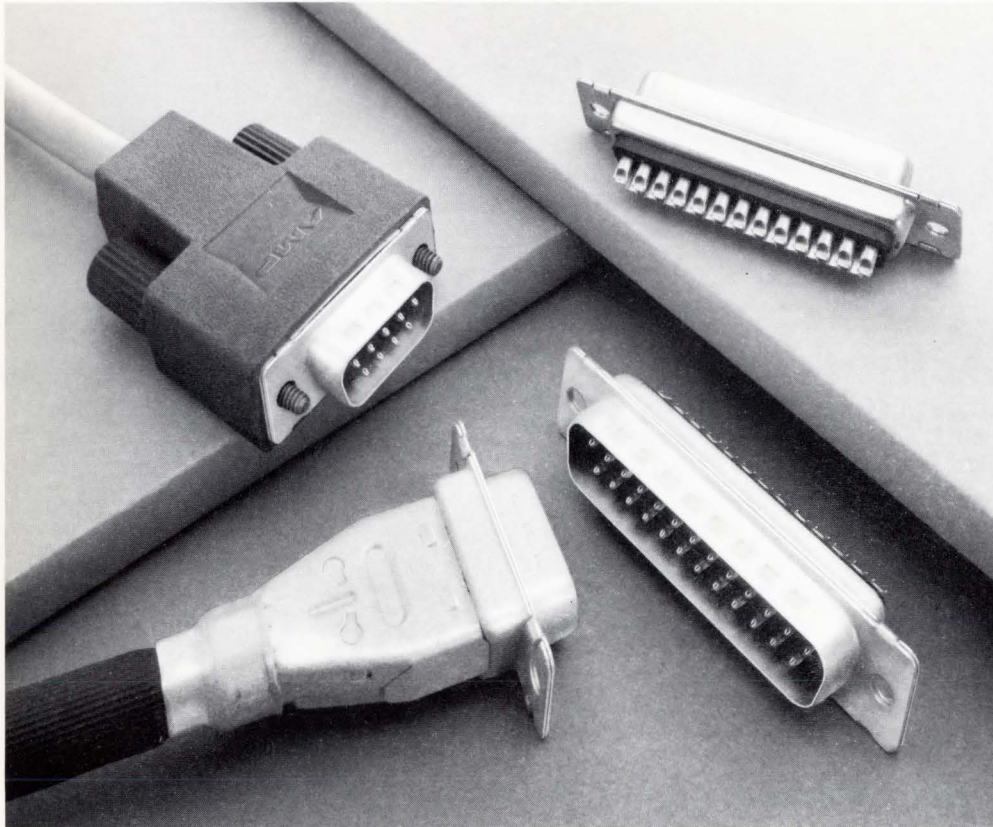


AMP

AMPLIMITE Subminiature-D HDP-20 Solder Cup Connectors and Shielding Hardware

Catalog
85-772

Issued 12-85



AMP AMPLIMITE solder cup connectors are metal-shell connectors containing solder cup contacts preloaded in a one-piece plastic insert. The precision-formed contacts feature an anti-solderwicking design and duplex plating. Inter-mateable with other subminiature-D connectors, they meet standard commercial product specifications. The connectors require no special application tools.

The solder cups accept 20 AWG or smaller solid or stranded wire. The cups are tin-plated to improve ease of soldering. The solder cup design allows a 1/4-inch stripped lead length to help secure the wire in the cup, while the orientation of the cup permits rapid solder

application to fully loaded connectors.

The front and rear metal shells accommodate standard numerous hardware options for both cable clamps and mounting hardware.

For applications requiring shielding, connector kits are also available with easily installed metal shields. The shields offer a low-impedance ground path for electromagnetic interference (EMI) and electrostatic discharge (ESD). The basic shielding kit consists of the connector, an inner shield, and an outer shield. The shields are designed to permit overmolding.

An enclosure kit, also available, provides an overmolded-like shielded

connector system. The enclosure kit includes the components of the basic shielded kit plus a one-piece decorative plastic enclosure and two insulated jackscrews. The enclosure has a unique expanding neck that accommodates a full range of cable sizes without the need for multiple inserts.

