

MCON Mono 1.2 mm Terminals



NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 mm and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of MCON Mono 1.2 mm terminals. The MCON Mono 1.2 mm terminal is a stamped and formed one-piece version of the standard MCON terminal and is designed to work in the same connector housings as standard MCON terminals. MCON Mono 1.2 mm terminals are a less costly alternative to the standard MCON for applications that require less severe temperatures and vibration levels.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate inquiries for information. Basic terms and features of this product are provided in Figure 1.

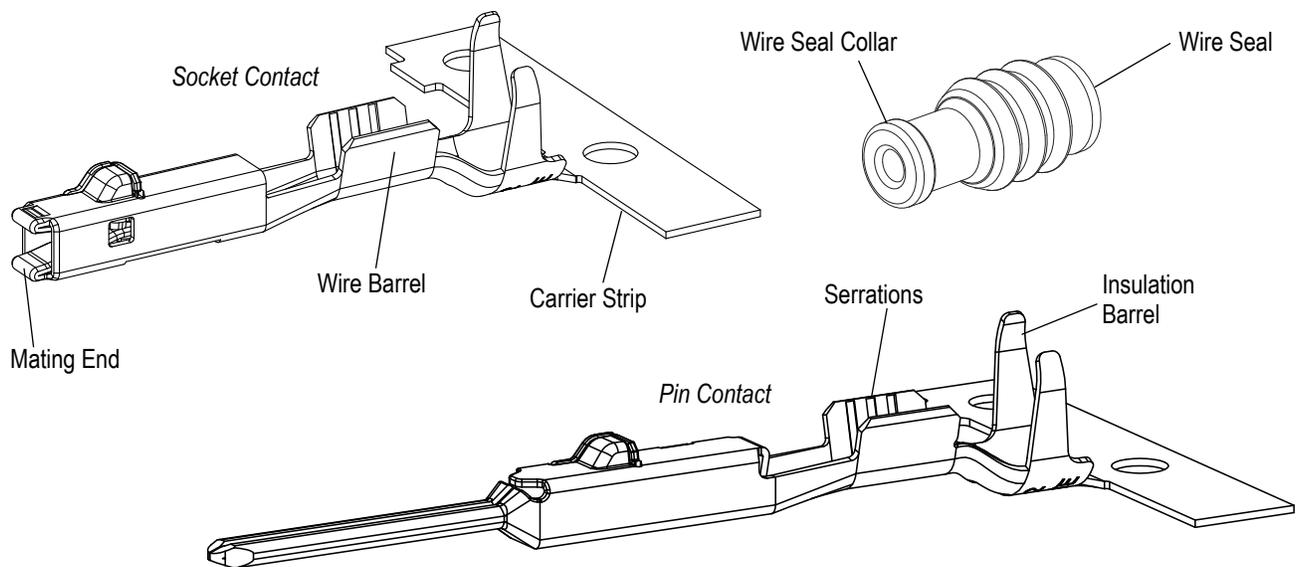


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Initial release of application specification

2.2. Customer Assistance

Reference Product Base Part Numbers 2138597, 2288916, 2203830, 2288917 and Product Code M020 are representative of MCON Mono 1.2 mm Terminals. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the information contained in the Customer Drawings takes priority.

2.4. Instructional Material

The following list includes available Instruction Sheets (408-series) which provide assembly procedures for operation, maintenance, and repair of tooling; and Customer Manuals (409-series) that provide machine setup and operation procedures. Documents available which pertain to this product are:

<u>Document Number</u>	<u>Document Title</u>
408-3295	Preparing Reel of Contacts for Application Tooling
408-7424	Checking Terminal Crimp Height Gaging Die Closure
408-8322	Heavy Duty Industrial (HD-I) Side-Feed Type Applicator
408-8490	Fine Adjust Assembly 879103-[] for Heavy Duty Industrial (HD-I) Type Applicators
408-9816	Handling of Reeled Products
409-5842	AMP-O-LECTRIC* Model • G" Terminating Machine 354500-[]
409-5854	AMPOMATOR* CLS Model III-G Lead-Making Machine 122500-[]
409-10027	Stripping Module 1490502-[], 1490500-[], and 1725910-[]
409-10047	3K Terminating Machines 1725950 and 5K Terminating Machines 1725900
410-8809	AMPOMATOR CLS IV+ Lead-Making Machine 356500-[]

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the product material.

B. Reeled Material

Care must be taken to prevent stretching, sagging, or other distortion that would prevent smooth feeding of the strip through automatic machine feed mechanisms. Store coil wound reels horizontally and traverse wound reels vertically.

