

040/070 Series Hybrid I/O

Features

- I/O connectors for use with a mixture of signal and power circuits
- Plug connector for wire termination accepts three types of circuitry, i.e., signal and power circuits singly or a mixture of both circuits
- Board-mounting cap connector accepts signal circuits or power circuits and a mixture of both

Performance Data

Low-level resistance and overall resistance:

040 Series—
 10mΩ max. (initial)
 20mΩ max.(final)

070 Series—
 3mΩ max. (initial)
 10mΩ max.(final)

Insulation resistance:

100MΩ min. DC 500V

Withstanding strength voltage:

1,000V AC for 1 minute

Contact retention:

Lance only—6kg min.

Lance plus double—
 8kg min.

Operating temperature range:

-30° ~ +105°C

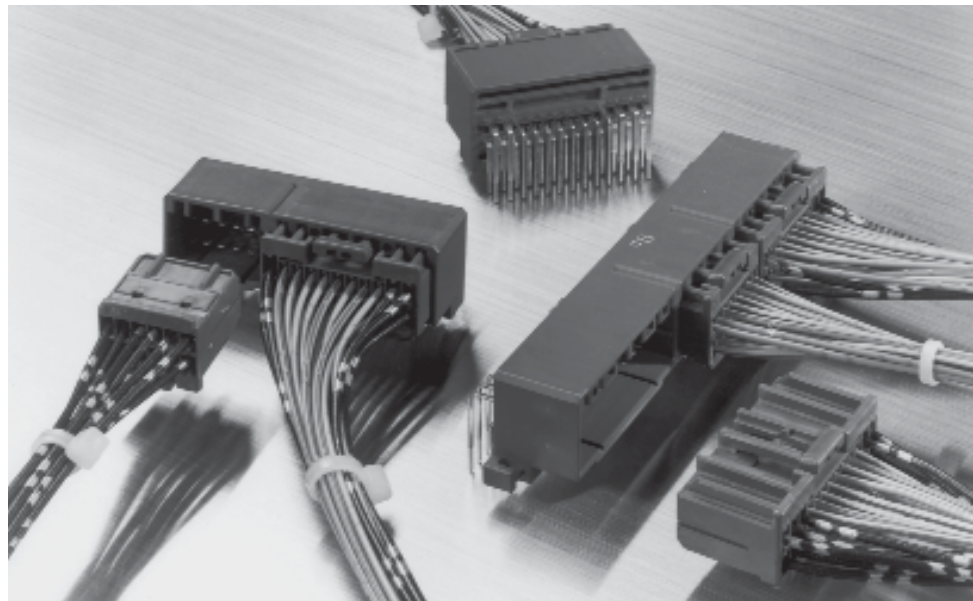
Product specification:

108-5280
 108-5342 (Mark II)

Mounting specification:

040 Series—
 114-5108, 5094, 5159,
 5133

070 Series—
 114-5091, 5092, 5160



AMP 040/070 Hybrid I/O Connectors are an improved wire-to-board interconnection connector incorporating the features of both 040 and 070 connectors which have proven performance as a sub-miniature I/O connector for automotive applications. These connectors consist of a plug connector for wire termination which accepts three types of circuitry, i.e., signal, power and a mixture of both (for loading receptacle contacts) and a PC board-mount cap connector. The plug connector features a housing lance design ; eliminating the possibility of contacts being tangled with one another or a deformed lance. This receptacle contact is available in two series, 040 and 070. It resists damage with a built-in spring and ensures a reliable electrical connection. The plug housing also features an integral double-lock to hold contacts loaded after wire termination, providing an effective protection against contact damage due to rocking motion at mating & unmating.

The board-mount cap connector is preloaded with right-angle post contacts for soldering.

The connectors are available in the following sizes:

- Plug Connectors
 - 12 positions (signal circuits)
 - 12 positions (power circuits)
 - 16 positions (signal circuits)
 - 22-positions hybrid (16 positions for signal and 6 positions for power circuits)
 - 26-positions hybrid (16 positions for signal and 10 positions for power circuits)
- Cap Connectors
 - Plug listed in parentheses are mating connectors.
 - 26 positions (26-position hybrid)
 - 34 positions (12 positions for power circuits and 22-position hybrid)
 - 38 positions (16 positions for signal circuits and 22 positions for 22-position hybrid)

42 positions (16 positions for signal circuits and 26 positions for 26-position hybrid)

