INCH-POUND
MIL-PRF-39023/4C
w/Amendment 2
1 December 2015
SUPERSEDING
MIL-PRF-39023/4C
w/Amendment 1
31 May 2011

PERFORMANCE SPECIFICATION SHEET

RESISTOR, VARIABLE, NONWIREWOUND, PRECISION, STYLE RQ200

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

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-39023.

1. SCOPE

1.1 Scope. This specification covers the requirements for style RQ200, variable, nonwirewound, precision resistors.

1.2 Classification.

1.2.1 Part or Identifying Number (PIN). The PIN is in the following form:

Single-section (cup) resistors

RQ200	A	A	1	2	A	B	103
Style	Resistance temperature characteristic, maximum ambient temperature and taps (1.2.2)	Shaft length (1.2.3)	Moisture resistance (1.2.4)	Life characteristic (1.2.5)	Function conformity tolerance characteristic (1.2.6)	Output smoothness characteristic (1.2.7)	Resistance (1.2.8)

1.2.2 Resistance temperature characteristic, maximum ambient temperature and taps. The resistance temperature characteristic, maximum ambient temperature and taps applicable to this specification are symbols A and B.

1.2.3 Shaft length. The shaft length applicable to this specification are symbols A to F, inclusive.

1.2.4 Moisture resistance. The moisture resistance applicable to this specification are symbols 1 and 2.

1.2.5 Life Characteristic. The life characteristics applicable to this specification are 1 to 4, inclusive.

Comments, suggestions, or questions on this document should be addressed to: DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, Ohio 43218-3990 or by email resistor@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil/.

AMSC N/A
FSC 5905

1.2.6 Function conformity tolerance characteristic. The function conformity tolerance characteristic applicable to this specification are symbols A to F, inclusive.

1.2.7 Output smoothness characteristic. The output smoothness characteristic applicable to this specification are symbols A to E, inclusive.

1.2.8 Resistance. The nominal total resistance values and maximum end voltage applicable to this specification will be in accordance with table I.

TABLE I. Nominal total resistance values and maximum end voltage.

Nominal total resistance values	Maximum end voltage (percent of total applied voltage)
Ohms	Percent
100	3.0
500	2.0
1,000	1.4
2,000	1.2
5,000	1.1
10,000	1.1
20,000	1.1
50,000	1.1
0.10 Megohm	1.1
0.20 Megohm	1.1
0.50 Megohm	1.1
1.00 Megohm	1.1

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 solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-39023 - Resistor, Variable, Nonwirewound, Precision, General Specification for.

(Copies of these documents are available online at http://quicksearch.dla.mil).

2.3 Order of precedence. Unless otherwise noted herein or in the event of a conflict between the text of this document and the references cited herein (except for related specifications), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. The requirements for acquiring the product described herein shall consist of this document and MIL-PRF-39023.

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

3.3 Minimum total resistance. The minimum total resistance value shall be 100 ohms.

3.4 Maximum total resistance. The maximum total resistance value shall be 1.0 megohm.

3.5 Mechanical travel. The mechanical travel shall be 360 degrees continuous.

3.6 Theoretical electrical travel. The theoretical electrical travel shall be 350 degrees.

3.7 Ganged cups. There shall be no more than 3 cups ganged.

3.8 Phasing. The phasing shall be for simultaneous conformity.

3.9 Weight. The maximum weight shall be 5.0 ounces and each additional cup shall be 2.0 ounces.

3.10 Function conformity. The type of conformity shall be independent linearity.

3.11 Pure tin. The use of pure tin, as an underplate or final finish, is prohibited both internally and externally. Tin content of resistor components and solder shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.4).

4. VERIFICATION

4.1 Sampling for delivery shall be in accordance with MIL-PRF-39023.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor 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 system commands 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.

