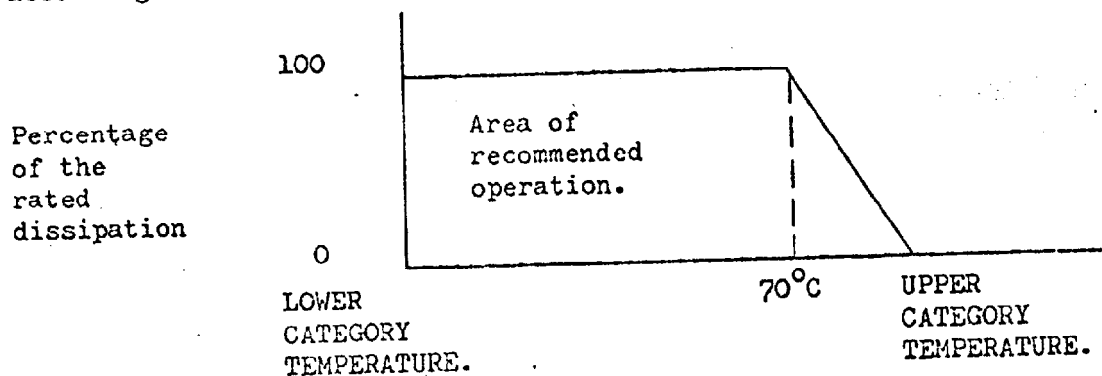
* The preferred values are those of E 3 series of IEC 63. Where the use of
 intermediate values is essential, they should, wherever possible, be chosen
 from a series in that document.

Refer to Qualified Products List PD 9002 and/or CECC 00200 for details of manufacturers
 approved to this specification.

Vibration Severity.	10 Hz to 55 Hz; 0.75 m.m. or 98 m/s ² (whichever is the less).
Limits of resistance change (a to c) (after 1000 h electrical endurance test)	± (15%R + 0 ohms).
Starting Torque	7 mNm to 35 mNm.
Limiting slider current	) SEE TABLE III.)
Terminal resistance	

1.1 Derating.

Potentiometers covered by this specification are derated according to the following curve.



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).
7. Manufacturer's name and trade-mark.
- Additional marking.
8. Pattern.

- 2.2 The potentiometer will be clearly marked with 1, 2, 3, 5, 7 & 8 above, using, where applicable, one of the coding methods specified in IEC 62.
- 2.3 The package containing the potentiometer shall be clearly marked with (1) to (7) as clause 2.3 of BS CECC 41302.
- 2.4 Any additional marking shall be so applied that no confusion can arise.

3. Related documents.

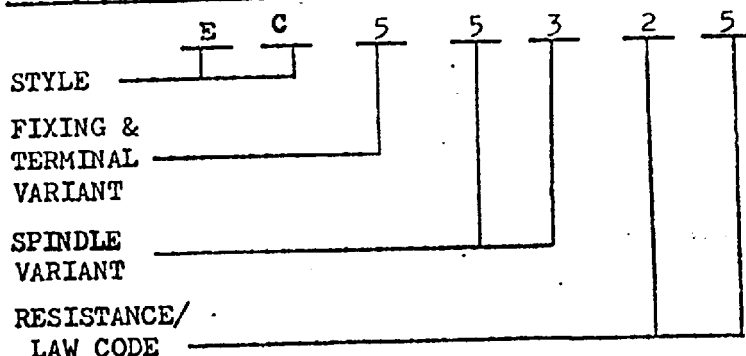
National Authorised Institution will complete this section, making reference to any documents, recommendations or specifications directly referred to in their national equivalent of this document.

4. Ordering Information.

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

- Quantity
- Resistance value and tolerance.
- Resistance Law. (If other than Linear).
- BS CECC Specification Number, Issue Number, Date and Assessment Level.
- Style and Pattern reference. (See Table IV).

Example Ordering Code.



The example code describes a DOUBLE GANG SINGLE TURN ROTARY POTENTIOMETER.
TWIST TAB BEARING, DIP SOLDERING TERMINALS, LONG PRINTED WIRING PINS,
PLAIN 6 mm SHAFT 30 mm LONG, LOG LAW 2.2 K ohms.

5. Certified Test Records.

National Authorised Institutions shall indicate in this paragraph 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 composition 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).

The detail specification may include information (which is not required to be verified by the inspection procedure) such as circuit diagrams, etc., needed for the clarification of the detail specification.

8. Inspection Requirements (See table 2).

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

8.2 When it is desired to obtain qualification approval by adopting the fixed sample size procedure, use shall be made of the test schedule given for that purpose in CECC 41 300.

The conditions of test and the performance requirements shall be identical to those prescribed for quality conformance inspection in the detail specification.