48 positions (22 positions for 22 position hybrid and 26 positions for 26-position hybrid)

54 positions (12 positions and power circuits, 16 positions for signal circuits and 26 position for 26-position hybrid)

64 positions (16 positions for signal circuits, 22 positions for 22-position hybrid and 26 position for 26-position hybrid)

76 positions (12 and 16 positions each for signal circuits, 22 positions for 22-position hybrid and 26 positions for 26-position hybrid)



040/070 Series Hybrid I/O

CAP HOUSING		PLUG HOUSING	
		Hinge Type	Side Lock Type
<p>□-178811-□</p>	<p>26 P</p>	<p>Mating Plug 26 Position □-174516-□ (see page 43)</p>	<p>Mating Plug 26 Position □-178801-□ (see page 45) □-917992-□ (see page 45)</p>
<p>□-175571-□</p>		<p>Mating Plug 26 Position □-174516-□ (see page 43)</p>	<p>Mating Plug 26 Position □-178801-□ (see page 45) □-917992-□ (see page 45)</p>
<p>□-178762-□ Different Key</p>		<p>Mating Plug 26 Position □-175567-□ (see page 43)</p>	<p>Mating Plug 26 Position □-178885-□ (see page 45) □-917994-□ (see page 45)</p>
<p>□-175569-□ Special Key</p>		<p>Mating Plug 26 Position □-175567-□ (see page 43)</p>	<p>Mating Plug 26 Position □-178885-□ (see page 45) □-917994-□ (see page 45)</p>



040/070 Series Hybrid I/O (Continued)

CAP HOUSING		PLUG HOUSING	
		Hinge Type	Side Lock Type
<p>□-176206-□</p> <ul style="list-style-type: none"> • Bottom mount ears 	<p>26 P</p> <p>Mating Plug 26 Position □-176204-□</p>	<p>Mating Plug 26 Position □-178888-□ □-917997-□</p>	
<p>□-178900-□</p> <ul style="list-style-type: none"> • Side mount ears 	<p>Mating Plug 26 Position □-176204-□ (see above)</p>	<p>Mating Plug 26 Position □-178888-□ (see above) □-917997-□ (see above)</p>	
<p>□-178209-□</p> <ul style="list-style-type: none"> • Low profile mounting ears 	<p>Mating Plug 26 Position □-178747-□</p>	<p>Mating Plug 26 Position □-178897-□ □-917850-□</p>	

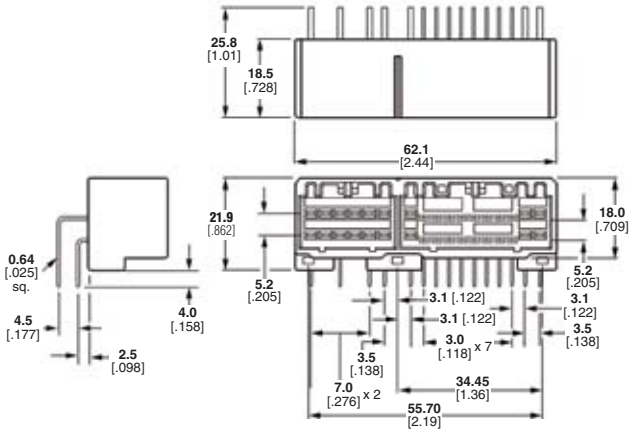


040/070 Series Hybrid I/O (Continued)

CAP HOUSING	PLUG HOUSING	
	Hinge Type	Side Lock Type

- 176255-□
- 4 vacant circuits
- Bottom mount ears

**30
P**



Mating Plug

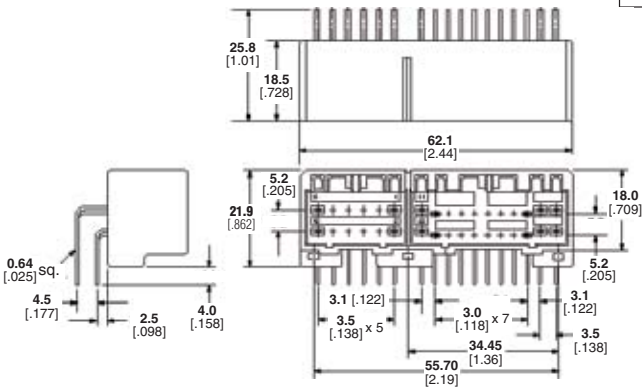
- 12 Position**
□-175442-□ (see page 42)
(all 070)
- 22 Position**
□-174515-□ (see page 43)

