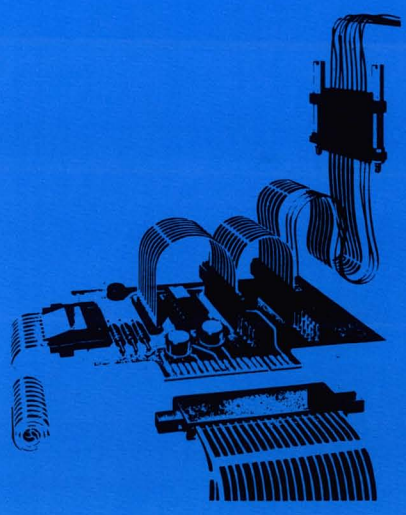
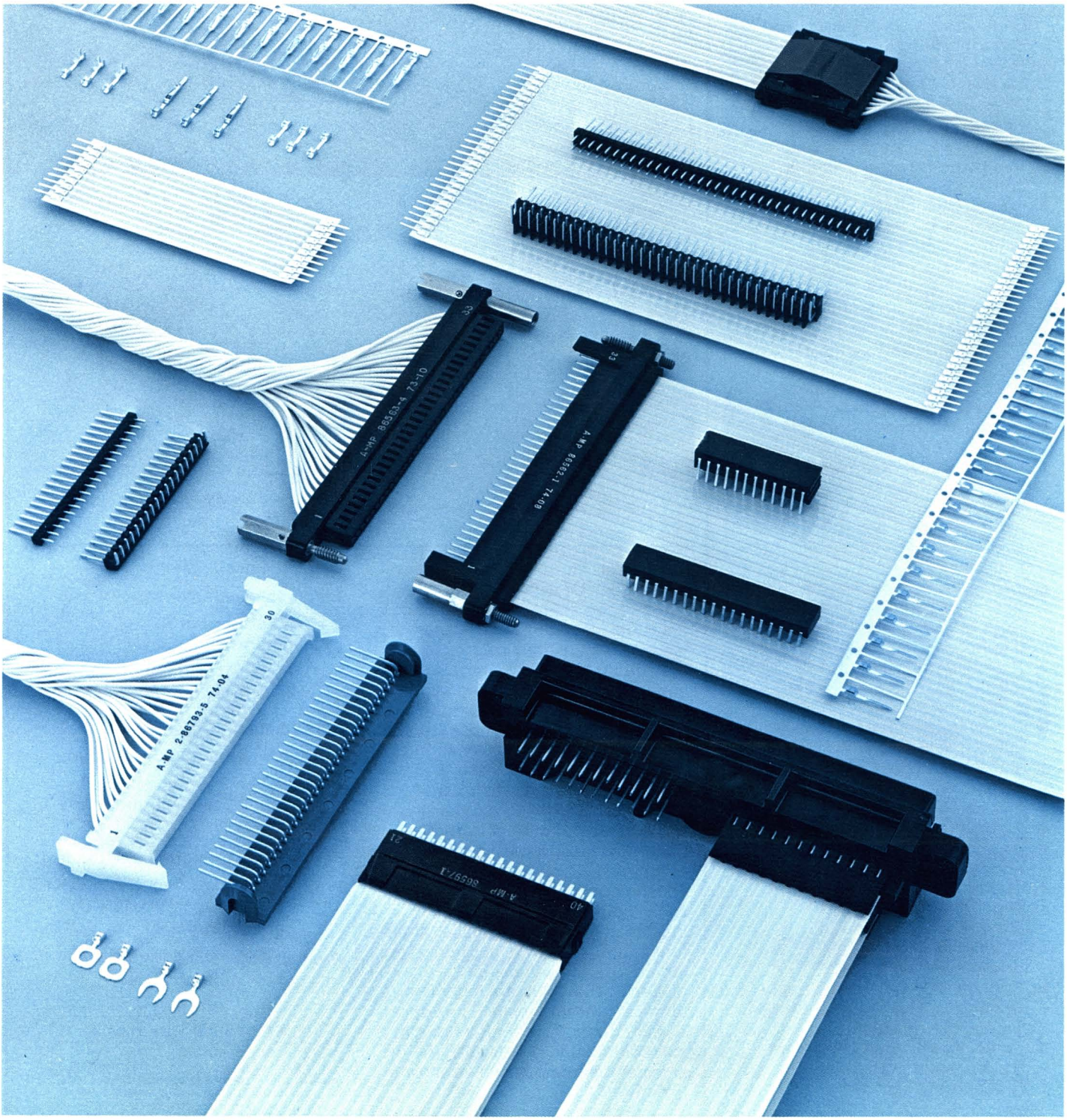
12

FLEXIBLE FLAT CABLE PRODUCTS

A wide range of connector sizes and configurations are available for cable-to-cable, cable-to-board, cable-to-wire and cable-to-post applications. Termination capabilities include small gage discrete wire (solid or stranded), flat conductor cable as well as flat ribbon, woven ribbon and other types of flat cable with round conductors. AMP's crimp technique of terminating contacts to cable using matched application tooling achieves excellent electrical and mechanical connections without a need for cable stripping or conductor plating.



FLEXIBLE FLAT CABLE CONNECTORS



Flexible Flat Cable Termination

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Features

- Recognized under the component program of Underwriters' Laboratories, Inc., Electrical File No. E-28476.
- Flexible flat cable jumper assemblies are recognized under the component program of Underwriters' Laboratories, Inc., Electrical File No. E-53799.
- Automatic crimp-on, snap-in contacts.
- Crimp technique displaces insulation for excellent electrical contact.
- Reliable electrical and mechnical characteristics.
- Eliminates cable stripping and conductor plating requirements.
- No heat applied to crimp-type contacts.
- Easy connector maintenance and field repairable.
- Choice of pin and receptacle contacts, card edge contacts or printed circuit board solder tabs.
- Capability of intermixing flat cable and round wire conductors in the same housing.
- Choice of a wide variety of housings.
- Terminates conductors on .100″ [2.54 mm] centers with ±.005″ [0.13 mm] non-accumulative tolerance — .003″-.005″ [0.08 mm-0.13 mm] thick by .059″/.065″ [1.5 mm/1.65 mm] conductors per IPC-FC-220.
- Connectors available for cable-to-cable, cable-to-board, cable-to-.025″ x .025″ [0.64 mm x 0.64 mm] AMPMODU posts, daisy chain, and cable-to-wire applications.
- Automatic machine crimp-on contact applications for lower applied cost.
- Solder tab contacts for permanent printed circuit board terminations are available. Choice of gold-over-nickel or tin plating.
- Contacts can be applied to cable by hand tool for prototype or low production quantities.
- Custom-designed assemblies can be made available, using the products in this catalog.

Contact Features

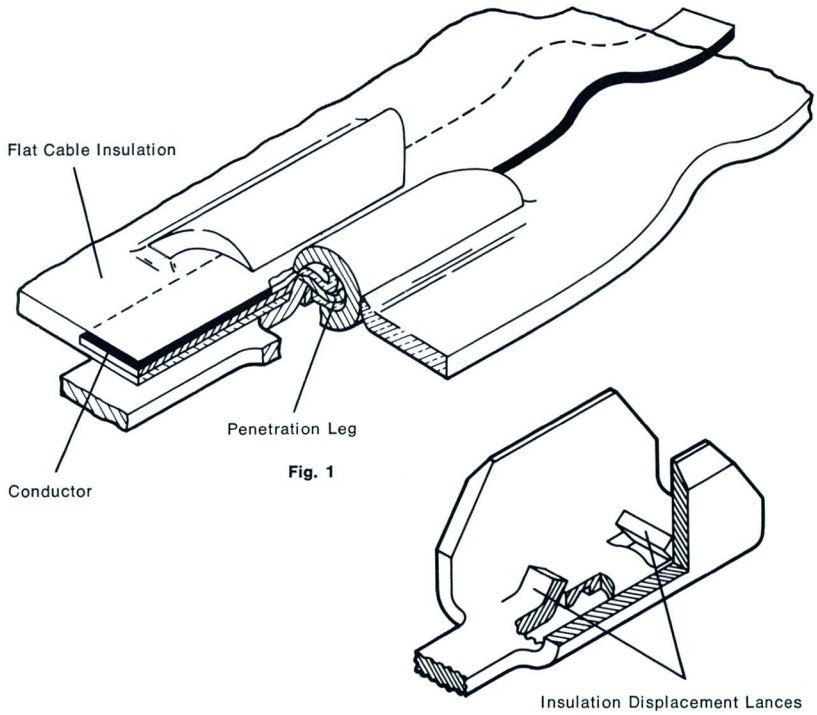


Fig. 1

Fig. 2

The barrel is formed into the shape of an open "U" with the legs of the "U" swaged sharp enough to pierce the cable insulation. Two lateral lances are punched upwards from the bottom of the "U". They are supported during crimping by a base material which has extruded back under the lance. These lances act as short, stiff cantilever springs to maintain residual pressure on the conductor. During crimping the legs of the "U" are driven through the cable astride or through a conductor. As these legs engage the crimping die, they are curled inward 180° to again pierce the insulation as the lateral lances displace the insulation from the other side. At the four points where the legs and lances cross, the insulation is displaced so that there are four metal-to-metal pressure joints. The edges of the conductor are also brought into contact under pressure with the sides of the crimp barrel as shown in Figure 1.

Contact Specifications

Electrical Characteristics

a. Contact Current Rating: 3 amperes continuous

b. Operating Temperature: −55°C to +105°C

Performance:

a. High Potential: 1,200 VAC RMS

b. Insulation Resistance: 5,000 megohms minimum between contacts

For Additional Information, request:

Product Spec. 114-25001, "Crimping contacts onto flexible flat conductor cable"

Product Spec. 108-9024, "Flexible flat cable connector"

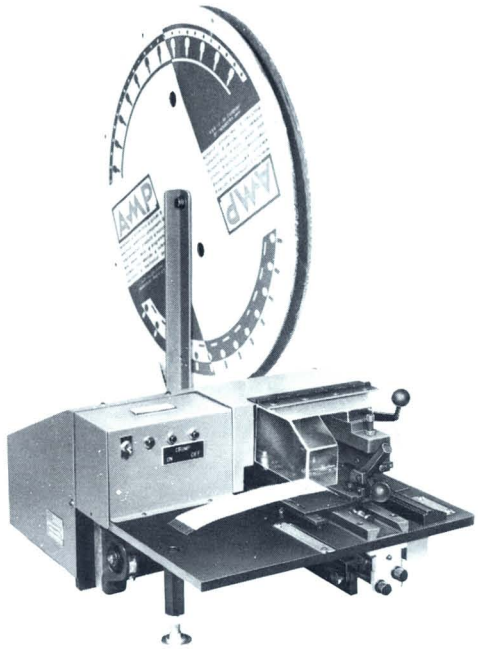
Product Spec. 114-25002, "Crimping FFC round wire pins & receptacles"

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

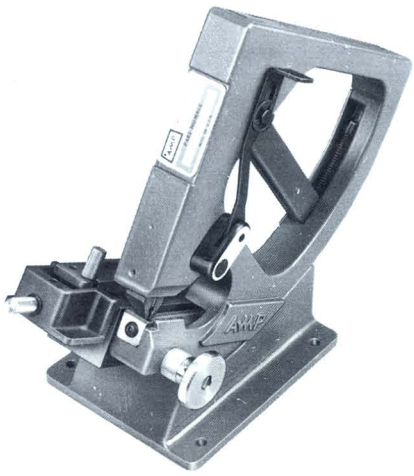
Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Complementing AMP's complete line of Flexible Flat Cable Connectors is the AMP-O-MATIC Flexible Flat Cable Terminating Machine — the industry's first fully automatic machine for the termination of flexible flat cable. Offering speed and economy, this versatile machine completely eliminates the need for expensive and time-consuming special cable preparations. Reel-fed, stamped and formed contacts are automatically applied to the flat cable at rates of two contacts per second in one continuous action. The operator simply positions the cable and presses the start button. The machine automatically crimps the contact to the cable achieving positive contact-to-conductor connections with excellent electrical and mechanical characteristics.

Tooling



AMP-O-MATIC Flexible
Flat Cable Termination Machine,
Part No. 455942-1



CERTI-CRIMP Hand Tool
for Termination of Flexible
Flat Cable,
Part No. 90273-2

CERTI-CRIMP Hand Tool
for Termination of
Round Wire,
Part No. 90222-2
for Card Edge Type Contacts,
Part No. 90268-1

Contacts

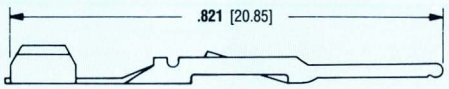
Dimensioning:

1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

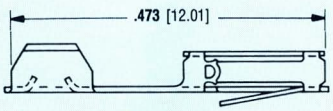
†PLATING CODE	
.000030 [0.00076] NICKEL STANDARD UNDERPLATE FOR ALL CONTACTS	
Code	**Plating**
A	.000015 [0.00038] gold on contact area — Gold flash on remainder of contact
B	.000030 [0.00076] gold on contact area — Gold flash on remainder of contact
C	.000050 [0.00127] gold on contact area — Gold flash on remainder of contact
D	.000015 [0.00038] gold on contact area — Nickel plating on remainder of contact
E	Bright tin plating
F	.000030 [0.00076] gold overall
G	.000030 [0.00076] gold on contact area — Nickel plating on remainder of contact
H	.000015 [0.00038] gold overall

For Flexible Flat Conductor Cable Terminations

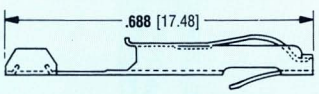
(.059/.065 [1.5/1.65] wide conductors on .100 [2.54] min. centers with ±.005 [0.13] non-accumulative tolerance, .015 [0.39] max. total cable thickness.)



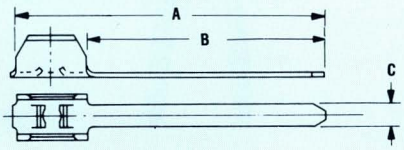
Pin



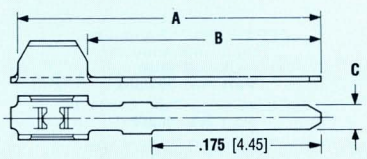
Receptacle



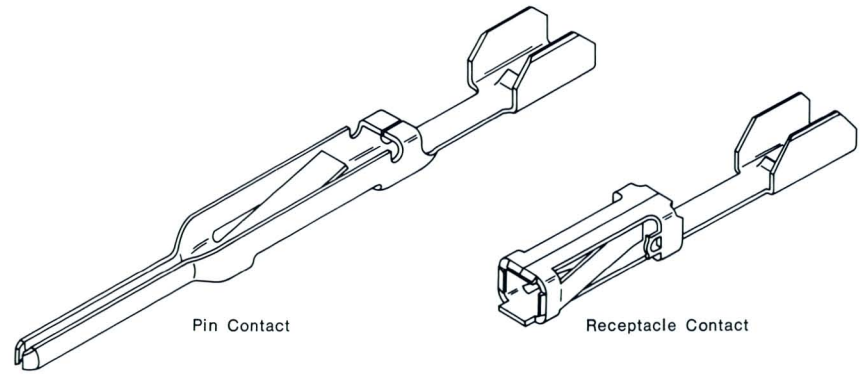
Edge Connector Contact

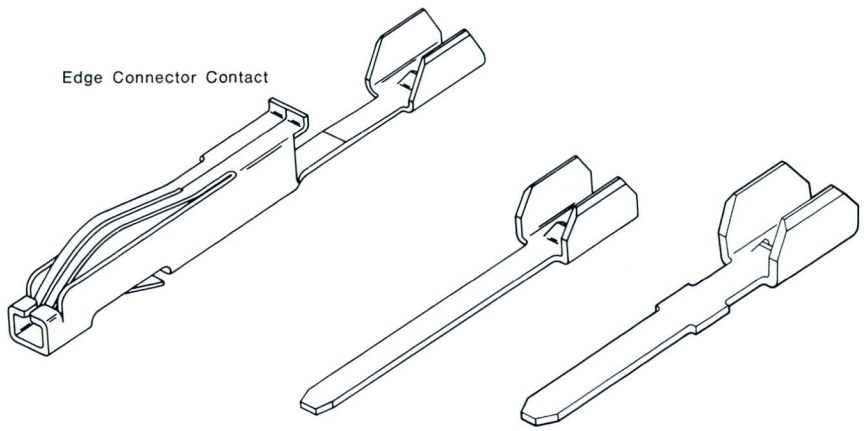


Solder Tab—A



Solder Tab—B





Material: Phosphor Bronze

Type of Contact	Plating†	Strip Form Part No.	Loose Piece Part No.
PIN	A	86556-8	86569-4
	C	86556-9	86569-5
	B	1-86556-0	86569-6
	E	1-86556-3	86569-8
RECEPTACLE	A	86565-8	86570-2
	B	86565-9	86570-4
	C	1-86565-0	86570-6
EDGE CONNECTOR CONTACT	A	86742-4	86797-2
	B	86742-5	86797-3
HIGH PRESSURE RECEPTACLE	E	88049-3	88049-4

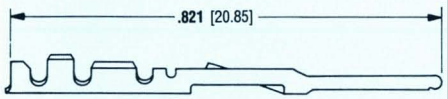
Type of Contact	Dimensions A	Dimensions B	Dimensions C	Plating†	Strip Form Part No.	Loose Piece Part No.
SOLDER TAB—A (Not for use in housings)	.745 / 18.92	.625 / 15.88	.038 / 0.97	F	86574-5	86575-2
				E	86574-6	86575-3
	.345 / 8.76	.225 / 5.72	.027 / 0.69	F	86706-6	86707-2
				E	86706-7	86707-3
	.405 / 10.29	.285 / 7.24	.025 / 0.64	E	86706-8	86707-4
SOLDER TAB—B (Not for use in housings)	.405 / 10.29	.285 / 7.24	.025 / 0.64	E	86970-5	86970-7
	.440 / 11.18	.320 / 8.13	.025 / 0.64		86970-6	86970-8

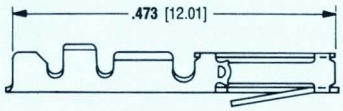
Contacts (Cont'd)

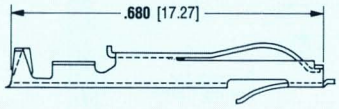
Dimensioning:
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

Round Wire Contacts

(Not for use in Daisy Chain Style Housings)
Material: Phosphor Bronze



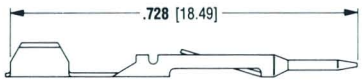


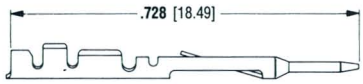
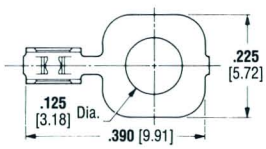
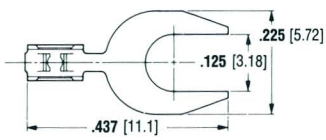


Type of Contact	Wire Range AWG	Wire Range [mm²]	Ins. Dia. Range	Plating†	Strip Form Part No. Standard Applicator	Strip Form Part No. Miniature Applicator	Loose Piece Part No.
PIN	24-22	0.2-0.4	.040-.056 / 1.02-1.42	B	1-86557-0	86557-4	86561-4
				A	1-86557-1	86557-6	86561-6
				C	1-86557-2	86557-7	86561-7
				E	1-86557-5	1-86557-4	86561-9
	30-28	0.05-0.09	.025-.048 / 0.64-1.22	A	88048-6	88048-4	88048-5
				E	88048-7	88048-2	88048-3
RECEPTACLE	24-20	0.2-0.4	.040-.056 / 1.02-1.42	A	1-86566-0	86566-2	86571-2
				B	1-86566-1	86566-4	86571-4
				C	1-86566-2	86566-6	86571-6
	30-28	0.05-0.09	.025-.048 / 0.64-1.22	A	1-88017-0	88017-2	88017-6
				B	1-88017-1	88017-3	88017-7
				C	1-88017-2	88017-4	88017-8
EDGE CONNECTOR CONTACT	28-24	0.08-0.2	.035-.055 / 0.89-1.4	G	583616-6	583616-2	583616-4
				D	583616-7	583616-3	583616-5
HIGH PRESSURE RECEPTACLE	24-22	0.2-0.4	.040-.056 / 1.02-1.42	E	88067-3	88067-2	88067-4

