

## **.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)**

The .031 x .062 [0.79 x 1.57] interconnection system has served as an industry standard for modular packaging for over two decades. It is a rugged, large scale system designed for board-to-board and board-to-wire or cable applications that has offered millions of reliable interconnections and countless mating cycles. This versatile interconnection system successfully meets the requirements for most modular power supply packaging.

Board mounted receptacles and receptacle assemblies are available in various geometries, offering packaging interconnections that include perpendicular, parallel and stacking capabilities. Machine applied terminations, through matched application equipment, are geared to virtually any production requirement, providing the lowest possible applied cost.

Crimp snap-in receptacles for 26-18 AWG [0.12-0.9 mm<sup>2</sup>] wire provide excellent discrete wire terminations. Housings for these contacts provide for ease of handling terminations in high density applications.

AMPMODU mating posts are supplied typically as header assemblies. They are available in various sizes to meet the interconnection and packaging requirements of your system. However, in instances where packaging configurations do not lend themselves to the economies of assemblies, AMP can provide for the discrete location of individual posts and receptacles.

If your interconnections require Top Entry, Bottom Entry and/or Side Entry for perpendicular, parallel and stacked configurations, the .031 x .062 [0.79 x 1.57] interconnection system can fulfill your needs with the lowest applied cost through efficient interconnections and supporting application equipment.



3  
Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

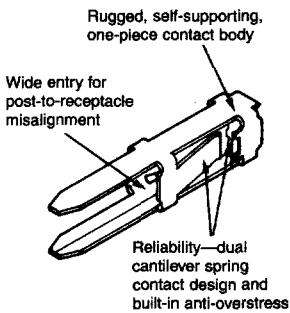
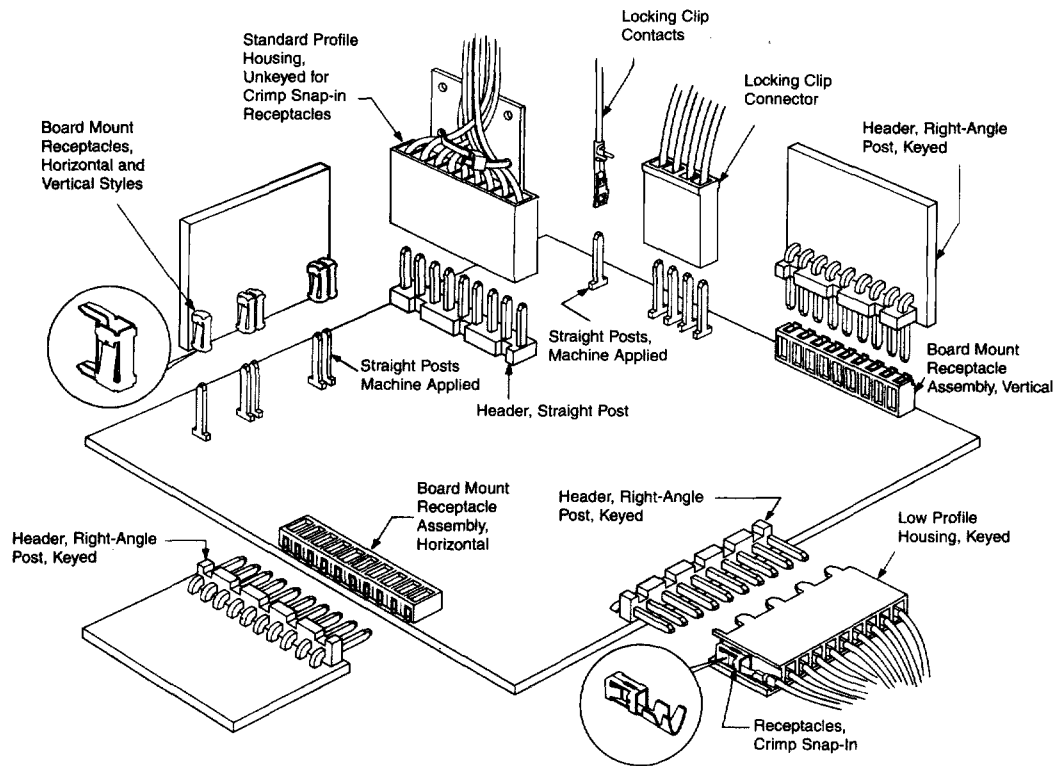
■ Recognized under the  
Component Program of  
Underwriters  
Laboratories Inc.,  
File No. E28476



