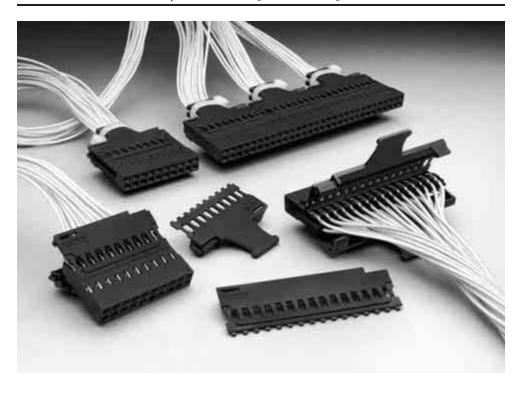


### Level V IDC Connectors, .125 x .125 [3.18 x 3.18] Centerline

### **Product Facts**

- Termination of discrete wire sizes 26-22 AWG [0.12-0.3 mm²] as well as jacketed cable and bonded ribbon cable (conductors separated)
- Connectors stackable endto-end and side-to-side on .125 [3.18] centers
- Connectors preloaded with insulation displacement receptacle contacts
- Contact design employs dual cantilever beams, redundant insulation displacement slots, built-in post stop and wire support crimp
- Copper alloy contacts are duplex plated
- Snap-on covers with or without cable tie paddles
- Full line of mass termination tooling offers lowest installed costs for most production needs
- Recognized under the Component Program of Underwriters
  Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



AMPMODU Level V IDC connectors provide cost effective discrete wire connections that are compatible with today's telecommunications packaging techniques. These connectors are designed to mate with .025 [0.64] sq. posts on .125 x .125 [3.18 x 3.18] centers and are comprised of double-row housings preloaded with insulation displacement receptacle contacts, snap-on hermaphroditic covers, and a full line of mass termination tooling to meet virtually every production need. For modular flexibility, connectors can be stacked end-to-end or side-to-side, maintaining a .125 x .125 [3.18 x 3.18] centerline spacing.

Covers can be furnished with and without a cable tie paddle. The covers are simply snapped onto a housing after the connector has been terminated.

The receptacle contacts feature the Tyco Electronics insulation displacement crimp technique for achieving top quality, low cost terminations. These contacts employ dual cantilever beams for redundant interface with a mating post, an integral post stop to limit post mating depth and protect the crimp termination, and a wire support (strain relief) crimp to prevent accidental wire pull-out. The contacts are made of high conductivity copper alloy and are duplex plated.

### Performance Characteristics

**Contact Current Rating** — 3 amperes

Termination Resistance — 12 milliohms (max.) **Durahility** — Ref. Product

**Durability** — Ref. Product Specification 108-25028 (Interconnection System, Insulation Displacement Connector, IDC Level)

**Application Specification** 114-25020 (Interconnection System, IDC Level V, Application of)



279

# **Electronics**

### Receptacle Assemblies, Double-Row, .125 x .125 [3.18 x 3.18] Centerline

### **Housings Preloaded with Insulation Displacement Crimp Receptacle Contacts**



### **Material and Finish**

**Housing** — Black thermoplastic, flame retardant

**Contacts** — Copper alloy, duplex plated .000050 [0.00127] gold on contact area, .000100 [0.00254] min. tin in crimp area, with entire contact underplated .000050 [0.00127] nickel

Note: Preloaded contacts accept max. insulation dia. of .050 [1.27]. The minimum point of contact, as measured from front edge of housing, is .095 [2.41].

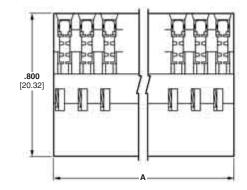
### Technical Documents —

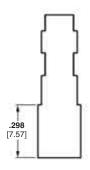
pages 277, 278

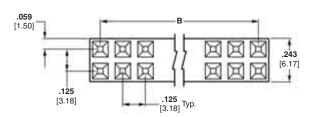
**Product Specification** 108-25028

**Application Specification** 114-25020

Receptacle assemblies can be stacked end-to-end and side-toside on .125 x .125 [3.18 x 3.18] centers.







No. of	Dimer	nsions	Receptacle Assembly (Stamped¹) for 26-22 AWG		
Pos.	Α	В	[0.12-0.3 mm <sup>2</sup> ] Wire		
8	<b>.493</b> [12.52]	<b>.375</b> [9.52]	102935-4		
10	<b>.618</b> [15.70]	<b>.500</b> [12.70]	102935-6		
12	<b>.743</b> [18.87]	<b>.625</b> [15.88]	102935-8		
16	<b>.993</b> [25.22]	<b>.875</b> [22.23]	1-102935-2		
20	<b>1.243</b> [31.57]	<b>1.125</b> [28.58]	1-102935-6		
24	<b>1.493</b> [37.92]	<b>1.375</b> [34.93]	1-102935-9		
30	<b>1.868</b> [47.45]	<b>1.750</b> [44.45]	1-102935-3		
32	<b>1.993</b> [50.62]	<b>1.875</b> [47.63]	2-102935-8		
40	<b>2.493</b> [63.32]	<b>2.375</b> [60.33]	3-102935-6		

<sup>1</sup>White ink stamped, one side—8- thru 12-position with AMP and arrow; 14- and 16-position with AMP, part no., and arrow; 18- thru 40-position with AMP, part no., date code and arrow.

Notes: 1. Covers for these housings are shown on pages 281 & 282.

- 2. Termination tooling for these connectors are shown on page 273-275.
- 3. 14- and 18-position receptacle assemblies, as well as other sizes, can be made available upon request. Consult Tyco Electronics.

Note: All part numbers are RoHS compliant.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

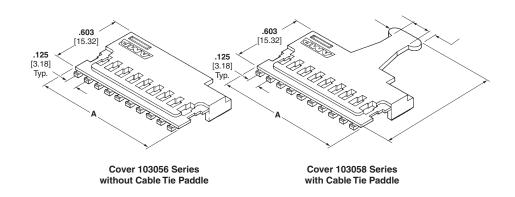


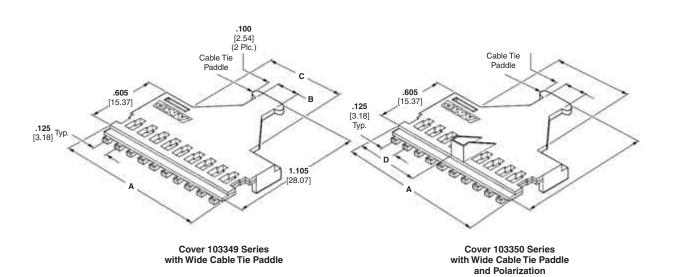
# Hermaphroditic Covers for Level V IDC Receptacle Assemblies, Double-Row, .125 x .125 [3.18 x 3.18] Centerline

All covers illustrated here and on the following page can be used on the doublerow Level V IDC connectors shown on page 280.

### Material

Black thermoplastic, flame retardant, 94V-0 rated





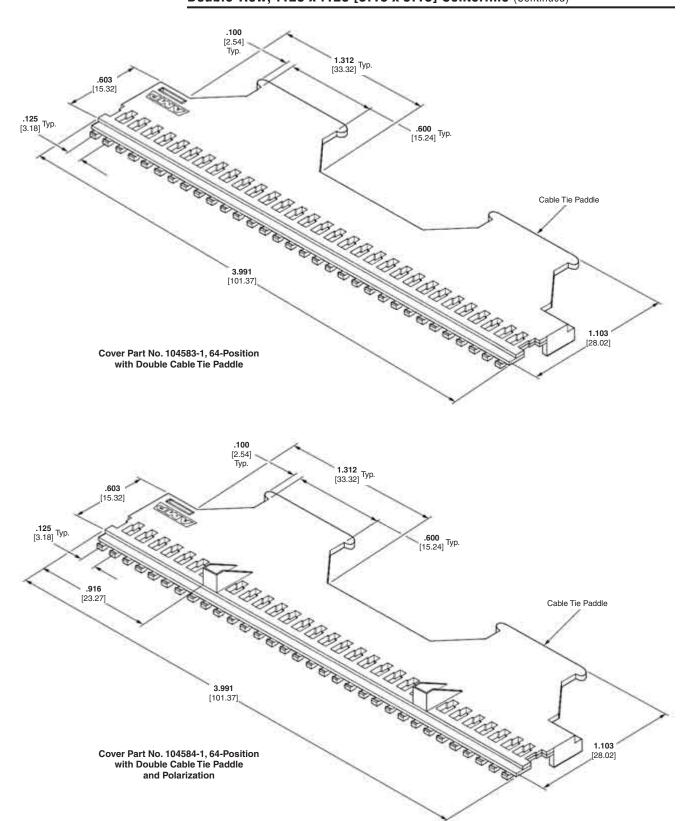
No. of		Plant de la constant				Cover Part Nos.				
No. of Pos.			Without Cable Tie	With Cable Tie	With Wide Cable Tie	With Wide Cable Tie				
(Housing Size)	Α	В	С	D	E	Paddle	Paddle	Paddle	Paddle and Polarization	
8	<b>.491</b> [12.47]	<b>.150</b> [3.81]	<b>.285</b> [7.24]	<b>.166</b> [4.22]	<b>.125</b> [3.18]	_	_	103349-4	103350-4	
10	<b>.616</b> [15.65]	_	_	_	<b>.125</b> [3.18]	_	103058-3	_	_	
12	<b>.741</b> [18.82]	_	_	_	<b>.200</b> [5.08]	_	103058-4	_	_	
16	<b>.991</b> [25.17]	<b>.300</b> [7.62]	<b>.592</b> [15.04]	<b>.416</b> [10.57]	_	_	_	103349-1	103350-1	
20	<b>1.241</b> [31.52]	<b>.300</b> [7.62]	<b>.592</b> [15.04]	<b>.541</b> [13.74]	_	_	_	103349-5	103350-5	
24	<b>1.491</b> [37.87]	_	_	_	<b>.400</b> [10.16]	1-103056-0	1-103058-0	_	_	
32	<b>1.991</b> [50.57]	<b>.600</b> [15.24]	<b>1.312</b> [33.32]	<b>.916</b> [23.27]	_	_	_	103349-2	103350-2	
40	<b>2.491</b> [63.27]	<b>.750</b> [19.05]	<b>1.820</b> [46.23]	<b>1.166</b> [29.61]	_	_	_	103349-3	103350-3	
64				See page 28	32 for Double Cab	ole Tie Paddle ver	sions.			

Notes: 1. Two hermaphroditic covers of any style can be installed on a double-row connector housing.

2. Other sizes can be made available upon request.

Note: All part numbers are RoHS compliant.

# Hermaphroditic Covers for Level V IDC Receptacle Assemblies, Double-Row, .125 x .125 [3.18 x 3.18] Centerline (Continued)



Note: All part numbers are RoHS compliant.

# Mod I 0.031 x 0.062 Interconnection System

### **Product Facts**

- Rugged connector system featuring .031 x .062 [0.79 x 1.57] posts with mating receptacles
- Current rating 5 amps max per contact. Varies due to ambient temperature, wire size and duty cycles.
- Available for board-to-board and wire-to-board applications
- Posts available on strip for machine application directly to pc board or in housings for board mounting
- Receptacles available for board mounting or wire crimping
- Contacts available in both tin and gold plating
- Flame retardant thermoplastic housings 94V-0 rated
- Locking Clip contacts available to mate with .031 x .062 [0.79 x 1.57] posts
- Recognized under the Component Program of Underwriters
  Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

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



The .031 x .062 [0.79 x 1.57] interconnection system has served as an industry standard for modular packaging for over three 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, assuring the lowest possible applied cost.

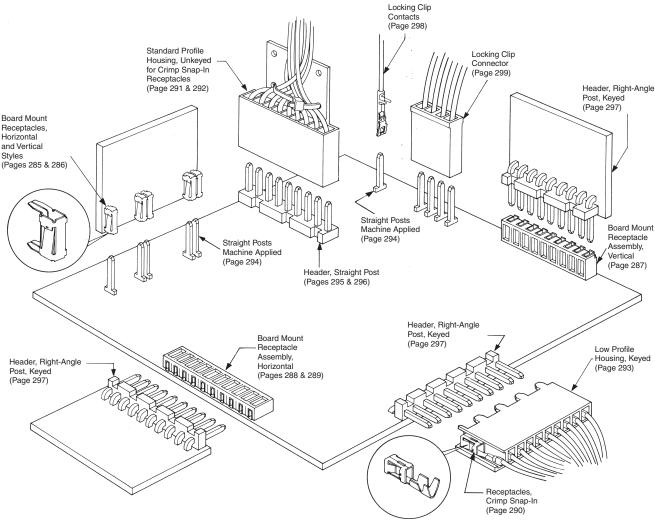
Crimp snap-in receptacles for 26-18 AWG [0.12 – 0.9mm²] wire provide excellent discrete wire terminations. Housings for these contacts provide for ease of handling terminations in high density applications.