Mating Plug

- 12 Position**
□-178881-□ (see page 44)
□-917978-□ (see page 44)
- 22 Position**
□-178798-□ (see page 45)
□-917989-□ (see page 45)

- 175444-□
- 776190-□ (Partially loaded version)

**34
P**



Mating Plug

- 12 Position**
□-175442-□ (see page 42)
(all 070)
- 22 Position**
□-174515-□ (see page 43)

Mating Plug

- 12 Position**
□-178881-□ (see page 44)
□-917978-□ (see page 44)
- 22 Position**
□-178798-□ (see page 45)
□-917989-□ (see page 45)



040/0700 Series Hybrid I/O (Continued)

CAP HOUSING	PLUG HOUSING	
	Hinge Type	Side Lock Type
<p><input type="checkbox"/>-175521-<input type="checkbox"/></p> <ul style="list-style-type: none"> • Side mount ears 	<div style="border: 1px solid black; padding: 5px; width: 30px; margin: 0 auto;">38 P</div> <p>Mating Plug 16 Position <input type="checkbox"/>-174514-<input type="checkbox"/> (see page 43) 22 Position <input type="checkbox"/>-174515-<input type="checkbox"/> (see page 43)</p>	<p>Mating Plug 16 Position <input type="checkbox"/>-178795-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917981-<input type="checkbox"/> (see page 45) 22 Position <input type="checkbox"/>-178798-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917989-<input type="checkbox"/> (see page 45)</p>
<p><input type="checkbox"/>-638048-<input type="checkbox"/></p> <ul style="list-style-type: none"> • High temperature version 	<p>Mating Plug 16 Position <input type="checkbox"/>-174514-<input type="checkbox"/> (see page 43) 22 Position <input type="checkbox"/>-174515-<input type="checkbox"/> (see page 43)</p>	<p>Mating Plug 16 Position <input type="checkbox"/>-178795-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917981-<input type="checkbox"/> (see page 45) 22 Position <input type="checkbox"/>-178798-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917989-<input type="checkbox"/> (see page 45)</p>
<p><input type="checkbox"/>-178093-<input type="checkbox"/></p>	<p>Mating Plug 12 Position <input type="checkbox"/>-175442-<input type="checkbox"/> (see page 42) 26 Position <input type="checkbox"/>-174516-<input type="checkbox"/> (see page 43)</p>	<p>Mating Plug 12 Position <input type="checkbox"/>-179881-<input type="checkbox"/> (see page 36) <input type="checkbox"/>-917978-<input type="checkbox"/> (see page 36) 26 Position <input type="checkbox"/>-178801-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917992-<input type="checkbox"/> (see page 45)</p>



040/070 Series Hybrid I/O (Continued)

CAP HOUSING	PLUG HOUSING	
	Hinge Type	Side Lock Type
<p><input type="checkbox"/>-175446-<input type="checkbox"/></p>	<p>42 P</p> <p>Mating Plug 16 Position <input type="checkbox"/>-174514-<input type="checkbox"/> (see page 43) 26 Position <input type="checkbox"/>-174516-<input type="checkbox"/> (see page 43)</p>	<p>Mating Plug 16 Position <input type="checkbox"/>-178795-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917981-<input type="checkbox"/> (see page 45) 26 Position <input type="checkbox"/>-178801-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917992-<input type="checkbox"/> (see page 45)</p>
<p><input type="checkbox"/>-176242-<input type="checkbox"/></p>	<p>Mating Plug 16 Position <input type="checkbox"/>-176243-<input type="checkbox"/> (see page 43) 26 Position <input type="checkbox"/>-175567-<input type="checkbox"/> (see page 43)</p>	<p>Mating Plug 16 Position <input type="checkbox"/>-178883-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917983-<input type="checkbox"/> (see page 45) 26 Position <input type="checkbox"/>-178885-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917994-<input type="checkbox"/> (see page 45)</p>
<p><input type="checkbox"/>-177542-<input type="checkbox"/></p>	<p>— —</p>	<p>Mating Plug 16 Position <input type="checkbox"/>-177545-<input type="checkbox"/> (040/070) <input type="checkbox"/>-917976-<input type="checkbox"/> (040/070) 26 Position <input type="checkbox"/>-178801-<input type="checkbox"/> (see page 45) <input type="checkbox"/>-917992-<input type="checkbox"/> (see page 45)</p>