6. NOTES

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

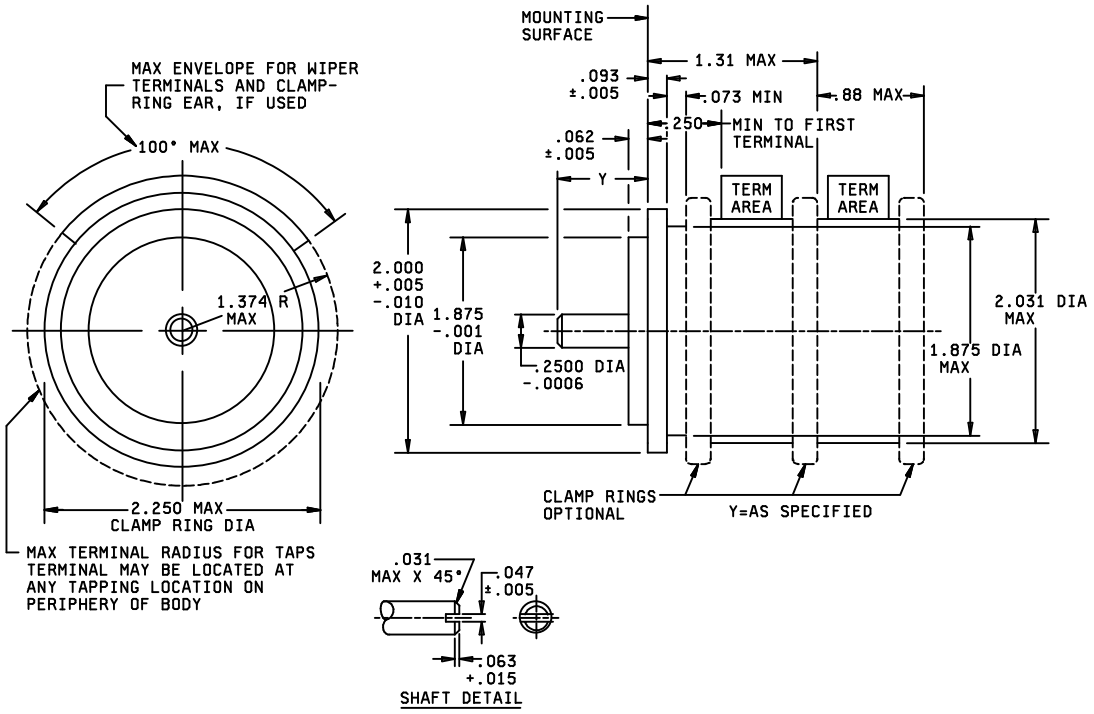
6.1 Notes. The notes specified in MIL-PRF-39023 will be applicable to this specification.

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. Unless otherwise specified (see 2.1), the versions of the individual documents referenced will be those in effect on the date of release of the solicitation.

c. Packaging requirements (see 5.1).



Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.0006	0.02	.015	0.38	.063	1.60	.88	22.35	2.000	50.80
.001	0.03	.031	0.79	.073	1.85	1.31	33.27	2.031	51.59
.005	0.13	.047	1.19	.093	2.36	1.375	34.93	2.250	57.15
.010	0.25	.062	1.57	.250	6.35	1.875	47.63		

NOTE: Dimensions are in inches. Metric equivalents (to the nearest 0.01 mm) are given for general information only and are based on 1 inch = 25.4 mm.

Style	Turns	Maximum continuous working voltage (volts)	Power rating (watts) 1/	Maximum starting and running torque (ounce-inch)			
				Single cup		Per each additional cup	
				Starting	Running	Starting	Running
RQ200	single	250	2.0	1.5	1.0	1.5	1.0

1/ When 2 single units are ganged, the first cup shall be rated at 75 percent of single unit wattage rating and second cup shall be rated at 60 percent of rated wattage. When 3 single units are ganged, the first unit shall be rated at 75 percent, the second at 50 percent, and the third at 60 percent of the rated wattage of single units.

FIGURE 1. Style RQ200

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 Tin whisker growth. The use of alloys with tin content greater than 97 percent, by mass, may exhibit tin whisker growth problems after manufacture. Tin whiskers may occur anytime from a day to years after manufacture and can develop under typical operating conditions, on products that use such materials. Conformal coatings applied over top of a whisker-prone surface will not prevent the formation of tin whiskers. Alloys of 3 percent lead, by mass, have shown to inhibit the growth of tin whiskers. For additional information on this matter, refer to ASTM-B545 (Standard Specification for Electrodeposited Coatings of Tin).

6.5 Amendment notations. The margins of this specification are marked with vertical lines to indicate modification generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship.

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

Review activities
Army - AR, AT, CR4, MI
Navy - AS, CG, MC, OS
Air Force - 19, 99

(Project 5905-2015-058)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.