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, Tyco Electronics can provide for the discrete location of individual posts and receptacles.

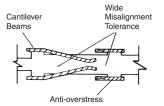
If your interconnections require Top Entry, Bottom Entry and/or Side Entry for perpendicular, parallel and stacked configurations, the .031 x .062 [0.79 x 1.57] interconnection system can fulfill your needs with the lowest applied cost through efficient interconnections and supporting application equipment.

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



Rugged-self supporting, one-Wide entry for post to receptacle misalignment Reliability-dual cantilever spring contact design and built-in

Offers high or low contact forces



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 antioverstress and excessive permanent deformation is prevented. This feature allows a wide range of tolerances for misalignment of mating contacts. 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.

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, Tyco Electronics recommends that customers purchase a contact lubricant. (See application specification 114-25004 for further information.)



Wire Crimp Receptacle

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Catalog 1307819 Revised 8-08

www.tycoelectronics.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents

Dimensions are shown for reference purposes only. Specifications subject to change.

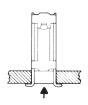
USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a

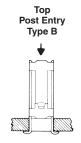


### Mod I Receptacles, Board Mount, .031 x .062 [0.79 x 1.57] Centerline

### **Vertical and Horizontal Board Mount**



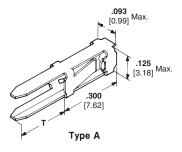
**Bottom** Post Entry Type A

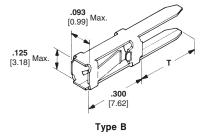


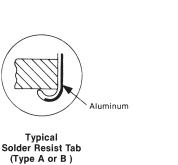


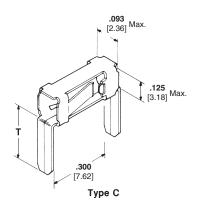
Type C

### **Receptacle Styles**









### **Related Product Data**

**Recommended Board Layout for Type C** — page 288

Mates with -

Machine Applied Posts — page 294

**Headers** — pages 295-297

Application Tooling —

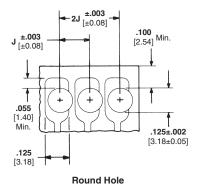
pages 300-304

Performance Specifications page 305

Technical Documents —

page 305

### **Recommended Board Layout for Receptacle Assemblies** and Individual Receptacles (Type A and B)



### **Keying Plug**



Part No. 86181-2 **Use in Board Mount Receptacles** 

J-Receptacle centers may vary depending on requirements. For individual receptacles, minimum nominal centerline spacing between adjacent receptacles is .150 [3.81]; for receptacle assemblies, centerline spacing between adjacent receptacles is .156 [3.96]. The .003 [0.08] tolerances are not to accumulate over length of board. For solder mask, see Tyco Electronics Instruction Sheet 408-7411.

(Post Entry Type A or B)

Note: Drawings depict normal use of the contact in a one or two-sided circuit board. When using plated thru-holes, refer to Tyco Electronics Engineering Report ER-001 and Tyco Electronics Instruction Sheet 408-7411. For solder mask, see Tyco Electronics Instruction Sheet 408-7411.

Note: All part numbers are RoHS compliant.



### Mod I Receptacles, Board Mount, .031 x .062 [0.79 x 1.57] Centerline (Continued)

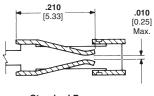
### **Material and Finish**

Copper alloy, plated as follows:

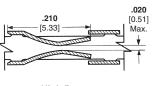
Plating A — Selectively plated .000030 [0.00076] gold on contact area, with gold flash over .000050 [0.00127] nickel on entire contact

**Plating B** — .000079 [0.00201] min. tin on entire contact

Plating C — (Solder Resist) —
.000030 [0.00076] gold over .000050
[0.00127] nickel on contact area,
.000500 [0.01270] aluminum on inside
area of solder tines; remainder of contact
unfinished







High Pressure Receptacle

Туре			Finish		Standard Pressure Part Nos.		Pressure t Nos.	Insertion Applicator No. for	
•	Range	(Ref. Pg. 285)		Strip Form	Loose Piece	Strip Form	Loose Piece	"U" Frame Machine	
			Plating A	86477-2	86480-2	_	_	466376-1	
Α	<b>.070055</b> [1.78-1.40]	<b>.112</b> [2.84]	Plating B	86477-3	_	87316-3	_	466376-1	
			Plating C (Solder Resist)	87772-2	_	_	_	466376-1	
			Plating A	87003-1	87105-1	_	_	466376-1	
В	<b>.070055</b> [1.78-1.40]	<b>.112</b> [2.84]	Plating B	87003-2	_	_	_	466376-1	
		Plating C (Solde	Plating C (Solder Resist)	87774-2	_	_	_	466376-1	
	C .103055 [2.62-1.40]	445 [0.00]	Plating A	85487-4	85493-4	86432-8	86434-6	E65067.2	
C		<b>.145</b> [3.68]	Plating B	85487-3	_	86432-1	86434-1	565967-3	

Notes: 1. All strip form parts in packaged quantities of 5,000 each.

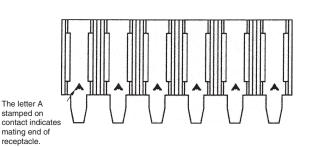
<sup>2.</sup> All loose piece parts in packaged quantities of 500 each.

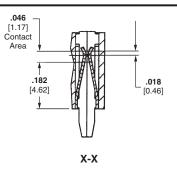
# od i Keceptacies, rtical Board Mount

# Mod I Receptacle Assemblies, Vertical Board Mount, .031 x .062 [0.79 x 1.57] Centerline

### Single Row .156 [3.96] Centerline







Tyne R

### **Material and Finish**

**Housing** — Black thermoplastic, 94V-0 rated

**Contacts** — Copper alloy, plated as follows:

Plating A — Selectively plated .000030 [0.00076] gold on contact area, with gold flash over .000050 [0.00127] nickel on entire contact

**Plating B** — .000079 [0.00201] min. tin on entire contact

Plating C — (Solder Resist) — .000030 [0.00076] gold over .000050 [0.00127] nickel on contact area, .000500 [0.01270] aluminum on inside area of solder tines; remainder of contact unfinished

### 

No.	Dimen	eione	Type A				туре в			
of	A	В	Sta	ndard Press	ure	<b>High Pressure</b>	re Standard Pressure		ure	
Pos.	А	В	Plating A	Plating B	Plating C	Plating B	Plating A	Plating B	Plating C	
2	<b>.156</b> [3.96]	<b>.312</b> [7.92]	87984-2	87983-2	87989-2	87993-2	87986-2	87985-2	87990-2	
3	<b>.312</b> [7.92]	<b>.468</b> [11.89]	87984-3	87983-3	87989-3	87993-3	87986-3	87985-3	87990-3	
4	<b>.468</b> [11.89]	<b>.624</b> [15.85]	87984-4	87983-4	87989-4	87993-4	87986-4	87985-4	87990-4	
5	<b>.624</b> [15.85]	<b>.780</b> [19.81]	87984-5	87983-5	87989-5	87993-5	87986-5	87985-5	87990-5	
6	<b>.780</b> [19.81]	<b>.936</b> [23.77]	87984-6	87983-6	87989-6	87993-6	87986-6	87985-6	87990-6	
7	<b>.936</b> [23.77]	<b>1.092</b> [27.74]	87984-7	87983-7	87989-7	87993-7	87986-7	87985-7	87990-7	
8	<b>1.092</b> [27.74]	<b>1.248</b> [31.70]	87984-8	87983-8	87989-8	87993-8	87986-8	87985-8	87990-8	
9	<b>1.248</b> [31.70]	<b>1.404</b> [35.66]	87984-9	87983-9	87989-9	87993-9	87986-9	87985-9	87990-9	
10	1.404 [35.66]	<b>1.560</b> [39.62]	1-87984-0	1-87983-0	1-87989-0	1-87993-0	1-87986-0	1-87985-0	1-87990-0	
11	<b>1.560</b> [39.62	<b>1.716</b> [43.59]	1-87984-1	1-87983-1	1-87989-1	1-87993-1	1-87986-1	1-87985-1	1-87990-1	
12	<b>1.716</b> [43.59]	<b>1.872</b> [47.55]	1-87984-2	1-87983-2	1-87989-2	1-87993-2	1-87986-2	1-87985-2	1-87990-2	
13	<b>1.872</b> [47.55]	<b>2.028</b> [51.51]	1-87984-3	1-87983-3	1-87989-3	1-87993-3	1-87986-3	1-87985-3	1-87990-3	
14	<b>2.028</b> [51.51]	<b>2.184</b> [55.47]	1-87984-4	1-87983-4	1-87989-4	1-87993-4	1-87986-4	1-87985-4	1-87990-4	
15	<b>2.184</b> [55.47]	<b>2.340</b> [59.44]	1-87984-5	1-87983-5	1-87989-5	1-87993-5	1-87986-5	1-87985-5	1-87990-5	
16	<b>2.340</b> [59.44]	<b>2.496</b> [63.40]	1-87984-6	1-87983-6	1-87989-6	1-87993-6	1-87986-6	1-87985-6	1-87990-6	
17	<b>2.496</b> [63.40]	<b>2.652</b> [67.36]	1-87984-7	1-87983-7	1-87989-7	1-87993-7	1-87986-7	1-87985-7	1-87990-7	
18	<b>2.652</b> [67.36]	<b>2.808</b> [71.32]	1-87984-8	1-87983-8	1-87989-8	1-87993-8	1-87986-8	1-87985-8	1-87990-8	
19	<b>2.808</b> [71.32]	<b>2.964</b> [75.29]	1-87984-9	1-87983-9	1-87989-9	1-87993-9	1-87986-9	1-87985-9	1-87990-9	
20	<b>2.964</b> [75.29]	<b>3.120</b> [79.25]	2-87984-0	2-87983-0	2-87989-0	2-87993-0	2-87986-0	2-87985-0	2-87990-0	

Tyne A

### **Related Product Data**

Recommended Board Layout — page 288

Mates with —

Machine Applied Posts — page 294

Headers — pages 295-297

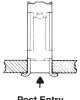
Performance Specifications — page 305

Technical Documents — page 305

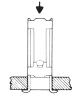
### **Keying Plug**



Part No. 86181-2 (Use in Board Mount Receptacles)



Post Entry Type A



Post Entry Type B

Note: All part numbers are RoHS compliant.

Catalog 1307819 Revised 8-08

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a

### Mod I Receptacle Assemblies, Horizontal Board Mount, .031 x .062 [0.79 x 1.57] Centerline

### Single Row .156 [3.96] **Centers**

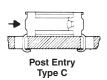
### **Material and Finish**

Housing — Black thermoplastic, 94V-0

**Contacts** — Copper alloy, plated as follows:

**Plating A** — Selectively plated .000030 [0.00076] gold contact area, with gold flash over .000050 [0.00127] nickel on entire contact

**Plating B** — .000079 [0.00201] min. tin on entire contact



### **Related Product Data**

Mates with -

Machine Applied Posts — page 294

**Headers** — pages 295-297

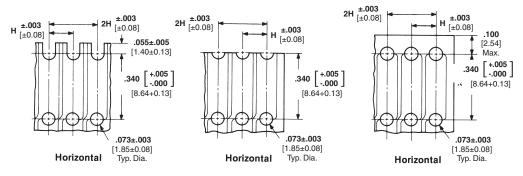
Performance Specifications page 305

Technical Documents page 305

### **.046** [1.17] [0.46] Contact Area .182 [4.62] The letter A stamped X-X on contact indicates mating end of recep-B<sub>[±0.38]</sub> .156 333+.010 .145 [3.96] [8.46±0.25] [3.68] .175±.007 [4.45±0.18]

X

### Recommended Board Layouts for Receptacle **Assemblies and Individual** Receptacles (Type C)



This configuration recommended for use with machine applied posts or headers with a .405 [10.29] minimum mating end post length.\*

This configuration recommended for use with machine applied posts or headers with a .345 [18.76] minimum mating end post length.\*

This configuration recommended for use with machine applied posts or headers with a .500 [12.70] minimum mating end post length.\*

.300±.003

[7.62±0.08]

.018

### **Keying Plug**



Part No. 86181-2 (Use in Board Mount Receptacles)

The mating post length is depicted by the A dimension on page 294 (machine applied posts) and the C dimension on pages 295-297 (headers).

