Wire to Board Connectors
AMP-LATCH* J Series Connectors

Features
This connector, developed for easy mating and unmating, consists of a board mount pin header and a receptacle. The receptacle is readily locked into or disengaged from the mated pin header. The J series pin header is supplied with or without latches.

■ Pin Header
Positive locking of the receptacle is provided by simply pushing it into the pin header. To disengage the receptacle, lightly squeeze the latches on both sides of the mated pin header with your fingers. The receptacle comes off and slips into your palm, thus making mating and unmating of the connector a simple one-handed operation. This features facilitate the handling of the connector deep inside electronic equipment or other confined places where the use of both hands presents difficulties. Moreover, the latches on the pin header can be manipulated within the overall width of its housing so that several pin headers can be mounted end-to-end on a PC board in close proximity to one another.
The pin header is loaded with two rows of 0.64 mm diameter pin contacts on 2.54 mm centers. Two types of pin header, for horizontal and vertical mounting, are supplied. Also available is a short-type pin header housing that comes without latches and locking ears for even high density mounting, where space requirements are at a premium. These are also available for horizontal and vertical mounting.

■ Connector size
The AMP-LATCH J Series connectors are available in sizes of 10, 16, 20, 26, 34, 40 and 50 positions.

■ Receptacle Connector
The receptacle connector housings for wire termination comes in two configurations. One is loaded with insulation displacement contacts for mass termination of flat ribbon cables available with and without locking ears; the other is designed for connecting discrete wires with crimp snap-in contacts available only with locking ears. The receptacle connector housings without locking ears mate with short-type pin headers.

■ Polarization
Both the pin header and the receptacle connector are provided with polarization to prevent mismating.

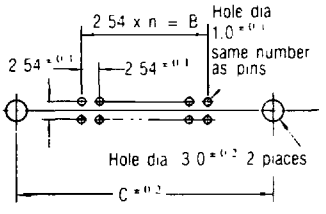
■ Paddle Card Connector
One of the AMP LATCH J series connector family, the paddle card connector connects flat ribbon cables directly to the PC board without the use of pin header.
The housing is preloaded with insulation displacement contacts with soldering posts for mass termination of flat ribbon cables. The paddle card connector are available with and without mounting ears.

■ Product Specifications
(excluding connectors for discrete wire termination)
Voltage and current ratings:
250 VAC, 1.0 A max.
Low level overall resistance:
Initial — 15 mΩ max.
After test — 30 mΩ max.
Insulation resistance:
5,000 MΩ min.
Withstanding voltage:
500 VAC for one minute
Contact insertion force:
340g max.
Contact withdrawal force:
20g min.

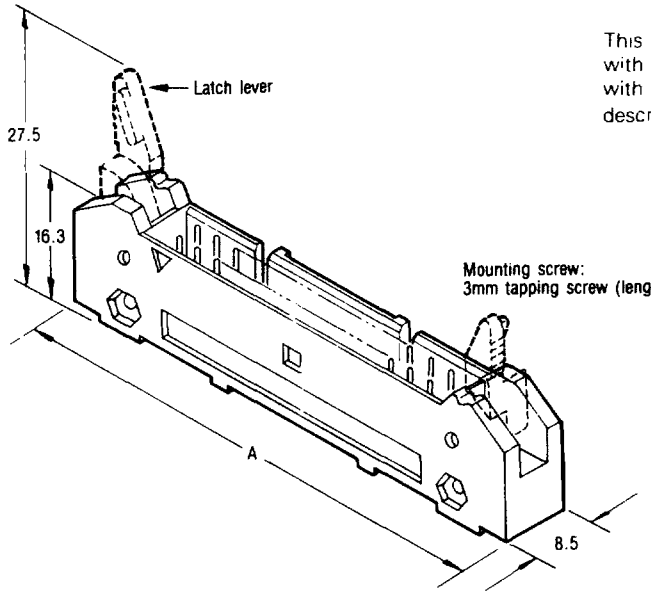
Wire to Board Connectors
AMP-LATCH J Series Connectors
Pin Header Assemblies with and without Latch Levers

Vertical mounting type

Materials:
Housing –
Glass fiber reinforced, black, PBT plastic, 94V-0 rated (UL)
Pin contacts –
Bronze, gold plating on a nickel plated base coating or tin plating