Special Contacts

Material: Phosphor Bronze

	Plating†	Strip Form Part No.	Loose Piece Part No.
 Flat Cable Contact Pin (Consult AMP Incorporated for U.L. Rating.)	H	86804-2	—
 Flat Conductor Cable Splice	H	—	86771-1
 Flat Conductor Cable-to-Round Wire Splice (26-22 AWG [0.2-0.4 mm²], Insulation Range .035-.060 [0.89-1.52])	H	—	86774-1
 NAFI Flat Conductor Cable Pin	C	86598-3	86598-4

	Plating†	Strip Form Part No. Standard Applicator	Loose Piece Part No.
 NAFI Wire Pin For 24-22 AWG [0.2-0.4 mm²] Wire Size	C	86599-2	86599-3
 Ring Tongue Terminal**	E	—	86638-1
 Spade Tongue Terminal**	E	—	86640-1

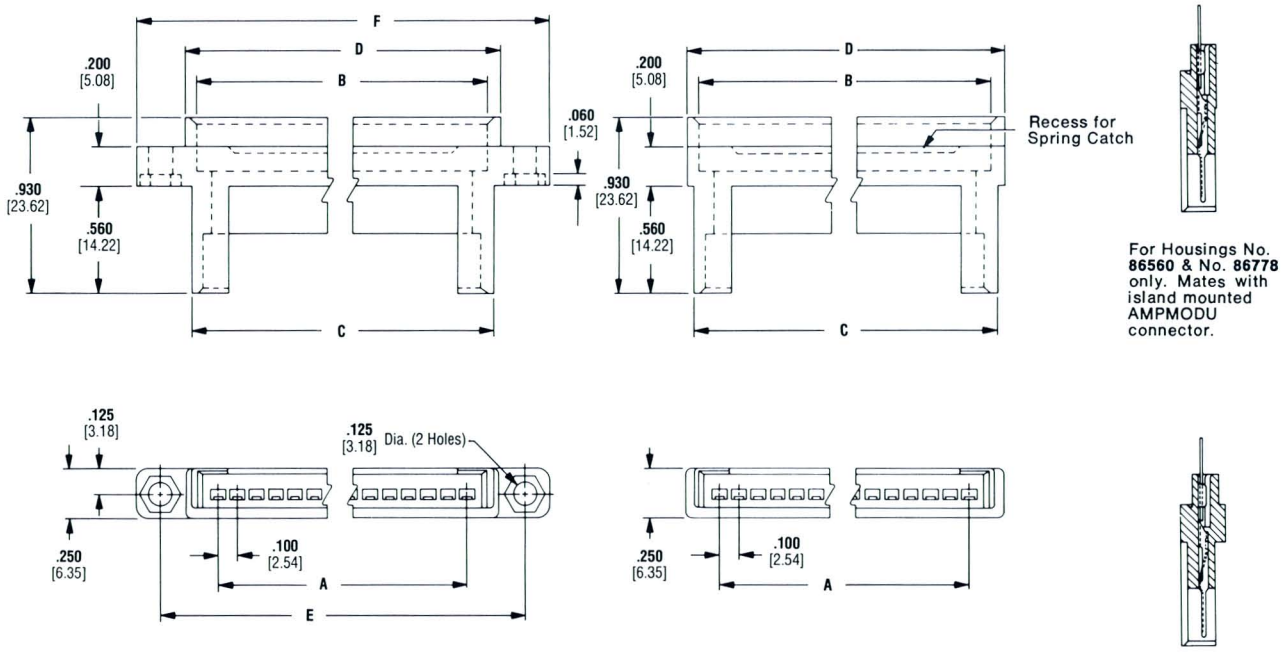
**These contacts to be used on minimum center to center spacing of .275 [6.99].

†PLATING CODE .000030 [0.00076] NICKEL STANDARD UNDERPLATE FOR ALL CONTACTS	
Code	**Plating**
A	.000015 [0.00038] gold on contact area — Gold flash on remainder of contact
B	.000030 [0.00076] gold on contact area — Gold flash on remainder of contact
C	.000050 [0.00127] gold on contact area — Gold flash on remainder of contact
D	.000015 [0.00038] gold on contact area — Nickel plating on remainder of contact
E	Bright tin plating
F	.000030 [0.00076] gold overall
G	.000030 [0.00076] gold on contact area — Nickel plating on remainder of contact
H	.000015 [0.00038] gold overall

Single Row
Pin Housings

Dimensioning:

1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**



With Mounting Ears **Without Mounting Ears**

Housing Material: Black Glass-Filled Nylon

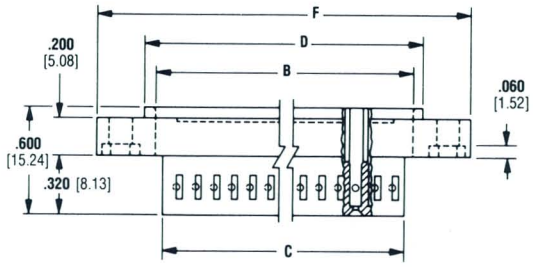
No. of Positions	Dimensions						Housing for Single Cable or Round Wire with Mounting Ears	Housing for Double (Daisy Chain) Cable with Mounting Ears	Housing for Single Cable or Round Wire without Mounting Ears	Housing for Double (Daisy Chain) Cable without Mounting Ears	Extraction Tool**
	A	B	C	D	E	F					
9	.800 20.32	1.026 26.06	1.080 27.43	1.150 29.21	1.410 35.81	1.660 42.16	86562-3	86777-1	86555-2	86776-1	91047-1
12*	1.100 27.94	1.326 33.68	1.380 35.05	1.450 36.83	—	—	—	—	86560-2	86778-1	1-91047-4
18	1.700 43.18	1.926 48.92	1.980 50.29	2.050 52.07	2.310 58.67	2.560 65.02	86562-9	86777-9	86555-5	86776-9	1-91047-6
19*	1.800 45.72	2.026 51.46	2.080 52.83	2.150 54.61	—	—	—	—	86560-1	86778-3	91047-2
19	1.800 45.72	2.026 51.46	2.080 52.83	2.150 54.61	2.410 61.21	2.660 67.56	86562-4	86777-3	86555-1	86776-3	91047-2
29	2.800 71.12	3.026 76.86	3.080 78.23	3.150 80.01	3.410 86.61	3.660 92.96	86562-2	86777-5	86555-3	86776-5	91047-3
33	3.200 81.28	3.426 87.02	3.480 88.39	3.550 90.17	3.810 96.77	4.060 103.12	86562-1	86777-7	86555-4	86776-7	91047-4

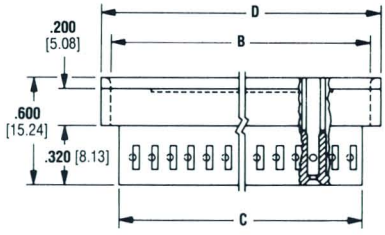
*Housings to mate with island mounted AMPMODU Connectors
Extraction Tool **Part No. 91092-1 for Round Wire Contact

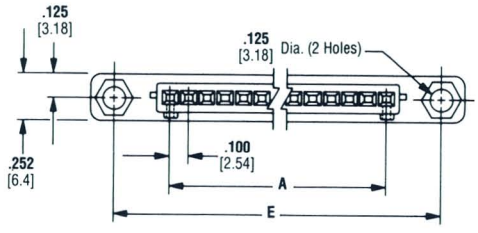
Single Row
Receptacle Housings

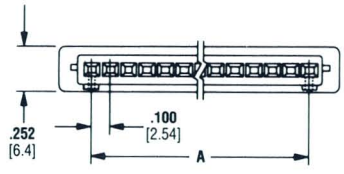
Dimensioning:

1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**









With Mounting Ears

Without Mounting Ears

Keying Plug for
Receptacle Housing
Material: Nylon
Part No. 86286-1

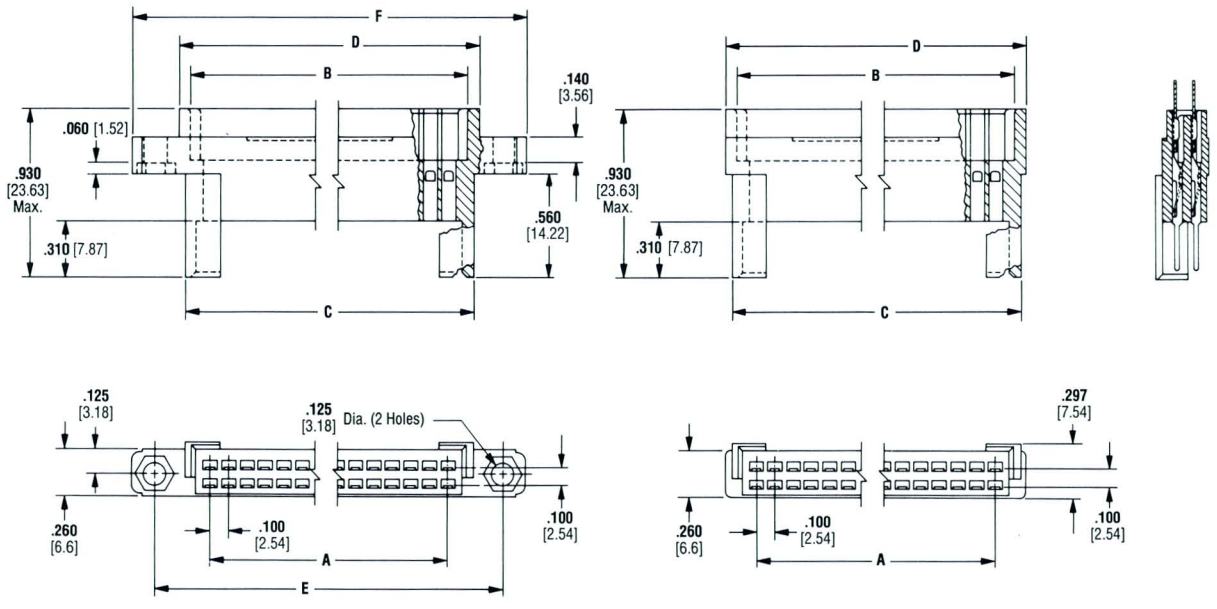
Housing Material: Black Glass-Filled Nylon

No. of Positions	Dimensions						Housing for Single Cable or Round Wire with Mounting Ears	Housing for Double (Daisy Chain) Cable with Mounting Ears	Housing for Single Cable or Round Wire without Mounting Ears	Housing for Double (Daisy Chain) Cable without Mounting Ears	Extraction Tool**
	A	B	C	D	E	F					
9	.800 20.32	1.034 26.26	.940 23.88	1.150 29.21	1.410 35.81	1.660 42.16	86563-1	86779-1	86572-1	86780-1	91048-1
18	1.700 43.18	1.934 49.12	1.840 46.74	2.050 52.07	2.310 58.67	2.560 65.02	86563-9	86779-9	86572-6	86780-9	1-91048-4
19	1.800 45.72	2.034 51.66	1.940 49.28	2.150 54.61	2.410 61.21	2.660 67.56	86563-2	86779-3	86572-2	86780-3	91048-2
22	2.100 53.34	2.334 59.28	2.240 56.9	2.450 62.23	—	—	—	—	86572-5	—	91048-8
29	2.800 71.12	3.034 77.06	2.940 74.68	3.150 80.01	3.410 86.61	3.660 92.96	86563-3	86779-5	86572-3	86780-5	91048-3
33	3.200 81.28	3.434 87.22	3.340 84.84	3.550 90.17	3.810 96.77	4.060 103.12	86563-4	86779-7	86572-4	86780-7	91048-4

Extraction Tool **Part No. 91093-1 for Round Wire Contact

Double Row
Pin Housings

Dimensioning:
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**



With Mounting Ears **Without Mounting Ears**

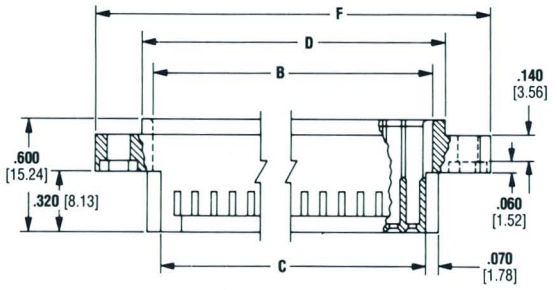
Housing Material: Black Glass-Filled Nylon

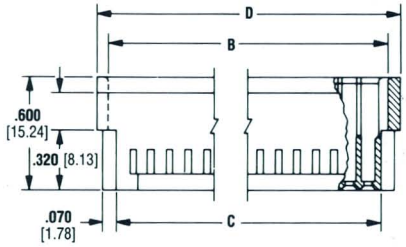
No. of Positions	Dimensions						Housing for Single Cable or Round Wire with Mounting Ears	Housing for Double (Daisy Chain) Cable with Mounting Ears	Housing for Single Cable or Round Wire without Mounting Ears	Housing for Double (Daisy Chain) Cable without Mounting Ears	Extraction Tool**
	A	B	C	D	E	F					
18	.800 20.32	1.034 26.26	1.080 27.43	1.150 29.21	1.410 35.81	1.660 42.16	1-86670-1	1-86781-1	1-86671-1	1-86782-1	91047-1
20	.900 22.86	1.134 28.8	1.180 29.97	1.250 31.75	1.510 38.35	1.760 44.7	86670-5	86781-5	86671-5	86782-5	1-91047-0
24	1.100 27.94	1.334 33.88	1.380 35.05	1.450 36.83	1.710 43.43	1.960 49.78	1-86670-7	1-86781-7	1-86671-7	1-86782-7	1-91047-4
26	1.200 30.48	1.434 36.42	1.480 37.59	1.550 39.37	1.810 45.97	2.060 52.32	1-86670-9	1-86781-9	1-86671-9	1-86782-9	1-91047-3
28	1.300 33.02	1.534 38.96	1.580 40.13	1.650 41.91	1.910 48.51	2.160 54.86	2-86670-1	2-86781-1	2-86671-1	2-86782-1	1-91047-5
36	1.700 43.18	1.934 49.12	1.980 50.29	2.050 52.07	2.310 58.67	2.560 65.02	2-86670-5	2-86781-5	2-86671-5	2-86782-5	1-91047-6
38	1.800 45.72	2.034 51.66	2.080 52.83	2.150 54.61	2.410 61.21	2.660 67.56	86670-3	86781-3	86671-3	86782-3	91047-2
40	1.900 48.26	2.134 54.2	2.180 55.37	2.250 57.15	2.510 63.75	2.760 70.1	86670-7	86781-7	86671-7	86782-7	91047-5
44	2.100 53.34	2.334 59.28	2.380 60.45	2.450 62.23	2.710 68.83	2.960 75.18	1-86670-5	1-86781-5	1-86671-5	1-86782-5	1-91047-1
58	2.800 71.12	3.034 77.06	3.080 78.23	3.150 80.01	3.410 86.61	3.660 92.96	1-86670-3	1-86781-3	1-86671-3	1-86782-3	91047-3
66	3.200 81.28	3.434 87.22	3.480 88.39	3.550 90.17	3.810 96.77	4.060 103.12	86670-9	86781-9	86671-9	86782-9	91047-4
70	3.400 86.36	3.634 92 3	3.680 93.47	3.750 95.25	4.010 101.85	4.260 108.2	86670-1	86781-1	86671-1	86782-1	1-91047-2

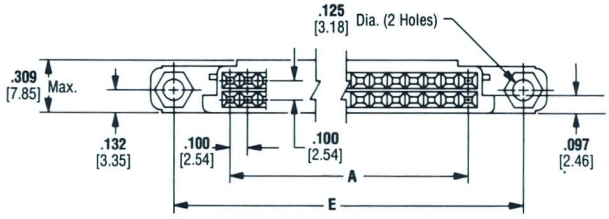
Note: Additional sizes of connectors can be made available. Consult AMP Incorporated.
Extraction Tool **Part No. 91092-1 for Round Wire Contact

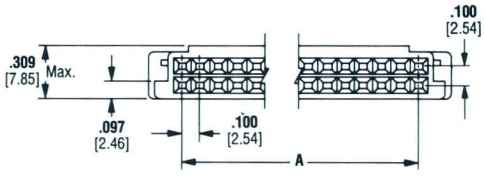
Double Row
Receptacle Housings

Dimensioning:
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**



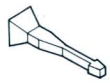






With Mounting Ears

Without Mounting Ears



Keying Plug for Receptacle Housing
Material: Nylon
Part No. 86286-1

Housing Material: Black Glass-Filled Nylon

No. of Positions	Dimensions						Housing for Single Cable or Round Wire with Mounting Ears	Housing for Double (Daisy Chain) Cable with Mounting Ears	Housing for Single Cable or Round Wire without Mounting Ears	Housing for Double (Daisy Chain) Cable without Mounting Ears	Extraction Tool**
	A	B	C	D	E	F					
18	.800 20.32	1.034 26.26	.940 23.88	1.150 29.21	1.410 35.81	1.660 42.16	1-86672-1	1-86783-1	1-86673-1	1-86784-1	91048-1
20	.900 22.86	1.134 28.8	1.040 26.42	1.250 31.75	1.510 38.35	1.760 44.7	86672-5	86783-5	86673-5	86784-5	91048-5
24	1.100 27.94	1.334 33.88	1.380 35.05	1.450 36.83	1.710 43.43	1.960 49.78	1-86672-7	1-86783-7	1-86673-7	1-86784-7	91048-8
26	1.200 30.48	1.434 36.42	1.480 37.59	1.550 39.37	1.810 45.97	2.060 52.32	1-86672-9	1-86783-9	1-86673-9	1-86784-9	91048-9
28	1.300 33.02	1.534 38.96	1.580 40.13	1.650 41.91	1.910 48.51	2.160 54.86	2-86672-1	2-86783-1	2-86673-1	2-86784-1	1-91048-0
36	1.700 43.18	1.934 49.12	1.840 46.74	2.050 52.07	2.310 58.67	2.560 65.02	2-86672-5	2-86783-5	2-86673-5	2-86784-5	91048-2
38	1.800 45.72	2.034 51.66	1.940 49.28	2.150 54.61	2.410 61.21	2.660 67.56	86672-3	86783-3	86673-3	86784-3	91048-2
40	1.900 48.26	2.134 54.2	2.040 51.82	2.250 57.15	2.510 63.75	2.760 70.1	86672-7	86783-7	86673-7	86784-7	91048-6
44	2.100 53.34	2.334 59.28	2.380 60.45	2.450 62.23	2.710 68.83	2.960 75.18	1-86672-5	1-86783-5	1-86673-5	1-86784-5	1-91048-1
58	2.800 71.12	3.034 77.06	2.940 74.68	3.150 80.01	3.410 86.61	3.660 92.96	1-86672-3	1-86783-3	1-86673-3	1-86784-3	91048-3
66	3.200 81.28	3.434 87.22	3.340 84.84	3.550 90.17	3.810 96.77	4.060 103.12	86672-9	86783-9	86673-9	86784-9	91048-4
70	3.400 86.36	3.634 92.3	3.540 89.92	3.750 95.25	4.010 101.85	4.260 108.2	86672-1	86783-1	86673-1	86784-1	91048-7

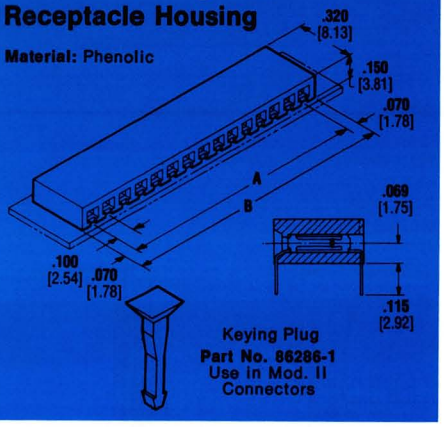
Note: Additional sizes of connectors can be made available. Consult AMP Incorporated.
Extraction Tool **Part No. 91093-1 for Round Wire Contact

Receptacle Housings (Cont'd)

Dimensioning:
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Charts contain dimensions in inches over millimetres.**

AMPMODU Single Row Receptacle Housing

Material: Phenolic



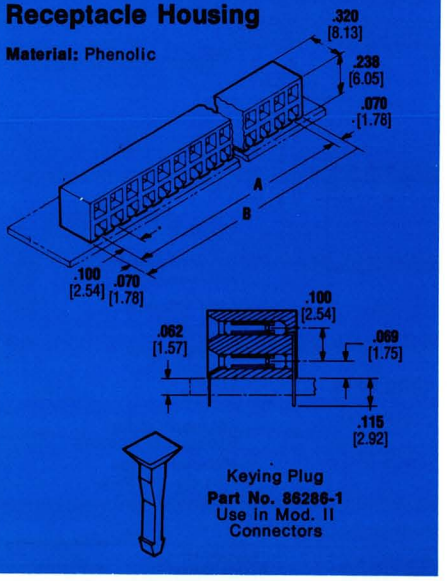
AMPMODU MOD. II RECEPTACLE CONNECTORS

No. of Positions	Dimensions A	Dimensions B	Part No.
9	.800 / 20.32	.940 / 23.88	5-86105-7
12	1.100 / 27.94	1.240 / 31.5	86105-3
18	1.700 / 43.18	1.840 / 46.74	86105-9
19	1.800 / 45.72	1.940 / 49.28	1-86105-0
29	2.800 / 71.12	2.940 / 74.68	2-86105-0
33	3.200 / 81.28	3.340 / 84.84	2-86105-0

Above housings are loaded with receptacle contacts and will mate with single row FFC pin housings.

