

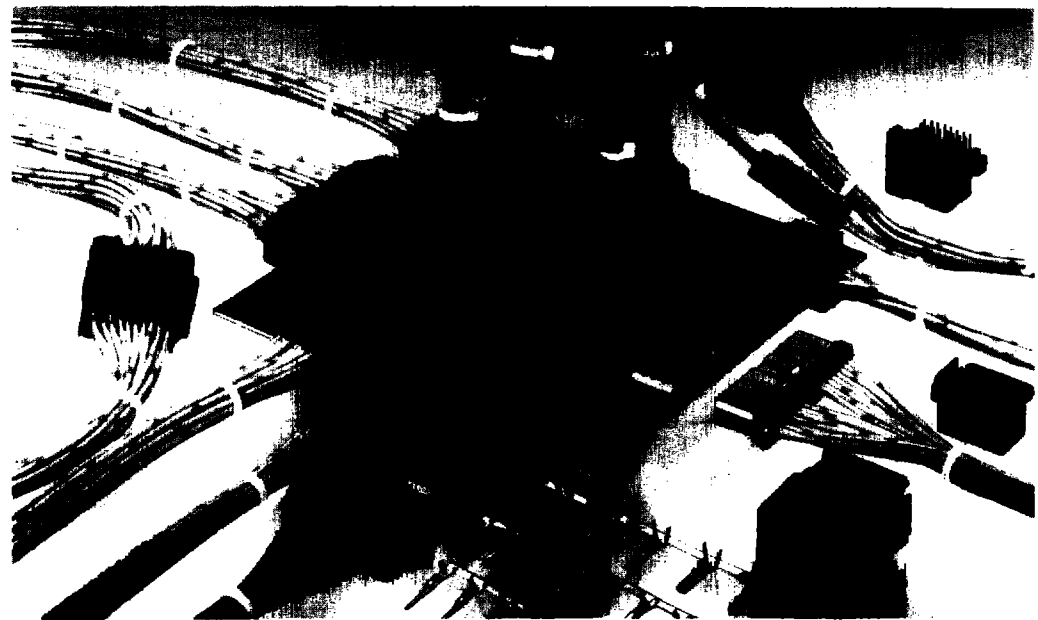
**Wire to Board Connectors
AMP 040 Series MULTILOCK* Connectors (Standard)**

Features

- Small yet durable wire-to-wire and wire-to-board connectors
- Smaller by 35% in volume ratio than conventional connectors of similar design.
- High-density wiring connectors with contacts on 2.5mm centers.
- Housing lance design; contacts have no lance and do not tangle with one another.
- Easy to handle
- Consist of plug and cap housings for wire termination. Contacts, and cap housing assemblies for horizontal and vertical mounting.
- Receptacle contact for wire termination has a spring encased in a box-shaped receptacle for protection against damage from outside.
- Both plug and cap housings for wire termination have an integral double-lock mechanism to ensure positive contact retention.
- Cap housing assembly for board mount is available in two styles; horizontal and vertical. Both pre-loaded with tab contacts with solder post.

Product specification:
108-5244(Wire to Board)
108-5352(Wire to Wire)

Application specifications:
114-5108(040 tab contacts)
114-5094(040 receptacle contacts)
114-5109(070 receptacle contacts)



AMP 040 Series MULTILOCK Connectors are a miniature high-density connector similar in design to DLI Connectors which are in wide use as an I/O connector for automotive applications, but smaller in size by as much as 35 percent (volume ratio) compared to them. With contacts on 2.5mm centers, these connectors comprise both wire-to-wire and wire-to-board connectors. The plug and cap housings for wire termination are of housing lance design. The receptacle and tab contacts used in these housings have no lance and consequently, there is no possibility of contacts tangling with one another or of contact lances being deformed as often encountered in other types of connector contacts. The contacts are of crimp, snap-in type. The receptacle contact, made of highly resilient and conductive KLF-5 material, provides a high contacting force due to its double-

spring construction. This spring is encased in a box-shaped receptacle and is highly resistant to damage from outside. Both plug and cap housings have an integral double-lock mechanism for positive contact loading. Despite their small size, these housings are durable and dependable, and protect contacts against possible damage by rocking action at mating/unmating. The cap housing assembly is preloaded with tab receptacles with solder post. The cap housing assembly for horizontal board mounting can accept two split-type assemblies, a 040 Series assembly for signal circuits and a 070 Series assembly for power circuits. The 040 Series MULTILOCK Connectors are offered in the following sizes;

- For wire application
Plug: 2, 4, 8, 12, 16 and 20 positions, plus 16(070 Series) and 16(single-row type) positions

