

MCDONNELL DOUGLAS

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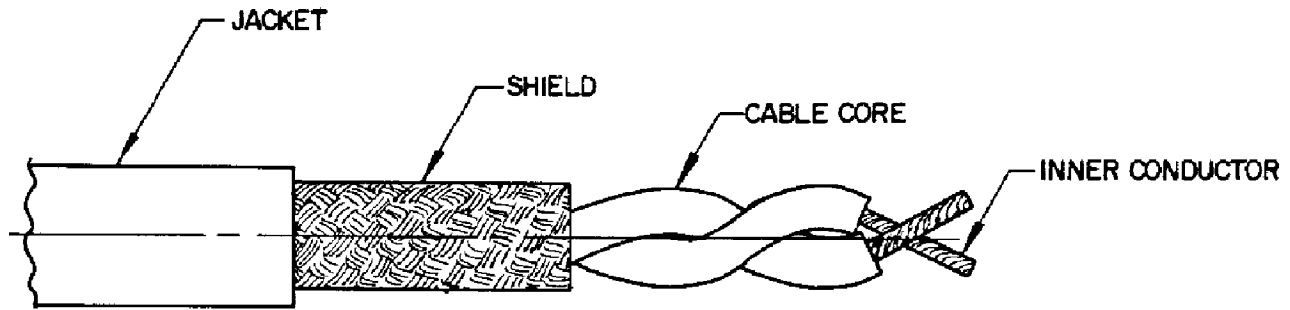


Table I – Construction Details

Approved Callout	5M2022-001 5M2022-008	5M2022-004* 5M2022-009*	5M2022-002	5M2022-005*	5M2022-003	5M2022-006*	5M2022-007
Inner Conductors	26AWG, 19/38 – Unilay, Silver Plated Copper Alloy 135 (-001, -004) Alloy CS95 (-008, -009) O.D. – 0.020 Max.		22 AWG, 19/34 – Unilay Silver Plated Copper Alloy 135 O.D. – 0.031 Max.		24 AWG, 19/36 – Unilay Silver Plated Copper Alloy O.D. – 0.024 Max.		20 AWG 19/32–Unilay Silver Plated Copper O.D. – 0.039 Max.
Cable Number of Cndtrs.	2		2		2		2
Dielectric Material	Extruded PTFE		Extruded PTFE		Extruded PTFE		Extruded PTFE
Color Cond. 1	Black		Green		Blue		Red
Cond. 2	Black with Continuous White Helical Stripe		Green with Continuous White Helical Stripe		Blue with Continuous White Helical Stripe		Red with Continuous White Helical Stripe
O.D. of Each Cond.	0.039 ± 0.002		0.061 ± 0.002		0.044 ± 0.048		0.077 ± 0.002
O.D. of Twisted Pair	0.078 ± 0.004		0.122 ± 0.004		0.088 ± 0.096		0.154 ± 0.004
Twists Per Foot	4 Min.		4 Min. – 6 Max.		4 Min. – 6 Max.		4 Min. – 6 Max.

SCALE: NONE.

(W) ENTIRE DOCUMENT REVISED

DIMENSIONS IN INCHES: TOLERANCES UNLESS OTHERWISE SPECIFIED: X.XX ± 0.03; X.XXX ± 0.010; ANGLES ± 0.5°

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

CAGE NO. 76301	<i>McDonnell Douglas Aerospace – East</i>	STANDARD PART DOCUMENT
APPROVED 81-01-01	TITLE	5M2022
REVISION (W) 94-10-20	CABLE – RF, TWIN CONDUCTOR, 75 OHM	SHEET 1 OF 5

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Table I – Construction Details (Continued)

Approved Callout	5M2022-001 5M2022-008	5M2022-004* 5M2022-009*	5M2022-002	5M2022-005*	5M2022-003	5M2022-006*	5M2022-007
Shield	Single Braid, 38 AWG SPC 90% Min. Coverage O.D. – 0.096 ± 0.004	None	Single Braid, 38 AWG SPC 90% Min. Coverage O.D. – 0.140 ± 0.004	None	Single Braid, 38 AWG SPC 90% Min. Coverage O.D. – 0.110 ± 0.004	None	Single Braid, 38 AWG SPC 90% Min. Coverage O.D. – 0.175 ± 0.004
Jacket Material	Extruded FEP	—	Extruded FEP	—	Extruded FEP	—	Extruded FEP
Color O.D. of Finished Cable	Black Gray (-008 Only) 0.114 ± 0.004	None	Green 0.158 ± 0.004	None	Blue 0.128 ± 0.004	None	Red 0.190 ± 0.004

*Application Note: 5M2022-004, -005, -006, -009 are for use as jumper leads only.

