Amphenol
Aerospace

2M - COMPACT HIGH-SPEED P2P CABLE ASSEMBLIES

Environmental Sealed Data Cable Assemblies

PDS - 386



High-reliability aerospace and defense systems increasingly utilize commercial data protocols such as Ethernet and USB. However, commercial-grade connectors like RJ45 modular plugs are not designed for airframe or tactical environments, where shielding, environmental sealing, and mechanical durability are essential.

Amphenol High-Speed P2P Cables, with their compact design, rugged construction, and reliable availability, are widely deployed for 100BASE-T, 1000BASE-T, and USB 2.0 applications across commercial air transport, military airframes, unmanned systems, and dismounted soldier platforms.

This 2M connector provides ordering and technical information for High-Speed P2P cable assemblies supporting standard signal, Ethernet, and USB applications. These assemblies feature military-grade construction, including overmolding, shielding, and durable jacketing.

FEATURES AND BENEFITS:

- Compact, lightweight design utilizing size #23 contacts
- Supports USB 2.0, 100BASE-T, 1000BASE-T, and IEEE 1394 protocols
- Environmentally sealed with ruggedized construction
- Aerospace-grade cable compliant with FAA FAR 25 flammability requirements
- Tactical-grade cable meeting low-toxicity standards
- Silver-coated copper braid shield (95% coverage) over aluminized Mylar shield
- Available with threaded coupling, quick-disconnect, or bayonet mating options

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2M HIGH-SPEED P2P CABLE SPECIFICATIONS

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2. Cable Specifications	A	B	C	D	E	F	G
Cable Type	100BASE-T	100BASE-T	1000BASE-T	IEEE 1394	USB 2.0	100 Ω STP	100 Ω STP
Construction	UTP	Quad	UTP	Quad	STP	STP	STP
Number of Pairs	2	–	4	–	1	2	4
Number of Conductors	4	4	8	4	4	4	8
Conductor AWG	24	24	24	24	26 & 22	26	26
Conductor Material	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy	Silver-Coated Copper Alloy
Conductor Insulation	FEP	FEP	FEP	FEP	FEP	FEP	FEP
Inner Shield	Aluminum Mylar	Aluminum Mylar	Aluminum Mylar	Aluminum Mylar	SCCB	Aluminum Mylar	Aluminum Mylar
Outer Shield	Silver-Coated Copper Braid	Silver-Coated Copper Braid	Silver-Coated Copper Braid	Silver-Coated Copper Braid	Silver-Coated Copper Braid	Silver-Coated Copper Braid	Silver-Coated Copper Braid
Shield Coverage	95% Min.	95% Min.	95% Min.	95%	95%	95%	95%
Impedance	100 ± 10 Ω	100 ± 10 Ω	100 ± 10 Ω	110 ± 7 Ω	90 ± 13 Ω	100 ± 10 Ω	100 ± 10 Ω
Capacitance (pF/ft.)	13	13	14.5	12.5	13	13	13
Propagation Velocity	80%	80%	70%	80%	70%	80%	80%
Attenuation @10 MHz (dB/100 ft.)	3.1	3.1	3.1	2.9	–	–	–
Attenuation @100 MHz (dB/100 ft.)	8	8	8	7.5	–	–	–
Attenuation @500 MHz (dB/100 ft.)	–	–	–	15.5	–	–	–
Attenuation @1 GHz (dB/100 ft.)	–	–	–	22.5	–	–	–
Near-End Crosstalk @10 MHz (dB)	47	47	47	47	–	–	–
Near-End Crosstalk @100 MHz (dB)	32	32	32	32	–	–	–
Dielectric Withstanding Voltage	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC

3. Cable Jacket Characteristics	F	P
Jacket Material	Extruded FEP	Low Smoke / Zero Halogen Polyurethane
Typical Use	Airframe, Avionics, Missile	Dismounted Soldier, Shipboard, Armored Vehicle, Railcar
UL Rating	94 V-0	94 V-0
FAA Flammability	FAR 25.853(a), FAR 25.869(a)(4)	FAR 25.853(a)
Temperature Range	-65° to +200°C	-30° to +105°C
Resistance to Solvents	Excellent	Excellent
Flexibility	Good	Excellent
Abrasion Resistance	Excellent	Excellent
Color	Translucent Blue	Black
Smoke Index (NES 711)	24	–
Toxicity Index (NES 713)	3.9	–
Oxygen Index (ASTM D-2863)	95%	28%

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Overall Cable Diameter	Diameter (F Jacket)	Diameter (P Jacket)
A	0.210 (5.33 mm)	0.238 (6.05 mm)
B	0.175 (4.45 mm)	0.218 (5.54 mm)
C	0.265 (6.73 mm)	0.311 (7.90 mm)
D	0.190 (4.83 mm)	0.236 (5.99 mm)
E	0.200 (5.08 mm)	0.250 (6.35 mm)
F	0.250 (6.35 mm)	0.300 (7.62 mm)
G	0.298 (7.57 mm)	0.344 (8.74 mm)

