

# Contents

AMPSEAL Connector Overview .....	12
Product Documentation .....	12
Performance Specifications .....	12
Material Specifications .....	13
Dimensions .....	13
Configurations .....	13
Ordering Information .....	14
Accessories .....	15
Contacts .....	15-16
Tooling .....	17
How To Instructions .....	18-19

### AMPSEAL Connector Overview

AMPSEAL connectors provide rugged reliability and environmental sealing. They are available in cable plugs and PCB mount headers that are designed to stand up to high-temperature underhood applications. The pre-assembled receptacle housing connector features built-in contact sealing and an integral interfacial seal that protects mated connectors.



### APPLICABLE PRODUCT DOCUMENTATION

Additional documentation is available for assistance with AMPSEAL connector products. The following TE Connectivity document numbers may be helpful:

54285-2 (Catalog Section)	408-3229 (Instruction Sheet)
108-1329 (Product Specification)	408-9592 (Instruction Sheet, Tooling)
114-16016 (Application Specification)	408-9999 (Instruction Sheet, Tooling)

### AMPSEAL CONNECTOR PERFORMANCE SPECIFICATIONS

<b>Current:</b>	Up to 17 amps gold, up to 8 amps tin
<b>Temperature:</b>	Operating at temperatures -40°C to +125°C for gold plated, -40°C to +105°C for tin plated
<b>Durability:</b>	See <i>note</i> . Mate and unmate specimens for 10 cycles at maximum rate of 600 cycles per hour.
<b>Physical Shock:</b>	No discontinuities of 1 microsecond or longer duration. TE Spec 109-26-1. Subject mated specimens to 50 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Fig 5 in TE product document 108-1329.
<b>Insulation Resistance:</b>	100 megohms minimum. TE Spec 109-28-4. Test between adjacent contacts of mated specimens.
<b>Immersion:</b>	Leakage current not to exceed 50 micro-amperes at 48 volts DC. TE Spec 109-74-5. Immerse specimens to a depth of 100 mm in 5% salt water at a temperature of $23 \pm 5^\circ \text{C}$ for 1 hour. Check between adjacent circuits and each surface to reference electrode.
<b>Random Vibration:</b>	See <i>note</i> . TE Spec 109-21-7, Condition G, except 10-500 Hz frequency range. Subject mated specimens to 10 Gs for 8 hours each plane.
<b>Voltage:</b>	250 volts AC

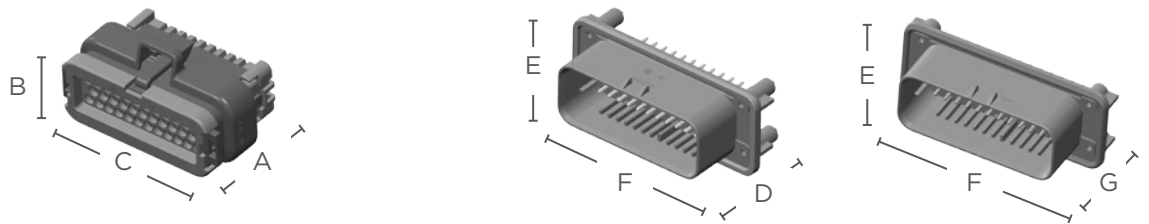
Note: Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 3 of TE product document 108-1329.

# AMPSEAL Connectors

## MATERIAL SPECIFICATIONS

- Wire Seal:** Silicone rubber
- Mating Seal:** Silicone rubber
- Cover:** Glass filled PBT
- Locking Wedge:** PBT

## DIMENSIONS



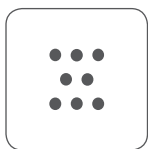
**AMPSEAL Receptacle Housing**

**AMPSEAL Header**

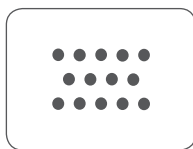
Cavity	Overall Length A	Overall Height B	Overall Width C	Overall Length Straight D	Overall Height E	Overall Width F	Overall Length 90° G
8	1.32 (33.6)	1.36 (34.6)	1.08 (27.4)	1.35 (34.3)	1.26 (32.1)	1.61 (40.8)	1.49 (37.9)
14	1.32 (33.6)	1.36 (34.6)	1.39 (35.4)	1.35 (34.3)	1.26 (32.1)	1.92 (48.8)	1.49 (37.9)
23	1.32 (33.6)	1.36 (34.6)	1.87 (47.4)	1.35 (34.25)	1.26 (32.1)	2.39 (60.8)	1.49 (37.9)
35	1.32 (33.6)	1.36 (34.6)	2.50 (63.4)	1.35 (34.25)	1.26 (32.1)	3.03 (76.9)	1.49 (37.9)

Dimensions are for reference only.