- Cap: 2, 4, 12 and 20 positions
- For board application
Horizontal:
8, 12, 16, 20, 36(16+20), 48(12+20+16<070>) and 64(12+20+16+16<070>) positions
Vertical:
8, 12, 16, 20 and 28(12+16) positions

Performance Data

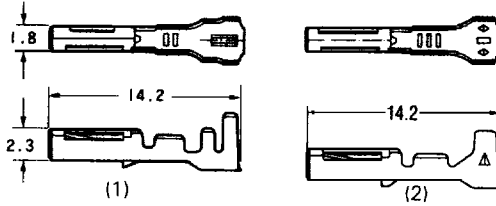
- Low level resistance and Overall resistance:**
<040> 10mΩ max.(initial)
20mΩ max.(final)
<070> 3mΩ max.(initial)
10mΩ max.(final)
- Insulation resistance:**
100MΩ 500V DC
- Withstanding voltage:**
1,000V AC/one minute
- Contact retention:**
10Kg min.
- Operating temperature:**
-30°C ~ +105°C

Wire to Board Connectors AMP 040 Series MULTILOCK Connectors (Standard)

Receptacle Contacts (For Plug Housing)

Material and Finish:
KLF-5, Pretinned or selective gold plated

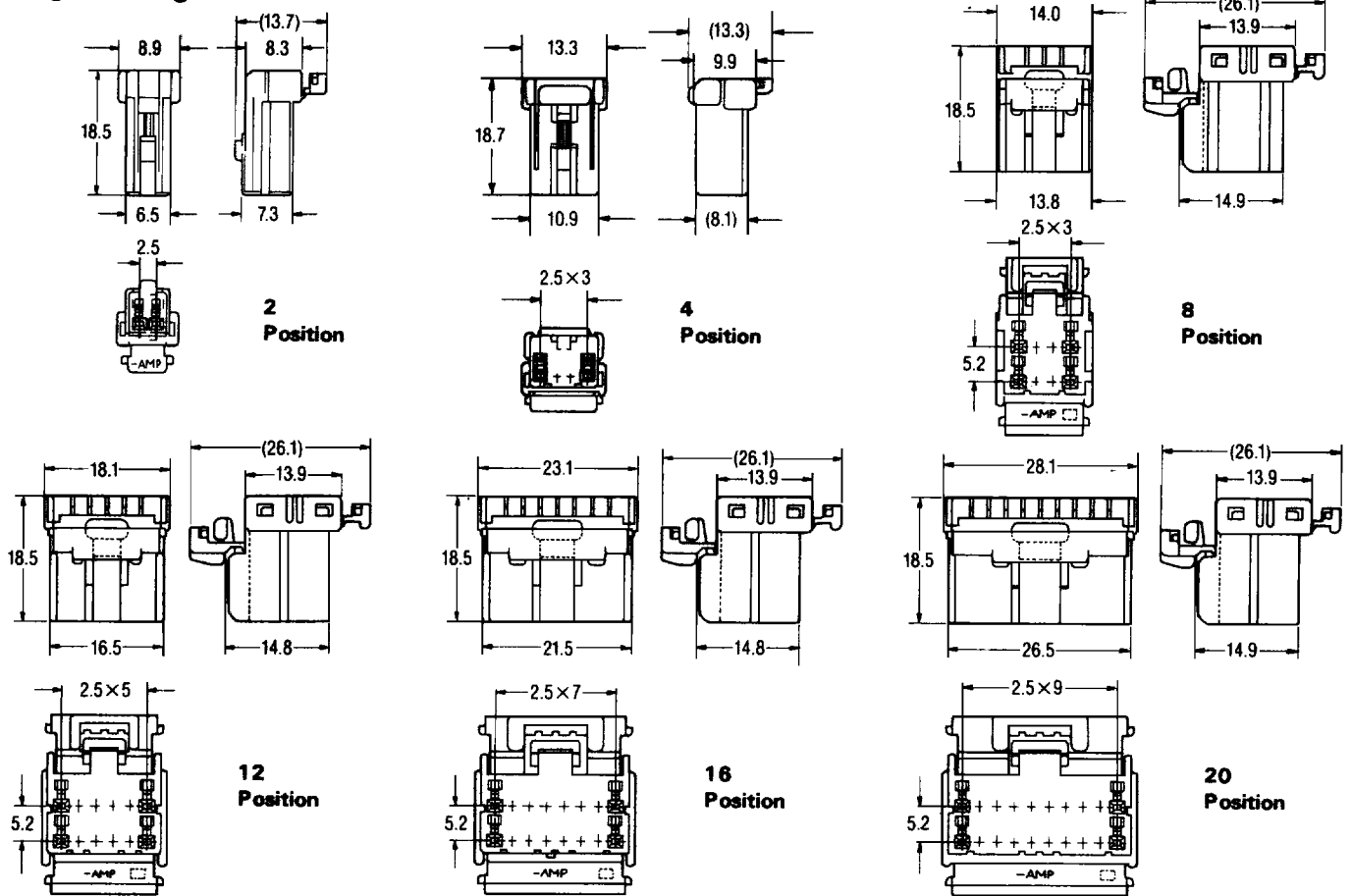
040 Series



Wire Range AWG	Wire Ins. mm ²	Wire Ins. Diameter	Finish	Part No. of Receptacle Contact		Hand Tool No.	Crimp specifications	
				Strip Form	Loose Piece			
24-20	0.2~0.56	(1) 1.1~1.4	Pretinned	175180-1	—	911738-1 (IS-417J)	114-5091	
			Sel. gold	175180-2	—			
		(2) 1.4~2.0	Pretinned	173681-1	175062-1			911738-1 (IS-417J)
			Sel. gold	173681-2	175062-2			

040 Series for signal circuit (Extraction tool No. 755430-1/IS-288J)

