

INCH-POUND

MIL-R-18546/1G
w/ Amendment 1
20 October 2010
SUPERSEDING
MIL-R-18546/1G
15 May 2001

MILITARY SPECIFICATION

RESISTORS, FIXED, WIRE-WOUND
(POWER TYPE, CHASSIS MOUNTED),
STYLES RE60, RE65, RE70, AND RE75

INACTIVE FOR NEW DESIGN AFTER 22 APRIL 1970,
USE [MIL-PRF-39009/1](#) FOR CHARACTERISTIC G,
AND [MIL-PRF-39009/2](#) FOR CHARACTERISTIC N.

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

The requirements for acquiring the product described herein shall
consist of this specification sheet and [MIL-PRF-18546](#).

1. SCOPE

1.1 Scope. This specification covers the requirements for styles RE60, RE65, RE70, and RE75 resistors.

- * 1.2 Part or Identifying Number (PIN). Resistors covered by this specification are identified by a PIN which consists of the style designation, terminal, resistance, resistance tolerance, and product level designator. The PIN is derived in accordance with [MIL-PRF-18546](#) and is in the following form:

<u>RE65</u>	<u>F</u>	<u>1001</u>
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Style	Resistance tolerance	Resistance

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 emailed to 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.daps.dla.mil>.

AMSC N/A

FSC 5905

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in section 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 user 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

[MIL-PRF-18546](#) - Resistors, Fixed, Wire-wound (Power Type, Chassis Mounted), GSF.

- * (Copies of these documents are available online at <https://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia PA 19111-5094.)

- * 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 specification 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.

3. REQUIREMENT

3.1 General. The requirements for acquiring the product described herein shall consist of this document and [MIL-PRF-18546](#).

3.2 Interface and physical dimension. Resistors shall meet the interface and physical dimension specified on [figure 1](#) and as specified herein.

3.2.1 Weight. The maximum weight shall be as specified in [table I](#).

TABLE I. Weight.

Style	Grams, (maximum)	
	Characteristic G	Characteristic N
RE60	3	3.3
RE65	8	8.8
RE70	15	16.5
RE75	32	35.0

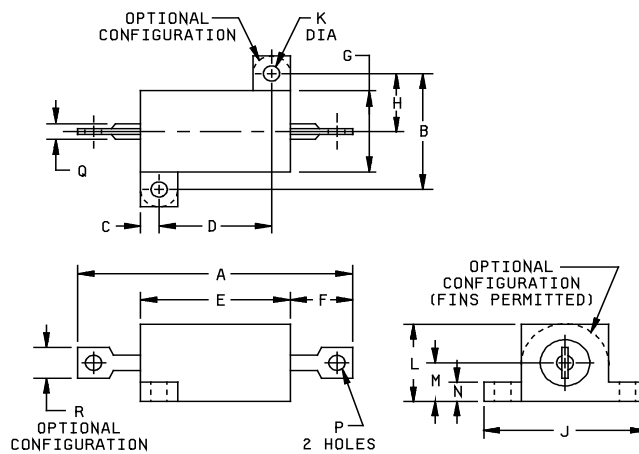
3.3 Power rating. The power rating shall be as specified in [table II](#), based on full load operation at an ambient temperature of 25°C, when mounted on the chassis specified in [table VI](#).

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TABLE II. Power rating.

Style	Power rating (watts)	
	Chassis mounted	Free air ^{1/}
RE60	5	3
RE65	10	6
RE70	20	8
RE75	30	10

^{1/} Free air power ratings are listed for information only.