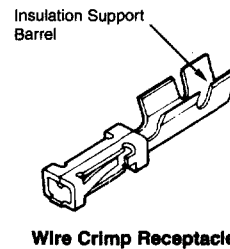
■ Certified by  
Canadian Standards  
Association  
File No. LR 7189



## AMPMODU Interconnection System (Continued)



The AMPMODU receptacle cross-section is primarily rectangular, with rounded corners. Two integral cantilever beams contact the mating square or rectangular posts. Deflection of these spring members is limited by anti-overstress and excessive permanent deformation is prevented. This feature allows a wide range of tolerances for misalignment of mating contacts.

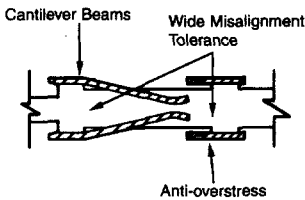


Wire Crimp Receptacle

**Note:** Application of a contact lubricant is part of the manufacturing process of all AMPMODU tin-plated crimp products. However, it is not part of the manufacturing process of products that customers will solder, then clean. For these products, AMP recommends that customers purchase the Contact Lubricant listed below:

**Part No.: 854387-2, 1 qt. [.95 liter] bulk can**

### Board Mount Receptacle



Two styles offer high or low contact forces

The configuration of the receptacle completely encloses the spring members preventing damage during handling and assembly and makes the system compatible with automatic application techniques.

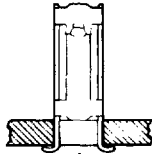
This design also permits the use of the receptacles without housings or encapsulation.

## Receptacles, Board Mount

### Vertical and Horizontal Board Mount

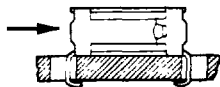
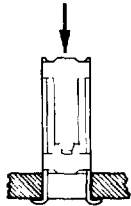
**Material and Finish**  
Copper alloy, see chart

**Mates with—Machine**  
Applied Posts and Headers



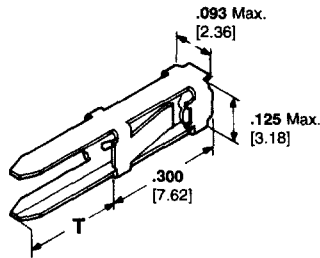
Bottom  
Post Entry  
Type A

Top  
Post Entry  
Type B

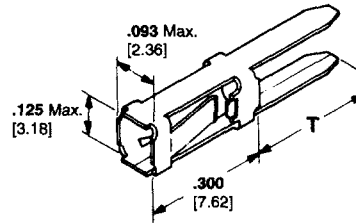


Horizontal  
Post Entry  
Type C

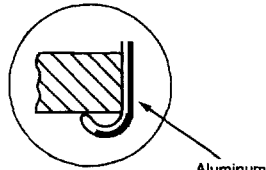
## Receptacle Styles



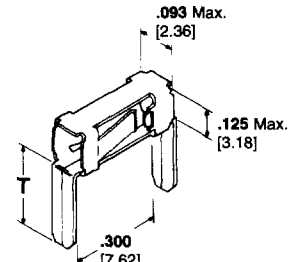
Type A



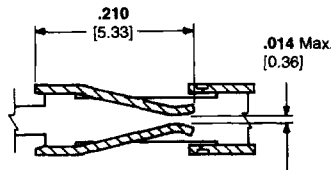
Type B



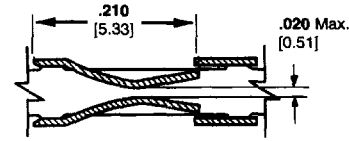
Typical  
Solder Resist Tab  
(Type A or B)



