



NOTE

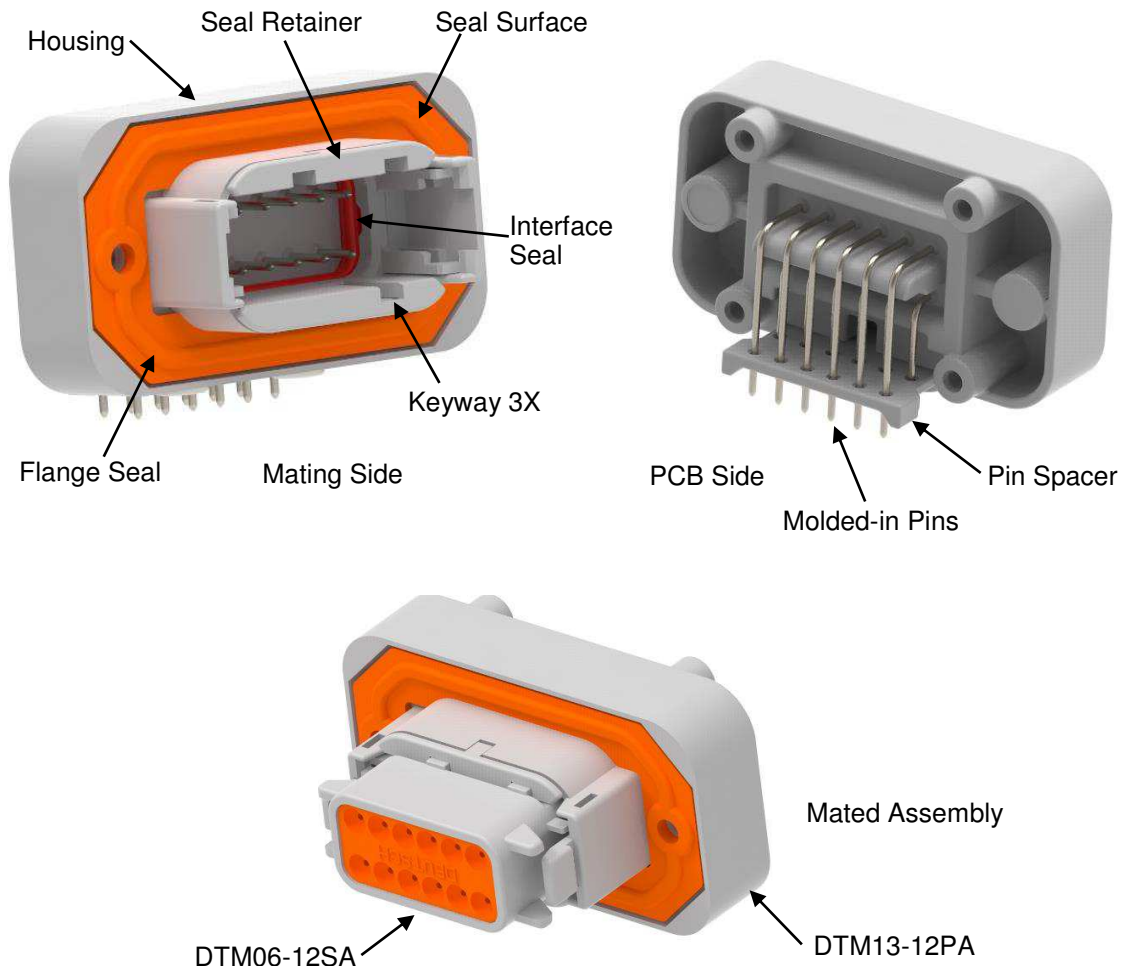
All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ± 0.13 [$\pm .005$] and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of DEUTSCH DTM header connector to be mounted on a printed circuit board (PCB). The header is offered in 12-pin arrangements which will mate to the DEUTSCH DTM plug connector and comes in Right Angle and Straight versions.

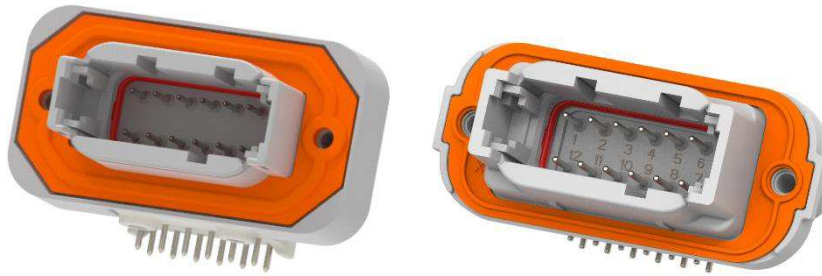
The header receptacle consist of a housing, molded-in pins, pin spacer and flange seal. The header feature integral latch-style mating. The 12 pin arrangements have color-coded seal retainer.

