

## 3300 XL 50 mm Proximity Transducer System

**Designed specifically for differential expansion applications in aggressive steam environments**

GE Energy's new Bently Nevada™ 3300 XL 50 mm transducer system is a highly robust and reliable replacement for all of our older 50 mm proximity probe systems — including the 7200 series 50 mm and the 130713 DE (Differential Expansion) transducer systems. It offers greater moisture resistance and a broader temperature range without compromising the linearity and accuracy required by differential expansion applications. The new system also delivers the longest linear range in our family of Bently Nevada proximity transducers, enabling displacement of up to 1.1 inches (1100 mils) to be addressed, and allowing it to be used wherever an extended-range measurement is required, whether for DE or other applications.

### **Turbine Differential Expansion — A Vital Measurement**

Large steam turbines, and certain gas turbines, exhibit non-uniform thermal growth rates of rotor and casing during machine startups and shutdowns. If not carefully monitored and controlled, excessive differential expansion can cause rotor and casing to rub, with catastrophic results. For this reason, the DE measurement is a critical component of a Turbine Supervisory Instrumentation (TSI) system, and operators depend on reliable DE information to safely start and stop their turbines.

The DE measurement poses particular challenges for a transducer system, since the measurement is made in environments where elevated temperatures and steam concentrations are present. The DE measurement also typically involves relative displacements that can exceed 1 inch (25.4 mm). This necessitates a transducer with an extended linear range. Further, turbines requiring a DE measurement are typically found in power generation applications where lost production revenues and contract penalties can be very expensive. As such, a transducer failure has serious economic consequences



### **Transducer Color Codes Help Eliminate Installation Errors**

Bently Nevada™ proximity transducer systems from GE Energy incorporate three basic components:

1. Probe and integral cable
2. Extension cable
3. Proximitor® sensor

Probes are available in a variety of tip sizes and case sizes, and for facilities that use multiple sizes of probes, it can be easy to mismatch components from different systems since they may look very similar. To assist our customers, we introduced the following color-coding system in the mid-1990s for use on many of our most popular proximity probe systems. Used on probes, cables, and Proximitor sensors, it allows the correct components to be easily identified by color, helping to eliminate the likelihood of mismatching.

SYSTEM	COLOR
3300 XL 5 & 8 mm	Blue
3300 XL 11 mm	Purple
3300 XL 25 mm	Lime Green
3300 XL 50 mm	Brown
7200 5 & 8 mm	Light Yellow
NSv and RAM	Gray
16 mm HTPS	Orange
REBAM®	White

because it precludes the operator from being able to start the machine — and installation of spare or redundant transducers are often not practical.

Combined, these factors require a transducer system that is highly reliable and robust, is impervious to moisture and elevated temperatures, and delivers the necessary accuracy over an extended linear range. All

of these considerations were addressed in the development of the new 3300 XL 50 mm transducer system, and we are pleased to offer this outstanding product to our customers. You can learn more by contacting your local sales professional or by visiting [www.ge.com/energy](http://www.ge.com/energy) and entering “174014” in our search engine, taking you directly to the product’s datasheet.