H-Receptacle centers may vary depending on requirements. For individual receptacles, minimum nominal centerline spacing between adjacent receptacles is .125 [3.18] for receptacle assemblies, centerline spacing between adjacent receptacles is .156 [3.96]. The .003 [0.08] tolerances are not to accumulate over length of board.

Note: All part numbers are RoHS compliant.

www.tycoelectronics.com

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a



# Mod I Receptacle Assemblies, Horizontal Board Mount, .031 x .062 [0.79 x 1.57] Centerline (Continued)

No. of	Dimer	nsions	Standard	Pressure	High Pressure
Pos.	Α	В	Plating A	Plating B	Plating B
2	<b>.156</b> [3.96]	<b>.312</b> [7.92]	87988-2	87987-2	87995-2
3	<b>.312</b> [7.92]	<b>.468</b> [11.89]	87988-3	87987-3	87995-3
4	<b>.468</b> [11.89]	<b>.624</b> [15.85]	87988-4	87987-4	87995-4
5	<b>.624</b> [15.85]	<b>.780</b> [19.81]	87988-5	87987-5	87995-5
6	<b>.780</b> [19.81]	<b>.936</b> [23.77]	87988-6	87987-6	87995-6
7	<b>.936</b> [23.77]	<b>1.092</b> [27.74]	87988-7	87987-7	87995-7
8	<b>1.092</b> [27.74]	<b>1.248</b> [31.70]	87988-8	87987-8	87995-8
9	<b>1.248</b> [31.70]	<b>1.404</b> [35.66]	87988-9	87987-9	87995-9
10	<b>1.404</b> [35.66]	<b>1.560</b> [39.62]	1-87988-0	1-87987-0	1-87995-0
11	<b>1.560</b> [39.62]	<b>1.716</b> [43.59]	1-87988-1	1-87987-1	1-87995-1
12	<b>1.716</b> [43.59]	<b>1.872</b> [47.55]	1-87988-2	1-87987-2	1-87995-2
13	<b>1.872</b> [47.54]	<b>2.028</b> [51.51]	1-87988-3	1-87987-3	1-87995-3
14	<b>2.028</b> [51.51]	<b>2.184</b> [55.47]	1-87988-4	1-87987-4	1-87995-4
15	<b>2.184</b> [55.47]	<b>2.340</b> [59.44]	1-87988-5	1-87987-5	1-87995-5
16	<b>2.340</b> [59.44]	<b>2.496</b> [63.40]	1-87988-6	1-87987-6	1-87995-6
17	<b>2.496</b> [63.40]	<b>2.652</b> [67.36]	1-87988-7	1-87987-7	1-87995-7
18	<b>2.652</b> [67.36]	<b>2.808</b> [71.32]	1-87988-8	1-87987-8	1-87995-8
19	<b>2.808</b> [71.32]	<b>2.964</b> [75.29]	1-87988-9	1-87987-9	1-87995-9
20	<b>2.964</b> [75.29]	<b>3.120</b> [79.25]	2-87988-0	2-87987-0	2-87995-0

.031 x .062 [0.79 x 1.57] Centerline

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

### **Material and Finish**

Copper alloy, plated as follows:

Plating A — Selectively plated .000030 [0.00076] gold on contact area, with gold flash over .000050 [0.00127] nickel on entire contact

**Plating B** — .000016 [0.00041] min. tin on entire contact

### **Related Product Data**

Housings used in — pages 291-293

**Mate with Machine Applied** 

Posts — page 294

**Headers** — pages 295-297

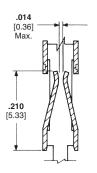
Application Tooling — page 300-304

Performance Specification —

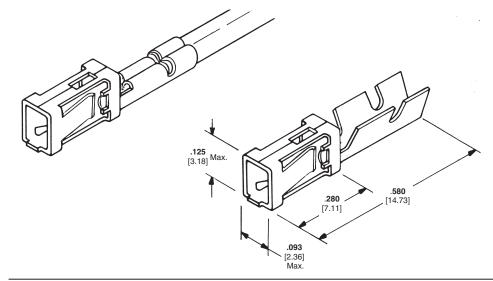
page 305

### Technical Documents —

page 305



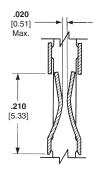
Standard Pressure Receptacle



			Standard Pressure				
Wire Size Range	Ins. Dia.	Finish -	Strip	Strip Form		Loose Piece	
AWG [mm <sup>2</sup> ]	Range	Filliali	Packaged Quantities	Part Nos.	Packaged Quantities	Part Nos.	
<b>22-18</b> [0.3-0.9]	<b>.051090</b> [1.30–2.29]	Plating A	5,000	102099-2	500	102103-2	
22-10 [0.3-0.9]	.031030 [1.30-2.29]	Plating B	5,000	102099-5	500	102103-3	

		Premium			
Wire Size Range AWG [mm²]	Part Number	Туре	Used With Machine	CERTI-CRIMP Hand Tool Part Number	
	466764-3	HDM	Model "G" (AMP-O-LECTRIC)		
22-18	466764-2	HDM	Model "K" (AMP-O-LECTRIC)	90274-2	
[0.3-0.9]	466764-1	HDM	CLS IV+ (AMPOMATOR)	90274-2	
	466937-1	SCA	Stripper-Crimper (AMP-O-MATIC)		

AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines and Stripper/Crimper Machines. Consult Tyco Electronics.



**High Pressure Receptacle** 



Extraction Tool Part No. 843473-1 Part Instruction Sheet 408-9451

			High Pressure				
Wire Size Range	Ins. Dia.	Finish	Strip	Strip Form		Loose Piece	
AWG [mm²]	Range	FIIIISII	Packaged Quantities	Part Nos.	Packaged Quantities	Part Nos.	
<b>22-18</b> [0.3-0.9]	<b>.051090</b> [1.30–2.29]	Plating A	5,000	102100-2	500	102104-2	
22-10 [0.5-0.5]	.031030 [1.50-2.23]	Plating B	5,000	102100-5	500	102104-3	
<b>26-22</b> [0.12-0.4]	<b>0.42073</b> [1.07-1.85]	Plating A	5,000	102102-2	500	102106-2	
20-22 [0.12-0.4]	<b>0.42073</b> [1.07-1.05]	Plating B	5.000	102102-5	500	102106-3	

		Applicator (High Pressure)					
Wire Size Range AWG [mm²]	Part Number			CERTI-CRIMP Hand Tool Part Number			
	466764-3	HDM	Model "G" (AMP-O-LECTRIC)				
<b>22-18</b> [0.3-0.9]	466764-2	HDM	Model "K" (AMP-O-LECTRIC)	90274-2			
	466764-1	HDM	CLS IV+ (AMPOMATOR)				
	466937-1	SCA	Stripper-Crimper (AMP-O-MATIC)				
<b>26-22</b> [0.12-0.4]	466763-2	HDM	Model "K" (AMP-O-LECTRIC)	90328-1			
	466763-1	HDM	CLS IV+ (AMPOMATOR)				

AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines and Stripper/Crimper Machines. Consult Tyco Electronics.

Note: All part numbers are RoHS compliant.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a



# Mod I Receptacle Housings, Standard Profile, Unkeyed, .031 x .062 [0.79 x 1.57] Centerline

### Single Row, .156 [3.96] Centers, Without Strain Relief



### Material

Black thermoplastic, flame retardant, 94V-0 rated

### **Related Product Data**

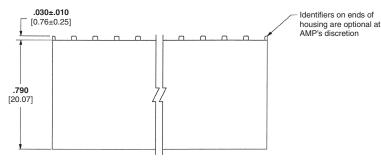
 $\begin{array}{l} \textbf{Contacts used with} \longrightarrow \text{page 290} \\ \textbf{Mate with} \longrightarrow \end{array}$ 

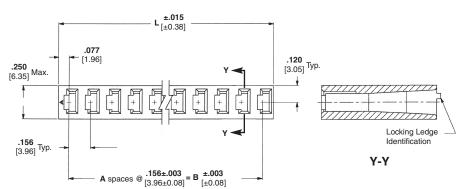
**Machine Applied Posts** — page 294 **Headers** — pages 295-297

Performance Specifications —

page 305

### **Technical Documents** — page 305





No. of		Dimensions		Housing Part Nos.		
Pos.	Α	В	L	Stamped <sup>1</sup>	Unstamped <sup>2</sup>	
2	1	<b>.156</b> [3.96]	<b>.312</b> [7.92]	_	2-87025-5	
3	2	<b>.312</b> [7.92]	<b>.468</b> [11.89]	_	2-87025-1	
4	3	<b>.468</b> [11.89]	<b>.624</b> [15.85]	_	1-87025-3	
5	4	<b>.624</b> [15.85]	<b>.780</b> [19.81]	_	2-87025-3	
6	5	<b>.780</b> [19.81]	<b>.936</b> [23.77]	87025-1	87025-2	
7	6	<b>.936</b> [23.77]	<b>1.092</b> [27.74]	_	3-87025-4	
8	7	<b>1.092</b> [27.74]	<b>1.248</b> [31.70]	_	1-87025-6	
9	8	<b>1.248</b> [31.70]	<b>1.404</b> [35.66]	87025-9	1-87025-0	
10	9	<b>1.404</b> [35.66]	<b>1.560</b> [39.62]	1-87025-7	1-87025-8	
11	10	<b>1.560</b> [39.62]	<b>1.716</b> [43.59]	_	3-87025-6	
12	11	<b>1.716</b> [43.59]	<b>1.872</b> [47.55]	1-87025-1	1-87025-2	
13	12	<b>1.872</b> [47.55]	<b>2.028</b> [51.51]	_	3-87025-0	
14	13	<b>2.028</b> [51.51]	<b>2.184</b> [55.47]	_	3-87025-8	
15	14	<b>2.184</b> [55.47]	<b>2.340</b> [59.44]	_	3-87025-2	
16	15	<b>2.340</b> [59.44]	<b>2.496</b> [63.40]	_	2-87025-0	
17	16	<b>2.496</b> [63.40]	<b>2.652</b> [67.36]	_	4-87025-0	
18	17	<b>2.652</b> [67.36]	<b>2.808</b> [71.32]	_	87025-4	
19	18	<b>2.808</b> [71.32]	<b>2.964</b> [75.29]	_	87025-6	
20	19	<b>2.964</b> [75.29]	<b>3.120</b> [79.25]	_	87025-8	
25	24	<b>3.744</b> [95.10]	<b>3.900</b> [99.06]	_	5-87025-0	

Notes: <sup>1</sup>Markings on housing. <sup>2</sup>No markings on housing.

Note: All part numbers are RoHS compliant.

# Tyco Electronics

### Mod I Receptacle Housings, Standard Profile, Unkeyed, .031 x .062 [0.79 x 1.57] Centerline (Continued)

### Single Row, .156 [3.96] Centers, With Strain Relief



### Material

Black thermoplastic, flame retardant, 94V-0 rated

### **Related Product Data**

Contacts used with — page 290

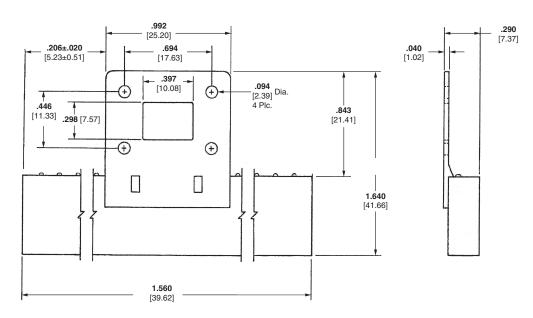
Mate with -

Machine Applied Posts — page 294

Headers — pages 295-297

 ${\bf Performance\ Specifications\ --}$ 

### Technical Documents page 305



10 Position Receptacle Housing, Part No. 1-102090-0

Note: All part numbers are RoHS compliant.