Plug Housings



Material: P. B. T.
(See table for color)

No. of Pos.	Housing Color	Plug Housing Part No.	Applicable Contact Part No.
2	Black	174056-2	173681
4	Black	174966-2	
8	Black	174044-2	
12	Black	174045-2	
16	Black	174046-2	
20	Black	174047-2	

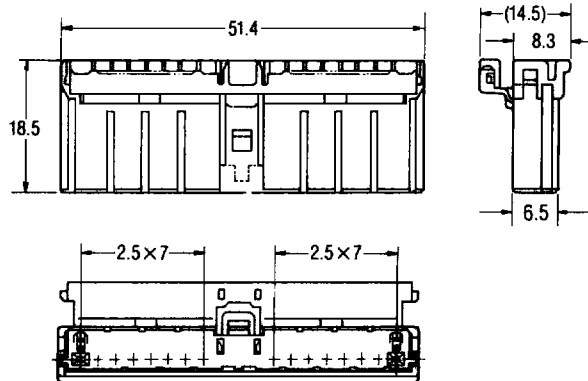
Note: See next page for 16 position (070 Series) and 16 position (Single row type)

Wire to Board Connectors AMP 040 Series MULTILOCK Connectors (Standard)

For Signal Circuit

(040 Series)—Singl Row Type

Material: P. B. T. (Blue)



No. of Pos.	Plug Housing Part No.	Applicable Contact Part No.	Mating Cap Housing Part No.
16	174060-5	173681/175180	174062

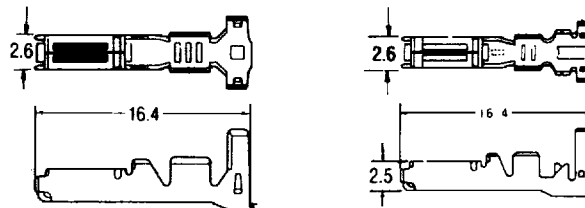
Receptacle Contacts

(For Plug Housing)

(070 Series)

Material and Finish:

KLF-5, Pretinned or selective gold plated



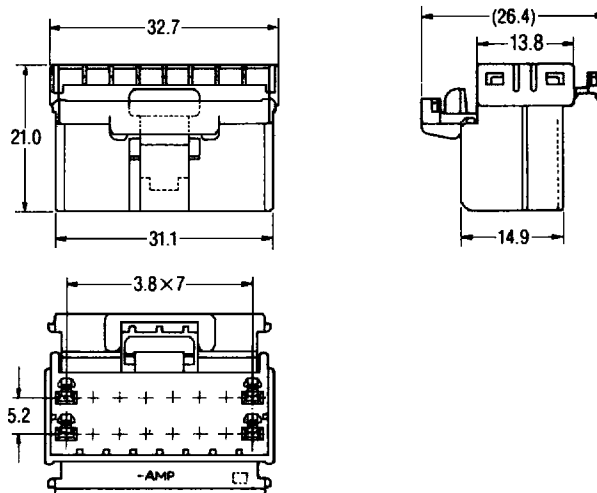
Wire Range AWG	Wire Ins. mm ²	Wire Ins. Diameter	Finish	Part No. of Receptacle Contact		Hand Tool No.	Crimp specifications
				Strip Form	Loose Piece		
20-14	0.56~2.09	(1)2.0~2.9	Pretinned	173708-1	175081-1	911771-1 (IS-422J)	—
			Sel. gold	173708-2	175081-2		
20-25	0.56~1.25	(2)1.2~2.2	Pretinned	175221-1	—	—	114-5156
			Sel. gold	175221-2	—		

