

# SPECIFICATION CONTROL DRAWING

SCD

**55A0812**

Title WIRE, RADIATION-CROSSLINKED, MODIFIED ETFE-INSULATED,  
NORMAL WEIGHT, GENERAL PURPOSE, 600 VOLT

Date 1-12-17

Revision V

This specification sheet forms a part of the latest issue of Raychem Specification 55A.



TABLE I. CONSTRUCTION DETAILS

| PART NUMBER<br>1/ | WIRE SIZE<br>(AWG) | CONDUCTOR STRANDING<br>(number x AWG) | DIAMETER OF STRANDED CONDUCTOR<br>(inch) |         | FINISHED WIRE                                    |                    |                                  |
|-------------------|--------------------|---------------------------------------|--|---------|--|--------------------|----------------------------------|
|                   |                    |                                       | MINIMUM                                  | MAXIMUM | MAXIMUM RESISTANCE<br>AT 20°C<br>(ohms/1000 ft.) | DIAMETER<br>(inch) | MAXIMUM WEIGHT<br>(lbs/1000 ft.) |
|                   |                    |                                       |  |         |  |                    |                                  |
| 55A0812-26-*      | 26                 | 19 x 38                               | .018                                     | .019    | 38.4   | .040 ± .002        | 1.70                             |
| 55A0812-24-*      | 24                 | 19 x 36                               | .023                                     | .024    | 24.3   | .045 ± .002        | 2.30                             |
| 55A0812-22-*      | 22                 | 19 x 34                               | .029                                     | .030    | 15.1   | .050 ± .002        | 3.20                             |
| 55A0812-20-*      | 20                 | 19 x 32                               | .037                                     | .038    | 9.19   | .058 ± .002        | 4.70                             |
| 55A0812-18-*      | 18                 | 19 x 30                               | .046                                     | .048    | 5.79   | .070 ± .003        | 7.20                             |
| 55A0812-16-*      | 16                 | 19 x 29                               | .052                                     | .054    | 4.52   | .077 ± .003        | 9.00                             |
| 55A0812-14-*      | 14                 | 19 x 27                               | .065                                     | .068    | 2.88   | .094 ± .003        | 13.8                             |
| 55A0812-12-*      | 12                 | 37 x 28                               | .084                                     | .087    | 1.90   | .111 ± .003        | 20.5                             |
| 55A0812-10-*      | 10                 | 37 x 26                               | .106                                     | .112    | 1.19   | .134 ± .004        | 32.4                             |
| 55A0812-8-*       | 8                  | 133 x 29                              | .158                                     | .169    | .658   | .195 ± .008        | 61.9                             |
| 55A0812-6-*       | 6                  | 133 x 27                              | .198                                     | .213    | .418   | .241 ± .010        | 94.5                             |
| 55A0812-4-*       | 4                  | 133 x 25                              | .250                                     | .268    | .264   | .310 ± .010        | 158.                             |
| 55A0812-2-*       | 2                  | 665 x 30                              | .320                                     | .340    | .170   | .408 ± .012        | 249.                             |
| 55A0812-1-*       | 1                  | 817 x 30                              | .360                                     | .380    | .139   | .470 ± .012        | 329.                             |
| 55A0812-0-*       | 0                  | 1045 x 30                             | .395                                     | .425    | .108   | .510 ± .016        | 404.                             |
| 55A0812-00-*      | 00                 | 1330 x 30                             | .440                                     | .475    | .085   | .570 ± .016        | 500.                             |
| 55A0812-000-*     | 000                | 1665 x 30                             | .500                                     | .540    | .068   | .610 ± .016        | 594.                             |
| 55A0812-0000-*    | 0000               | 2109 x 30                             | .565                                     | .605    | .054   | .675 ± .022        | 746.                             |

Users should evaluate the suitability of this product for their application. Specifications are subject to change without notice. Tyco Electronics Corporation also reserves the right to make changes in materials or processing, which do not affect compliance with any specification, without notification to Buyer.

1/ COLORS AND COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH MIL-STD-681. OTHER CODES AND SUFFIXES MAY BE ADDED TO THE PART NUMBER, AS NECESSARY, TO CAPTURE ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE PURCHASE ORDER.

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DIMENSIONS ARE IN INCHES AND, UNLESS OTHERWISE DESIGNATED, ARE NOMINAL.

THIS SPECIFICATION SHEET TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.



