1.0 OBJECTIVE

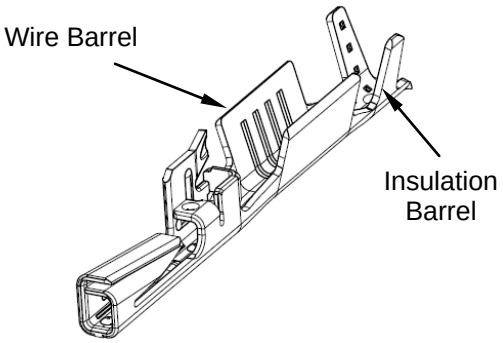
This specification provides information and requirements regarding customer application of Minitek MicroSpace™ connectors. This specification is intended to provide general guidance for application process development. It is recognized that no single application process will work under all customer scenarios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

2.0 SCOPE

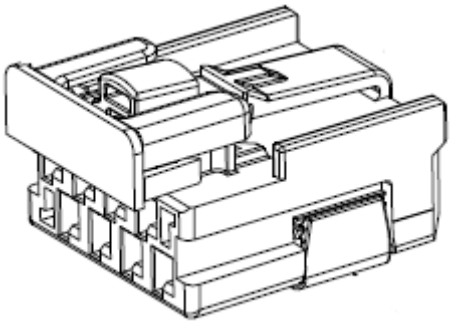
This specification provides information and requirements regarding customer application of Minitek MicroSpace™ connector.

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 10141272 & 10148496 series



Receptacle Assembly

4.0 DRAWINGS AND APPLICABLE DOCUMENTS

- AFCI PRODUCT SPECIFICATION GS-12-1422
- AFCI PRODUCT DRAWINGS
- APPLICATION MANUALS/INSTRUCTION SHEETS (IF NOT INCLUDED IN THIS DOCUMENT)

Product drawings and **AFCI's GS-12-1422** Product Specification are available at www.fci.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 AFCI product drawings for appropriate details.

5.0 APPLICATION REQUIREMENTS

The wires in Table (**1**) are qualified for use with Receptacle Terminal 10141272 & 10148496.

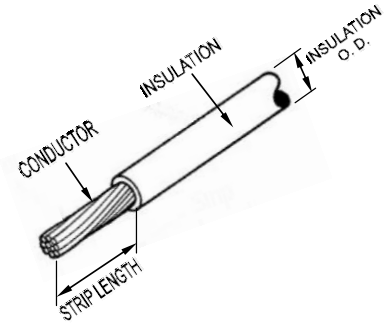


Table (**1**)

Wire Manufacturers PN	#of Conductors	AWG	Solid -or- Stranded	# of Strands Insulation	Insulation Material	Insulation Diameter	Strip Length
-	7	AWG22	Stranded	-	TPE-E	1.4mm max	4mm
-	7	AWG24	Stranded	-	TPE-E	1.4mm max	
-	7	AWG26	Stranded	-	TPE-E	1.1mm max	
-	7	AWG28	Stranded	-	TPE-E	0.9mm max	