Basic terms and features of this product are provided below.



Standard Features All Arrangements
(DTM13-12PA shown as example)

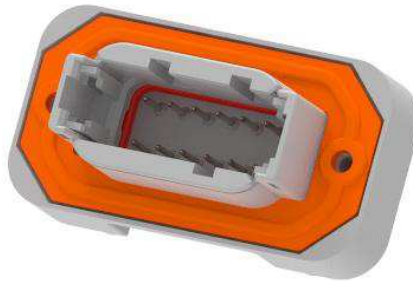
1.1. Header Receptacle (Right Angle – 90°)



DTM13-12PX

DTM13-12PX-NP02

1.2. Header Receptacle (Straight – 180°)



DTM15-12PX



Note:

1) X = A, B, C, D keys

1.3. Product Dimensions

See connector product drawing for product dimensions. See section 2.3

2. REFERENCE MATERIAL

2.1. Revision Summary

See Section 7

2.2. Customer Assistance

Product Base Part Numbers (listed below) and Product Code EQ65 is representative of DEUTSCH DTM header connectors. Use of these numbers will identify the product line and help you to obtain product and tooling information when visiting www.te.com or calling the number at the bottom of this page.

DTM13-12P and DTM15-12P

2.3. Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority. X refers to A,B,C,D keys and XXXX refers to product modification.

Product Drawing	Description	Product Drawing	Description
DTM13-12PX-XXXX	12 Pin Header, 90°	DTM15-12PX-XXXX	12 Pin Header, 180°

2.4. Specifications

- [108-151010](#) Product Specification DTM Series
- [114-151010](#) Application Specification DEUTSCH DTM Series Connector System

2.5. Manuals

- [402-40](#) Solderability and Soldering

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Storage

A. Ultraviolet Light

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

B. 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 deterioration could adversely affect performance.

C. Chemical Exposure

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

- | | | | | |
|---------|---------|------------|------------|------------------|
| Alkalis | Ammonia | Citrates | Phosphates | Sulfur Compounds |
| Acids | Amines | Carbonates | Nitrites | Sulfur Nitrites |
| | | | | Tartrates |

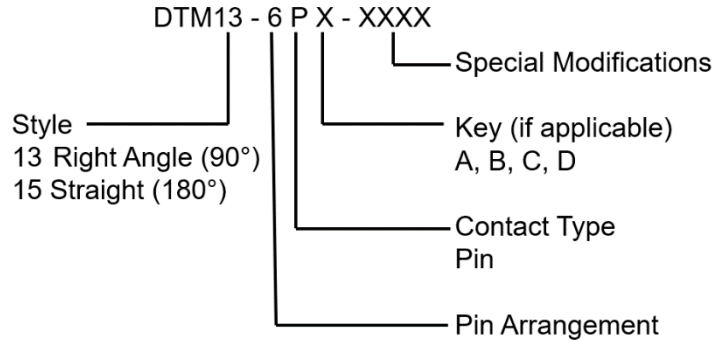


NOTE:

- 1) Resistance depends on chemical concentration, temperature, and exposure medium.

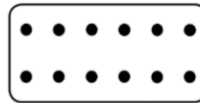
3.3. Characteristics

A. Part Numbering System



B. Pin Arrangement

See product drawing for contact cavity marking



12-pin

C. Materials

Header Housing:	PA46 GF30 (gray)
Pin Spacer:	PA46 GF30 (gray) or PTFE (white)
Seal Retainer:	PA46 GF30 (gray, black, green or brown)
Flange Seal:	VMQ (red-orange)
Interface Seal:	VMQ (red-orange)
Pin Contact:	Copper Alloy
Pin Plating:	Mating Side (Ni/Cu or Au/Ni/Cu) PCB Side (Sn/Ni/Cu)

