

INCH-POUND  
MIL-PRF-27208/9G  
w/Amendment 1  
18 September 2013  
SUPERSEDING  
MIL-PRF-27208/9G  
11 October 2006

## PERFORMANCE SPECIFICATION SHEET

RESISTOR, VARIABLE, WIREWOUND,  
ADJUSTMENT TYPE, LEAD SCREW ACTUATED,  
STYLE RT24

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-27208](#).

THIS SPECIFICATION IS INACTIVE FOR NEW DESIGN AFTER 5 OCTOBER 1973,  
WITH THE EXCEPTION OF TERMINAL TYPE "L".  
USE [MIL-PRF-39015/3](#) FOR TERMINAL TYPES "P", "W", and "X".

### 1. SCOPE

1.1 Scope. This specification covers the requirements for style RT24 adjustment type, lead screw actuated, wirewound, variable resistors.

1.2 Part or Identifying Number (PIN). Resistors covered by this specification are identified by a PIN which consists of a basis style and a coded number. The PIN is in the following form:

<u>RT24</u>	<u>C2L102</u>
-----	-----
Style	Coded number (see <a href="#">MIL-PRF-27208</a> )

### 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4 and 5 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, 4 and 5 of this specification, whether or not they are listed.

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](mailto: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/>.

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 cited in the solicitation (see 6.2).

DEPARTMENT OF DEFENSE STANDARDS

[MIL-PRF-27208](#) - Resistor, Variable, Wirewound, Nonprecision, General Specification for.

(Copies of these documents are available online at <http://quicksearch.dla.mil> or from the DLA Document Services, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

2.3 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence unless otherwise noted. 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-27208](#).

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 0.750 watt, based on full load operation at an ambient temperature of 85°C.

3.4 Nominal resistance value, maximum resolution, and maximum rated ac or dc working voltage. Nominal resistance values, maximum resolutions, and maximum rated ac or dc working voltages are specified in table I.

TABLE I. Nominal resistance value, maximum resolution, and maximum rated ac or dc working voltage.

Nominal resistance value (in ohms)	Maximum resolution <sup>1/</sup> (in percent)	Maximum rated ac or dc working voltage
10	1.30	2.7
20	1.10	3.8
50	0.77	6.1
100	0.62	8.7
200	0.55	12.3
500	0.51	19.4
1,000	0.37	27.4
2,000	0.30	38.7
5,000 <sup>2/</sup>	0.25	61.3
10,000 <sup>3/</sup>	0.19	86.7

<sup>1/</sup> Maximum resolution shown are theoretical.

<sup>2/</sup> Value based on the use of wire having no less than a 0.001 inch nominal diameter.

<sup>3/</sup> Value based on the use of wire having no less than a 0.0008 inch nominal diameter.

