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**PLUG SHELL AND RECEPTACLE, SINGLE CAVITY,  
FLOATING, EN4165**

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**1 - INTRODUCTION**

This specification covers the requirements for a floating pair of single cavity receptacle and plug shells accepting modules per EN4165 requirements.

**2 - REFERENCE MATERIAL****2.1. Customer assistance**

Reference drawing numbers (or base part numbers): 1577134 and 1577135.

Use of these numbers will identify the products and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local Tyco Electronics Representative or, after purchase, by calling the Product Information

**3 - DOCUMENT****3.1. Drawings**

Drawings 1577134 and 1577035 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, please call the Product Information number.

The following drawings refer to usable modules. Suitable codings must be used (details appear later in this document).

Modules 20-22: 1577698, 1577699, 1577851, 1577852 (20 contacts # 22)

Modules 12-20: 1577853, 1577854, 1577132, 1577133 (12 contacts # 20)

Modules 08-16: 1577725, 1577726, 1577859, 1577860 (08 contacts # 16)

Modules 04-12: 1577732, 1577733, 1577857, 1577858 (04 contacts # 12)

Modules 01-28: 2091194, 2091196 (for 1 quadrax contact)

Modules 99-01 (6#16 contacts+5#22 contacts): 1577849, 1577850, 1577855, 1577856,

**3.2. Specifications**

108-15349 CONNECTOR, SINGLE CAVITY, AEROSPACE, EN4165

108-15384 Rectangular modular connectors according to EN 4165 - 175°C continuous.

### 3.3. Instructional material

The following list includes available instruction sheets that may provide assembly procedures for product, operation, maintenance and repair of tooling.

<u>Document Number</u>	<u>Document Title</u>
408-6958	Extraction Tools
408-7491	Insertion/Extraction Tools 91066
408-7516	Application Tooling for Screw-Machine Contacts
114-15111	Application of modular rectangular modules and shells per EN4165

## 4 - REQUIREMENTS

### 4.1. Safety

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

### 4.2. Limitations

The connectors are designed to operate in a temperature range of  $-65^{\circ}\text{C}$  to  $175^{\circ}\text{C}$

### 4.3. Storage

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

### 4.4. Panel mounting

The plug and receptacle connectors are both designed for panel mounting application. The plug shell is to be mounted on the stationary side (i.e. the bulkhead)

The receptacle shell is to be mounted on the equipment side (i.e. the "unit").

The panel thickness must be within limits specified on the drawing. The self locking nuts shall be tightened at the torque specified on product drawing. Application of excessive torque may damage the connector.

The blind mating shell design accepts  $\pm 1$  mm of misalignment in the vertical and horizontal directions.

However the customer supplied pre-guiding hardware must restrict the degree of freedom of the equipment, in such a way that the angular misalignment is virtually eliminated prior to the engagement phase of the shells.

The customer supplied hardware must also provide a locking mechanism sufficiently robust to permanently overcome with a safety margin the force generated by the springs of the connector plug (150 N min) and ensure that the connectors are fully mated. The relative positions of the shell flanges and panels shall be per the drawings, in order to ensure full mating and adequate compression of the interfacial seals.

Polarizing grooves on the plug shell and ribs on the receptacle shell ensure that the parts be mated with a single orientation. A dot machined outside the shells provides a visual help (fig 1 and 2).

The customer must ensure that the orientation of both plug and receptacle shells match in the overall system design.

- A sufficient space allowance should be made on the rear side of the mounting panel, in order to
- enable mounting of the plug shell, and optional cover, if it is used.
  - allow space required for connector displacement resulting from the mating operation and the compression of the springs. Refer to the drawings for dimensions.

