

SPECIFICATION CONTROL DRAWING

FLHT*0311

TITLE HIGH TEMPERATURE HOOKUP WIRE, TIN-COATED COPPER, RADIATION-CROSSLINKED, MODIFIED, ETFE INSULATED, 200°C, 600 VOLT

Date 09-09-03

Revision R

The complete requirements for procuring the wire described herein shall consist of this document and the issue in effect of Raychem Specification WCD 3106 and UL Subject 758, Style 3557, File E38136 and carries UL labels to this effect.

CONDUCTOR - TIN-COATED COPPER

INSULATION - RADIATION-CROSSLINKED, MODIFIED ETFE

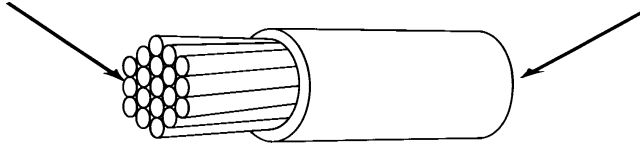


TABLE I. CONSTRUCTION DETAILS

PART NUMBER 1/	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	TARGET CONDUCTOR DIAMETER (in.) (mm)	FINISHED WIRE				
				MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft.) (ohms/km)	DIAMETER (in.) (mm)			NOMINAL WEIGHT (lbs/1000 ft.) (kg/km)
					LOWER SPEC LIMIT	TARGET VALUE	UPPER SPEC LIMIT	
FLHTA0311-26-**	26	1 x 26	.0159 (.404)	44.5 (146.)	.0285 (.724)	.0299 (.759)	.0313 (.795)	1.15 (1.71)
FLHTA0311-24-**	24	1 x 24	.0201 (.511)	27.2 (89.2)	.0317 (.805)	.0331 (.841)	.0345 (.876)	1.63 (2.43)
FLHTA0311-22-**	22	1 x 22	.0253 (.643)	17.2 (56.4)	.0369 (.937)	.0383 (.973)	.0397 (1.01)	2.43 (3.62)
FLHTA0311-20-**	20	1 x 20	.0320 (.813)	10.7 (35.1)	.0436 (1.11)	.0450 (1.14)	.0464 (1.18)	3.67 (5.46)
FLHTB0311-28-**	28	7 x 36	.0145 (.368)	68.2 (224.)	.0271 (.688)	.0285 (.724)	.0299 (.759)	.86 (1.28)
FLHTB0311-18-**	18	7 x 26	.0465 (1.18)	7.06 (23.2)	.0584 (1.48)	.0601 (1.53)	.0618 (1.57)	5.95 (8.85)
FLHTB0311-16-**	16	7 x 24	.0600 (1.52)	4.01 (13.2)	.0731 (1.86)	.0750 (1.91)	.0769 (1.95)	9.75 (14.5)
FLHTB0311-14-**	14	7 x .0242" 2/	.0726 (1.84)	2.90 (9.51)	.0865 (2.20)	.0886 (2.25)	.0907 (2.30)	14.6 (21.7)
FLHTC0311-26-**	26	19 x 38	.0185 (.470)	40.1 (132.)	.0301 (.765)	.0315 (.800)	.0329 (.836)	1.27 (1.89)
FLHTC0311-24-**	24	19 x 36	.0235 (.597)	25.4 (83.3)	.0351 (.892)	.0365 (.927)	.0379 (.963)	1.85 (2.75)
FLHTC0311-22-**	22	19 x 34	.0295 (.749)	15.9 (52.2)	.0411 (1.04)	.0425 (1.08)	.0439 (1.12)	2.74 (4.08)
FLHTC0311-20-**	20	19 x 32	.0375 (.953)	9.76 (32.0)	.0491 (1.25)	.0505 (1.28)	.0519 (1.32)	4.17 (6.21)
FLHTC0311-18-**	18	19 x 30	.0465 (1.18)	6.22 (20.4)	.0583 (1.48)	.0600 (1.52)	.0617 (1.57)	6.34 (9.43)
FLHTC0311-16-**	16	19 x 29	.0525 (1.33)	4.82 (15.8)	.0656 (1.67)	.0675 (1.71)	.0694 (1.76)	8.09 (12.0)
FLHTC0311-14-**	14	19 x 27	.0660 (1.68)	3.05 (10.0)	.0799 (2.03)	.0820 (2.08)	.0841 (2.14)	12.5 (18.6)
FLHTC0311-12-**	12	19 x 25	.0900 (2.29)	1.92 (6.30)	.1035 (2.63)	.1060 (2.69)	.1085 (2.76)	22.4 (33.3)
FLHTD0311-12-**	12	37 x 28	.0850 (2.16)	2.01 (6.59)	.0984 (2.50)	.1010 (2.57)	.1036 (2.63)	19.3 (28.7)
FLHTD0311-10-**	10	37 x 26	.107 (2.72)	1.26 (4.13)	.121 (3.07)	.125 (3.18)	.129 (3.28)	30.7 (45.7)
FLHTE0311- 8-**	8	133 x 29	.160 (4.06)	.701 (2.30)	.175 (4.45)	.180 (4.57)	.185 (4.70)	54.9 (81.7)

2/ Nominal Strand Diameter

Due to UL limitations on the usage of small strand bare and tin plated conductors, products with conductor strand diameters less than .015" (.381 mm) are intended for dry locations only. For wet locations, other UL Recognized products are available.

