

INCH-POUND
MIL-DTL-16878/18B
w/AMENDMENT 1
12 January 2016
SUPERSEDING
MIL-DTL-16878/18B
11 August 2000

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL, POLYVINYL CHLORIDE (PVC) INSULATED,
POLYAMIDE JACKET, 105 DEGREE C, 1000 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.

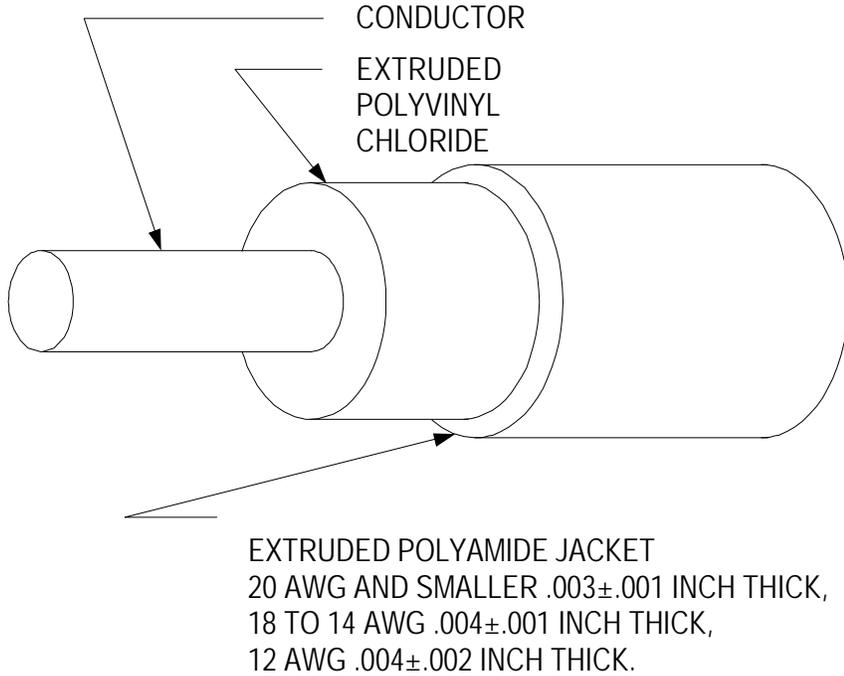


FIGURE 1. Wire configuration.

