

INCH-POUND

MIL-DTL-16878/33B
11 August 2000
SUPERSEDING
MIL-W-16878/33A(NAVY)
11 September 1992

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL,
POLYETHYLENE INSULATED, 75 °C, 600 VOLTS,
POLYAMIDE COVERING, ABRASION RESISTANT

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:

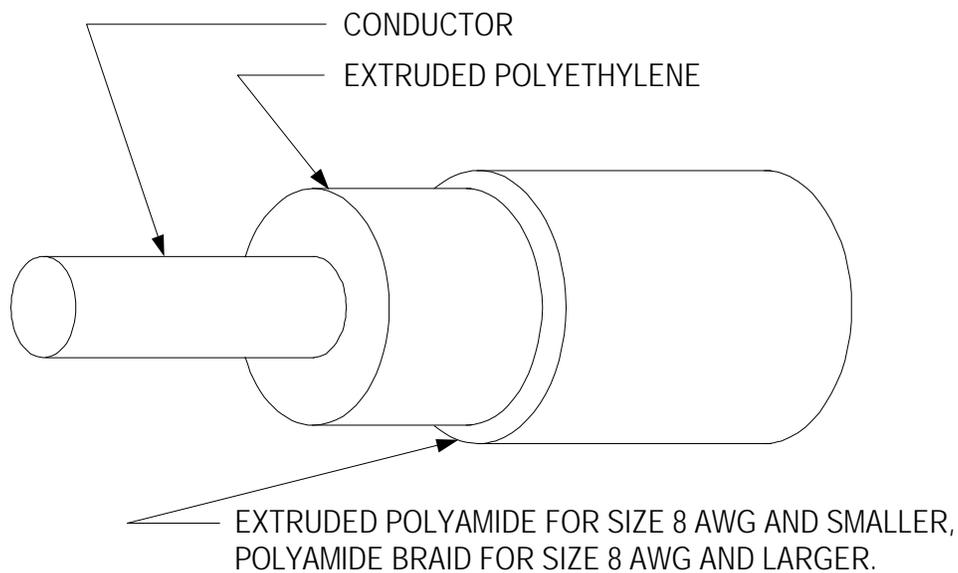


FIGURE 1. Wire configuration.

TABLE I. Wire configuration and dimensions.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)		Polyamide thickness (inch)	
			Material ^{2/}	Coating		Min	Max	Min	Max
M16878/33BEA*	24	1 X 24	Copper	Tin	.0201	.045	.057	.002	.004
M16878/33CEA*	24 ^{3/}	1 X 24	C.C. steel	Tin	.0201	.045	.057	.002	.004
M16878/33BEB*	24	7 X 32	Copper	Tin	.0240	.049	.061	.002	.004
M16878/33BEE*	24	19 X 36	Copper	Tin	.0250	.049	.061	.002	.004
M16878/33BFA*	22 ^{3/}	1 X 22	Copper	Tin	.0254	.051	.064	.002	.004
M16878/33CFA*	22	1 X 22	C.C. steel	Tin	.0254	.051	.064	.002	.004
M16878/33BFB*	22	7 X 30	Copper	Tin	.0300	.056	.068	.002	.004
M16878/33BFE*	22	19 X 34	Copper	Tin	.0320	.056	.068	.002	.004
M16878/33BGA*	20	1 X 20	Copper	Tin	.0320	.060	.072	.002	.004
M16878/33BGB*	20	7 X 28	Copper	Tin	.0380	.066	.078	.002	.004
M16878/33BGE*	20	19 X 32	Copper	Tin	.0400	.066	.078	.002	.004
M16878/33BHA*	18	1 X 18	Copper	Tin	.0403	.068	.081	.002	.004
M16878/33BHB*	18	7 X 26	Copper	Tin	.0480	.076	.088	.002	.004
M16878/33BHE*	18	19 X 30	Copper	Tin	.0500	.076	.088	.002	.004
M16878/33BHD*	18	16 X 30	Copper	Tin	.0470	.075	.087	.002	.004
M16878/33BRL*	4	33 X 25	Copper	Tin	.2690	.349	.363	.007	.014
M16878/33BSL*	2	33 X 23	Copper	Tin	.3350	.413	.443	.007	.014
M16878/33BTN*	1	59 X 25	Copper	Tin	.3780	.461	.493	.007	.014
M16878/33BUN*	0	59 X 24	Copper	Tin	.4240	.509	.539	.007	.014
M16878/33BWN*	00	59 X 23	Copper	Tin	.4770	.579	.613	.007	.014
M16878/33BZN*	0000	59 X 21	Copper	Tin	.6010	.704	.738	.007	.014

Notes:

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

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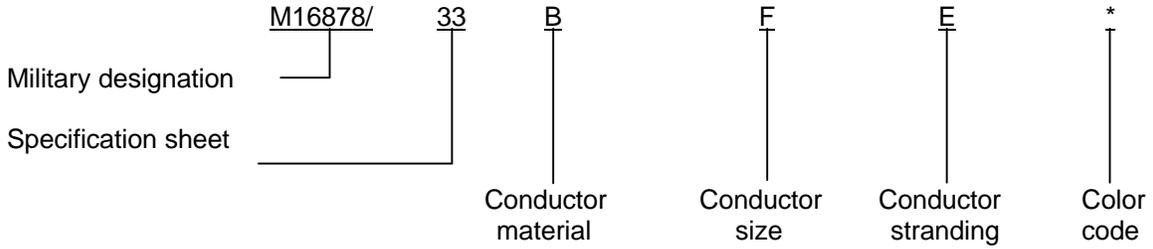


FIGURE 2. Example of PIN (see MIL-DTL-16878G).

Operating voltage: Up to 600 volts
 Operating temperature: Up to 75 °C
 Insulation: Extruded polyethylene
 Covering: Extruded polyamide or polyamide braid (see figure 1)
 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
0000	10

Surface resistance: 5 megohm-inches (minimum) for braided jackets (size 6 and larger)
 Heat resistance: Condition at 95 °C for 48 hours. Cracking of the jacket shall constitute a failure
 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)
 Fungus resistance: Not required
 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 issue because of the extensiveness of the changes.

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 6145-2193-017)

Review activity:
Navy - AS