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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TABLE II. PERFORMANCE DETAILS

PART NUMBER 1/	BEND TESTING			
	MANDREL DIAMETER (inch) (mm) (± 3%)		WEIGHT (lb) (kg) (± 3%)	
	CROSSLINK VERIFICATION		CROSSLINK VERIFICATION	
FLHTA0311-26-**	.375	(9.53)	.125	(.057)
FLHTA0311-24-**	.375	(9.53)	.500	(.227)
FLHTA0311-22-**	.500	(12.7)	.750	(.340)
FLHTA0311-20-**	.500	(12.7)	1.00	(.454)
FLHTB0311-28-**	.375	(9.53)	.125	(.057)
FLHTB0311-18-**	.500	(12.7)	1.00	(.454)
FLHTB0311-16-**	.750	(19.1)	1.50	(.680)
FLHTB0311-14-**	1.00	(25.4)	2.00	(.907)
FLHTC0311-26-**	.375	(9.53)	.125	(.057)
FLHTC0311-24-**	.375	(9.53)	.500	(.227)
FLHTC0311-22-**	.500	(12.7)	.750	(.340)
FLHTC0311-20-**	.500	(12.7)	1.00	(.454)
FLHTC0311-18-**	.500	(12.7)	1.00	(.454)
FLHTC0311-16-**	.750	(19.1)	1.50	(.680)
FLHTC0311-14-**	1.00	(25.4)	2.00	(.907)
FLHTC0311-12-**	1.50	(38.1)	3.00	(1.36)
FLHTD0311-12-**	1.50	(38.1)	3.00	(1.36)
FLHTD0311-10-**	2.00	(50.8)	3.00	(1.36)
FLHTE0311- 8-**	3.00	(76.2)	4.00	(1.81)

WIRE RATINGS AND ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 200°C

VOLTAGE RATING: 600 volts (rms) at sea level

CROSSLINK VERIFICATION: 300 ± 3°C for 1 hour

FLAME RATING: VW-1

INSULATION ELONGATION AND TENSILE STRENGTH:

Elongation, 100% (minimum)

Tensile Strength, 5470 lbf/in² (minimum)

INSULATION FLAWS:

Spark Test, AWG 28 - 24, 4.0 kV (rms)

AWG 22 - 20, 5.0 kV (rms)

AWG 18 - 16, 6.0 kV (rms)

AWG 14 - 10, 7.5 kV (rms)

AWG 8, 10.0 kV (rms)

Impulse Dielectric Test, 8.0 kV (peak)

INSULATION RESISTANCE: 5000 megohms
for 1000 ft. (minimum)

INSULATION THICKNESS:

AWG 28 - 16: 0.0055 inch (minimum)
0.006 inch (minimum average)

AWG 14: 0.006 inch (minimum)
0.0065 inch (minimum average)

AWG 12: 0.0065 inch (minimum)
0.007 inch (minimum average)

AWG 10: 0.007 inch (minimum)
0.0075 inch (minimum average)

AWG 8: 0.0075 inch (minimum)
0.008 inch (minimum average)

SHRINKAGE: 0.125 in. (maximum) per end at
200°C for 1 hour

THERMAL STABILITY: 232°C

Elongation, 60% (minimum)

Tensile Strength, 5000 lbf/in² (minimum)

VOLTAGE WITHSTAND TEST (Post Environmental):

2500 volts (rms)

PART NUMBER:

The single "*" in the part number in the upper right hand corner of page 1 and 2 shall be replaced with a letter designator to define conductor stranding (see part numbers in table).

A = Solid B = 7 Strands C = 19 Strands D = 37 Strands E = Rope Lay

The "*" in the part numbers in the table shall be replaced by color code designators.

1/ Example: AWG 22, solid conductor, white: FLHTA0311-22-9

AWG 22, solid conductor, white with black stripe:

FLHTA0311-22-90

SPOOL LABEL: All spool/reel labels containing conductor strand diameters less than .015" (.381 mm) shall include: "For Dry Locations Only".

1/ See footer on page 1