# l I Receptacle

# Mod I Receptacle Housings, Low Profile, Keyed, .031 x .062 [0.79 x 1.57] Centerline

### Single Row, .156 [3.96] Centers



### Material

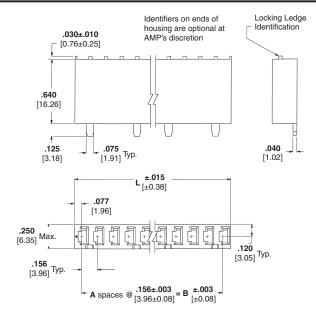
Black thermoplastic, flame retardant, 94V-0 rated

### **Related Product Data**

Contacts used with — page 290 Mate with —

**Headers** — pages 295-297 **Performance Specifications** — page 305

**Technical Documents** — page 305

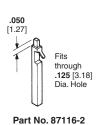


No. of		Dimensions		No. of	Housing Part Nos.	Key
Pos.	Α	В	L	Keys	(Unstamped) <sup>1</sup>	Locations
2	1	<b>.156</b> [3.96]	<b>.312</b> [7.92]	1	87159-3	Α
3	2	<b>.312</b> [7.92]	<b>.468</b> [11.89]	1	87159-4	Α
4	3	<b>.468</b> [11.89]	<b>.624</b> [15.85]	2	87159-5	A,C
5	4	<b>.624</b> [15.85]	<b>.780</b> [19.81]	2	87159-1	A,D
6	5	<b>.780</b> [19.81]	<b>.936</b> [23.77]	3	87159-6	A,C,E
7	6	<b>.936</b> [23.77]	<b>1.092</b> [27.74]	3	87159-7	A,C,E
8	7	1.092 [27.74]	<b>1.248</b> [31.70]	4	87159-8	A,C,E,G
9	8	<b>1.248</b> [31.70]	<b>1.404</b> [35.66]	3	87159-9	A,D,G
10	9	<b>1.404</b> [35.66]	<b>1.560</b> [39.62]	5	1-87159-0	A,C,E,G,J
11	10	<b>1.560</b> [39.62]	<b>1.716</b> [43.59]	4	1-87159-1	A,D,G,K
12	11	<b>1.716</b> [43.59]	<b>1.872</b> [47.55]	6	1-87159-2	A,C,E,G,J,L
13	12	<b>1.872</b> [47.55]	<b>2.028</b> [51.51]	4	87159-2	A,D,J,M
14	13	<b>2.028</b> [51.51]	<b>2.184</b> [55.47]	7	1-87159-3	A,C,E,G,J,L,N
15	14	<b>2.184</b> [55.47]	<b>2.340</b> [59.44]	5	1-87159-4	A,D,G,K,N
16	15	<b>2.340</b> [59.44]	<b>2.496</b> [63.40]	8	1-87159-5	A,C,E,G,J,L,N,Q
17	16	<b>2.496</b> [63.40]	<b>2.652</b> [67.36]	6	1-87159-6	A,D,G,K,N,R
18	17	<b>2.652</b> [67.36]	<b>2.808</b> [71.32]	6	1-87159-7	A,D,F,J,P,S
19	18	<b>2.808</b> [71.32]	<b>2.964</b> [75.29]	8	1-87159-8	B,D,F,J,L,N,Q,S
20	19	<b>2.964</b> [75.29]	<b>3.120</b> [79.25]	10	1-87159-9	A,C,E,G,J,L,N,Q,S,U
25	24	<b>3.744</b> [95.10]	3.900 [99.06]	11	2-87159-4	A,C,E,H,K,M,Q,S,U,W,

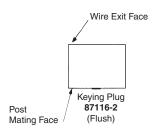
<sup>&</sup>lt;sup>1</sup>No marking on housing.

### **Keying Plug**

Material — Natural Color Nylon



### **Keying Plug References**



For Standard Housings

Wire Exit Face [4.06]

Keying Plug
87116-2
(Flush)

.160

For Low Profile Housings

Note: All part numbers are RoHS compliant.

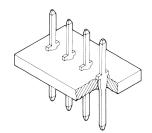
Catalog 1307819 Revised 8-08

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a

### Mod I Posts, Machine Applied, .031 x .062 [0.79 x 1.57] Centerline

### **Straight Posts**



Typical Assembly

### **Material and Finish**

Brass, plated .000030 [0.00076] gold over .000050 [0.00127] nickel on entire post

### **Related Product Data**

Mate with -

**Board Mount Receptacles** — pages 285, 286

Board Mount Receptacle Assemblies — pages 287-289

Crimp Snap-In Receptacles and

Housings — pages 290-292

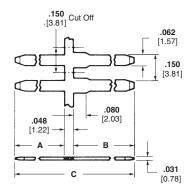
**Locking Clip Contacts &** 

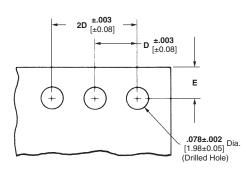
**Housings** — pages 298, 299 (see page 298 for recommended post length).

**Application Tooling** — pages 300-304

**Performance Specifications** — page 305

**Technical Documents** — page 305





**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		Finish	Pa	rt Nos.
Α	В	С	1	Strip Form <sup>1</sup>	Loose Piece <sup>2</sup>
<b>.360</b> [9.14]	<b>.187</b> [4.75]	<b>.595</b> [15.11]	Plating A	86147-7	86182-7
1000 [0.11]	1101 [1.70]	1000 [10.11]	Plating B	5086147-2	5086182-2
<b>.380</b> [9.65]	<b>.320</b> [8.13]	<b>.748</b> [19.00]	Plating A	1-86147-5	1-86182-5
[0.00]	1020 [0.10]	11 10 [10.00]	Plating B	5086147-9	5086182-9
<b>.400</b> [10.16]	<b>.125</b> [3.18]	<b>.573</b> [14.55]	Plating A	4-86147-2	2-86182-9
1100 [10.10]	1120 [0.10]	1010[11.00]	Plating B	3-5086147-7	2-5086182-5
<b>.480</b> [12.19]	<b>.187</b> [4.75]	<b>.715</b> [18.16]	Plating A	1-86147-8	1-86182-8
1100 [12.10]	1101 [1.70]		Plating B	2-5086147-2	2-5086182-2
<b>.565</b> [14.35]	<b>.187</b> [4.75]	<b>.800</b> [20.32]	Plating A	86147-8	86182-8
1000 [11.00]	1101 [1.70]	1000 [20.02]	Plating B	5086147-1	5086182-1
<b>.800</b> [20.32]	<b>.150</b> [3.81]	<b>.998</b> [25.35]	Plating A	1-86147-2	1-86182-2
.000 [20.02]		[20.00]	Plating B	1-5086147-0	1-5086182-0

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

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

Note: All part numbers are RoHS compliant.

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

See chart\_



### Mod I Headers, Straight Post, Keyed, .031 x .062 [0.79 x 1.57] Centerline

### Single Row, .156 [3.96] **Centers**



### **Material and Finish**

Housing — Black thermoplastic, 94V-0 rated

**Posts** — Brass, plated as follows:

Plating A — Selectively plated .000030 [0.00076] gold on contact area, with gold flash over .000050 [0.00127] min. nickel on entire post

Plating B — .000100-.000200 [0.00254-0.00508] tin over .000030 [0.00762] nickel on entire post

### [6.35±0.25] .125 [3.18] .085 .156±.003 [2.16] Max ±.003 = B [3.96±0.08] [±0.08] .031±.001 .063±.002 [0.79±0.03] Typ. [1.60±0.05] .062 .405±.010 [1.57] [10.29+0.25] .250±.010 .125±.010 [6.35±0.25] [3.18±0.25] .031 +.000 [0.89] .040-.015 +0.00 [1.02±0.38]

250+.010

### **Related Product Data**

Mate with -Board Mount Receptacles —

pages 285, 286

**Board Mount Receptacle** Assemblies — pages 287-289

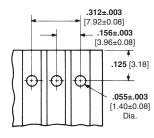
Crimp Snap-In Receptacles and Housings — pages 290-292

**Locking Clip Contacts &** 

**Housings** — pages 298 & 299 (see page 298 for recommended post length).

Performance Specifications page 305

### Technical Documents page 305



Recommended Board Layout



### **Keyway Locations** (Ref only)

No. of		Dimensions		No. of		Height 5 [10.29]		Height 7 [14.91]	Keyway
Pos.	Α	В	С	Keying Slots	Plating A	Plating B	Plating A	Plating B	Locations
2	1	.156 [3.96]	<b>.267</b> [6.78]	1	85829-2	5-87160-4	87247-2	5-87262-2	Α
3	2	<b>.312</b> [7.92]	<b>.423</b> [10.74]	1	85829-3	5-87160-5	87247-3	5-87262-3	Α
4	3	<b>.468</b> [11.89]	<b>.579</b> [14.71]	2	85829-4	5-87160-6	87247-4	5-87262-4	A,C
5	4	<b>.624</b> [15.85]	<b>.735</b> [18.67]	2	85829-5	5-87160-1	87247-5	5-87262-5	A,D
6	5	<b>.780</b> [19.81]	<b>.891</b> [22.63]	3	85829-6	5-87160-7	87247-6	5-87262-6	A,C,E
7	6	<b>.936</b> [23.77]	1.047 [26.59]	3	85829-7	5-87160-8	87247-7	5-87262-7	A,C,E,
8	7	<b>1.092</b> [27.74]	<b>1.203</b> [30.56]	4	85829-8	5-87160-9	87247-8	5-87262-8	A,C,E,G
9	8	<b>1.248</b> [31.70]	<b>1.359</b> [34.52]	3	85829-9	6-87160-0	87247-9	5-87262-9	A,D,G
10	9	1.404 [35.66]	<b>1.515</b> [38.48]	5	1-85829-0	6-87160-1	1-87247-0	6-87262-0	A,C,E,G,J
11	10	<b>1.560</b> [39.62]	<b>1.671</b> [42.44]	4	1-85829-1	6-87160-2	1-87247-1	6-87262-1	A,D,G,K
12	11	<b>1.716</b> [43.59]	<b>1.827</b> [46.41]	6	1-85829-2	6-87160-3	1-87247-2	6-87262-2	A,C,E,G,J,L
13	12	<b>1.872</b> [47.55]	<b>1.983</b> [50.37]	4	1-85829-3	5-87160-2	1-87247-3	6-87262-3	A,D,J,M
14	13	2.028 [51.51]	<b>2.139</b> [54.33]	7	1-85829-4	6-87160-4	1-87247-4	6-87262-4	A,C,E,G,J,L,N
15	14	<b>2.184</b> [55.47]	<b>2.295</b> [58.29]	5	1-85829-5	6-87160-5	1-87247-5	6-87262-5	A,D,G,K,N
16	15	<b>2.340</b> [59.44]	<b>2.451</b> [62.26]	8	1-85829-6	6-87160-6	1-87247-6	6-87262-6	A,C,E,G,J,L,N,Q
17	16	<b>2.496</b> [63.40]	<b>2.607</b> [66.22]	6	1-85829-7	6-87160-7	1-87247-7	6-87262-7	A,D,G,K,N,R
18	17	<b>2.652</b> [67.36]	<b>2.763</b> [70.18]	7	1-85829-8	6-87160-8	1-87247-8	6-87262-8	A,D,F,J,M,P,S
19	18	<b>2.808</b> [71.32]	<b>2.919</b> [74.14]	8	1-85829-9	6-87160-9	1-87247-9	6-87262-9	B,D,F,J,L,N,Q,S
20	19	<b>2.964</b> [75.29]	<b>3.075</b> [78.11]	10	2-85829-0	7-87160-0	2-87247-0	7-87262-0	A,C,E,G,J,L,N,Q,S,U
21	20	<b>3.120</b> [79.25]	<b>3.231</b> [82.07]	7	2-85829-1	7-87160-1	2-87247-1	7-87262-1	A,D,G,K,N,R,U
22	21	<b>3.276</b> [83.21]	<b>3.387</b> [86.03]	11	2-85829-2	7-87160-2	2-87247-2	7-87262-2	A,C,E,G,J,L,N,Q,S,U,V
23	22	<b>3.432</b> [87.17]	<b>3.543</b> [89.99]	8	2-85829-3	7-87160-3	2-87247-3	7-87262-3	A,D,G,K,N,R,U,X
24	23	<b>3.588</b> [91.14]	<b>3.699</b> [93.95]	12	2-85829-4	7-87160-4	2-87247-4	7-87262-4	A,C,E,G,J,L,N,Q,S,U,W
25	24	<b>3.744</b> [95.10]	<b>3.855</b> [97.92]	11	2-85829-5	7-87160-5	2-87247-5	7-87262-5	A,C,E,H,K,M,Q,S,U,W,

Note: All part numbers are RoHS compliant.