C. Shelf Life

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

D. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites		Tartrates



NOTE

Where the above environmental conditions exist, phosphor-bronze terminals are recommended instead of brass if available.

3.2. Wire Selection and Preparation

The sealed contacts accept solid or stranded copper type wire sizes 0.15 to 1.0 mm². Wire insulation diameter according to wire size is given in the table in Figure 2.

Proper strip length is necessary to properly insert the wire into the terminal. Strip length is given in the table in Figure 2.



CAUTION

Reasonable care must be taken not to nick, scrape, or cut any strands during the stripping operation.



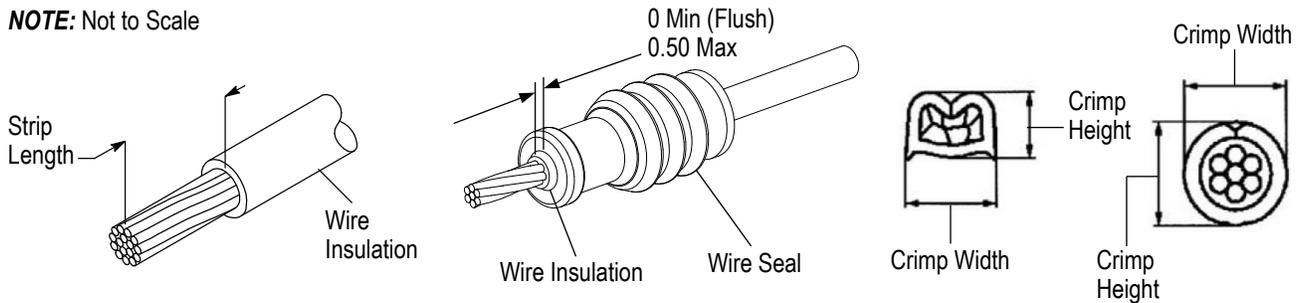
NOTE

The applied crimp dimension (within the functional range of the product) is dependent on the termination tooling being used. Refer to the documentation (applicator logs and instruction sheets) supplied with the termination tooling for the applied crimp height. See Section 5, TOOLING.

The wire seal must be inserted onto the wire (prior to termination) and crimped in the insulation barrel of the terminal simultaneously with the terminal. The appropriate wire seal must be selected which will accommodate the insulation diameter of the wire (contact Product Information at the number at the bottom of page 1 for appropriate wire seal part number). The wire seal must be installed onto the wire as shown in Figure 2.

CAUTION The wire seal must not be damaged when placing it over the wire.

NOTE: Not to Scale



WIRE			CONTACT					WIRE SEAL PART NUMBER
WIRE SIZE (mm ²)	INSULATION DIA RANGE	STRIP LENGTH	WIRE BARREL CRIMP		INSULATION BARREL CRIMP			
			HEIGHT	WIDTH	TARGET	HEIGHT	WIDTH	
1.0	1.55-2.10	3.6 ±0.3	1.07 ±0.03	1.78	3.18	3.45 MAX	3.45 MAX	967067-1
0.75	1.45-1.90	3.6 ±0.3	0.95 ±0.03	1.78	3.18	3.45 MAX	3.45 MAX	967067-1
0.5	1.40-1.70	3.6 ±0.3	0.80 ±0.03	1.57	3.18	3.45 MAX	3.45 MAX	967067-1
0.35	1.10-1.40	3.3 ±0.3	0.75 ±0.03	1.27	3.05	3.45 MAX	3.45 MAX	967067-2

Figure 2

3.3. Crimp Requirements

The contact shall be located in desired tooling and crimped according to the instructions packaged with that tooling. See Section 5, TOOLING, of this document for details on tooling options.

CAUTION Wire insulation shall NOT be fully cut or broken during the crimping operation, nor shall the insulation be crimped into the contact wire barrel. Reasonable care should be taken by tooling operators to provide undamaged wire terminations.

NOTE Wire stripping tool jaws may leave corrugated indentations on the surface of the wire insulation. This is especially severe with cross-linked polyethylene (high temperature) insulation.

NOTE Periodic inspections must be made to ensure crimped contact formation is consistent as shown.

A sealed contact as it should appear after crimping is shown in Figure 3.

A. Wire Barrel Crimp

The crimp applied to the wire portion of the contact is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the crimped contact. The contact wire barrel crimp height must be within the dimension provided in Figure 2.