D. Modification



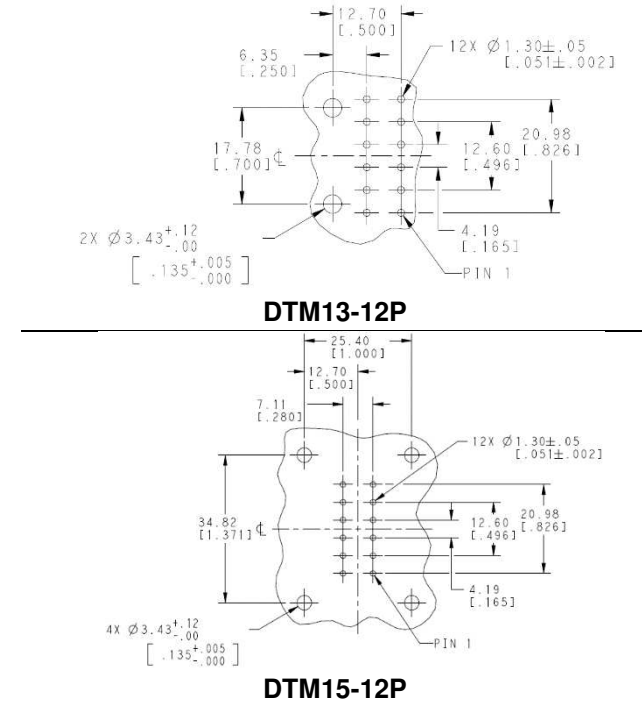
NOTES:

- 1) Modifications include but are not limited to the following list.
- 2) Modifications listed are for reference only and may not be available for every arrangement.

Modification	Description
G003	Color: Gray Pins: Gold
NP02	Housing: Low Profile Color: Gray Pins: Gold 5 psi rated (grommet)

3.4. Printed Circuit Board (PCB) Layout

The recommended PCB layout requirement is shown below for the component side. The PCB thickness depends on application. The header pins extend $3.05 \pm .64$ [$.120 \pm .025$] below pin spacer mounting surface.

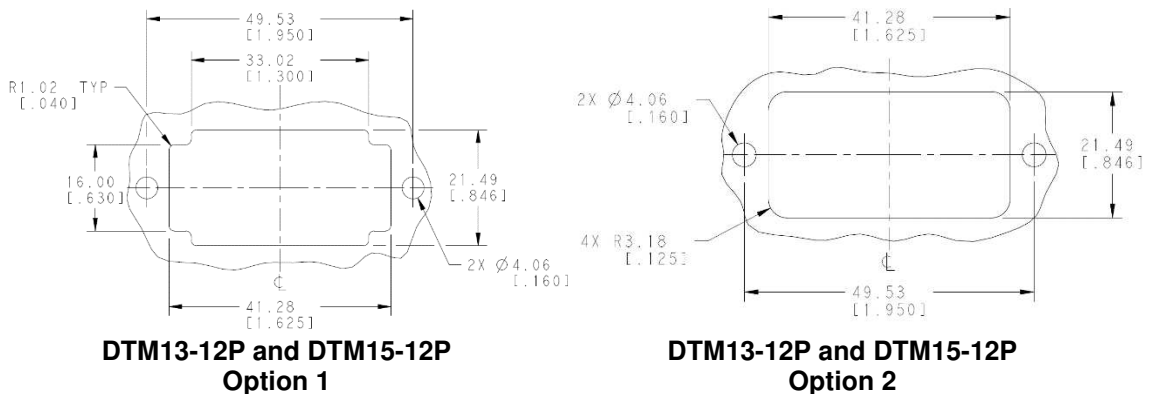


Note:

- 1) Tolerance: $\pm .05$ [$.002$].
- 2) Customer to determine finished hole diameter based on soldering process, through hole plating, etc.

3.5. Panel Cutout

The header requires a panel cutout that allows the flange to be mounted on the inside of the panel.



Note:

- 1) Tolerance: $\pm .12$ [$.005$]
- 2) Sealing surface: $0.8 Ra$ [32 RMS] or better and .13 [$.005$]

3.6. Soldering Guidelines

The header is designed to be compatible with standard soldering process (i.e. hand soldering, wave soldering, reflow soldering) which uses tin solder. The header material is capable to withstand 260°C [500°F] for 5 seconds. There must be no interruptions of the conveyor carrying the PCB through the solder bath.



CAUTION

Care must be taken not to leave the header exposed directly to the soldering flow during an interruption. Any header exposed to the solder flow longer than the normal soldering cycle must be rejected and replaced

Manual [402-40](#) is available to be used as a guide to soldering. This manual provides information on various flux types and characteristics with the commercial designation and flux removal procedures. A checklist is included in the manual as a guide for information on soldering problems.

