

INCH-POUND

MIL DTL-16878/10E
11 August 2000
SUPERSEDING
MIL-W-16878/10D(NAVY)
11 September 1992

DETAIL SPECIFICATION SHEET

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

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-16878G.

REQUIREMENTS.

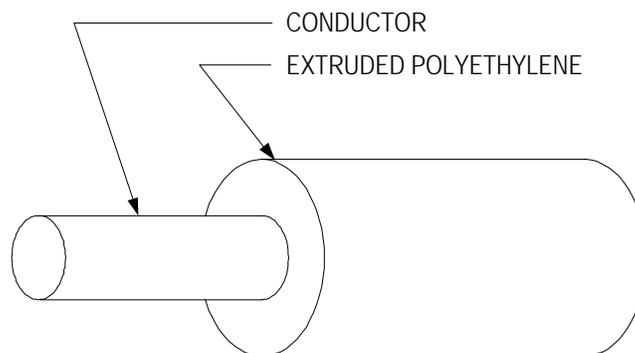


FIGURE 1. Wire configuration.

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 ^{3/}	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 ^{3/}	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.
- 3/ Inactive for new design.

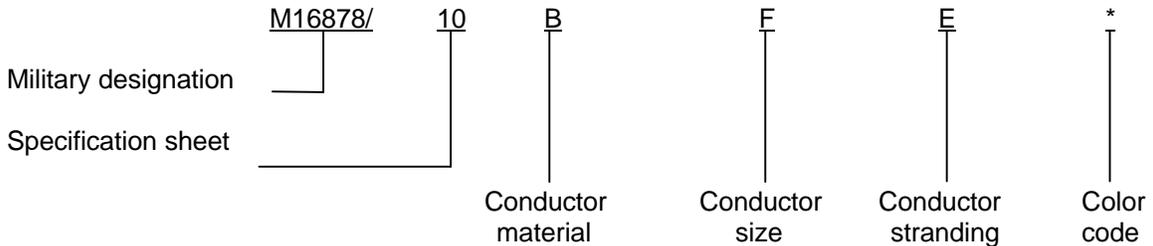


FIGURE 2. Example of PIN (see MIL-DTL-16878G).

MIL-DTL-16878/10E

Configuration and dimensions: See figure 1 and table I
 Operating voltage: Up to 600 volts
 Operating temperature: Up to 75 °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
 per 1000 feet at 20 °C
 K = 50,000
 D = Maximum average diameter of finished wire
 d = Conductor diameter
 Cold bend: Condition 4 hours at -65±1 °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 °C for 48 hours
 Heat aging: 25 percent change (maximum) in 48 hours at 95 °C
 Insulation tensile strength: 1400 pounds force per square inch (minimum)
 Insulation elongation: 100 percent (minimum)
 Marking and stripe durability: Not required

CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issues due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
 Navy - SH
 Air Force - 11
 DLA - CC

Preparing activity:
 DLA - CC
 (Project 6145-2193-006)

Review activity:
 Navy - AS