Style	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
	±.062 (1.57)	±.010 (0.25)	±.031 (0.79)	±.010 (0.25)	±.062 (1.57)	±.062 (1.57)	±.062 (1.57)	±.031 (0.79)	±.031 (0.79)	±.005 (0.13)	±.031 (0.79)	±.062 (1.57)	±.031 (0.79)	±.005 (0.13)	min AWG	min
RE60	1.125 (28.58)	0.490 (12.45)	0.078 (1.98)	0.444 (11.28)	0.600 (15.24)	0.266 (6.76)	0.334 (8.48)	0.245 (6.22)	0.646 (16.41)	0.093 (2.36)	0.320 (8.13)	0.133 (3.38)	0.065 (1.65)	0.050 (1.27)	16	0.085 (2.16)
RE65	1.375 (34.93)	0.625 (15.88)	0.094 (2.39)	0.562 (14.27)	0.750 (19.05)	0.312 (7.92)	0.438 (11.13)	0.312 (7.92)	0.812 (20.62)	0.094 (2.39)	0.406 (10.31)	0.203 (5.16)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)
RE70	1.938 (49.23)	0.781 (19.84)	0.172 (4.37)	0.719 (18.26)	1.062 (26.97)	0.438 (11.13)	0.531 (13.49)	0.391 (9.93)	1.094 (27.79)	0.125 (3.18)	0.562 (14.27)	0.281 (7.14)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)
RE75	2.781 (70.64)	0.844 (21.44)	0.188 (4.78)	1.562 (39.67)	1.938 (49.23)	0.438 (11.13)	0.594 (15.09)	0.422 (10.72)	1.156 (29.36)	0.125 (3.18)	0.625 (15.88)	0.312 (7.92)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)

NOTES:

1. All dimensions are in inches.
2. Metric equivalent (to the nearest .01 mm) are given for general information only and based upon 1 inch = 25.4 mm.
3. Millimeters are in parentheses.

FIGURE 1. Styles RE60, RE65, RE70, and RE75 resistors.

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3.4 Resistance. The minimum and maximum nominal resistance values shall be as specified in [table III](#).

TABLE III. Minimum and maximum nominal resistance values.

Style	Resistance values (Ohms)					
	Minimum			Maximum		
	Characteristic		Characteristic <u>1/</u>		Characteristic <u>2/</u>	
	G	N	G	N	G	N
RE60	0.10	1	665	332	3,320	1,650
RE65	0.10	1	1,100	549	5,620	2,800
RE70	0.10	1	2,210	1,100	12,100	6,040
RE75	0.10	1	8,060	4,020	39,200	19,600

1/ Based on use of 0.00175 inch nominal diameter wire.

2/ Based on use of 0.001 inch nominal diameter wire.

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with [MIL-PRF-18546](#), and as specified herein.

4.2 Terminal strength. The direct pull shall be as specified in [table IV](#).

TABLE IV. Direct pull.

Style	Direct pull (pounds)
RE60	5 +0, -1/4
RE65	5 +0, -1/4
RE70	10 +0, -1/2
RE75	10 +0, -1/2

4.3 Dielectric withstanding voltage.

4.3.1 At atmospheric pressure. The magnitude of the test voltage shall be as specified in [table V](#).

TABLE V. Dielectric withstanding voltages at atmospheric pressure.

Style	Dielectric withstanding test voltage (volts)
RE60	1,000
RE65	1,000
RE70	1,000
RE75	2,000

