

INCH-POUND
MIL-DTL-49285/28A
1 March 2010
SUPERSEDING
MIL-C-49285/28
19 October 1989

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL, TWO PAIRS OF 25 (78 X 33) AWG,
ONE PAIR INDIVIDUALLY SHIELDED

Inactive for new design after 16 June 1997.

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-49285.

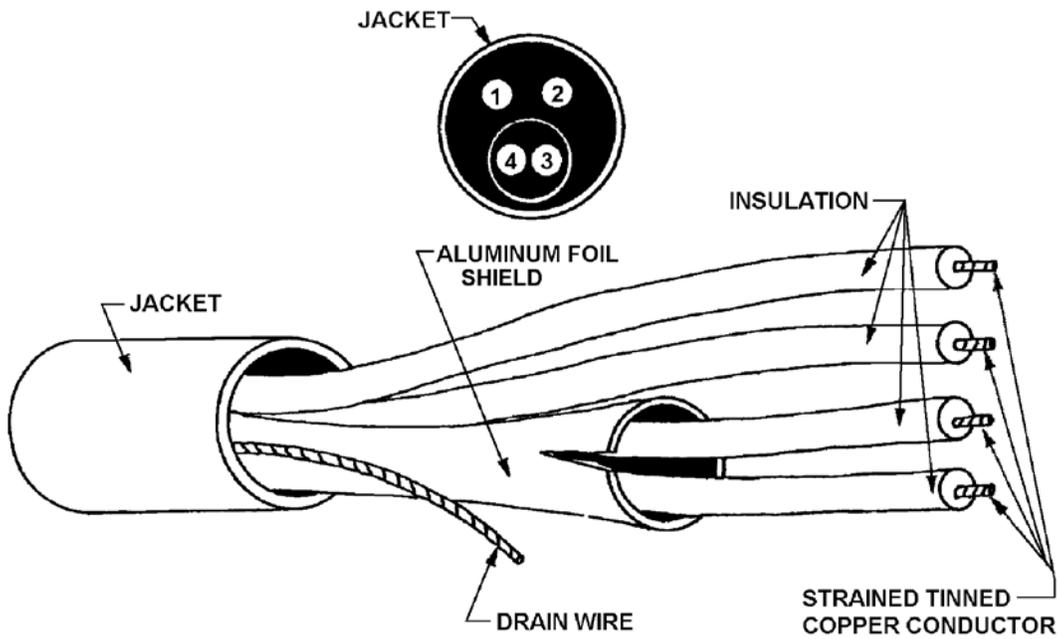


FIGURE 1. Cable illustration.

Engineering information: (see table I and figure 1).

Note: Not for aerospace use.

TABLE I. Description, electrical.

Electrical characteristics	Requirements
Nominal capacitance between conductors	25 pF/ft (picofarads/foot)
Nominal capacitance between the conductor and the shield with one conductor tied to the shield	40 pF/ft
Continuous working voltage	400 V rms maximum between conductors
Continuous working voltage between adjacent shields	28 ohms/1,000 feet maximum
Shield dc resistance	48.0 ohms/1,000 feet maximum

TABLE II. Description, physical.

Components	Construction details
Number of pairs	Two pairs – one pair individually shielded
Conductor type and wire size	Stranded 25 AWG
Conductor stranding	7 X 33 AWG 3 tinned copper 4 tinned coated copper clad steel
Conductor insulation	Polyethylene
Conductor insulation thickness	0.013 inch nominal thickness
Drain wire type and size	Stranded 25 AWG
Drain wire stranding	7 X 33 AWG 3 tinned copper 4 tinned coated copper clad steel
Jacket material	Polyvinyl chloride
Jacket thickness	0.019 inch
Finished cable diameter	0.174 inch maximum outside diameter
Cable style (UL)	Not applicable
Tensile strength (jacket)	2,000 pounds per square inch minimum
Elongation (jacket)	150 percent minimum
Overall cabling lay lengths	8.0 twists per foot \pm 10 percent

REQUIREMENTS:

Design and construction: (see table II):

Shield location and orientation. This cable consists of a shielded pair and an unshielded pair all enclosed by an overall shield. The polyester aluminum shield associated with the individually shielded pair is to be located on the outer circumference of the pair with the aluminum foil side outward. Insulation on the interior of the shield is to be complete with no aluminum available for contact. The overall shield encompasses the individually shielded pair and the unshielded pair. The overall shield insulation on the exterior of the shield is to be complete with no aluminum foil side inward.

Shield color code. The shield colors shall be blue.

Drain wire location. The drain wire is to be spirally located between the noise reducing tape and the aluminum foil shield, and is to be in continuous contact with the aluminum surface of the foil shield and the noise reducing tape throughout the cable.

Cable temperature rating. The cable temperature rating shall be -20°C to +80°C.

Conductor color code.

<u>1st pair (individually shielded)</u>	<u>2nd pair (under overall shield)</u>
1 st conductor: Red	1 st conductor: Green
2 nd conductor: Black	2 nd conductor: White

Cabling. Pairs cabled on a common axis to reduce diameter.

Shield effectiveness evaluation test connections. The cable will be tested as if it were one pair. The test shall be performed with the jacket in place. Install in the test fixture. Test one pair with the other pair floating. Alternate the connections in order to test the second pair. Care must be taken in order to preserve both shields during testing.

Shield integrity test.* The following list of responses refer to the pair located under the overall shield. This pair does not have an individual pair shield covering it.

<u>Frequency</u>	<u>Response **</u>
100 kHz	115 dB below reference
500 kHz	105 dB below reference
1 MHz	100 dB below reference
5 MHz	84 dB below reference
10 MHz	76 dB below reference
15 MHz	71 dB below reference
20 MHz	67 dB below reference
25 MHz	63 dB below reference
30 MHz	60 dB below reference

Fixture resonance will occur between 40 and 70 MHz.

At 100 MHz: At least 45 dB below reference.

The following list of responses refers to the pair covered by an individual pair shield and located within the overall shield.

<u>Frequency</u>	<u>Response **</u>
100 kHz	115 dB below reference
500 kHz	105 dB below reference
1 MHz	101 dB below reference
5 MHz	89 dB below reference
10 MHz	85 dB below reference
15 MHz	81 dB below reference
20 MHz	76 dB below reference
25 MHz	71 dB below reference
30 MHz	66 dB below reference

Fixture resonance will occur between 40 and 70 MHz.

At 100 MHz: At least 47 dB below reference.

* Any two readings may deviate to a value of 0.9 times the stated limits.

** All values are a minimum numerical value.

Crosstalk test limits. Crosstalk testing is not required for this configuration.

Durometer hardness. The cable shall have a durometer hardness of 85 ± 5 .

Part or Identifying Number (PIN): The PIN shall be M49285/28.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 and relationship to the last previous issue.

Referenced document. This document references MIL-DTL-49285.

CONCLUDING MATERIAL

Custodians:
 Army – CR
 Navy – SH
 Air Force – 85
 DLA – CC

Preparing activity:
 DLA - CC

Review activities:
 Army – MI
 Air Force – 71
 DLA - IS

(Project 6145-2009-025)

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 <http://assist.daps.dla.mil>.