After soldering, removal of fluxes, residues and activators is necessary. Cleaners must be free of dissolved flux and other contaminants. We recommend cleaning the PCB on its edge. If using an aqueous cleaner, we recommend standard equipment such as a soak-tank or an automatic in-line machine.

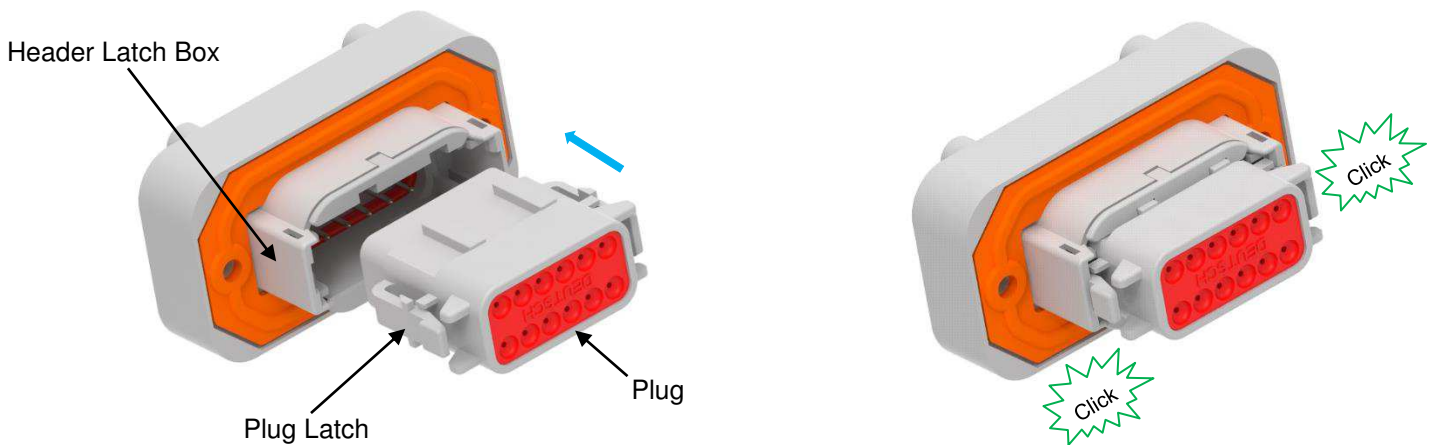
When drying cleaned assemblies and printed circuit boards, make certain that temperature limitations are not exceeded: -40° to 70°C [-40° to 158°F]. Excessive temperatures may cause housing degradation.

3.7. Plug Connector Assembly and Servicing

[114-151010](#) Application Specification DEUTSCH DTM Series Connector System

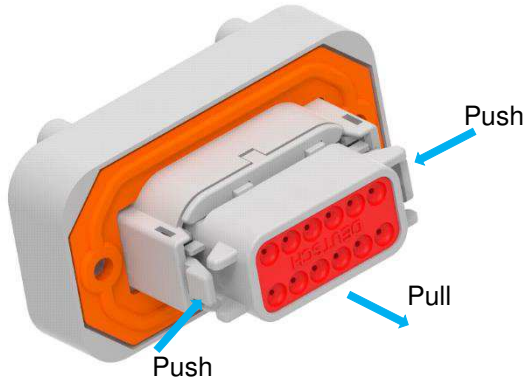
3.8. Connector Mating

12-pin: To mate the plug and header, first make sure both plug, and header are same key (i.e. A,B,C,D) next align the plug keys with the header keyways. Then push plug into the header until there is an audible and tactile click. Verify both plug latches are in full latched position.