Note: 070Series for power circuit (Extraction tool No. 755430-2/IS-287J)

For Power Circuit

(070 Series)

Material: P. B. T. (Black)

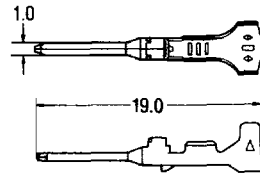


No. of Pos.	Plug Housing Part No.	Applicable Contact Part No.	Mating Cap Housing Part No.
16	174147-2	173708/175221	174149/174151

Wire to Board Connectors AMP 040 Series MULTILOCK Connectors (Standard)

Tab Contacts (For Cap Housing)

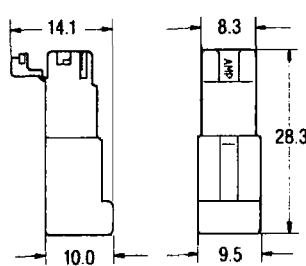
Material and Finish:
Pretinned brass



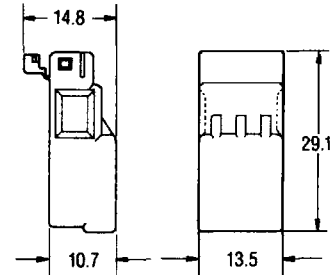
Wire Range		Wire Ins. Diameter	Finish	Part No. of Tab Contact		Hand Tool No.
AWG	mm ²			Strip Form	Loose Piece	
24-20	0.2~0.56	1.4~2.0	Pretinned	173682-1	175063-1	911738-2 (IS-417J)

Cap Housings (For Wire to Wire)

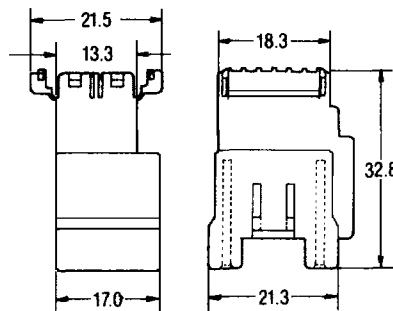
Material: -P. B. T.
(See table for color)