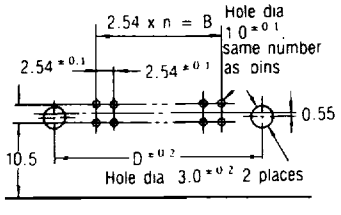
Recommended PC Board Mounting Dimensions



This Pin Header Assembly connects with the Receptacle connector kit; with mounting ears and cover as described in page 452

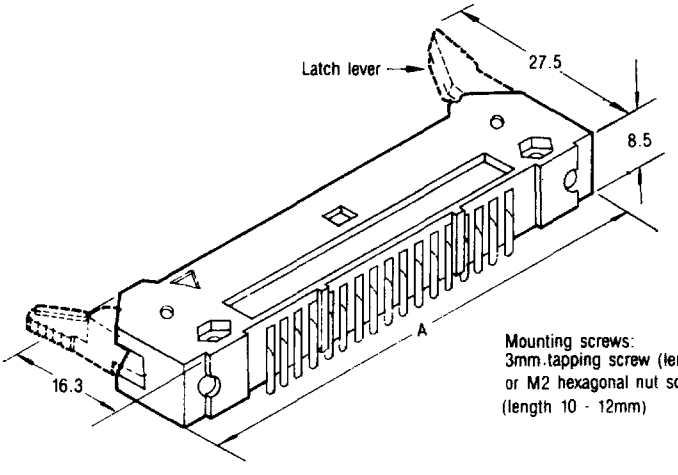
Horizontal mounting type

Materials:
Housing –
Glass fiber reinforced, black, PBT plastic, 94V-0 rated (UL)
Pin contacts –
Bronze, gold plating on a nickel plated base coating or tin plating.



(PC board edge)

Recommended PC Board Mounting Dimensions



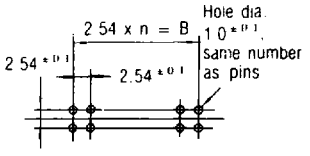
Number of Positions	n	Dimensions				Vertical Mounting Type Pin Header Part No.*		Horizontal Mounting Type Pin Header Part No.*	
		A	B	C	D	With/Lach	Without/Lach	With/Latch	Without/Lach
10	4	36.7	10.16	27.9	21.8	**4-172092-1**	**4-172091-1**	**4-172094-1**	–
16	7	44.3	17.78	35.5	29.4	**4-172092-2**	–	**4-172094-2**	**4-172093-2**
20	9	49.4	22.86	40.6	34.5	**4-172092-3**	**4-172091-3**	**4-172094-3**	**4-172093-3**
26	12	57.0	30.48	48.2	42.1	**4-172092-4**	**4-172091-4**	**4-172094-4**	**4-172093-4**
34	16	67.2	40.64	58.4	52.3	**4-172092-5**	–	**4-172094-5**	–
40	19	74.8	48.26	66.0	59.9	**4-172092-6**	**4-172091-6**	**4-172094-6**	–
50	24	87.5	60.96	78.7	72.6	**4-172092-7**	–	**4-172094-7**	–

* Indicates assemblies with 0.2μ gold plated contact pins. Other available pin coatings are as follows:
If tin plated pin, place 6- before the part number when ordering.

Wire to Board Connectors
AMP-LATCH J Series Connectors
Short Type Pin Header Assembly (Without Lacking Latch Lever)

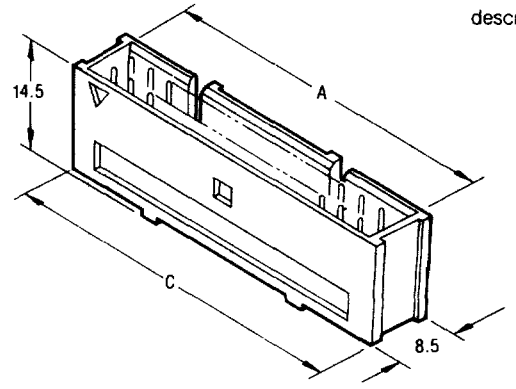
Vertical mounting type

Materials:
Housing –
Glass fiber reinforced, black, PBT plastic, 94V-0 rated (UL)
Pin contacts –
Bronze, gold plating on a nickel plated base coating or tin plating.