4.3.2 At reduced barometric pressure. The magnitude of the test voltage shall be 500 volts.

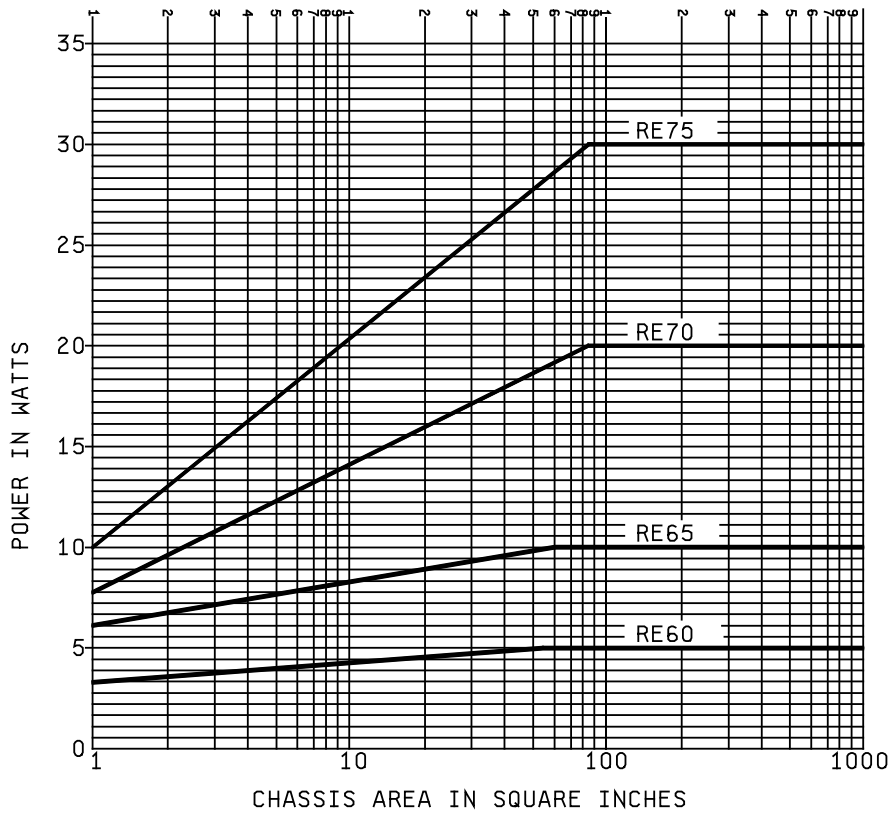
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4.4 Chassis dimensions. The chassis dimensions shall be as specified in [table VI.](#)

TABLE VI. Chassis dimensions. 1/

Style	Length, width, and height	Thickness
RE60	6 X 4 X 2	0.04
RE65	6 X 4 X 2	0.04
RE70	7 X 5 X 2	0.04
RE75	7 X 5 X 2	0.04

1/ All dimension are given in inches.



NOTE:

The chassis derating curves are based on the full power ratings at an ambient temperature of 25°C. These curves are independent of the temperature derating curves.

FIGURE 2. Chassis area derating curves.

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

6.1 Intended use. In addition to the notes specified herein, the notes specified in [MIL-PRF-18546](#) are 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 design after date of this specification. These resistors are suitable for use in design contracts effective prior to 22 April 1970, and for logistic support of existing military equipment. Resistors specified in [MIL-PRF-39009](#) are preferred for design and regardless of failure rate designation are authorized as substitutes for the inactivated resistor of the same resistance and tolerance of this specification. Substitution for characteristic G and N are as follows:

MIL-R-18546/1		MIL-PRF-39009	
Style	Characteristic	Style	Specification sheet
RE60	G (Inductive)	RER60	MIL-PRF-39009/1
RE65	G (Inductive)	RER65	MIL-PRF-39009/1
RE70	G (Inductive)	RER70	MIL-PRF-39009/1
RE75	G (Inductive)	RER75	MIL-PRF-39009/1
RE60	N (Noninductive)	RER40	MIL-PRF-39009/2
RE65	N (Noninductive)	RER45	MIL-PRF-39009/2
RE70	N (Noninductive)	RER50	MIL-PRF-39009/2
RE75	N (Noninductive)	RER55	MIL-PRF-39009/2

6.4 Power rating (free air). The free air (resistor not mounted on a chassis) power rating is as listed in [table II](#).

6.5 Chassis area derating curves. [Figure 2](#) may be used for design information.

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6.6 Interchangeability. Items in this specification are mutually interchangeable with items of the same style and characteristic procured under MIL-R-18546/1E.

- * 6.7 Amendment notations. The margins of this specification are marked with asterisks to indicate modifications 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.

Custodians:

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

Preparing activity:
DLA-CC

(Project 5905-2010-011)

Review activities:

Army - AR, AT, AV, CR4
Navy - AS, CG, MC, OS
Air Force - 19

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