AMPMODU Double Row Receptacle Housing

Material: Phenolic

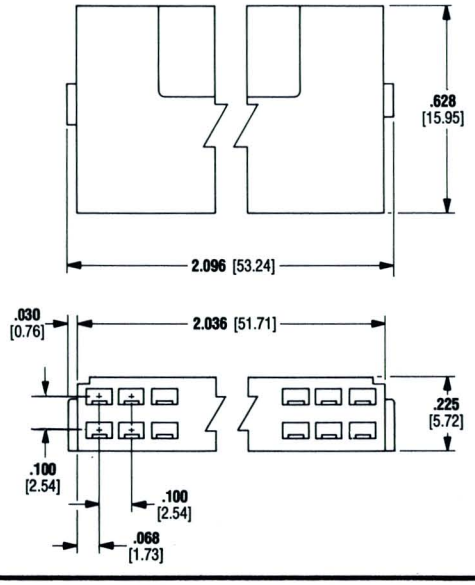


No. of Positions	Dimensions A	Dimensions B	Part No.
18	.800 / 20.32	.940 / 23.88	86063-5
20	.900 / 22.86	1.040 / 26.42	86063-6
24	1.100 / 27.94	1.240 / 31.5	86063-8
26	1.200 / 30.48	1.340 / 34.04	86063-9
28	1.300 / 33.02	1.440 / 36.58	1-86063-0
36	1.700 / 43.18	1.840 / 46.74	1-86063-4
38	1.800 / 45.72	1.940 / 49.28	1-86063-5
40	1.900 / 48.26	2.040 / 51.82	1-86063-6
44	2.100 / 53.34	2.240 / 56.9	1-86063-8
58	2.800 / 71.12	2.940 / 74.68	2-86063-5
66	3.200 / 81.28	3.340 / 84.84	2-86063-9
70	3.400 / 86.36	3.540 / 89.92	3-86063-1

Above housings are loaded with receptacle contacts and will mate with double row FFC pin housings.

NAFI Housing

Material: Diallyl Phthalate



This special housing is designed to accept pin **Nos. 86598** or **86599** and mate with the NAFI receptacle module.

40 Position
(Double Row — 20 Contacts per Row)

Part No. 86597-3

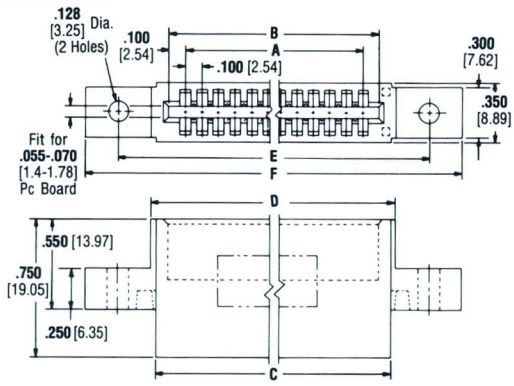
Extraction Tool Part No. 91047-5

Dimensioning:

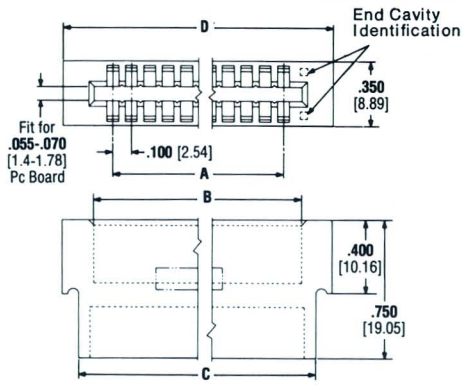
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

One-Piece Printed Circuit Edge Connectors

Material: Black Glass-Filled Nylon



With Mounting Ears



Without Mounting Ears

No. of Positions	Dimensions A	B*	C	D	E	F	Housing for Single Cable or Round Wire with Mounting Ears	Housing for Double (Daisy Chain) Cable with Mounting Ears	Housing for Single Cable or Round Wire without Mounting Ears	Housing for Double (Daisy Chain) Cable without Mounting Ears	End Cavity Identification	Extraction Tool**
9	.800 20.32	1.000 25.4	1.154 29.31	1.200 30.48	1.600 40.64	2.000 50.8	86743-9	88036-9	—	—	1, 9 and A, K	91089-1
				1.334 33.88	—	—	—	—	86792-1	88037-1		
10	.900 22.86	1.100 27.94	1.254 31.85	1.300 33.02	1.700 43.18	2.100 53.34	86743-1	88036-1	—	—	1, 10 and A, L	91089-6
				1.434 36.42	—	—	—	—	86792-3	88037-3		
15	1.400 35.56	1.600 40.64	1.754 44.55	1.800 45.72	2.200 55.88	2.600 66.04	86743-3	88036-3	—	—	1, 15 and A, S	91089-7
				1.934 49.12	—	—	—	—	86792-5	88037-5		
17	1.600 40.64	1.800 45.72	1.954 49.63	2.000 50.8	2.400 60.96	2.800 71.12	1-86743-9	1-88036-9	—	—	1, 17 and A, U	91089-2
				2.134 54.2	—	—	—	—	1-86792-9	1-88037-9		
19	1.800 45.72	2.000 50.8	2.154 54.71	2.200 55.88	2.600 66.04	3.000 76.2	86743-5	88036-5	—	—	1, 19 and A, W	91089-8
				2.334 59.28	—	—	—	—	86792-7	88037-7		
20	1.900 48.26	2.100 53.34	2.254 57.25	2.300 58.42	2.700 68.58	3.100 78.74	1-86743-5	1-88036-5	—	—	1, 20 and A, X	91089-3
				2.434 61.82	—	—	—	—	1-86792-5	1-88037-5		
21	2.000 50.8	2.200 55.88	2.354 59.79	2.400 60.96	2.800 71.12	3.200 81.28	2-86743-1	2-88036-1	—	—	1, 21 and A, Y	91089-4
				2.534 64.36	—	—	—	—	2-86792-1	2-88037-1		
22	2.100 53.34	2.300 58.42	2.454 62.33	2.500 63.5	2.900 73.66	3.300 83.82	1-86743-7	1-88036-7	—	—	1, 22 and A, Z	91089-5
				2.634 66.9	—	—	—	—	1-86792-7	1-88037-7		
25	2.400 60.96	2.600 66.04	2.754 69.95	2.800 71.12	3.200 81.82	3.600 91.44	2-86743-3	2-88036-3	—	—	1, 25 and A, c	1-91089-2
				2.934 74.52	—	—	—	—	2-86792-3	2-88037-3		
28	2.700 68.58	2.900 73.66	3.054 77.57	3.100 78.74	3.500 88.9	3.900 99.06	1-86743-3	1-88036-3	—	—	1, 28 and A, f	1-91089-1
				3.234 82.14	—	—	—	—	1-86792-3	1-88037-3		
29	2.800 71.12	3.000 76.2	3.154 80.11	3.200 81.82	3.600 91.44	4.000 101.6	1-86743-1	1-88036-1	—	—	1, 29 and A, h	1-91089-0
				3.334 84.68	—	—	—	—	86792-9	88037-9		
33	3.200 81.28	3.400 86.36	3.554 90.27	3.600 91.44	4.000 101.6	4.400 111.76	86743-7	88036-7	—	—	1, 33 and A, m	91089-9
				3.734 94.84	—	—	—	—	1-86792-1	1-88037-1		
35	3.500 88.9	3.600 91.44	3.754 95.35	3.800 96.52	4.200 106.68	4.600 116.84	2-86743-5	2-88036-5	—	—	1, 35 and A, P	1-91089-3
				3.934 99.92	—	—	—	—	2-86792-5	2-88037-5		

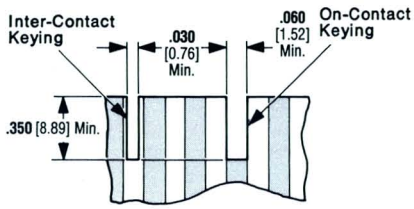
Note: Card slot depth — .345 [8.76]
*Actual board width should be .013 [0.33] less than card slot dimension listed in chart.
Extraction Tool **Part No. 91073-2 for Round Wire Contact

Dimensioning:

1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

Inter-Contact Keying Plug

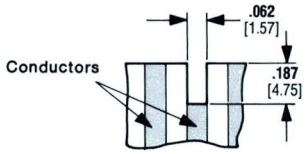
Material: Nylon, Natural Color
Part No. 583274-1



Board Slot Dimension

On-Contact Keying Plug

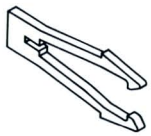
Material: Nylon
Part No. 583764-1

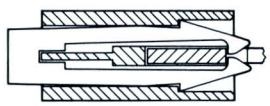


Cable Cut-Out Dimension

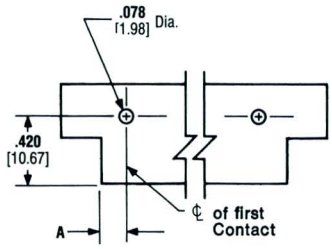
(required when On-Contact Keying Plug is used)

Locking Key (for use with crimp, snap-in Twin Leaf Housings)





Material: Nylon
Part No. 530213-1



℄	A
.100 2.54	.100 2.54
.125 3.18	.125 3.18
.156 3.96	.160 4.06

Pc Board Layout for Locking Key

Retaining Spring

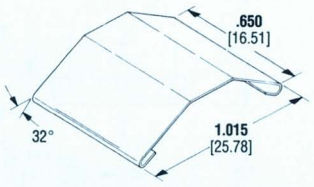
Note: Retaining springs are used on opposite side of board slot for single-sided pc board applications. Use 1 (one) spring per 6 contacts, i.e. in 50-position housing, use 8 springs; 40-position, 6 springs; 30-position, 5 springs; etc.

Material: Beryllium Copper
Part No. 583691-2 (unplated)
Part No. 583691-3 (gold over nickel finish)

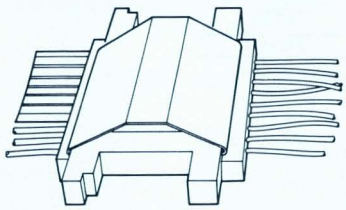
Dimensioning:

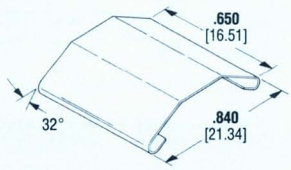
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

Spring Catches



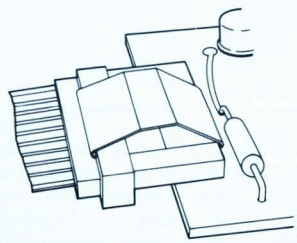
Part No. 86694-7
for FFC to FFC Housings





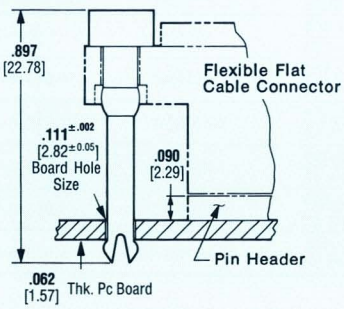
Part No. 86694-8 for FFC to
AMPMODU Mod. II Connector Housing

Finish: Non-Conductive Enamel — **Color:** Blue



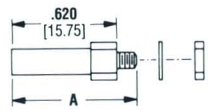
Mounting Hardware

Material: Nylon, Natural Color
Part No. 88144-1

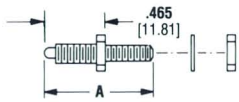


Jackscrews

FIXED

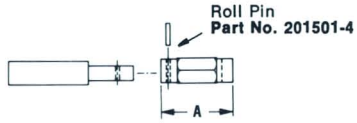


Female

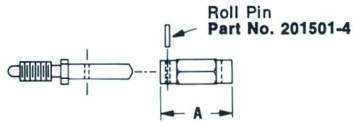


Male

SHORT-SHORT TURNABLE



Female



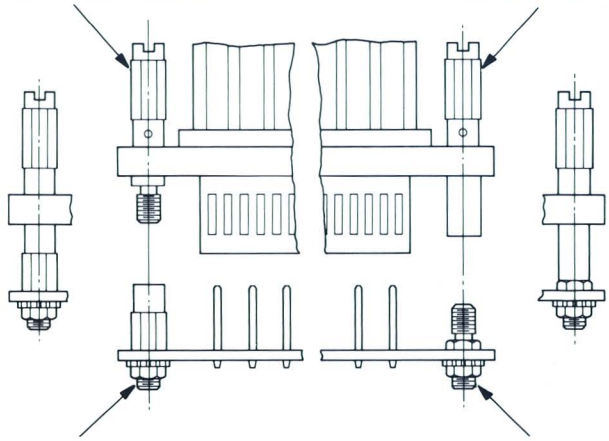
Male

Suitable for all pin and receptacle housings with mounting ears, except the FFC edge connector.

Type	Material	Fixed		Short-Short Turnable	
		A	Part No.	A	Part No.
Male	Stainless Steel	.815 / 20.7	200874-1	.562 / 14.27	87185-1
Male	Zinc Plated Steel	.815 / 20.7	200874-2	.562 / 14.27	201388-2
Female	Zinc Plated Steel	.972 / 24.69	86582-1	.562 / 14.27	86581-1
Female	Stainless Steel	1.095 / 27.81	86602-1	.562 / 14.27	86603-1

Turnable Male Jackscrew **Part No. 86922-1**

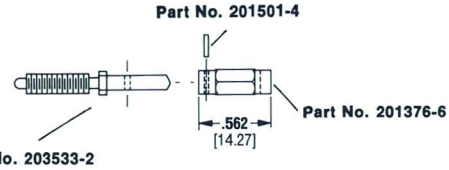
Turnable Female Jackscrew **Part No. 86924-1**



Fixed Female Jackscrew **Part No. 86923-1**

Fixed Male Jackscrew **Part No. 86921-1**

EXTRA LONG TURNTABLE MALE
(used with 6-32 clinch nut —
Not supplied by AMP)



Extra Long Turnable Male Jackscrew Kit No. 203535-2

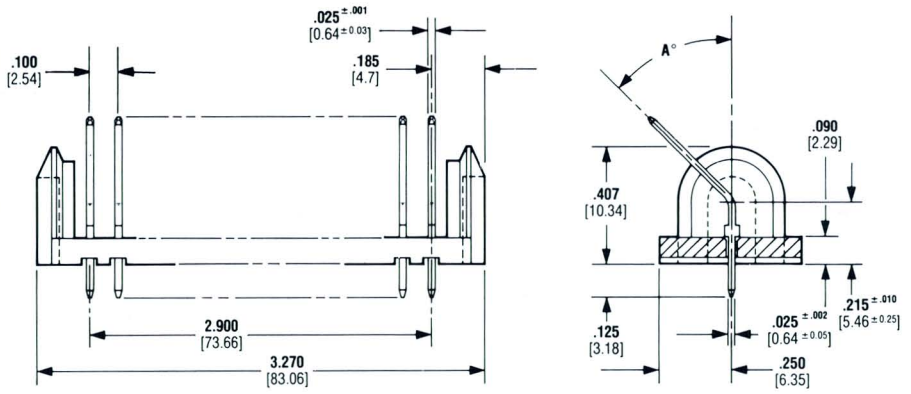
To be used with single or double row receptacle housing when mated to .025 [0.64] square posts in panel or printed circuit board. Tip to be screwed into 6-32 nut (clinch type) which is mounted in panel or printed circuit board.

Flexible Flat Cable Contact Housings

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

Any-Angle Post Housing

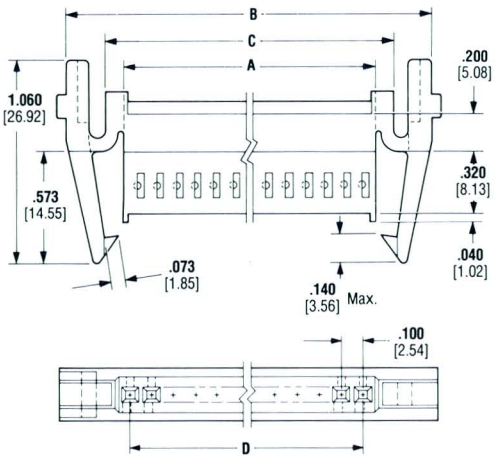
Mates with Housing **No. 2-86793-5**

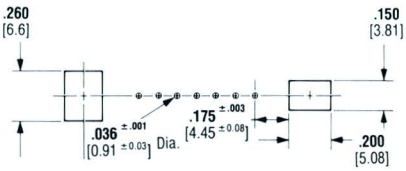


No. of Positions	A*	Part No.
30	90°	87241-1

*Consult AMP Incorporated for other degrees of angle.

Latch Style Housing (Cable-to-Board)





Recommended Pc Board Layout
(Pc Board Thickness — .062 [1.57] nominal)

No. of Positions	Dimensions A	B	C	D	Part No.	Extraction Tool
4	.443 / 11.25	1.050 / 26.67	.653 / 16.59	.300 / 7.62	2-86793-3	1-91048-8
9	.943 / 23.95	1.550 / 39.37	1.153 / 29.29	.800 / 20.32	86793-1	91048-1
11	1.143 / 29.03	1.750 / 44.45	1.353 / 34.37	1.000 / 25.4	1-86793-3	91048-3
12	1.243 / 31.57	1.850 / 46.99	1.453 / 36.91	1.100 / 27.94	86793-9	91048-8
14	1.443 / 36.65	2.050 / 52.07	1.653 / 41.99	1.300 / 33.02	1-86793-5	1-91048-0
17	1.743 / 44.27	2.350 / 59.69	1.953 / 49.61	1.600 / 40.64	1-86793-7	1-91048-5
18	1.843 / 46.81	2.450 / 62.23	2.053 / 52.15	1.700 / 43.18	86793-7	1-91048-4
19	1.943 / 49.35	2.550 / 64.77	2.153 / 54.69	1.800 / 45.72	86793-3	91048-2
22	2.243 / 56.97	2.850 / 72.39	2.453 / 62.31	2.100 / 53.34	86793-5	1-91048-1
23	2.343 / 59.51	2.950 / 74.93	2.553 / 64.85	2.200 / 55.88	1-86793-1	1-91048-2
24	2.443 / 62.05	3.050 / 77.47	2.653 / 67.39	2.300 / 58.42	1-86793-9	1-91048-6
26	2.643 / 67.13	3.250 / 82.55	2.853 / 72.47	2.500 / 63.5	2-86793-1	1-91048-7
30	3.043 / 77.29	3.650 / 92.71	3.253 / 82.63	2.900 / 73.66	2-86793-5	1-91048-9

Contact AMP Incorporated for U.L. rating.