**Raychem Wire & Cable**  
501 Oakside Avenue  
Redwood City, CA 94063-3800  
Phone: 1-800-522-6752  
Fax: 1-650-361-6297



**TABLE II. PERFORMANCE DETAILS**

| PART NUMBER<br>1/ | MANDREL DIAMETER<br>(inch) (± 3%)                  |              | WEIGHT<br>(lb) (± 3%)                              |              |
|-------------------|--|--------------|--|--------------|
|                   | LIFE CYCLE,<br>IMMERSION, AND<br>ACCELERATED AGING | COLD<br>BEND | LIFE CYCLE,<br>IMMERSION, AND<br>ACCELERATED AGING | COLD<br>BEND |
| 55A0812-26-*      | .375   | 1.00         | .500   | 3.00         |
| 55A0812-24-*      | .500   | 1.00         | .750   | 3.00         |
| 55A0812-22-*      | .500   | 1.00         | 1.00   | 3.00         |
| 55A0812-20-*      | .500   | 1.00         | 1.50   | 4.00         |
| 55A0812-18-*      | .750   | 1.50         | 2.00   | 4.00         |
| 55A0812-16-*      | 1.00   | 1.50         | 2.00   | 5.00         |
| 55A0812-14-*      | 1.00   | 2.00         | 3.00   | 5.00         |
| 55A0812-12-*      | 1.50   | 2.00         | 3.00   | 5.00         |
| 55A0812-10-*      | 2.00   | 3.00         | 3.00   | 5.00         |
| 55A0812-8-*       | 3.00   | 4.00         | 4.00   | 6.00         |
| 55A0812-6-*       | 4.00   | 5.00         | 4.00   | 10.0         |
| 55A0812-4-*       | 5.00   | 6.00         | 4.00   | 10.0         |
| 55A0812-2-*       | 6.00   | 8.00         | 6.00   | 15.0         |
| 55A0812-1-*       | 8.00   | 10.0         | 6.00   | 15.0         |
| 55A0812-0-*       | 8.00   | 10.0         | 6.00   | 15.0         |
| 55A0812-00-*      | 10.0   | 12.0         | 8.00   | 20.0         |
| 55A0812-000-*     | 10.0   | 12.0         | 8.00   | 20.0         |
| 55A0812-0000-*    | 10.0   | 12.0         | 8.00   | 20.0         |

**WIRE RATINGS AND ADDITIONAL REQUIREMENTS**

**TEMPERATURE RATING: 200°C**

Maximum continuous conductor temperature

**VOLTAGE RATING: 600 volts (rms) at sea level**

**ACCELERATED AGING (CROSSLINKING PROOF):**

300 ± 3°C for 7 hours

**BLOCKING: 230 ± 3°C for 24 hours**

**COLOR: White preferred**

**CONCENTRICITY: 70% (minimum)**

**FLAMMABILITY: Procedure 1,**

3 seconds (maximum), 3 inches (maximum);

no flaming of facial tissue

**HUMIDITY RESISTANCE: Insulation Resistance,**

5000 megohms for 1000 ft. (minimum), AWG 26-10

3000 megohms for 1000 ft. (minimum), AWG 8-0000

**IDENTIFICATION, COLOR STRIPING, AND BAND DURABILITY:**

125 cycles (250 strokes) (minimum), 500 g weight

**IMMERSION: Diameter increase 5% (maximum);**

no cracking, no dielectric breakdown

**INSULATION ELONGATION AND TENSILE STRENGTH:**

Elongation,

125% (minimum) for primary insulation, AWG 26-10 only

75% (minimum) for total insulation (primary insulation & jacket)

Tensile Strength,

5000 lbf/in<sup>2</sup> (minimum) for primary insulation

5000 lbf/in<sup>2</sup> (minimum) for total insulation (primary insulation & jacket)

**INSULATION FLAWS:**

Primary Insulation,

Spark Test, 1.5 kV (rms) at 60 Hz; 4.2 kV (rms) at 3 kHz

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire,

Spark Test, 5.7 kV (rms) at 3 kHz

Impulse Dielectric Test, 8.0 kV (peak)

**INSULATION RESISTANCE:**

5000 megohms for 1000 ft. (minimum), AWG 26-10

3000 megohms for 1000 ft. (minimum), AWG 8-0000

**INSULATION THICKNESS:**

0.003 in. (minimum) for primary insulation

0.004 in. (minimum) for outer jacket

0.009 in. (minimum) for total insulation

**LIFE CYCLE: 230 ± 3°C for 500 hours**

**LOW TEMPERATURE-COLD BEND: -65 ± 3°C for 4 hours**

**SHRINKAGE: 230 ± 3°C for 6 hours,**

0.125 in. (maximum) in 12 inches

**SMOKE TEST: 250 ± 5°C, no visible smoke**

**SOLDERABILITY (AWG 10 and smaller only):**

Per MIL-STD-202, Method 208, except without steam aging

**SURFACE RESISTANCE:**

500 megohms-in. (minimum), both readings

**THERMAL SHOCK RESISTANCE: 200 ± 3°C,**

0.060 in. (maximum), AWG 26-12

0.100 in. (maximum), AWG 10-8

0.125 in. (maximum), AWG 6-0000

**VOLTAGE WITHSTAND (Post Environmental):**

2500 volts (rms), 60 Hz

**WICKING: 2.25 in. (maximum)**

**WRAP TEST: 313 ± 3°C for 2 hours**

**1/ PART NUMBER:**

The "\*" in the part numbers in Tables I and II shall be replaced by a color code designator.

Example: AWG 22, white: 55A0812-22-9

AWG 22, white with a black stripe: 55A0812-22-90

1/ See footer section on page 1

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