



CAGE/NCAGE Code: 3FNFO

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High Quality Data Acquisition and Embedded Control Products

Recently, ICP DAS USA was contacted by a systems integrator, with an inquiry in regards to the need for highly precise data acquisition modules, capable of serial communication and networking via DeviceNet. The said application was to be used by an avionic hardware fabricator, working directly in conjunction with Boeing on the new 7E7 dream liner.

The actual scope of the project was quite involved, as the customer was monitoring vacuum over an extremely large table top surface; via a flush mount inductive eddie current sensor. The production version of the measurement device would implement over 700 sensors to monitor the tension and vacuum across wing panels mounted on the table for CNC machining. The inductive eddie current sensors would measure the air gap between the table, and the sheet metal surface being pulled down with the vacuum. Each sensor would be transmitting a 4~20ma analog signal to represent the increment of measurement.

The challenging aspect of the application was the required use of DeviceNet as both the serial interface, as well as, the infrastructural communicative network. Because of the large scale of data acquisition needed for the project, ICP recommended the implementation of the I-7017C, an 8 channel analog current input module. The I-7017C is an 8-channel, current specific analog input module, capable of sampling full 16-bit data streams at 10 samples/second, and allowing user selectable channel configuration. By implementing upwards of 89 modules in the projected application, the end user would be able to amply monitor their data acquisition needs via a DeviceNet based network. The task of converting the acquired data would be placed upon ICP DAS's I-7241D DeviceNet converter. With the I-7241D in place, all 89 modules were daisy-chained via RS-485, to simultaneously monitor the tabletop vacuum, and transmit data via DeviceNet, to the data-logging module.

Upon completion of the installation and initial testing, the fabricator was most impressed with the ease of integration, and capabilities of the ICP hardware. Although it has not formally been submitted, the fabricator has reassured ICP DAS that their choice will be a clear one.

