

This specification is also available from
Mullard Limited, Mullard House
Torrington Place, London WC1E 7HD

CECC 41 302-006
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**ELECTRONIC COMPONENTS OF ASSESSED
QUALITY IN ACCORDANCE WITH :**

- CECC 41 000 or NBN C83-410
- CECC 41 300 or NBN C83-413
- CECC 41 302 or NBN C83-413-02

NBN C 83-413-022 (Issue 1)



For individual details see appendixes
A to D

LOW POWER
SINGLE TURN
ROTARY POTENTIOMETERS

- END STOPS
- ACTUATING DEVICE INSULATED
- HORIZONTAL AND VERTICAL VERSIONS
- TERMINATIONS ARE RIGID AND SUITABLE
FOR MOUNTING ON PRINTED WIRING
BOARDS.
- DRIVING SHAFT : APPENDIX E
- BOTH SIDES SUITABLE FOR ACTUATING

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 a.c. peak)
	Resistance law A	Resistance laws B and C		Normal air pressure
see table 2	0,1	0,05	350 V	500 V

1. RATINGS AND CHARACTERISTICS

- *Resistance range and laws : 470 Ω to 2,2M Ω for Linear Law
2,2K Ω to 1M Ω for logarithmic and re-
versed logarithmic law.
- Standard selection tolerances : $\pm 20 \%$
- Temperature characteristic of : $\Delta R/R/\Delta T : \leq \pm 500 \text{ ppm}/^\circ\text{C}$
resistance (20° to 70°C)
- Climatic category : 25/70/10

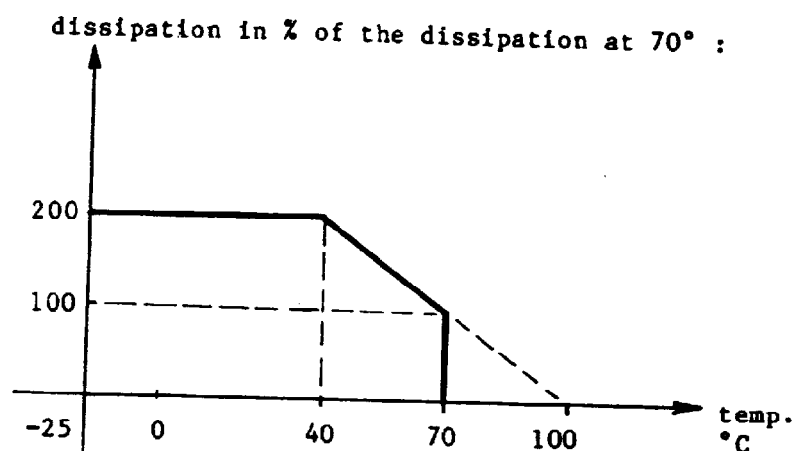
* The preferred values are those of the E3 series of IEC 63. Where the
use of intermediate values is essential, they should, wherever
possible, be chosen from a series in that document.

See the relevant Qualified Products List for availability of components made to
this specification.

Vibration severity	: 10 Hz to 55 Hz ; 0,75 mm or 98 m/s ² (whichever is the less severe)
Limits of resistance change (<u>a</u> to <u>c</u>) (after 1000 h electrical endurance test)	: $\pm (10 \% R + 0,5 \Omega)$
Starting torque	: 2,5 mNm to 16 mNm
Limiting slider current	: see table 3 on clause 7
Residual resistance	: $\leq 25\Omega$ for $R \geq 1K$, other $\leq 10\Omega$

1.1 Derating

Potentiometers covered by this specification are derated according to the 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
- (4) Detail specification and style
- (5) Date of acceptance
- (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), (3) and (5) above 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).

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

3. RELATED DOCUMENTS

- IEC 62 : Marking codes for resistors and capacitors.
- IEC 63 : Preferred number series for resistors and capacitors.
- IEC 68 : Basic environmental testing procedures for electronic components and electronic equipment.
- IEC 410 : Sampling procedures and tables for inspection by attributes for electronic components of assessed quality. (See CECC 00007 (1978))
- CECC 00 007 (1978) - Basic specification : Sampling plans and procedures for inspection by attributes
- CECC 00 200 Qualified Products List
- CECC 41 000 (1976) - Generic specification for potentiometers and amendments 1 to 3
- CECC 41 300 (1978) - Sectional specification for low power single turn rotary potentiometers
- CECC 41 302 (1978) - Blank detail specification for low power single turn rotary potentiometers.

4. ORDERING INFORMATION

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

- Resistance value and tolerance
- Resistance law (if other than linear)
- Number of the detail specification and style reference (see table 2)

Table 2

STYLE	VERSION	with or without BRACKET	short or protruding ROTOR	in-line or staggered TERMINALS	outline drawing on APP.:
V00	Vertical	Without	Protruding	In-line	A
V01	"	"	"	Staggered	A
V10	"	"	Short	In-line	B
V11	"	"	"	Staggered	B
V20	"	With	Protruding	In-line	C
V21	"	"	"	Staggered	C
V30	"	"	Short	In-line	C
V31	"	"	"	Staggered	C
H05	Horizontal	Without	Protruding	In-line	D
H15	"	"	Short	"	B

5. CERTIFIED TEST RECORDS

not applicable

6. DELAYED DELIVERY

The provisions of 3.6 of CECC 41000 shall apply, except that the Inspection Level shall be reduced to S-2.

7. ADDITIONAL INFORMATION (not for inspection purposes)

7.1. Limiting conditions

The limiting conditions for voltage and slider current as a function of the rated resistance at a temperature of 70°C are given in table 3 below.

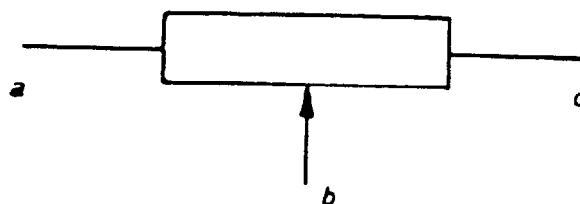
Table 3

Rated Resistance	Rated Voltage or Limiting Element Voltage (V)	Dissipation at 70°C (W)	Limiting Slider Current (mA)
<u>LINEAR law</u>			
470Ω	6,9	0,1	14,6
1KΩ	10	0,1	10
2,2KΩ	14,8	0,1	6,7
4,7KΩ	21,7	0,1	4,6
10KΩ	31,6	0,1	3,2
22KΩ	46,9	0,1	2,1
47KΩ	68,6	0,1	1,5
100KΩ	100	0,1	1
220KΩ	148	0,1	0,7
470KΩ	217	0,1	0,5
1MΩ	316	0,1	0,3
2,2MΩ	350	0,05	0,2
<u>LOGARITMIC or REVERSED LOGARITMIC law</u>			
2,2 KΩ	10,5	0,05	4,8
4,7 KΩ	15,3	0,05	3,3
10 KΩ	22,3	0,05	2,2
22 KΩ	33,2	0,05	1,5
47 KΩ	48,5	0,05	1,0
100 KΩ	70,7	0,05	0,7
220 KΩ	105	0,05	0,5
470 KΩ	153	0,05	0,3
1 MΩ	224	0,05	0,2

7.2. Resistance law

The resistance laws of potentiometers covered by this detail specification approximate to those given in CECC 41 300 clause 2.1.5.

7.3. Designation of terminations



see also appendix A and D

7.4. Driving shaft

See appendix C

The customer has to develop the combination of knob and driving shaft according to his design.

8. INSPECTION REQUIREMENTS (See Table 4)

8.1 When drying is called for, Procedure I 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).