

NUMBER GS-20-0687	TYPE Application Specification	Amphenol ICC	
TITLE Minitek Power 5.7 Wire to Board connectors		PAGE 1 of 11	REVISION A
		AUTHORIZED BY Mithun Paul	DATE 2021/05/20
CLASSIFICATION UNRESTRICTED			

1.0 OBJECTIVE

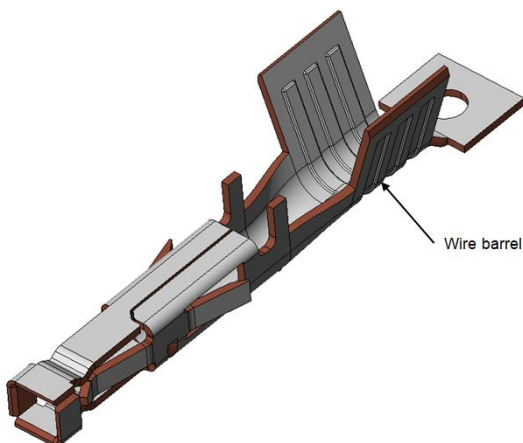
This specification provides information and requirements regarding customer application of Minitek Pwr5.7 crimp to wire connectors. This specification is intended to provide general guidance for application process development. It is recognized that no single application process will work under all customer scenarios and that customers will develop their own application processes to meet their needs. However, if these application processes differ greatly from the one recommended, Amphenol FCI cannot guarantee results.

2.0 SCOPE

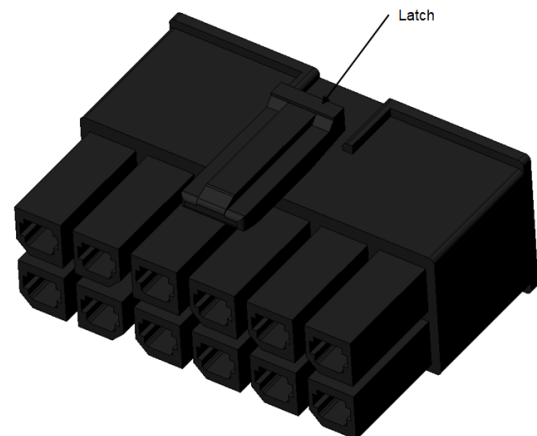
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3.0 GENERAL

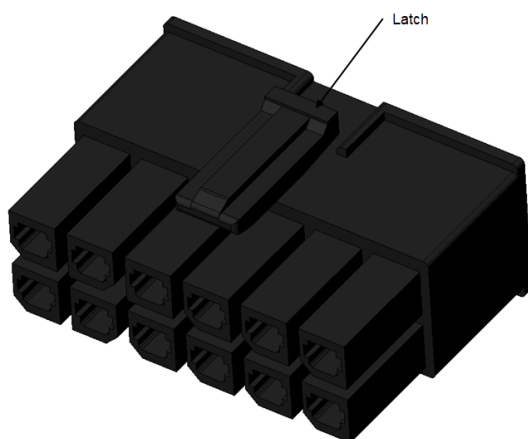
This document is meant to be an application guide. If there is a conflict between the product drawings and specifications, the drawings take precedence.



Receptacle Terminal 10158070 Series



Receptacle HSG 10142707 Series



Receptacle HSG 10158453 Series

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4.0 DRAWINGS AND APPLICABLE DOCUMENTS

- 4.1 Amphenol FCI Product Specification: GS-12-1405.
- 4.2 Amphenol FCI Product Drawing: Latest version of: 10158070 (Receptacle terminal), 10142707 (Receptacle housing) and 10158453 (Receptacle Housing).

Product drawings and **Amphenol FCI's GS-XX-XXX** Product Specification are available at www.amphenol-icc.com In the event of a conflict between this application specification and the drawing, the drawing will take precedence. Customers are advised to refer to the latest revision level of Amphenol FCI product drawings for appropriate details.

5.0 APPLICATION REQUIREMENTS

The wires in Table 1 are the wiring information for use with crimp terminal 10158070 series.