Type C



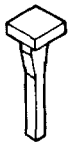
Standard Pressure  
Receptacle



High Pressure  
Receptacle

Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

### Keying Plug



Part No. 86181-2  
Use in Board Mount  
Receptacles

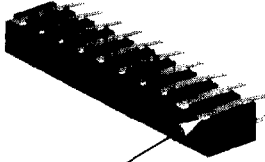
Type	Board Thickness	Dim. T	Finish	Part Numbers			
				Standard Pressure		High Pressure	
				Strip Form <sup>1</sup>	Loose Piece <sup>2</sup>	Strip Form <sup>1</sup>	Loose Piece <sup>2</sup>
A	.070-.055 1.78-1.40	.112 2.84	Tin	86477-3	—	87316-3	87509-2
			Gold	86477-2	86480-2	—	—
			Solder Resist	87772-2	—	—	—
B	.070-.055 1.78-1.40	.112 2.84	Tin	87003-2	—	87954-1	—
			Gold	87003-1	87105-1	—	—
			Solder Resist	87774-2	—	—	—
C	.103-.055 2.62-1.40	.145 3.68	Tin	85487-3	85493-3	86432-1	86434-1
			Gold	85487-4	85493-4	—	—

<sup>1</sup>Packaging quantity of 5,000 each.  
<sup>2</sup>Packaging quantity of 500 each.

## Receptacle Assemblies, Vertical Board Mount

Single Row  
.156 [3.96] Centers

Mates with—Machine  
Applied Posts and Headers



Notch Indicates  
Mating End of  
Receptacle

### Keying Plug

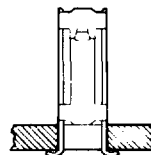


Part No. 86181-2  
Use in Board Mount  
Receptacles

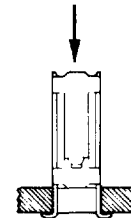
Note: 10 Pos. Housing Dim. (Typ.)—1.560 [39.62] L x .175 [4.45] W x .300 [7.62] H

No. of Pos.	Part Numbers						
	Type A			Type B			
	Standard Pressure		High Pressure	Standard Pressure			
	Tin Plated	Gold Plated	Solder Resist	Tin Plated	Tin Plated	Gold Plated	Solder Resist
2	—	87984-2	—	87993-2	87985-2	—	—
3	—	87984-3	—	—	87985-3	—	—
4	87983-4	87984-4	—	—	87985-4	87986-4	—
5	87983-5	87984-5	—	87993-5	87985-5	—	—
6	—	87984-6	87989-6	87993-6	87985-6	87986-6	—
8	87983-8	87984-8	87989-8	87993-8	87985-8	—	—
10	—	—	1-87989-0	—	1-87985-0	1-87986-0	—
12	—	—	1-87989-2	—	1-87985-2	—	1-87990-2
14	—	—	1-87989-4	—	—	—	—

Packaging Quantities: 2 through 4 Pos. (500 each); 5, 6 and 8 Pos. (250 each); and 10 through 14 Pos. (100 each).