MIL-PRF-27208/9G  
w/Amendment 1

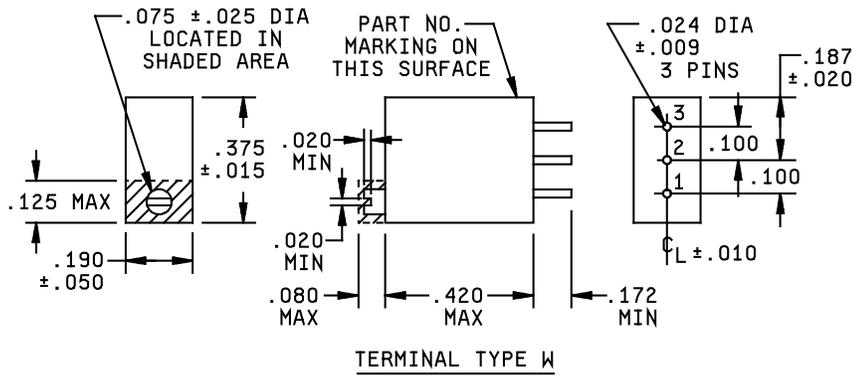
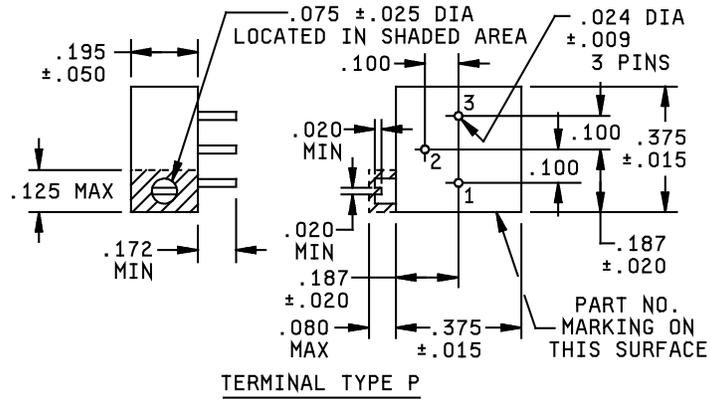
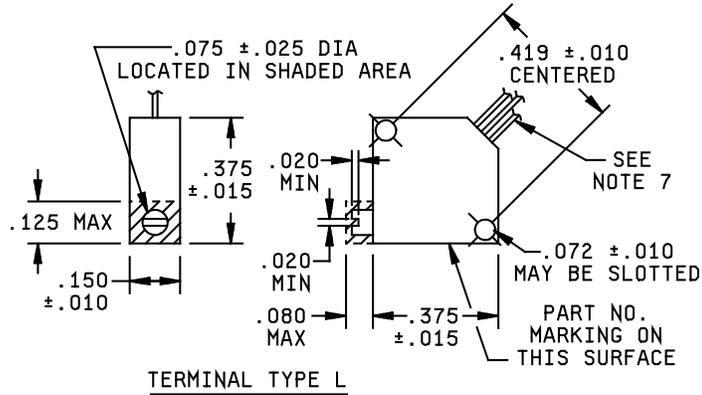
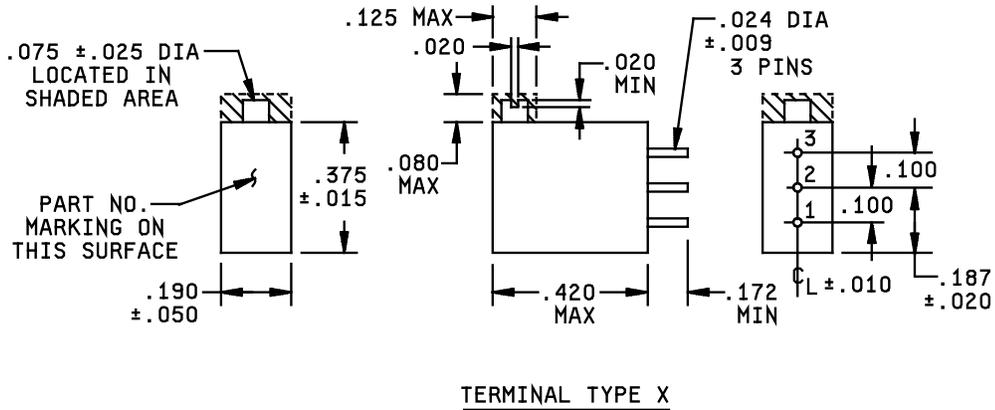


FIGURE 1. Style RT24.

MIL-PRF-27208/9G  
w/Amendment 1



Inches	mm								
0.009	0.23	0.024	0.61	0.075	1.91	0.150	3.81	0.195	4.95
0.010	0.25	0.025	0.64	0.080	2.03	0.172	4.37	0.375	9.53
0.015	0.38	0.050	1.27	0.100	2.54	0.187	4.75	0.419	10.64
0.020	0.51	0.072	1.83	0.125	3.18	0.190	4.83	0.420	10.67

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information.
3. Unless otherwise specified, tolerance is  $\pm 0.005$  (0.13mm).
4. The entire slot of the actuating screw must be above the surface of the unit.
5. For types P,W, and X, normal mounting means is by use of pins only.
6. The picturization of the styles above are given as a representative of the envelope of the item. Slight deviations from the outline shown, which are contained within the envelope, and do not alter the functional aspects of the device are acceptable.
7. The three leads shall be of stranded wire, AWG size 28 to 30, having a minimum length of 6 inches (152.4 mm); they shall be insulated with polytetrafluoroethylene, stripped 0.250 inch  $\pm 0.062$  inch (6.35mm  $\pm 1.57$ mm) from the end, and color coded.

FIGURE 1. Style RT24 - Continued.

3.5 Actual effective electrical travel. The actual effective electrical travel shall be 15 turns minimum and 30 turns maximum.

3.6 Operating torque. The torque required to effect rotation shall be 5 inch-ounce maximum.

3.7 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 6.5).

3.7.1 Termination "L". Termination "L" uses 100 percent tin plating on the internal tab (see 6.6).

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-PRF-27208.

## 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 packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's 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 Intended use. The intended use specified in [MIL-PRF-27208](#) is 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).

6.3 Substitution data. The resistors specified herein are not for use in new design (with exception of terminal type "L") after 5 October 1973. They are authorized for use in design contracts effective prior to or on 5 October 1973, and to support existing military equipment. Resistors specified in [MIL-PRF-39015/3](#) are preferred for design and regardless of the failure rate designation can be used as substitutes for the inactivated resistors of the same resistance value, tolerance and characteristic performance of this specification.

6.4 Weight. The maximum weight is 1.3 grams.

6.5 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).

6.6 Termination "L". The QPL manufacturer of the "L" termination of this slash sheet has always used 100 percent tin plating on their internal tabs. Designers are caution on using the "L" termination for replacement purposes (see 6.5).

6.7 Amendment notification. 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.

MIL-PRF-27208/9G  
w/Amendment 1

Custodians:

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

Preparing activity:  
DLA - CC

Review activities:

Army - AR, AT, AV, MI  
Navy - MC, OS  
Air Force - 19

(Project 5905-2013-004)

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>.