

BRITISH STANDARDS INSTITUTION
2, PARK STREET, LONDON, W1A 2BS

Specification available from:— As shown in PD 9002
CECC 00200 and

Colvern Ltd, Spring Gardens,
ROMFORD, Essex, RM7 9LP
Telephone: ROMFORD 62222 Telex: 23984

BS CECC 41 401 - 001
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ELECTRONIC COMPONENTS OF ASSESSED QUALITY
DETAIL SPECIFICATION IN ACCORDANCE WITH
BS CECC 41000: 1977
BS CECC 41400: 1980

MANUFACTURER'S TYPE NUMBER
11 CP

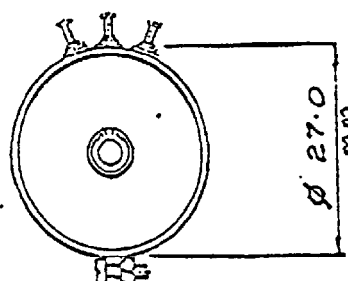
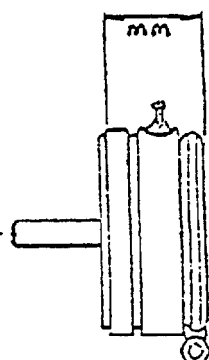
See PD 9002 and CECC 00200

Outline and dimensions
15.8

First angle projection



For ordering information
see Clause 4



ROTARY
PRECISION
POTENTIOMETERS

SINGLE TURN.
CONDUCTIVE PLASTIC.
SPINDLE AND BODY
INSULATED FROM
RESISTIVE ELEMENT.
NON SEALED

ASSESSMENT LEVEL S
+ ADDITIONAL ASSESSMENT

Rigid terminations
For detail dimensions see Appendix A
Marking information see clause 2

(See Note 11)

TABLE 1

Style	Rated dissipation (W at 70° C)	Limiting element voltage (Volts d.c. or a.c. r.m.s)	Isolation voltage (V d.c. or a.c. peak)	
			Normal air pressure	Low air pressure
AP	1	400	570	380

1 RATINGS and CHARACTERISTICS

Resistance law and degree of conformity
*Resistance range

Standard selection tolerances
Temperature characteristic of resistance
(20° to 70° C)
Climatic category

Linear $\pm 0.5\%$ (Independent)
The range of values available is
given in the Qualified Products List
 $\pm 10\%$
 $\Delta R/R \leq \pm 1.25\%$
 $\Delta R/R / \Delta T \leq 250 \times 10^{-6}/^{\circ}\text{C}$
40/125/04

*The preferred values are those of the E3 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.



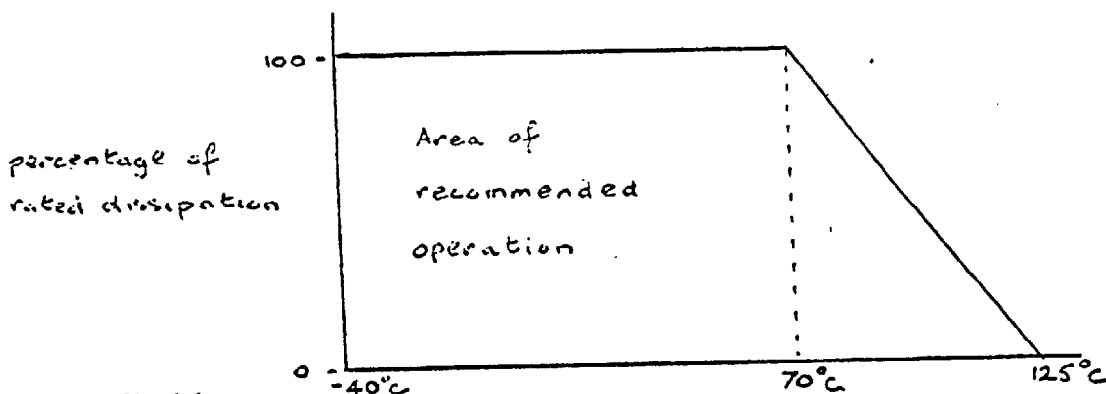
Documents

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Vibration severity	10 Hz to 500 Hz; 0.75 mm or 98 m/s ² (whichever is less)
Bump severity	390 m/s ² ; 4000 bumps
Low air pressure	8.5 kPa (85 m bar)
Limits of resistance change (after 1000 h electrical endurance test)	± 3% + 0.1 ohms
Starting torque	0.25 mNm to 1.0 mNm
Number of turns of the actuating device	1
Limiting slider current	30 mA (limited by dissipation)
Terminal resistance	≤ 2% of R
Residual resistance	N/A
Minimum effective resistance	N/A

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) Detail specification and style
- (4) Degree of resistance law conformity
- (5) Date of acceptance
- (6) Details of spindle (if not implicit in 3 above)
- (7) Manufacturers name and trade mark

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- 2.2 The potentiometer shall be clearly marked with (1), (2) and (3) using, where practicable, one of the coding methods specified in IEC 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) above.
- 2.4 Any additional marking shall be so applied that no confusion can arise.