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Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a



# Mod I Headers, Straight Post, Keyed, .031 x .062 [0.79 x 1.57] Centerline (Continued)

No. of		Dimensions		No. of Keying		Height [19.05]		Height 7 [30.15]		Height 0 [33.27]	Keyway Locations
Pos.	Α	В	С	Slots	Plating A	Plating B	Plating A	Plating B	Plating A	Plating B	Locations
2	1	<b>.156</b> [3.96]	<b>.267</b> [6.78]	1	85923-2	5-85875-7	87283-2	_	85839-2	5-85840-2	А
3	2	<b>.312</b> [7.92]	<b>.423</b> [10.74]	1	85923-3	5-85875-8	87283-3	5-86207-2	85839-3	5-85840-3	A
4	3	<b>.468</b> [11.89]	<b>.579</b> [14.71]	2	85923-4	5-85875-1	87283-4	5-86207-9	85839-4	5-85840-4	A,C
5	4	<b>.624</b> [15.85]	<b>.735</b> [18.67]	2	85923-5	5-85875-2	87283-5	5-86207-3	85839-5	5-85840-5	A,D
6	5	<b>.780</b> [19.81]	<b>.891</b> [22.63]	3	85923-6	5-85875-9	87283-6	_	85839-6	5-85840-6	A,C,E
7	6	<b>.936</b> [23.77]	1.047 [26.59]	3	85923-7	6-85875-0	87283-7	_	85839-7	5-85840-7	A,C,E,
8	7	<b>1.092</b> [27.74]	<b>1.203</b> [30.56]	4	85923-8	6-85875-1	87283-8	_	85839-8	5-85840-8	A,C,E,G
9	8	<b>1.248</b> [31.70]	<b>1.359</b> [34.52]	3	85923-9	5-85875-3	87283-9	_	85839-9	5-85840-9	A,D,G
10	9	1.404 [35.66]	<b>1.515</b> [38.48]	5	1-85923-0	6-85875-2	1-87283-0	_	1-85839-0	6-85840-0	A,C,E,G,J
11	10	<b>1.560</b> [39.62]	<b>1.671</b> [42.44]	4	1-85923-1	6-85875-3	1-87283-1	_	1-85839-1	6-85840-1	A,D,G,K
12	11	<b>1.716</b> [43.59]	<b>1.827</b> [46.41]	6	1-85923-2	5-85875-4	1-87283-2	_	1-85839-2	6-85840-2	A,C,E,G,J,L
13	12	<b>1.872</b> [47.55]	<b>1.983</b> [50.37]	4	1-85923-3	6-85875-4	1-87283-3	_	1-85839-3	6-85840-3	A,D,J,M
14	13	<b>2.028</b> [51.51]	<b>2.139</b> [54.33]	7	1-85923-4	6-85875-5	1-87283-4	_	1-85839-4	6-85840-4	A,C,E,G,J,L,N
15	14	<b>2.184</b> [55.47]	<b>2.295</b> [58.29]	5	1-85923-5	6-85875-6	1-87283-5	_	1-85839-5	6-85840-5	A,D,G,K,N
16	15	<b>2.340</b> [59.44]	<b>2.451</b> [62.26]	8	1-85923-6	6-85875-7	1-87283-6	_	1-85839-6	6-85840-6	A,C,E,G,J,L,N,Q
17	16	<b>2.496</b> [63.40]	<b>2.607</b> [66.22]	6	1-85923-7	6-85875-8	1-87283-7	_	1-85839-7	6-85840-7	A,D,G,K,N,R
18	17	<b>2.652</b> [67.36]	<b>2.763</b> [70.18]	7	1-85923-8	6-85875-9	1-87283-8	_	1-85839-8	6-85840-8	A,D,F,J,M,P,S
19	18	<b>2.808</b> [71.32]	<b>2.919</b> [74.14]	8	1-85923-9	7-85875-0	1-87283-9	_	1-85839-9	6-85840-9	B,D,F,J,L,N,Q,S
20	19	<b>2.964</b> [75.29]	<b>3.075</b> [78.11]	10	2-85923-0	7-85875-1	2-87283-0	_	2-85839-0	7-85840-0	A,C,E,G,J,L,N,Q,S,U
21	20	<b>3.120</b> [79.25]	<b>3.231</b> [82.07]	7	2-85923-1	7-85875-2	2-87283-1	_	2-85839-1	7-85840-1	A,D,G,K,N,R,U
22	21	<b>3.276</b> [83.21]	<b>3.387</b> [86.03]	11	2-85923-2	7-85875-3	2-87283-2	_	2-85839-2	7-85840-2	A,C,E,G,J,L,N,Q,S,U,W
23	22	<b>3.432</b> [87.17]	3.543 [89.99]	8	2-85923-3	5-85875-5	2-87283-3	_	2-85839-3	7-85840-3	A,D,G,K,N,R,U,X
24	23	<b>3.588</b> [91.14]	<b>3.699</b> [93.95]	12	2-85923-4	7-85875-4	2-87283-4	_	2-85839-4	7-85840-4	A,C,E,G,J,L,N,Q,S,U,W,Y
25	24	<b>3.744</b> [95.10]	<b>3.855</b> [97.92]	11	2-85923-5	7-85875-5	2-87283-5	_	2-85839-5	7-85840-5	A,C,E,H,K,M,Q,S,U,W,Y



### Mod I Headers, Right-Angle Post, Keyed, .031 x .062 [0.79 x 1.57] Centerline

### Single Row, .156 [3.96] Centers



### **Material and Finish**

**Housing** — Black thermoplastic, 94V-0 rated

**Posts** — Brass, plated as follows:

Plating A — Selectively plated .000030 [0.00076] gold on contact area, with gold flash over .000050 [0.00127] nickel on entire post

**Plating B** — .000015 [0.00038] gold over .000050 [0.00127] nickel on entire post

**Plating C** — .000100-.000200 [0.00254-0.00508] tin over .000050 [0.00127] nickel on entire post

### **Related Product Data**

Mate with — Board Mount Receptacles pages 285, 286

Board Mount Receptacle Assemblies — pages 287-289

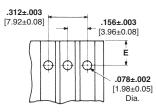
**Crimp Snap-In Receptacles and Housings** — pages 290-292

Locking Clip Contacts and

**Housings** — pages 298 & 299 (see page 298 for recommended post length).

**Performance Specifications** — page 305

### Technical Documents — page 305



**Recommended Board Layout** 

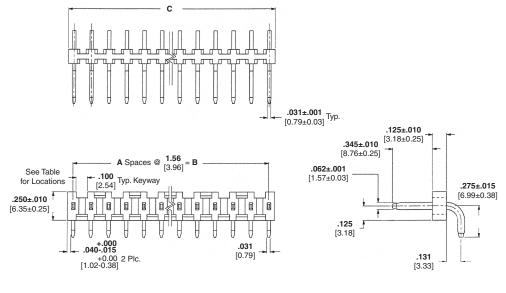
### **E Dimension**

### .345 [8.76] Post Height —

.250 [6.35] for mounting header flush with board edge; .595 [15.11] for supporting mating connector on board.

### .500 [12.70] Post Height -

.250 [6.35] for mounting header flush with board edge; .750 [19.05] for supporting mating connector on board.





Keyway Locations (Ref Only)

No. of		Dimensions		No. of Keying		Height 5 [8.76]	Post Height D=.500 [12.70]		Keyway
Pos.	Α	В	С	Slots	Plating A	Plating C	Plating B	Plating C	Locations
2	1	<b>.156</b> [3.96]	<b>.267</b> [6.78]	1	87654-2	5-87655-2	87258-2	5-87194-1	А
3	2	<b>.312</b> [7.92]	<b>.423</b> [10.74]	1	87654-3	5-87655-3	87258-3	5-87194-2	А
4	3	<b>.468</b> [11.89]	<b>.579</b> [14.71]	2	87654-4	5-87655-4	87258-4	5-87194-3	A,C
5	4	<b>.624</b> [15.85]	<b>.735</b> [18.67]	2	87654-5	5-87655-5	87258-5	5-87194-4	A,D
6	5	<b>.780</b> [19.81]	<b>.891</b> [22.63]	3	87654-6	5-87655-6	87258-6	5-87194-5	A,C,E
7	6	<b>.936</b> [23.77]	1.047 [26.59]	3	87654-7	5-87655-7	87258-7	5-87194-6	A,C,E
8	7	<b>1.092</b> [27.74]	<b>1.203</b> [30.56]	4	87654-8	5-87655-8	87258-8	5-87194-7	A,C,E,G
9	8	<b>1.248</b> [31.70]	<b>1.359</b> [34.52]	3	87654-9	5-87655-9	87258-9	5-87194-8	A,D,G
10	9	1.404 [35.66]	<b>1.515</b> [38.48]	5	1-87654-0	6-87655-0	1-87258-0	5-87194-9	A,C,E,G,J
11	10	<b>1.560</b> [39.62]	<b>1.671</b> [42.44]	4	1-87654-1	6-87655-1	1-87258-1	6-87194-0	A,D,G,K
12	11	<b>1.716</b> [43.59]	<b>1.827</b> [46.41]	6	1-87654-2	6-87655-2	1-87258-2	6-87194-1	A,C,E,G,J,L
13	12	<b>1.872</b> [47.55]	<b>1.983</b> [50.37]	4	1-87654-3	6-87655-3	1-87258-3	6-87194-2	A,D,J,M
14	13	<b>2.028</b> [51.51]	<b>2.139</b> [54.33]	7	1-87654-4	6-87655-4	1-87258-4	6-87194-3	A,C,E,G,J,L,N,
15	14	<b>2.184</b> [55.47]	<b>2.295</b> [58.29]	5	1-87654-5	6-87655-5	1-87258-5	6-87194-4	A,D,G,K,N
16	15	<b>2.340</b> [59.44]	<b>2.451</b> [62.26]	8	1-87654-6	6-87655-6	1-87258-6	6-87194-5	A,C,E,G,J,L,N,Q
17	16	<b>2.496</b> [63.40]	<b>2.607</b> [66.22]	6	1-87654-7	6-87655-7	1-87258-7	6-87194-6	A,D,G,K,N,R
18	17	<b>2.652</b> [67.36]	<b>2.763</b> [70.18]	7	1-87654-8	6-87655-8	1-87258-8	6-87194-7	A,D,F,J,M,P,S
19	18	<b>2.808</b> [71.32]	<b>2.919</b> [74.14]	8	1-87654-9	6-87655-9	1-87258-9	6-87194-8	B,D,F,J,L,N,Q,S
20	19	<b>2.964</b> [75.29]	<b>3.075</b> [78.11]	10	2-87654-0	7-87655-0	2-87258-0	6-87194-9	A,C,E,G,J,L,N,Q,S,U
21	20	<b>3.120</b> [79.25]	<b>3.231</b> [82.07]	7	2-87654-1	7-87655-1	2-87258-1	7-87194-0	A,D,G,K,N,R,U
22	21	<b>3.276</b> [83.21]	<b>3.387</b> [86.03]	11	2-87654-2	7-87655-2	2-87258-2	7-87194-1	A,C,E,G,J,L,N,Q,S,U,W
23	22	<b>3.432</b> [87.17]	<b>3.543</b> [89.99]	8	2-87654-3	7-87655-3	2-87258-3	7-87194-2	A,D,G,K,N,R,U,X
24	23	<b>3.588</b> [91.14]	<b>3.699</b> [93.95]	12	2-87654-4	7-87655-4	2-87258-4	7-87194-3	A,C,E,G,J,L,N,Q,S,U,W,Y
25	24	<b>3.744</b> [95.10]	<b>3.855</b> [97.92]	11	2-87654-5	7-87655-5	2-87258-5	7-87194-4	A,C,E,H,K,M,Q,S,U,W,Y

Note: All part numbers are RoHS compliant.

