

INCH-POUND

MIL-DTL-17/201A
27 MAY 2016
SUPERSEDING
MIL-DTL-17/201
w/AMENDMENT 1
16 October 2008

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TWINAXIAL,
SINGLE SHIELD, DATA BUS, 77 OHMS

This specification is approved for use by all Departments
and Agencies of the department of Defense.

The requirements for acquiring the cable described herein shall consist
of this specification sheet and MIL-DTL-17.

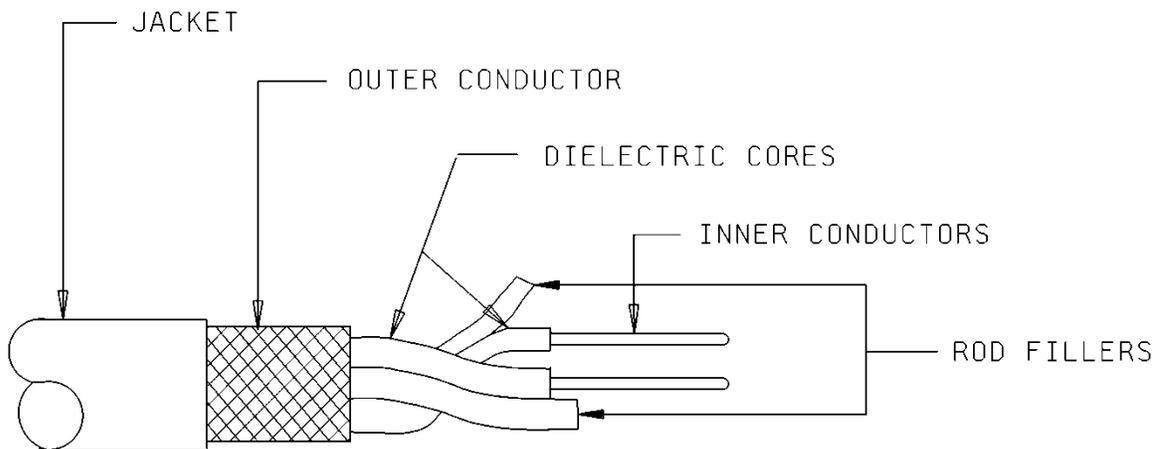


FIGURE 1. Configuration for Part or Identifying Number (PIN) M17/201-00001 through 00003.

AMSC N/A

FSC 6145



TABLE I. Description.

Components	Construction		
	M17/201-00001	M17/201-00002	M17/201-00003
Inner conductors <u>1/</u>	AWG. 24 19 strands AWG 36 silver-coated, high strength copper ally <u>2/</u>	AWG 22. 19 strands AWG 34 tin-coated copper. <u>3/</u>	AWG. 24 19 strands AWG 36 silver-coated, high strength copper alloy <u>2/</u>
Dielectrics	Radiation cross-linked modified ETFE, one light blue, one white. Permittivity: 2.7 nominal. O.D.: .052 ±.002 inch each. <u>4/</u>	Radiation cross-linked modified ETFE, one light blue, one white. Permittivity: 2.7 nominal. O.D.: .064 ±.003 inch each. <u>4/</u>	Radiation cross-linked Modified ETFE, one light blue, one white. Permittivity: 2.7 nominal. O.D.: .048 ±.002 inch each. <u>4/</u>
Fillers	None	None	Rod fillers, radiation crosslinked ETFE
Braid	AWG 24 overall. AWG 38 tin-coated copper. Coverage: 90% minimum Braid angle range: 18°-40°. O.D. .127 inch maximum	AWG 22 overall. AWG 36 tin-coated copper. Coverage: 90% minimum Braid angle range: 18°-40°. O.D. .153 inch maximum	AWG 24 overall. AWG 38 tin-coated copper, optimized. Coverage: 90% minimum Braid angle range: 18°-40°. O.D. .120 inch maximum
Jacket	Radiation cross-linked Modified ETFE, white. O.D.: .137 ±.007 inch.	Radiation cross-linked Modified ETFE, white. O.D.: .165 ±.008 inch.	Radiation cross-linked Modified ETFE, white. O.D.: .130 ±.007 inch.

1/ Lay length shall be 1.00 ±.25 inch.

2/ High strength copper alloy in accordance with SAE-AS22759/35.

3/ Tin-coated, high strength copper alloy in accordance with SAE-AS22759/34.

4/ Radiation-crosslinked modified ETFE copolymer in accordance with SAE-AS22759/35.

ENGINEERING INFORMATION:

Continuous working voltage: 600 V rms, maximum.

