

# SPECIFICATION CONTROL DRAWING

**55A0111**

TITLE WIRE, RADIATION-CROSSLINKED, MODIFIED, ETFE-INSULATED, TIN-COATED COPPER, LIGHTWEIGHT

Date 24MAR11

Revision R

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

CONDUCTOR - TIN-COATED COPPER

INSULATOR - RADIATION-CROSSLINKED, MODIFIED ETFE



TABLE I. CONSTRUCTION DETAILS

| PART NUMBER<br>1/ | WIRE SIZE<br>(AWG) | CONDUCTOR STRANDING<br>(number x AWG) | DIAMETER OF STRANDED CONDUCTOR<br>(in.) |         | FINISHED WIRE                                    |                   |                                  |
|-------------------|--------------------|---------------------------------------|-----------------------------------------|---------|--------------------------------------------------|-------------------|----------------------------------|
|                   |                    |                                       | MINIMUM                                 | MAXIMUM | MAXIMUM RESISTANCE<br>AT 20°C<br>(ohms/1000 ft.) | DIAMETER<br>(in.) | MAXIMUM WEIGHT<br>(lbs/1000 ft.) |
|                   |                    |                                       |                                         |         |                                                  |                   |                                  |
| 55A0111-30-*      | 30                 | 7 x 38                                | .011                                    | .013    | 108.4                                            | .024 ± .002       | .66                              |
| 55A0111-28-*      | 28                 | 7 x 36                                | .014                                    | .016    | 68.6                                             | .027 ± .002       | .91                              |
| 55A0111-26-*      | 26                 | 19 x 38                               | .018                                    | .020    | 41.3                                             | .032 ± .002       | 1.4                              |
| 55A0111-24-*      | 24                 | 19 x 36                               | .023                                    | .025    | 26.2                                             | .037 ± .002       | 2.0                              |
| 55A0111-22-*      | 22                 | 19 x 34                               | .029                                    | .031    | 16.2                                             | .043 ± .002       | 2.8                              |
| 55A0111-20-*      | 20                 | 19 x 32                               | .037                                    | .039    | 9.88                                             | .050 ± .002       | 4.3                              |
| 55A0111-18-*      | 18                 | 19 x 30                               | .046                                    | .049    | 6.23                                             | .060 ± .002       | 6.5                              |
| 55A0111-16-*      | 16                 | 19 x 29                               | .052                                    | .055    | 4.81                                             | .068 ± .002       | 8.3                              |
| 55A0111-14-*      | 14                 | 19 x 27                               | .065                                    | .069    | 3.06                                             | .085 ± .003       | 13.0                             |
| 55A0111-12-*      | 12                 | 37 x 28                               | .084                                    | .089    | 2.02                                             | .103 ± .003       | 19.7                             |
| 55A0111-10-*      | 10                 | 37 x 26                               | .106                                    | .113    | 1.26                                             | .128 ± .006       | 31.8                             |
| 55A0111- 8-*      | 8                  | 133 x 29                              | .158                                    | .173    | .701                                             | .188 ± .008       | 58.8                             |

TABLE II. PERFORMANCE DETAILS

| PART NUMBER<br>1/ | BEND TESTING                                      |              |                                                   |              |
|-------------------|---------------------------------------------------|--------------|---------------------------------------------------|--------------|
|                   | MANDREL DIAMETER<br>(inch) (± 3%)                 |              | WEIGHT<br>(lb) (± 3%)                             |              |
|                   | IMMERSION,<br>LIFE CYCLE AND<br>ACCELERATED AGING | COLD<br>BEND | IMMERSION,<br>LIFE CYCLE AND<br>ACCELERATED AGING | COLD<br>BEND |
|                   |                                                   |              |                                                   |              |
| 55A0111-30-*      | .250                                              | .375         | .125                                              | .500         |
| 55A0111-28-*      | .250                                              | .375         | .125                                              | .500         |
| 55A0111-26-*      | .375                                              | .500         | .125                                              | .500         |
| 55A0111-24-*      | .375                                              | .500         | .250                                              | 1.00         |
| 55A0111-22-*      | .500                                              | .750         | .375                                              | 1.00         |
| 55A0111-20-*      | .500                                              | .750         | .500                                              | 1.00         |
| 55A0111-18-*      | .500                                              | 1.00         | .500                                              | 1.00         |
| 55A0111-16-*      | .750                                              | 1.00         | .750                                              | 1.00         |
| 55A0111-14-*      | 1.00                                              | 1.50         | 1.00                                              | 3.00         |
| 55A0111-12-*      | 1.50                                              | 2.00         | 1.50                                              | 3.00         |
| 55A0111-10-*      | 2.00                                              | 3.00         | 1.50                                              | 3.00         |
| 55A0111- 8-*      | 3.00                                              | 4.00         | 4.00                                              | 6.00         |

Users should evaluate the suitability of this product for their application. Specifications are subject to change without notice.

TE Connectivity 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.

## WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150 °C,

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms) at sea level

ACCELERATED AGING (CROSSLINKING PROOF): 300 ± 3 °C for 7 hours

BLOCKING: 200 ± 3 °C for 24 hours

COLOR: white preferred

CONCENTRICITY: 70% (minimum)

FLAMMABILITY: Procedure 1, 3 seconds (maximum); 3 in. (maximum); no flaming of facial tissue.

HUMIDITY RESISTANCE: Insulation Resistance,

5000 megohms for 1000 ft. (minimum) for AWG 30 - 10

3000 megohms for 1000 ft. (minimum) for AWG 8

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, 75% (minimum)

Tensile strength, 5000 lbf/in<sup>2</sup> (minimum)

INSULATION FLAWS:

Spark test, 5.7 kV (rms) at 3 kHz

Impulse Dielectric Test, 8.0 kV (peak)

INSULATION RESISTANCE:

5000 megohms for 1000 ft. (minimum) for AWG 30 - 10

3000 megohms for 1000 ft. (minimum) for AWG 8

INSULATION THICKNESS: 0.005 in. (minimum)

LIFE CYCLE: 200 ± 3 °C for 500 hours

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

SHRINKAGE: 200 ± 3 °C, for 6 hours, 0.125 in. (maximum) in 12 in.

SOLDERABILITY: Per MIL-STD-202, Method 208, without steam aging

N/A for AWG 10 and 8

SMOKE TEST: 200 ± 2 °C. No visible smoke

SURFACE RESISTANCE: 500 megohms-in. (minimum), both readings

THERMAL SHOCK RESISTANCE: 150 ± 3 °C, 0.060 in. (maximum)

VOLTAGE WITHSTAND TEST (Post Environmental): 2500 volts (rms), 60 Hz

WRAP TEST: 200 ± 3 °C for 2 hours

PART NUMBER:

The "" in the part numbers on page 1 shall be replaced by a color code designator.

1/ Example: AWG 22, white: 55A0111-22-9

AWG 22, white with black stripe: 55A0111-22-90

1/ See footer section on page 1