



## SOLDERING PROCESS GUIDE

### Soldering:

EMP Connectors are built to withstand exposure to harsh environments. However, since delicate electronic components are involved in the construction of these connectors, care must be exercised during the processing and use of these products. This guide is intended to provide recommendations and tips for successful soldering of filtered and transient protected connectors. To prevent possible damage to the connector, the following guidelines should be used:

**Safety First:** Protective eye equipment must be worn whenever performing soldering operations.

**Soldering tool preparation:** Any soldering tools should be cleaned prior to use and during use as necessary. A wet, fine-textured sponge should be used.

**Preparing Wire (Solder cup termination):** When removing insulation from wires be sure not to damage the individual strands of conductors. The conductor should be exposed to a length that will bring the insulation clearance above the solder cup equal to one and one-half times the outside diameter of the insulation, when the wire is inserted into the solder cup to its full depth.

**Pre-Tinning:** Stranded wire portions which come into contact with the area to be soldered should be tinned prior to attachment. Apply flux to the stripped ends about half way to the insulation and shake off excess flux. Immediately after fluxing, pre-tin by dipping into a solder pot about half way to the insulation. Avoid overheating which may cause melting or burning of the insulation.

**Preheating:** It is always a good idea to preheat the connector prior to any soldering operation in order to minimize subjecting the electronic components to any thermal shock related to the soldering operation. We recommend preheating to 118°C - 125°C (245°F - 257°F) for five (5) minutes prior to soldering.

**Heat Sinks:** The use of a heat sink attached directly to the contact being soldered is recommended where permissible/applicable. In some cases, such as with PC Tail termination or high-density arrays, the use of a heat sink may not be possible.

**Application of heat:** It is not advisable to apply heat to any contact for longer than five (5) seconds, whether the soldering method be hand soldering, wave soldering, or any other form (5 sec. maximum duration does not include any preheat or deheat processes). When hand soldering it is strongly recommended that the contacts be soldered in a "criss-cross" pattern, alternating between central and peripheral locations as much as possible in order to avoid heat buildup in any one area. It is also strongly recommended to maintain soldering temperature to 274°C - 302°C (525°F - 575°F) for best results and to avoid damage caused by excessive heat. Minimize any pressure being applied to the contact during soldering to prevent damage to the connector.

**Cleaning:** Immersion in a cleaning solution is not recommended. After soldering, solder joints may be brush cleaned with isopropyl alcohol and allowed to dry.



EMP Connectors, Inc.  
1631 E. St. Andrew Place  
Santa Ana, California 92705  
Tel: (714) 665-2085  
Fax: (714) 665-2099  
sales@empconnectors.com