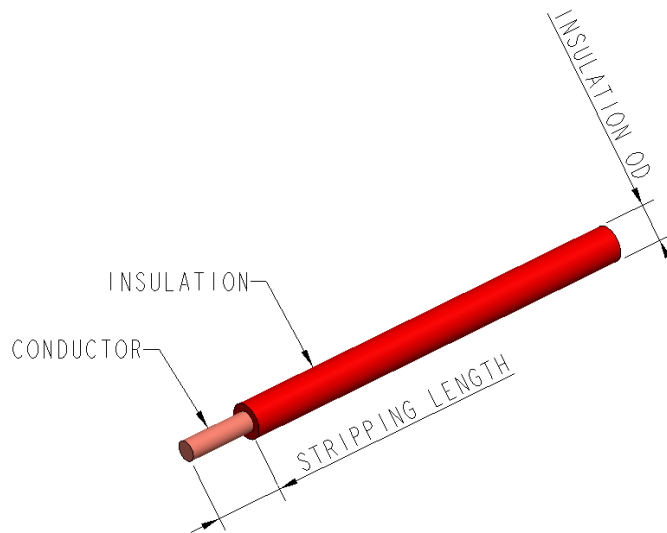


Table 1

Crimp Terminal Part Number	Applicable Wire Gauge (AWG)	Insulation Outside Diameter (mm)	Strip Length (mm)
10158070-XX1LF	14 ~ 16 AWG	4.1mm Max	5.50 ~ 6.00
10158070-XX2LF	12 AWG	4.1mm Max	5.50 ~ 6.00

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6.0 APPLICATION TOOLING

There are some commercial crimping tools available for crimping terminals. Select the models listed in Table 2 & 3:

Crimping Machine Tooling List

Table 2: Crimping Applicator

Semi-Auto crimping machine	Fully-Auto Pneumatic Crimping Applicator	Fully-Auto Mechanical Crimping Applicator	Applicable Terminal P/N
Press P/N			
10157923-001			
Applicator P/N	Applicator P/N	Applicator P/N	
10160975-001	10161844-001	10161845-001	10158070-XX1LF (14 AWG)
10160975-002	10161844-002	10161845-002	10158070-XX1LF (16 AWG)
10160975-003	10161844-003	10161845-003	10158070-XX2LF (12 AWG)

(*) Fully-Auto Pneumatic and mechanical applicators are suitable in Semi-auto Crimping machines.

Table 3: Hand Crimping Tool

Hand Crimping Tool Part number	Applicable Terminal P/N
10160974-001	10158070-XX1LF (14 AWG)
	10158070-XX1LF (16 AWG)
	10158070-XX2LF (12 AWG)

