

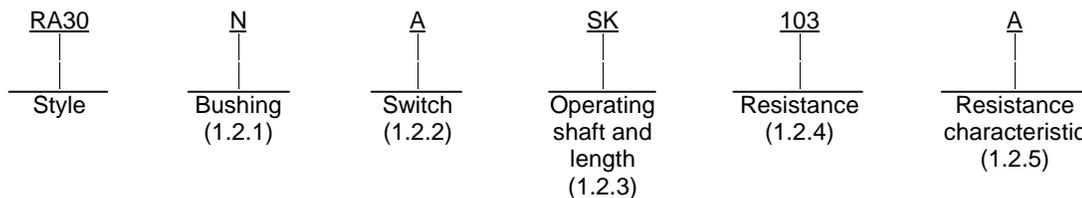
PERFORMANCE SPECIFICATION
RESISTOR, VARIABLE, WIRE-WOUND
(LOW OPERATING TEMPERATURE), STYLE RA30

This specification is approved for use by all Department of Departments and agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for style RA30, low operating temperature, wirewound, variable resistors.

1.2 Part or Identifying Number (PIN). Variable resistors covered by this specification must be identified by a PIN, which must be in the following form:



1.2.1 Bushing. The type of bushing applicable to this specification is identified by a single symbol in accordance with table I.

TABLE I. Bushing.

Symbol	Bushing
N	Standard
L	Locking
S	Shaft and panel-seal (standard)
T	Shaft and panel seal (locking)

1.2.2 Switch. The type of switch or lock of switch applicable to this specification is identified by a single symbol in accordance with table II.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: DSCC/VAM, 3990 East Broad Street, Columbus, OH 43213-1199 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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TABLE II. Switch.

Symbol	Switch
A	No switch
B <u>1/</u>	Single pool, single throw switch which is actuated to the "on" position at the start of the clockwise rotation.

1/ For replacement purpose only. Not to be used for new design.

1.2.3 Operating shaft and length. The operating shaft and length applicable to this specification are identified by a two letter symbol. The first letter indicates the shaft style as specified in table III and the second letter indicates the shaft length as specified in table IV.

TABLE III. Shaft style.

Symbol	Shaft
S	Slotted

TABLE IV. Shaft length

Symbol	Length of shaft from mounting surface, nominal	
	Bushings N and S in inches (± 0.03125)	Bushings L and T in inches (± 0.03125)
A	0.500	---
B	---	0.625
D	0.875	0.875
G	1.250	1.250
K	2.500	---

1.2.4 Resistance. The nominal total resistance and available tapers applicable to this specification are in accordance with table V.

1.2.5 Resistance characteristic. The resistance characteristic applicable to this specification is in accordance with table VI.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

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SPECIFICATION

DEPARTMENT OF DEFENSE

MIL-PRF-19 - Resistor, Variable, Wire-wound (Low Operating Temperature), General Specification for.

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Defense Automated Printing Service, Building 4D (DPM-DODSSP), 700 Robbins Avenue, Philadelphia, PA 19111-5094).

2.4 Order of precedence. In event of a conflict between the text of this document and the references cited herein (except for related associated specifications, specification sheets, or MS sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

TABLE V. Resistance values and available tapers.

Nominal total resistance in ohms	Available taper(s)
3	A
6	A
8	A
10	A, C, F
15	A, C, F
20	A, C, F
25	A, C, F
35	A, C, F
50	A, C, F
75	A, C, F
100	A, C, F
150	A, C, F
200	A, C, F
250	A, C, F
350	A, C, F
500	A, C, F
750	A, C, F
1,000	A, C, F
1,500	A, C, F
2,000	A, C, F
2,500	A, C, F
3,500	A, C, F
5,000	A, C, F
7,500	A
10,000	A
15,000	A
20,000	A
25,000	A

TABLE VI. Resistance characteristic.