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

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Features

Connectors

- Preloaded duplex-plated solder cup contacts
- Shell finish in choice of standard zinc chromate or tin
- One-piece 94V-0 rated plastic insert
- Anti-solderwicking contact design
- Intermateable with other subminiature-D connectors
- Available in 9-, 15-, 25-, and 37-position (shell sizes 1-4) plugs and receptacles
- Easy application without special application tools
- UL recognized
- CSA certified

Shields

- Full EMI shielding and ESD insulation
- Crimped shield termination for low impedance
- Variety of ferrules for all cable sizes
- Ferrule-to-shield crimp provides strain relief
- Shields may be post molded or covered with enclosures

Technical Documents

AMP Instruction Sheets
IS 9193—Solder Cup Connectors
IS 9199—Shielding Enclosure Expansion Tools
IS 9217—Shielding Hardware Kit
IS 9218—Shielding Enclosure Kit

AMP Product Specification
108-40031—HDP-20 Solder Cup Connectors

HDP-20 Plug Connectors With Preloaded Solder Cup Contacts (Nonremovable)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

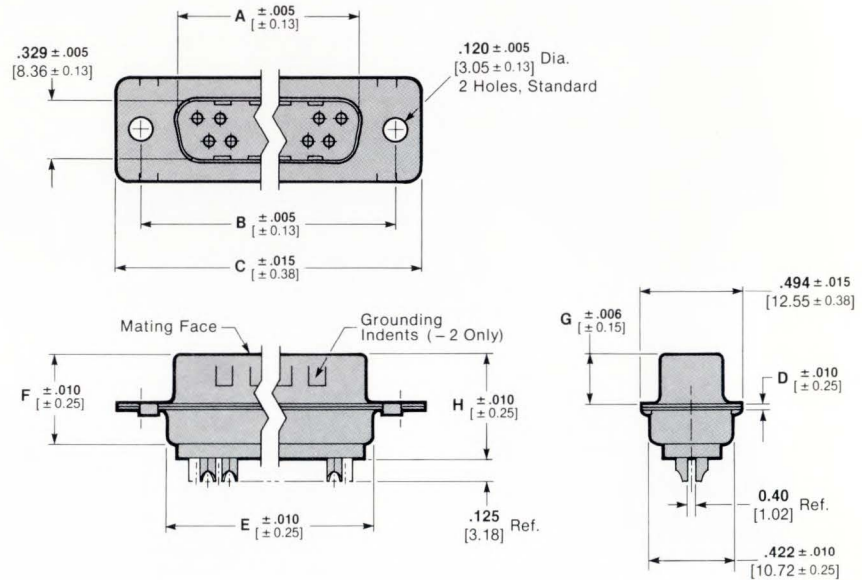
Material and Finish

Connector Shells—Steel, Tin or Zinc Plated

Connector Insert—Black Thermoplastic, 94V-O rated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .150 [3.81] min. length, .000150-.000300 [.000381-0.00762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.

Shell Size	Style	Connector Type
1	Plug	DE-9P
2	Plug	DA-15P
3	Plug	DB-25P
4	Plug	DC-37P



No. of Contact Positions (Shell Size)	Dimensions								Plug Assembly Part No.	
	A	B	C	D	E	F	G	H	Tin-Plated Shell	Zinc-Plated Shell
9	.666	.984	1.213	.030	.759	.422	.235	.492	747904-2	747904-4
(1)	16.92	24.99	30.81	0.76	19.28	40.72	5.97	12.50		
15	.994	1.312	1.541	.030	1.083	.422	.235	.492	747908-2	747908-4
(2)	25.25	33.32	39.14	0.76	27.51	10.72	5.97	12.50		
25	1.534	1.852	2.088	.039	1.625	.426	.230	.496	747912-2	747912-4
(3)	38.96	47.04	53.04	0.99	41.3	10.82	5.84	12.60		
37	2.182	2.500	2.729	.039	2.272	.426	.230	.496	747916-2	747916-4
(4)	55.42	63.5	69.32	0.99	57.71	10.82	5.84	12.60		

HDP-20 Receptacle Connectors With Preloaded Solder Cup Contacts (Nonremovable)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimetres.