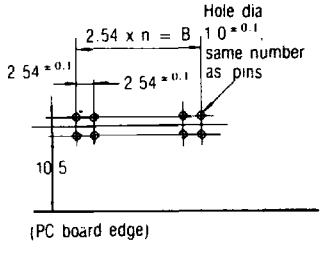
Recommended PC Board Mounting Dimensions

This Pin Header Assembly connects with the receptacle connector kit; without mounting ears and cover as described in page 452

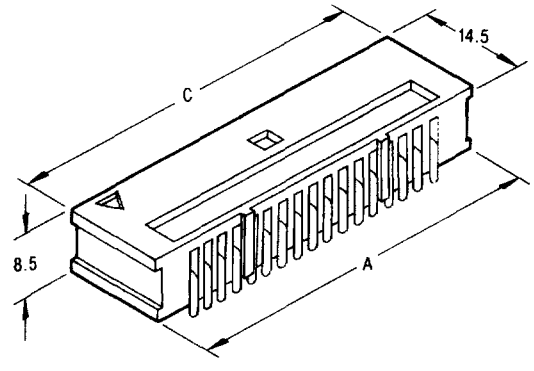


Horizontal mounting type

Materials:
Housing –
Glass fiber reinforced, black, PBT plastic, 94V-0 rated (UL)
Pin contacts –
Bronze, gold plating on a nickel plated base coating or tin plating.



Recommended PC Board Mounting Dimensions



Number of Positions	n	Dimensions A	B	C	Vertical Mounting Type Pin Header Part No.*	Horizontal Mounting Type Pin Header Part No.*
20	9	30.4	22.86	31.7	**4-172530-3**	–
26	12	38.0	30.48	39.3	–	**4-172531-4**
34	16	48.2	40.64	49.5	–	**4-172531-5**
40	19	55.8	48.26	57.1	–	–
50	24	68.5	60.96	69.8	–	–

* Indicates assemblies with 0.2μ gold plated contact pins. Other available pin coatings are as follows: If tin plated pins, place 6- before the part number when ordering.

Wire to Board Connectors
AMP-LATCH J Series Connectors
Receptacle Connector Kit for Flat Ribbon Cable Assemblies

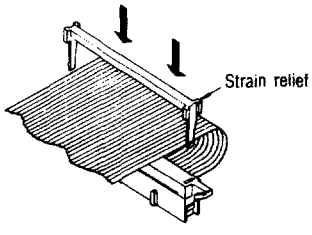
Receptacle connector kit

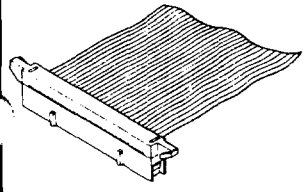
(Kit contains the housing assembly and accessories)

Materials:

Housing/cover/strain relief – Glass fiber reinforced, black, PBT plastic, 94V-0 rated

Receptacle Contact – Phosphor bronze, gold plating over a nickel plate base coating or lead contained tin plating



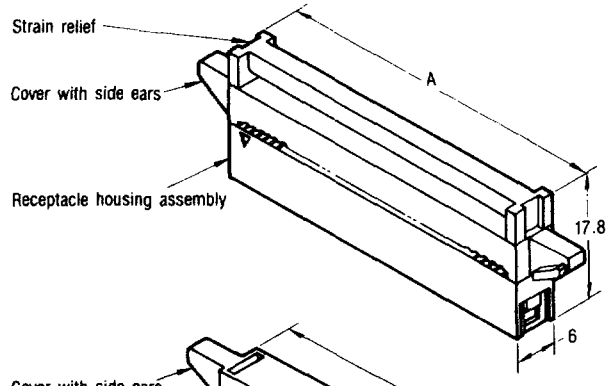


The cover kit with side ears is designed to mate with the Pin Header (with or without latch levers) described in page 450

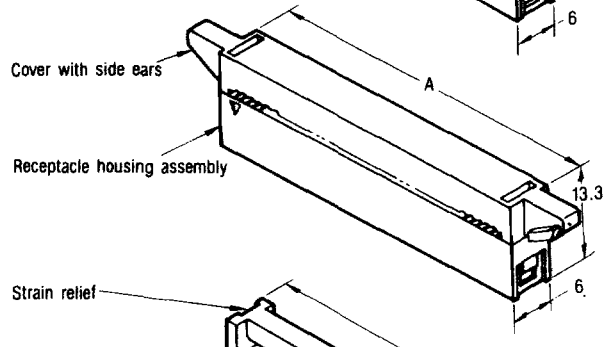
The cover kit without mounting ears is designed to mate with the Pin Header (short type) described in page 451

