

# CTC AppNotes

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

## Protecting Single Sensor Data Acquisition Points in the Field

Many industrial processes require large facilities where a single pump, motor or gearbox may be located far from other locations requiring sensors, thus making it difficult, or cost prohibitive, to bring cabling for data collection to a single junction box. In some situations like this analysts have resorted to leaving connectors exposed to the elements. (See Figure 1).

These individual "dangling BNC" connections provide the analyst a valuable method of collecting data, particularly for points that may otherwise be inaccessible, or may be located in a situation where collecting the data with a hand held accelerometer and magnet may be too dangerous.

While these dangling BNC's provide access to valuable data for trending and analysis, over time they are subject to aging and weathering which can lead to losses in data quality and make predicting potential failures in the system being monitored much more difficult. These issues can be compounded especially in harsh environments. (See Figure 2).



Figure 2— Close-up of male BNC exposed to severe weathering in a power plant. The yellow plastic cap did not provide adequate protection after less than 18 months.

In order to meet the needs of analysts and provide a solution for these situations that did not involve purchasing single point junction boxes, one of CTC's distribution channel partners came up with an idea that he gave CTC permission to share as a new connector option, this is CTC's EMPP connector. This is a female BNC mounted into an epoxy filled cord grip (to seal tightly to the back

of the cable), then a threaded nylon cover is supplied to screw onto the cord grip over the BNC. (See Figures 3 and 4) In order to connect directly to data collectors a BNC barrel adapter is recommended (Figure 5).

If you have any questions or for further information please feel free



Figure 4— EMPP with cover removed, ready to take data. Note cover resting on check valve in the background.



Figure 3— EMPP with cover in place.



Figure 5— CTC's BNC barrel adapter, CB911-3A.

to contact CTC directly via Email [techsupport@ctconline.com](mailto:techsupport@ctconline.com) or call 1-800-999-5290 in the US and Canada or +1-585-924-5900 internationally.

## CTC's EMPP Solution



If any CTC vibration analysis hardware product should ever fail, we will repair or replace it at no charge.