

# SPECIFICATION CONTROL DRAWING

82A0112

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

Date 04-27-04

Revision P

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

CONDUCTOR - SILVER-COATED COPPER

INSULATION - RADIATION-CROSSLINKED,  
MODIFIED FLEXIBLE ETFE

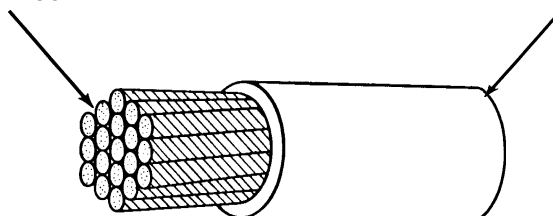


TABLE I. CONSTRUCTION DETAILS

| PART NUMBER<br>1/ | WIRE<br>SIZE<br>(AWG) | CONDUCTOR<br>STRANDING<br>(number x AWG) | DIAMETER OF<br>STRANDED<br>CONDUCTOR<br>(in.) |         | FINISHED WIRE                                       |                    |                                    |
|-------------------|-----------------------|------------------------------------------|-----------------------------------------------|---------|-----------------------------------------------------|--------------------|------------------------------------|
|                   |                       |                                          | MINIMUM                                       | MAXIMUM | MAXIMUM<br>RESISTANCE<br>AT 20°C<br>(ohms/1000 ft.) | DIAMETER<br>(inch) | MAXIMUM<br>WEIGHT<br>(lb/1000 ft.) |
| 82A0112-28-*      | 28                    | 42 x 44                                  | .013                                          | .017    | 75.5                                                | .029 ± .003        | 1.2                                |
| 82A0112-26-*      | 26                    | 63 x 44                                  | .017                                          | .021    | 46.9                                                | .033 ± .003        | 1.4                                |
| 82A0112-24-*      | 24                    | 105 x 44                                 | .023                                          | .027    | 28.2                                                | .037 ± .003        | 2.1                                |
| 82A0112-22-*      | 22                    | 154 x 44                                 | .029                                          | .033    | 19.2                                                | .043 ± .003        | 2.9                                |
| 82A0112-20-*      | 20                    | 154 x 42                                 | .037                                          | .043    | 11.7                                                | .053 ± .004        | 4.2                                |
| 82A0112-18-*      | 18                    | 259 x 42                                 | .047                                          | .053    | 7.14                                                | .064 ± .004        | 6.7                                |
| 82A0112-16-*      | 16                    | 259 x 40                                 | .061                                          | .067    | 4.62                                                | .079 ± .004        | 10.2                               |
| 82A0112-14-*      | 14                    | 665 x 42                                 | .078                                          | .086    | 2.96                                                | .099 ± .005        | 16.5                               |
| 82A0112-12-*      | 12                    | 665 x 40                                 | .096                                          | .106    | 1.89                                                | .121 ± .006        | 24.8                               |
| 82A0112-10-*      | 10                    | 665 x 38                                 | .126                                          | .140    | 1.12                                                | .157 ± .009        | 42.2                               |
| 82A0112- 8-*      | 8                     | 665 x 36                                 | .157                                          | .173    | .714                                                | .195 ± .010        | 66.3                               |
| 82A0112- 6-*      | 6                     | 1045 x 36                                | .192                                          | .208    | .490                                                | .236 ± .011        | 102.                               |
| 82A0112- 4-*      | 4                     | 1665 x 36                                | .265                                          | .285    | .326                                                | .318 ± .013        | 168.                               |
| 82A0112- 2-*      | 2                     | 1665 x 34                                | .325                                          | .345    | .204                                                | .385 ± .014        | 253.                               |
| 82A0112- 0-*      | 0                     | 2660 x 34                                | .435                                          | .465    | .133                                                | .516 ± .020        | 405.                               |

TABLE II. PERFORMANCE DETAILS

| PART NUMBER<br>1/ | BEND TESTING                    |                         |
|-------------------|---------------------------------|-------------------------|
|                   | MANDREL DIAMETER<br>(in.) (±3%) | WEIGHT<br>(lb) (±3%)    |
|                   | CROSSLINKING PROOF TEST         | CROSSLINKING PROOF TEST |
| 82A0112-28-*      | .250                            | .125                    |
| 82A0112-26-*      | .375                            | .125                    |
| 82A0112-24-*      | .375                            | .250                    |
| 82A0112-22-*      | .500                            | .375                    |
| 82A0112-20-*      | .500                            | .500                    |
| 82A0112-18-*      | .500                            | .500                    |
| 82A0112-16-*      | .750                            | .750                    |
| 82A0112-14-*      | 1.00                            | 1.00                    |
| 82A0112-12-*      | 1.50                            | 1.50                    |
| 82A0112-10-*      | 2.00                            | 1.50                    |
| 82A0112- 8-*      | 3.00                            | 2.00                    |
| 82A0112- 6-*      | 3.00                            | 2.00                    |
| 82A0112- 4-*      | 4.00                            | 2.50                    |
| 82A0112- 2-*      | 6.00                            | 3.00                    |
| 82A0112- 0-*      | 8.00                            | 4.00                    |

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

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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## 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,

30 minutes for AWG 28 - 14, 1 hour for AWG 12 - 0

IDENTIFICATION AND COLOR STRIPING DURABILITY:

125 cycles (250 strokes) (minimum), 500 g 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 - 0 Elongation 125% (minimum)

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

INSULATION FLAWS:

Spark Test: 4.2 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 8-0 .012 in. (minimum)

PRODUCT IDENTIFICATION: Black ink only for AWG 28 - 10,

Black ink preferred for AWG 8 & larger

SECANT MODULUS:

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

AWG 8-0, 4.0 x 10<sup>4</sup> lbf/in<sup>2</sup> (maximum),

2% strain, 2 inch jaw separation, 0.2 inch/minute, procedural reference ASTM D 882

SHRINKAGE: 150 ± 3°C for 6 hours,

AWG 28 - 10, 0.13 inch (maximum) in 12 inches

AWG 8- 0, 0.25 inch (maximum) in 12 inches

VOLTAGE WITHSTAND TEST (POST ENVIRONMENTAL):

2500 volts (rms), 60 Hz

1/ PART NUMBER:

The "\*" in the part numbers on page 1 shall be replaced by color code designators.

Example: AWG 22, white: 82A0112-22-9

AWG 22, white with black stripe: 82A0112-22-90

1/ See footer section on page 1

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