040/070 Series Hybrid I/O (Continued)

CAP HOUSING		PLUG HOUSING		
		Hinge Type	Side Lock Type	
<input type="checkbox"/> -179375- <input type="checkbox"/> <input type="checkbox"/> -174917- <input type="checkbox"/>		48 P	Mating Plug 22 Position <input type="checkbox"/> -174515- <input type="checkbox"/> (see page 43) 26 Position <input type="checkbox"/> -174516- <input type="checkbox"/> (see page 43)	Mating Plug 22 Position <input type="checkbox"/> -178798- <input type="checkbox"/> (see page 45) <input type="checkbox"/> -917989- <input type="checkbox"/> (see page 45) 26 Position <input type="checkbox"/> -178801- <input type="checkbox"/> (see page 45) <input type="checkbox"/> -917992- <input type="checkbox"/> (see page 45)

*Part with hold down feature available upon request.



040/070 Series Hybrid I/O (Continued)

CAP HOUSING	PLUG HOUSING	
	Hinge Type	Side Lock Type
<p>□-175448-□</p>	<p>54 P</p> <p>Mating Plug</p> <p>12 Position □-175442-□ (see page 42)</p> <p>16 Position □-174514-□ (see page 43)</p> <p>26 Position □-174516-□ (see page 43)</p>	<p>Mating Plug</p> <p>12 Position □-178881-□ (see page 44) □-917978-□ (see page 44)</p> <p>16 Position □-178795-□ (see page 45) □-917981-□ (see page 45)</p> <p>26 Position □-178801-□ (see page 45) □-917992-□ (see page 45)</p>

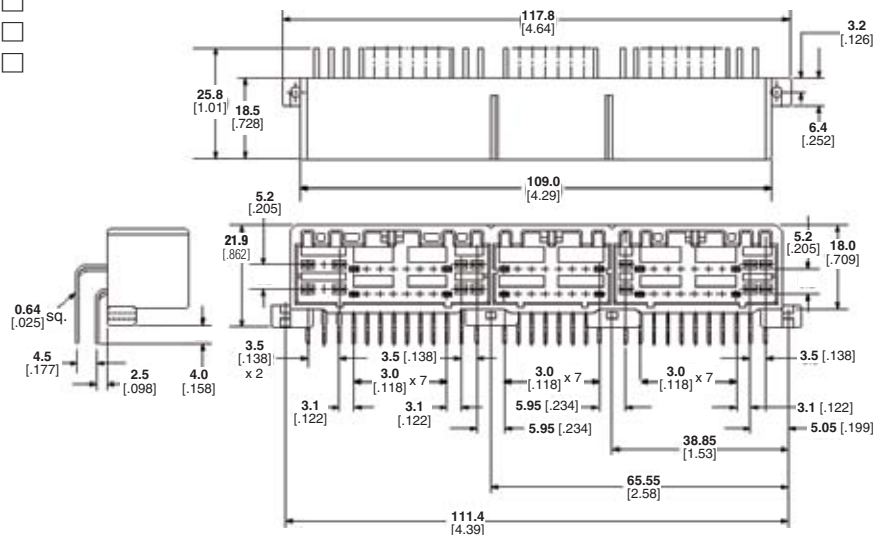


040/070 Series Hybrid I/O (Continued)

CAP HOUSING

- 917322-
- 776189-
- 176122-
- 178764-
- 174518-
- 177609-

**64
P**



PLUG HOUSING

Hinge Type

Side Lock Type

Customer Specifies Mating Plug (Tight Fit)

- 16 Position**
-175109-
- 22 Position**
-175110-
- 26 Position**
-175111-

Mating Plug

- 16 Position**
-174514- (see page 43)
- 22 Position**
-174515- (see page 43)
- 26 Position**
-174516- (see page 43)

Mating Plug

- 16 Position**
—
- 22 Position**
—
- 26 Position**
—

Mating Plug*

- 16 Position**
-178795- (see page 45)
-917981- (see page 45)
- 22 Position**
-178798- (see page 45)
-917989- (see page 45)
- 26 Position**
-178801- (see page 45)
-917992- (see page 45)