Post Entry  
Type A

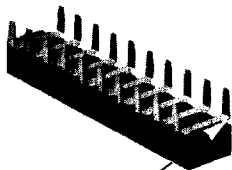


Post Entry  
Type B

## Receptacle Assemblies, Horizontal Board Mount

Single Row,  
.156 [3.96] Centers

Mates with—Machine  
Applied Posts and Headers



Notch Indicates  
Mating End of  
Receptacle

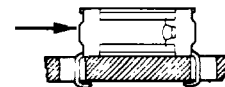
### Keying Plug



Part No. 86181-2  
Use in Board Mount  
Receptacles

Note: 5 Pos. Housing Dim. (Typ.)—.780 [19.81] L x .300 [7.62] W x .175 [4.45] H

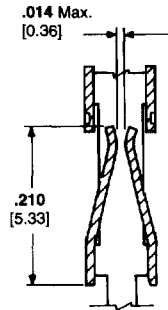
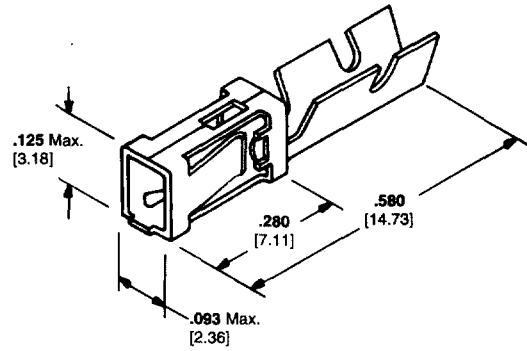
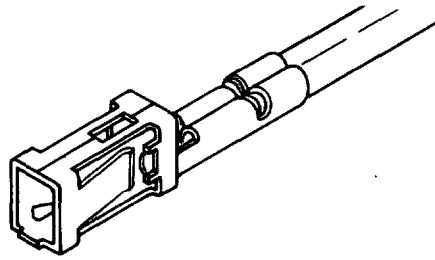
No. of Pos.	Pkg. Qty.	Part Numbers		
		Tin Plated		Gold Plated
		Standard Pressure	High Pressure	Standard Pressure
3	500	—	87995-3	—
4	500	—	87995-4	87988-4
5	250	87987-5	—	87988-5
6	250	87987-6	—	87988-6
7	250	—	87995-7	—
8	250	87987-8	—	87988-8



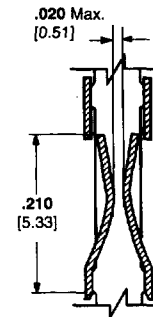
Post Entry  
Type C

## Receptacles, Crimp Snap-In (Wire Applied)

**Material and Finish**  
Copper alloy, see chart  
**Mates with**—Machine  
Applied Posts and Headers



**Standard Pressure  
Receptacle**



**High Pressure  
Receptacle**

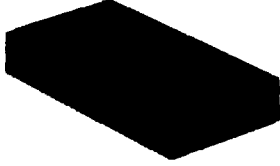
Wire Range AWG/mm <sup>2</sup>	Ins. Dia. Range	Finish	Pkg. Qty.	Part Numbers	
				Standard Pressure	High Pressure
22-18 0.3-0.97	.051-.090 1.30-2.29	Tin	5,000	102099-5	102100-5
		Gold		102099-2	102100-2
26-22 0.12-0.4	.042-.073 1.07-1.85	Tin	5,000	102101-5	102102-5
		Gold		—	102102-2



**Extraction Tool**  
Part No. 843473-1

3  
Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

**Receptacle Housings,  
Standard Profile (Unkeyed)**  
Without Strain Relief,  
Single Row,  
.156 [3.96] Centers



Mates with—Machine  
Applied Posts and Headers

**Note:** 10 Pos. Housing Dim. (Typ.)—1.560 [39.62] L x .790 [20.01] W x .250 [6.35] H

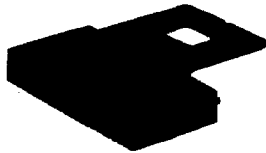
No. of Pos.	Pkg. Qty.	Part Numbers	
		Stamped <sup>1</sup>	Unstamped <sup>2</sup>
2	300	—	2-87025-5 <sup>3</sup>
3	300	—	2-87025-1
4	300	—	1-87025-3
5	300	—	2-87025-3
6	300	87025-1	87025-2
9	300	87025-9	1-87025-0 <sup>3</sup>
10	300	1-87025-7	1-87025-8
11	150	—	3-87025-6 <sup>3</sup>
12	150	1-87025-1 <sup>3</sup>	1-87025-2 <sup>3</sup>
13	150	2-87025-9 <sup>3</sup>	3-87025-0 <sup>3</sup>
14	150	—	3-87025-8 <sup>3</sup>
17	150	—	4-87025-0 <sup>3</sup>
20	150	—	87025-8
25	150	—	5-87025-0

<sup>1</sup> AMP Trademark, Part No. and Data Code stamped on housing.

<sup>2</sup> No marking on housing.

<sup>3</sup> Minimum order greater than packaged quantities required. Consult AMP.

