

INCH-POUND
MIL-DTL-16878/10E
w/AMENDMENT 1
12 January 2016
SUPERSEDING
MIL-DTL-16878/10E
11 August 2000

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL, POLYETHYLENE INSULATED, 75 DEGREE C,
600 VOLTS

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.

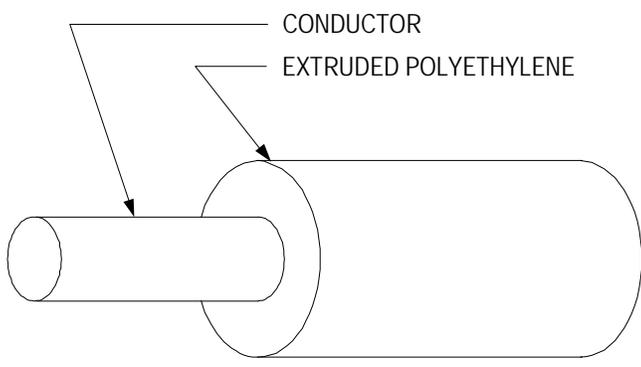


FIGURE 1. Wire configuration.



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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/}	Coating		Min	Max
M16878/10BEA*	24	1 X 24	Copper	Tin	.0201	.041	.049
M16878/10CEA*	24	1 X 24	C.C. steel	Tin	.0201	.041	.049
M16878/10BEB*	24 -	7 X 32	Copper	Tin	.0240	.045	.053
M16878/10BEE*	24	19 X 36	Copper	Tin	.0250	.045	.053
M16878/10BFA*	22	1 X 22	Copper	Tin	.0254	.047	.055
M16878/10CFA*	22	1 X 22	C.C. steel	Tin	.0254	.047	.055
M16878/10BFB*	22	7 X 30	Copper	Tin	.0300	.052	.060
M16878/10BFE*	22	19 X 34	Copper	Tin	.0320	.052	.060
M16878/10BGA*	20	1 X 20	Copper	Tin	.0320	.056	.064
M16878/10BGB*	20	7 X 28	Copper	Tin	.0380	.062	.070
M16878/10BGE*	20	19 X 32	Copper	Tin	.0400	.062	.070
M16878/10BHA*	18	1 X 18	Copper	Tin	.0403	.064	.072
M16878/10BHB*	18	7 X 26	Copper	Tin	.0480	.072	.080
M16878/10BHD*	18	16 X 30	Copper	Tin	.0470	.071	.079
M16878/10BHE*	18	19 X 30	Copper	Tin	.0500	.072	.080
M16878/10BJA*	16	1 X 16	Copper	Tin	.0508	.077	.085
M16878/10BJE*	16	19 X 29	Copper	Tin	.0570	.083	.091
M16878/10BJF*	16	26 X 30	Copper	Tin	.0600	.086	.094
M16878/10BKA*	14	1 X 14	Copper	Tin	.0641	.094	.102
M16878/10BKE*	14	19 X 27	Copper	Tin	.0720	.102	.110
M16878/10BLE*	12	19 X 25	Copper	Tin	.0910	.121	.129
M16878/10BLJ*	12	65 X 30	Copper	Tin	.0930	.123	.131
M16878/10BMG*	10	37 X 26	Copper	Tin	.1110	.146	.156
M16878/10BMK*	10	105 X 30	Copper	Tin	.1200	.155	.165
M16878/10BNL*	8	133 X 29	Copper	Tin	.1690	.216	.226
M16878/10BPL*	6	133 X 27	Copper	Tin	.2130	.270	.282
M16878/10BRL*	4	133 X 25	Copper	Tin	.2690	.335	.349
M16878/10BSL*	2	133 X 23	Copper	Tin	.3350	.399	.415
M16878/10BTM*	1	259 X 25	Copper	Tin	.3780	.447	.465
M16878/10BUM*	0	259 X 24	Copper	Tin	.4240	.495	.511
M16878/10BWM*	00	259 X 23	Copper	Tin	.4770	.565	.585
M16878/10BYM*	000	259 X 22	Copper	Tin	.5330	.623	.633
M16878/10BZM*	0000	259 X 21	Copper	Tin	.6010	.690	.710

Notes:

- 1/ PIN stands for part or identifying number (see figure 2).
- 2/ C.C. stands for copper-clad.

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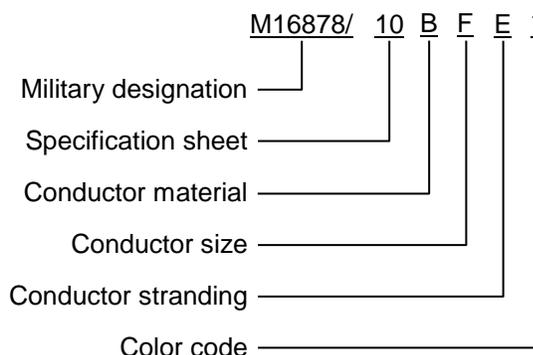


FIGURE 2. Example of PIN (see MIL-DTL-16878).

Configuration and dimensions: See figure 1 and table I
 Operating voltage: Up to 600 volts
 Operating temperature: Up to 75 degrees C
 Insulation: Extruded polyethylene
 Spark test voltage: 3.4 kV
 Impulse dielectric test voltage: 8.0 kV, or 5.7 kV using the 3.0 kHz spark test
 Dielectric withstanding voltage: 2.2 kV
 Insulation resistance: $IR = K \log_{10} D/d$
 Where: IR = Minimum insulation resistance in megohms-1000 feet at 20 degrees C
 K = 50,000
 D = Maximum average diameter of finished wire
 d = Conductor diameter

Cold bend: Condition 4 hours at -65 ± 1 degrees C (see table II)

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
24, 22	1
20 through 12	2
10 through 6	3
4 through 1	4.5
0, 00	6
000, 0000	10

Surface resistance: Not required
 Heat resistance: Condition at 95 degrees C for 48 hours
 Heat aging: 25 percent change (maximum) in 48 hours at 95 degrees C
 Insulation tensile strength: 1400 pounds force per square inch (minimum)
 Insulation elongation: 100 percent (minimum)
 Marking and stripe durability: Not required

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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 6145-2015-039)

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>.