

[INCH-POUND]
 A-A-55512A
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 SUPERSEDING
 A-A-55512
 19 April 1995

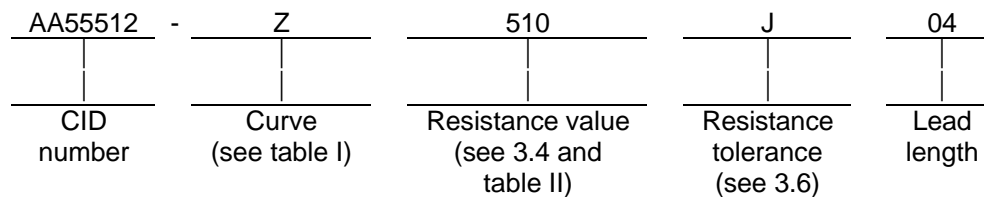
COMMERCIAL ITEM DESCRIPTION

RESISTORS, THERMALY SENSITIVE (THERMISTOR)

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. **SCOPE.** This (CID) covers the general requirements for a thermistor. This thermistor is a stainless steel probe with a flange, for air (open ended) and liquid (sealed ended) measurements. These parts come with insulated leads in four different lengths. Thermistors covered by this CID are intended for commercial/industrial applications and are not used in military systems needing stringent environmental and electrical requirements.

2. **CLASSIFICATION.** This CID uses a classification system which is included in the Part Identification Number (PIN) as shown in the following examples (see 7.1).



3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. The thermistor supplied to this CID shall meet the interface and physical dimensions as specified herein (see figure 1).

3.2 Material. The material shall be as specified herein.

3.2.1 Body. The body of the thermistor shall be of negative temperature coefficient (NTC) material.

3.3 Finish. The finish shall be to the best commercial practices.

3.4 Resistance. The resistance measured at +25°C and expressed in ohms shall be as specified in table I and is identified by a three digit number. The first two digits represent significant figures, and the last digit specifies the number of zeros to follow.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Defense Supply Center, Columbus, ATTN: DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000, telephone (614) 692-0552, or facsimile (FAX) (614) 692-6939

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3.5 Resistance at temperatures other than 25°C. Resistance of temperatures other than +25°C shall be as specified in table II.

TABLE I. Minimum/maximum resistance value and curve.

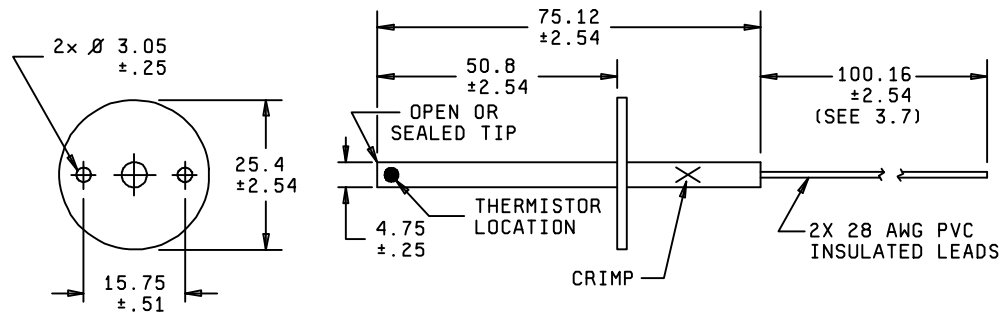
Resistance (ohms) at +25°C	Resistance temperature curve
40 to 250	A
470 to 2.2 k	Y
1.7 k to 33 k	Z
33 k to 100 k	W
47 k to 150 k	M
47 k to 220 k	V
470 k to 1.2 M	P
3.1 M to 40 M	R

3.6 Resistance tolerance. The thermistor specified herein is available in resistance tolerances F (± 1 percent), G (± 2 percent), J (± 5 percent), and K (± 10 percent) plus the resistance deviation at specified temperature as specified in table II.

3.7 Lead length. The leads shall be number 28 gauge AWG, black polyvinylchloride (PVC), insulated wire and are available in 4 inch (10.02 cm), 6 inch (15.24 cm), 12 inch (30.48 cm), or 24 inch (30.48 cm) lengths.

3.8 Resistance temperature coefficient. The resistance temperature coefficient shall be as specified in table II.

3.9 Marking. Marking of the individual thermistor supplied to this CID is not required; however, each unit package shall be marked with the manufacturer's standard commercial PIN.



mm	Inches	mm	Inches
0.25	0.010	15.75	0.62
0.51	0.02	25.4	1.0
2.54	0.10	50.8	2.0
3.05	0.12	75.12	3.0
4.75	0.18	100.16	4.07

FIGURE 1. Resistor, thermally sensitive (thermistor probe).

