

# SPECIFICATION CONTROL DRAWING

SCD  
**ATF+0311**

Date 1-29-15      Revision H

Title  
AUTOMATIC TRANSMISSION CABLE,  
RADIATION-CROSSLINKED, MODIFIED FLUOROPOLYMER-INSULATED, 600 VOLT

This specification sheet forms a part of the latest issue of Raychem Specification 63.

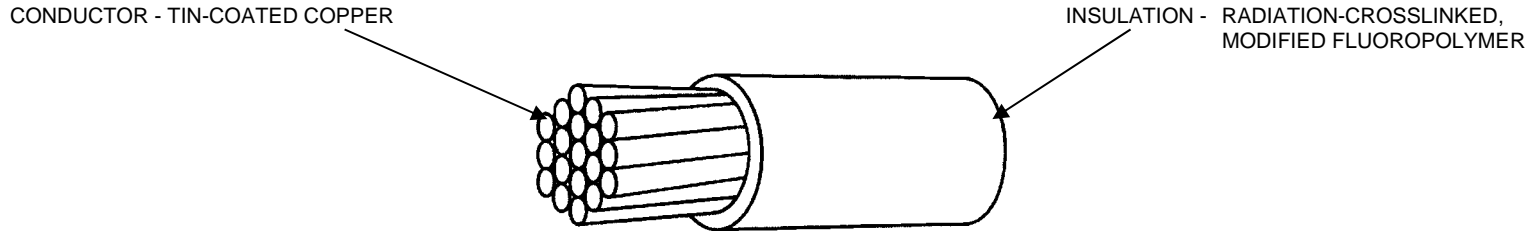


TABLE I. CONSTRUCTION DETAILS

PART NUMBER <sup>1/</sup>	WIRE SIZE (AWG)	CONDUCTOR STRANDING (number x AWG)	CONDUCTOR DIAMETER (inch) (mm)		MAXIMUM RESISTANCE AT 20°C (ohms/1000 ft.) (ohms/km)	FINISHED CABLE			NOMINAL WEIGHT (lbs/1000 ft.) (kg/km)
			LOWER SPEC LIMIT	UPPER SPEC LIMIT		DIAMETER (inch) (mm)			
						LOWER SPEC LIMIT	TARGET VALUE	UPPER SPEC LIMIT	
ATFC0311-22-*	22	19 x 34	.029 (.737)	.031 (.787)	16.2 (53.1)	.044 (1.12)	.046 (1.17)	.048 (1.22)	3.0 (4.46)
ATFC0311-20-*	20	19 x 32	.037 (.940)	.039 (.991)	9.88 (32.4)	.052 (1.32)	.054 (1.37)	.056 (1.42)	4.4 (6.55)
ATFC0311-18-*	18	19 x 30	.046 (1.17)	.049 (1.24)	6.23 (20.4)	.061 (1.55)	.063 (1.60)	.065 (1.65)	6.6 (9.82)
ATFC0311-16-*	16	19 x 29	.052 (1.32)	.055 (1.40)	4.81 (15.8)	.066 (1.68)	.069 (1.75)	.072 (1.83)	8.3 (12.4)
ATFC0311-14-*	14	19 x 27	.065 (1.65)	.069 (1.75)	3.06 (10.0)	.083 (2.11)	.086 (2.18)	.089 (2.26)	12.9 (19.2)
ATFD0311-16-*	16	37 x 32	.051 (1.30)	.056 (1.42)	4.98 (16.3)	.067 (1.70)	.070 (1.78)	.073 (1.85)	8.5 (12.6)
ATFD0311-14-*	14	37 x 30	.067 (1.70)	.072 (1.83)	3.11 (10.2)	.089 (2.26)	.093 (2.36)	.097 (2.46)	15.5 (23.1)

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.

<sup>1/</sup> COLORS SHALL BE IN ACCORDANCE WITH SAE J1128. COLOR CODE DESIGNATORS SHALL BE IN ACCORDANCE WITH SPEC 63.  
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.



TABLE II. PERFORMANCE DETAILS				
PART NUMBER <u>1/</u>	HEAT RESISTANCE - BEND TESTING		DYNAMIC CUT-THROUGH (lb) (kg) (minimum)	
	MANDREL DIAMETER (inch) (mm) (± 3%)	WEIGHT (lb) (kg) (± 3%)	INITIAL	AFTER IMMERSION
ATFC0311-22-*	.750 (19.1)	.375 (.170)	TBD	TBD
ATFC0311-20-*	.750 (19.1)	.375 (.170)	20 (9.07)	20 (9.07)
ATFC0311-18-*	.750 (19.1)	.375 (.170)	TBD	TBD
ATFC0311-16-*	.750 (19.1)	.375 (.170)	TBD	TBD
ATFC0311-14-*	.750 (19.1)	.375 (.170)	TBD	TBD
ATFD0311-16-*	1.00 (25.4)	.500 (.227)	TBD	TBD
ATFD0311-14-*	1.00 (25.4)	.500 (.227)	TBD	TBD

**CABLE RATINGS AND ADDITIONAL REQUIREMENTS**

VOLTAGE RATING: 600 volts (dc) at sea level  
 CONCENTRICITY: 70% (minimum)  
 CROSSLINK PROOF TEST: Per QC/3/117  
 FLAMMABILITY: 70 seconds (maximum) afterburn  
 HEAT RESISTANCE: 150 ± 2°C for 1 hour  
 no cracking, no dielectric breakdown  
 INSULATION ELONGATION AND TENSILE STRENGTH:  
 (Pulled at 2 inches (51 mm) per minute)  
 Elongation, 150% (minimum)  
 Tensile Strength, 3000 lbf/in<sup>2</sup> (20.7 N/mm<sup>2</sup>) (minimum)  
 INSULATION FLAWS:  
 Impulse Dielectric,  
 ATFC0311, 14 AWG and smaller, 5.0 kV (peak)  
 ATFD0311-16, 5.0 kV (peak)  
 ATFD0311-14, 6.0 kV (peak)  
 INSULATION RESISTANCE:  
 1000 kohms for 1000 ft. (305 kohms for 1 km) (minimum)  
 LOW TEMPERATURE-COLD BEND: -55 ± 3°C for 4 hours  
 SHRINKAGE: 0.050 inch (1.27 mm) (maximum)  
 STRIP FORCE: 4.5 lbs (2.04 kg) (minimum)

THERMAL STABILITY: Short Term, 200 ± 3°C for 168 hours  
 Elongation Retention, 80% (minimum)  
 Tensile Strength Retention, 80% (minimum)  
 TRANSMISSION FLUID RESISTANCE: Dexron VI, 150 ± 2°C for 720 hours  
 Diameter Swell, 5% (maximum)  
 Mandrel Wrap, 1x diameter mandrel, no dielectric breakdown  
 Dynamic Cut-Through, see Table II  
 VOLTAGE WITHSTAND (Post Environmental):  
 1000 volts (rms), 60 Hz, 1 minute

1/ PART NUMBER:

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

C = 19 Strands D = 37 Strands

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

Example: AWG 20, 19 strands, dark blue: ATFC0311-20-6D

1/ See footer section on page 1