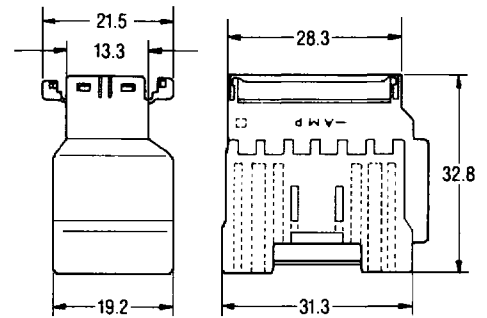
2 Position



4 Position



12 Position

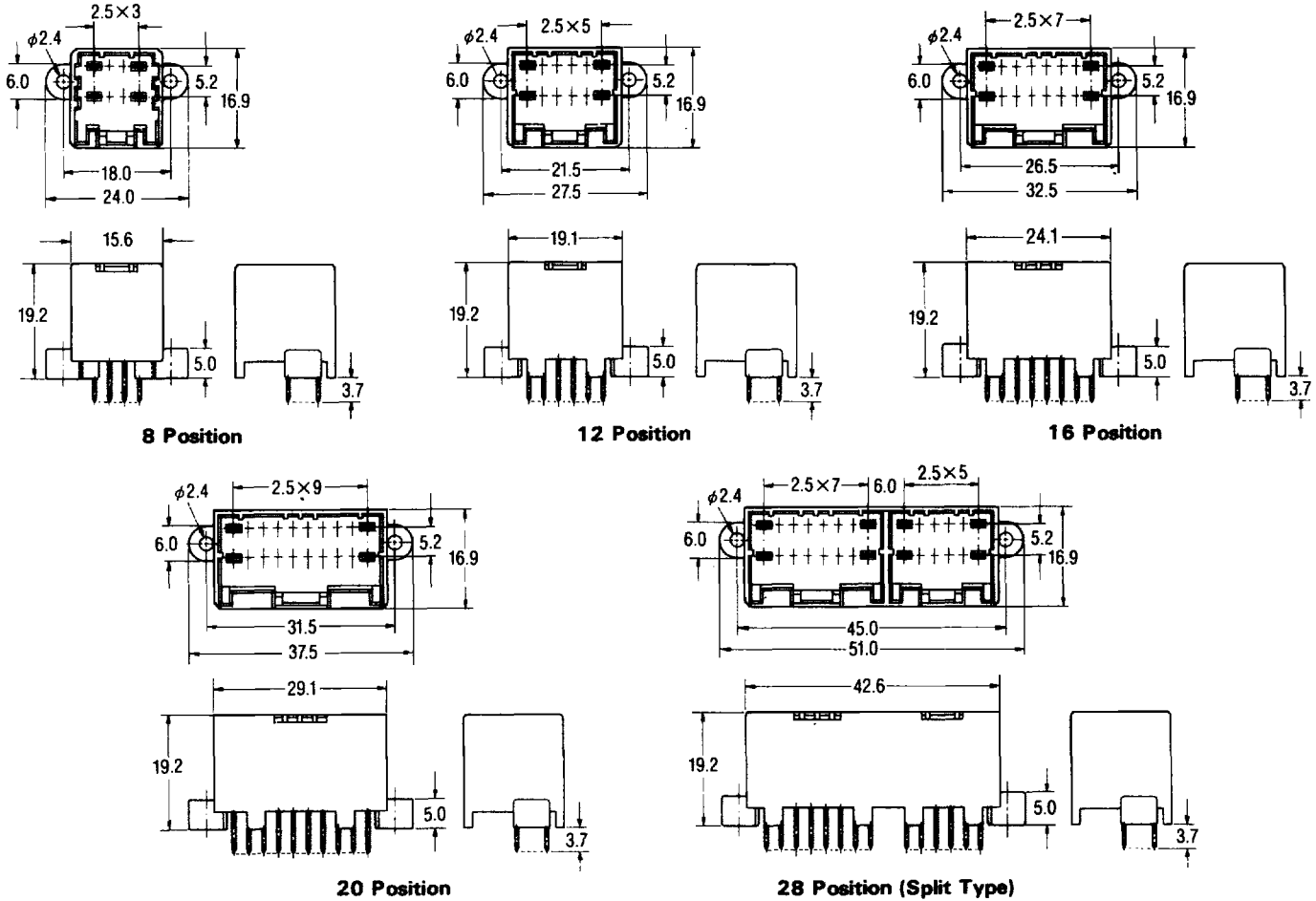


20 Position

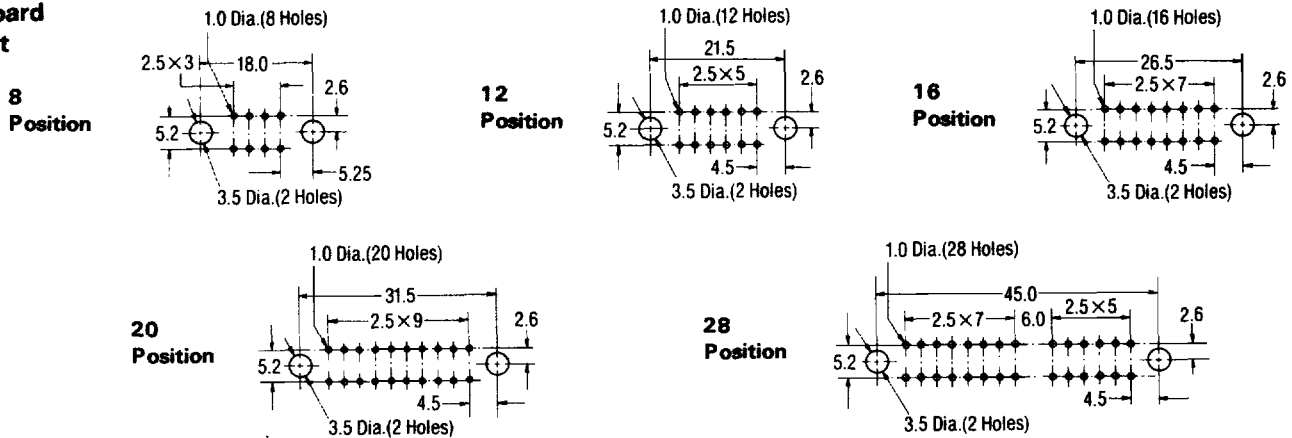
No. of Pos.	Housing Color	Cap Housing Part No.	Applicable Contact Part No.
2	Black	174057-2	173682
4	Black	174967-2	
12	Black	174058-2	
20	Black	175652-2	