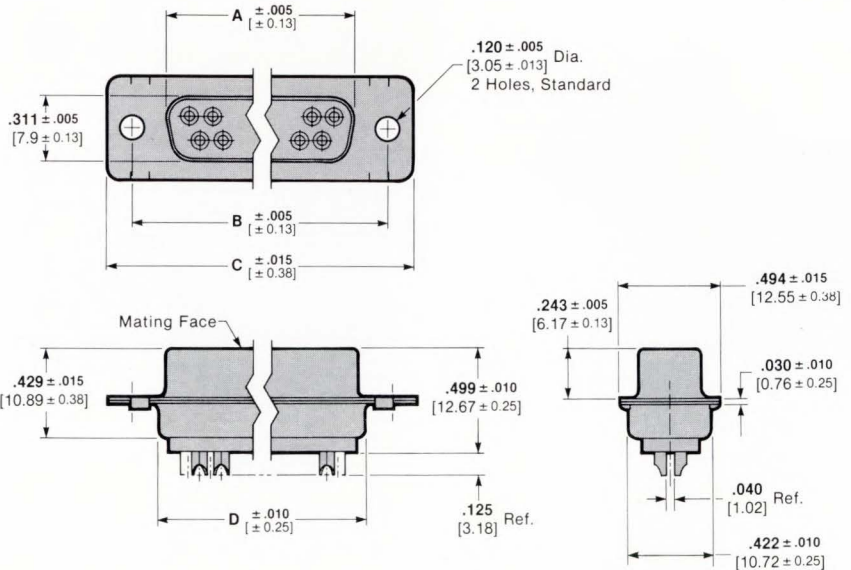
Material and Finish

Connector Shells—Steel, Tin or Zinc Plated

Connector Insert—Black Thermoplastic, 94V-O rated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .100 [2.54] min. length, .000150-.000300 [0.00381-0.00762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.

Shell Size	Style	Connector Type
1	Receptacle	DE-9S
2	Receptacle	DA-15S
3	Receptacle	DB-25S
4	Receptacle	DC-37S



No. of Contact Positions (Shell Size)	Dimensions				Receptacle Assembly Part No.	
	A	B	C	D	Tin-Plated Shell	Zinc-Plated Shell
9 (1)	.643 16.33	.984 24.99	1.213 30.81	.759 19.28	747905-2	747905-4
15 (2)	.971 24.66	1.312 33.32	1.541 39.14	1.083 27.51	747909-2	747909-4
25 (3)	1.511 38.38	1.852 47.04	2.088 53.04	1.625 41.3	747913-2	747913-4
37 (4)	2.159 54.84	2.500 63.5	2.729 69.32	2.272 57.71	747917-2	747917-4

HDP-20 Solder Cup Plug Connector Basic Shielding Kits

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimetres.

Each kit contains:

- Connector with preloaded, nonremovable contacts
- Inner shield
- Outer shield

Ferrules must be purchased separately.

Material and Finish

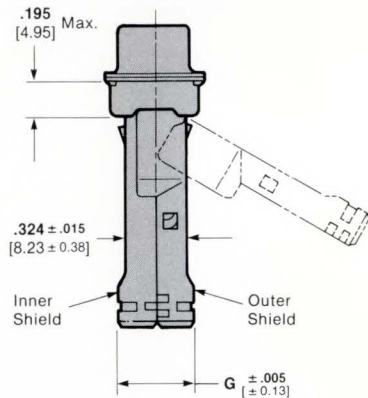
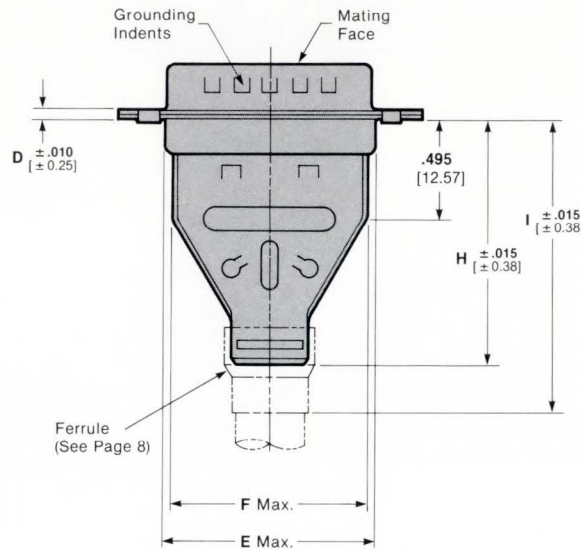
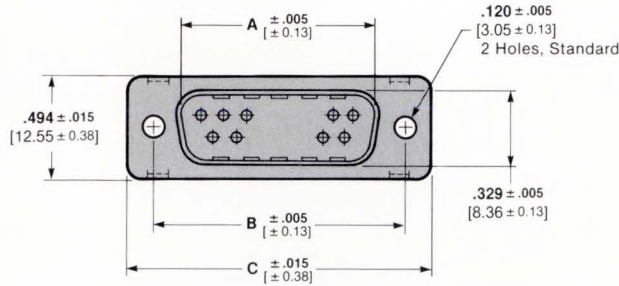
Connector Shells—Steel, Tin Plated

