

UNDERSTANDING THE EFFECT OF IEEE 1451 SMART SENSORS

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Abstract

A new generation of 'smart' sensors is growing in popularity, with commercialization benefitting, in part, by the participation of members of the test & measurement community in the standardization of these sensors. This standardization forms in the name of the IEEE 1451 family of standards. In particular, IEEE P1451.4 defines a mixed-mode smart sensor with TEDS (Transducer Electronic Data Sheet). This standard defines both the physical interface to the smart sensor and the configuration of the digital datasheet.

This digital datasheet stands to drastically change the flow of information from the calibration laboratory to the sensor's end user. It also holds the potential of further automating the calibration process by automatically identifying a transducer and its test parameters. This paper outlines the scope of the IEEE 1451 family of standards, in particular IEEE P1451.4. This paper also describes the implementation of the IEEE P1451.4 interface in an accelerometer calibration system.