**Receptacle Housings,  
Standard Profile (Unkeyed)**  
With Strain Relief,  
Single Row,  
.156 [3.96] Centers



Type II

Mates with—Machine  
Applied Posts and Headers

**Note:** 10 Pos. Housing Dim. (Typ.)—1.560 [39.62] L x 1.640 [41.66] W x .290 [7.37] H

No. of Pos.	Type	Pkg. Qty.	Part Numbers <sup>1</sup>
10	II	150	1-102090-0 <sup>2</sup>
12	II	75	1-102090-2 <sup>2</sup>
13	II	75	1-102090-3 <sup>2</sup>

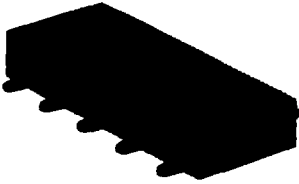
<sup>1</sup> No marking on housing.

<sup>2</sup> Minimum order greater than packaged quantities required. Consult AMP.

3  
Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

## Receptacle Housings, Low Profile (Keyed) Single Row, .156 [3.96] Centers

Mates with—Headers



Note: 10 Pos. Housing Dim. (Typ.)—1.560 [39.62] L x .640 [16.26] W x .250 [6.35] H

No. of Pos.	No. of Keys	Pkg. Qty.	Part Numbers (Unstamped) <sup>1</sup>
2	1	300	87159-3
3	1	300	87159-4
4	2	300	87159-5
5	2	300	87159-1
6	3	300	87159-6
7	3	300	87159-7
8	4	300	87159-8
9	3	300	87159-9
10	5	300	1-87159-0
12	6	150	1-87159-2
13	4	150	87159-2
14	7	150	1-87159-3
15	5	150	1-87159-4
18	6	150	1-87159-7
20	10	150	1-87159-9

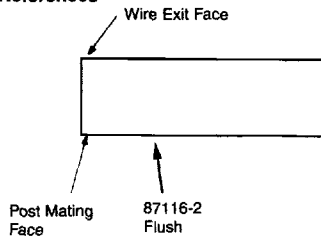
<sup>1</sup> No marking on housing.

### Keying Plug Part No. 87116-2

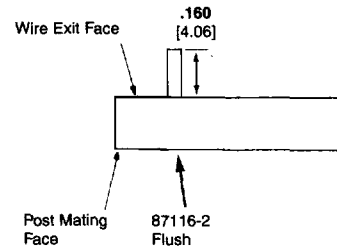


Fits through  
.125 [3.18]  
Dia. Hole

### Keying Plug References

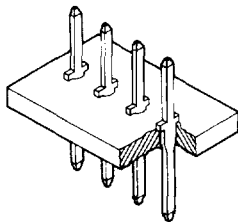


For Standard Housings



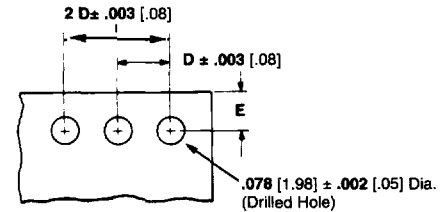
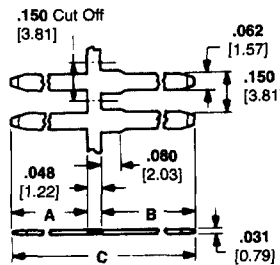
For Low Profile Housings

## Posts, Machine Applied Straight Posts Material and Finish Brass, see chart



Typical Assembly

Mates with—  
Board Mount  
Receptacles, Board  
Mount Receptacle  
Assemblies, Crimp  
Snap-In Receptacles  
and Housings



Recommended Mounting Holes

D—Post centers may vary depending on requirements. Minimum nominal centerline spacing between adjacent contacts is .125 [3.18]; .003 [0.08] tolerances not to accumulate over length of board.  
E—Post center location from edge of board may vary to satisfy application.