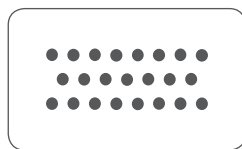
## CONFIGURATIONS



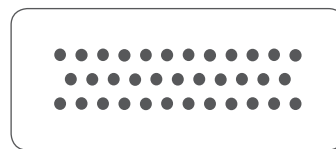
**8 Positions**  
8 size 1.3 mm



**14 Positions**  
14 size 1.3 mm



**23 Positions**  
23 size 1.3 mm



**35 Positions**  
35 size 1.3 mm

## ORDERING INFORMATION

Position	Keyed Housing Color	Contact Finish	Receptacle Housing	Right-Angle PCB Header		Vertical PCB Header	
				Without Seal	With Seal	Without Seal	With Seal
8	Black	Tin plated	776286-1	776279-1	776280-1	776275-1	776276-1
		Gold plated		1-776279-1	1-776280-1	1-776275-1	1-776276-1
	Natural	Tin plated	776286-2	776279-2	776280-2	776275-2	776276-2
		Gold plated		1-776279-2	1-776280-2	1-776275-2	1-776276-2
14	Black	Tin plated	776273-1	776266-1	776267-1	776261-1	776262-1
		Gold plated		1-776266-1	1-776267-1	1-776261-1	1-776262-1
	Natural	Tin plated	776273-2	776266-2	776267-2	776261-2	776262-2
		Gold plated		1-776266-2	1-776267-2	1-776261-2	1-776262-2
	Gray	Tin plated	776273-4	776266-4	776267-4	776261-4	776262-4
		Gold plated		1-776266-4	1-776267-4	1-776261-4	1-776262-4
	Blue	Tin plated	776273-5	776266-5	776267-5	776261-5	776262-5
		Gold plated		1-776266-5	1-776267-5	1-776261-5	1-776262-5
23	Black	Tin plated	770680-1	770669-1	776087-1	776200-1	776228-1
		Gold plated		1-770669-1	1-776087-1	1-776200-1	1-776228-1
	Natural	Tin plated	770680-2	770669-2	776087-2	776200-2	776228-2
		Gold plated		1-770669-2	1-776087-2	1-776200-2	1-776228-2
	Gray	Tin plated	770680-4	770669-4	776087-4	776200-4	776228-4
		Gold plated		1-770669-4	1-776087-4	1-776200-4	1-776228-4
	Blue	Tin plated	770680-5	770669-5	776087-5	776200-5	776228-5
		Gold plated		1-770669-5	1-776087-5	1-776200-5	1-776228-5
35	Black	Tin plated	776164-1	776180-1	776163-1	776230-1	776231-1
		Gold plated		1-776180-1	1-776163-1	1-776230-1	1-776231-1
	Natural	Tin plated	776164-2	776180-2	776163-2	776230-2	776231-2
		Gold plated		1-776180-2	1-776163-2	1-776230-2	1-776231-2
	Gray	Tin plated	776164-4	776180-4	776163-4	776230-4	776231-4
		Gold plated		1-776180-4	1-776163-4	1-776230-4	1-776231-4
	Blue	Tin plated	776164-5	776180-5	776163-5	776230-5	776231-5
		Gold plated		1-776180-5	1-776163-5	1-776230-5	1-776231-5
Orange	Gold plated	776164-6	1-776180-6	1-776163-6	-	1-776231-6	

## AMPSEAL Connectors

### WIRE SEALING RANGE

The wire sealing range is the recommended outside diameter of the wire insulation required to maintain an environmental seal in the rear connector cavities.

Contact Size	Standard Seal
1.3 mm 16-20 AWG (1.5-0.5mm <sup>2</sup> )	.067-.106 (1.7-2.7)

### Accessories

Wire relief is available as an accessory for the AMPSEAL 23 and 35 positions connectors. The wire relief offers a high level of protection and helps reduce strain from the wires.

### WIRE RELIEF



Positions	Part Number	Description
23	776464-1 (one half, two halves required per receptacle housing)	Vertical, sealed receptacle housing wire relief (accepts no. 4 self-tapping screw)
35	776463-1 (one half, two halves required per receptacle housing)	Vertical, sealed receptacle housing wire relief (accepts no. 4 self-tapping screw)

### Contacts

The AMPSEAL connectors commonly use the 1.3 mm three contact beam lanceless stamped & formed contact system.

### 1.3 MM CONTACT PERFORMANCE SPECIFICATIONS

#### Durability

TE Spec 109-27. Mate and unmate specimens for 10 cycles at maximum rate of 600 cycles per hour. See *note*.

#### Current Rating

Up to 17 amps gold, up to 8 amps tin, consult TE product document 108-1329.

#### Contact Retention

TE Spec 109-30. Apply an axial load of 115 N to contacts in the axial direction with wedge lock in locked position. Contacts shall not dislodge.

#### Crimp Tensile Strength

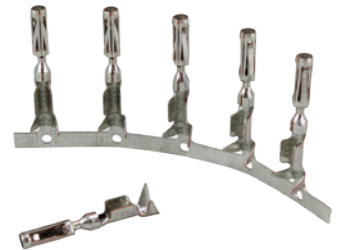
Contact Size	Tensile Strength
Size 20	80 lbs
Size 18	90 lbs
Size 16	150 lbs

Note: Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 3 of TE product document 108-1329.

