

INCH-POUND
MIL-DTL-16878/17B
w/AMENDMENT 1
12 January 2016
SUPERSEDING
MIL-DTL-16878/17B
11 August 2000

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL, POLYVINYL CHLORIDE (PVC) INSULATED,
POLYAMIDE JACKET, 105 DEGREE C, 600 VOLTS (NOT FOR NAVY
SHIPBOARD USE)

Inactive for new design after 08 December 2014. For new design, use
National Electrical Manufacturers Association (NEMA) HP 7.

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

The requirements for acquiring the product described herein shall consist of this specification sheet
and MIL-DTL-16878.

REQUIREMENTS.

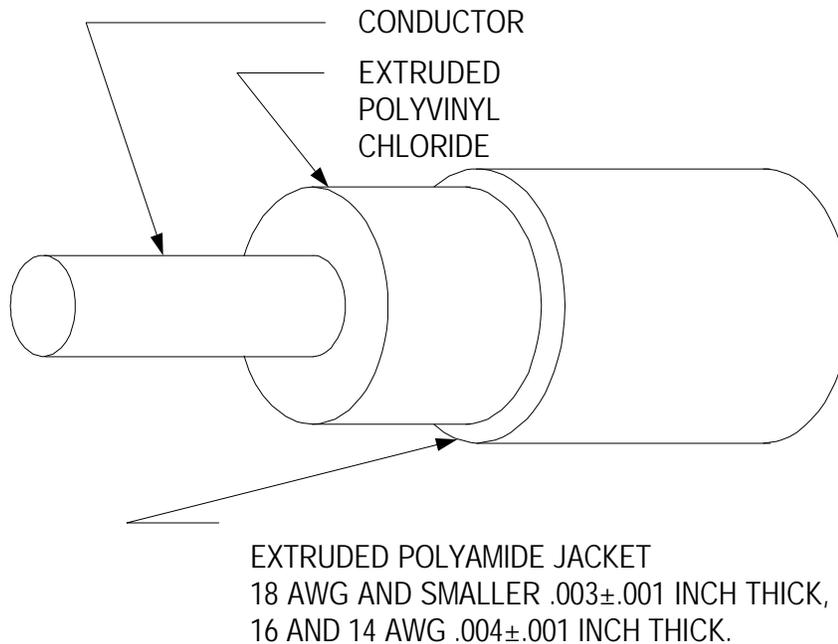


FIGURE 1. Wire configuration.

Note: Not for Navy shipboard use or use in aerospace applications.



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TABLE I. Wire configuration details.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material _{2/, 3/}	Coating		Min	Max
M16878/17BAA*	32	1 X 32	Copper	Tin	.0080	.028	.038
M16878/17DAA*	32	1 X 32	H.S.C.A	Silver	.0080	.028	.038
M16878/17CAA*	32	1 X 32	C.C. steel	Tin	.0080	.028	.038
M16878/17BAB*	32	7 X 40	Copper	Tin	.0100	.030	.040
M16878/17DAB*	32	7 X 40	H.S.C.A	Silver	.0100	.030	.040
M16878/17BBA*	30	1 X 30	Copper	Tin	.0100	.030	.040
M16878/17DBA*	30	1 X 30	H.S.C.A	Silver	.0100	.030	.040
M16878/17CBA*	30	1 X 30	C.C. steel	Tin	.0100	.030	.040
M16878/17BBB*	30	7 X 38	Copper	Tin	.0120	.032	.042
M16878/17DBB*	30	7 X 38	H.S.C.A	Silver	.0120	.032	.042
M16878/17BCA*	28	1 X 28	Copper	Tin	.0126	.033	.043
M16878/17DCA*	28	1 X 28	H.S.C.A	Silver	.0126	.033	.043
M16878/17CCA*	28	1 X 28	C.C. steel	Tin	.0126	.033	.043
M16878/17BCB*	28	7 X 36	Copper	Tin	.0150	.035	.045
M16878/17DCB*	28	7 X 36	H.S.C.A	Silver	.0150	.035	.045
M16878/17BDA*	26	1 X 26	Copper	Tin	.0159	.036	.046
M16878/17DDA*	26	1 X 26	H.S.C.A	Silver	.0159	.036	.046
M16878/17CDA*	26	1 X 26	C.C. steel	Tin	.0159	.036	.046
M16878/17BDB*	26	7 X 34	Copper	Tin	.0190	.039	.049
M16878/17ddb*	26	7 X 34	H.S.C.A	Silver	.0190	.039	.049
M16878/17BDE*	26	19 X 38	Copper	Tin	.0210	.039	.049
M16878/17DDE*	26	19 X 38	H.S.C.A	Silver	.0210	.039	.049
M16878/17BEA*	24	1 X 24	Copper	Tin	.0201	.040	.051
M16878/17DEA*	24	1 X 24	H.S.C.A	Silver	.0201	.040	.051
M16878/17CEA*	24	1 X 24	C.C. steel	Tin	.0201	.040	.051
M16878/17BEB*	24	7 X 32	Copper	Tin	.0240	.044	.055
M16878/17DEB*	24	7 X 32	H.S.C.A	Silver	.0240	.044	.055
M16878/17BEE*	24	19 X 36	Copper	Tin	.0260	.044	.055
M16878/17DEE*	24	19 X 36	H.S.C.A	Silver	.0260	.044	.055
M16878/17BFA*	22	1 X 22	Copper	Tin	.0253	.045	.056
M16878/17DFA*	22	1 X 22	H.S.C.A	Silver	.0253	.045	.056
M16878/17CFA*	22	1 X 22	C.C. steel	Tin	.0253	.045	.056
M16878/17BFB*	22	7 X 30	Copper	Tin	.0300	.050	.061
M16878/17DFB*	22	7 X 30	H.S.C.A	Silver	.0300	.050	.061
M16878/17BFE*	22	19 X 34	Copper	Tin	.0320	.050	.061
M16878/17DFE*	22	19 X 34	H.S.C.A	Silver	.0320	.050	.061
M16878/17BGA*	20	1 X 20	Copper	Tin	.0320	.052	.063