B. Effective Crimp Length

For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp dimensions provided in Figure 3. Effective crimp length shall be defined as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool. Instructions for adjusting, repairing, and inspecting tools are packaged with the tools. See Section 5, TOOLING.

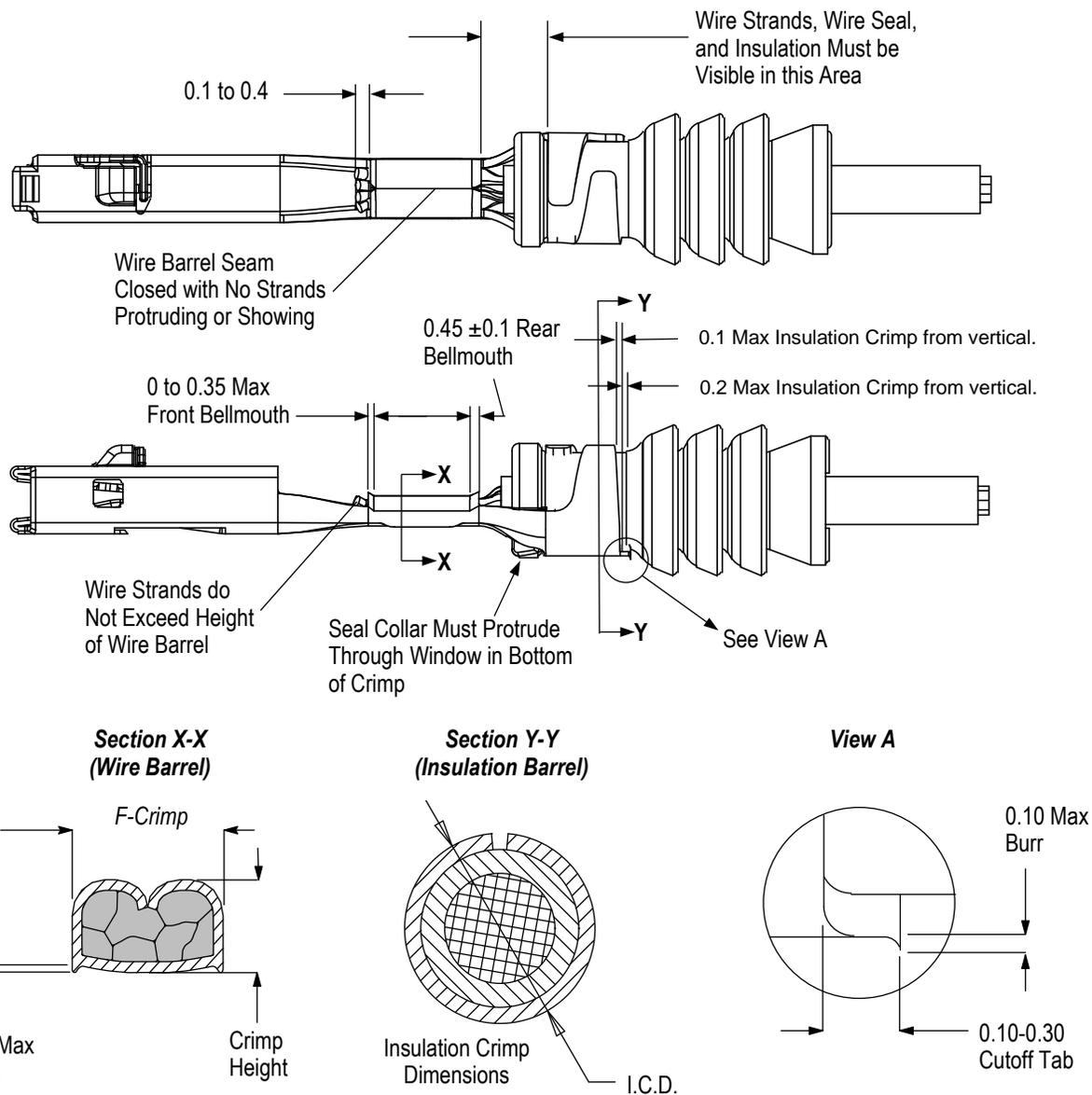


Figure 3

C. Crimp Width

The crimp width must be within the dimensions provided in the table in Figure 2.

D. Wire Seal

The wire seal may not extend beyond the dimensions shown in Figure 3.



CAUTION

The wire seal shall NOT be cut or broken during the crimping operation.

E. Wire Barrel Seam

The wire barrel seam must be closed with no evidence of loose wire strands visible in the seam as shown in Figure 3.

