

# SPECIFICATION CONTROL DRAWING

55A0713

TITLE

WIRE, RADIATION-CROSSLINKED, MODIFIED, ETFE-INSULATED,  
HEAVY DUTY, GENERAL PURPOSE, 1000 VOLT

Date

6-1-06

Revision

B

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

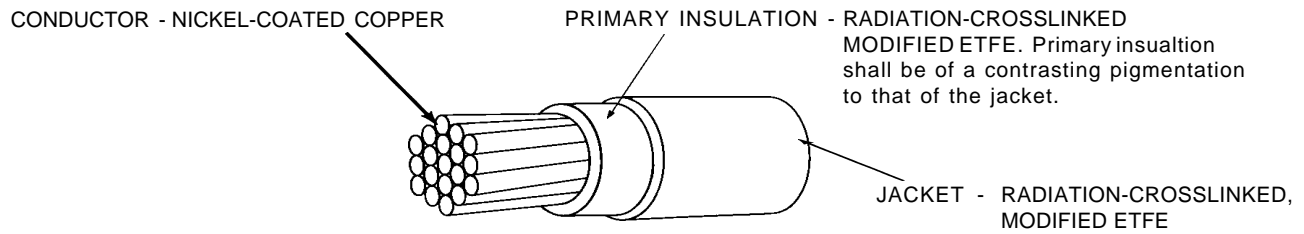


TABLE I. CONSTRUCTION DETAILS

| PART NUMBER<br>1/ | WIRE SIZE<br>(AWG) | CONDUCTOR STRANDING<br>(number x AWG) | DIAMETER OF STRANDED CONDUCTOR (in.) |         | FINISHED WIRE                             |                |                              |
|-------------------|--------------------|---------------------------------------|--------------------------------------|---------|---|----------------|------------------------------|
|                   |                    |                                       | MINIMUM                              | MAXIMUM | MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft) | DIAMETER (in.) | MAXIMUM WEIGHT (lbs/1000 ft) |
|                   |                    |                                       |                                      |         |   |                |                              |
| 55A0713-24-*      | 24                 | 19 x 36                               | .023                                 | .025    | 25.9                                      | .056 ± .003    | 3.3                          |
| 55A0713-22-*      | 22                 | 19 x 34                               | .029                                 | .031    | 16.0                                      | .062 ± .003    | 4.4                          |
| 55A0713-20-*      | 20                 | 19 x 32                               | .037                                 | .039    | 9.77                                      | .070 ± .003    | 6.1                          |
| 55A0713-18-*      | 18                 | 19 x 30                               | .046                                 | .049    | 6.10                                      | .080 ± .004    | 8.7                          |
| 55A0713-16-*      | 16                 | 19 x 29                               | .052                                 | .055    | 4.76                                      | .087 ± .004    | 10.6                         |
| 55A0713-14-*      | 14                 | 19 x 27                               | .065                                 | .069    | 3.00                                      | .103 ± .004    | 15.5                         |
| 55A0713-12-*      | 12                 | 37 x 28                               | .084                                 | .089    | 1.98                                      | .120 ± .006    | 22.8                         |
| 55A0713-10-*      | 10                 | 37 x 26                               | .106                                 | .113    | 1.24                                      | .144 ± .006    | 35.3                         |
| 55A0713- 8-*      | 8                  | 133 x 29                              | .158                                 | .173    | .694                                      | .205 ± .008    | 63.6                         |

TABLE II. PERFORMANCE DETAILS

| PART NUMBER<br>1/ | BEND TESTING                                |           |   |           |
|-------------------|---|-----------|---|-----------|
|                   | MANDREL DIAMETER (inch) (± 3%)              |           | WEIGHT (lb) (± 3%)                          |           |
|                   | IMMERSION, LIFE CYCLE AND ACCELERATED AGING | COLD BEND | IMMERSION, LIFE CYCLE AND ACCELERATED AGING | COLD BEND |
| 55A0713-24-*      | 1.00  | 1.25      | 2.00  | 4.00      |
| 55A0713-22-*      | 1.00  | 1.25      | 2.00  | 4.00      |
| 55A0713-20-*      | 1.00  | 1.25      | 3.00  | 5.00      |
| 55A0713-18-*      | 1.00  | 1.25      | 3.00  | 5.00      |
| 55A0713-16-*      | 1.25  | 1.50      | 3.50  | 5.50      |
| 55A0713-14-*      | 1.25  | 1.50      | 3.50  | 5.50      |
| 55A0713-12-*      | 2.00  | 3.00      | 4.00  | 6.00      |
| 55A0713-10-*      | 2.00  | 3.00      | 4.00  | 6.00      |
| 55A0713- 8-*      | 4.00  | 5.00      | 4.00  | 8.00      |

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: 200°C

Maximum continuous conductor temperature

VOLTAGE RATING: 1000 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 in. (maximum); no flaming of facial tissue.

HUMIDITY RESISTANCE: Insulation Resistance, 5000 megohms for 1000 ft. (minimum)

IDENTIFICATION AND COLOR STRIPING DURABILITY:

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

INSULATION ELONGATION AND TENSILE STRENGTH:

Total Insulation (primary insulation and jacket)

Elongation, 50% (minimum)

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

INSULATION FLAWS:

Primary Insulation,

Spark test, 1.5 kV (rms)

Impulse Dielectric Test, 6.0 kV (peak)

Finished Wire,

Spark test, 3.0 kV (rms)

Impulse Dielectric Test, 8.0 kV (peak)

INSULATION RESISTANCE: 5000 megohms for 1000 ft (minimum)

INSULATION THICKNESS: 0.014 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 in.

SMOKE TEST: 250 ± 5°C, No visible smoke

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

THERMAL SHOCK RESISTANCE: 200 ± 3°C

0.060 in. (maximum) for AWG 24 - 12

0.100 in. (maximum) for AWG 10 - 8

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

PART NUMBER:

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

1/Example: AWG 22, white: 55A0713-22-9

AWG 22, white with black stripe: 55A0713-22-90

1/ See Footer section on page 1