Table II – Electrical and Physical Requirements

Approved Callout	5M2022-001 5M2022-008	5M2022-004 5M2022-009	5M2022-002	5M2022-005	5M2022-003	5M2022-006	5M2022-007
Impedance Between Conductors (OHMS) at 1MHZ	75 ± 5	—	75 ± 5	—	75 ± 5	—	75 ± 5
Dielectric Strength	1500 Volts RMS	**	1500 Volts RMS	**	1500 Volts RMS	**	1500 Volts RMS
Insulation Resistance	10,000M Ω 1,000 Ft. Min.	—	10,000M Ω 1,000 Ft. Min.	—	10,000M Ω 1,000 Ft. Min.	—	10,000M Ω 1,000 Ft. Min.
Jacket Spark	1500 Volts RMS	—	1500 Volts RMS	—	1500 Volts RMS	—	1500 Volts RMS
Capacitance (Cond. to Cond.) at 10KHZ (Cond. to Shield)	30 PF per Foot Max. 46 PF per Foot Max.	—	30 PF/Ft. Max. 46 PF/Ft. Max.	—	30 PF/Ft. Max. 46 PF/Ft. Max.	—	30 PF per Foot Max. 46 PF per Foot Max.
Corona Extinction	700 Volts RMS Min.	—	700 Volts RMS Min.	—	700 Volts RMS Min.	—	700 Volts RMS Min.
Velocity of Propagation	55% Min.	—	55% Min.	—	55% Min.	—	55% Min.
Attenuation at 1MHZ	1.5 DB/ 100 Ft. Max. (-001) 1.7 DB/ 100 Ft. Max. (-008)	—	1.5 DB/ 100 Ft. Max.	—	1.5 DB/ 100 Ft. Max.	—	1.5 DB/ 100 Ft. Max.

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Table II – Electrical and Physical Requirements (Continued)

Approved Callout	5M2022-001 5M2022-008	5M2022-004 5M2022-009	5M2022-002	5M2022-005	5M2022-003	5M2022-006	5M2022-007
Temp. Range (Continuous)	-65°C to 200°C ***						
Weight	10.8 Lb./ 1000 Ft. Max.	4.04 Lb./ 1000 Ft. Max.	20.0 Lb./ 1000 Ft. Max.	9.45 Lb./ 1000 Ft. Max.	15.7 Lb./ 1000 Ft. Max.	6.04 Lb./ 1000 Ft. Max.	32.0 Lb./ 1000 Ft. Max.

**Impulse dielectric test of MIL-W-22759/22 shall be run on 5M2022-004, -005, -006, -009.

***5M2022 maximum temperature is 170°C for -008, -009.

1. Scope:

- 1.1 This document describes the requirements for twin conductor radio frequency cable.
- 1.2 The part number shall consist of this document number and an assigned dash number.
- 1.3 Parts selected from this document require approval from MDAE Standards Engineering and the applicable project parts control authority.

2. Applicable Documents:

- 2.1 This document is the controlling document and takes precedence over all referenced documents.
- 2.2 Referenced documents shall be of the issue in effect on date of invitation for bid, or as authorized in writing by the MDAE Standards Engineering Department.
- 2.3 The following documents form a part of this specification to the extent specified herein.