Wire to Board Connectors
AMP 040 Series MULTILOCK Connectors, (Standard)
PC Board Applications

Cap Housing Assemblies/Vertical Mount Type



PC Board Layout



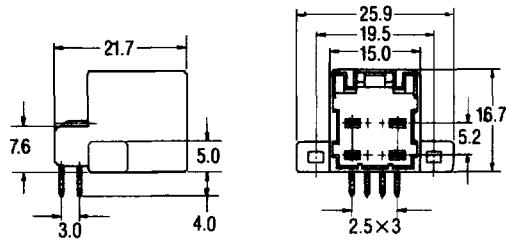
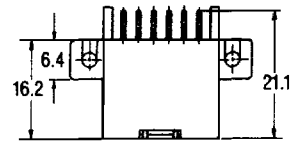
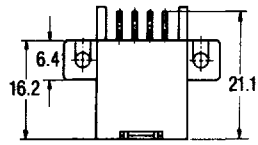
Material and Finish:
 Housing—P. B. T.
 (See chart for color)
 Contact—Brass, Pretinned

No. of Pos.	Housing Color	Cap Housing Assembly Part No.	Mating Plug Housing No. of Pos.
8	Black	174971-2	8
12	Black	174973-2	12
16	Black	174975-2	16
20	Black	174977-2	20
28	Black	174979-2	12, 16

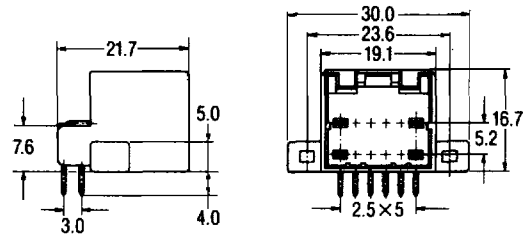


Wire to Board Connectors AMP 040 Series MULTILOCK Connectors, (Standard) PC Board Applications

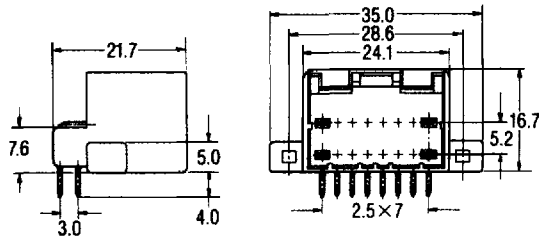
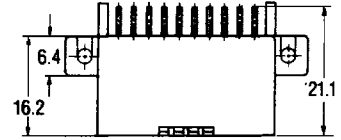
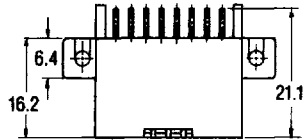
Cap Housing Assemblies Horizontal Mount Type



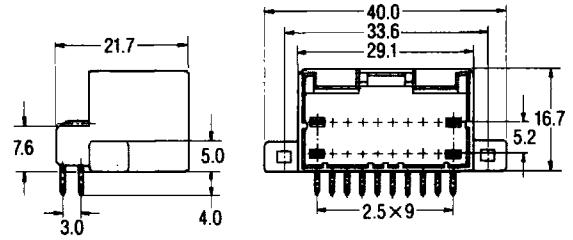
8 Position



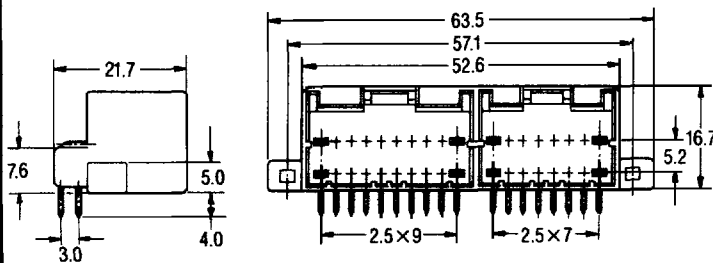
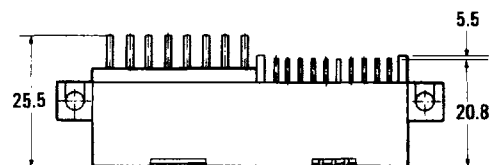
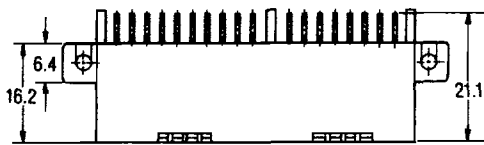
12 Position