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TABLE II. Resistance temperature coefficient.

		CURVE A			CURVE Y			CURVE Z			CURVE W		
°C	°F	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC
-60	-76	43.0			75.69	9.7		140.58	4.1				
-55	-67	31.9			54.78			96.40					
-50	-58	24.3	18.3	5.6	40.06	8.2	6.1	67.06	3.5	7.2			
-40	-40	14.4	15.4	4.9	22.05	6.8	5.8	33.66	3.0	6.7	40.16	3.0	
-30	-22	8.93	12.5	4.5	12.56	5.6	5.4	17.10	2.4	6.2	20.64	2.4	6.5
-20	-4	5.69	9.9	4.4	7.422	4.4	5.1	9.712	1.9	5.8	11.03	1.9	5.1
-15	5	4.56			5.777			7.296			8.175		
-10	14	3.68	7.4	4.3	4.527	3.3	4.8	5.534	1.4	5.5	6.119	1.4	5.7
-5	23	2.99			3.58			4.234			4.615		
0	32	2.45	5.0	3.9	2.848	2.3	4.5	3.266	1.0	5.1	3.510	1.0	5.4
5	41	2.02			2.282			2.540			2.690		
10	50	1.68	2.7	3.8	1.838	1.2	4.2	1.99	0.5	4.6	2.078	0.5	5.1
15	59	1.42			1.492			1.571			1.617		
20	68	1.18	0.5	3.4	1.216	0.3	4.0	1.249	0.1	4.5	1.267	0.1	4.8
25	77	1.0		3.1	1.0		3.9	1.0		4.4	1.0		4.7
30	86	0.854	1.4	3.0	0.826	0.6	3.8	0.806	0.2	4.3	0.794	0.2	4.6
35	95	0.732			0.686			0.653			0.635		
40	104	0.628	3.2	2.9	0.573	1.4	3.6	0.533	0.6	4.0	0.511	0.6	4.3
45	113	0.537			0.480			0.437			0.413		
50	122	0.464	5.0	2.8	0.405	2.2	3.4	0.36	1.0	3.8	0.336	1.0	4.1
55	131	0.403			0.343			0.299			0.275		
60	140	0.350	6.7	2.7	0.291	3.0	3.2	0.249	1.2	3.6	0.23	1.2	3.9
65	149	0.305			0.249			0.208			0.167		
70	158	0.267	8.2	2.6	0.214	3.6	3.0	0.175	1.6	3.4	0.155	1.6	3.7
75	167	0.238			0.184			0.148			0.129		
80	176	0.208	9.8	2.5	0.159	4.3	2.8	0.126	1.8	3.3	0.108	1.9	3.5
85	185	0.183			0.138			0.107			0.091		
90	194	0.163	11.2	2.4	0.120	4.9	2.7	0.092	2.1	3.1	0.077	2.1	3.3
95	203	0.145			0.105			0.079			0.065		
100	212	0.130	12.6	2.3	0.092	5.5	2.5	0.068	2.4	2.9	0.057	2.4	3.2
105	221	0.117			0.081			0.059			0.048		
110	230	0.105			0.072	6.1	2.4	0.061	2.6	2.8	0.041	2.6	3.0
115	239	0.094	13.5	2.2	0.064			0.045			0.035		
120	248	0.085			0.057	6.7	2.3	0.039	2.9	2.7	0.030	2.9	2.9
125	257	0.075	15.0	2.1	0.050	6.9		0.034	3.0	2.6	0.026		
130	366							0.030	3.1	2.5	0.023	3.1	2.8
140	284							0.024	3.4	2.4	0.017	3.4	2.7
150	302							0.019	3.5		0.013	3.5	

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TABLE II. Resistance temperature coefficient - Continued.