6.0 APPLICATION TOOLING

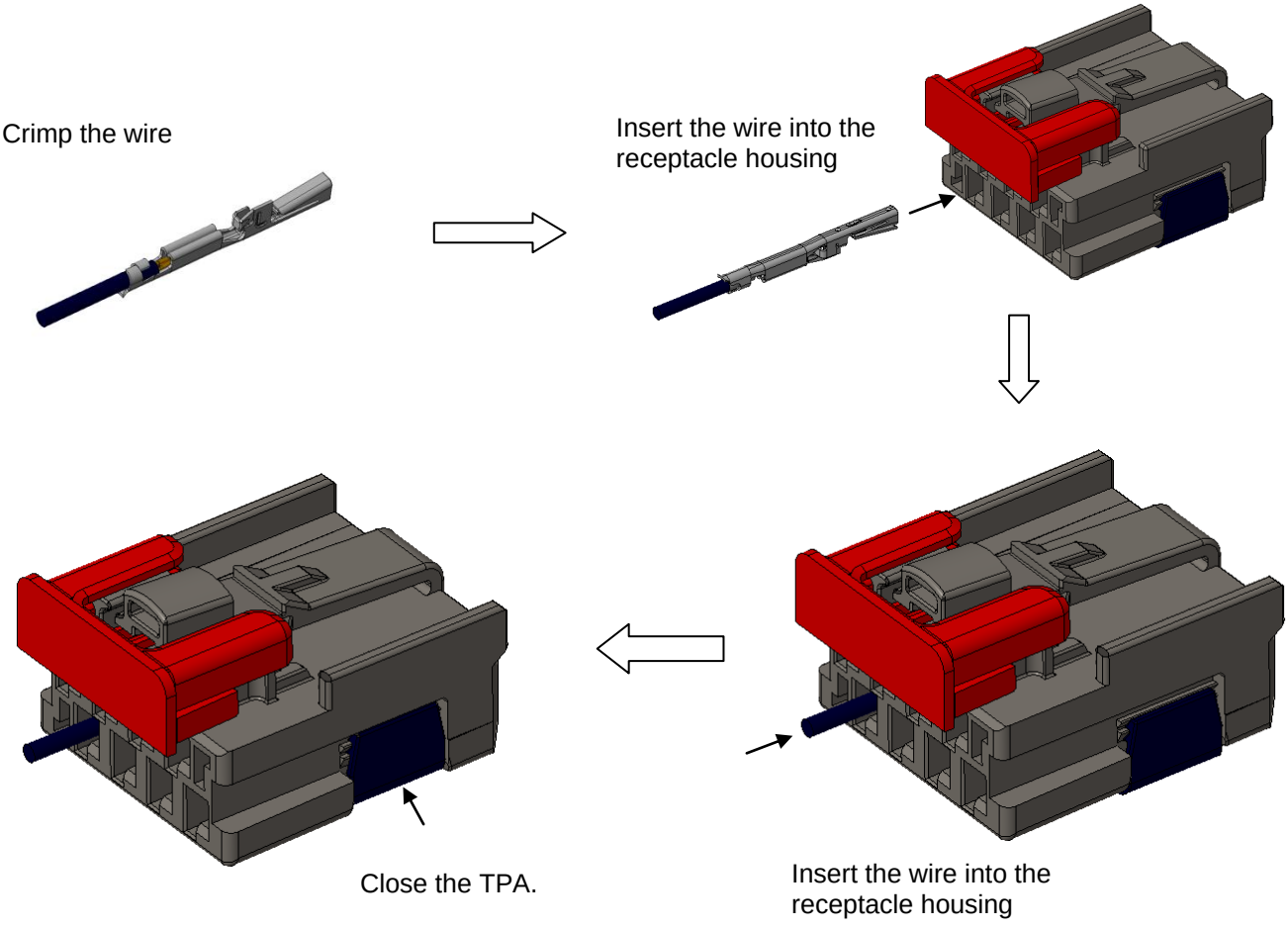
Application Tooling needed for installation of Receptacle Terminal 10141272 & 10148496 is defined in Table **(2)**:

Table **(2)**

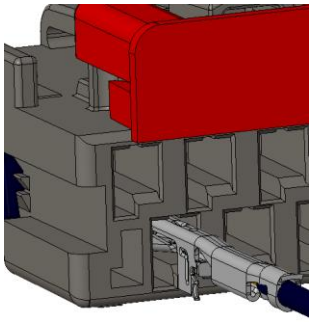
TOOL SUPPLIER	DESIGNATION	TOOL P/N	PHOTO FOR INFORMATION ONLY
AMPHENOL FILEC **rfq@filec.fr**	Mini applicator Minitek µSpace AWG22 10141272-Y11LF & 10148496-Y11LF	**T1002-22**	
	Mini applicator Minitek µSpace AWG24 10141272-Y13LF & 10148496-Y13LF	**T1001-24**	
	Mini applicator Minitek µSpace AWG26 10141272-Y12LF & 10148496-Y12LF	**T1003-26**	
	Mini applicator Minitek µSpace AWG28 10141272-Y12LF & 10148496-Y12LF	**T1004-28**	
	Spare parts for mini applicator Minitek µSpace AWG22 10141272-Y11LF & 10148496-Y11LF	**T2002-22**	
	Spare parts for mini applicator Minitek µSpace AWG24 10141272-Y13LF & 10148496-Y13LF	**T2001-24**	
	Spare parts for mini applicator Minitek µSpace AWG26 10141272-Y12LF & 10148496-Y12LF	**T2003-26**	
	Spare parts for mini applicator Minitek µSpace AWG28 10141272-Y12LF & 10148496-Y12LF	**T2004-28**	
	Crimping hand tool Minitek µSpace (without set for crimping)	**T3001**	
	Set for crimping hand tool Minitek µSpace AWG22 10141272-Y11LF & 10148496-Y11LF	**T3003-22**	
	Set for crimping hand tool Minitek µSpace AWG24 10141272-Y13LF & 10148496-Y13LF	**T3002-24**	
	Set for crimping hand tool Minitek µSpace AWG26 10141272-Y12LF & 10148496-Y12LF	**T3004-26**	
	Set for crimping hand tool Minitek µSpace AWG28 10141272-Y12LF & 10148496-Y12LF	**T3005-28**	

7.0 APPLICATION PROCEDURE

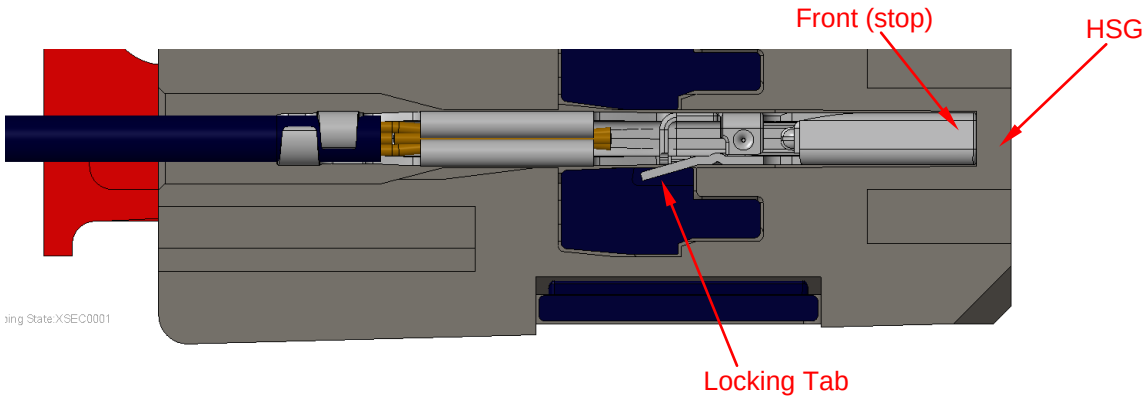
7.1 Strip the wire (Table 1)
7.2 Crimp the wire (Table 2, 3, 4)
7.3 Insert the wire into the receptacle housing
7.4 Close the TPA.



Make sure the Receptacle terminal is well oriented for the insertion to the housing.