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TABLE I. Wire configuration details - Continued.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor Diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material _{2/, 3/}	Coating		Min	Max
M16878/17DGA*	20	1 X 20	H.S.C.A	Silver	.0320	.052	.063
M16878/17BGB*	20	7 X 28	Copper	Tin	.0380	.058	.069
M16878/17DGB*	20	7 X 28	H.S.C.A	Silver	.0380	.058	.069
M16878/17BGC*	20	10 X 30	Copper	Tin	.0380	.058	.069
M16878/17DGC*	20	10 X 30	H.S.C.A	Silver	.0380	.058	.069
M16878/17BGE*	20	19 X 32	Copper	Tin	.0410	.058	.069
M16878/17BHA*	18	1 X 18	Copper	Tin	.0403	.060	.072
M16878/17BHB*	18	7 X 26	Copper	Tin	.0490	.069	.080
M16878/17BHE*	18	19 X 30	Copper	Tin	.0510	.069	.080
M16878/17BJA*	16	1 X 16	Copper	Tin	.0508	.072	.084
M16878/17BJE*	16	19 X 29	Copper	Tin	.0590	.080	.092
M16878/17BJF*	16	26 X 30	Copper	Tin	.0620	.083	.095
M16878/17BKA*	14	1 X 14	Copper	Tin	.0641	.085	.097
M16878/17BKE*	14	19 X 27	Copper	Tin	.0720	.093	.105

Notes:

- 1/ PIN stands for part or identifying number (see figure 2).
- 2/ H.S.C.A. stands for high-strength copper alloy.
- 3/ C.C. stands for copper-clad.

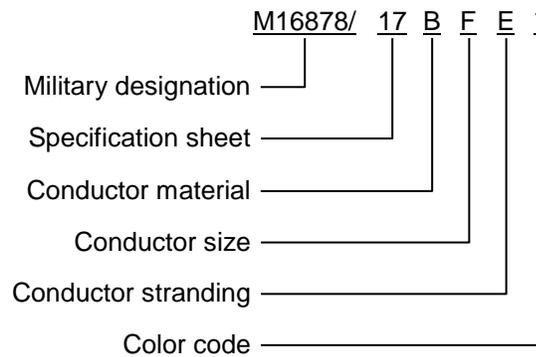


FIGURE 2. Example of PIN (see MIL-DTL-16878G).

Configuration and dimensions:	See figure 1 and table I
Operating voltage:	Up to 600 volts
Operating temperature:	Up to 105 degrees C
Insulation:	Polyvinyl chloride (PVC)
Jacket:	Extruded polyamide
Spark test voltage:	3.4 kV

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Impulse dielectric test voltage: 8.0 kV, or 5.7 kV using the 3.0 kHz spark test
 Dielectric withstanding voltage: 2.0 kV
 Insulation resistance: $IR = K \log_{10} D/d$
 Where: IR = Minimum insulation resistance in megohms-1000 feet at 20 degrees C
 K = 2,000
 D = Maximum average diameter of finished wire
 d = Conductor diameter
 Cold bend: Condition 4 hours at -54 ± 1 degrees C (see table II)

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
32 through 26	1
24 through 14	2

Surface resistance: Not required
 Heat resistance: Condition at 150 degrees C. Cracking of the jacket shall constitute a failure.
 Heat aging: 25 percent change (maximum) in 96 hours at 135 degrees C
 Insulation tensile strength: 1800 pounds force per square inch (minimum)
 Insulation elongation: 100 percent (minimum)

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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: This document references MIL-DTL-16878.

CONCLUDING MATERIAL

Custodians:
 Navy - SH
 Air Force - 85
 DLA - CC

Preparing activity:
 DLA - CC
 (Project 6145-2015-043)

Review activity:
 Navy – AS

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>.