Specifications:

Military:

- | | |
|-------------|--|
| MIL-C-17 | Cable, Radio Frequency, Flexible, Coaxial, 95 OHMS |
| MIL-C-12000 | Cable, Cord, and Wire, Electric |

Standards:

Military:

- | | |
|-------------|----------------------------------|
| MIL-STD-129 | Marking for Shipment and Storage |
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MDAE:

- | | |
|-------|---|
| 6M148 | Instructions Regarding Procurement, Inspection, and Interchangeability Information on Standard Part Documents |
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3. Requirements:

- 3.1 Twin conductor RF cable shall meet the requirements of MIL-C-17 and this standard part document.
- 3.2 Electrical and physical requirements of the finished cable shall be as shown in Table II.
- 3.3 Construction details of the cable shall be as shown in Table I.
 - 3.3.1 There shall be no degradation of the electrical or mechanical properties when the cable is immersed in JP-4 or JP-5 fuel for indefinite time periods.

4. Quality Assurance Provisions:

4.1 Acceptance:

- 4.1.1 Group A inspection and production inspection of MIL-C-17 shall be performed on all shipments to MDAE or MDAE's designee. Certificate of compliance shall be provided with each lot.
- 4.1.2 Group B inspection need be performed by the vendor only when specified by MDAE.
- 4.1.3 MDAE reserves the right to perform all inspections and/or tests to ensure compliance with this document and to accept or reject lots in accordance with MDAE's Quality Assurance Provisions.

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5. Marking, Packaging and Shipping:

- 5.1 The cable shall be permanently marked in accordance with MIL-C-17 with the MDAE part number, vendor's name, and cage code.
- 5.2 Reel Marking: Each reel of cable shall be identified with the following information legibly and durably printed on the reel.

MDAE Part Number	Purchase Order Number
Vendor's Name	*MDAE Circle Number
Vendor's Part Number	Conductor Size Impedance
Vendor's Lot Number	Cable Lengths (Feet) and Total Footage
Month and Year of Manufacture	

- 5.3 Reel Size and Construction: Cable shall be wound on reels conforming to 6M255.
- 5.4 Reel Protection: All shipping reels shall have a minimum of two wraps of corrugated cardboard (reel wrap per PPP-P-291 or equivalent) covering the outer layer of wire.
- 5.5 Reel Loading and Cable Ends: When cable lengths permit, more than one length of cable shall be wound on a reel. The ends shall be brought out for inspection and sealed. No loaded reel shall exceed 50 pounds in weight.

<u>*Part Number</u>	<u>Circle Number</u>
5M2022-001	870
5M2022-002	872
5M2022-003	473
5M2022-004	518
5M2022-005	519
5M2022-006	520
5M2022-007	549
5M2022-008	A40
5M2022-009	A52

- 5.6 Minimum Lengths:
 - 5.6.1 The cable shall be supplied in minimum lengths of 100 ft.

6. Notes:

- 6.1 These parts shall be specified, procured, and used under the MDAE approved callout number.
- 6.2 The listed vendors and designations, when applicable, are the only items and sources for parts shown hereon approved for procurement and/or use on MDAE products. Vendors of competitive articles may apply to MDAE Standards Engineering for approval as a source of supply.

Approved Vendor and Cage Code:

<u>Vendor Cage Code</u>	<u>Vendor Name and Address</u>
05973	Champlain Cable Corp., Winooski, VT
12515	Teledyne Thermatics, Elm City, NC
92607	Tensolite, St. Augustine, FL (W)
27478	Harbour Industries, Shelburne, VT

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Approved Callout	Approved Vendor's Cage Code and Vendor's Designation				Superseded Parts Not Approved for Procurement See 6M148 for Disposition Directions
	05973	12515	92607 (W)	27478	
5M2022-001	81-00459	12150	26843/3033YX-2	12-2808	None
5M2022-002	81-00468	12442	22863/3033YX-2	12-2809	None
5M2022-003	81-00553	12497	24443/52088X-2	12-2810	None
5M2022-004	51-05100	12498	26443/30033E-2	—	None
5M2022-005	51-05101	12499	22463/30033E-2	—	None
5M2022-006	51-05102	12500	24443/60729E-2	—	None
5M2022-007	81-00648	12521	20470/60729X-2	12-2811	None
5M2022-008	61-02859	13756	26448/85238X-2	—	None
5M2022-009	61-02867	—	26448/85238E-2	—	Use 26448/90133E-2 (W)

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