

INCH-POUND

MIL-DTL-49285/1A
w/AMENDMENT 2
18 November 2021
SUPERSEDING
MIL DTL 49285/1A
w/AMENDMENT 1
27 March 2018

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL, ONE INDIVIDUALLY SHIELDED
PAIR OF 18 (16 X 30) AWG

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.

Engineering information: See table I.

Note: : Not recommended for shipboard or aerospace applications due to toxic smoke release in the event of a fire. PVC is not recommended in other applications (i.e. confined spaces, low ventilation) where there is the potential for human smoke exposure in a fire.

TABLE I. Description, electrical.

Electrical characteristics	Requirements
Nominal capacitance between conductors	27 pF/ft (picofarads/foot)
Nominal capacitance between the conductor and the shield with one conductor tied to the shield	49 pF/ft
Continuous working voltage	300 V _{rms} maximum between conductors
Shield dc resistance	9.3 ohms/1,000 feet maximum



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TABLE II. Description, physical.

Components	Construction details
Number of pairs	One individually shielded
Conductor type and wire size	Stranded tinned copper 18 AWG
Conductor stranding	16 x 30 AWG
Conductor insulation	Polyethylene
Conductor insulation thickness	0.018 inch nominal thickness
Drain wire type and size	Stranded tinned copper 20 AWG
Drain wire stranding	7 x 28 AWG
Jacket material	Polyvinyl chloride
Jacket thickness	0.027 inch maximum
Finished cable diameter	0.240 inch maximum outside diameter
Cable style (UL)	2092
Tensile strength (jacket)	2,000 pounds per square inch minimum
Elongation (jacket)	150 percent minimum
Overall cabling lay length	8.0 twists per foot $\pm$ 10 percent

REQUIREMENTS:

Design and construction: See table II.

Shield color code. The shield color shall be blue.

Shield location and orientation. The polyester aluminum shield 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.

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

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

Flammability. Insulation flammability testing shall be performed in accordance with the VW-1 flame test method of UL 2556.

Conductor color coding. The first conductor is black; the second conductor is natural (clear).

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Shield integrity test.*

<u>Frequency</u>	<u>Response</u>
100 kHz	115 dB or more below reference
500 kHz	104 dB or more below reference
1 MHz	98 dB or more below reference
5 MHz	81 dB or more below reference
10 MHz	75 dB or more below reference
15 MHz	70 dB or more below reference
20 MHz	65 dB or more below reference
25 MHz	60 dB or more below reference
30 MHz	57 dB or more below reference

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

Fixture resonance will occur between 40 and 70 MHz.

At 100 MHz: At least 37 dB below reference.

Durometer hardness: The cable jacket shall have a "Shore A" hardness of 82 ± 5 .

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

Part or Identifying Number (PIN). The PIN shall be M49285/01.

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. In addition to MIL-DTL-49285, this document references the following: UL 2556.

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CONCLUDING MATERIAL

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

Preparing activity:
DLA-CC

(Project 6145-2021-036)

Review activities:
Army – MI

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>.