



## Application Notes:

When selecting a connector, it is necessary to know the purpose for which the connector was designed, its proper application and environmental specifications, so that it can be used with a correct understanding of its features.

This is to explain the points that should be considered to get the best performance from KEL connectors and insure that they are used in their intended conditions. We hope this will be of some help in your engineering design work.

### 1. PURPOSE OF USE AND APPLICATION

Please select a connector after checking the features, application information and specifications so that the connector will be used according to its intended purpose. If proper intended usage is ignored, or the connector is applied for a use other than its designed application, full performance to specification cannot be insured and performance features will be altered. In cases where connectors are used in products which interface directly with human life; such as automobiles and medical equipment, etc., please consult with our sales personnel.

### 2. ENVIRONMENT

**Dust:** Dust may cause insufficient contact. Countermeasures in extremely dusty conditions are required.

**Humidity:** Extremely humid conditions can alter insulation, and induce a short circuit. It is required that connectors not be used in extreme humidity and condensing applications.

**Temperature:** It is required that connectors be applied within specified temperature ranges. Contact resistance can be effected.

### 3. SOLDERING

Do not solder mating connectors together. Performance characteristics and specifications will be altered.

**Dip Soldering:** It is recommended that connectors be soldered at 260+/-5°C for 5 seconds or less.  
(Through Hole)

**Soldering by Hand** :It is recommended that soldering is done at 300-350°C for 3 seconds or less.

**Reflow Soldering** :Use reflow soldering for surface mount connectors. Reflow (SMT) profiles for each connector is specified at the end of its respective catalog. If no information on the catalog, please download following profile and it is specified.

[http://www.kel.jp/english/e-pdf/B2\\_Soldering\\_RoHS.pdf](http://www.kel.jp/english/e-pdf/B2_Soldering_RoHS.pdf)



## 4. CLEANING

Some of our connectors have a special surface treatment on the contacts to enhance anti-corrosion features. This surface treatment may diminish slightly in the cleaning of the connector. Contaminated cleaning liquids can also leave a film of contamination on connector contacts. Cleaning liquids must be applied carefully and removed completely.

- \* Care must be taken to remove all water, alcohol, cleaning fluids, etc. from connectors. Proper consideration must be given to devising drying methods. Positioning connectors vertically for drying is one example.
- \* If boards cannot be cleaned, be careful with flux rising into contact area.
- \* Please do not use petroleum based solvents and lubricants on connectors.
- \* Sufficient care must be given to cleaning liquids and methods to make sure that part markings are not obliterated and insulators do not break or melt.  
Do not use this group of insulator materials with the listed solvents.

### (RESIN)

Diallyl Phthalate  
Polycarbonate  
Polybutylene Terephthalate  
Polyethylene Terephthalate  
Polyphenylene Sulfide  
Liquid Crystal Polymer

### (SOLVENT)

Thinner  
Ethyl Alcohol  
Benzene  
Freon  
Carbon Tetrachloride  
Chloroethene

## 5. PLATING OF CONTACTS

### Gold Plating:

Our gold plating is mainly used for the finish of the contact mating area.

Flash plating (0.05 $\mu$ m [2 $\mu$ "] or less) is standard plating. The performance of this plating satisfies the specification set forth in the catalog. (Some products have different specifications.)

### Tin Alloy Plating:

Our tin alloy plating is mainly used on the contact tail area. The basic specification is 1 $\mu$ m [40 $\mu$ "] or more as standard. This plating is adequate for soldering.

Do not mate differing plating metals even if the connectors are KEL products. For details, please contact our sales personnel.



## 6. RELIABILITY TESTING

(Test Items)

- \* Insulation Resistance
- \* Dielectric Withstanding Voltage
- \* Contact Resistance
- \* Vibration
- \* Shock
- \* Salt Spray
- \* Connector and Contact Insertion and Withdrawal Force
- \* Thermal Shock
- \* Temperature Range

## 7. OTHER CONSIDERATIONS

- \* Clean PCB contact area prior to insertion and soldering.
- \* Please do not touch the terminals or contacts. It may cause corrosion and deformation of contacts.
- \* Please do not depress contacts with probes during circuit check.
- \* For Printed Circuit Board Layout, please refer to product catalog.
- \* Please insert and withdraw the connector after power is switched off completely, unless otherwise specified.
- \* Please insert and withdraw connector as straight as possible to avoid bending contacts or breaking the insulator.
- \* Please investigate tolerance sufficiently when 2 connectors are used on one board. It may be necessary to adjust position.
- \* If a connector would be inserted by force while it has a mechanism to prevent mis-insertion, it may break. Please insert after checking polarity, refer to triangle mark on body of connector.
- \* Please use a card puller when a universal PC card is inserted and/or withdrawn. Injury may occur to the hands.
- \* Please take care when handling connectors, sharp edges are present and can cause injury.
- \* Please do not disengage cable connectors by pulling the cable. This may deteriorate the performance of the connector.

Should you have any questions, please feel free to contact our sales personnel.