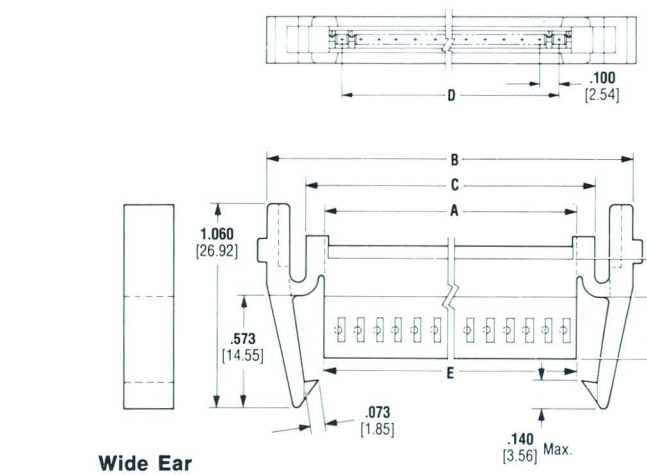
Flexible Flat Cable
Contact Housings (Cont'd)

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

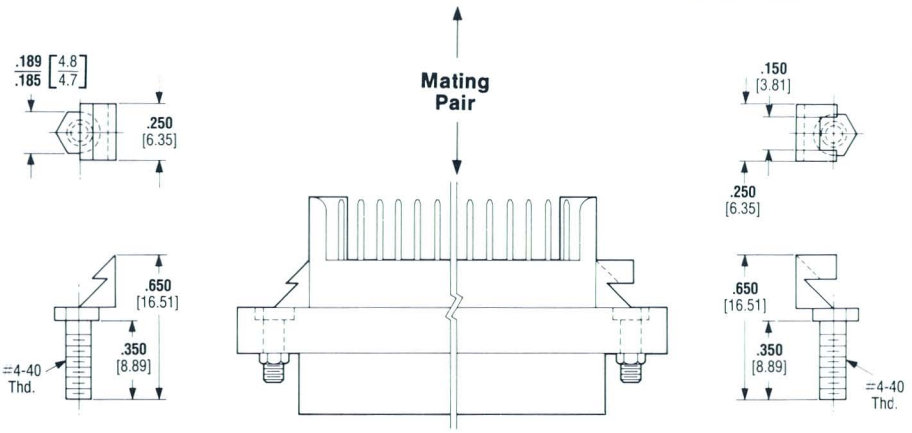
Latch Style Housings (Cable-to-Cable)

Socket Housings

No. of Positions	Dimensions A	B	C	D	E	Part No.	Extraction Tool
9	.950 / 24.13	1.550 / 39.37	1.160 / 29.46	.800 / 20.32	.940 / 23.88	86917-1	91048-1
19	1.950 / 49.53	2.550 / 64.77	2.160 / 54.86	1.800 / 45.72	1.940 / 49.28	86917-3	91048-2



Wide Ear **Narrow Ear**



Mating Pin Connectors, Series **86562** and **86777.**
(Refer to page 4.)

Locking Catch for Wide Ear

Material: Glass-Filled Nylon
Part No. 86918-1

Locking Catch for Narrow Ear

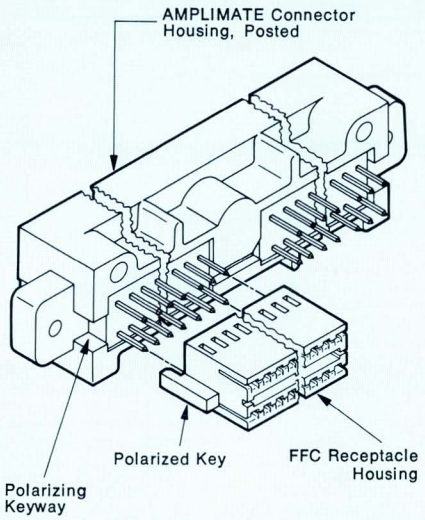
Material: Glass-Filled Nylon
Part No. 86918-2

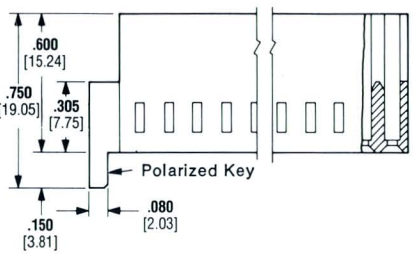
Special Flexible Flat Cable Receptacle Housings

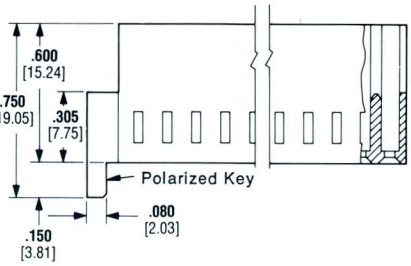
Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

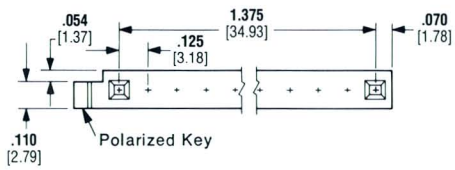
Receptacle Housings on .125 x .250 [3.18 x 6.35] Centers

(Mate with AMPLIMATE Connector, Series **206202-1**, Posted — shown below.)

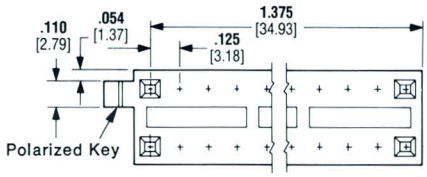




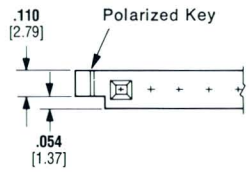




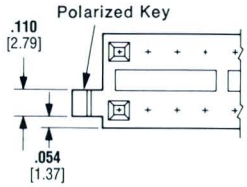
Type I
Part No. 86931-1



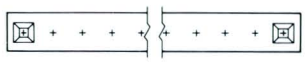
Type I
Part No. 86930-1



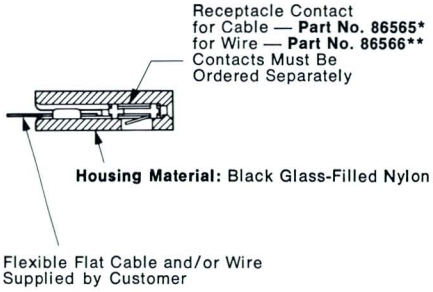
Type II
Part No. 86931-3

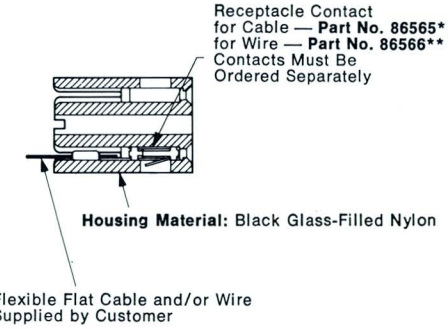


Type II
Part No. 86930-3



Type III
Part No. 86931-5





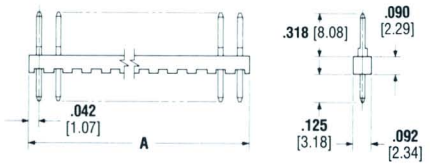
*Refer to page 2.
**Refer to page 3.

AMPMODU
Mod. II — Header Assemblies
.100 [2.54] Centerline Spacing

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

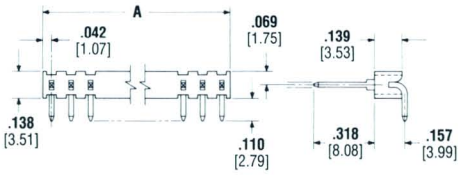
Material:
Housing — Black Glass-Filled Nylon
Contact — Phosphor Bronze, Gold over Nickel Plated

Single Row Straight Post Headers



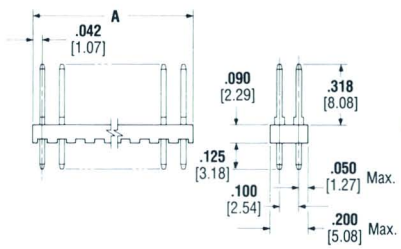
No. of Positions	A	Part No. Plating A†	Part No. Plating B†
9	.884 / 22.45	87220-9	87224-9
18	1.784 / 45.31	1-87220-8	1-87224-8
19	1.884 / 47.85	1-87220-9	1-87224-9
22	2.184 / 55.47	2-87220-2	2-87224-2
29	2.884 / 73.25	2-87220-9	2-87224-9
33	3.284 / 83.41	3-87220-3	3-87224-3

Single Row Right Angle Post Headers



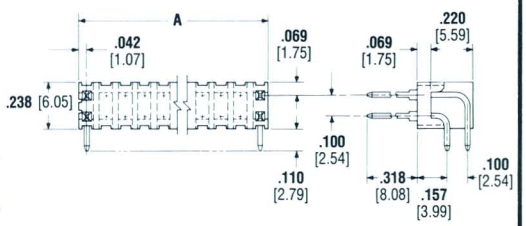
No. of Positions	A	Part No. Plating A†	Part No. Plating B†
9	.884 / 22.45	87232-9	87233-9
18	1.784 / 45.31	1-87232-8	1-87233-8
19	1.884 / 47.85	1-87232-9	1-87233-9
22	2.184 / 55.47	2-87232-2	2-87233-2
29	2.884 / 73.25	2-87232-9	2-87233-9
33	3.284 / 83.41	3-87232-3	3-87233-3

Double Row Straight Post Headers



No. of Positions	A	Part No. Plating A†	Part No. Plating B†
18	.884 / 22.45	87215-6	87227-9
20	.984 / 24.99	87215-7	1-87227-0
24	1.184 / 30.07	87215-8	1-87227-2
26	1.284 / 32.61	87215-9	1-87227-3
28	1.384 / 35.15	1-87215-4	1-87227-4
36	1.784 / 45.31	1-87215-8	1-87227-8
38	1.884 / 47.85	1-87215-9	1-87227-9
40	1.984 / 50.39	2-87215-0	2-87227-0
44	2.184 / 55.47	2-87215-2	2-87227-2
58	2.884 / 73.25	2-87215-9	2-87227-9
66	3.284 / 83.41	3-87215-3	3-87227-3
70	3.484 / 88.49	3-87215-5	3-87227-5

Double Row Right Angle Post Headers



No. of Positions	A	Part No. Plating A†	Part No. Plating B†
18	.884 / 22.45	86479-6	87230-9
20	.984 / 24.99	86479-1	1-87230-0
24	1.184 / 30.07	86479-7	1-87230-2
26	1.284 / 32.61	1-86479-0	1-87230-3
28	1.384 / 35.15	1-86479-8	1-87230-4
36	1.784 / 45.31	2-86479-2	1-87230-8
38	1.884 / 47.85	2-86479-3	1-87230-9
40	1.984 / 50.39	2-86479-4	2-87230-0
44	2.184 / 55.47	2-86479-6	2-87230-2
58	2.884 / 73.25	3-86479-3	2-87230-9
66	3.284 / 83.41	3-86479-7	3-87230-3
70	3.484 / 88.49	3-86479-9	3-87230-5

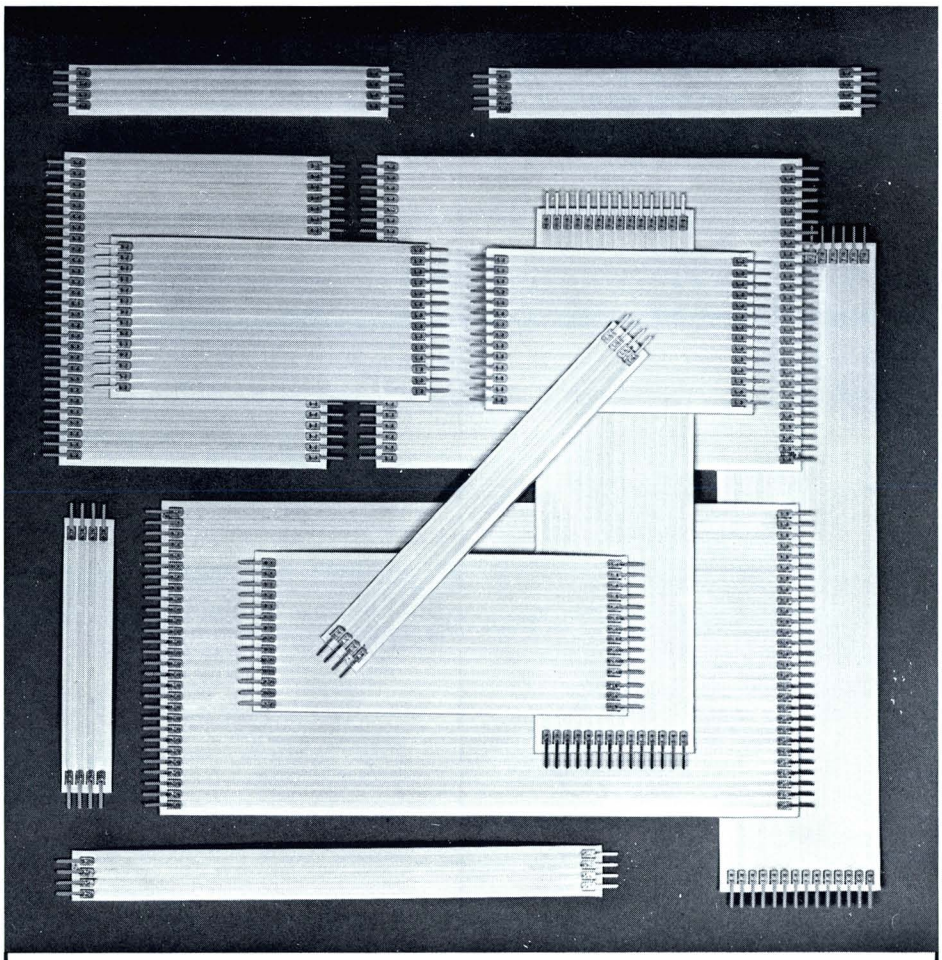
†Plating Code	
Code	Plating
A	.000030 [0.00076] gold over .000050 [0.00127] nickel
B	.000015 [0.00038] gold over .000050 [0.00127] nickel

Flexible Flat Cable Jumper Assemblies

The increasing use of flexible flat cable in electrical and electronic equipment such as business machines, industrial controls, communications systems and computers is reflected in the full line of flexible flat cable jumper assemblies made available by AMP for off-the-shelf delivery.

AMP jumper assemblies can be ordered in a wide variety of lengths, ranging from 2.5″ [63.5 mm] to 6″ [152.4 mm], and in widths that accommodate from 4 to 33 positions.

Cable assemblies are provided terminated to your specifications through AMP's unique insulation displacement technique which eliminates cable preparation, stripping and conductor plating. In this crimping process, contacts are centered over the conductor, and forced down to displace the insulation. Contact extensions of "U" channel design are then folded inward and back up into the insulation. These extensions displace the insulation, and the contact lances are forced down through the top insulation and against the conductor to create four points of contact and complete captivation of the conductor within the contact. The combination of redundancy and pressure is assurance of maximum conductivity and high resistance to vibration.



Contacts are flexible enough to conform to your particular application.

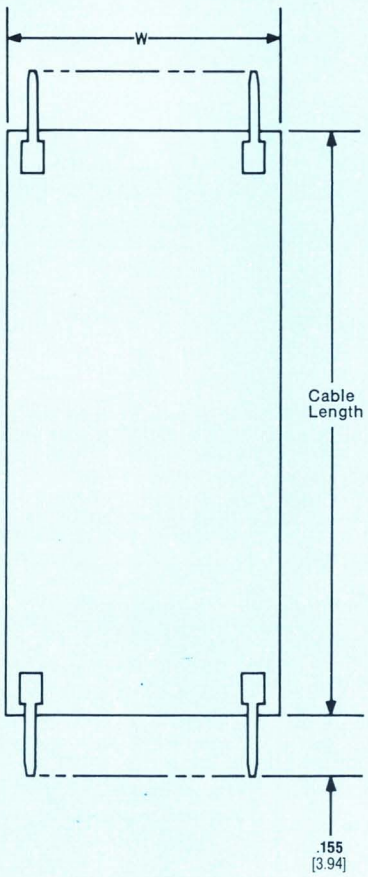
If contact configurations other than solder tabs are required, consult AMP Incorporated.

Cable Specifications	.100 [2.54] center-to-center system
Solder Tab Plating	bright tin
Current Rating	3 amp
Rated Temperature	105°C
High Potential	1,200 VAC RMS
Insulation Resistance	5,000 megohms min.
U.L. Listed	File No. E53799

Flexible Flat Cable
Jumper Assemblies (Cont'd)

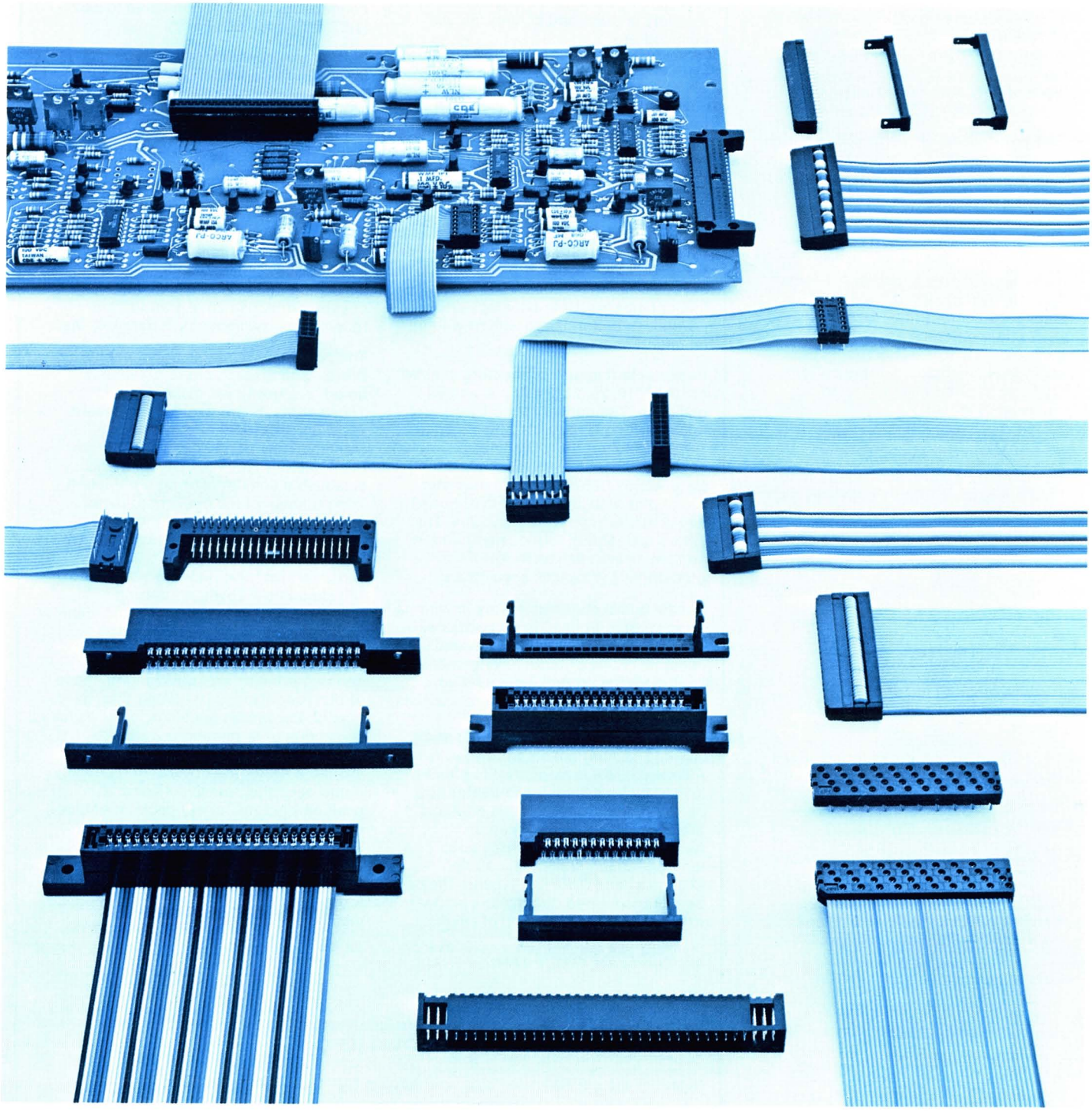
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.