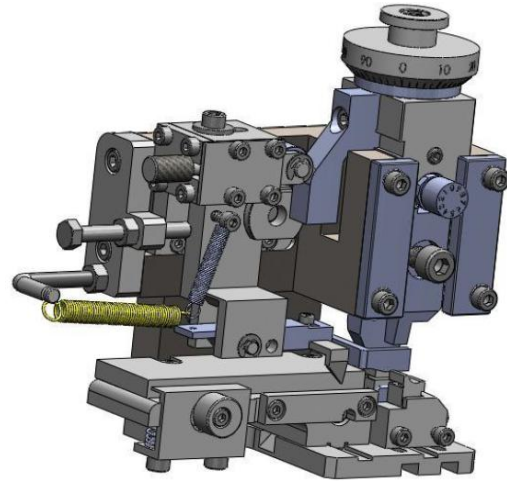


10160974

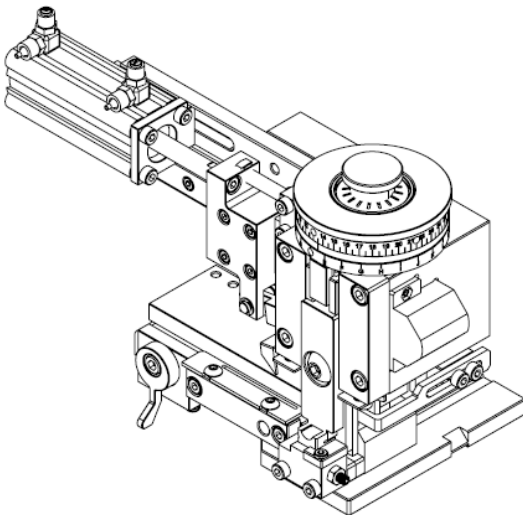
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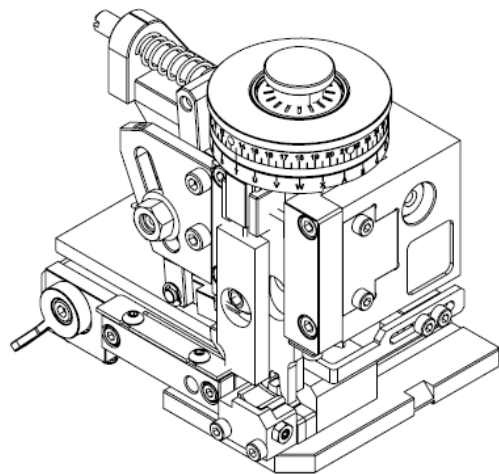
10157923-001



10160975



10161844

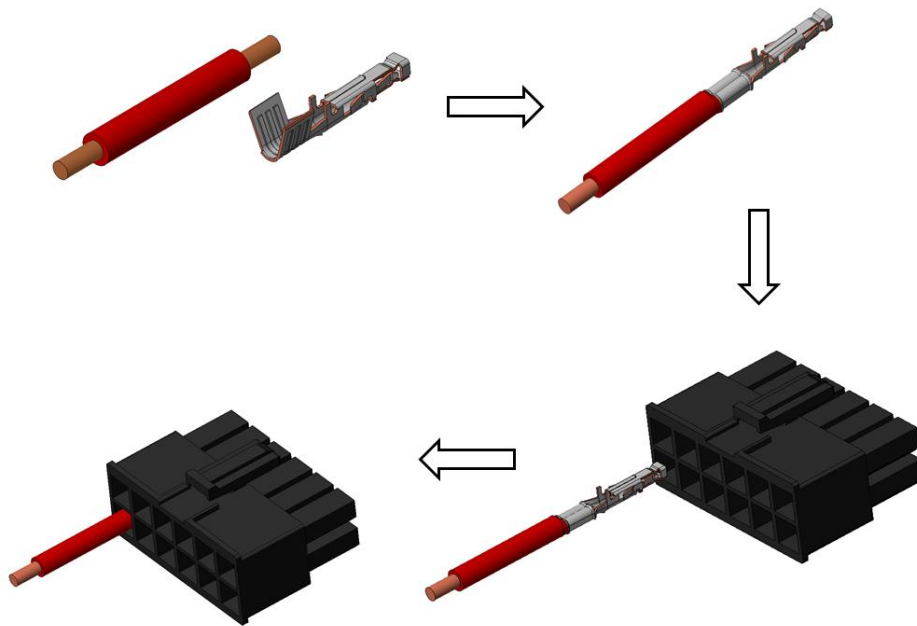


10161845

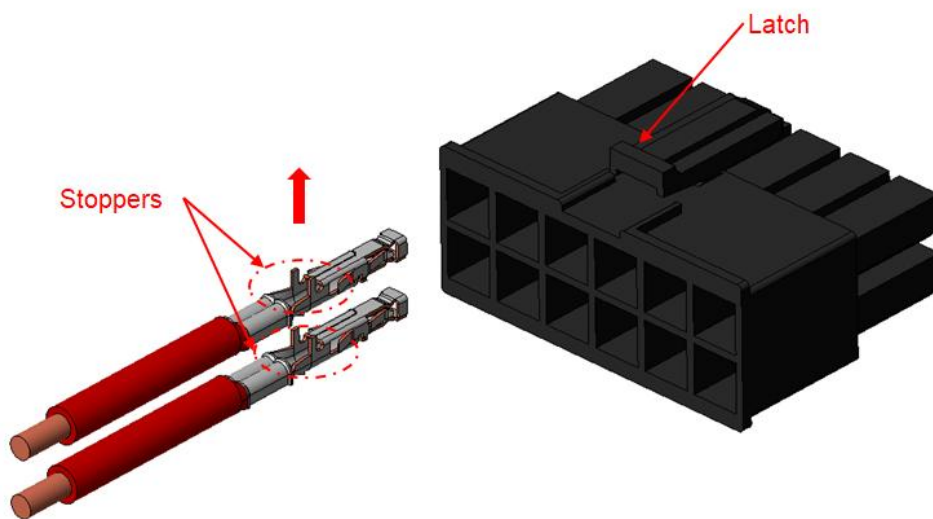
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7.0 APPLICATION PROCEDURE