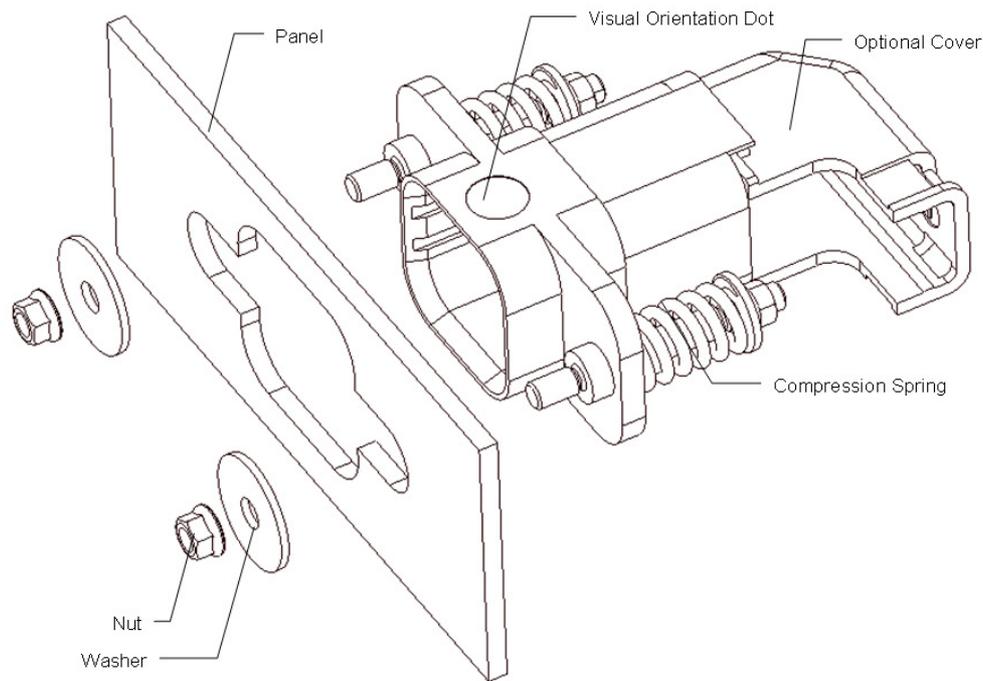


Fig 1 PLUG SHELL

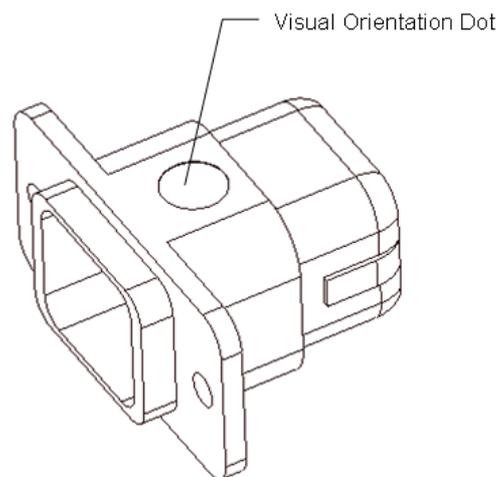


Fig 2 RECEPTACLE SHELL

## 4.5. Panel cut-out

Dimensions of the panel cut-out for the plug connector is provided on drawing 1577134 and the panel cut-out for the receptacle connector is provided on drawing 1577135

### 4.5.1. Plug side

Two self locking 4-40 nuts and washers are supplied with the plug shell and are required for panel mounting. The recommended torque for the plug is specified on the drawing.

#### 4.5.1.1 Attachment of optional cover

The part number of the applicable optional cover is indicated on the drawing of the plug shell.

The cover can be mounted from either short side of the shell, in order to choose the direction of the wire.

Slide the cover in the groove at the back of the plug shell in the direction shown fig 3, to the point where it snaps firmly in place and becomes flush with the shell.

Attach a cable tie to secure the wire bundle to the cover in area shown.