No. of Positions	W	Cable Lengths and Part No.					
		2.5 [63.5] Part No.	3 [76.2] Part No.	3.5 [88.9] Part No.	4 [101.6] Part No.	5 [127] Part No.	6 [152.4] Part No.
4	.500 / 12.7	86942-3	86943-3	86944-3	86945-3	86946-3	86947-3
5	.600 / 15.24	86942-4	86943-4	86944-4	86945-4	86946-4	86947-4
6	.700 / 17.78	86942-5	86943-5	86944-5	86945-5	86946-5	86947-5
7	.800 / 20.32	86942-6	86943-6	86944-6	86945-6	86946-6	86947-6
8	.900 / 22.86	86942-7	86943-7	86944-7	86945-7	86946-7	86947-7
9	1.000 / 25.4	86942-8	86943-8	86944-8	86945-8	86946-8	86947-8
10	1.100 / 27.94	86942-9	86943-9	86944-9	86945-9	86946-9	86947-9
11	1.200 / 30.48	1-86942-0	1-86943-0	1-86944-0	1-86945-0	1-86946-0	1-86947-0
12	1.300 / 33.02	1-86942-1	1-86943-1	1-86944-1	1-86945-1	1-86946-1	1-86947-1
13	1.400 / 35.56	1-86942-2	1-86943-2	1-86944-2	1-86945-2	1-86946-2	1-86947-2
14	1.500 / 38.1	1-86942-3	1-86943-3	1-86944-3	1-86945-3	1-86946-3	1-86947-3
15	1.600 / 40.64	1-86942-4	1-86943-4	1-86944-4	1-86945-4	1-86946-4	1-86947-4
16	1.700 / 43.18	1-86942-5	1-86943-5	1-86944-5	1-86945-5	1-86946-5	1-86947-5
17	1.800 / 45.72	1-86942-6	1-86943-6	1-86944-6	1-86945-6	1-86946-6	1-86947-6
18	1.900 / 48.26	1-86942-7	1-86943-7	1-86944-7	1-86945-7	1-86946-7	1-86947-7
19	2.000 / 50.8	1-86942-8	1-86943-8	1-86944-8	1-86945-8	1-86946-8	1-86947-8
20	2.100 / 53.34	1-86942-9	1-86943-9	1-86944-9	1-86945-9	1-86946-9	1-86947-9
21	2.200 / 55.88	2-86942-0	2-86943-0	2-86944-0	2-86945-0	2-86946-0	2-86947-0
22	2.300 / 58.42	2-86942-1	2-86943-1	2-86944-1	2-86945-1	2-86946-1	2-86947-1
23	2.400 / 60.96	2-86942-2	2-86943-2	2-86944-2	2-86945-2	2-86946-2	2-86947-2
24	2.500 / 63.5	2-86942-3	2-86943-3	2-86944-3	2-86945-3	2-86946-3	2-86947-3
25	2.600 / 66.04	2-86942-4	2-86943-4	2-86944-4	2-86945-4	2-86946-4	2-86947-4
26	2.700 / 68.58	2-86942-5	2-86943-5	2-86944-5	2-86945-5	2-86946-5	2-86947-5
27	2.800 / 71.12	2-86942-6	2-86943-6	2-86944-6	2-86945-6	2-86946-6	2-86947-6
28	2.900 / 73.66	2-86942-7	2-86943-7	2-86944-7	2-86945-7	2-86946-7	2-86947-7
29	3.000 / 76.2	2-86942-8	2-86943-8	2-86944-8	2-86945-8	2-86946-8	2-86947-8
30	3.100 / 78.74	2-86942-9	2-86943-9	2-86944-9	2-86945-9	2-86946-9	2-86947-9
31	3.200 / 81.28	3-86942-0	3-86943-0	3-86944-0	3-86945-0	3-86946-0	3-86947-0
32	3.300 / 83.82	3-86942-1	3-86943-1	3-86944-1	3-86945-1	3-86946-1	3-86947-1
33	3.400 / 86.36	3-86942-2	3-86943-2	3-86944-2	3-86945-2	3-86946-2	3-86947-2

AMP Latch Connectors



Dimensioning
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Features

- No cable stripping—simultaneous termination of all conductors
- Terminates small gauge discrete wires (#28 AWG [0.08 mm²] stranded and #30 AWG [0.05 mm²] solid) as well as flat ribbon, woven ribbon and other types of flat cable with round conductors on .050″ [1.27 mm] centers.
- Self-registration of wires—compatibility of product and tooling designs eliminates registration problems
- Connectors packaged in kits
- Wide variety of connector sizes and configurations available:

  Paddle board plug connectors in sizes from 10 to 60 positions—four staggered contact rows provide .050″ [1.27 mm] centerline spacing of contacts (row-to-row), contact rows arranged in a choice of three patterns, "full row", "short end" or "special center";

  Plug (male) connectors in standard 14 & 16 position DIP configurations;

  Receptacle (female) connectors and right-angle pin header assemblies in sizes from 10 to 60 positions—dual contact rows on a .100″ [2.54 mm] grid;

  Card edge connectors in sizes from 20 to 50 positions—dual contact rows on .100″ [2.54 mm] centers
- Contacts accept all popular cable styles
- Positive latching of contacts and housing with cover eliminates cover warpage
- Easy visual inspection of terminations during assembly
- Electrical probing capability after assembly
- All plastic parts made of UL recognized, 94V-0 rated material
- AMP matched application tooling assures, fast, economical terminations

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

Introduction

The versatile AMP latch connector family provides instant, multiple terminations for flat cable with round conductors on .050″ [1.27 mm] centers, for flat ribbon cable, woven ribbon cable and conventional #28 AWG [0.08 mm²] stranded and #30 AWG [0.05 mm²] solid insulated wire. All cable and wire connections are performed simultaneously, without a need for pre-stripping the insulation.*

AMP latch connectors are available in a variety of sizes and configurations. Included are:

Card edge connectors in sizes of 20, 26, 30, 34, 40 and 50 positions. The connector housings are loaded with two rows of contacts on .100″ [2.54 mm] centers. The contacts are bifurcated for redundancy and have dual, independent cantilever springs to provide excellent contact pressure and board retention without the need for high insertion forces. A folded box design also prevents overstressing of the spring members. Card edge connectors are designed to accept .055″-070″ [1.4 mm-1.78 mm] thick pc boards. Both housings and covers can be furnished with or without mounting ears.

Receptacle (female) connectors in sizes of 10, 14, 16, 20, 26, 34, 40, 50 and 60 positions. The connector housings are loaded with two rows of contacts on a .100″ [2.54 mm] grid. The female contacts will mate with .025″ [0.64 mm] sq. posts or .025″ [0.64 mm] diameter round pins with .318″ [8.08 mm] (max.) and .240″ [6.1 mm] (min.) lengths. This allows mateability with posted headers and pin arrays such as those of the right-angle pin header assemblies.

Paddle board plug connectors in various sizes ranging from 10 to 60 positions. The connector housings are loaded with contacts in one of three arrangements—"full row", "short end", or "special center". Basically, each pattern consists of four rows of contacts on .200″ [5.08 mm] centers (within a row) and .100″ [2.54 mm] spacing between rows. Also, each row is staggered to effect a .050″ [1.27 mm] center-to-center spacing between contacts. The male contacts are bright tin plated and can be furnished in a choice of three post lengths—.080″ [2.03 mm], .100″ [2.54 mm] and .156″ [3.96 mm]. They can be either soldered directly to a pc board or simply plugged into one of several interconnection packaging devices for quick-disconnect interfacing.

Right-angle pin header assemblies in sizes of 10, 20, 26, 34, 40, 50 and 60 positions. The header housings are loaded with contacts in a dual row .100″ [2.54 mm] grid configuration. The .025″ [0.64 mm] diameter pins have selectively gold plated mating ends and tin plated tails for reliable soldering to pc boards. Pin header assemblies are designed to mate with receptable connectors, providing 90° cable-to-board connections of flat ribbon cable to .062″ [1.57 mm] thick pc boards.

Plug (male) connectors with contacts loaded in standard 14 and 16 position dual in-line package (DIP) configurations. The male contacts, identical to those of the paddle board plug connectors, are solderable for permanent interconnections to pc boards and pluggable for quick-disconnect interfacing using one of several interconnection packaging devices.

AMP supplies the connectors in conveniently packaged kits. In addition, all components—housing assemblies, covers, protective covers and strain reliefs—are available as separate items.

The connector contacts are phosphor bronze and, except where previously noted, are gold-over-nickel plated. These contacts are designed to assure excellent electrical and mechanical stability. They permit easy penetration of all popular types of insulation and establish a constant spring termination. Their unique folded design produces redundant points of contact for #28 AWG [0.08 mm²] stranded and #30 AWG [0.05 mm²] solid conductors. The contacts also have latching ears which will snap into a cover, equalizing pressure over all terminations and eliminating any possible cover warpage.

Other features of the AMP latch connector family are: plastic parts made of UL recognized, 94V-0 rated thermoplastic; low profile housings; easy visual inspection of terminations during assembly; electrical probing capability; available protective covers for receptacle (female) connectors and 14 and 16 position plug (male) connectors; choice of optional strain relief hardware for receptacle (female) connectors; inter-contact and on-contact keying for card edge connectors; and fast, economical terminations to wire or cable using matched application tooling.

**For solid wire specifications, request AMP Drawing No. 86900; for stranded wire specifications, request AMP Drawing Nos. 86901 and 87407.*

Electrical Characteristics

Contact Current Rating: 1 (one) ampere (continuous)
Operating Temperature Range: −55°C to +105°C

Note: Complete specification data is provided in AMP Specification No. 108-25005.

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

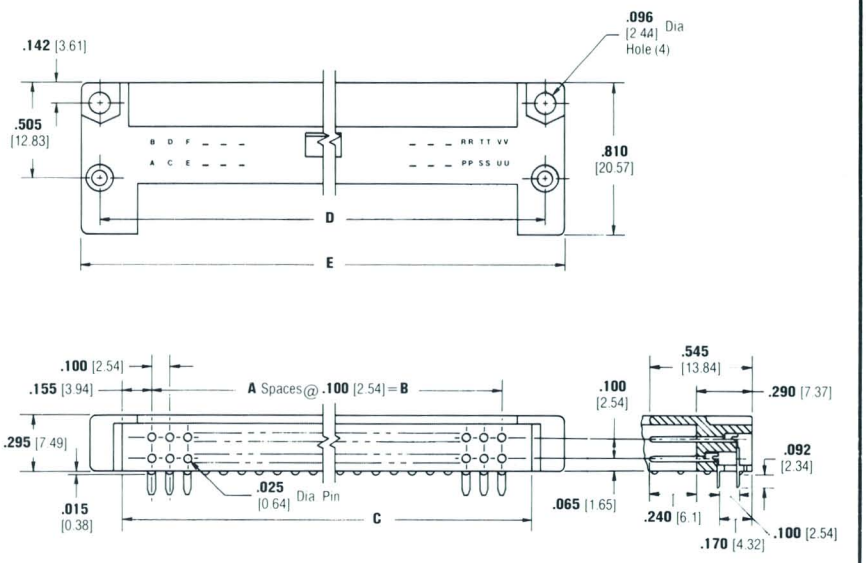
Right-Angle Pin Header Assembly Specifications

10, 20, 26, 34, 40, 50 & 60 Positions

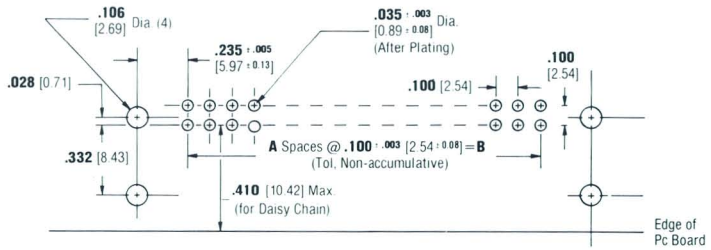
Materials and Finishes:

Housings—UL recognized, 94V-0 rated thermoplastic; Color, black

Contacts—Phosphor bronze with .000030" [0.00076 mm] (min.) gold over .000030"-.000070" [0.00076 mm-0.00178 mm] nickel plating on mating end and .000100"-.000200" [0.00254 mm-0.00508 mm] tin over .000030"-.000070" [0.00076 mm-0.00178 mm] nickel plating on solder tail



Housing Assembly (loaded with pin contacts)



Recommended Mounting Hole Pattern (for .062" [1.57 mm] thick pc boards)

No. of Positions	Dimensions					Pin Header Assembly Part No.
	A	B	C	D	E	
10	4	.400 10.16	.710 18.03	.870 22.1	1.080 27.64	87365-1
20	9	.900 22.86	1.210 30.73	1.370 34.8	1.580 40.13	87365-2
26	12	1.200 30.48	1.510 38.35	1.670 42.42	1.880 47.75	87365-3
34	16	1.600 40.64	1.910 48.51	2.070 52.58	2.280 57.91	87365-4
40	19	1.900 48.26	2.210 56.13	2.370 60.2	2.580 65.53	87365-5
50	24	2.400 60.96	2.710 68.83	2.870 72.9	3.080 78.23	87365-6
60	29	2.900 73.66	3.210 81.53	3.370 85.6	3.580 90.93	87365-7

Note: Right-angle pin header assemblies will mate with the correspondingly sized receptacle (female) connectors. Refer to pages 12-26 and 12-27.

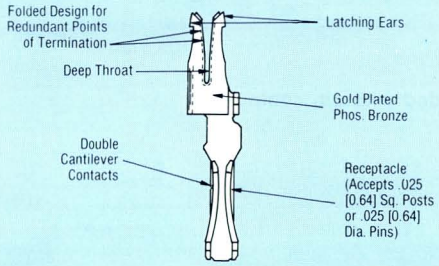
Receptacle Connector Specifications

10, 14, 16, 20, 26, 34, 40, 50 & 60 Positions

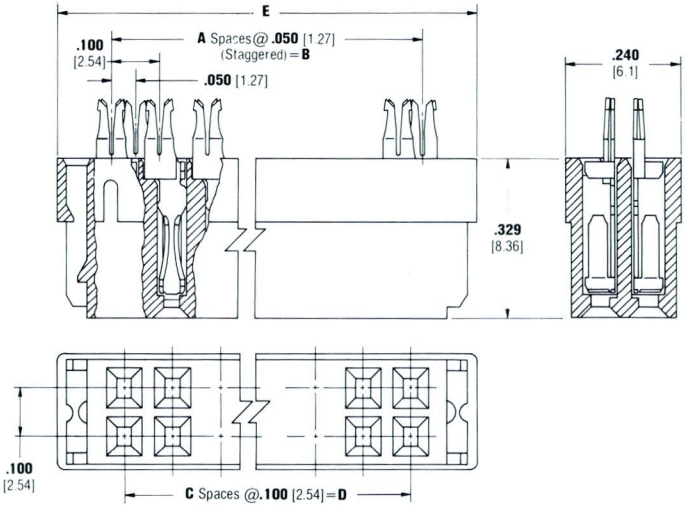
Materials and Finishes:

Housings, Covers & Strain Reliefs—UL recognized, 94V-0 rated thermoplastic; Color, black

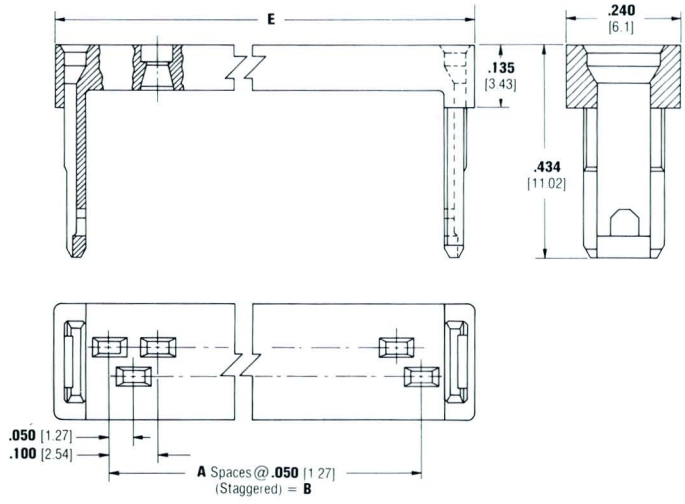
Contacts—Phosphor bronze with .000030″ [0.00076 mm] (min.) gold over .000030″ [0.00076 mm] (min.) nickel plating



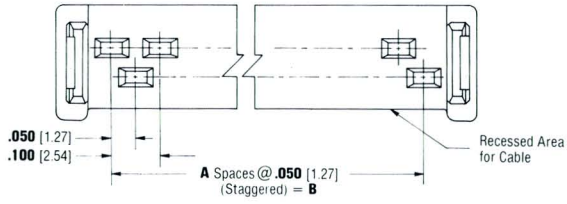
Receptacle Contact (female)



Housing Assembly (loaded with female contacts)



Cover (standard)



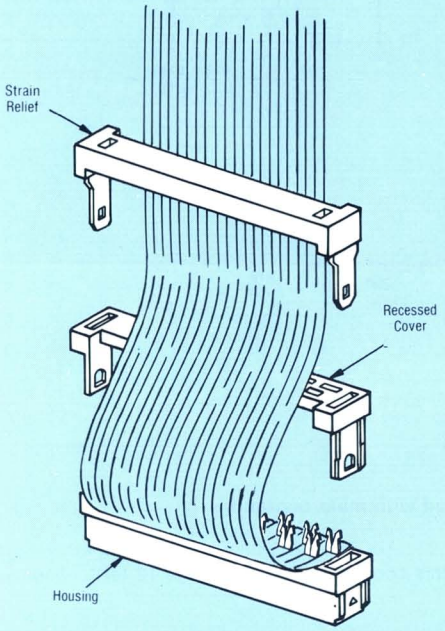
Cover (recessed)

Note: Recessed covers are required only with receptacle connectors using strain reliefs. See following page.

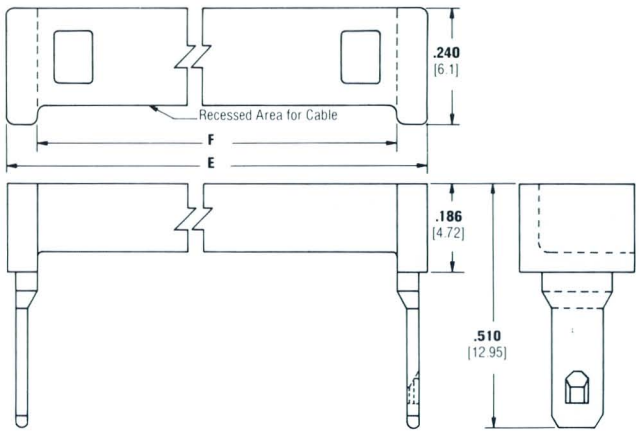
Dimensioning:
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Receptacle Connector Specifications (Cont'd)

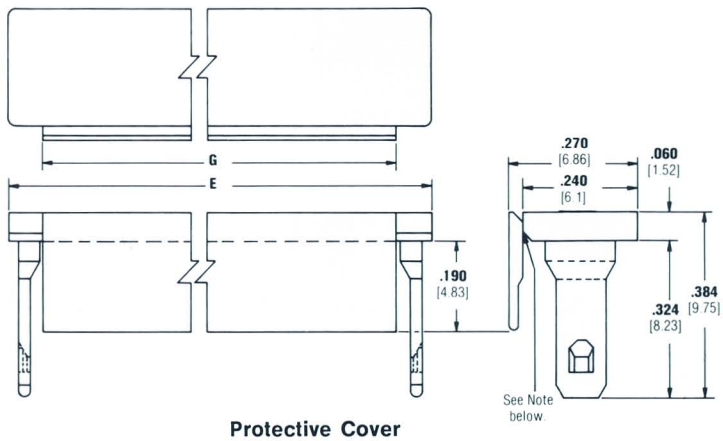
Recessed covers and strain reliefs are used to rout the cable from the rear of the connector and permit the cable to remain within the outside connector dimensions. This feature allows connectors to be stacked on close centers, or plugged into protected (hooded) headers.



For cable specifications, request AMP Drawing Nos. 86900, 86901 and 87407.



Strain Relief



Protective Cover

Note: The protective lip which covers exposed end of flat cable may be broken (snapped) off here for applications where lip is not required.