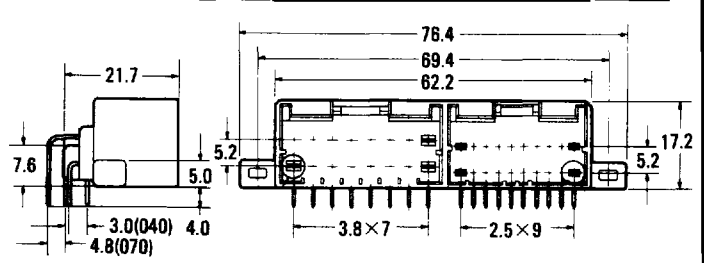
16 Position



20 Position



36 Position Split Type(174146-2)



36 Position Split Type(178460-2)

Material and Finish:
Housing—P.B.T.
(See table for color)
Contact—Brass, Pretinned

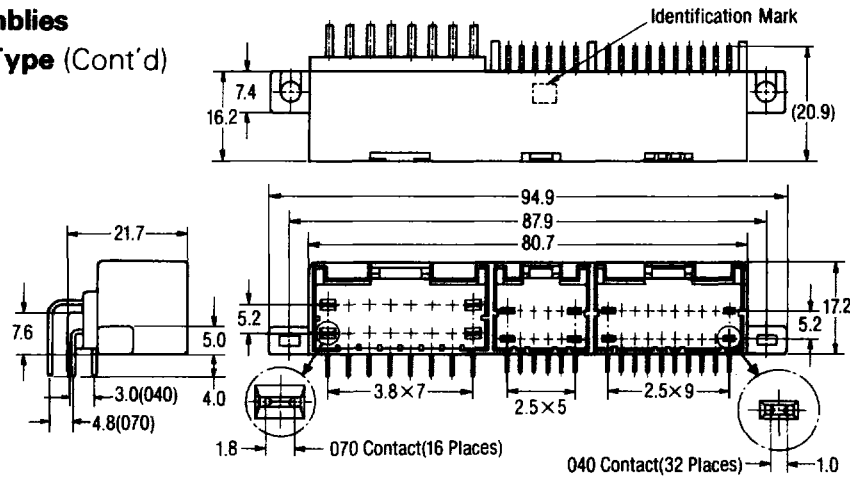
No. of Pos.	Housing Color	Cap Housing Assembly Part No.	Mating Plug Housing No. of Pos.
8	Black	174049-2	8
12	Black	174051-2	12
16	Black	174053-2	16
20	Black	174055-2	20
36	Black	174146-2 178460-2*	16, 20

Note: See page 672 for pc board layout.

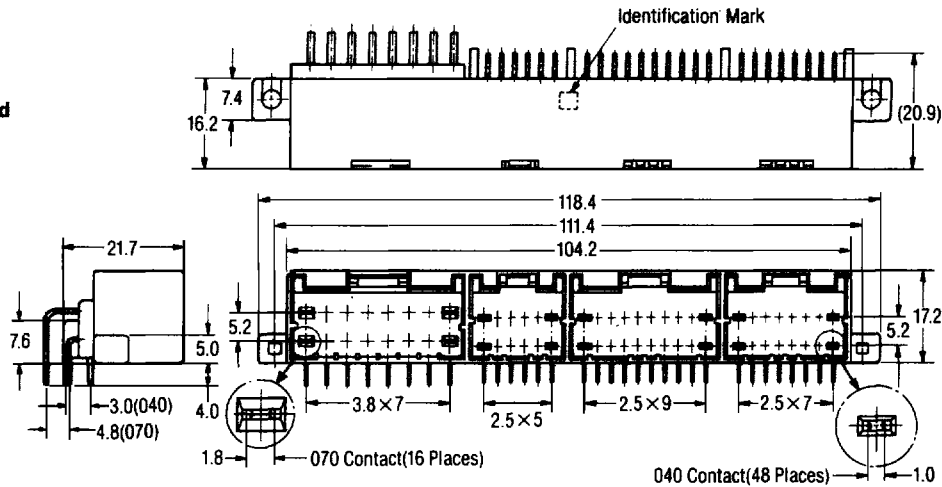
Wire to Board Connectors AMP 040 Series MULTILOCK Connectors (Standard)

Cap Housing Assemblies Horizontal Mount Type (Cont'd)

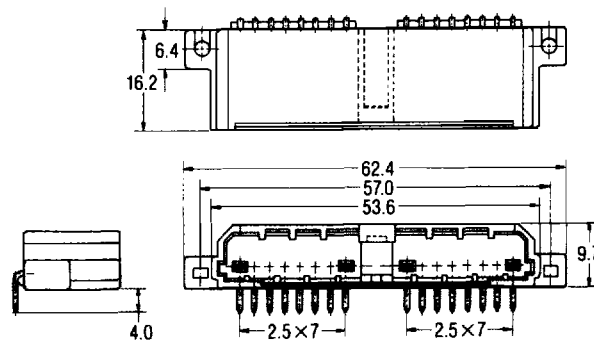
**48 Position
070/040 Mixed
Split Type**



**64 Position
070/040 Mixed
Split Type**



**16 Position
Single Row,
Low Profile Type**



Material and Finish:
Housing—P. B. T.
(See table for color)
Contact—Brass, Pretinned or selective gold plated.