7.1 Strip the wire (Table 1), Crimp wire and inserting to housing. No insertion tool is required.



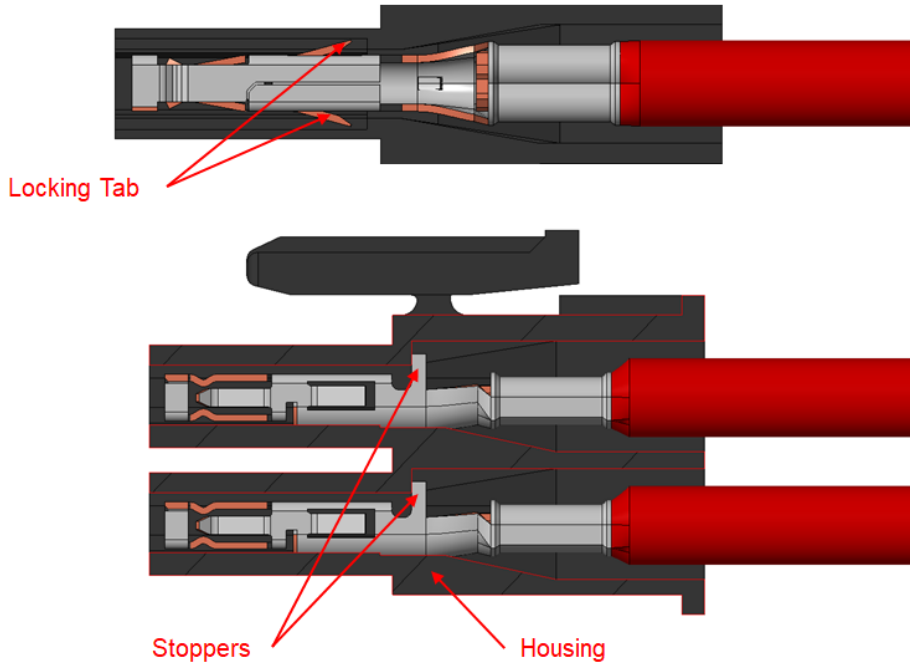
7.2 Make sure the stoppers on the terminals are always upwards for both rows: towards the Latch of Housing.



10158070 Inserted to 10142707/10158453

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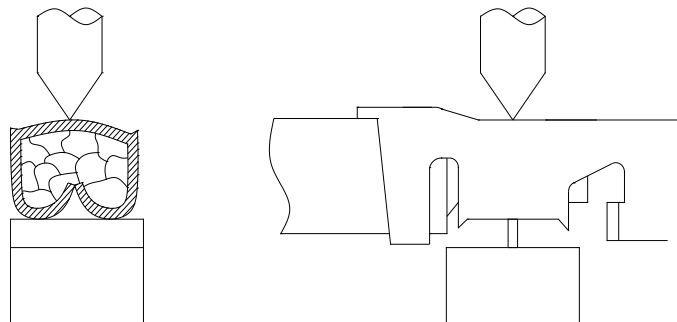
7.3 Insert the terminal into Housing until stopped by Housing. Then locking tabs will be engaged the retention shoulder and prevent back out during mating. Pull back the wire slightly and ensure the terminal is fully seated on the Housing.



8.0 POST- APPLICATION INSPECTION PROCEDURES

8.1 Crimp height and width measurement:

8.1.1 Use Crimp Height Type Micrometers to measure crimping height.



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8.2 Required crimping dimensions, crimp height and width for different wire AWG are defined in Table 4, Table 5 and Table 6.