Symbol	Resistance taper	Resistance tolerance
A	A	± 10 percent
C	C	± 10 percent
E	F	± 10 percent

3. REQUIREMENTS.

3.1 General. The requirements for acquiring the product herein shall consist of this document and MIL-PRF-19.

3.2 Interface and physical dimensions. The resistors shall meet the interface and physical dimensions specified in figure 1.

3.3 Power rating. The power rating shall be 4.0 watts for taper A and 2.2 watts for tapers C and F at an ambient temperature of 40°C.

3.4 Torque. The torque required to effect rotation shall be not less than 1.2 ounce-inch nor more than 6 ounce-inches. The torque applied through the operating shaft to the stops shall be 8 pound-inches. For locking-bushing type, the control arm shall not move when a torque of 30 ounce-inches is applied to the shaft after the locking nut is tightened with a torque of 10 pound-inches.

3.5 Mechanical rotation. The mechanical rotation with or without a switch shall be 280° minimum and 305° maximum.

3.6 Actual electrical rotation. The electrical rotation with switch shall be 230° minimum and 275° maximum; without a switch 280° minimum and 305° maximum.

3.7 Hardware. The mounting nut shall be 0.094 inch thick and shall measure 0.500 inch across the hexagonal flats, unless otherwise specified (6.2). The locking nut shall be 0.151 to 0.234 inch thick and shall measure 0.500 inch across the hexagonal flats. Threads size shall be 0.375-32UNEF-2B. Internal-tooth lockwasher of suitable size shall be supplied.

3.8 Retainer rings. If retainer rings are used, they shall be not thicker than 0.047 inch.

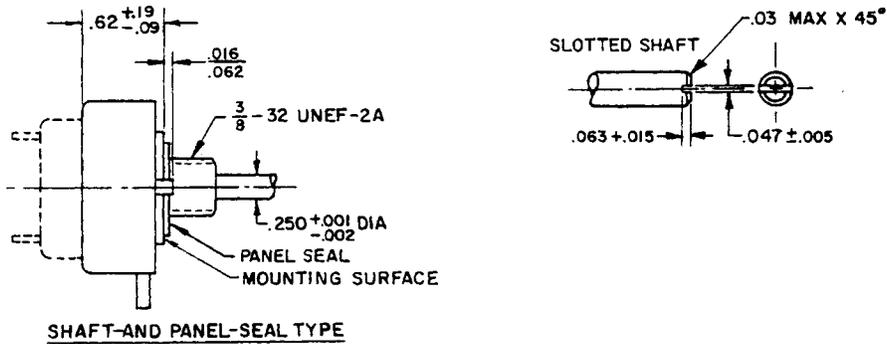
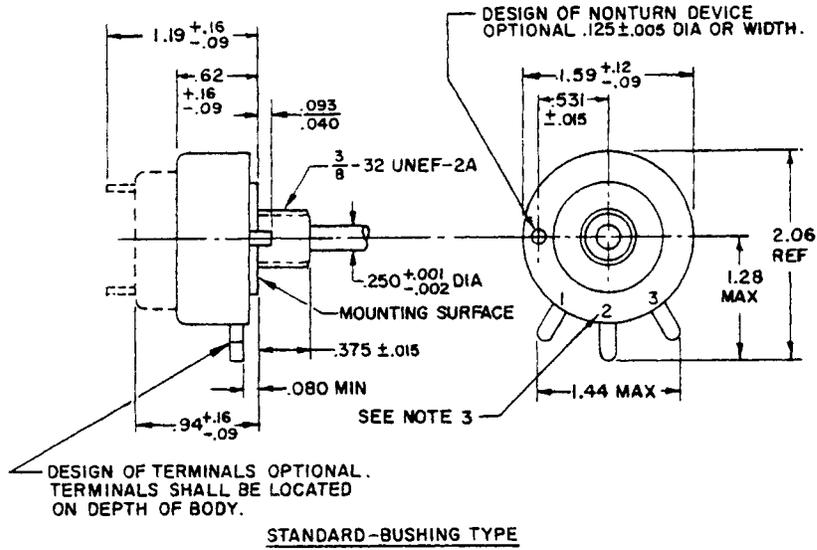
4. VERIFICATION.