## AMPSEAL Connectors

### 1.3 MM STAMPED & FORMED CONTACTS FOR AMPSEAL

Size	Receptacle Part Numbers				Wire Size AWG (mm <sup>2</sup> )	Insulation Diameter (mm)	Finish
	Strip Form	Package Quantity	Loose Piece	Package Quantity			
1.3 mm	770520-1	5000	770854-1	1000	16-20 (1.5-0.5)	.067-.106 (1.7-2.7)	Pre-tin plated
	770520-3	5000	770854-3	1000			Selective gold plated



### SEALING PLUGS

Open cavities provide pathways for contaminants to enter the connectors. To maintain seal integrity, any unused cavity that has been pierced must be filled with the appropriate size sealing plug.



Color	Part Number	Contact Size	Wire Gauge Range	Material
White	770678-1	1.3 mm	16-20 AWG	Nylon

## AMPSEAL Connectors

### Tooling

Tools are specific to the contact style. To create a proper crimp and achieve the highest performance specifications, contacts must be crimped with the recommended tooling.

#### HAND TOOLS FOR 1.3 MM CONTACTS



PRO-CRIMPER III    CERTI-CRIMP II

Receptacle Strip Form	Receptacle Loose Piece	Tool P/N	Description
770520-1 770520-3	770854-1 770854-3	58529-1	PRO-CRIMPER III hand tool and die set assembly
		2217748-1	CERTI-CRIMP II straight action hand tool

Note: Base PRO-CRIMPER III tool part number with -2 suffix is the part number for the die set, which can be ordered separately

#### AUTOMATED TOOLING FOR 1.3 MM CONTACTS

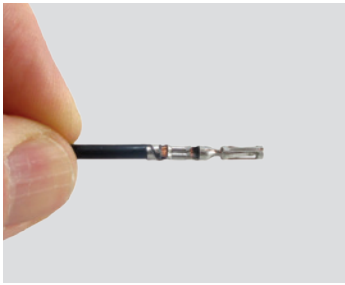


Receptacle Strip Form	Applicator P/N	Description
770520-1 770520-3	2151376-1	OCEAN end feed applicator with mechanical feed
	2151376-2	OCEAN end feed applicator with pneumatic feed

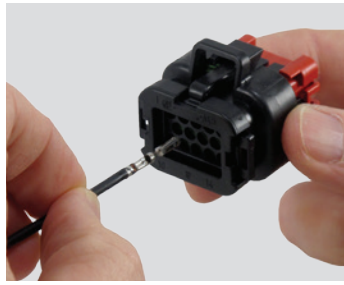
Note: Applicators with additional feed styles are available, contact your representative

### How To Instructions

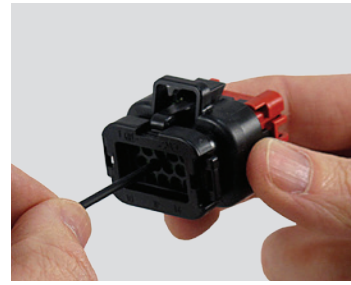
#### CONTACT INSERTION



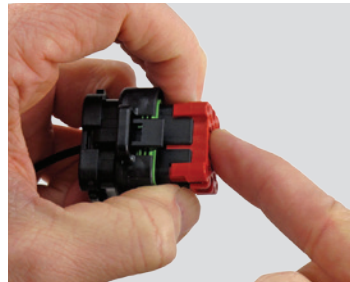
**Step 1:**  
Grasp crimped contact approximately one inch behind the contact barrel.



**Step 2:**  
Check that the wedgelock of the plug assembly is in open position. Align the contact with the applicable cavity.



**Step 3:**  
Insert the contact into the connector cavity until there is an audible and tactile click. A slight tug will verify the contact is locked in place.



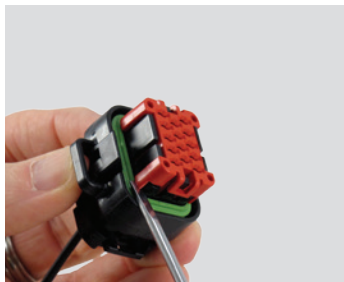
**Step 4:**  
After all the contacts have been inserted, close the wedgelock by simultaneously squeezing locking latches inward and pushing the wedgelock into the housing.

#### Note

AMPSEAL connector grommet is solid until pierced.



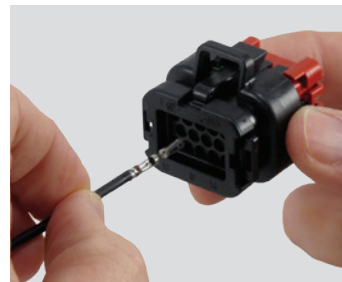
### CONTACT REMOVAL



**Step 1:**  
Insert the tip of a screwdriver (2-5mm wide blade) between the edge of the plug assembly housing and one corner of the wedgelock.



**Step 2:**  
Gently pry the edge of the wedgelock until it is released from (but not completely removed) the housing. Repeat these steps for the opposite corner of the wedge.



**Step 3:**  
Gently pull the wire of the contact to be removed while rotating the wire (a quarter turn each direction) back and forth until the contact is removed from the housing.