Product Spec.: No. 108-5133
Application Spec.: No. 114-5080

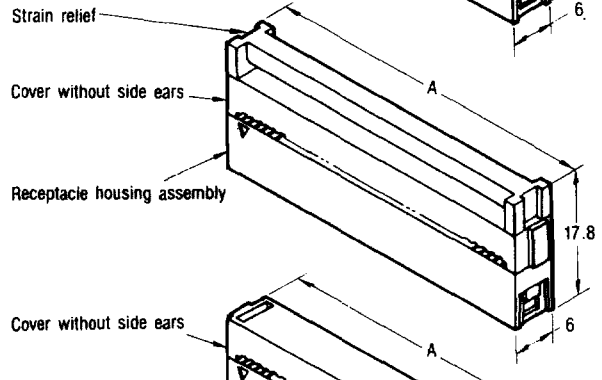
Cover with ears and strain relief, kit



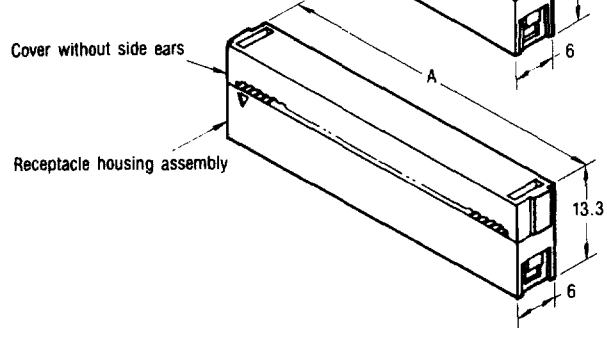
Cover with ears kit



Cover without ears but with strain relief, kit



Cover without ears kit



Applicable flat ribbon cable: AWG # 28 (0.08 – 0.09mm²) stranded wire

Number of Positions	Dimensions A	Part Numbers of the Connector*			
		Cover with Ears Kit		Cover without Ears Kit	
		w/Strain Relief	wo/Strain Relief	w/Strain Relief	wo/Strain Relief
10	17.3	4-172083-1	4-172082-1	—	—
16	24.9	4-172083-2	4-172082-2	—	—
20	30.0	4-172083-3	4-172082-3	4-172534-3	4-172533-3
26	37.6	4-172083-4	4-172082-4	—	—
34	47.8	4-172083-5	4-172082-5	4-172534-5	4-172533-5
40	55.4	4-172083-6	4-172082-6	4-172534-6	4-172533-6
50	68.1	4-172083-7	4-172082-7	4-172534-7	4-172533-7

* Kits in this table come with 0.2μ gold plated contact pins. Kits with other type plating for the contact pins are available with the following code numbers to be attached to the part number when ordering: —
•Lead contained tin plating : 6- (In this case, no connectors without strain reliefs are available for 40 and 50 pins, so customer is requested to use connectors with strain reliefs.)

Wire to Board Connectors
AMP-LATCH J Series Connectors
Paddle Card Connector Kit for Flat Ribbon Cables

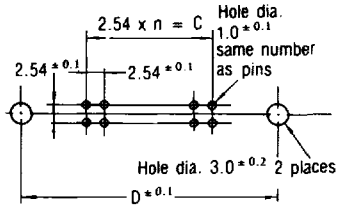
Connector kit

Spacing between the contact pins: 2.54 x 2.54mm

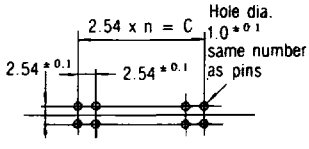
Materials:
Housing/cover/strain relief
Mounting ears –
Glass fiber reinforced PBT., black
Contact Pin –
Phosphor bronze, gold flash coating plating over a nickel plate base coating or lead contained tin.

Features

- The connector is compatible with Pin Headers with PC board pin holes spaced 2.54 x 2.54mm
- Mounting ears are fixed to the PC board by screws so that resistance against pulling force is raised.