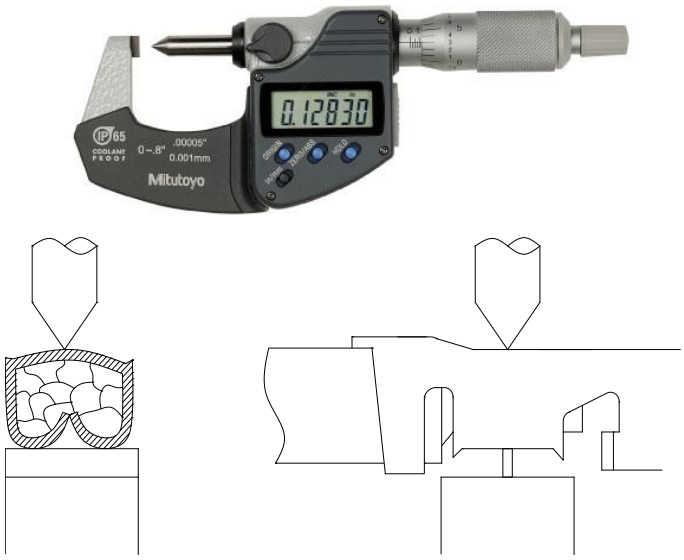
Insert the terminal into HSG until the front is stopped by HSG. Then locking tab will be engaged the retention shoulder and prevent back out during mating. Pull back on the wire lightly and ensure the terminal is fully seated.



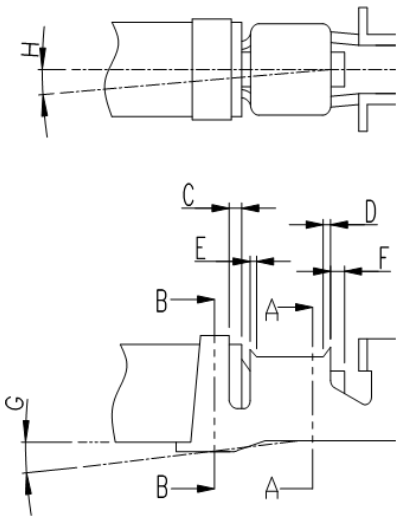
8.0 POST-APPLICATION INSPECTION PROCEDURES

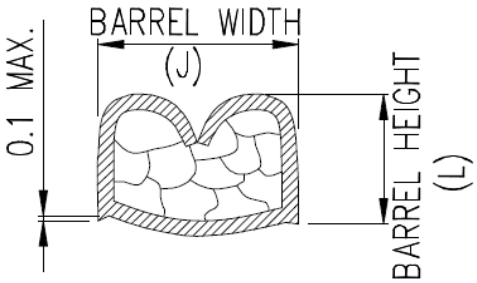
8.1 Crimp height and width measurement:

8.1.1 Use Crimp Height Type Micrometers to measure crimping height.

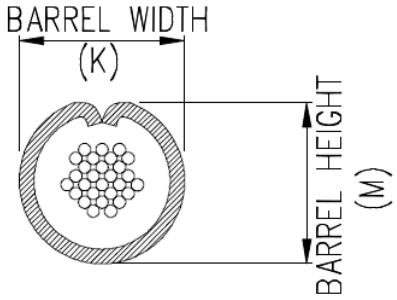


8.2 Required crimping dimensions, crimp height and width for different wire AWG are defined in Table 3 & Table 4.





Section A-A (Wire Area)



Section B-B (Insulation Area)

Table 3 (unit: mm)

Item		Requirement	Note
Insulation position	**C**	0.5 mm	Insulation and wire should be both visual in this area
Front bell mouth	**D**	-	Not required
Rear bell mouth	**E**	0.2 - 0.5mm	
Extruded wire length	**F**	0.5mm max.	
Bend up / down	**G**	±3° max.	
Bend right / left	**H**	±3° max.	