8.3 In the quality conformance inspection the values representative of the whole approved range shall be tested within one year. (Groups A, B, and C only).

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(See Note 1.)	or ND	CONDITIONS OF TEST	(See Note 2.)	Requirement (See Note 1).
GROUP A INSPECTION.				
To be conducted on a sampling basis, lot by lot.				
<u>Sub-Group A1.</u>	ND		S-3	4.0%
4.3.1 Visual inspection.				As in 4.3.1
<u>Sub-Group A2</u>	ND		S-3	1.5%
4.3.2 Marking.				As in 4.3.2
4.5 Element Resistance				As in 4.5.1
Potentiometer R1				As in 4.5.1
Potentiometer R2				
4.10 Matching Linear Law.		At values between 10% & 90% of R Total		< 2DB
Logarithmic Law and Reversed		At Attenuations between 0 - 20 DB		< 2DB
Logarithmic Law		- 20 - 30 DB		< 3DB
		- 30 - 40 DB		< 4DB
<u>Sub-Group A3</u>	ND		S-3	2.5%
4.15 Rotational Noise		Method A (non-wirewound types).		
Potentiometer R1				≤ 47 mV
Potentiometer R2				≤ 47 mV
Group B Inspection.				
To be conducted on a sampling basis, lot by lot.				
<u>Sub-Group B1.</u>	ND		S-2	2.5%
4.12 Voltage proof				As in 4.12.5
4.23.1 Soldering - Solderability		Soldering iron method: Soldering iron: Size B Duration : 2 ± 0.5 s		The terminations shall be examined for good tinning as evidence by free flowing of the solder with wetting of the terminations.
<u>Sub-Group B2</u>	ND		S-2	2.5%
4.6 Terminal Resistance Potentiometer R1 R2		Resistance <u>a</u> to <u>b</u> Resistance <u>b</u> to <u>c</u>		SEE TABLE III
4.9 Resistance Law.		The preferred measuring points & associated values of the output ratios for resistance laws are :		
Potentiometer R1)		Resistance Law	% of effective electrical travel	OUTPUT RATIO $\frac{V_{ab}}{V_{ac}} \%$
Potentiometer R2)		A (Linear)	17 - 37	22 3.33 ± 0.5 (6)
		B (Logarithmic)	20 - 36 64 - 70	15 0.20 ± 0.25 (6)
		C (reverse logarithmic)	30 - 37 64 - 70	1.5 = 8 10 = 40

Test	D or ND	Conditions of Test	Sample size & criteria of acceptability (See Note 3)			Performance Requirements (See note 1)
			p	n	c	
<u>GROUP C INSPECTION.</u>						
To be conducted on a sampling basis, at the periodicity given in column "P".						
<u>Sub-Group C1.</u>	D		3	5	1	AS IN APPENDIX "A"
4.3.3 Dimensions Detail. 4.21 Robustness of terminations 4.21.2 4.21.4 4.21.5 Potentiometer R1 Potentiometer R2		Test U a Test U b tag termination. Test U b printed wire termination. Visual Examination. Element Resistance.				
						As in 4.21.8(1) $\Delta R: \leq \pm (1\%R + 0 \text{ ohms})$ $\Delta R: \leq \pm (1\%R + 0 \text{ ohms})$
<u>Sub-Group C2</u>	ND		3	5	1	7 mNm to 35 mNm
4.16 Starting Torque		Room temperature				
<u>Sub-Group C3</u>	D		6	8	1	As in 4.30.6 $\Delta R: \leq \pm (15\%R + 0 \text{ ohms})$ $\Delta R: \leq \pm (15\%R + 0 \text{ ohms})$ 7 mNm to 35 mNm $\leq 47 \text{ mV}$ $\leq 47 \text{ mV}$
4.30 Mechanical Endurance (Potentiometer) Potentiometer R1 Potentiometer R2 (Potentiometer R1 Potentiometer R2		(See Note 4) Number of Cycles : Rate 10 : 17 cycles per min. Visual Examination Element Resistance. Starting Torque Rotational Noise Method A (non-wirewound type)				
<u>Sub-Group C4</u>	D		6	8	1	As in 4.32.2.6 $\Delta R: \leq \pm (15\%R + 0 \text{ ohms})$ $\Delta R: \leq \pm (15\%R + 0 \text{ ohms})$ $\geq 1 \text{ G ohms.}$ $\leq 47 \text{ mV}$ $\leq 47 \text{ mV}$
4.32.2 Electrical endurance at 70°C Potentiometer R1 Potentiometer R2 Potentiometer R1 Potentiometer R2		Duration : 1000 h examination at 168,500 and 1000 h Visual examination Element Resistance. Examination at 1000 h Insulation Resistance Rotational noise Method A Non-wirewound types)				