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## Locking Clip Contacts for .031 x .062 [0.79 x 1.57] Posts, .031 x .062 [0.79 x 1.57] Centerline

### Wire Crimp Contacts with Insulation Support

### **Material and Finish**

**Contact Body** — Phosphor bronze, plated as follows:

Plating A — Selectively plated .000015 [0.00038] gold on contact area, with gold flash over .000050 [0.00127] nickel on entire post

**Plating B** — .000100 [0.00254] min. tin over .000050 [0.00127] nickel on entire contact

Contact Spring — Stainless steel

### **Related Product Data**

Mate with -

Machine Applied Posts — page 294 Headers (.500 Post Height Only) —

pages 295-297 (see recommended post length below)\*

**Housings used in** — page 299 **Application Tooling** — pages 300-304

**Performance Specification** — page

### **Technical Documents** — page 305



**Instruction Sheet** 408-7678

	Spring	
		Body
Mating Post		

Wire Size Range	Ins. Dia.	Finish	Contact	Part Nos.	
AWG [mm²]	Range	FIIIISII	Strip Form	Loose Piece	
<b>22-18</b> [0.3-0.9]	<b>.0500100</b> [1.27–2.54]	Plating A	87269-2	87278-2	
22 10 [0.0-0.9]	1000 10100 [1.27-2.54]	Plating B	5-87269-1	5-87278-1	

Wire Size		Appli	cator	Premium	
Range	Part	Type	Used With	CERTI-CRIMP Hand Tool	
AWG [mm <sup>2</sup> ]	Number	Турс	Machine	Part Number	
<b>22-18</b> [0.3-0.9]	466007-2	HDM	Model "K" (AMP-O-LECTRIC)1	90308-1	
<b>22-16</b> [0.3-0.9]	466950-2	SCA	Stripper/Crimper (AMP-O-MATIC)	90306-1	

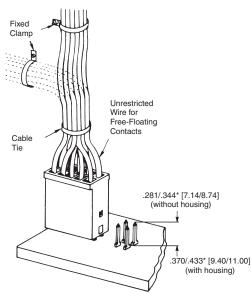
<sup>1</sup>AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines. Consult Tyco Electronics.

**Note:** These contacts must be crimped in accordance with Tyco Electronics Specification No. 114-25008 in order to function properly in a connector housing.

Extraction Tool Part 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 allow 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. For more information, request Insulating and Bundling Products Catalog 124132.



\*Dimension defines .031 x .062 [0.79 x 1.57] portion of post.

If post is longer than maximum specified, post tip may butt against wire ends.

Note: All part numbers are RoHS compliant.



### Locking Clip Connector Housings, .031 x .062 [0.79 x 1.57] Centerline

### Single Row, .156 [3.96] Centers



### **Material and Finish**

Black thermoplastic, 94V-0 rated

### **Related Product Data**

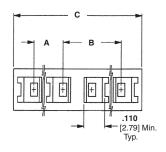
Contacts used with — page 298 Mate with —

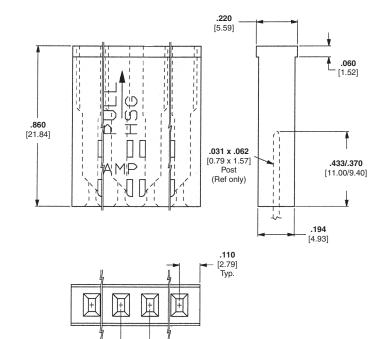
Machine Applied Posts — page 294

**Headers** — pages 295-297 (see page 298 for recommended post length)

Performance Specifications — page 305

### **Technical Documents** — page 305





No. of		<b>Dimensions</b>		Housing	Part Nos.	Keyed Positions
Pos.	Α	В	С	UnKeyed	Keyed	on Mating Face
1	_	_	<b>.200</b> [5.08]	87270-1	_	_
2	_	_	<b>.376</b> [9.55]	87270-2	_	_
3	<b>.156</b> [3.96]	<b>.156</b> [3.96]	<b>.532</b> [13.51]	1-87270-3	_	_
3 of 4	450 [0.00]	<b>.312</b> [7.92]	<b>.688</b> [17.48]	_	87270-3	
4	<b>.156</b> [3.96]	.312 [7.92]	.000 [17.40]	87270-4	_	_
4 of 5	<b>.312</b> [7.92]	<b>.312</b> [7.92]	044 [04 44]	_	1-87270-0	
5		.312 [7.92]	<b>.844</b> [21.44]	1-87270-4	_	_
5 of 6	242 [7 00]	460 [11 00]	1 000 [05 40]	_	1-87270-2	
6	<b>.312</b> [7.92]	<b>.400</b> [11.89]	<b>1.000</b> [25.40]	87270-5	_	_
6 of 7	460 [11 00]	<b>460</b> [11 00]	1 156 [20 26]	_	1-87270-1	
7	. <b>400</b> [11.89]	<b>.406</b> [11.69]	<b>1.156</b> [29.36]	1-87270-5	_	_
8	<b>.468</b> [11.89]	<b>.624</b> [15.85]	<b>1.312</b> [33.32]	87270-6	_	_
9	<b>.624</b> [15.85]	<b>.624</b> [15.85]	<b>1.468</b> [37.29]	1-87270-6	_	_
10	<b>.624</b> [15.85]	<b>.780</b> [19.81]	<b>1.624</b> [41.25]	87270-7	_	_
11	<b>.780</b> [19.81]	<b>.780</b> [19.81]	<b>1.780</b> [45.21]	1-87270-7	_	_
12	<b>.780</b> [19.81]	<b>.936</b> [23.77]	<b>1.936</b> [49.17]	87270-8	_	_

**.156** [3.96]

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

Notes: 1. All housings listed above will accept Locking Clip Contacts No. 87269 and 87278, refer to page 298

2. Refer to Tyco Electronics Instruction Sheet 408-7676 for proper contact orientation within the housings.

**Note:** All part numbers are RoHS compliant.

Catalog 1307819 Revised 8-08 USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a

# **Electronics**

### **Application Tooling**

For Crimp Snap-In Receptacles and Locking **Clip Contacts** 

### Side-Feed Heavy-Duty **Miniature Applicators** (Coded HDM)



Interchangeable applicators for crimping products reeled side-by-side on single or dual carrier strips (primarily closed-barrel terminals and open-barrel contacts). Similar design as the endfeed version. All side-feed applicators include a wire stop to help correctly position the wire end in the crimping target area.

For more information, request Instruction Sheet 408-8040.

AMP-O-LECTRIC Model "G" **Terminating Machines**, 354500-1, -9, -11



Semiautomatic bench machines for crimping reeled terminals and contacts, featuring a quiet and reliable direct motor drive, microprocessor controls for ease of setup and operation, and guarding and lighting designed for operator convenience and safety. All models are equipped with either manual or automatic precision adjustment of crimp height. Machine-mounted sensors are available for crimp quality monitoring using conventional miniature-style applicators.

### **Specifications**

**Width** — 18.7-25.3 [475-643] depending on applicator type **Depth** — 21.5-28.1 [546-713] depending on applicator type

**Height** — 20 [508]

Weight — 240 lb [110 kg]

**Electrical** — 120 or 220 VAC, 50

or 60 Hz; 310 VA

**Air** — 90-110 psi [6.21-7.59 bar], 6 scfm [0.00282 m³/s] when required with air-feed applicators

Wire Range — 26-10 AWG [0.12-6 mm<sup>2</sup>] solid or stranded, depending on product applied For more information, request Catalog 65828, Video 198116, Catalog 82275 [Crimp Quality Monitor (CQM)], Video 198094.

### AMPOMATOR CLS IV+ Lead-Making Machines, 356500-1, -2, 1213400-1, -2



Fully-automatic machines that measure, cut, strip and terminate single leads. Microprocessor-controlled, and programmed and operated using an easy-tofollow, menu-driven touchscreen. Features include direct-drive terminating units with precision crimp height adjustment, fully programmable setups, wire runout and splice detection, and motorized pre-feed with wire straightener. Crimp quality monitoring is also available.

### **Specifications**

**Width** — 159 [4 040]

**Depth** — 68 [1 730]

Height — 86 [2 185] with 24 [610] dia. reel

**Weight** — 2 000 lb [907 kg]

Electrical — 220 VAC, 50 or 60 Hz, single phase, 25 A, with neutral and ground

**Air** — 90 psi [6.21 bar], 15 scfm [0.0071 m<sup>3</sup>/s] sustained

Wire Range — 26-10 AWG [0.12-6 mm<sup>2</sup>] stranded, 26-16 AWG [0.12-1.4 mm<sup>2</sup>] solid

Lead Lengths — 3-90 [76.2-2 285], 90-1 000 [2 285-25 400] with long lead conveyors

For more information, request Catalog **124324**, Video **198142** (NTSC), 199609 (PAL).

Note: All part numbers are RoHS compliant.

Note: For additional tooling options, contact Tyco Electronics or reference the Tyco Electronics web site.

### Specifications

**Width**—14 [355]

**Depth**—18 [457]

**Height**—33 [838] without reel **Weight**—150 lb [68 kg]

**Electrical**—120 VAC, 50 or

60 Hz, .5 A

**Air**—80-100 psi [5.52-6.90 bar], 3.5 scfm [0.00165 m³/s]

**Wire Range**—32-14 AWG [0.03-2 mm<sup>2</sup>]

For more information, request Catalog 65004, Video 198075, Catalog 82275 [Crimp Quality Monitor (CQM)], Video 198094.

### **Application Tooling** (Continued)

For Crimp Snap-In Receptacles and Locking Clip Contacts (Continued)

### AMP-O-MATIC Stripper-Crimper Machines, 854040-3, -4



system. All adjustments can be made from the front of the machines without special tools. Available with crimp quality monitoring.

Semiautomatic bench

strip the wire, and are

therefore used for

crimping machines that also

terminating jacketed cable.

keyed strip blades for faster,

more accurate setups, and

an efficient scrap removal

Feature manual precision adjustment of crimp height,

### Stripper-Crimper Applicators (coded SCA)



Interchangeable applicators for crimping products in AMP-O-MATIC Stripper-Crimper Machines. Consist of separate ram and lower tooling assemblies. Similar dial-in settings for different wire sizes and insulation diameters as HDM applicators. Available with sensors for use with the Crimp Quality Monitor.

For more information, request Catalog 65004 (AMP-0-MATIC Stripper-Crimper Machines), Catalog 82275 [Crimp Quality Monitor (CQM)].

### Kappa 235, Automatic Cut and Strip, 3-547178-1



The Kappa 235 has the capability of processing wires with a cross section of up to 4 AWG and an outside diameter of 0.59 inch.
Options include an inner conductor processing kit for multiconductor cables and a flat ribbon cable kit.

### **Specifications**

Width—25 [630]

**Depth**—16 [490]

**Height**—13.4 [370]

**Weight**—95 lb [44 kg]

Wire Cross-Sections— 24-4 AWG [0.22-25 mm²]

**Flat Ribbon Cables**—width up to 40mm

**Length Range**—0.04"-328ft [1mm - 99.99m] (+/- 0.2%)

**Electrical**—110/230 V - 50/60Hz, switches automatically

### Cosmic 927R Micro-Cable Stripper



The Cosmic 927R Micro-Cable Stripper was developed to reliably strip various insulation materials and micro-cable. From conductor diameter 36 AWG to 10 AWG, the stripping diameter display can be set to within 0.1mm increments.

Thus optimal stripping quality is guaranteed and damage to the conductor is eliminated.

**Note:** All part numbers are RoHS compliant.

Note: For additional tooling options, contact Tyco Electronics or reference the Tyco Electronics web site.

Application Tooling

**Application Tooling** 

### **Application Tooling** (Continued)

For Crimp Snap-In **Receptacles and Locking** Clip Contacts (Continued)

**Electronics** 

### **CERTI-CRIMP Straight Action Hand Tools (SAHT)**



Premium grade hand tools. Feature ratchet control to provide complete crimp cycle. Die sets close in a straight line. Include a contact locator and wire stop, plus an insulation crimp adjustment lever, when applicable. Approximate weight 1.3 lb [0.59 kg]

assemblies / dies, have multiple power options available. The accompanying diagram outlines those power options. See catalogs 1654714 (SDE Electric Terminator), 124208 (626 Pneumatic Tool System) and 1773381(Battery-Powered Crimp Tool Kits) for more information.

All CERTI-CRIMP head

For more information, request Catalog **65780**.



### **PRO-CRIMPER III Hand Tool**



Commercial grade hand tool for crimping various products. Features ratchet control to provide complete crimp cycle. Accepts both pinned- and shoulderedstyle die sets. Locators are provided with pinned-style die sets for proper contact and wire positioning, and to help minimize contact rotation and bending during crimping. Approximate weight 1.3 lb [0.60 kg].

All PRO-CRIMPER head assemblies / dies, have multiple power options available. The accompanying diagram outlines those power options. See catalogs 1654714 (SDE Electric Terminator), 124208 (626 Pneumatic Tool System) and 1773381(Battery-Powered Crimp Tool Kits) for more information.

Instruction Sheet 408-9930



Note: For additional tooling options, contact Tyco Electronics or reference the Tyco Electronics web site.