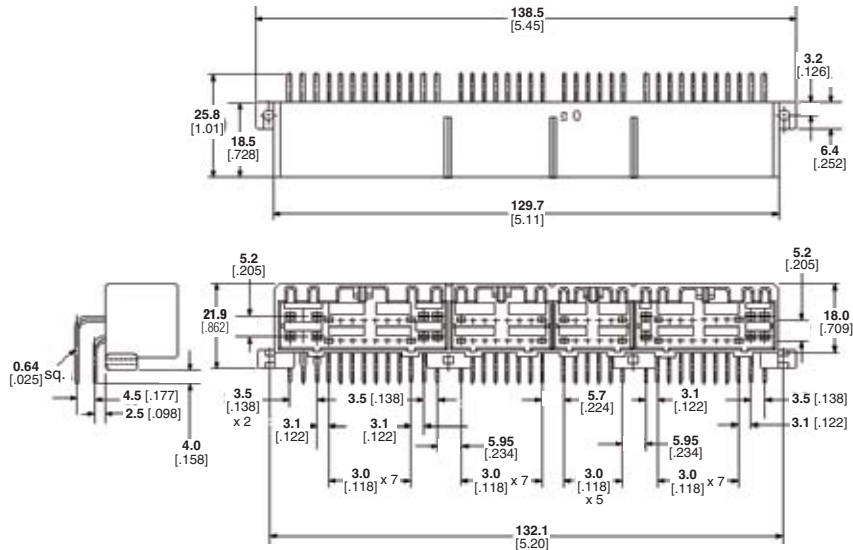


040/070 Series Hybrid I/O (Continued)

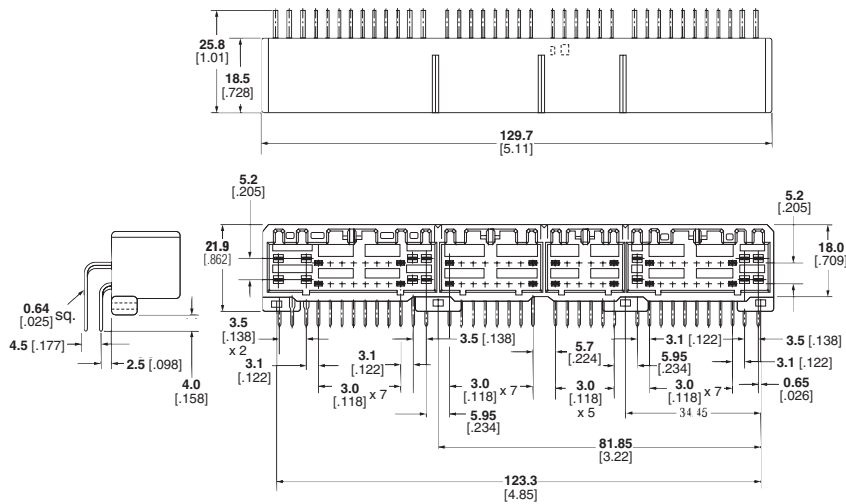
CAP HOUSING

- 174915-
- Side mount ears

**76
P**



- 178780-



PLUG HOUSING

Hinge Type

Side Lock Type

Mating Plug

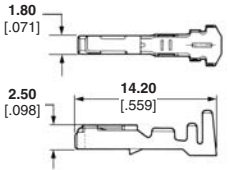
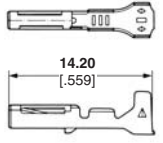
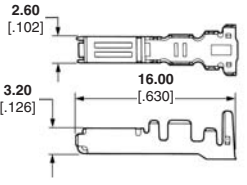
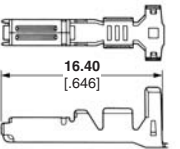

- 12 Position**
- 174913- (see page 42)
- 16 Position**
- 174514- (see page 43)
- 22 Position**
- 174515- (see page 43)
- 26 Position**
- 174516- (see page 43)

Mating Plug*

- 12 Position**
- 178845- (see page 44)
- 917975- (see page 44)
- 16 Position**
- 178795- (see page 45)
- 917981- (see page 45)
- 22 Position**
- 178798- (see page 45)
- 917989- (see page 45)
- 26 Position**
- 178801- (see page 45)
- 917992- (see page 45)