Connector Insert—Black Thermoplastic, 94V-O rated

Shields—Steel, Tin Plated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .150 [3.81] min. length, .000150-.000300

[.000381-.000762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.



No. of Contact Positions (Shell Size)	Dimensions									Cable Insulation Diameter	Plug Kit Part No.
	A	B	C	D	E	F	G	H	I		
9	.666	.984	1.213	.030	.780	.700	.395	1.273	1.535	.165-.435	748038-1
(1)	16.92	24.99	30.81	0.76	19.28	17.78	10.03	32.34	38.99	4.19-11.05	
15	.994	1.312	1.541	.030	1.103	1.024	.395	1.273	1.535	.165-.435	748040-1
(2)	25.25	33.32	39.14	0.76	28.02	26.01	10.03	32.34	38.99	4.19-11.05	
25	1.534	1.852	2.088	.039	1.645	1.576	.395	1.273	1.535	.165-.435	748042-1
(3)	38.96	47.04	53.04	0.99	41.79	40.03	10.03	32.34	38.99	4.19-11.05	
37	2.182	2.500	2.729	.039	2.295	2.215	.490	1.507	1.892	.338-.562	748044-1
(4)	55.42	63.5	69.32	0.99	58.31	56.26	12.45	38.28	48.06	8.58-14.27	

HDP-20 Solder Cup Receptacle Connector Basic Shielding Kits

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimetres.

Each kit contains:

- Connector with preloaded, nonremovable contacts
- Inner shield
- Outer shield

Ferrules must be purchased separately.

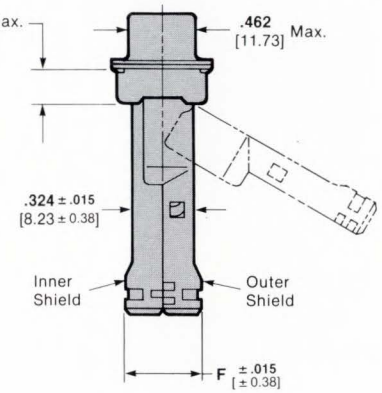
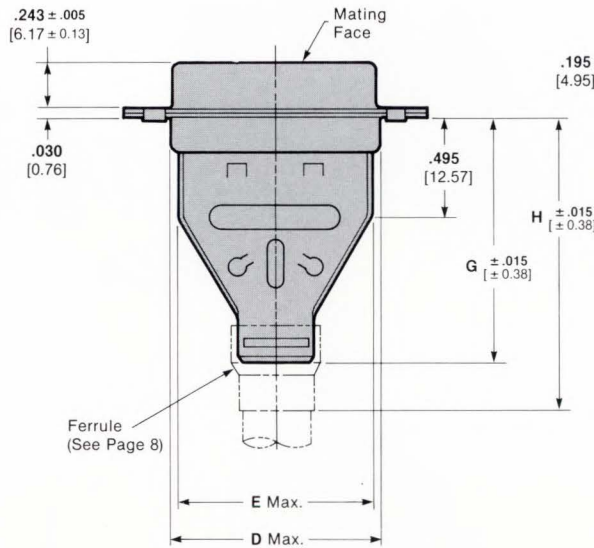
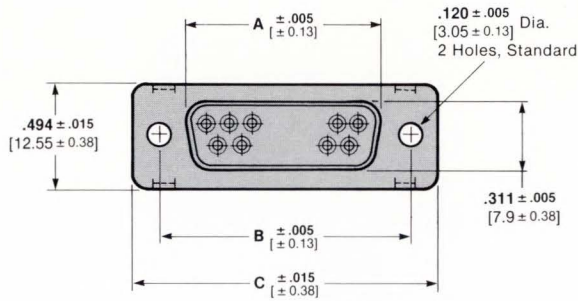
Material and Finish

Connector Shells—Steel, Tin Plated

Connector Insert—Black Thermoplastic, 94V-0 rated

Shields—Steel, Tin Plated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .100 [2.54] min. length, .000150-.000300 [0.00381-0.00762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.