**Application Tooling** 

### **Application Tooling** (Continued)

**For Board Mount Receptacles and Machine Applied Posts** 

**Modular Insertion System** (MIS) Bench Machines, 217600 Series. 662820 Series (shown)



For Board Mount Receptacles

Bench machines for inserting a variety of products into pc boards. Uses the same interchangeable insertion heads as the Comp-U-Sertor II Machines. Series 217600 machines feature a manually-operated X-Y positioning fixture, plus a locator spotlight. The machine cycles when the board hole is placed on the anvil and both triggers on the dual handles attached to the X-Y fixture are depressed. Series 662820 machines, without board fixturing, cycle automatically when the hole is properly located. A stabilizing disk over the anvil helps keep the board level.

This benchtop insertion machine installs contacts into PC boards at rates to 2000 per hour. A spotlight highlights the insertion area, and lower tooling assures precise board location. The machine is activated by a foot pedal.

### **Specifications**

Width — 18 [457]

**Depth** — 24 [610]

Height — 18 [457]

Weight — 250 lb [113 kg]

**Electrical** — 120 to 220 VAC, 50 or 60 Hz (217600); 120 or 240 VAC, 60 Hz, single phase, 120 VA (662820)

**Air** — 80 psi [5.52 bar] min., 15 scfm [0.00708 m³/s] min.

Insertable Area — 18 x 22 [457 x 559] max.

For more information, request Catalog 296059.

### **P300 Automatic Insertion** Machine



Automatic machine for inserting a variety of contacts into pc boards (PCBs). Equipped with an insertion tool (comprised of a product-specific insertion head, an anvil, and a product feed mechanism). Stepper-motor driven X-Y table positions PCBs under insertion head. Surface Mount Equipment Manufacturers Association (SMEMA) compatible inline PCB Insertion Station for posts, tabs, receptacles or sockets. Stand-alone unit is field upgradeable to Pass Through. Mounts up to four Tyco Electronics pneumatic insertion heads. Modem diagnostics standard, vision system optional. Control panel used to program and monitor entire insertion process.

### Specifications

Width — 57.5 [1 460]

**Depth** — 64.5 [1 640]

**Height** — 60 [1 520]

Weight — Depending on configuration

Electrical — 110 V, 60 Hz

**Air** — 87 psi [6 bar]

Insertable Area — 24 x 16

[600 x 400]

For more information, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Note: For additional tooling options, contact Tyco Electronics or reference the Tyco Electronics web site.



### **Application Tooling** (Continued)

For Board Mount Receptacles and Machine Applied Posts (Continued)

### **P350 Pin Insertion Machine**



The P350 is a fully automatic inline pin insertion machine capable of applying reeled pins, tabs, receptacles and similar products into PCBs. With inline operation, an automatic tool changer and insertion rates up to 5 per second, it is focused at fully automatic high speed operation to maximize throughput while minimizing costly scrap.

A servo powered XY table positions the PCB under a central drive station at high speed. The tool changer can hold up to 3 insertion heads each capable of applying a different product. A unique rotary insertion finger allows the application of products at up to 7 different angles without rotating the PCB. This allows the P350 to apply product at different angles without a reduction in insertion rate or the potential positioning error associated with PCB rotation. Icon driven software with touch screen provides a simple to use, intuitive operator interface.

The P350 provides a wide range of solutions for pin insertion applications. Quick change tooling packs, and a wide range of options make it a flexible high speed platform.

### **Specifications**

**Width** — 102 [2600]

**Depth** — 118 [3000]

**Height** — 87 [2200]

Weight — approx 3500 lb

[1600 kg]

**Electrical** — 230 V, 50-60 Hz,

10 A

Air — 600 kPa dried air

**Max. Board Size** — 17.5 x 17.5 [450 x 450]

**Performance Specifications** 

The electrical, mechanical and environmental characteristics of the AMPMODU .031 x .062 [0.79 x 1.57] Interconnection System are listed below:

### **Mechanical Characteristics Contact Durability**

	Recep	tacles	Locking
Plating	Standard Pressure	High Pressure	Clip Contacts
.000016 [0.00041] Min. Tin	75 Cycles	25 Cycles	N/A
.000079 [0.00201] Min. Tin	75 Cycles	25 Cycles	N/A
.000100 [0.00254] Min. Tin	N/A	N/A	25 Cycles
.000015 [0.00038] Gold	75 Cycles	50 Cycles	25 Cycles
.000030 [0.00076] Gold	200 Cycles	100 Cycles	N/A

### **Electrical Characteristics**

### Contact Current Rating —

5 amperes max. for single contact in free air, could vary due to ambient temperature, wire size and duty cycles.

### Contact Resistance -

12 milliohms at 100 ma and 50 mv open circuit.

### Dielectric Rating -

At Sea Level - 1200 VAC between contacts on .156 [3.96] centers for 1 minute.

Insulation Resistance — 5 x 103 megohms (initial)

### **Connector Durability**

### Receptacles

Mating	<ul> <li>16 oz. [4.45N] max. per contact after 3 mating cycles (standard pressure)</li> </ul>
	-30 oz. [8.34N] max. per contact after 3 mating cycles (high pressure, gold)
	-60 oz. [16.68N] max. per contact after 3 mating cycles (high pressure, tin)

Unmating - 1 oz. [0.28N] min. per contact after 3 mating cycles (standard pressure) 3 oz. [0.83N] min. per contact after 3 mating cycles (high pressure)

### **Locking Clip Contacts**

- 4 lb. [17.79N] max. per contact after 3 mating cycles Unmating - 2 lb. [8.90N] min. per contact after 3 mating cycles

### **Environmental Characteristics**

Operating Temperature — -65°C to 105°C [-85°F to 221°F] (Gold Plated) -65°C to 60°C [-85°F to 140°F] (Tin Plated)

### **Technical Documents**

Various technical documents are available for your use:

### **Product Specifications**

describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-25016 Interconnection System, Standard Pressure

108-25025 Interconnection System, High Pressure, Gold

108-25025-1 Interconnection System, High Pressure, Tin

108-36029 Locking Clip Connectors

### **Application Specifications**

describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-25000 Crimp Snap-In Receptacle Contacts

114-25004 Board Mount Receptacle Contacts

114-25008 Locking Clip Contacts 114-25011 Machine Applied Straight Posts

**Instruction Sheets** provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

408-7308 Clinching Procedures for Header Assemblies

408-7411 Suggestions for Wave Soldering AMPMODU Receptacles

Tyco Electronics Hand Tool 408-7594 90274-2 for Crimping Crimp Snap-In 18-22 AWG Contacts

**408-7750** Tyco Electronics Hand Tool 90328-1 for Crimping Crimp Snap-In Contacts

(22-26 AWG) 408-7676 AMPMODU Locking Clip

Connectors and Contacts 408-7671 Tyco Electronics Hand Tool 90308-1 for Crimping

Locking Clip Contacts 408-7678 Tyco Electronics Extraction Tool 91104-1 for Locking

Clip Contacts 408-7981 Clinching Procedures for Receptacle Assemblies

Tyco Electronics Extraction 408-9451 Tool 843473-1 for Crimp Snap-In Receptacles

Note: All part numbers are RoHS compliant.

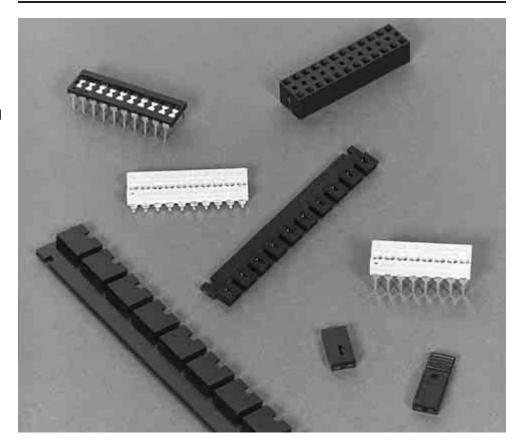
305



### Shunts

### **Product Facts**

- 7600 Series Programmable Shunts use conventional .100 x .300 [2.54x7.62] DIP leg spacing
- Post Shunts are used to common pairs of .025 [0.64] square posts, .025 [0.64] diameter round posts and .022 x .026 [0.56 x 0.66] formed posts



Tyco Electronics offers a variety of high quality shunts for low cost manual programming. Tyco Electronics 7600 Series Programmable Shunts are designed on the standard .100 x .300 [2.54 x 7.62] DIP spacing.

Tyco Electronics DIP Shunts are a highly reliable, low cost means of manually programming various types of electrical/electronic equipment. The shunt consists of a series of conductive straps packaged in a DIP configuration. The straps can be retained intact for a closed circuit or broken with a hand tool to produce an open circuit.

Tyco Electronics Post Shunts mate with any common pairs of square, rectangular and round posts. Post shunts come in two-position low profile, 2 mm miniature, tandem spring, dual beam, and multiposition versions.

Among the options available are choices of gold or tin plating, beryllium copper or phosphor bronze contact material and shunts with 94V-0 rated housing spaces on .079 [2.00], .100 [2.54] and .200 [5.08] centers with the low profile series requiring only .250 [6.35] clearance from the pc board.

All Tyco Electronics shunts feature one-piece construction for high reliability. All have high normal forces for excellent electrical continuity. For added reliability, Tandem Spring and Dual Beam Shunts have two points of contact in each receptacle.



### Dual In-Line Package (DIP) Shunts — 7600 Series

### Standard Shunt Standard Pressure

### **Material and Finish**

**Housing** — Glass-filled polyester, UL 94V-0 rated

Contacts — Brass

**Finish** — Selectively plated .000100 min. tin on solder area over .000050 min. nickel on entire contact

Contact Lead Spacing — .100 x .300 [2.54x7.62]

**Lead Length** — .140 [3.56] below mounting surface

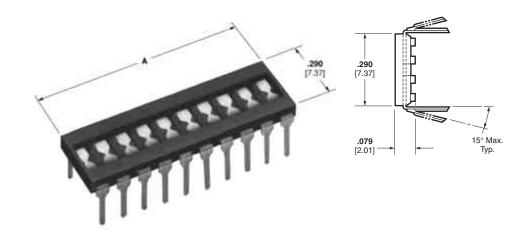
Housing Color — Black

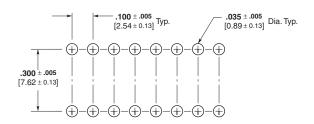
**Programming Tool** — See below

### **Programming Hand Tool** Part No. 435862-1



This tool provides a reliable means of programming DIP shunts. It is rugged, light-weight and dependable. No special skills are required to use this tool.





No. of	Dimen	sion A	Standard Shunt
Pos.	inch	mm	Standard Pressure
4	.400	10.16	1825190-4
6	.600	15.24	1825190-6
7	.700	17.78	1825190-7
8	.800	20.32	1825190-8
9	.900	22.86	1825190-9
10	1.000	25.40	1-1825190-0
12	1.200	30.48	1-1825190-2

Note: All part numbers are RoHS compliant.