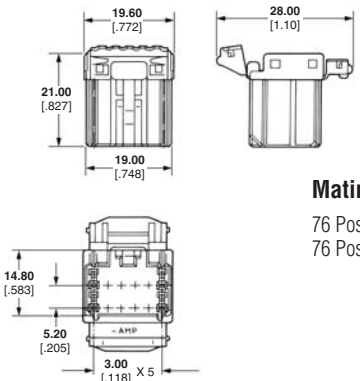
040/070 Series Hybrid

Receptacle Contact (Hinge Lock Type)						
Type of Contact	Wire Range	Wire Ins. Diameter	Finish	Strip Form	Loose Piece	Hand Tool No.
040 Series  Application Specification: 114-5111	0.3-0.5mm ² (AWG#22-20)	ø1.4-2.0mm	KLF-5/Pre-Tin	173716-1	175061-1	911738-1
			KLF-5/Sel. Gold	173716-2	175061-2	
 Application Specification: 114-5133	0.3-0.5mm ² (AWG#22-20)	ø1.1-1.3mm	KLF-5/Pre-Tin	175094-1	—	—
			KLF-5/Sel. Gold	175094-2	—	
070 Series  Application Specification: 114-5091	0.2-0.3mm ² (AWG#24-22)	ø1.4-1.3mm	Brass/Pre-Tin	173630-1	175026-1	911799-2
			Brass/Sel. Gold	173630-2	175026-2	
	0.5-1.25mm ² (AWG#20-16)	ø2.0-2.6mm	Brass/Pre-Tin	173631-1	175027-1	911788-2
			Brass/Sel. Gold	173631-2	175027-2	
 Application Specification: 114-5134	0.3-0.5mm ² (AWG#24-22)	ø1.1-1.3mm	Brass/Pre-Tin	175124-1	—	—
			Brass/Sel. Gold	175124-2	—	
 Application Specification: 114-5134	0.5-1.25mm ² (AWG#20-16)	ø1.3-1.8mm	Brass/Pre-Tin	175095-1	—	—

Plug (Hinge Lock Type)

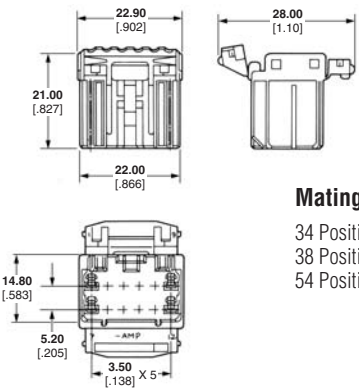
12
P

□-174913-□



Mating Cap
 76 Position: □-178780-□ (see page 41)
 76 Position: □-174915-□ (see page 41)

□-175442-□



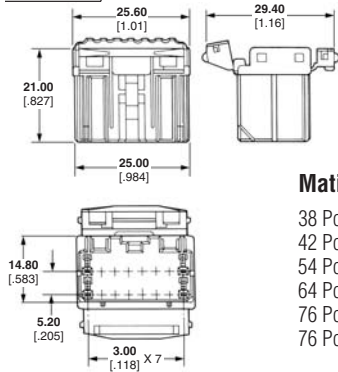
Mating Cap
 34 Position: □-175444-□ (see page 35)
 38 Position: □-178093-□ (see page 36)
 54 Position: □-175448-□ (see page 39)

040/070 Series Hybrid (Continued)

Plug (Hinge Lock Type) (Continued)

16 P

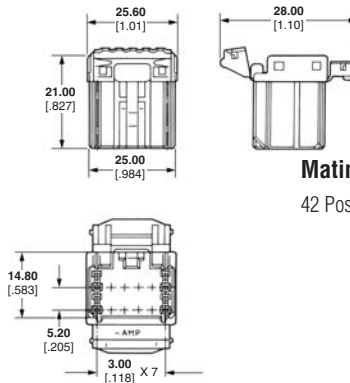
□-174514-□



Mating Cap

38 Position: □-175521-□ (see page 36)
42 Position: □-175446-□ (see page 37)
54 Position: □-175448-□ (see page 39)
64 Position: □-178764-□ (see page 40)
76 Position: □-178780-□ (see page 41)
76 Position: □-174915-□ (see page 41)