F. Bellmouths

Front and rear bellmouths shall be evident and conform to the dimensions given in Figure 3.

G. Wire Location

The wire conductor, wire seal, and insulation must be visible in the transition area between the wire and insulation barrels. Refer to Figure 3.

H. Wire Barrel Flash

The wire barrel flash shall not exceed the dimensions shown in Figure 3.

I. Cutoff Tab

The cutoff tab shall be cut to the dimensions shown in Figure 3.

J. Cutoff Burr

The burr shall not exceed the dimensions shown in Figure 3.

K. Conductor Location

The conductor may extend beyond the wire barrel to the maximum shown in Figure 3. No strands may extrude over the height of the conductor crimp.

L. Wire Location

The wire conductor and insulation must be visible in the transition area between the wire and insulation barrels.

M. Twist and Roll

There shall be no deformation or other damage to the mating portion of the crimped contact that will prevent proper mating. The twist and roll shall not exceed the limit shown in Figure 4.

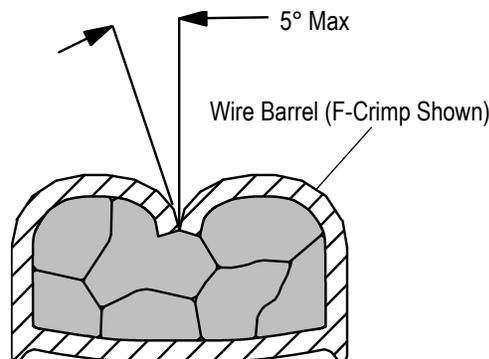


Figure 4

N. Straightness (Figure 5)

The force applied during crimping may cause some bending between the crimped wire barrel and the mating portion of the terminal. Such deformation is acceptable within the following limits.

1. Parallelism

The bottom of the wire crimp or of the insulation crimp must be parallel with the contact body, with a tolerance of 0.2 mm.

2. Symmetry

The crimp for the single-wire seal must lie within a symmetrical tolerance of 0.3 mm relative to the longitudinal axis of the contact. The single-wire seal must be symmetrical in both directions with the longitudinal axis of the contact, with a tolerance of 0.5 mm.



NOTE

Periodic inspections must be made to ensure crimped contact information is consistent as shown.

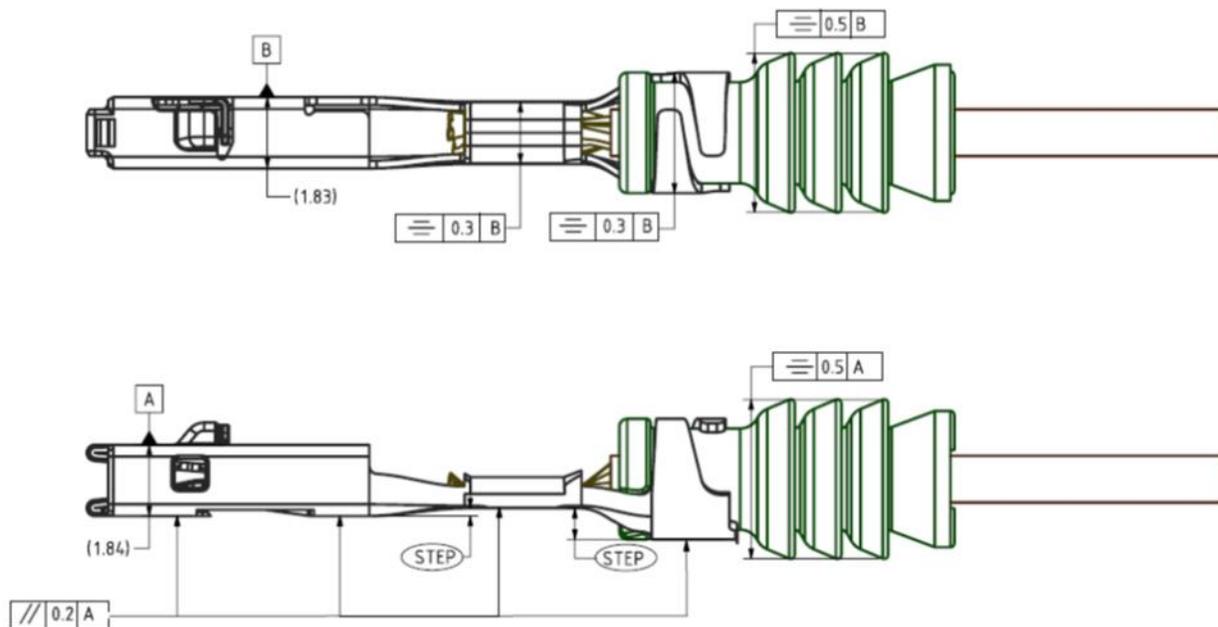


Figure 5

3.4. Repair and Replacement



CAUTION

These terminals are not repairable. Damaged terminals must be removed from the connector and replaced with new ones. Terminals **MUST NOT** be re-used by removing the wire.