No. of Contact Positions (Shell Size)	Dimensions								Cable Insulation Diameter	Receptacle Kit Part No.
	A	B	C	D	E	F	G	H		
9	.643	.984	1.213	.780	.700	.395	1.273	1.535	.165-.435	748039-1
(1)	16.33	24.99	30.81	19.28	17.78	10.03	32.34	38.99	4.19-11.05	
15	.971	1.312	1.541	1.103	1.024	.395	1.273	1.535	.165-.435	748041-1
(2)	24.66	33.32	39.14	28.02	26.01	10.03	32.34	38.99	4.19-11.05	
25	1.511	1.852	2.088	1.645	1.576	.395	1.273	1.535	.165-.435	748043-1
(3)	38.38	47.04	53.04	41.79	40.03	10.03	32.34	38.99	4.19-11.05	
37	2.159	2.500	2.729	2.295	2.215	.490	1.507	1.892	.338-.562	748045-1
(4)	54.84	63.5	69.32	58.31	56.26	12.45	38.28	48.06	8.58-14.27	

HDP-20 Solder Cup Plug Connector Shielding Enclosure Kits

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Each kit contains:

- Connector with preloaded, nonremovable contacts
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Ferrules must be purchased separately.

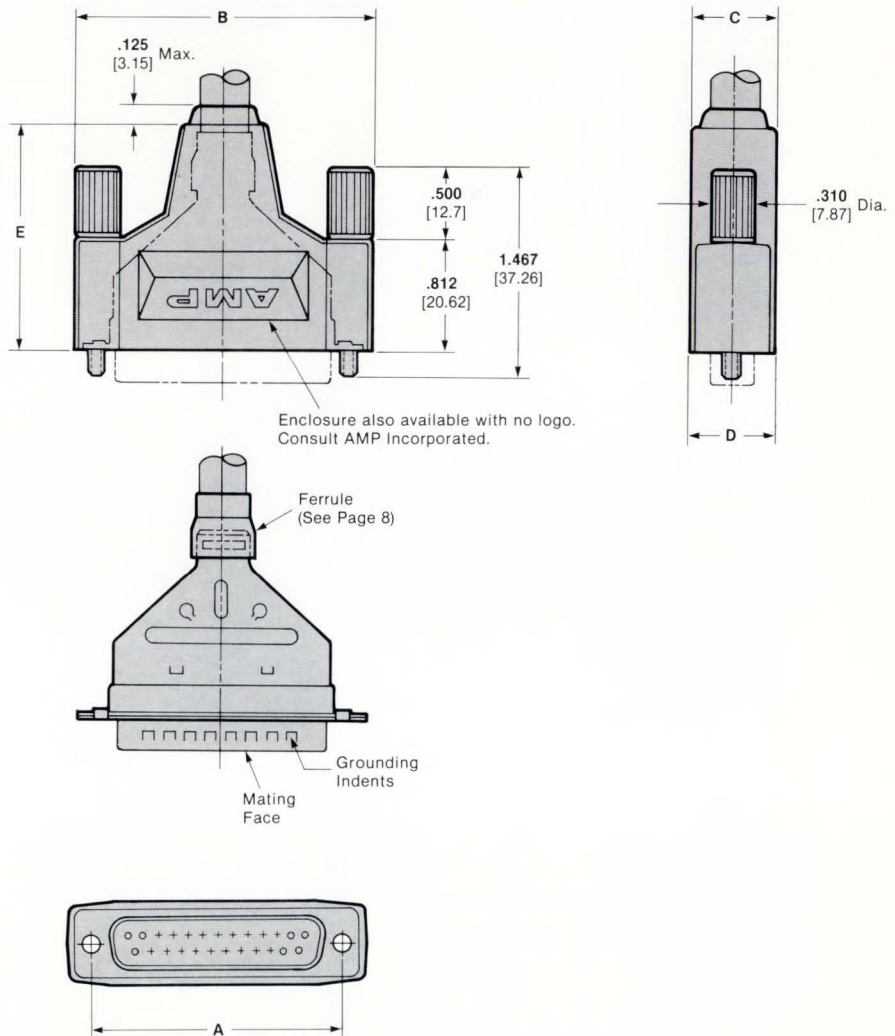
Material and Finish

Connector Shells—Steel, Tin Plated

Connector Insert—Black Thermoplastic, 94V-O rated

Shields—Steel, Tin Plated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .150 [3.81] min. length, .000150-.000300 [.000381-0.000762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.