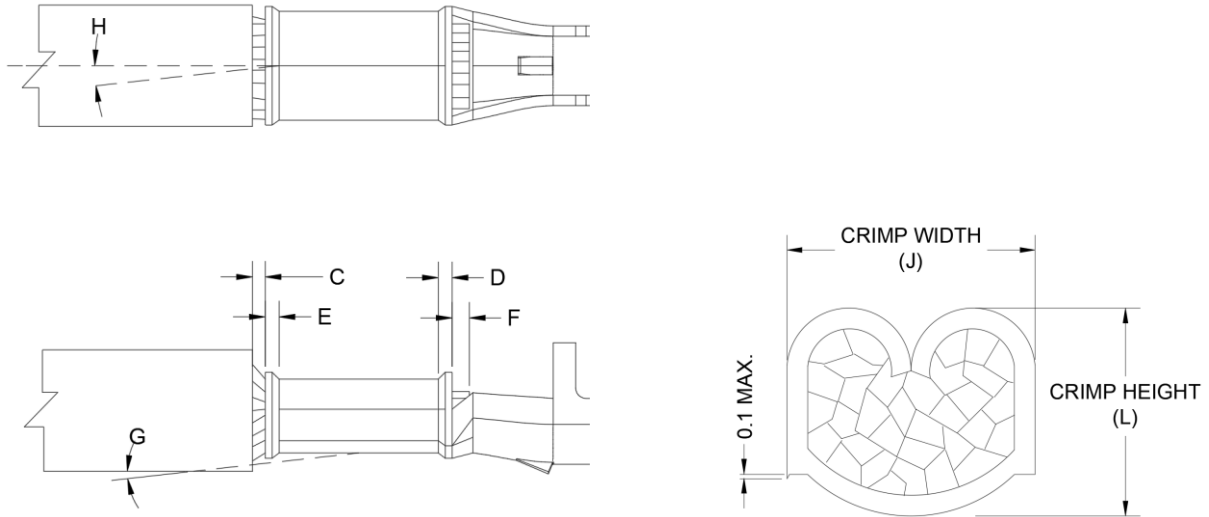


Table 4 (unit: mm)

Item		Requirement	Note
Insulation position	C	20% to 75% of Inspection window	Insulation and wire should be visual in this area
Front bell mouth	D	0.50 mm max.	
Rear bell mouth	E	0.50 mm max.	
Extruded wire length	F	0.80 mm Max.	
Bend up / down	G	±3° max.	
Bend right / left	H	±3° max.	

Table 5 (Unit: mm) For Hand crimping tool

Part Number	Tool Part Number	AWG Range	Conductor	
			Crimp Height	Crimp Width
10158070-XX1LF 10158070-XX2LF	10160974-001	12	1.87 – 1.97	3.20 – 3.30
		14	1.50 – 1.60	2.50 – 2.60
		16	1.45 – 1.55	2.50 – 2.60

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Table 6 (Unit: mm) For Crimping Applicators

Series	Part Number	Tool Part Number	AWG Range	Conductor	
				Crimp Height	Crimp Width
10158070	10158070-XX2LF	10160975-003 10161844-003 10161845-003	12	1.95 – 2.05	3.10 – 3.20
	10158070-XX1LF	10160975-001 10161844-001 10161845-001	14	1.50 – 1.60	2.41 – 2.51
	10158070-XX1LF	10160975-002 10161844-002 10161845-002	16	1.45 – 1.55	2.35 – 2.45

8.3 Pullout force measurement:

- 8.3.1 After crimping, pullout force measurement should be applied to ensure the performance. Follow test procedure of GS-12-1405.
- 8.3.2 Apply an axial pullout force on the wire at a rate of 25 ± 6 mm.
- 8.3.3 Pullout force should not be less than those listed in Table 7.

Table 7 (unit: N)

Wire AWG	AWG 12	AWG 14	AWG 16
Wire Pullout Force	220	220	200

8.4 Visual Inspection:

- 8.4.1 No damage, deformation on locking tabs, contact area or other portion of the terminals.
- 8.4.2 Insulation should not be crimped into wire barrel.
- 8.4.3 Wire should not be cut-off and insulation should not be broken after crimping process.

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9.0 OTHER INFORMATION

9.1 CABLE TIE AND OR WIRE TWIST LOCATION

The “T” dimension defines a “free” length of wire, or a length of wire that is not subject to significant bias by external factors such as a wire tie, wire twisting, or other means of bending or deforming of the wires that repositions them from their natural relaxed state or location where they enter the housing. Wires are to be dressed in such a manner to allow the terminals to float freely in the pocket.