		CURVE M			CURVE V			CURVE P			CURVE R		
°C	°F	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC	RT/R25	Max dev	NTC
-60	-76												
-55	-67							159.0			479.0		
-50	-58	56.49	3.5	6.9	90.06	5.0	7.2	110.1			307.0		
-40	-40	29.49	3.0	6.3	44.03	4.2	7.0	55.5			128.0		
-30	-22	16.03	2.4	5.9	22.35	2.9	6.6	28.4			54.0		
-20	-4	9.04	1.9	5.6	11.80	2.7	6.2	14.65	13.7	6.8	23.38		
-15	5	6.873			8.691			10.51			15.84		
-10	14	5.267	1.4	5.2	6.453	2.1	5.9	7.61	11.7	6.4	10.85		
-5	23	4.070			4.830			5.56			7.508		
0	32	3.166	1.0	4.9	3.643	1.4	5.5	4.09	9.9	6.0	5.246	13.2	7.1
5	41	2.461			2.774			3.04			3.7		
10	50	1.958	0.5	4.7	2.128	0.8	5.2	2.28	8.2	5.7	2.633	10.9	6.7
15	59	1.556			1.644			1.72			1.891		
20	68	1.243	0.1	4.4	1.278	0.2	5.0	1.31	6.6	5.4	1.369	8.7	6.4
25	77	1.0		4.2	1.0		4.9	1.0			1.0		
30	86	0.809	0.2	4.0	0.787	0.4	4.7	0.77	5.2	5.1	0.736	6.8	6.1
35	95	0.658			0.623			0.60			0.546		
40	104	0.538	0.6	3.7	0.497	0.9	4.5	0.47	3.7	4.9	0.407	4.9	5.8
45	113	0.443			0.398			0.37			0.307		
50	122	0.366	1.0	3.6	0.321	1.5	4.3	0.29	2.4	4.6	0.232	3.2	5.5
55	131	0.304			0.26			0.23			0.176		
60	140	0.253	1.2	3.4	0.212	1.9	4.1	0.19	1.1	4.4	0.136	1.5	5.2
65	149	0.212			0.173			0.15			0.105		
70	158	0.179	1.6	3.2	0.143	2.4	3.9	0.12		4.2	0.081	0.0	5.0
75	167	0.151			0.118			0.10			0.064		
80	176	0.128	1.9	3.1	0.098	2.7	3.7	0.08	1.0	4.0	0.050	1.4	4.8
85	185	0.109			0.081			0.066			0.039		
90	194	0.093	2.1	2.9	0.068	3.2	3.5	0.054	2.1	3.8	0.031	2.8	4.6
95	203	0.080			0.057			0.045			0.025		
100	212	0.069	2.4	2.8	0.048	3.6	3.4	0.037	3.1	3.6	0.020	4.1	4.4
105	221	0.060			0.041			0.031			0.016		
110	230	0.052	2.6	2.7	0.035	4.0	3.2	0.026	4.0	3.5	0.013	5.2	4.2
115	239	0.045			.03			0.022			0.011		
120	248	0.039	2.9	2.7	.025	4.4	3.1	0.019	4.9	3.3	0.009	6.4	4.0
125	257	0.034	3.0	2.6	.022	4.5	3.0	0.016	5.3	3.2	0.007	7.0	3.9
130	266	0.030	3.1	2.5	.019	4.7	3.0	0.013	5.8	3.2	0.006	7.6	3.8
140	284	0.023	3.4	2.4	.014	5.0	2.9	0.01	6.6	3.1	0.004	8.6	3.7
150	302	0.018	3.5	2.3	.011	5.4	2.8	0.007	7.3	2.9	0.003	9.6	3.5

4. REGULATORY REQUIREMENTS.

4.1 Recycled/recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR).

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5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these resistors to DSCC under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.3 Source of documents. This section is not applicable to this CID.

7.4 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN.
- b. Product conformance provisions.
- c. Packaging requirements.

7.5 Commercial products. As part of the market analysis and research effort, this CID was coordinated with the following manufacturers of commercial products. At the time of CID preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown).

TABLE III. Commercial products.

CID PIN	MFR's CAGE	MFR's name and address
AA55512-*****	56866	Quality Thermistor, Inc. 2147 Centurian Place Boise, ID 83709-2865

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7.6 Part number (P/N) supersession data. This CID supersedes the following manufacturers P/N as shown. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE IV. P/N supersession data.

CID dash number (see table I)	Vendor commercial PIN	Vendor CAGE number
AA55512-*****	QTA*-****-*	56866

1/ The manufacturers P/N shall not be used for procurement to the requirements of this CID. At the time or preparation of this CID, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown.

7.7 Government users. To acquire information on obtaining these resistors from the government inventory system, contact Defense Supply Center, Columbus, ATTN: DSCC-CPB, Post Office Box 3990, Columbus, OH 43216-5000, or telephone (614) 692-7678.

MILITARY INTERESTS:

Custodians:
NAVY - EC
DLA - CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - 7FXE

Preparing activity:
DLA - CC

Project 5905-1624