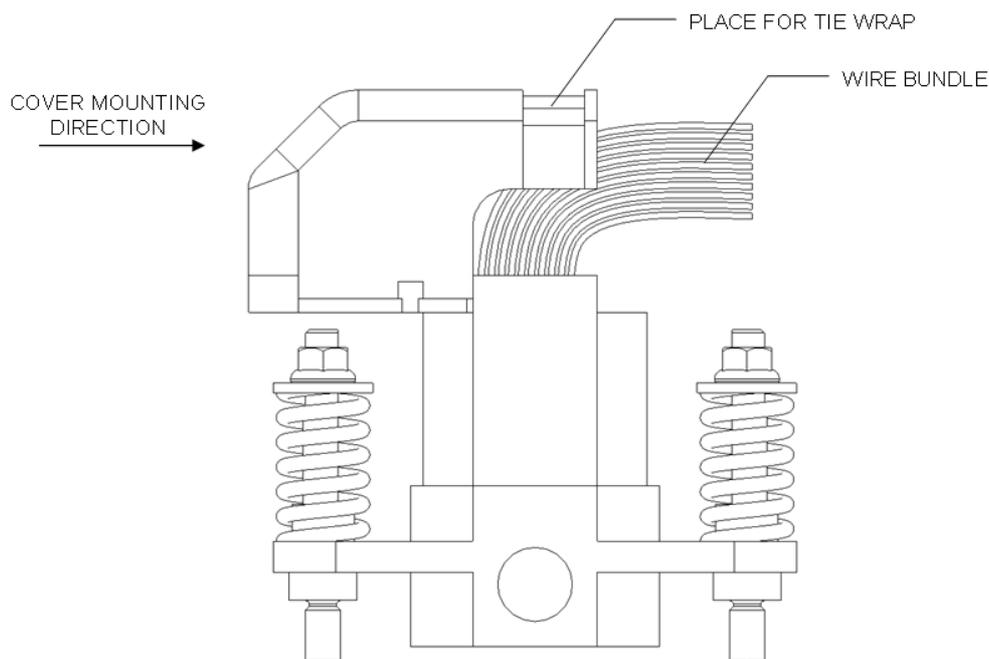


FIG 3 MOUNTING OPTIONAL COVER

### 4.5.2. Receptacle side

M3 screws or rivets can be used to fix the connector to the equipment. If screws are used, the max head diameter allowed shall be per applicable drawing.

#### 4.6. Modules and contacts

The neutral modules coded N, however, can be mounted in any shell coding.

However the shells coded A, B, C, D, accept only modules coded A, B, C, D, respectively.

Typically, the plug is equipped with a female module and the receptacle with a male module, but in special cases, this can be inverted.

Both modules must feature the same contact arrangement and be of opposite sexes.

The procedures applicable to cable preparation, contact crimping, assembly of contacts into modules and assembly of modules into shells are found in 114-15111.

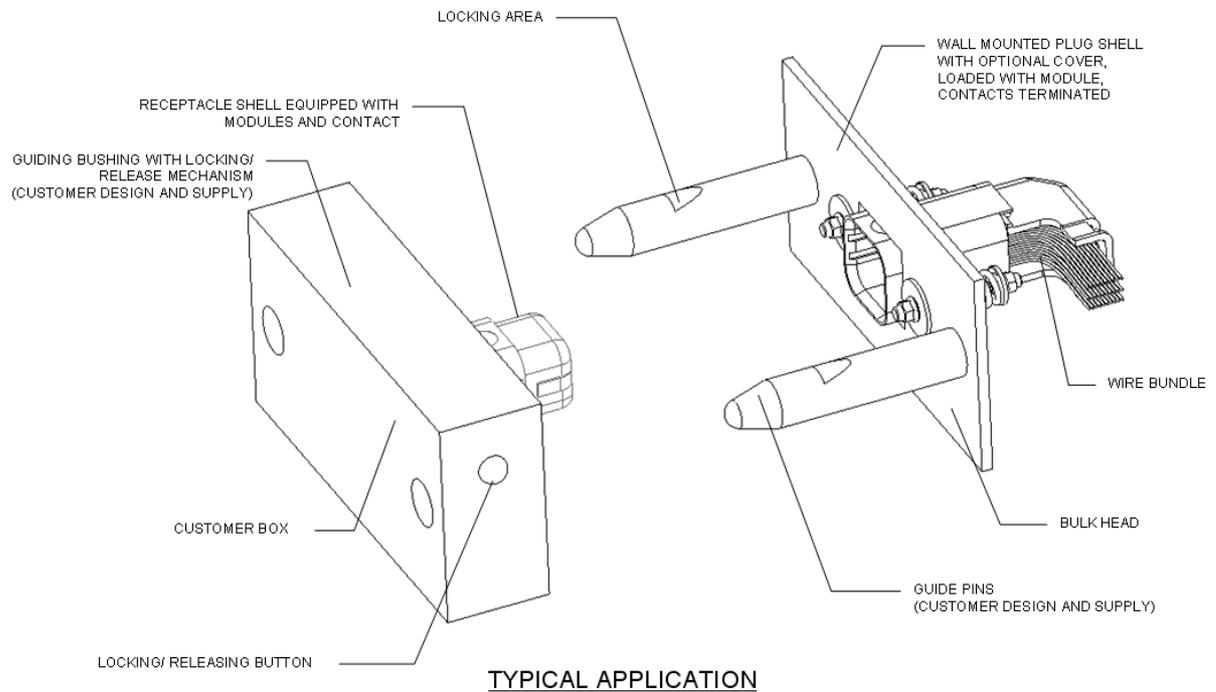


Fig 4 CONNECTOR USAGE OVERVIEW