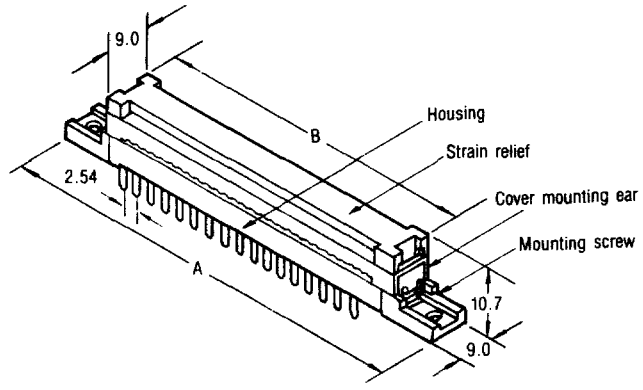
Recommended PC Board Mounting Dimensions (With Mounting Ears Kit)



Recommended PC Board Mounting Dimensions (Without Mounting Ears Kit)

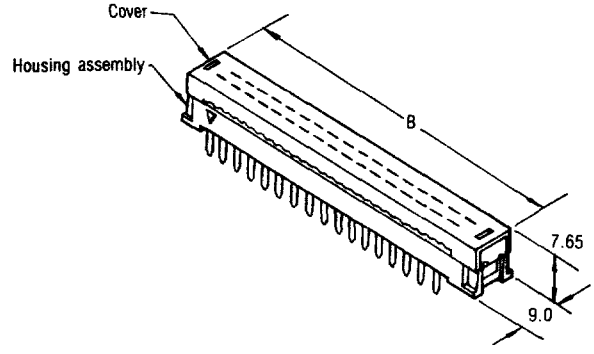
Product Spec.: No. 108-5145

Housing assembly cover kit with mounting ears and strain relief



Mounting screw: 3mm self-tapping screw (length 5mm) or M2 hexagonal nut screw and small screw (length 5mm)

Housing assembly and cover kit



Applicable cable: AWG #28 (0.08mm²), 1.27mm pitch flat cable

Number of Positions	n	Dimensions				Part Numbers of the Connector Kit *			
						wo/Mounting Ears Kit		w/Mounting Ears Kit	
		A	B	C	D	wo/Strain Relief	w/Strain Relief	wo/Strain Relief	w/Strain Relief
10	4	33.2	20.2	10.16	27.9	—	—	—	—
16	7	40.8	27.8	17.78	35.5	**172290-2**	**172292-2**	—	—
20	9	45.9	32.9	22.86	40.6	**172290-3**	—	—	—
26	12	53.5	40.5	30.48	48.2	**172290-4**	—	—	—
34	16	63.6	50.6	40.64	58.4	**172290-5**	—	—	—
40	19	71.3	58.3	48.26	66.0	—	**172292-6**	—	—
50	24	84.0	71.0	60.96	78.7	—	**172292-7**	**172293-7**	**172291-7**

* Kits listed in this table have flash-coated gold contact pin assemblies. If kits with lead containing tin plated contact pins are required, place 2- before the part number when ordering.

Wire to Board Connectors
AMP-LATCH J Series Connectors
Receptacle Connector for Discrete Wires

Features

- This connector is designed to mate discrete wire cables to the PC board.
- Spacing of the contact pin centers is 2.54 x 2.54mm
- The Pin Header for the PC board side can be used in common with that for flat ribbon cables, the Header has a latch mechanism that enables lock/eject by single handed operation.
- Connector capacity by the number of pin positions is 10, 16, 20, 26, 34, 40 and 50.
- The housing has a positive polarizing device.
- The high reliability AMPMODU* model IV receptacle contact pins used in these connectors consist of two opposed wire-clamping cantilever members that feature over-stress prevention construction.
- The receptacle housing material comprises, glass reinforced polybutylene terephthalate (PBT), UL 94 V-0 rated black colored plastic.
- The contact pin material is 0.2mm thick beryllium copper.
- Applicable wire size is AWG # 28 to # 20 (0.08 to 0.52mm^2), external wire diameter is 0.89 to 1.27mm
- Cable clamp kits are available for 30, 40, 50 pin connectors, providing clamping capability for a wide range of wire diameters.
- The cable clamp material used is UL 94 V-0 rated, black colored 66 nylon.

Performance specifications

Rated current:
AWG # 20 - 24 — 3.5A
Low level overall resistance:
Initial, and after the test — 18 milliohms or less.

