CTC AppNotes

A series of technical documents written by members of the CTC community

New CTC BNC Connector Options

Creating cables with BNC terminations for use in specialized applications where a floating shield is a better solution

BNC connectors are widely used throughout many industrial applications for cable and instrumentation connections. Frequently BNC's may be grouped together on an instrumentation board so that multiple signals can be read simultaneously.

Figure 1- CTC's polycarbonate molded F (Top) and E (Bottom) connectors are guaranteed for life.

Due to their ease of use and durability, BNC connectors have become a staple of the vibration analysis community.

BNC's were originally designed to be used with coaxial cable, where the signal is carried on the center conductor and the common is the outer core or shield of the cable. At CTC twisted shielded pair is utilized to build our BNC connectors with the cable shield connected to the common conductor of our twisted shielded pair cabling. For many years this has proven to be an excellent method of manufacturing, providing durable cables that mimic the electrical properties of coaxial type cables.

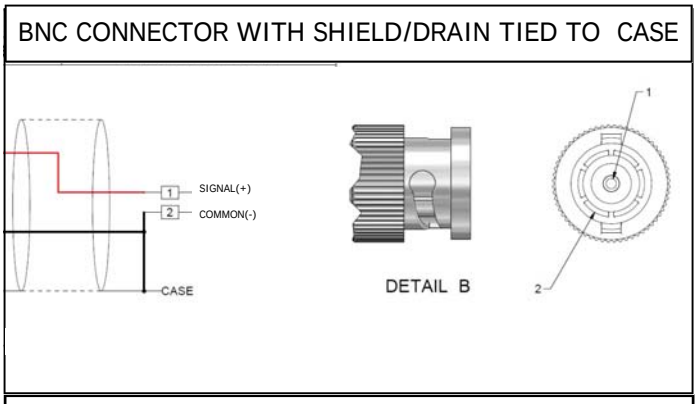

Figure 2– Schematic detail of CTC's standard BNC electrical schematic showing the shield drain attached with the common to the outer shell of the BNC.

In the vibration industry we frequently use BNC cables to collect data and make connections with proximity probe systems and other sensitive electronics. In these situations having the shield of the cable connected to the common can have undesirable effects such as an increase in cable induced noise, or in negative voltage applications, having the shield tied to the common conductor is detrimental to collecting good data. In these situations CTC has designed our FN and EN series of connectors where the shield is not connected to the common, but "floating". These cables still provide outstanding durability and carry the full CTC lifetime warranty, but are a better solution for use in situations where a floating shield is required.

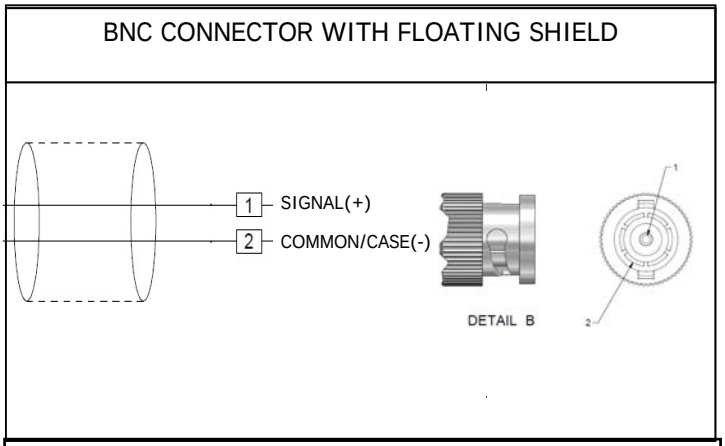

Figure 3— Detail from a schematic of a CTC cable showing the shield drain floating instead of tied to the case of the BNC. In this case the shield is connected to the back-shell of the connector at the opposite end of the cable.

If you have any questions or for further information please feel free to contact CTC directly via Email techsupport@ctconline.com or call 1-800-999-5290 in the US and Canada or +1-585-924-5900 internationally.