### **Post Shunts**

### **Product Facts**

- One-piece contact construction
- High normal forces
- 94V-0 rated housings
- Gold inlay, gold plate or tin plate over nickel
- Stackable
- Those post shunts indicated are recognized under the component program of **Underwriters** Laboratories Inc., File No. E28476 and certified by the **Canadian Standards Association** File No. LR 7189





### **Tandem Spring Shunts**

- Two points of contact provide extra reliability
- Shunts accept posts as short as .175 [4.45]; posts bottom at .330 [8.38]

### 2mm Mini Shunts

- Stackable on 2mm contact centerline
- **■** Low profile
- Available in strips of 10

### Material and Finish — Low Profile and 2mm Shunts

**Housing** — Glass-filled thermoplastic, black, UL 94V-0 rated

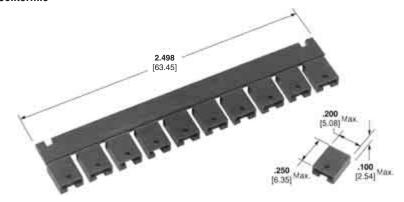
Contacts — Beryllium copper or phosphor bronze, plated .000050 [0.00127] nickel underplate with gold plate in contact area or tin overall

### Material and Finish — **Tandem Spring Shunts**

Housing — Nylon, UL 94V-0 rated Contacts — Phosphor Bronze **Finish** — .000030 [0.00076] nickel underplate with gold inlay in the contact

### 2-Position, Low Profile Shunts

**Economy Shunt** .100 [2.54] Centerline

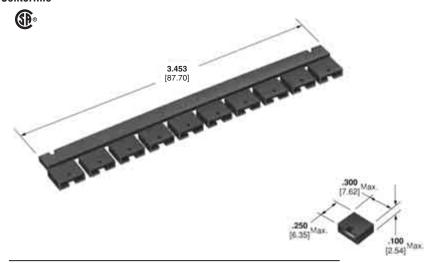


		Part Numbers					
Configuration	Housing Color	Gold Plate <sup>1</sup> .000015 [0.00038]	Gold Flash <sup>1</sup> .000005 [0.00013]	Tin Plate .000100 [0.00254]	Gold Plate .000030 [0.00076]		
Strip of 10	Blue	382811-2	_	_	_		
Strip of 10	Black	382811-6	382811-8	382811-5	2-382811-0		
Strip of 10	Red	382811-9	_	_	_		
Loose Piece	Black	1-382811-6	1-382811-8	_	_		

<sup>&</sup>lt;sup>1</sup>In contact area

### **Standard Housing Shunt** .200 [5.08] Centerline





			Part Numbers	
Configuration	Housing Color	Gold Plate <sup>1</sup> .000015 [0.00038]	Gold Plate <sup>1</sup> .000030 [0.00076]	Tin Plate .000100 [0.00254]
Strip of 10	Black	531230-2	531230-3	531230-1

<sup>&</sup>lt;sup>1</sup>In contact area

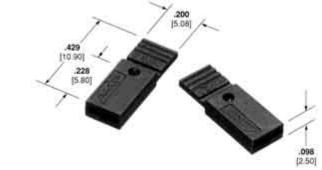
Note: All part numbers are RoHS compliant.

area or tin overall

### Post Shunts (Continued)

2-Position, Low Profile Shunts (Novo) (Continued)

**Handle Shunt** .100 [2.54] Centerline



		Loose Piec	e Part Numbers		
Housing Color	Gold Plate <sup>1</sup> .000015 [0.00038]	Gold Plate <sup>1</sup> .000030 [0.00076]	Gold Plate <sup>1</sup> .000050 [0.00127]	Tin Plate .000100 [0.00254]	Туре
Black	881545-1	881545-2	881545-3	4-881545-2	Open Top
Black	880584-1	880584-2	880584-3	880584-4	Closed Top

<sup>&</sup>lt;sup>1</sup>In contact area

2 mm Mini-Shunt .079 [2.00] Centerline



**Dual Beam Shunt** 



# 

		Part N	umbers
Configuration	Housing Color	Gold Plate <sup>1</sup> .000015 [0.00038]	Gold Plate <sup>1</sup> .000030 [0.00076]
Strip of 10	Black	382575-2	382575-3

<sup>&</sup>lt;sup>1</sup>In contact area

# .196 [4.98] [6.27] .096

		Part	Numbers	
Configuration	Housing Color	Gold Plate <sup>1</sup> .000015 [0.00038]	Gold Plate <sup>1</sup> .000030 [0.00076]	Туре
Strip of 10	Black	390088-2	390088-1	Open Top
Strip of 10	Blue	390088-4	390088-3	Open Top
Strip of 10	Yellow	_	390088-5	Open Top

<sup>&</sup>lt;sup>1</sup>In contact area

Note: All part numbers are RoHS compliant.

Catalog 1307819 Revised 8-08

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208a



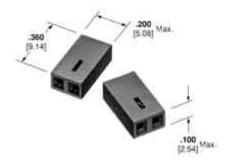
### Post Shunts (Continued)

### **Tandem Spring Shunt**

.100 [2.54] Centerline







	Part Numbers			
Housing Color	Gold Inlay <sup>1</sup> .000030 [0.00076]	TinPlate .000100 [0.00254]		
Black	530153-2	4-530153-1		

<sup>1</sup>In contact area

Multiposition Shunts for.025 [0.64] Square Posts

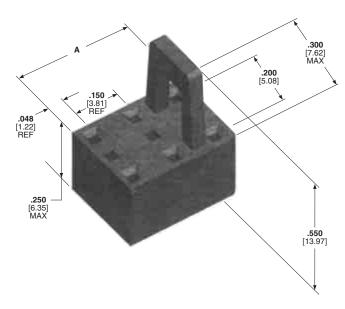
.200 [5.08] Centerline





Housing — Glass-filled polyester Contacts — Beryllium Copper Finish — .000030 [.00076] gold in contact area over .000050 [.00127] nickel on entire contact

Current Rating — 2.5 amps



0:	Dimen	sion A	Housing	Part
Size	inch	mm	Color	Number
2x2	.246	6.25	Black	390102-1
2x2	.246	6.25	Red	390102-3
2x3	.396	10.01	Black	390102-2

Note: All part numbers are RoHS compliant.



### **Performance Specifications**

### Dual In-Line Package (DIP) Shunts — 7600 Series

### **Current Rating** —

Standard pressure — 2 amperes for +20°C rise above ambient (one conductor per shunt Machine insertable — 1 ampere for +20°C rise above ambient (one conductor per shunt)

Insulation Resistance — 1x 1010 ohms min. at 100 VDC

Dielectric Withstanding Voltage — 500 VDC min.

**Capacitance** — 2 picofarads max. between adjacent straps

**Temperature Rating** —  $-55^{\circ}$ C to  $+105^{\circ}$ C

Terminal Strength (Bend Test) — Two 45° bend cycles per MIL-STD-202, Method 211, Condition B

### Solder Bridging —

Cut straps can be reconnected by solder bridging. Solder bridging recommendations are:

- •Use low temperature solder (60/40 tin/lead)
- •Use solder tip approximately 1/32 [0.79] in diameter
- Do not let solder tip come in contact with plastic material

### **Post Shunts**

### Current Rating —

3 amperes max. unless otherwise noted

**Temperature Rating** —  $-65^{\circ}$ C to  $+105^{\circ}$ C (gold)  $-40^{\circ}$ C to  $+85^{\circ}$ C (tin)

### **Technical Documents**

Various technical documents are available for your use:

**Product Specifications** describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-7533	Dual In-Line Package (DIP) Shunts
108-1445	2mm Mini Shunt
108-1476	Economy Shunt, Multiposition Shunt
108-1674	Dual Beam Shunt
108-9057	Low Profile Shunt
108-9062	Tandem Spring Shunt
108-37006	Novo Shunt with Handle

**Application Specifications** describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

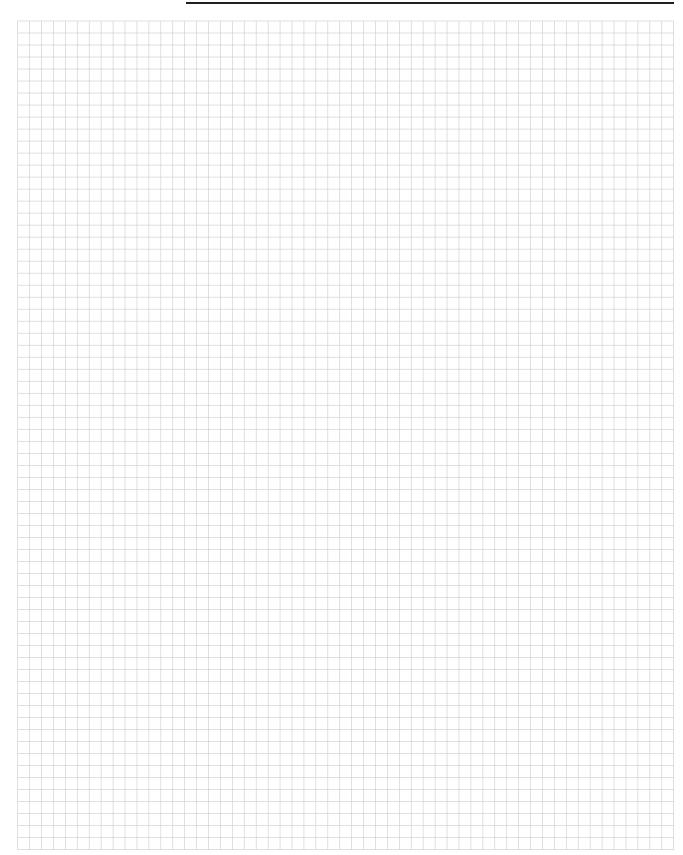
114-1045	Tandem Spring Shunt
114-1054	Dual In-Line Package (DIP) Shunts
114-1059	Economy Shunt, Dual Beam Shunt, Low Profile Shunt, Multiposition
	Shunt
114-1074	2mm Mini Shunt

**Instruction Sheets** provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

408-7768	Dual In-Line Package (DIP) Shunts
408-3208	Tandem Spring Shunt
408-3230	Economy Shunt, Dual Beam Shunt, Low Profile Shunt
408-3251	Multiposition Shunt
408-3276	2mm Mini Shunt



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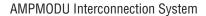
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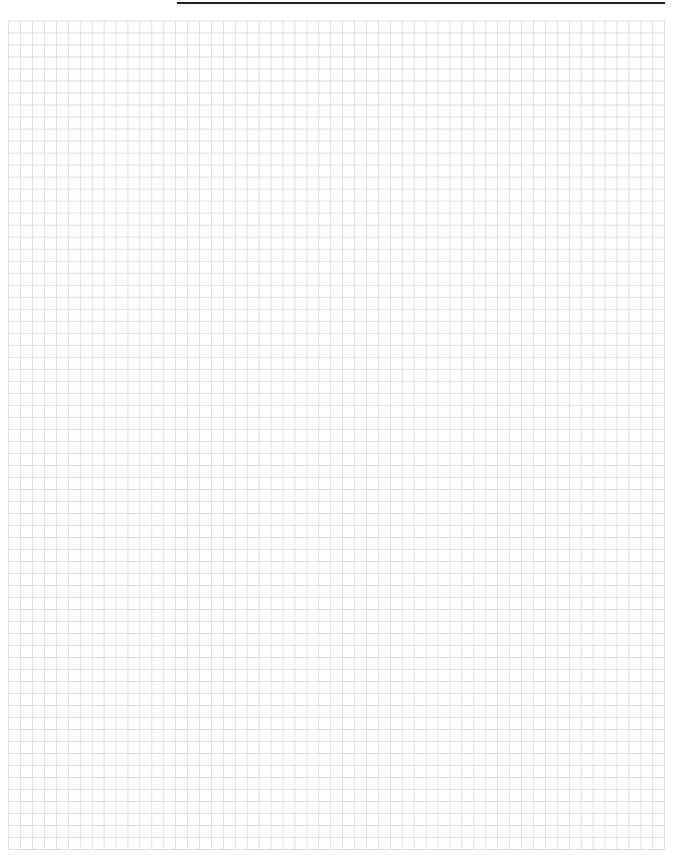
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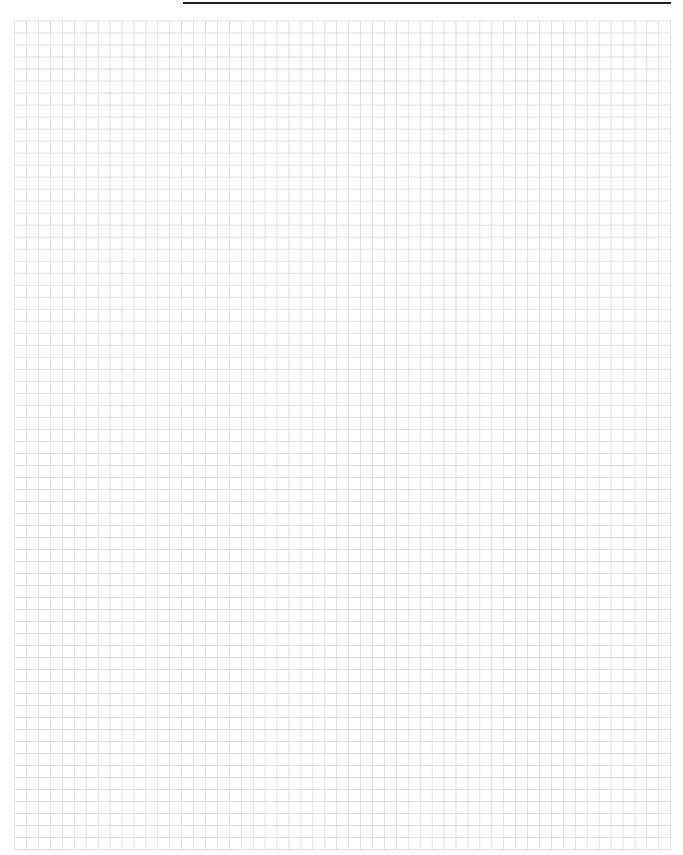
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