No. of Positions	Dimensions							Housing Assembly Part No.	Cover Part No.	Strain Relief Part No.	Protective Cover Part No.	Connector Kit Part No.**
	A	B	C	D	E	F	G					
10	9	.450 11.43	4	.400 10.16	.680 17.27	.551 14	.540 13.72	86872-5	86873-5	—	—	**86981-1**
									86972-5*	86874-5	—	**86981-2**
									86873-5	—	86885-5	**86981-3**
14	13	.650 16.51	6	.600 15.24	.880 22.35	.751 19.08	.740 18.8	86872-9	86873-9	—	—	**88041-1**
									86972-9*	86874-9	—	**88041-2**
									86873-9	—	86885-9	**88041-3**
16	15	.750 19.05	7	.700 17.78	.980 24.89	.851 21.62	.840 21.34	86872-8	86873-8	—	—	**88011-1**
									86972-8*	86874-8	—	**88011-2**
									86873-8	—	86885-8	**88011-3**
20	19	.950 24.13	9	.900 22.86	1.180 29.97	1.051 26.7	1.040 26.42	86872-2	86873-2	—	—	**86904-1**
									86972-2*	86874-2	—	**86904-2**
									86873-2	—	86885-2	**86904-3**
26	25	1.250 31.75	12	1.200 30.48	1.480 37.59	1.351 34.32	1.340 34.04	86872-3	86873-3	—	—	**86905-1**
									86972-3*	86874-3	—	**86905-2**
									86873-3	—	86885-3	**86905-3**
34	33	1.650 41.91	16	1.600 40.64	1.880 47.75	1.751 44.48	1.740 44.2	86872-6	86873-6	—	—	**86987-1**
									86972-6*	86874-6	—	**86987-2**
									86873-6	—	86885-6	**86987-3**
40	39	1.950 49.53	19	1.900 48.26	2.180 55.37	2.051 52.1	2.040 51.82	86872-1	86873-1	—	—	**86896-1**
									86972-1*	86874-1	—	**86896-2**
									86873-1	—	86885-1	**86896-3**
50	49	2.450 62.23	24	2.400 60.96	2.680 68.07	2.551 64.8	2.540 64.52	86872-4	86873-4	—	—	**86916-1**
									86972-4*	86874-4	—	**86916-2**
									86873-4	—	86885-4	**86916-3**
60	59	2.950 74.93	29	2.900 73.66	3.180 80.77	3.051 77.5	3.040 77.22	86872-7	86873-7	—	—	**88012-1**
									86972-7*	86874-7	—	**88012-2**
									86873-7	—	86885-7	**88012-3**

*These covers are recessed and are packaged only in those kits that include a strain relief.
**Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.

Dimensioning
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

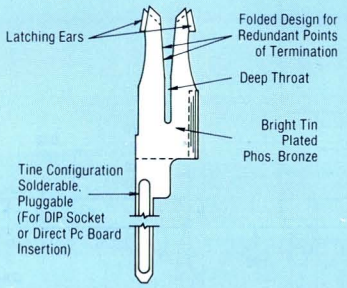
Paddle Board Plug Connector Specifications

"Full Row" Contact Pattern

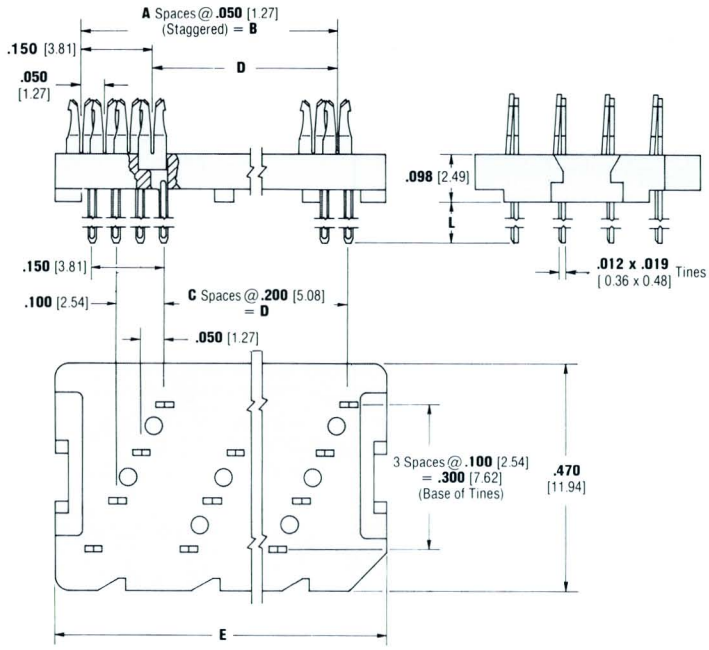
Materials and Finishes:

Housings & Covers—UL recognized, 94V-0 rated thermoplastic; Color, black

Contacts—Phosphor bronze with .000100" [0.00254 mm] (min.) bright tin over .000030" [0.00076 mm] (min.) nickel plating

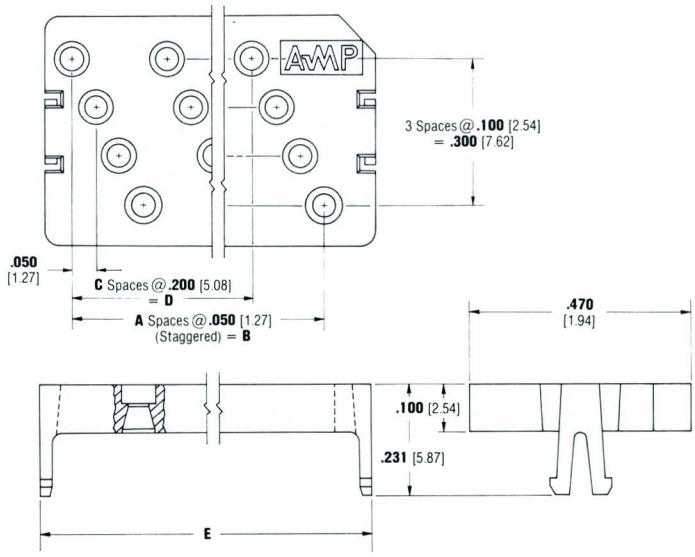


Plug Contact (male)



Housing Assembly (loaded with male contacts)

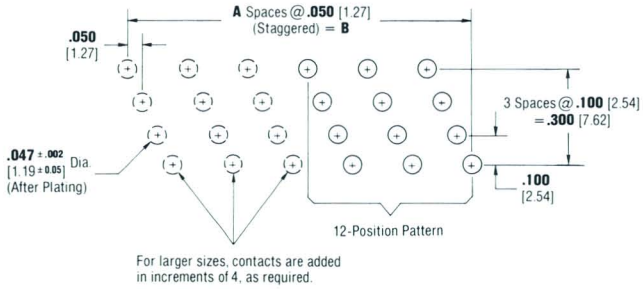
Note: Use Termination Die Set No. 91115-1 for this contact pattern. See page 12 for tooling information.



Cover

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

Paddle Board Plug Connector Specifications (Cont'd)



Recommended Pc Board Hole Layout for "Full Row" Contact Patterns (Component Side)

No. of Positions	Dimensions					.080 [2.03] Post Length (L)*			.100 [2.54] Post Length (L)*			.156 [3.96] Post Length (L)*		
	A	B	C	D	E	Housing Assembly Part No.	Cover Part No.	Connector for Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**
12	11	.550 13.97	2	.400 10.16	.714 18.14	88091-2	88089-2	**88139-2**	88201-1	88089-2	**88213-1**	88202-1	88089-2	**88214-1**
16	15	.750 19.05	3	.600 15.24	.914 23.22	88091-3	88089-3	**88139-3**	88201-2	88089-3	**88213-2**	88202-2	88089-3	**88214-2**
20	19	.950 24.13	4	.800 20.32	1.114 28.3	88091-4	88089-4	**88139-4**	88201-3	88089-4	**88213-3**	88202-3	88089-4	**88214-3**
24	23	1.150 29.21	5	1.000 25.4	1.314 33.38	88091-5	88089-5	**88139-5**	88201-4	88089-5	**88213-4**	88202-4	88089-5	**88214-4**
28	27	1.350 34.29	6	1.200 30.48	1.514 38.46	88091-6	88089-6	**88139-6**	88201-5	88089-6	**88213-5**	88202-5	88089-6	**88214-5**
32	31	1.550 39.37	7	1.400 35.56	1.714 43.54	88091-7	88089-7	**88139-7**	88201-6	88089-7	**88213-6**	88202-6	88089-7	**88214-6**
36	35	1.750 44.45	8	1.600 40.64	1.914 48.62	88091-8	88089-8	**88139-8**	88201-7	88089-8	**88213-7**	88202-7	88089-8	**88214-7**
40	39	1.950 49.53	9	1.800 45.72	2.114 53.7	88091-1	88089-1	**88139-1**	88201-8	88089-1	**88213-8**	88202-8	88089-1	**88214-8**
44	43	2.150 54.61	10	2.000 50.8	2.314 58.78	88091-9	88089-9	**88139-9**	88201-9	88089-9	**88213-9**	88202-9	88089-9	**88214-9**
48	47	2.350 59.69	11	2.200 55.88	2.514 63.86	1-88091-0	1-88089-0	**1-88139-0**	1-88201-0	1-88089-0	**1-88213-0**	1-88202-0	1-88089-0	**1-88214-0**
52	51	2.550 64.77	12	2.400 60.96	2.714 68.94	1-88091-1	1-88089-1	**1-88139-1**	1-88201-1	1-88089-1	**1-88213-1**	1-88202-1	1-88089-1	**1-88214-1**
56	55	2.750 69.85	13	2.600 66.04	2.914 74.02	1-88091-2	1-88089-2	**1-88139-2**	1-88201-2	1-88089-2	**1-88213-2**	1-88202-2	1-88089-2	**1-88214-2**
60	59	2.950 74.93	14	2.800 71.12	3.114 79.1	1-88091-3	1-88089-3	**1-88139-3**	1-88201-3	1-88089-3	**1-88213-3**	1-88202-3	1-88089-3	**1-88214-3**

*Recommended pc board thicknesses for the various post lengths are:
.080 [2.03] posts, .032/.047 [0.81/1.19] thick pc boards;
.100 [2.54] posts, .062 [1.57] thick pc boards;
.156 [3.96] posts, .094/.125 [2.39/3.18] thick pc boards

**Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.

Dimensioning
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

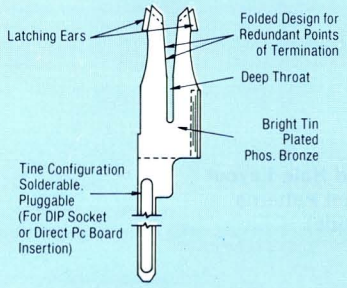
Paddle Board Plug Connector Specifications

"Short End" Contact Pattern

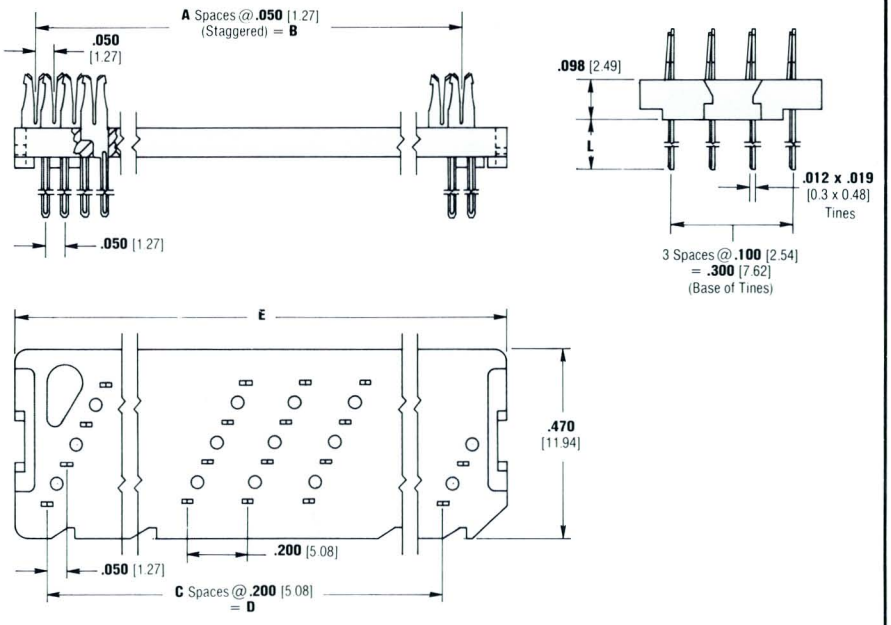
Materials and Finishes:

Housings & Covers—UL recognized, 94V-0 rated thermoplastic; Color, black

Contacts—Phosphor bronze with .000100" [0.00254 mm] (min.) bright tin over .000030" [0.00076 mm] (min.) nickel plating

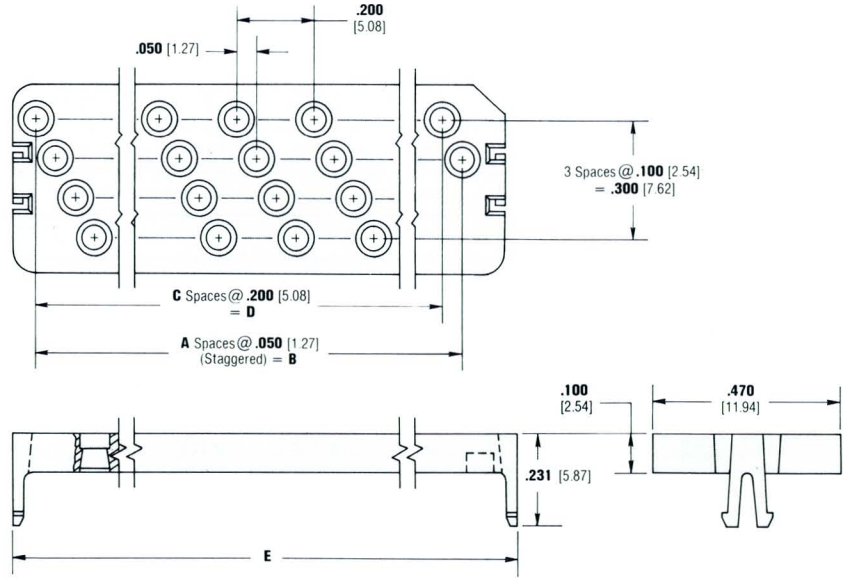


Plug Contact (male)



Housing Assembly (loaded with male contacts)

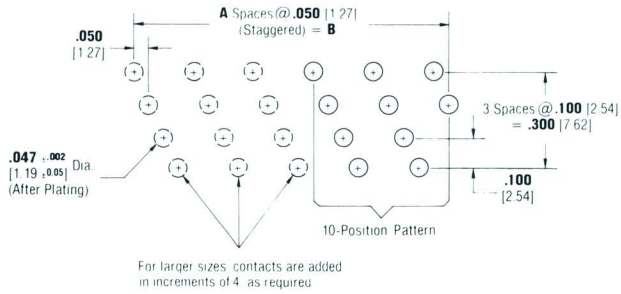
Note: Use Termination Die Set No. 91115-1 for this contact pattern. See page 12 for tooling information.



Cover

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

Paddle Board Plug Connector Specifications (Cont'd)



Recommended Pc Board Hole Layout for "Short End" Contact Pattern (Component Side)

No. of Positions	Dimensions					.080 [2.03] Post Length (L)*			.100 [2.54] Post Length (L)*			.156 [3.96] Post Length (L)*		
	A	B	C	D	E	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**
10	9	.450 11.43	2	.400 10.16	.614 15.6	88205-1	88203-1	**88215-1**	88206-1	88203-1	**88216-1**	88207-1	88203-1	**88217-1**
14	13	.650 16.51	3	.600 15.24	.814 20.68	88205-2	88203-2	**88215-2**	88206-2	88203-2	**88216-2**	88207-2	88203-2	**88217-2**
18	17	.850 21.59	4	.800 20.32	1.014 25.76	88205-3	88203-3	**88215-3**	88206-3	88203-3	**88216-3**	88207-3	88203-3	**88217-3**
22	21	1.050 26.67	5	1.000 25.4	1.214 30.84	88205-4	88203-4	**88215-4**	88206-4	88203-4	**88216-4**	88207-4	88203-4	**88217-4**
26	25	1.250 31.75	6	1.200 30.48	1.414 35.92	88205-5	88203-5	**88215-5**	88206-5	88203-5	**88216-5**	88207-5	88203-5	**88217-5**
30	29	1.450 36.83	7	1.400 35.56	1.614 41	88205-6	88203-6	**88215-6**	88206-6	88203-6	**88216-6**	88207-6	88203-6	**88217-6**
34	33	1.650 41.91	8	1.600 40.64	1.814 46.08	88205-7	88203-7	**88215-7**	88206-7	88203-7	**88216-7**	88207-7	88203-7	**88217-7**
38	37	1.850 46.99	9	1.800 45.72	2.014 51.16	88205-8	88203-8	**88215-8**	88206-8	88203-8	**88216-8**	88207-8	88203-8	**88217-8**
42	41	2.050 52.07	10	2.000 50.8	2.214 56.24	88205-9	88203-9	**88215-9**	88206-9	88203-9	**88216-9**	88207-9	88203-9	**88217-9**
46	45	2.250 57.15	11	2.200 55.88	2.414 61.32	1-88205-0	1-88203-0	**1-88215-0**	1-88206-0	1-88203-0	**1-88216-0**	1-88207-0	1-88203-0	**1-88217-0**
50	49	2.450 62.23	12	2.400 60.96	2.614 66.4	1-88205-1	1-88203-1	**1-88215-1**	1-88206-1	1-88203-1	**1-88216-1**	1-88207-1	1-88203-1	**1-88217-1**
54	53	2.650 67.31	13	2.600 66.04	2.814 71.48	1-88205-2	1-88203-2	**1-88215-2**	1-88206-2	1-88203-2	**1-88216-2**	1-88207-2	1-88203-2	**1-88217-2**
58	57	2.850 72.39	14	2.800 71.12	3.014 76.56	1-88205-3	1-88203-3	**1-88215-3**	1-88206-3	1-88203-3	**1-88216-3**	1-88207-3	1-88203-3	**1-88217-3**

*Recommended pc board thicknesses for the various post lengths are:
.080 [2.03] posts, .032/.047 [0.81/1.91] thick pc boards;
.100 [2.54] posts, .062 [1.57] thick pc boards;
.156 [3.96] posts, .094/.125 [2.39/3.18] thick pc boards

**Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.

Paddle Board Plug Connector Specifications (Cont'd)

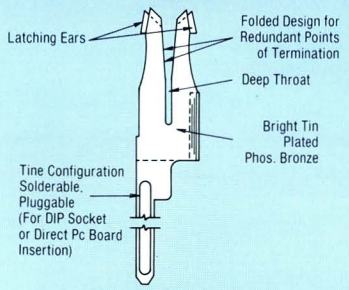
Dimensioning:
1. **All dimensions in inches and millimetres. Values in brackets are metric equivalents.**
2. **Chart contains dimensions in inches over millimetres.**

"Special Center" Contact Pattern

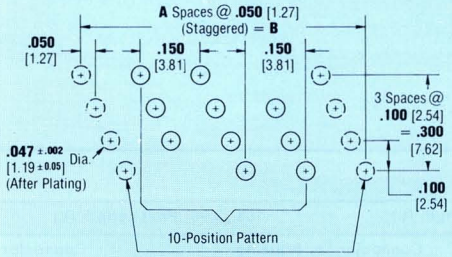
Materials and Finishes:

Housings & Covers—UL recognized, 94V-0 rated thermoplastic; Color, black

Contacts—Phosphor bronze with .000100" [0.00254 mm] (min.) bright tin over .000030" [0.00076 mm] (min.) nickel plating

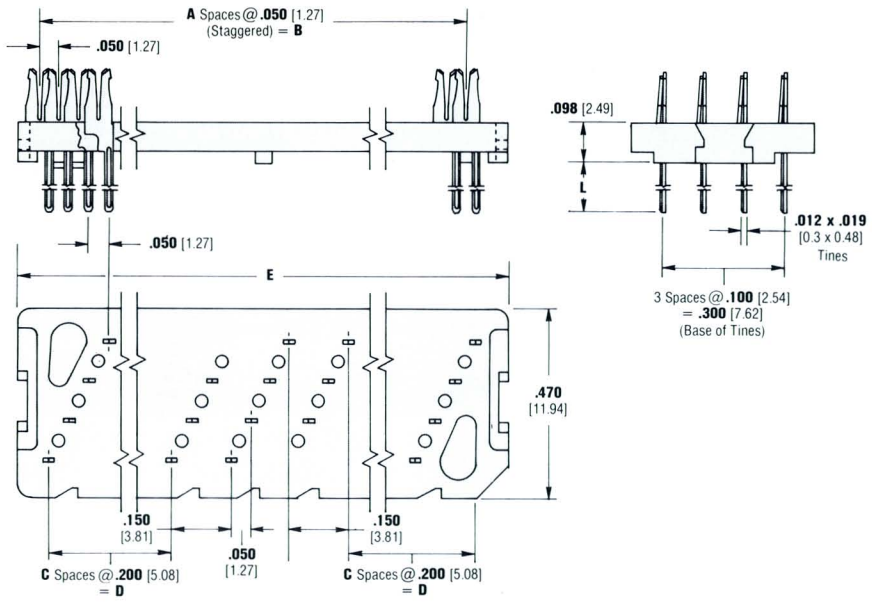


Plug Contact (male)



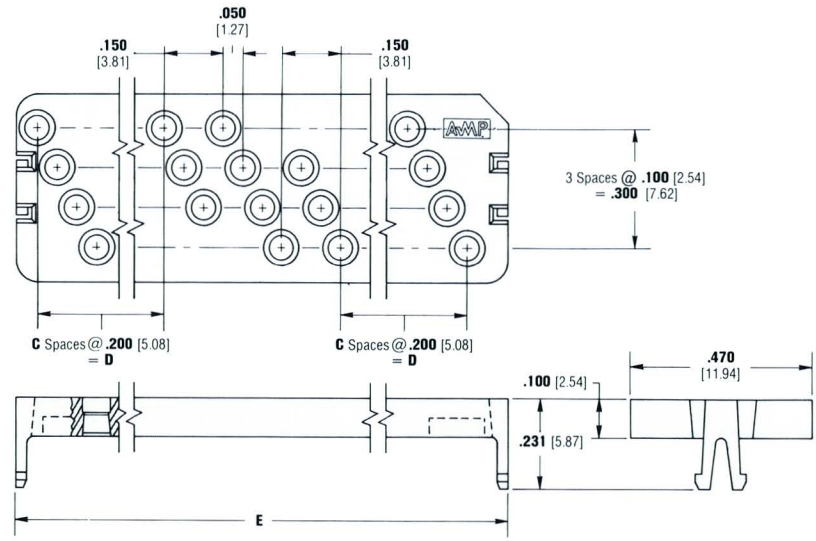
For larger sizes, equal no. of contact rows (4 contacts per row) are added to each end, as required.