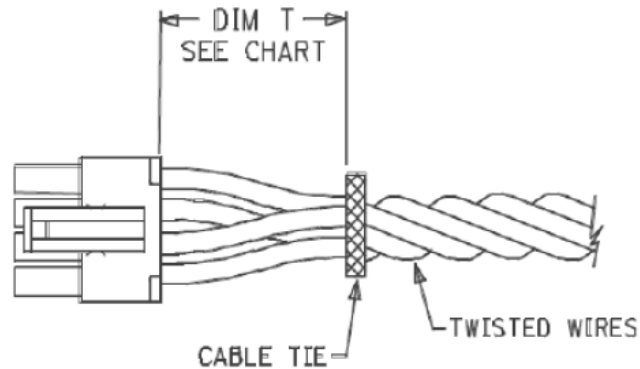
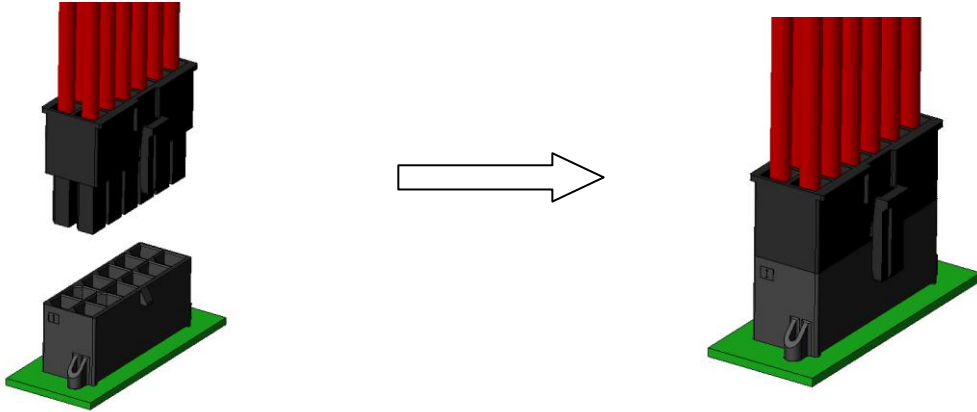


Table 8

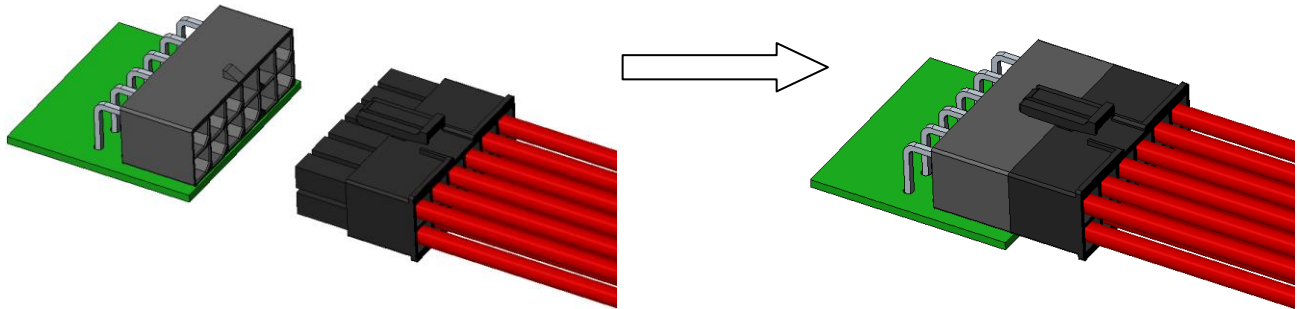
AWG size	Number of positions	DIM T
12AWG 14AWG 16AWG	2P	13.0 mm
	4P to 6P	19.0 mm
	8P	25.5 mm
	10P to 12P	32.0 mm

9.2 Mating Pairs: Receptacle wire connectors 10142707 and 10158453, with receptacle crimping terminals 10158070 inserted, can mate with the following Amphenol FCI wire / board connectors:
Vertical board connector 10142708;

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Right angle board connector 10146997;



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RECORD RETENTION

REV	PAGE	DESCRIPTION	EC#	DATE
1	All	New Release		2021/05/20