



VPC TAC™ Contact Care and Cleaning Procedures

Page 1 of 3

Applies to all VPC TAC™ signal, power and coax contacts.

A. Handling and Storage

- Keep connectors clean
- Do not touch the mating surfaces
- Do not set contact mating end down
- Never store connectors loose in a box or a drawer

B. Visual Inspection

- Inspect all connectors carefully before every connection
- Look for metal particles, scratches, and dents
- Examine connectors for obvious defects or damage; badly worn plating; deformed threads; bent, broken or misaligned pins or center conductors
- Nuts should turn smoothly and be free of burrs, loose metal particles, or rough spots
- Mating surfaces showing deep scratches, dents, dirt, metal byproducts, or uneven wear must be cleaned per section C below and possibly repaired or replaced
- Never use a damaged connector

C. Cleaning

VPC Contacts may require periodic cleaning due to the usage cycle imposed, as well as the environmental conditions. If unacceptable resistance readings occur, contacts should be cleaned using the following procedure:

- Spray contacts with filtered air or inert gas to remove any loose particle contamination
- If additional cleaning is necessary, clean contact mating surfaces using only a soft bristle brush and 99% pure isopropyl alcohol (Apply isopropyl alcohol to brush; Do not pour alcohol directly onto contacts)
- Spray contacts with filtered air or inert gas again to dry alcohol and remove any residual lint, dust, etc
- Use the least amount of isopropyl alcohol possible and avoid wetting any plastic parts
- Never spray isopropyl alcohol directly into a connector
- Check isopropyl alcohol periodically for contamination

Following this procedure for cleaning and maintaining VPC contacts will help avoid performance problems due to contamination.

CAUTION

Virginia Panel Corporation PROHIBITS the use of any type of contact lubricant/cleaner to be used other than the procedure listed above. Contact cleaners that contain lubricants may leave residues that will degrade the electrical performance of the contacts.



VPC TAC™ Contact Care and Cleaning Procedures

Page 2 of 3

D. Application and Use of Twin Access Contacts (TAC™)

Virginia Panel Corporation's patented Twin Access Contact (TAC™) is designed to mate directly with a Printed Circuit Board (PCB) on both ends of the contact, reducing the time and dollars spent on discrete wiring a system. The TAC features double-ended wiping action that will not damage the contact pads on the PCB. TAC can mate directly to a PCB or be discrete wired using VPC wiring surface contacts.

In order to take advantage of these cost saving benefits and consistently maintain optimum electrical performance, proper consideration should be given to the application of these high precision contact assemblies. Issues to consider include:

- Engagement
 - The contact normal force and degree of wiping action is a function of the amount of displacement imposed on the internal compression spring. Electrical performance will be compromised if the amount of engagement is below .025" min on either plunger and a total of less than .075" nominal.
 - One area that can reduce the amount of engagement is bow in the customer's PCB. VPC recommends a G10 PCB of .25" min thickness. For thinner PCB's, the customer may need to design a stiffener.
 - Another issue to consider with TAC contacts in 90 Series and 2100 Series systems is bow of the mounting frame in ITA's and Receivers. Mounting frame bow can result with excessive loading from the total mating forces of all types of contacts used as well as their location within the frame relative to the TAC modules. VPC application engineers are available to assist in optimum loading design.
 - Mating force loading must also be considered in the customer's chassis design.
- Contamination
 - Electrical performance may be further compromised by the presence of contamination on the TAC planar mating surfaces.
 - If unacceptable resistance readings occur through the TAC contacts, a visual inspection should be done per section B above with special attention given to detection of the following contaminants on the planar mating surfaces:
 - Light Dust particles
 - Dirt
 - Oils/Lubricants
 - Solvents
 - Solder Flux
 - Pending the results of the visual inspection, the planar surfaces of the VPC TAC contacts may require periodic cleaning per section C above.
- Damage
 - Damage due to "Sticking Pins"
 - Slightly bent plungers or contamination along the length of the plungers can cause the TAC contacts to remain compressed (sticking pins) or be very sluggish in recovering to their fully expanded position. VPC TAC contacts are designed with precise cylindrical sliding action.
 - If unacceptable resistance readings occur through the TAC contacts, a visual inspection should be done per section B above with special attention given to detection of sticking pins.
 - Sticking pins suspected of slightly bent plungers should be extracted from the module and rolled along a flat surface to observe evidence of the plunger being slightly bent. TAC contacts with bent plungers should be replaced.



VPC TAC™ Contact Care and Cleaning Procedures

Page 3 of 3

- Sticking pins suspected of contamination along the plungers should be extracted from the module and inspected under 10x magnification while compressing the TAC contact. If contamination along the plungers is detected, the contaminated pin should be replaced.
- To avoid damage to TAC contacts used in a VPC CLICK connector the following steps should be taken to ensure proper engagement of the CLICK ID and Receiver:
 - Prior to engaging an ID with the Receiver for the first time, the user should check that all the Modules (ID and Receiver) have been installed properly. This is done by inspecting the module ends to ensure the even height of all the module ends relative to one another. While checking this, the user should verify the positioning of the modules themselves. The top of each module is marked with a “T”. It is crucial that all modules are installed properly with all of the “T”s at the top.
 - The ID, upon being inspected, is now ready for engagement with the Receiver. The Receiver should be checked one last time for any foreign objects that may hinder the engagement. To attach the ID to the Receiver, place ID dogs into Receiver. Special care should be taken to ensure that the ID dogs are inserted into the Receiver slots without touching the TAC contacts in the Receiver. Once the ID dogs are properly inserted into the Receiver slots, the engagement angle is controlled for proper alignment while pressure is applied to the cable clamp area until the latch catches in the Receiver.
 - Push lock from left to right so latch cannot be operated.
 - When not in use, snap rubber protective cover over ID.
- To avoid damage to TAC contacts used in a VPC 90 Series or a 2100 Series module always use protective covers on all ITA’s and Receivers when not in use.