Recommended Pc Board Hole Layout for "Special Center" Contact Pattern (Component Side)



Housing Assembly (loaded with male contacts)

Note: Use Termination Die Set No. 91115-2 for this contact pattern. See page 12 for tooling information.



Cover

No. of Positions	Dimensions					.080 [2.03] Post Length (L)*			.100 [2.54] Post Length (L)*			.156 [3.96] Post Length (L)*		
	A	B	C	D	E	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**	Housing Assembly Part No.	Cover Part No.	Connector Kit Part No.**
10	9	.450 11.43	—	—	6.14 15.6	88210-1	88208-1	**88218-1**	88211-1	88208-1	**88219-1**	88212-1	88208-1	**88220-1**
26	25	1.250 31.75	2	.400 10.16	1.414 35.92	88210-2	88208-2	**88218-2**	88211-2	88208-2	**88219-2**	88212-2	88208-2	**88220-2**
34	33	1.650 41.91	3	.600 15.24	1.814 46.08	88210-3	88208-3	**88218-3**	88211-3	88208-3	**88219-3**	88212-3	88208-3	**88220-3**
50	49	2.450 62.23	5	1.000 25.4	2.614 66.4	88210-4	88208-4	**88218-4**	88211-4	88208-4	**88219-4**	88212-4	88208-4	**88220-4**

*Recommended pc board thicknesses for the various post lengths are:
.080 [2.03] posts, .032/.047 [0.81/1.19] thick pc boards;
.100 [2.54] posts, .062 [1.57] thick pc boards;
.156 [3.96] posts, .094/.125 [2.39/3.18] thick pc boards

**Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.

Plug Connector Specifications

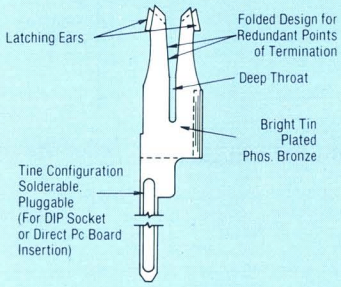
Dimensioning:
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

14 & 16 Positions

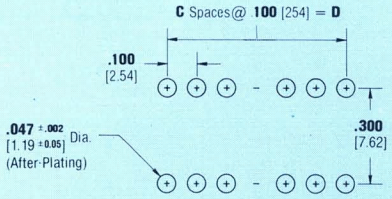
Materials and Finishes:

Housings & Covers—UL recognized, 94V-0 rated thermoplastic; Color, black

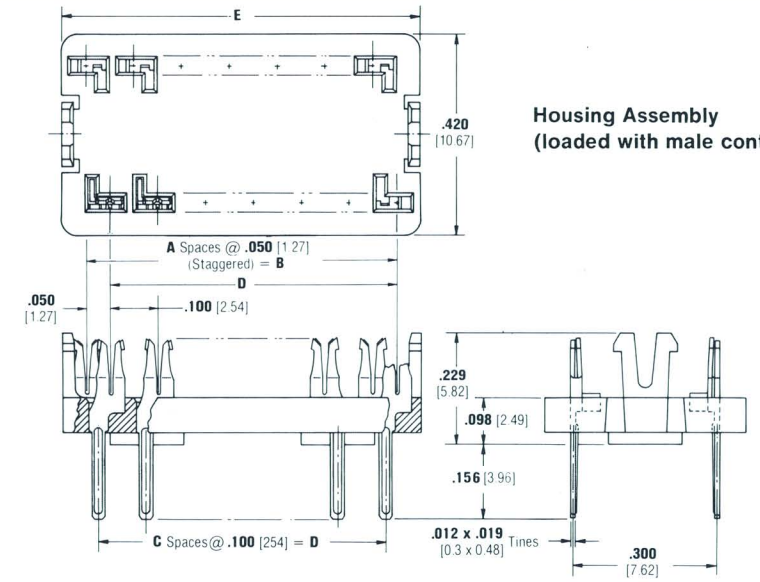
Contacts—Phosphor bronze with .000030" [0.00076 mm] (min.) gold over .000030" [0.00076 mm] (min.) nickel plating



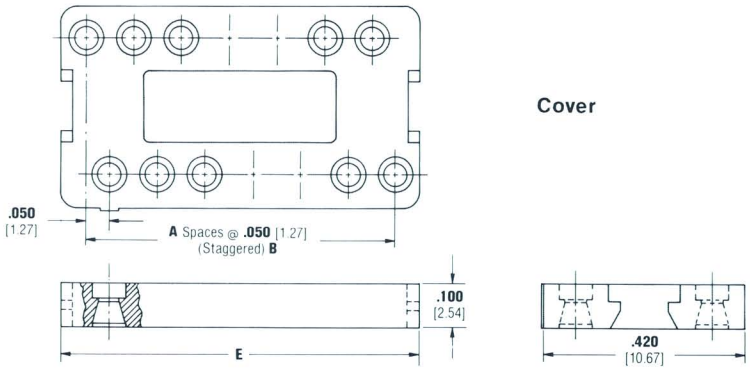
Plug Contact (male)



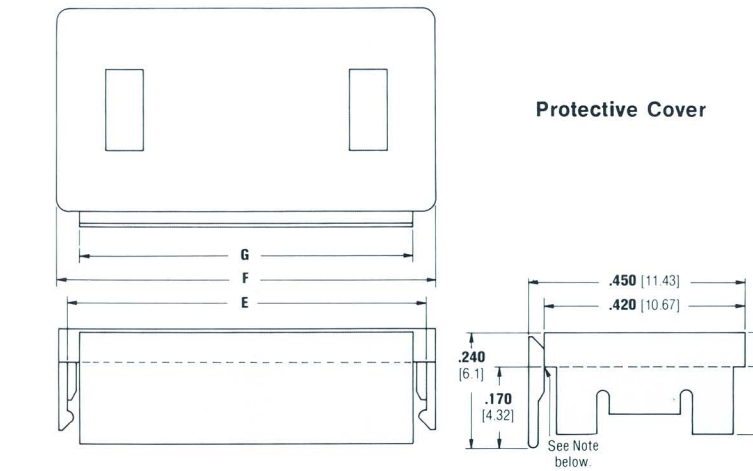
Recommended Pc Board Hole Layout (for .094"-.125" [2.39 mm-3.18 mm] thick pc boards)



Housing Assembly (loaded with male contacts)



Cover



Protective Cover

Note: The protective lip which covers exposed end of flat cable may be broken (snapped) off here for applications where lip is not required.

No. of Positions	Dimensions							Housing Assembly Part No.	Cover Part No.	Protective Cover Part No.	Connector Kit Part No.*
	A	B	C	D	E	F	G				
14	13	.650 16.51	6	.600 15.24	.750 19.05	.790 20.07	.710 18.03	86838-1	86839-1	—	86886-1
										86898-1	86886-2
16	15	.750 19.05	7	.700 17.78	.850 21.59	.890 22.61	.810 20.57	86838-2	86839-2	—	86887-1
										86898-2	86887-2

*Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.

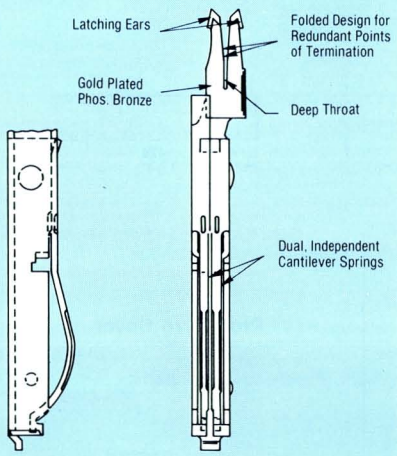
Dimensioning
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Card Edge Connector Specifications

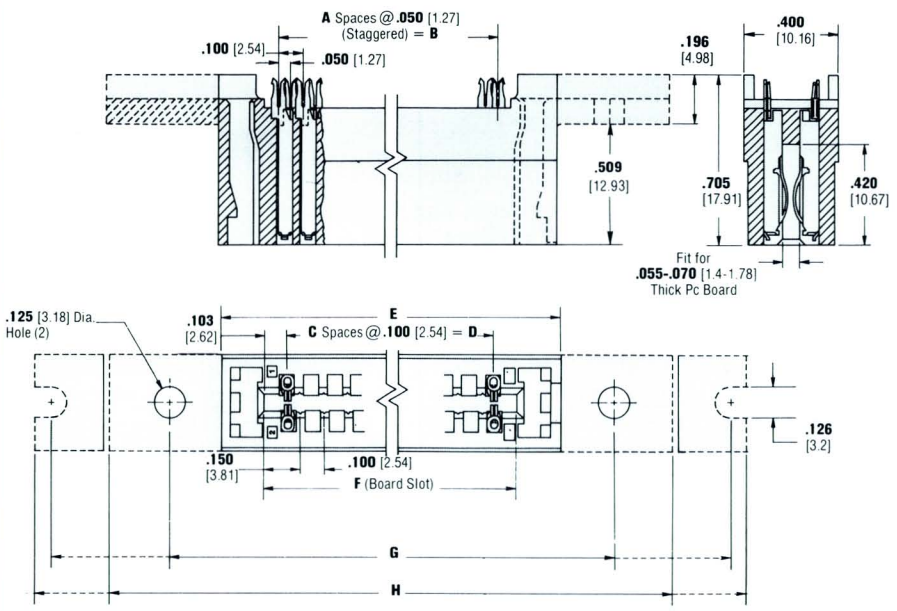
20, 26, 30, 34, 40, 50 & 60 Positions

Materials and Finishes:
Housings & Covers—UL recognized, 94V-0 rated thermoplastic; Color, black

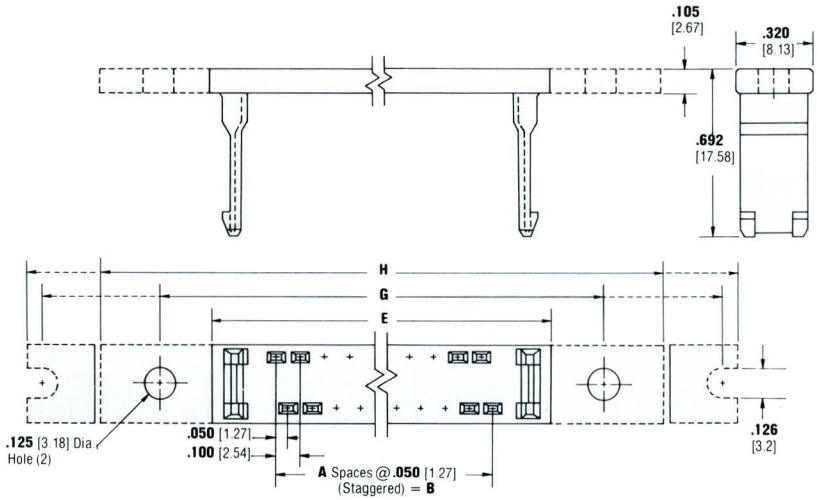
Contacts—Phosphor bronze with gold flash over .000030″ [0.00076 mm] (min.) nickel on entire receptacle and an additional .000030″ [0.00076 mm] (min.) gold plating on contact areas



Card Edge Contact



Housing Assembly (loaded with contacts)



Cover

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

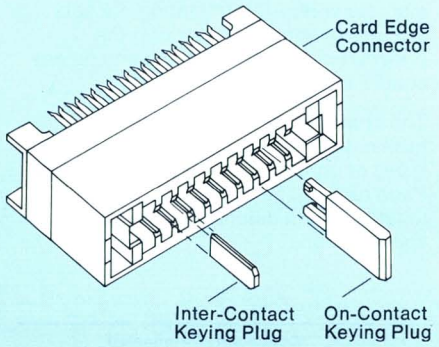
Card Edge Connector Specifications (Cont'd)

No. of Positions	Dimensions								Housing Assembly Part No.			Cover Part No.			Connector Kit Part No.*
	A	B	C	D	E	F	G	H	with Rnd. Hole Mtg. Ears	without Mtg. Ears	with slotted Mtg. Ears	with Rnd. Hole Mtg. Ears	without Mtg. Ears	with slotted Mtg. Ears	
20	19	.950 24.13	9	.900 22.86	1.460 37.08	1.107 28.12	1.900 48.26	2.400 60.96	88076-6	—	—	88075-6	—	—	88102-1
							—	—	—	88082-6	—	—	88081-6	—	88107-1
							1.800 45.72	2.000 50.8	—	—	88157-6	—	—	88156-6	88158-6
26	25	1.250 31.75	12	1.200 30.48	1.760 44.7	1.407 35.74	2.200 55.88	2.700 68.58	88076-5	—	—	88075-5	—	—	88101-1
							—	—	—	88082-5	—	—	88081-5	—	88106-1
							2.100 53.34	2.300 58.42	—	—	88157-5	—	—	88156-5	88158-5
30	29	1.450 36.83	14	1.400 35.56	1.960 49.78	1.607 40.82	2.400 60.96	2.900 73.66	88076-4	—	—	88075-4	—	—	88100-1
							—	—	—	88082-4	—	—	88081-4	—	88105-1
							2.300 58.42	2.500 63.5	—	—	88157-4	—	—	88156-4	88158-4
34	33	1.650 41.91	16	1.600 40.64	2.160 54.86	1.807 45.9	2.600 66.04	3.100 78.74	88076-3	—	—	88075-3	—	—	88099-1
							—	—	—	88082-3	—	—	88081-3	—	88104-1
							2.500 63.5	2.700 68.58	—	—	88157-3	—	—	88156-3	88158-3
40	39	1.950 49.53	19	1.900 48.26	2.460 62.48	2.107 53.52	2.900 73.66	3.400 86.36	88076-2	—	—	88075-2	—	—	88098-1
							—	—	—	88082-2	—	—	88081-2	—	88103-1
							2.800 71.12	3.000 76.2	—	—	88157-2	—	—	88156-2	88158-2
50	49	2.450 62.23	24	2.400 60.96	2.960 75.18	2.607 66.22	3.400 86.36	3.900 99.06	88076-1	—	—	88075-1	—	—	88077-1
							—	—	—	88082-1	—	—	88081-1	—	88083-1
							3.300 83.82	3.500 88.9	—	—	88157-1	—	—	88156-1	88158-1
60	59	2.950 74.93	29	2.900 73.66	3.460 87.88	3.107 78.92	3.900 99.06	4.400 111.76	88076-7	—	—	88075-7	—	—	88145-1
							—	—	—	88082-7	—	—	88081-7	—	88146-1
							3.800 96.52	4.000 101.6	—	—	88157-7	—	—	88156-7	88158-7

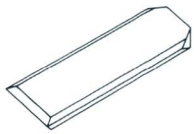
*Each connector kit is comprised of those components (1 each) listed by part no. for that particular kit. Individual components, however, may be purchased separately.
Note: See below for complete details on inter-contact and on-contact keying plugs for card edge connectors.

Accessories

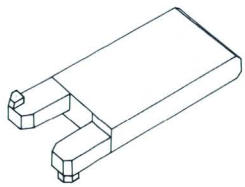
Keying Plugs (for Card Edge Connectors)



Extraction Tools



Inter-Contact Keying Plug, Part No. 88113-1



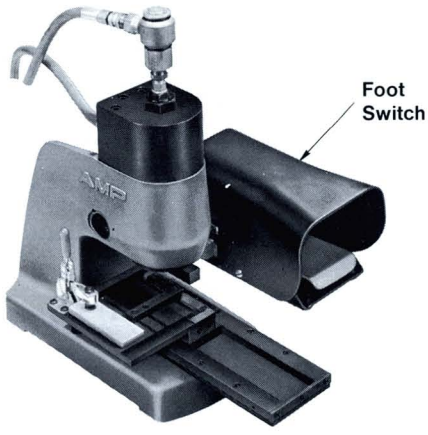
On-Contact Keying Plug, Part No. 88114-1

Material:
UL recognized, 94V-0 rated thermoplastic; Color, natural

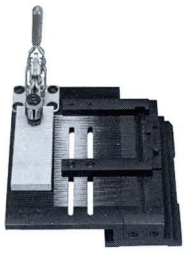
AMP Extraction Tool, Part No. 91094-1 (for plug connectors)

AMP Extraction Tool, Part No. 91095-1 (for receptacle connectors)

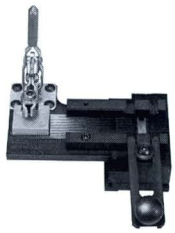
Application Tooling



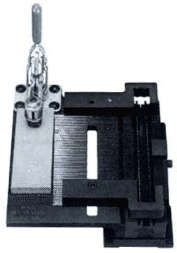
Pneumatic Tool, Part No. 91112-2*



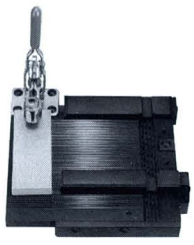
Part No. 91107-1



Part No. 91108-1



Part No. 91109-1



Part Nos. 91115-1 & 91115-2

Manual Tool, Part No. 91085-2*

Termination Die Sets**

These AMP application tools are designed for terminating contacts which are loaded into AMP latch connector housings. All cable and wire connections are performed simultaneously, without a need for pre-stripping the insulation. They also have the capability of terminating virtually all popular round conductor flexible cable, including those with flat side down or ribbed side down.

Two basic versions of tools are: a pneumatically powered unit and a manually operated unit. A heavy-duty pneumatic tool is also available. Each complete tool consists of a frame, shuttle tooling rails and a termination die set which includes both upper and lower tooling. Six different die sets are available for terminating receptacle (female) connectors, plug (male) connectors, card edge connectors, paddle board plug (male) connectors and discrete wire. All termination die sets are interchangeable between the pneumatic and manual tools and on any shuttle tooling rails.

