

9211 The Foundation of an Instrumentation System

Using Flexibility and Programmability in Your Instrumentation Systems

The 9211 is the basis of a flexible and programmable instrumentation system. Originally designed to be used as a receiver indicator for the tank level indication on the Virginia Class Submarines, the 9211 was enhanced by Prime Technology's expertise on the instrumentation field, creating a design with the objective of universality - meaning capability of using the same platform to measure multiple types of signals as well as incorporation of digital communications and operational alarm detection for process control. The powerful result is a versatile instrumentation hub capable of interfacing to multiple signal types and the additional proficiency in scale customization to profile linear and nonlinear sensor characteristics while maintaining readout accuracy.

Since its release, this platform has been utilized in several applications, including:

- Tank Level Indication
- Temperature Indication
- Pressure Indication
- Air Flow for Ventilation Systems
- And Most Recently: Tank Level, Hydrogen Concentration and Temperature Indication

How Does It All Work?

The system is comprised of three essential components:

- Chassis
- Power Supply Module
- Smart Receiver/Indicator

Modularity is an integral part of the design - the power supply module and the receiver/indicator modules are completely interchangeable across systems with the same model number of the receiver/indicator modules. This commanding feature is designed to restore operational conditions in case of a failure.

The Smart Receiver/Indicator is able to store sensor profile curves; this feature allows the instrumentation engineer to correct for errors related to sensors' nonlinearities. In addition, this curve information can be updated in the field by a process of programming/cloning of sensor characteristics.

The Power Supply module is specifically devised to power the receiver/indicators and the sensors connected to the chassis on a channel-by-channel basis.

This combined set of essential features and capabilities enables the 9211 to be used as the interface between a sensor and a main frame computer-based instrumentation system, where the sensor receives power from the 9211, and the Smart Receiver/Indicator in the 9211 processes the sensor output data and transfers this data to the main frame computer.

The Smart Receiver/Indicator module supports analog (4-20 DCmA current loop or 10 dcV) as well as digital (RS-422) communications with peripheral equipment typically used on instrumentation systems.

Finally, the 9211 has been qualified to the following mil requirements:

- Shock MIL-STD-901
- Vibration MIL-STD-167
- EMI MII-STD-461
- Drip-Proof MIL-STD-108
- Salt Spray MIL-STD-202
- EMP MIL-STD-1399, Part 70

Contact our office to speak with a member of our Prime Technology Engineering Instrumentation staff. We look forward to discussing your application and providing a unique solution to your requirements.

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