

# SPECIFICATION CONTROL DRAWING

82A0111

|       |   |      |        |          |   |
|-------|---|------|--------|----------|---|
| TITLE | WIRE, RADIATION-CROSSLINKED, MODIFIED FLEXIBLE ETFE-INSULATED, LIGHTWEIGHT, GENERAL PURPOSE, 600 VOLT | Date | 6-5-13 | Revision | T |
|-------|---|------|--------|----------|---|

This specification sheet forms a part of the latest issue of Raychem Specification 80.

CONDUCTOR - TIN-COATED COPPER

INSULATION - RADIATION-CROSSLINKED, MODIFIED FLEXIBLE ETFE

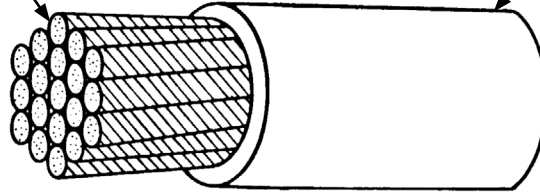


TABLE I. CONSTRUCTION DETAILS

| 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.) |
|                   |                    |                                       |   |         |  |                   |                                  |
| 82A0111-28-*      | 28                 | 42 x 44                               | .013                                    | .017    | 71.4   | .029 ± .003       | 1.0                              |
| 82A0111-26-*      | 26                 | 63 x 44                               | .017                                    | .021    | 43.5   | .033 ± .003       | 1.4                              |
| 82A0111-24-*      | 24                 | 105 x 44                              | .023                                    | .027    | 28.2   | .037 ± .003       | 2.1                              |
| 82A0111-22-*      | 22                 | 154 x 44                              | .029                                    | .033    | 19.2   | .043 ± .003       | 2.9                              |
| 82A0111-20-*      | 20                 | 154 x 42                              | .037                                    | .043    | 11.7   | .053 ± .004       | 4.2                              |
| 82A0111-18-*      | 18                 | 259 x 42                              | .047                                    | .053    | 7.14   | .064 ± .004       | 6.7                              |
| 82A0111-16-*      | 16                 | 259 x 40                              | .061                                    | .067    | 4.53   | .079 ± .004       | 10.2                             |
| 82A0111-14-*      | 14                 | 665 x 42                              | .078                                    | .086    | 2.96   | .099 ± .005       | 16.5                             |
| 82A0111-12-*      | 12                 | 665 x 40                              | .096                                    | .106    | 1.89   | .121 ± .006       | 24.8                             |
| 82A0111-10-*      | 10                 | 665 x 38                              | .126                                    | .140    | 1.12   | .157 ± .009       | 42.2                             |
| 82A0111-8-*       | 8                  | 665 x 36                              | .157                                    | .173    | .714   | .195 ± .010       | 66.3                             |
| 82A0111-6-*       | 6                  | 1045 x 36                             | .192                                    | .208    | .490   | .236 ± .011       | 102.                             |
| 82A0111-4-*       | 4                  | 1665 x 36                             | .265                                    | .285    | .326   | .318 ± .013       | 169.                             |
| 82A0111-2-*       | 2                  | 1665 x 34                             | .325                                    | .345    | .204   | .385 ± .014       | 252.                             |
| 82A0111-1-*       | 1                  | 2109 x 34                             | .370                                    | .400    | .163   | .445 ± .019       | 317.                             |
| 82A0111-0-*       | 0                  | 2660 x 34                             | .435                                    | .465    | .133   | .516 ± .020       | 407.                             |
| 82A0111-00-*      | 00                 | 3325 x 34                             | .485                                    | .515    | .102   | .566 ± .020       | 502.                             |

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.



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TABLE II. PERFORMANCE DETAILS

| PART NUMBER<br>1/ | BEND TESTING                      |                         |
|-------------------|-----------------------------------|-------------------------|
|                   | MANDREL DIAMETER<br>(inch) (± 3%) | WEIGHT<br>(lb) (± 3%)   |
|                   | CROSSLINKING PROOF TEST           | CROSSLINKING PROOF TEST |
| 82A0111-28-*      | .250                              | .125                    |
| 82A0111-26-*      | .375                              | .125                    |
| 82A0111-24-*      | .375                              | .250                    |
| 82A0111-22-*      | .500                              | .375                    |
| 82A0111-20-*      | .500                              | .500                    |
| 82A0111-18-*      | .500                              | .500                    |
| 82A0111-16-*      | .750                              | .750                    |
| 82A0111-14-*      | 1.00                              | 1.00                    |
| 82A0111-12-*      | 1.50                              | 1.50                    |
| 82A0111-10-*      | 2.00                              | 1.50                    |
| 82A0111-8-*       | 3.00                              | 2.00                    |
| 82A0111-6-*       | 3.00                              | 2.00                    |
| 82A0111-4-*       | 4.00                              | 2.50                    |
| 82A0111-2-*       | 6.00                              | 3.00                    |
| 82A0111-1-*       | 8.00                              | 4.00                    |
| 82A0111-0-*       | 8.00                              | 4.00                    |
| 82A0111-00-*      | 8.00                              | 4.00                    |

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 150°C

Maximum continuous conductor temperature

VOLTAGE RATING: 600 volts (rms) at sea level

COLOR: White preferred

CONCENTRICITY: 70% (minimum)

CROSSLINKING PROOF TEST: 300 ± 3°C for 7 hours

IDENTIFICATION AND COLOR STRIPING DURABILITY:

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

INSULATION ELONGATION AND TENSILE STRENGTH:

AWG 28-26: Elongation, 75% (minimum)

Tensile Strength, 3000 lbf/in<sup>2</sup> (minimum)

AWG 24-10: Elongation, 75% (minimum)

Tensile Strength, 3500 lbf/in<sup>2</sup> (minimum)

AWG 8-00: Elongation, 125% (minimum)

Tensile Strength, 3000 lbf/in<sup>2</sup> (minimum)

INSULATION FLAWS:

Spark Test, 1.5 kV (rms) at 3 kHz

Impulse Dielectric Test, 6.0 kV (peak)

INSULATION THICKNESS:

AWG 28-16: .004 in. (minimum)

AWG 14-10: .006 in. (minimum)

AWG 8-00: .012 in. (minimum)

SECANT MODULUS: (Test per ASTM D 882)

AWG 28-10: 5.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum)

AWG 8-00: 4.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum)

2% strain, 2 inch jaw separation, 0.2 inch/minute

SHRINKAGE: 150 ± 3°C for 6 hours,

AWG 28-10: 0.13 in. (maximum) in 12 inches

AWG 8-00: 0.25 in. (maximum) in 12 inches

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

PART NUMBER:

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

1/ Example: AWG 12, white; 82A0111-12-9

AWG 12, white with a black stripe; 82A0111-12-90

1/ See footer section on page 1

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