4. QUALIFICATION

MCON Mono 1.2 mm Terminals have not yet been sent for agency evaluation and testing.

5. TOOLING

Semi-automatic machines for power assisted application of strip-mounted terminals are available to cover the full wire size range. Modified designs and additional tooling concepts may be available to meet application requirements. Tooling part numbers and instructional material packaged with the tooling are shown in Figure 6.

5.1. Applicators

The applicator is designed to crimp strip-mounted terminals onto pre-stripped wire, and provides for high volume, heavy duty production requirements. The applicator must be installed onto a power unit.

5.2. Power Units

The power unit provides the force required to drive the applicator for crimping tape-mounted terminals. These power units are designed to be bench mounted.

WIRE		TOOLING (DOCUMENT)		
SIZE (mm ²)	INSULATION DIAMETER	APPLICATOR/FEMALE	APPLICATOR/MALE	POWER UNIT
1.00	1.55-2.10	2266298-[]	2266298-[]	Contact TE Connectivity for Specific Power Unit to Applicator Relationships
0.75	1.45-1.90	2266298-[]	2266298-[]	
0.5	1.40-1.70	2151857-[]	2151857-[]	
0.35	1.10-1.40	2266299-[]	2266299-[]	

Figure 6

6. VISUAL AID

The illustration below shows a typical application of. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

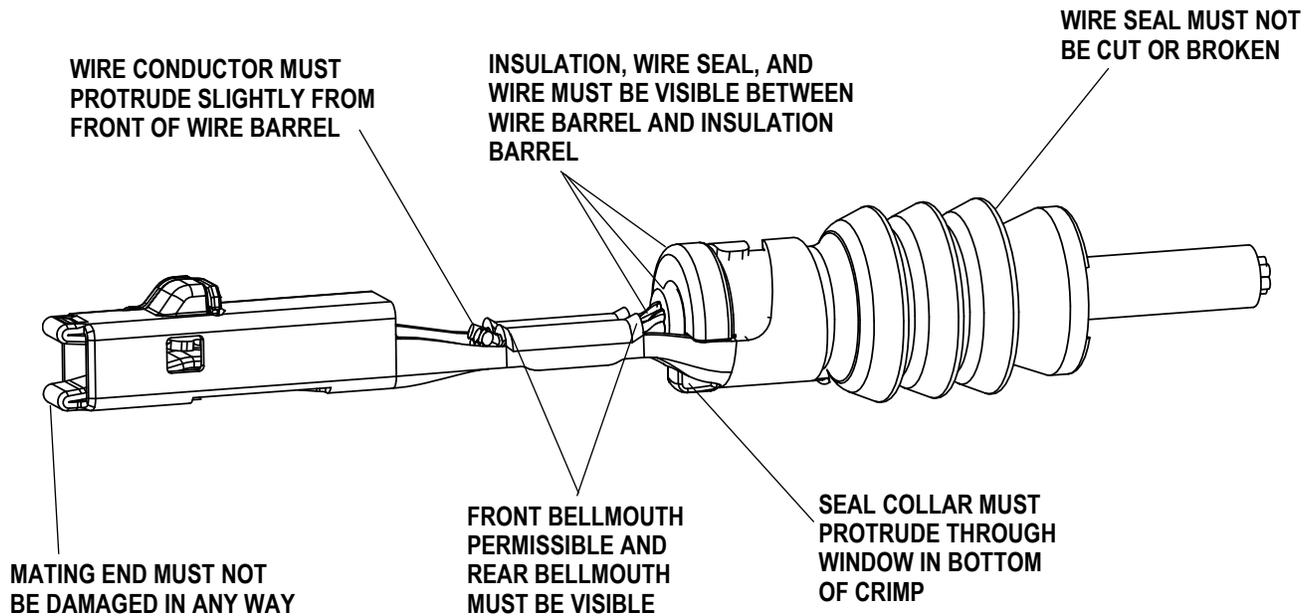


FIGURE 7. VISUAL AID