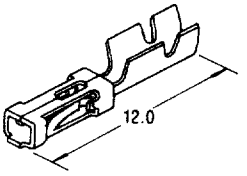
Insulation resistance:
5,000 megohms or more
Withstanding voltage:
500V AC for 1 minute
Control insertion force:
370g. max. (per contact pin)

Contact removal force:
30g. min. (per contact pin)
Usable temperature range:
−55°C to +105°C
Product Spec.: No. 108-5134
Application Spec.:
No. 114-5026

4

Receptacle contact

Material:
0.2mm thick beryllium copper
§ mark indicates phosphor bronze



Wire Size AWG	Wire Size mm^2	External Wire Dia.	Contact Finish	Part No. Strip Form	Part No. Loose Piece	Hand Tool Part No.
28–26	0.08–0.15	0.7–1.27	0.76μ (min) gold on mating end, with entire contact underplated with nickel.*	§170431-1	§170432-2	724744-1
		0.89–1.27	0.76μ (min) gold on mating end, with entire contact underplated with nickel.*	—	170434-1	
			0.76μ (min) gold on mating end, with entire contact underplated with nickel* overlayed with flashed gold.	170433-2	170434-2	
			0.38μ (min) gold on mating end, with entire contact underplated with nickel.*	170433-3	170434-3	
24–20	0.20–0.52	1.17–1.45	0.76μ (min) gold on mating end, with entire contact underplated with nickel.*	—	170438-1	
			0.76μ (min) gold on mating end with entire contact under plated with nickel* overlayed with flashed gold.	170437-2	170438-2	
			0.38μ (min) gold on mating end, with entire contact underplated with nickel.*	170437-3	170438-3	
		1.45–1.77	0.76μ (min) gold on mating end, with entire contact underplated with nickel.*	170435-1**	170436-1**	
			0.76μ (min) gold on mating end, with entire contact underplated with nickel* overlayed with flashed gold.	170435-2**	170436-2**	
			0.38μ (min) gold on mating end, with entire contact underplated with nickel.*	170435-3**	170436-3**	

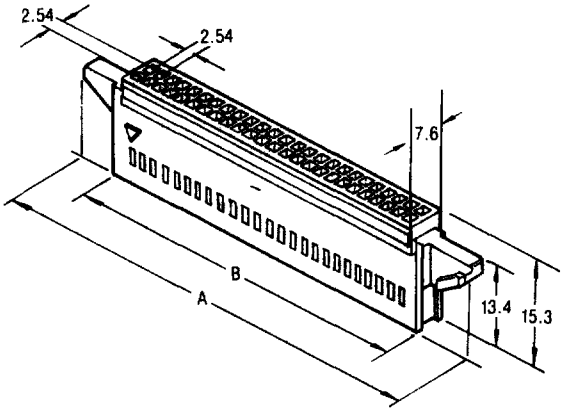
* Nickel plate thickness: 1.0μ — 4.0μ.
** This pin contact is applicable to AMP LATCH J Series Connectors only. Hand tool instruction sheet No.: IS-134J.

Wire to Board Connectors
AMP-LATCH J Series Connectors
Receptacle Connector for Discrete Wires

Receptacle housing

Contact center line, spacing:
2.54 x 2.54 mm

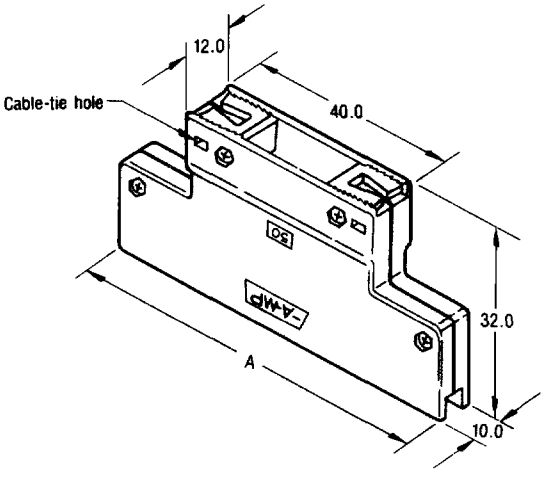
Materials:
UL 94 V-0 rated glass reinforced PBT, black.