Operating frequency: 10 MHz, maximum.

Velocity of propagation: 61 percent, nominal.

Operating temperature range: -65°C to +150°C.

Inner conductor properties

DC resistance (maximum, at 20°C):

M17/201-00001 and M17/201-00003: 28.4 ohms per 100 feet.

M17/201-00002: 16.2 ohms per 100 feet.

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Elongation:

M17/201-00001 and M17/201-00003: 6% minimum.
M17/201-00002: 10% minimum.

Tensile strength:

M17/201-00001 and M17/201-00003: 22.4 pounds, minimum.
M17/201-00002: Not applicable.

Jacket properties:

Elongation: 50% minimum.

Tensile strength: 5k lbf/inch², minimum.

Engineering note: Cables shall be suitable for use in MIL-STD-1553 data bus systems for use as main bus or stub cable.

REQUIREMENTS:

Dimensions, configuration and description: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination:

Out-of-roundness: Applicable to M17/201-00003 only.

Eccentricity: 10 percent, maximum.

Adhesion of conductors: Dielectrics shall be free stripping, using conventional stripping tools, without breaking of conductor strands and without bunching of the dielectric.

Electrical and mechanical:

Operational:

Continuity: Applicable.

Spark test: 1,000 V rms, minimum.

Voltage withstanding: 1,000 V rms, +10%, -0%.

Insulation resistance: 5,000 megohms minimum per 1,000 feet.

Corona extinction voltage: Not applicable.

Characteristic impedance: 77 ±5 ohms at 1 MHz.

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Surface transfer impedance: In accordance with SAE-AS85485; 100 milliohms/meter maximum at 1 MHz. Applicable to MIL17/201-00003 only.

RF transmission loss (attenuation):

M17/201-00001 and M17/201-00003: 1.4 dB/100 feet maximum at 1 MHz.

M17/201-00002: 1.0 dB/100 feet maximum at 1 MHz.

Standing wave ratio (return loss): Not applicable.

Capacitance: 30.0 pF per foot, maximum at 1 MHz.

Capacitance unbalance: 5% maximum.

Capacitance stability: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise: Not applicable.

Time delay: Not applicable.

Aging stability: Not applicable.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: -65°C (6 inch mandrel). Jacket shall pass spark test.

Dimensional stability: Not applicable.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Cable shall be tested in accordance with the flammability procedure of SAE-AS22759/35 and shall meet the requirements specified herein.

Flame propagation: Not applicable.

Acid gas generation: Not applicable.

Halogen: Not applicable.

Fluid immersion: Cable shall be tested in accordance with SAE-AS22759/35 using a 6 inch diameter mandrel. There shall be no cracking of the jackets or evidence of breakdown. The increase in diameter shall be 5% maximum.

Smoke index: Not applicable.

Toxicity index: Not applicable.

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Durometer hardness: Not applicable.

Weathering: Not applicable.

Abrasion resistance: Not applicable.

Tear strength: Not applicable.

Heat distortion: Not applicable.

Physical properties of insulation: Shall be in accordance with SAE-AS22759/35 for PINs M17/201-00001 and M17/201-00003. SAE-AS22759/34 shall apply to PIN M17/201-00002.

Hot oil immersion: Not applicable.

Accelerated aging: Shall be in accordance with SAE-AS22759/35 (.5 inch mandrel, .375 pound load) For PINs M17/201-00001 and M17/201-00003. SAE-AS22759/34 (.5 inch mandrel, .5 pound load) shall apply to PIN M17/201-00002.

Impulse dielectric: Shall be in accordance with SAE-AS22759/35 for PINs M17/201-00001 and M17/201-00003. SAE-AS22759/34 shall apply to PIN M17/201-00002.

PINs: M17/201- (dash number from table I).

Weight:

M17/201-00001, 14.2 lbs/1,000 feet maximum.

M17/201-00002, 21.9 lbs/1,000 feet maximum.

M17/201-00003, 15.9 lbs/1,000 feet maximum.

Workmanship: Applicable.

Supersession: This specification shall supersede Air Force drawing 8421526 when a QPL source becomes available.

Revision notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this revisions. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-DTL-17, this document references the following:

MIL-STD-1553
SAE-AS85485
SAE-AS22759/34
SAE-AS22759/35

MIL-DTL-17/201A

CONCLUDING MATERIAL

Custodians:

Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity:

DLA – CC

(Project 6145-2016-032)

Review activities:

Army – AT, CR4, MI
Navy – AS, MC, OS, SH
Air Force – 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.