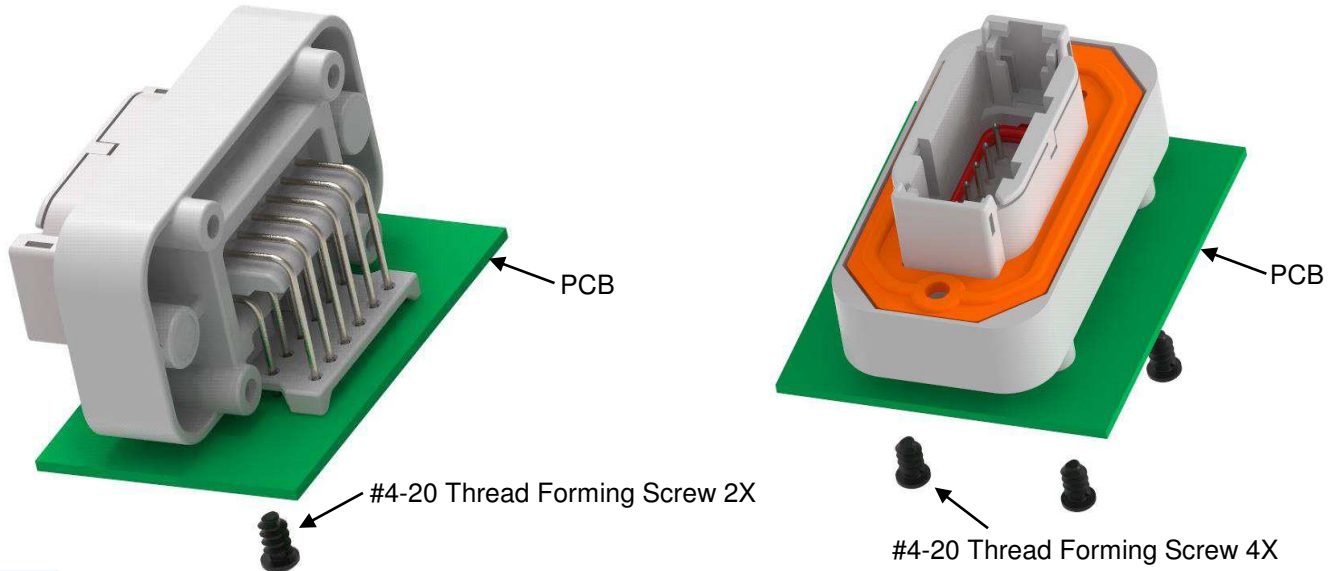
3.9. Connector Unmating

To un-mate the plug from the receptacle, push the plug latch(es) until a hard stop is felt. Pull the plug from the header until they are fully separated.



3.10. Printed Circuit Board Mounting

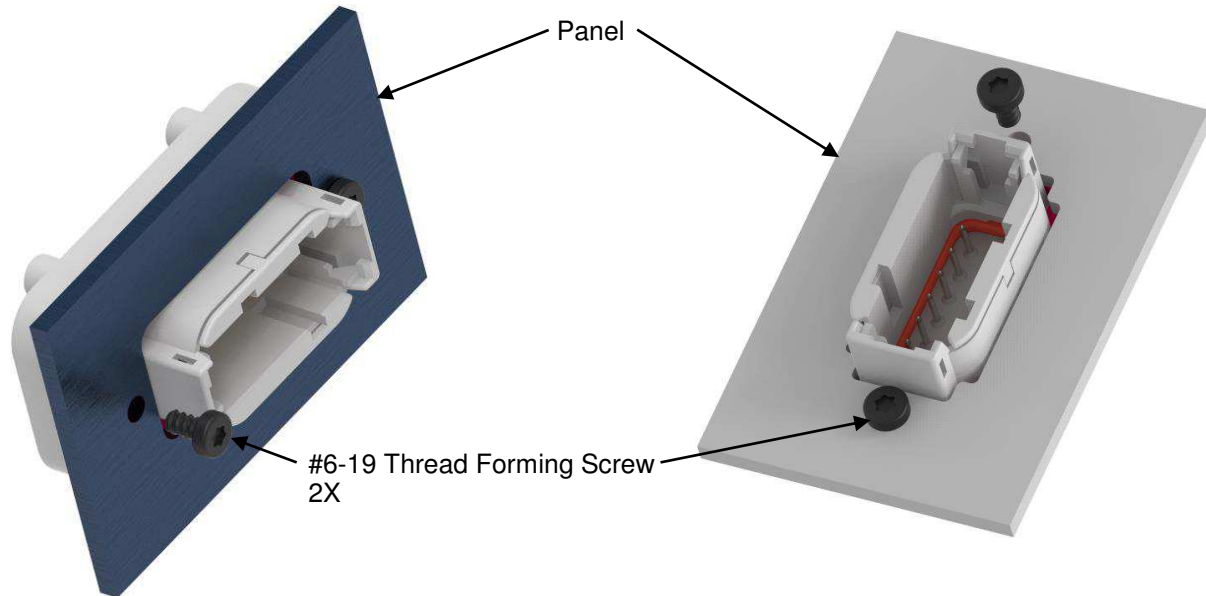
Solder the header to the PCB then secure the header to the PCB using #4-20 thread forming screws ([Plastite 48](#)). Screw length and torque depend on application.