Dimensions			Part Numbers		
A	B	C	Tin Plated Strip Form <sup>1</sup>	Gold Plated	
				Strip Form <sup>1</sup>	Loose Piece <sup>2</sup>
.360 [9.14]	.187 [4.75]	.595 [15.11]	86147-2	86147-7	86182-7
.380 [9.65]	.320 [8.13]	.748 [19.00]	86147-9	1-86147-5	1-86182-5
.400 [10.16]	.125 [3.18]	.573 [14.55]	3-86147-7	4-86147-2	—
.480 [12.19]	.187 [4.75]	.715 [18.16]	2-86147-2	1-86147-8	1-86182-8
.565 [14.35]	.187 [4.75]	.800 [20.32]	86147-1	86147-8	86182-8
.800 [20.32]	.150 [3.81]	.998 [25.35]	1-86147-0	1-86147-2	1-86182-2

<sup>1</sup> Packaging quantity of 20,000 per reel.

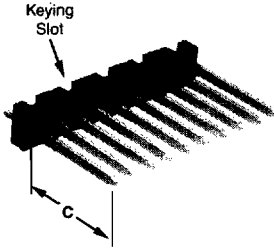
<sup>2</sup> Packaging quantity of 1,000 per bag.

Note: Strip form posts applied with Insertion Machine Part No. 3-457382-1, includes power unit and applicator.

Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

3

**Headers,  
Straight Post (Keyed)**  
Single Row,  
.156 [3.96] Centers



Mates with— Board  
Mount Receptacles,  
Board Mount Receptacle  
Assemblies, Crimp Snap-In  
Receptacles and Housings

Note: 10 Pos. Housing Dim. (Typ.)—1.515 [38.48] L x .125 [3.18] W x .250 [6.35] H

No. of Pos.	No. of Keying Slots	Pkg. Qty.	Post Height C = .405 [10.29]		Post Height C = .587 [14.91]	
			Bright Tin Plated Posts	Gold Plated Posts	Bright Tin Plated Posts	Gold Plated Posts
2	1	500	87160-4	85829-2	—	87247-2
3	1	500	87160-5	85829-3	—	—
4	2	500	87160-6	85829-4	—	87247-4
5	2	250	87160-1	85829-5	87262-5	—
6	3	250	87160-7	85829-6	—	87247-6
7	3	250	87160-8	—	—	—
8	4	250	87160-9	85829-8	87262-8	87247-8
9	3	250	1-87160-0	—	—	87247-9
10	5	100	1-87160-1	1-85829-0	1-87262-0	1-87247-0
12	6	100	1-87160-3	1-85829-2	1-87262-2	—
13	4	100	87160-2	—	—	—
15	5	100	—	1-85829-5	—	1-87247-5
18	6	50	—	—	1-87262-8	—

No. of Pos.	No. of Keying Slots	Pkg. Qty.	Post Height C = .750 [19.05]		Post Height C = 1.187 [30.15]		Post Height C = 1.310 [33.27]
			Bright Tin Plated Posts	Gold Plated Posts	Bright Tin Plated Posts	Gold Plated Posts	Gold Plated Posts
2	1	500	85875-7	—	—	87283-2	85839-2
3	1	500	85875-8	—	—	—	85839-3
4	2	500	85875-1	85923-4	86207-9	87283-4	85839-4
5	2	250	85875-2	—	86207-3	—	—
6	3	250	85875-9	—	—	—	85839-6
7	3	250	1-85875-0	—	—	87283-7	—
8	4	250	1-85875-1	—	—	—	85839-8
9	3	250	85875-3	85923-9	—	—	—
10	5	100	—	—	—	—	1-85839-0
12	6	100	—	—	—	—	1-85839-2
14	7	100	1-85875-5	—	—	—	—
15	5	100	—	—	—	—	1-85839-5
16	8	50	1-85875-7	—	—	—	—
17	6	50	—	—	—	1-87283-7	—

Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)



## Headers, Right-Angle Post (Keyed) Single Row .156 [3.96] Centers



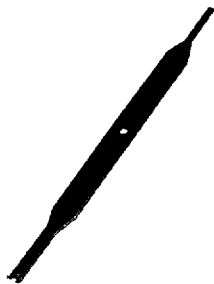
Mates with—Board Mount Receptacles, Board Mount Receptacle Assemblies, Crimp Snap-In Receptacles and Housings, and Locking Clip Contacts and Housings (.500 Post Height Only)