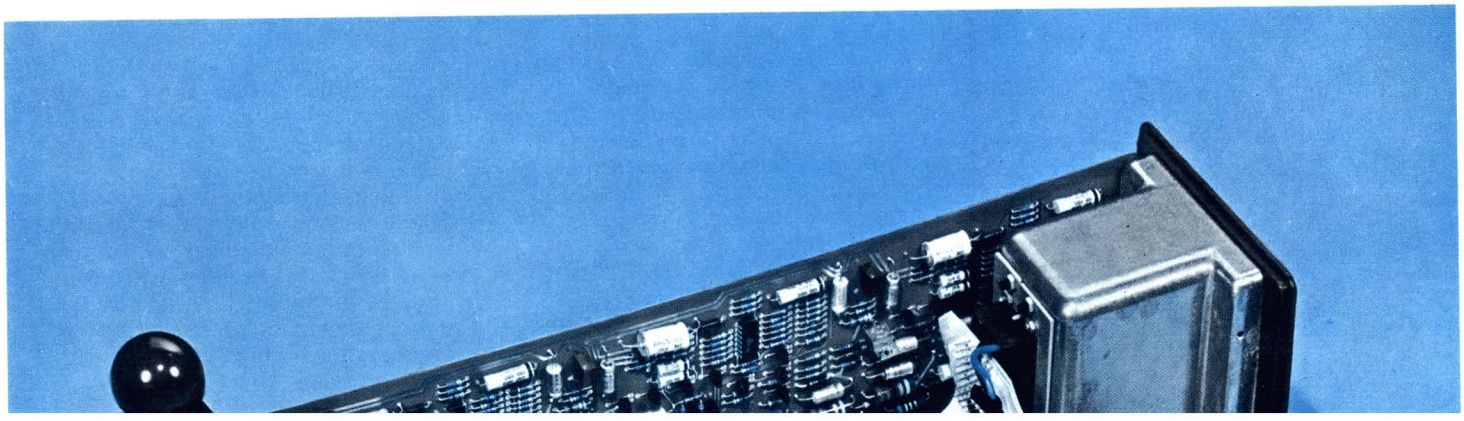
The chart below lists the various termination die sets by part no. with the types of connectors to be terminated. Page references are provided for location of the detailed connector specifications.

Tool			Termination Die Set Part No.**	Connectors Terminated	
Type		Part No.**		Type	Page Ref.
Pneumatic or Manual		91112-2 or 91085-2	91109-1	Card Edge	10, 11
			91107-1	Receptacle (female)	2, 3
			91115-1	Paddle Board Plug (male) with "Full Row" & "Short End" Patterns	4 thru 7
			91115-2	Paddle Board Plug (male) with "Special Center" Pattern	8
			91108-1	Plug (male)	9
			91110-1	Discrete Wire (Woven Twisted or Parallel Conductor Cable)	—

*Tool includes the frame with shuttle tooling rails installed.
**Termination die sets include both upper and lower tooling.

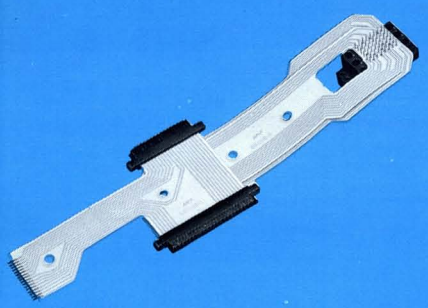
AMP Flexible Circuit Systems

Capabilities



FLEXIBLE CIRCUIT ASSEMBLIES

Dimensioning:
Values in brackets are metric equivalents.



Flexible Circuit Assembly
Multiple layers of single-sided flexible circuitry utilizing AMP receptacles for .025" x .025" [0.64 mm x 0.64 mm] posts. This assembly replaces a round wire harness.

The new economics of AMP flexible circuit products

The use of soldered and welded connections to flexible circuits has been the source of economic and production problems which have tended to limit the application of the flexible circuitry concept. By using solderless connections featuring a unique insulation displacement crimp, the reliability of which has been thoroughly documented, AMP has solved some of the knottiest of these problems.

Due to the recent, more widespread use of flexible circuits to make electrical interconnections, flexible circuitry has opened up challenging opportunities for product designers. Like flexible flat cable, flexible circuits save space and weight, drastically reduce assembly, check-out and re-work time, and eliminate human errors when compared to point-to-point discrete wiring.

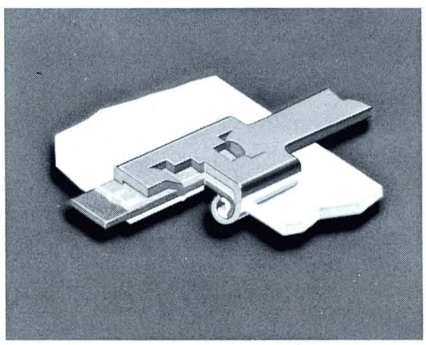
Custom fabrication and assembly add another measure of versatility by producing configurations of conductors, shielding and terminations that are impossible with parallel conductor cable.

AMP has developed specialized skills and facilities for manufacturing flexible circuits which are a logical outgrowth of the company's extensive experience in continuous fabrication and in solderless connector technology. Today, AMP offers not only a unique approach to flexible circuits themselves, but also an overall assembly capability, from input to output interconnection. This unusual combination makes it practical for AMP to do things with flexible circuits which were never before practical.

We currently produce a broad variety of flexible circuit assemblies for leading manufacturers of electrical and electronic equipment.

1.
Where the ambience is not extreme heat we can use more economical materials, such as polyester, since the base insulating film no longer needs to withstand soldering or welding. High temperature materials are available from AMP such as TFE or FEP.

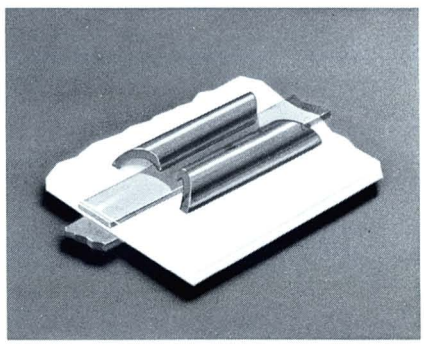
2.
Cover sheets are no problem. When a top insulating layer is needed on a conventional flexible circuit, holes must be die-punched in the top film in order to leave the copper



conductor exposed in the areas where soldered connections must be made. These holes must register accurately with the conductor layer, and the top film has to be laminated in place in precise position. Copper contact pads should be plated to facilitate soldering. All of this is tedious and costly.

With the AMP solderless connection method, there's no need to die-cut holes. The top insulating film is easily laminated to the circuit in a single piece because our terminations are made directly through the insulating layer.

3.
Solderless connections are more economical. The cost of hand soldered joints are increasing every



day . . . to which must be added the cost of reworking faulty joints. Total installed cost of an AMP crimped contact is appreciably lower than solder methods because of the speed and reliability of our application techniques.

Dimensioning:
Values in brackets are metric equivalents.

Production

For manufacturing flexible circuits, AMP has developed facilities which are unique in the industry. We have a continuous fabrication line which can produce continuous lengths of circuitry up to 22 inches [559 mm] wide, with repeat patterns as long as 50 feet [15.24 m].

We can make single or double sided circuits and can incorporate a ground plane shield surface. Our ability to manufacture unusually long and wide circuits is particularly useful in making such products as flat conductor transmission cable for high-speed digital transmission.

Solderless Terminations

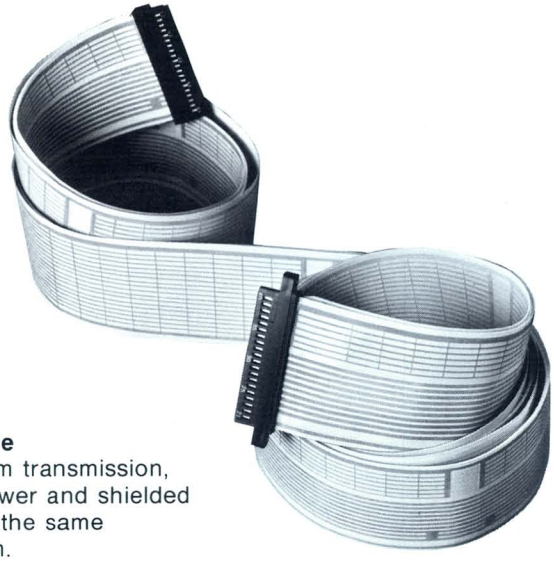
A complete family of standard AMP solderless connection devices is currently available from production tooling.

The standard line of AMP displacement crimp pin and socket contacts and connector housings supplied for parallel conductor flexible flat cable is equally applicable to in-line edge connections to flexible circuits.

The associated group of connector products permits a broad choice of interconnection systems, including transitions to round wire, flexible flat cable or combinations of both.

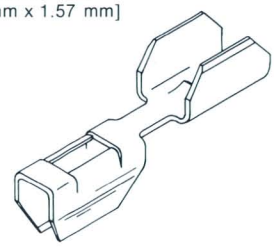
A new insulation displacement crimp contact has been designed to mate with standard .025" [0.64 mm] square posts. This product affords a simple, fast way to mate a flexible circuit to a rigid printed circuit board or to a connector panel.

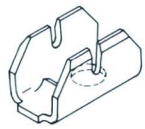
Other termination devices include crimp-on terminals with solder tabs, and mid-circuit splice connections for taking off taps to round wire or for repairing open conductor lines. In addition, we are ready to work with you to develop methods for interfacing selector switches and other components with flexible circuits.



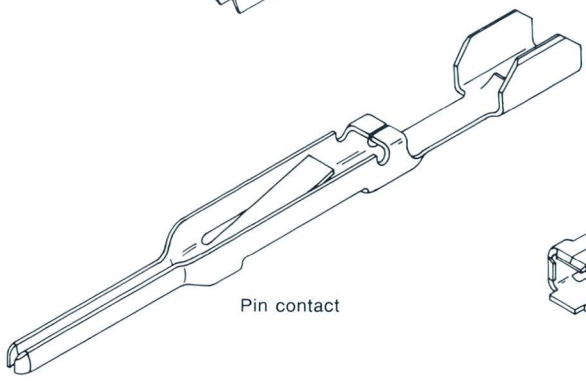
Combination Cable
Consists of 90 ohm transmission, general signal, power and shielded cabling, all within the same connection system.

Receptacle Contact (mates with .031" x .062" [0.79 mm x 1.57 mm] post)

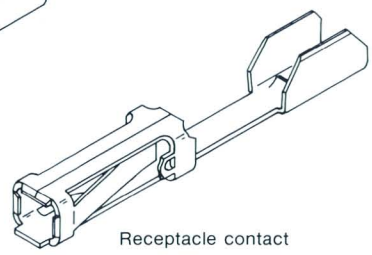




Receptacle Contact (mates with .025" [0.64 mm] square post)

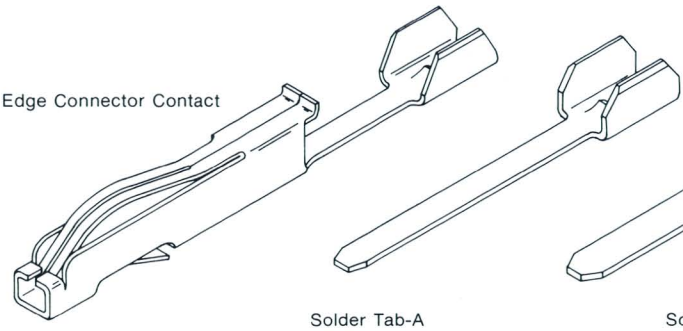


Pin contact

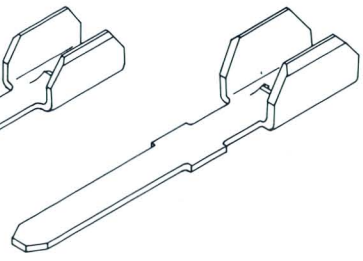


Receptacle contact

Edge Connector Contact



Solder Tab-A



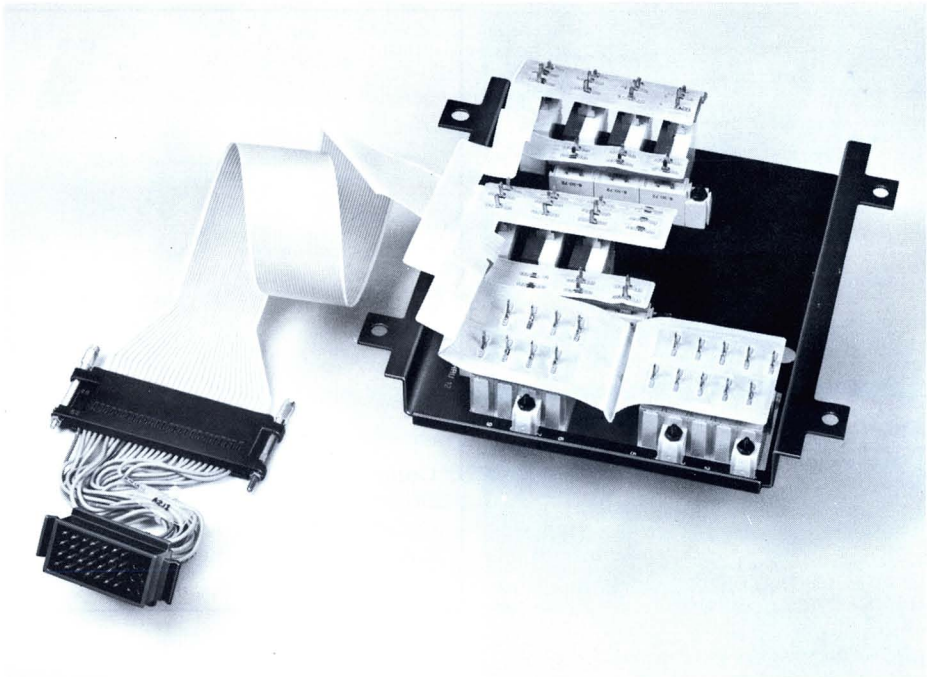
Solder Tab-B

COOPERATIVE DESIGN

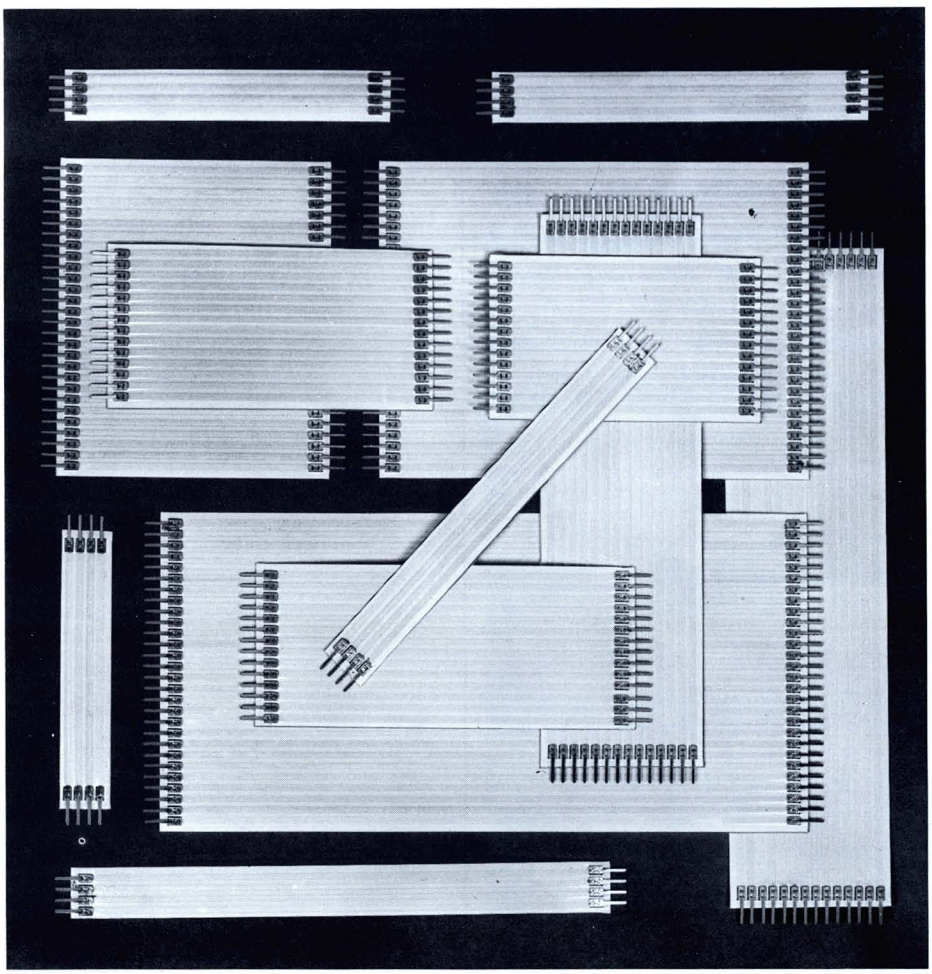
Dimensioning:
Values in brackets are metric equivalents.

You are invited to take advantage of the experience and ingenuity of our engineering staff, who will work closely with you to arrive at solutions to your specific problems. Our ability to come up with unusual but practical solutions has been proved by examples such as those illustrated here.

Computer aided design is used to optimize circuit layouts. We have full facilities for generating artwork.



Flexible circuit utilizing AMP receptacles for standard tabs used throughout the industry. This assembly replaces a round wire harness for a control panel.



Flexible Flat Cable Jumper Assemblies available in lengths from 2.5″ to 6″ [64 mm to 152 mm] and in widths that accommodate from 4 to 33 positions.

Dimensioning:
Values in brackets are metric equivalents.

AMP Incremental
Transmission Cable

Features

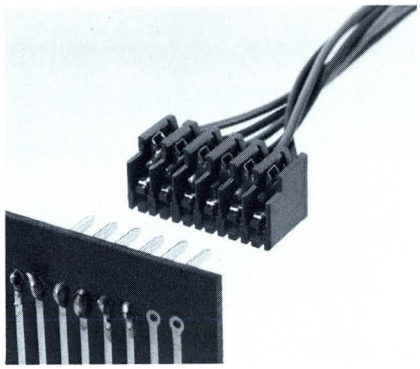
- No cable stripping
- Can be manufactured for all popular numbers of conductor cable widths
- Simultaneous ground and signal termination
- .100" [2.54 mm] grid systems adapt to standard AMP cataloged housings
- Any length cable can be cut from a continuous reel in approximately ½ inch [12.7 mm] increments
- Transmission harness assemblies available
- Automatic machine termination available for lowest applied cost
- Designed for solderless termination technique utilizing no-heat connections

AMP Incorporated has developed a unique complement to the complete line of flat cable products. AMP's incremental transmission cable with controlled impedance will satisfy applications from 50 to 125 ohms. There is no need to generate unique artwork for every cable length for a prescribed impedance; from a minimum of approximately ½ inch [12.7 mm] to any length needed, just cut off what you need.

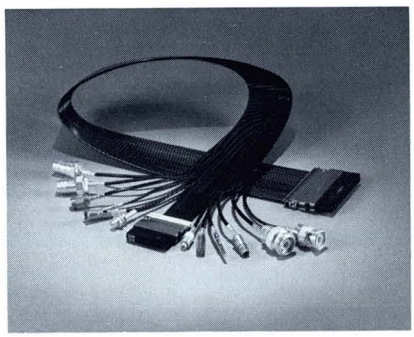
Termination of incremental transmission cable may be accomplished by an automatic machine, or by hand. With these capabilities, you too can use incremental transmission cable in place of many coaxial cable applications . . . at a greatly reduced cost.

Cross Reference

Lace-N-Lok Wire to Post Connectors — Section 7, Pages 7-21 and 7-22. Choice of 2 through 18 position configurations with contacts on .156" centerlines. Accepts ribbon wire and mates with .045², .045 round or .031 x .062 posts.



Coaxial Ribbon Cable Assemblies — Section 16, Pages 16-59 to 16-65. Available using 50, 75 and 93 ohm coaxial ribbon cable in 10, 13, 17, 20 and 25 conductor configurations, in lengths from 6" to 120". All conductors are on .100" centerlines.



CHAMP Connectors and Kits — Section 7, Pages 7-3 to 7-20. Insulation-displacing, mass-terminating connector for use with solid and stranded wire as well as flat conductor cable. Connectors are available in 14, 24, 36, 50 and 64 positions with a variety of accessories available.