Number of Positions	Dimensions		Receptacle Housing Part Number	Applicable Pin Header Part Number	
	A	B		Vertical Mounting Type	Horizontal Mounting Type
10	30.2	17.6	**172145-1**	**172092-1**	**172094-1**
16	37.75	25.15	**172145-2**	**172092-2**	**172094-2**
20	42.85	30.25	**172145-3**	**172092-3**	**172094-3**
26	50.45	37.85	**172145-4**	**172092-4**	**172094-4**
34	60.6	48.0	**172145-5**	**172092-5**	**172094-5**
40	68.2	55.6	**172145-6**	**172092-6**	**172094-6**
50	80.8	68.2	**172145-7**	**172092-7**	**172094-7**

Cable clamp assembly kit

Material:
UL 94 V-0 rated, 66 nylon, black



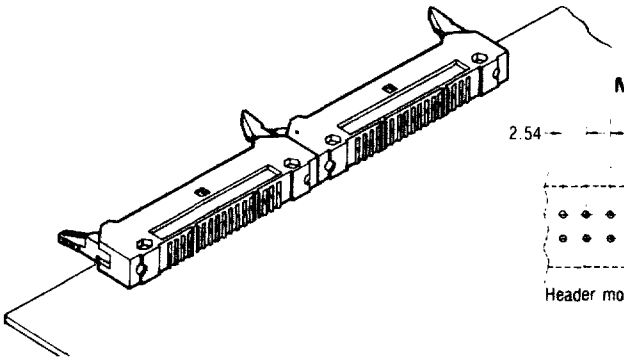
When using this connector with the cable bended 90 degrees, cable-tie (Part No. 171353-1) should be utilized.

Number of Positions	Dimension A	Cable Clamp Kit Part Numbers	Applicable Receptacle Housing Part Numbers
34	48.0	**172277-1**	**172145-5**
40	55.6	**172277-2**	**172145-6**
50	68.2	**172277-3**	**172145-7**

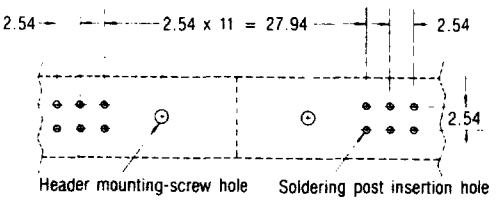
Wire to Board Connectors
AMP-LATCH J Series Connectors
High Density Mounting on a PC Board and Applicable Cable Assembly Tools

High density mounting on a PC board

As shown in the drawing, the pin headers can be mounted side-by-side in close contact without interference between the adjacent latch levers. This permits effective utilization of the connector mounting space available.



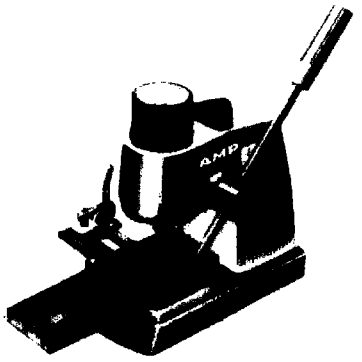
Mounting hole dimensions



Applicable cable assembly tools

AMP Minipress

This tool is used for connecting the flat ribbon cable to the receptacle housing assembly or the Paddle Card connector. Connections to the cable conductors are made simultaneously, with automatic stripping of each conductor's insulation. AMP minipresses are available as a manual version (actuated by a handle) or as a pneumatic version actuated by compressed air controlled by a foot pedal. Both the manual and pneumatic version minipress need to be equipped with a wire connecting die-set comprised of: a frame, shuttle, and tolling-rail fitted to the top and bottom toolholders. These die-sets are interchangeable between the manual and pneumatic versions of the press.



Manual press

Part numbers for the manual press

For the Receptacle Connector

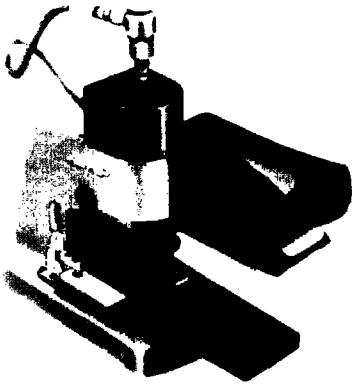
For the connector kit with mounting ears and cover:
#755850-3

For the connector kit without mounting ears but with cover:
#755850-2

Instruction Sheet No.: IS-93-J

For the Paddle Card Connector

#755850-4



Pneumatic press

Part numbers for the pneumatic press

For the Receptacle Connector

For the connector kit with mounting ears and cover:
#754850-3

For the connector kit without mounting ears but with cover:
#754850-2

For the Paddle Card Connector

#754850-4

Instruction Sheet No.: IS-127-J

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