□-176243-□

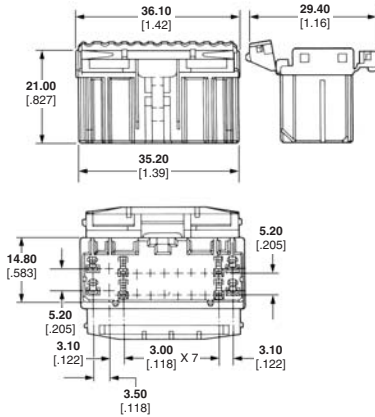


Mating Cap

42 Position: □-176242-□ (see page 37)

22 P

□-174515-□

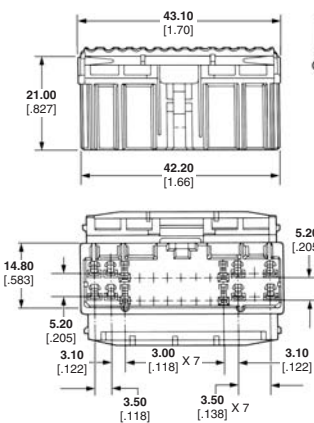


Mating Cap

34 Position: □-175444-□ (see page 35)
38 Position: □-175521-□ (see page 36)
48 Position: □-174917-□ (see page 38)
64 Position: □-178764-□ (see page 40)
76 Position: □-178780-□ (see page 41)
76 Position: □-174571-□ (see page 41)

26 P

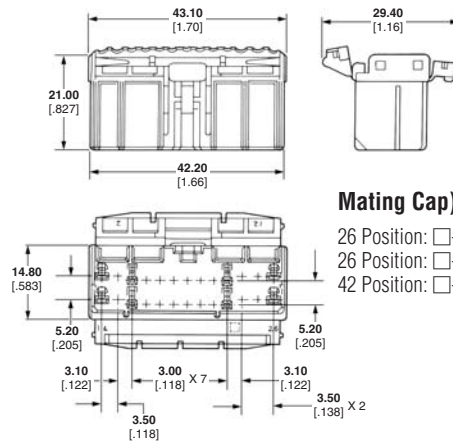
□-174516-□



Mating Cap

26 Position: □-175571-□ (see page 33)
26 Position: □-178811-□ (see page 33)
38 Position: □-178093-□ (see page 36)
42 Position: □-175446-□ (see page 37)
48 Position: □-174917-□ (see page 38)
54 Position: □-175448-□ (see page 39)
64 Position: □-178764-□ (see page 40)
76 Position: □-178780-□ (see page 41)
76 Position: □-174915-□ (see page 41)

□-175567-□

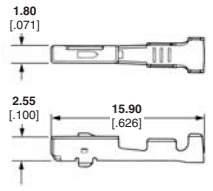
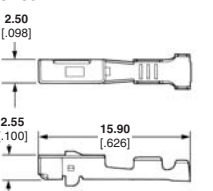


Mating Cap

26 Position: □-175569-□ (see page 33)
26 Position: □-178762-□ (see page 33)
42 Position: □-176242-□ (see page 37)



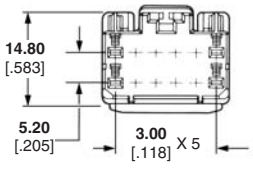
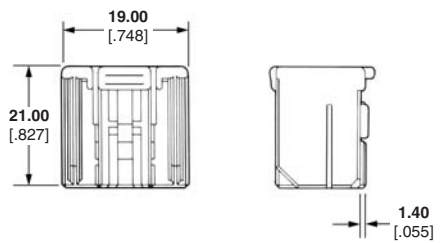
040/070 Series Hybrid (Continued)

Receptacle Contact (Side Lock Type)						
Type of Contact	Wire Range	Wire Ins. Diameter	Finish	Strip Form	Loose Piece	Hand Tool No.
040 Series  Application Specification: 114-5159	0.3-0.85mm ² (AWG#22-18)	ø1.1-1.8mm	KLF-5/Pre-Tin	175265-1	—	934192-1
			KLF-5/Sel. Gold	175266-2	179418-2	
070 Series  Application Specification: 114-5160	0.3-0.85mm ² (AWG#22-18)	ø1.1-1.8mm	Brass/Pre-Tin	175268-1	—	934195-1
			Brass/Sel. Gold	175275-2	—	
	0.5-1.25mm ² (AWG#20-16)	ø1.8-2.5mm	Brass/Pre-Tin	175269-1	—	934196-1
			Brass/Sel. Gold	175276-2	179426-2	

Plug Housing (Side Lock Type)