Table 4 (unit: mm)

Crimping Width & Height (mm)		AWG 22	AWG 24	AWG 26	AWG 28
Crimping Width (Wire barrel)	**J**	$1.1^{0/-0.05}$	$1.1^{0/-0.05}$	$0.9^{0/-0.05}$	$0.9^{0/-0.05}$
Crimping Width (Insulation barrel)	**K**	$1.35^{0/-0.1}$	$1.35^{0/-0.1}$	$1.05^{0/-0.1}$	$0.95^{0/-0.1}$
Crimping Height (Wire barrel)	**L**	$0.74^{+/-0.03}$	$0.62^{+/-0.03}$	$0.56^{+/-0.03}$	$0.54^{+/-0.03}$
Crimping Height (Insulation barrel)	**M**	$1.45^{0/-0.1}$	$1.35^{0/-0.1}$	$1.2^{0/-0.1}$	$1^{0/-0.1}$

8.3 Pullout force measurement

8.3.1 After crimping, pullout force measurement should be applied to ensure the performance.

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 the those listed in Table 5.

Table 5 (unit: N)

Wire AWG	**AWG 22**	**AWG 24**	**AWG 26**	**AWG 28**
Wire Pullout Force	50N min	35N min	25N min	15Nmin

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.

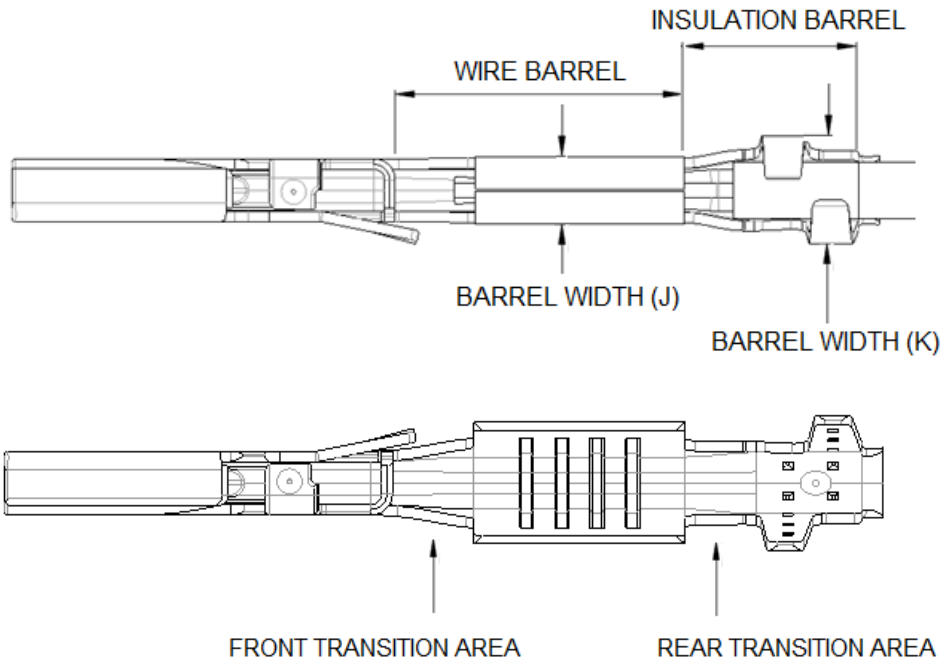
8.4.3 Wire should not be cut-off and insulation should not be broken after crimping process.

8.5 Required width dimensions:

8.5.1 Width dimensions should be applied to ensure the good insertion of the terminal into the housing.

8.5.2 During the crimp operation, the front transition area should be managed to respect the crimping widths (J) all along the wire barrel area

8.5.3 During the crimp operation, the rear transition area should be managed to respect the crimping widths (K) all along the insulation barrel area



REVISION RECORD

REV	PAGE	DESCRIPTION	EC#	DATE
A	ALL	RELEASE	-	22/03/2019
B	ALL	MODIFY APPLICATION TOOLING TABLE (2)	F-35600	10/12/2019
C	ALL	ADD STRIP LENGTH IN TABLE (1)	F-35613	11/12/2019
D	2	ADD AWG24 INSULATION DIAMETER	F-36288	12/03/2020
E	7	PULL OUT FORCE CHANGE	F-36938	07/05/2020