No. of Contact Positions (Shell Size)	Dimensions					Cable Insulation Diameter	Plug Enclosure Kit Part No.	Shielding Enclosure Expansion Tool
	A	B	C	D	E			
9 (1)	.984 24.99	1.350 34.29	.600 15.24	.600 15.24	1.640 41.66	.172-.435 4.36-11.05	748046-1	
15 (2)	1.312 33.32	1.680 42.67	.600 15.24	.600 15.24	1.640 41.66	.190-.435 4.38-11.05	748048-1	58241-1
25 (3)	1.852 47.04	2.205 56.01	.600 15.24	.600 15.24	1.640 41.66	.190-.435 4.38-11.05	748050-1	
37 (4)	2.500 63.50	2.860 72.65	.700 17.78	.600 15.24	2.010 51.05	.338-.562 8.58-14.27	748052-1	58241-2

HDP-20 Solder Cup Receptacle Connector Shielding Enclosure Kits

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimetres.

Each kit contains:

- Connector with preloaded, nonremovable contacts
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Ferrules must be purchased separately.

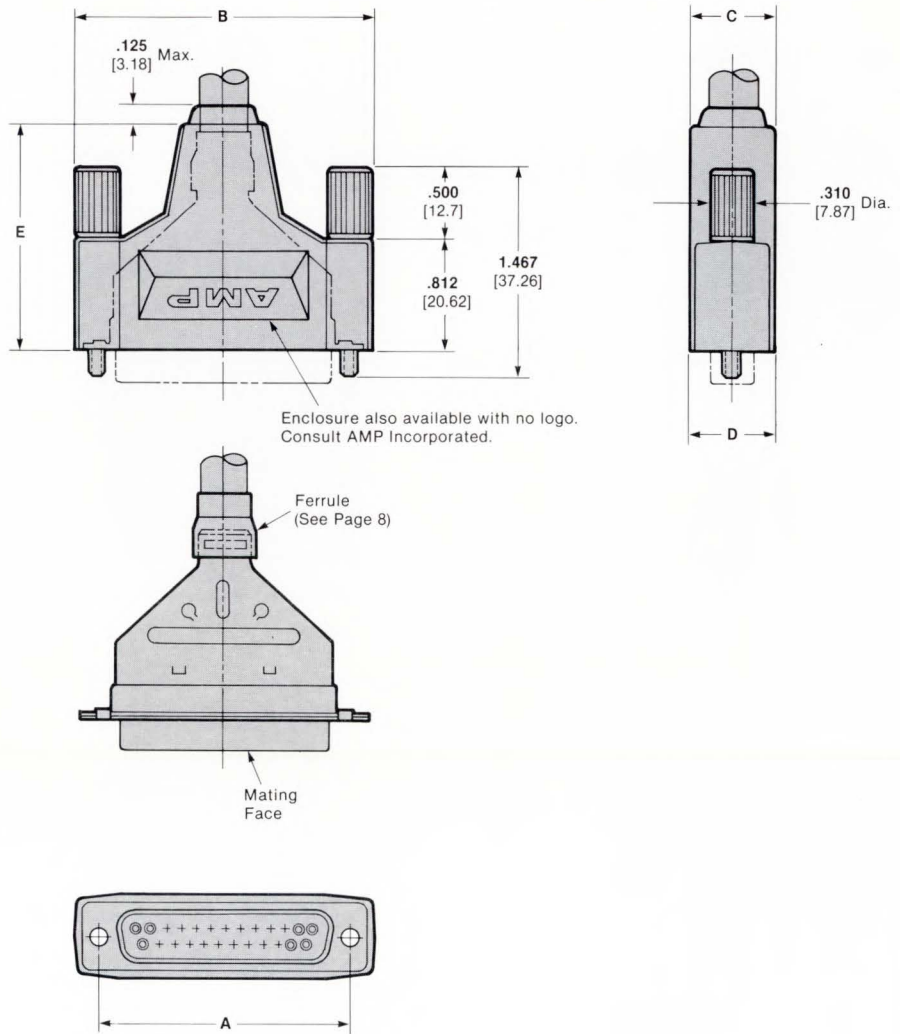
Material and Finish

Connector Shells—Steel, Tin Plated

Connector Insert—Black Thermoplastic, 94V-O rated

Shields—Steel, Tin Plated

Contacts—Phosphor Bronze; duplex plated with gold flash on mating end for .100 [2.54] min. length, .000150-.000300 [0.00381-0.00762] tin-lead on solder cup, with entire contact underplated .000030 [0.000762] nickel.