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-19.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD personnel these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

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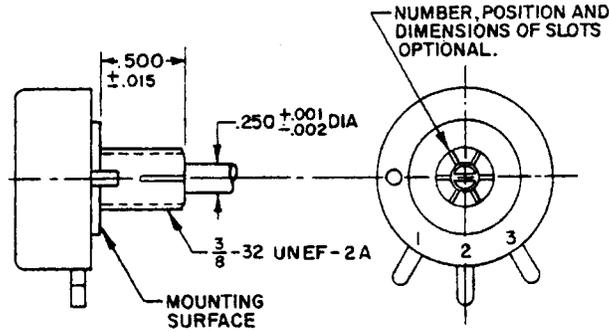


Inches	mm	Inches	mm	Inches	mm								
.001	0.03	.016	0.41	.062	1.57	.093	2.36	.190	4.83	.620	15.75	1.440	36.58
.002	0.05	.030	0.76	.063	1.60	.120	3.05	.250	6.35	.940	23.88	1.590	40.39
.005	0.13	.040	1.02	.080	2.03	.125	3.18	.375	9.53	1.190	30.23	2.060	52.32
.015	0.38	.047	1.19	.090	2.29	.160	4.06	.531	13.49	1.280	32.51		

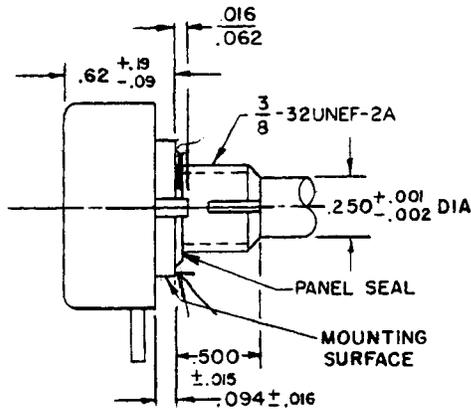
NOTES:

1. Dimensions are in inches.
2. Metric equivalent are given for general information only.
3. Terminal identification for reference only.

FIGURE 1. Style RA30 Resistors.



LOCKING-BUSHING TYPE



SHAFT-AND PANEL-SEALED LOCKING-BUSHING TYPE

Inches	mm	Inches	mm								
.001	0.03	.015	0.38	.062	1.57	.094	2.39	.250	6.35	.620	15.75
.002	0.05	.016	0.41	.090	2.29	.190	4.83	.500	12.70		

NOTES:

1. Dimensions are in inches.
2. Metric equivalent are given for general information.

FIGURE 1. Style RA30 Resistors. (continued)

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6. NOTES

(This section contains information of general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Notes. The notes specified in MIL-PRF-19 will be applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification, and the complete PIN (see 1.2).
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of the individual documents referenced (see 2.1).
- c. Packaging instructions (see 5.1).
- d. Mounting nut dimensions across the hexagonal flats, if other than 0.500 inch.

6.3 PIN. This specification requires a PIN that describes technology and appropriate references to associated documents (see 1.2 and 3.1).

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the change.

Custodians:
Army - CR
Navy - EC
Air Force - 11

Preparing activity:
DLA - CC

Review activities
Army - AR, AT, AV, CR4
Navy - MC, OS
Air Force - 19, 99

(Project 5905-1544-03)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-PRF-19/3C

2. DOCUMENT DATE (YYMMDD)

3. DOCUMENT TITLE RESISTORS, VARIABLE, WIRE-WOUND, (LOW OPERATING TEMPERATURE), STYLE RA30

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Incl Area Code)

7. DATE SUBMITTED
(YYMMDD)

(1) Commercial

(2) AUTOVON
(If applicable)

8. PREPARING ACTIVITY

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Defense Supply Center, Columbus
ATTN: DSCC/VAM

b. TELEPHONE (Include Area Code)
(1) Commercial (2) AUTOVON
(614) 692-8754 850-8754

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