No. of Pos.	Housing Color	Cap Housing Assembly Part No.	Mating Plug Housing No. of Pos.
48	Black	174149-2*	12, 20 16 (070)
64	Black	174151-2* 1-174151-2**	12, 16, 20 16 (070)
16	Blue	174062-5	16 (Single Row Type)

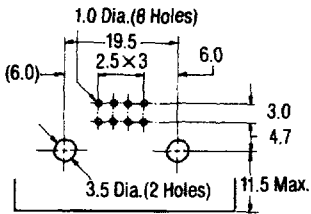
* 040 series—Selective gold, 070 series—Pretinned
** 040 series—Selective gold, 070 series—Sel. gold at Circuit #9 only, others are pretinned.
P/N 174062-5—Pretinned

Note: See next page for pc board layout.

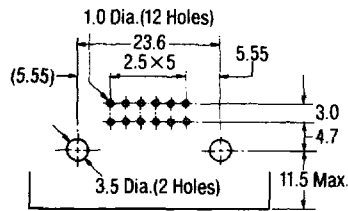


**Wire to Board Connectors
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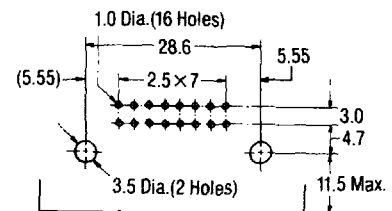
PC Board Layout



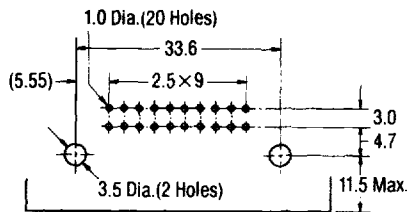
8 Position



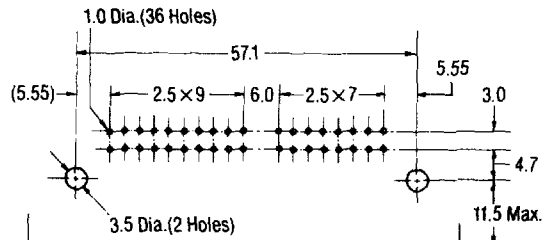
12 Position



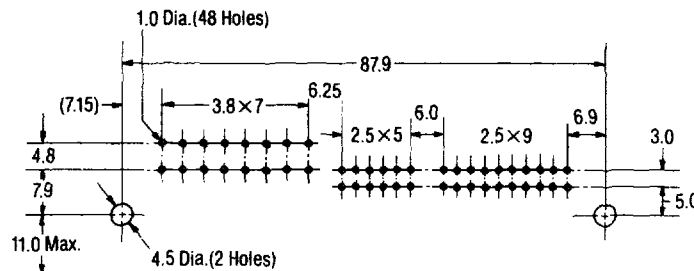
16 Position



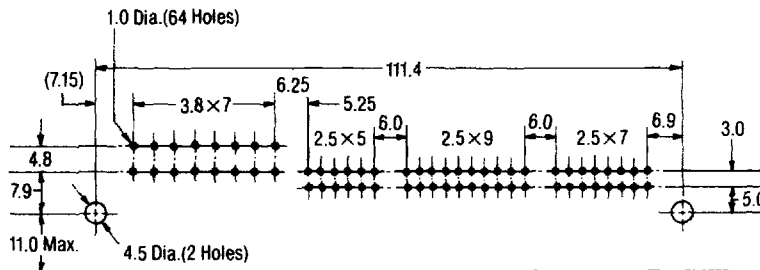
20 Position



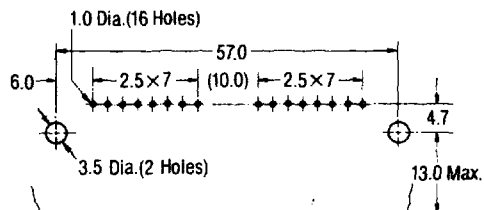
36 Position



48 Position



64 Position



16 Position