No. of Contact Positions (Shell Size)	Dimensions					Cable Insulation Diameter	Receptacle Enclosure Kit Part No.	Shielding Enclosure Expansion Tool
	A	B	C	D	E			
9 (1)	.984 24.99	1.350 34.29	.600 15.24	.600 15.24	1.640 41.66	.172-.435 4.36-11.05	748047-1	
15 (2)	1.312 33.32	1.680 42.67	.600 15.24	.600 15.24	1.640 41.66	.190-.435 4.38-11.05	748049-1	58241-1
25 (3)	1.852 47.04	2.205 56.01	.600 15.24	.600 15.24	1.640 41.66	.190-.435 4.38-11.05	748051-1	
37 (4)	2.500 63.50	2.860 72.65	.700 17.78	.600 15.24	2.010 51.05	.338-.562 8.58-14.27	748053-1	58241-2

Ferrules, Application Tooling and Performance Specifications

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Electrical Characteristics

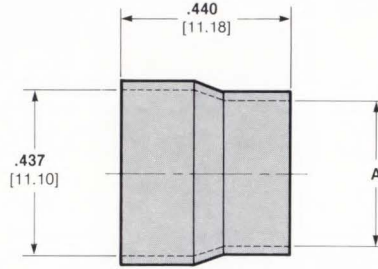
- Termination Resistance—8 milliohms max.
- Contact Current Rating—20 AWG—7.5 A
- Dielectric Withstanding Voltage—1 kVac
- Insulation Resistance—5000 Megohms

Mechanical Characteristics

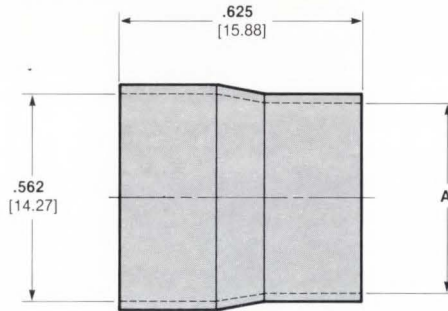
- Contact Retention—10 lb. [44 N] min.
- Contact Engagement Force—12 oz. [3.4 N] max.
- Contact Separation Force—.75 oz. [0.2 N] min.

Ferrules

For Shell Sizes 1-3



For Shell Size 4



Material and Finish: Tin-plated copper

Shell Sizes	Diameter A	Cable Diameter	Ferrule Part No.	Die Set Part No.*
1-3	.246 6.25	.165-.190 4.19-4.83	747579-8	58236-3
1-3	.246 6.25	.190-.217 4.83-5.51	747579-8	58236-2
1-3	.246 6.26	.217-.246 5.51-6.25	747579-8	58239-4
1-3	.324 8.23	.246-.284 6.25-7.21	1-747579-0	58236-1
1-3	.324 8.23	.284-.324 7.21-8.23	1-747579-0	58239-3
1-3	.375 9.52	.324-.375 8.23-9.52	1-747579-1	58239-2
1-3	.437 11.10	.375-.435 9.52-11.05	1-747579-2	58239-1
4	.385 9.78	.338-.385 8.58-9.78	747580-8	58238-2
4	.432 10.97	.375-.432 9.52-10.97	747580-4	58238-1
4	.490 12.45	.422-.490 10.72-12.45	747580-5	58237-2
4	.562 14.27	.480-.562 12.19-14.27	747580-6	58237-1

*Die sets used with Hand Crimping Tool 58235-1 or Pneumatic Bench Tool 312522-2 equipped with Die Set Holder 58240-1.

Application Tooling for Connector Shielding Kits



Hand Crimping Tool
Part No. 58235-1



Shielding Enclosure
Expansion Tools
Part Nos. 58241-1, -2



Pneumatic Bench Tool
Part No. 312522-2
(Requires Die Set Holder
Part No. 58240-1)