3 Related Documents

BS CECC 41000	Generic specification for potentiometers
BS CECC 41400	Sectional specification: rotary precision potentiometers
BS E9000	Basic rules
BS 6001	Sampling procedures and tables for inspection by attributes
CECC 00200	Qualified products list
PD 9002	Qualified products list

4 Ordering Information

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

Resistance value and tolerance
Resistance law
Number of the detail specification and style reference
Spindle dimensions, if not implicit in style reference

5 Certified Test Records

Certified Test Records shall be prepared in accordance with 3.5 of BS CECC 41000.

6 Delayed Delivery

The provisions of 3.6 of BS CECC 41000 shall apply, except that the Inspection Level shall be reduced to S - 2 and the period shall be extended to two years.

7 Additional Information

- 7.1 A cycle of operation is defined as two revolutions of 360° , in the same directions, of the moving contact. See BS CECC 41000 C4.19.

8 Inspection Requirements

- 8.1 When drying is called for, Procedure 1 of 4.2 of BS CECC 41000 shall be used.
- 8.2 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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TABLE 2 (SEE NOTE 3)

TEST (SEE NOTE 1)	D or ND	CONDITIONS OF TEST	IL (SEE NOTE 2)	AQL (SEE NOTE 2)	PERFORMANCE REQUIREMENTS (SEE NOTE 1)
GROUP A INSPECTION					
To be conducted on a sampling basis, lot by lot.					
<u>Sub - Group A1</u>	ND		I	1.5%	
4.5 Element resistance					As in 4.5.1
4.6 Terminal resistance		Resistance <u>a</u> to <u>b</u> Resistance <u>b</u> to <u>c</u>			$\leq 2\%$ of R (See $\leq 2\%$ of R Note 10)
<u>Sub - Group A2</u>	ND		I	1.5%	
4.3.1 Visual inspection					As in 4.3.1
4.3.2 Marking					As in 4.3.2
4.3.3 Dimensions (gauging)					See Appendix A
4.16 Starting torque		Room temperature			0.25 mNm to 1.0 mNm
4.3.5 Total mechanical travel					360°
<u>Sub - Group A3</u>	ND		S2	4.0%	
4.8 Mechanical and electrical travel		This test may be performed in combination with 4.9 Resistance Law. Angle of ineffective mechanical travel Angle of effective electrical travel			$\leq 25^\circ$ $\geq 335^\circ$
4.9 Resistance law D 4.8		As C4.6 of BS CECC 41000. Minimum output ratio 1.0%			$\leq \pm 0.5\%$ Vac

TABLE 2 (CONTINUED)

TEST (SEE NOTE 1)	D or ND	CONDITIONS OF TEST	IL	AQL	PERFORMANCE REQUIREMENTS (SEE NOTE 1)
4.15 Rotational noise		Not applicable to this style			V: $\leq 0.1\%$ Vac As in 4.12.5
D4.7 Output smoothness					
4.12 Voltage proof		Insulated styles only			
<u>Sub - Group A4</u> 4.23.1 Soldering - solderability	ND	Soldering iron method Soldering iron: size B Temperature: 300° C to 350° C. Duration: 2±0.5s	S2	1.5%	The terminations shall be examined for good tinning as evidenced by free flowing of the solder with wetting of the terminations
<u>Sub - Group A5</u> D4.1 Spindle run out	ND	Radial force: 2.5N Length of spindle extension (L): See Appendix A.	S2	2.5%	<u>Total indicator reading</u> L : ≤ 0.008
D4.2 Lateral run out		Radial force: 2.5N Axial force: 2.5N Mounting surface radius (r): 13.0 mm		<u>Total indicator reading</u> r : ≤ 0.006	
D4.3 Spigot diameter run out		Radial force: 2.5N		Total indicator reading ≤ 0.05 mm	
D4.4 Spindle end play		Direction A Direction B		Total indicator reading. ≤ 0.08 mm Total indicator reading ≤ 0.08 mm Sum of two indicator readings ≤ 0.08 mm	
<u>GROUP B INSPECTION</u> Not applicable					

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