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

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TABLE I. Wire configuration and dimensions.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material ^{2/, 3/}	Coating		Min	Max
M16878/18BDA*	26	1 X 26	Copper	Tin	.0159	.050	.062
M16878/18DDA*	26	1 X 26	H.S.C.A	Silver	.0159	.050	.062
M16878/18CDA*	26	1 X 26	C.C. steel	Tin	.0159	.050	.062
M16878/18BDB*	26	7 X 34	Copper	Tin	.0190	.053	.065
M16878/18ddb*	26	7 X 34	H.S.C.A	Silver	.0190	.053	.065
M16878/18BDE*	26	19 X 38	Copper	Tin	.0210	.053	.065
M16878/18dde*	26	19 X 38	H.S.C.A	Silver	.0210	.053	.065
M16878/18BEA*	24	1 X 24	Copper	Tin	.0201	.054	.066
M16878/18DEA*	24	1 X 24	H.S.C.A	Silver	.0201	.054	.066
M16878/18CEA*	24	1 X 24	C.C. steel	Tin	.0201	.054	.066
M16878/18BEB*	24	7 X 32	Copper	Tin	.0240	.058	.070
M16878/18DEB*	24	7 X 32	H.S.C.A	Silver	.0240	.058	.070
M16878/18BEE*	24	19 X 36	Copper	Tin	.0260	.058	.070
M16878/18DEE*	24	19 X 36	H.S.C.A	Silver	.0260	.058	.070
M16878/18BFA*	22	1 X 22	Copper	Tin	.0254	.059	.072
M16878/18DFA*	22	1 X 22	H.S.C.A	Silver	.0254	.059	.072
M16878/18CFA*	22	1 X 22	C.C. steel	Tin	.0254	.059	.072
M16878/18BFB*	22	7 X 30	Copper	Tin	.0300	.064	.076
M16878/18DFB*	22	7 X 30	H.S.C.A	Silver	.0300	.064	.076
M16878/18BFE*	22	19 X 34	Copper	Tin	.0320	.064	.076
M16878/18DFE*	22	19 X 34	H.S.C.A	Silver	.0320	.064	.076
M16878/18BGA*	20	1 X 20	Copper	Tin	.0320	.066	.078
M16878/18DGA*	20	1 X 20	H.S.C.A	Silver	.0320	.066	.078
M16878/18BGB*	20	7 X 28	Copper	Tin	.0380	.072	.084
M16878/18DGB*	20	7 X 28	H.S.C.A	Silver	.0380	.072	.084
M16878/18BGC*	20	10 X 30	Copper	Tin	.0380	.072	.084
M16878/18DGC*	20	10 X 30	H.S.C.A	Silver	.0380	.072	.084
M16878/18BGE*	20	19 X 32	Copper	Tin	.0410	.072	.084
M16878/18DGE*	20	19 X 32	H.S.C.A	Silver	.0410	.072	.084
M16878/18BHA*	18	1 X 18	Copper	Tin	.0403	.075	.088
M16878/18BHB*	18	7 X 26	Copper	Tin	.0490	.084	.096
M16878/18BHE*	18	19 X 30	Copper	Tin	.0510	.084	.096
M16878/18BJA*	16	1 X 16	Copper	Tin	.0508	.085	.098
M16878/18BJE*	16	19 X 29	Copper	Tin	.0590	.094	.106
M16878/18BJF*	16	26 X 30	Copper	Tin	.0620	.097	.109
M16878/18BKA*	14	1 X 14	Copper	Tin	.0641	.099	.111
M16878/18BKE*	14	19 X 27	Copper	Tin	.0720	.107	.119
M16878/18BDA*	26	1 X 26	Copper	Tin	.0159	.050	.062
M16878/18BKH*	14	41 X 30	Copper	Tin	.0800	.115	.127
M16878/18BLA*	12	1 X 12	Copper	Tin	.0808	.116	.131

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TABLE I. Wire configuration and dimensions- Continued.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material ^{2/, 3/}	Coating		Min	Max
M16878/18BLE*	12	19 X 25	Copper	Tin	.0910	.127	.141
M16878/18BLG*	12	37 X 28	Copper	Tin	.0890	.125	.139
M16878/18BLJ*	12	65 X 30	Copper	Tin	.0980	.139	.148

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.

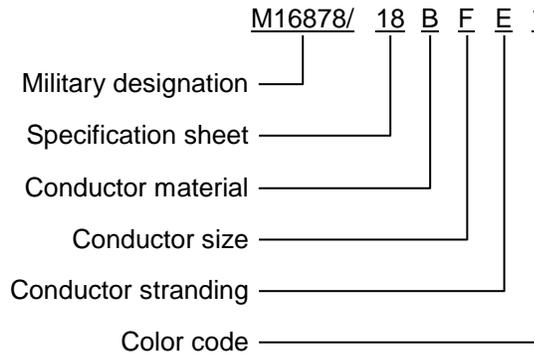


FIGURE 2. Example of PIN (see MIL-DTL-16878).

Configuration and dimensions:	See figure 1 and table I
Operating voltage:	Up to 1000 volts
Operating temperature:	Up to 105 degrees C
Insulation:	Extruded polyvinyl chloride
Insulation jacket:	Extruded polyamide
Spark test voltage:	5.0 kV
Impulse dielectric test voltage:	10.0 kV, or 7.1 kV using the 3.0 kHz spark test
Dielectric withstanding voltage:	3.0 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)

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TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
26 through 16	2
14, 12	3

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 6145-2015-044)

Review activity:
Navy – AS

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