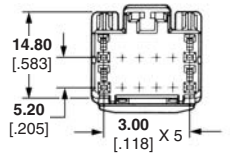
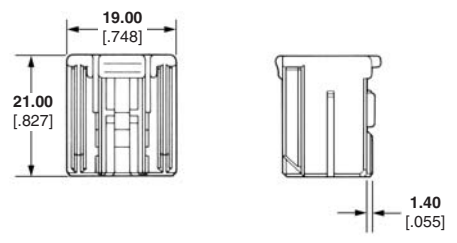
**12
P**

- 917975-□
- 178845-□



Mating Cap
76 Position: □-178780-□ (see page 41)

- 917978-□
- 178881-□



Mating Cap
34 Position: □-175444-□ (see page 35)
38 Position: □-178093-□ (see page 36)
54 Position: □-175448-□ (see page 39)

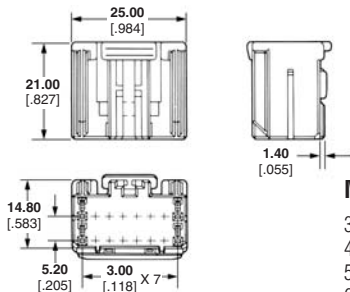


040/070 Series Hybrid (Continued)

Plug Housing (Side Lock Type) (Continued)

16
P

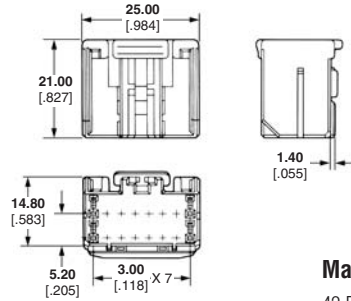
- 917981-□
- 178795-□



Mating Cap

- 38 Position: □-175521-□ (see page 36)
- 42 Position: □-175446-□ (see page 37)
- 54 Position: □-175448-□ (see page 39)
- 64 Position: □-178764-□ (see page 40)
- 76 Position: □-178780-□ (see page 41)

- 917983-□
- 178883-□

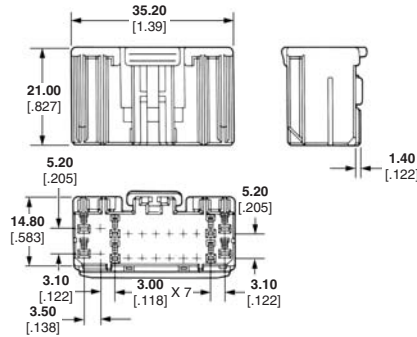


Mating Cap

- 42 Position: □-176242-□ (see page 37)

22
P

- 917989-□
- 178798-□

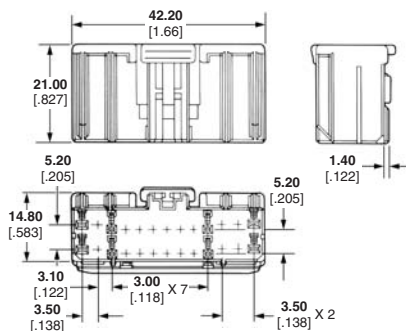


Mating Cap

- 34 Position: □-175444-□ (see page 35)
- 38 Position: □-175521-□ (see page 36)
- 48 Position: □-174917-□ (see page 38)
- 64 Position: □-178764-□ (see page 40)
- 76 Position: □-178780-□ (see page 41)

26
P

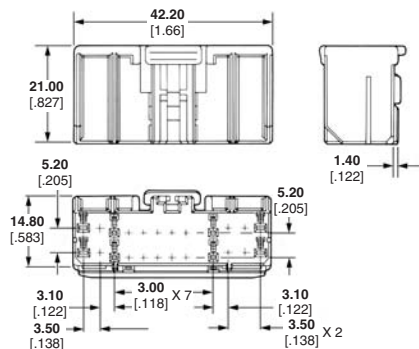
- 917992-□
- 178801-□



Mating Cap

- 26 Position: □-178811-□ (see page 33)
- 38 Position: □-178093-□ (see page 36)
- 42 Position: □-175446-□ (see page 37)
- 48 Position: □-174917-□ (see page 38)
- 54 Position: □-175448-□ (see page 39)
- 64 Position: □-178764-□ (see page 40)
- 76 Position: □-178780-□ (see page 41)

- 917994-□
- 178885-□



Mating Cap

- 26 Position: □-178762-□ (see page 33)
- 26 Position: □-175569-□ (see page 35)
- 42 Position: □-176242-□ (see page 37)