4. Strain Relief Specifications	P	B	H
Type	Polyamide Overmold	Aluminum Backshell	Heat-Shrink Boot
Material	Polyamide	6061-T6 Aluminum	Polyolefin
Max. Operating Temperature	105°C	150°C	105°C
Hardness	75 Shore A	N/A	N/A
Low Temperature Brittle Point	< -45°C	N/A	< -65°C
Volume Resistivity	$>10^{12}$ Ohms·cm	N/A	N/A
Dielectric Strength	>12 kV/mm	N/A	>12 kV/mm
Flammability (UL 94)	V0 Vertical Burn	N/A	V0 Vertical Burn
Smoke Index (NES 711)	<10	N/A	9
Toxicity Index (NES 713)	<7	N/A	1.9
Resistance to Ozone	Excellent	N/A	Excellent
Oil Resistance	Good	N/A	Good
Polar Solvents (Alcohol)	Poor	N/A	Good
Non-polar Solvents	Good	N/A	Good
Fuel Resistance	Good	N/A	Fair
Immersion	1 meter, MIL-STD-810 Method 512	IP67	1 meter, MIL-STD-810 Method 512
Part Number	NA	390MS077	770-003

Cable Code	Type	Number of Connector Pins	A Max.	B Max.	C Max.	D Max.	E Max.	F Max.
A	2 Pair UTP 100 Ω	4	2.500 (0.10)	0.560 (0.02)	2.100 (0.08)	0.530 (0.02)	1.600 (0.06)	0.470 (0.02)
B	Quad 100 Ω	4	2.500 (0.10)	0.560 (0.02)	2.100 (0.08)	0.530 (0.02)	1.600 (0.06)	0.470 (0.02)
C	4 Pair UTP 100 Ω	10	2.500 (0.10)	0.680 (0.03)	2.100 (0.08)	0.600 (0.02)	1.600 (0.06)	0.580 (0.02)
D	Quad 110 Ω	4	2.500 (0.10)	0.560 (0.02)	2.100 (0.08)	0.530 (0.02)	1.600 (0.06)	0.470 (0.02)
E	USB 90 Ω	4	2.500 (0.10)	0.560 (0.02)	2.100 (0.08)	0.600 (0.02)	1.600 (0.06)	0.470 (0.02)
F	2 Pair STP 100 Ω	4	2.500 (0.10)	0.560 (0.02)	2.100 (0.08)	0.600 (0.02)	1.600 (0.06)	0.470 (0.02)
G	4 Pair STP 100 Ω	10	2.500 (0.10)	0.680 (0.03)	2.100 (0.08)	0.600 (0.02)	1.600 (0.06)	0.580 (0.02)

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BUILD A PART NUMBER: 2M HIGH-SPEED P2P CABLE ASSEMBLIES

1. Series	2. Cable	3. Cable Jacket	4. Strain Relief	5. P1 Connector	6. P2 Connector	7. Service Class	8. Protective Cover	9. Keying	10. Overall Length
2M805-007	C	P	H	A	D	M	P	N	12

1. Series

2M801-024	Dual-Start Threaded Coupling
2M803-024	Bayonet Coupling Lock
2M804-024	Push-Pull Quick Disconnect
2M805-007	Tri-Start Ratchet with Gound spring

2. Cable

A	4 Pin Connector 100BASE-T Ethernet 4 Conductor UTP OAL Shield
B	4 Pin Connector 100BASE-T Ethernet Quad OAL Shield
C	10 Pin Connector 1000 BASE-T Ethernet 8 conductors UTP OAL Shield
D	4 Pin Connector IEEE 1394 High-Speed Quad 110 OHM
E	USB 2.0 TWO #22 Power One STP #26
F	4 Pin Connector TWO STP 100 Ohm OAL Shield
E	10 Pin Connector Four STP 100 ohm OAL Shield

3. Cable Jacket

F	Translucent Blue FFPE Flourcarbon Jacket
P	Low Smoke/Zero Black Halogen Polyurethane Jacket

4. Strain Relief

P	Polyamide Overmold
B	Metal Backshell
H	Heat-Shrink Boot (low smoke/Zero Halogen)

5. P1 Connector

A	Plug PIN
B	Plug SOCKET
C	Receptacle PIN
D	Receptacle SOCKET

6. P2 Connector

A	Plug PIN
B	Plug SOCKET
C	Receptacle PIN
D	Receptacle SOCKET
N	No Connector

7. P1 Connector

	Part Number	Description	ROHS
Aluminum	M	Electroless Nickel	Yes
	NF	Olive Drab Cad	
	MT	Durmalon	Yes
	ZN	Olive Drab Zinc Nickel	Yes
	ZNU	Black Zinc Nickel	Yes
Steel	Z1	Passivated	Yes
	ZL	Electrolytic Nickel	Yes

8. Protective Cover

P	2 Metal Protective Covers
N	No covers
M	1 Metal protective Cover

9. Keying

2M801	A = Normal B, C, D
2M805	A = Normal B, C, D
2M803	N = Normal X, Y, Z
2M804	A = Normal B, C, D