Note: 8 Pos. Housing Dim. (Typ.)—1.203 [30.56] L x .125 [3.18] W x .250 [6.35] H

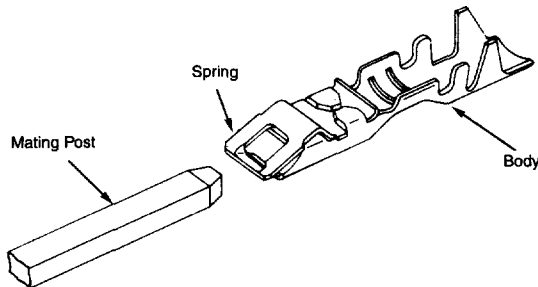
No. of Pos.	No. of Keying Slots	Pkg. Qty.	Post Height C = .345 [8.76]		Post Height C = .500 [12.7]	
			Bright Tin Plated Posts	Gold Plated Posts	Bright Tin Plated Posts	Gold Plated Posts
2	1	500	87655-2	—	—	87258-2
3	1	500	87655-3	—	—	87258-3
4	2	500	—	87654-4	—	87258-4
5	2	250	87655-5	—	87194-4	—
6	3	250	—	—	87194-5	—
8	4	250	87655-8	87654-8	—	87258-8
13	4	100	—	—	—	1-87258-3
15	5	100	1-87655-5	—	—	—
18	6	50	—	1-87654-8	—	—
24	12	50	2-87655-4	—	—	—

Printed Circuit Board Connectors  
.031 x .062 [0.79 x 1.57] Interconnection System (AMPMODU)

## Locking Clip Contacts, Crimp Snap-In (Wire Applied)



Extraction Tool  
Part No. 91104-1

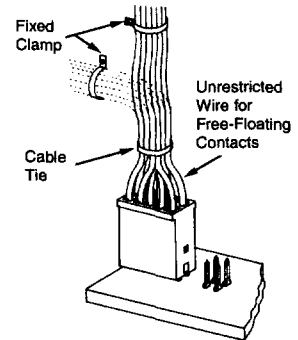


Wire Range AWG/mm <sup>2</sup>	Ins. Dia. Range	Finish	Contact Part Numbers	
			Strip Form	Loose Piece
22-18	.050-.100	Tin Plated	87269-1	87278-1
0.3-0.9	1.27-2.54	Gold Plated	87269-2	87278-2

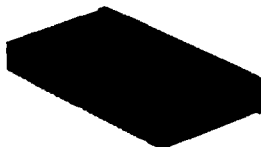
Note: These contacts must be crimped in accordance with AMP Specification No. 114-25008 in order to function properly in a connector housing. Extraction Tool No. 91104-1 is used for removing individual contacts from connector housings and for detaching contacts from mating posts.

### Wire Harnessing

If necessary, wires can be grouped with cable ties and secured to a panel with fixed clamps. However, locking clip contacts must be free to float within the connector housings to ensure proper extraction. Therefore, harnessing hardware or the use of multiple terminations per contact must not restrict the free-floating action of contacts in the housing.



## Locking Clip Connector Housings Single Row, .156 [3.96] Centers



Mates with—Machine Applied Posts and Headers (.500 Post Height Only)

Note: 10 Pos. Housing Dim. (Typ.)—1.624 [41.25] L x .860 [21.84] W x .194 [4.93] H

No. of Pos.	Housing Part No.		Keyed Positions on Mating Face
	Unkeyed	Keyed	
1	87270-1	—	—
2	87270-2	—	—
3	1-87270-3	—	—
3 of 4	—	87270-3	□ □ ■
4	87270-4	—	—
4 of 5	—	1-87270-0	□ □ □ ■
5	1-87270-4	—	—
6	87270-5	—	—
8	87270-6	—	—
10	87270-7	—	—

■ Indicates "closed cavity". No post entry in this position.

Notes: 1. All housings listed above will accept Locking Clip Contact Part Nos. 87269 and 87278, see above.  
2. Refer to AMP Instruction Sheet No. 408-7676 for proper contact orientation within the housings.