- i** Note:
- 1) [Plastite 48](#) screws are not available in true metric sizes.
 - 2) Mounting torque not to damage connector or PCB.
 - 3) DTM13-12PX-NP02 version does not require PCB mounting screws.

3.11. Panel Mounting

Insert the header through the panel cutout then secure the header using #6-19 thread forming screws ([Plastite 48](#)). Screw length dependent on application. Recommended screw torque is 1.24-1.46 Nm [11-13 in-lb.]. Recommended panel thickness is 6.25 [.250] max.



Note:

1) [Plastite 48](#) screws are not available in true metric sizes.

3.12. Replacement and Repair

Damaged or defective header must not be used. It may be removed from the PCB by normal desoldering methods and replaced with a new header.

4. QUALIFICATION

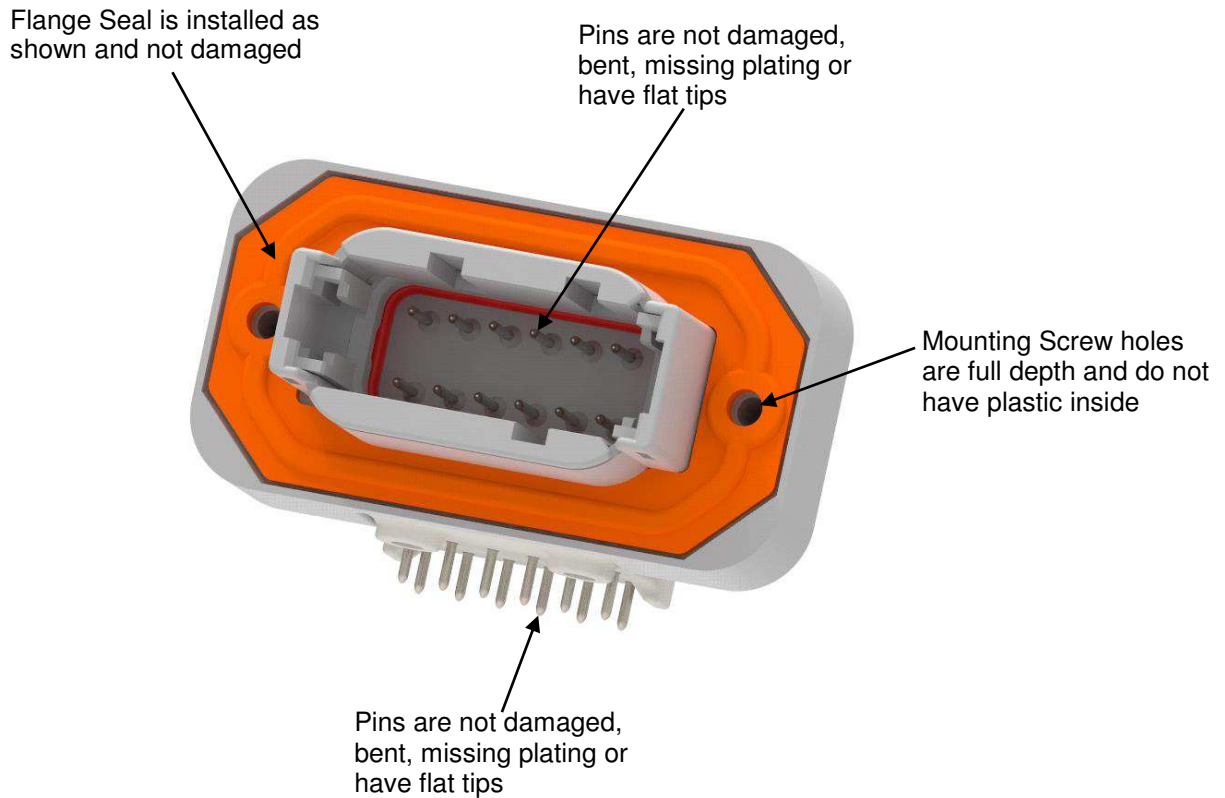
Refer to product specification [108-151010](#) for qualification and approved agency.

5. TOOLING

No special tooling is required for hand placement of the header onto the PCB or installation of the mating plug connector.

6. VISUAL AID

Below shows a typical application of the DTM Header Connector. 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 instruction, material shipped with the product or tooling.



7. REVISION HISTORY

Rev	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	09/11/2020	DM	IG
A1	Page 4, Section 3.3.C corrected typo. Pin Plating Mating Side (is) Ni/Ci (was) Sn/Ni/Cu. No change to pin plating.	06/11/2021	DM	IG