10. Cable Length

Minimum is 12 inches

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HOW TO ORDER: 2M TO USB 2.0 CONNECTORIZED CORDSET

1. Series	2. Shell Style	3. Service Class	4. Protective Cover	5. Shell Polarizing	6. Overall length
2M805-028	C	P	H	A	-36

1. Series

2M801-028	Series 801 Cordset, Double-Start Threaded Coupling
2M803-011	Series 803 Cordset, Push-Pull with Bayonet Lock Coupling
2M804-016	Series 804 Cordset, Quick-Disconnect Push-Pull
2M805-012	Series 805 Cordset, Tri-Start Threaded Coupling with Ratchet and Ground Spring

2. Shell Style

A	Plug, with Male Pin Contacts
B	Plug, with Female Socket Contacts
C	Receptacle, with Male Pin Contacts
D	Receptacle, with Female Socket Contacts

3. Service Class

	Part Number	Description	ROHS
Aluminum	M	Electroless Nickel	Yes
	NF	Olive Drab Cad	
	MT	Durmalon	Yes
	ZN	Olive Drab Zinc Nickel	Yes
	ZNU	Black Zinc Nickel	Yes
Steel	Z1	Passivated	Yes
	ZL	Electrolytic Nickel	Yes

4. Protective Cover

P	2 Metal Protective Covers with Lanyard
N	No covers supplied

5. Shell Polarizing Position

Series 800 & 803	N (Normal), X, Y, Z
Series 801 & 805	A (Normal), B, C, D
Series 804	Blank (Single Master Key) or A, B, C, D
2M804	A = Normal B, C, D

6. Overall Length

-18	18 inches
-36	36 inches
-72	72 inches
-120	120 inches

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HOW TO ORDER: 2M TO RJ45 CAT 5E CONNECTORIZED CORDSET

1. Series	2. Shell Style	3. Service Class	4. Protective Cover	5. Shell Polarizing	6. Overall length
2M801-029	B	MT	N	A	-36

1. Series

2M800-037	Series 800 Cordset, UNF Threaded Coupling, Hex Nut
2M801-029	Series 801 Cordset, Double-Start Threaded Coupling
2M803-012	Series 803 Cordset, Push-Pull with Bayonet Lock Coupling
2M804-017	Series 804 Cordset, Quick-Disconnect Push-Pull
2M805-013	Series 805 Cordset, Tri-Start Threaded Coupling with Ratchet and Ground Spring

2. Shell Style

A	Plug, with Male Pin Contacts
B	Plug, with Female Socket Contacts
C	Receptacle, with Male Pin Contacts
D	Receptacle, with Female Socket Contacts

3. Service Class

	Part Number	Description	ROHS
Aluminum	M	Electroless Nickel	Yes
	NF	Olive Drab Cad	
	MT	Durmalon	Yes
	ZNU	Black Zinc Nickel	Yes
Steel	Z1	Passivated	Yes

4. Protective Cover

P	Metal Protective Cover with Lanyard
N	No Covers Supplied

5. Shell Polarizing Position

Series 800 & 803	N (Normal), X, Y, Z
Series 801 & 805	A (Normal), B, C, D
Series 804	Blank (Single Master Key) or A, B, C, D
2M804	A = Normal B, C, D

6. Overall Length

-18	18 inches
-36	36 inches
-72	72 inches
-120	120 inches

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HOW TO ORDER: 2M TO RJ45 CONNECTORIZED CORDSET

1. Series	2. Shell Style	3. Service Class	4. Protective Cover	5. Shell Polarizing	6. Overall length
2M801-029	B	MT	N	A	-36

1. Series

Set 1 Codes	Set 2 Codes	Description
2M800-036	800-037	UNF Threaded Coupling, Hex Nut
2M801-028	801-029	Double-Start Threaded Coupling
2M803-011	803-012	Push-Pull with Bayonet Lock Coupling
2M804-016	804-017	Quick-Disconnect Push-Pull
2M805-012	805-013	Tri-Start Threaded Coupling with Ratchet and Ground Spring

2. Shell Style (Same for Both)

A	Plug, with Male Pin Contacts
B	Plug, with Female Socket Contacts
C	Receptacle, with Male Pin Contacts
D	Receptacle, with Female Socket Contacts

3. Service Class (Same for Both)

	Part Number	Description	ROHS
Aluminum	M	Electroless Nickel	Yes
	NF	Olive Drab Cad	
	MT	Durmalon	Yes
	ZNU	Black Zinc Nickel	Yes
Steel	Z1	Passivated	Yes

4. Protective Cover (Same for Both)

P	Metal Protective Cover with Lanyard
N	No Covers Supplied

5. Shell Polarizing Position (Same for Both

Series 800 & 803	N (Normal), X, Y, Z
Series 801 & 805	A (Normal), B, C, D
Series 804	Blank (Single Master Key) or A, B, C, D
2M804	A = Normal B, C, D

6. Overall Length (Same for Both)

-18	18 inches
-36	36 inches
-72	72 inches
-120	120 inches

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