CAN Newsletter Online

MEASUREMENT SYSTEM

Up to 128 channels can be acquired

IMC introduced the latest generation of its Spartan multi-channel measurement system. Equipped with a new base unit, the system now support the entire IMC portfolio of field and vehicle bus interfaces including CAN FD.

The measurement system provides CAN FD connectivity (Photo: IMC)

The direct integration of serial bus systems and networks for automotive (CAN FD, LIN), aerospace (Arinc), railway (MVB), and automation purposes (Ethercat slave) makes the measurement systems particularly versatile. In addition, the new generation enables synchronization via network (NTP) and the fast Irig-B standard.

The measurement modules include 16-channel isolated temperature and voltage measurement amplifiers, as well as bridge amplifiers with a maximum sampling rate of 500 Hz per channel. A module has been added for connecting LVDT-based sensors, such as inductive displacement transducers. In addition to analog measurement amplifiers, Spartan offers digital inputs and outputs, as well as pulse counter inputs for incremental encoders, said the company.

As a further feature, the modules now support characteristic curve calculation on the conditioners. This means that user-defined, non-linear characteristic curves can be calculated directly on the measurement amplifier and do not burden the integrated analysis platform IMC Online Famos. Thus, it is fully available for real-time calculation and control tasks.

The internal short-term UPS (uninterruptable power supply), which has been converted from lead-gel batteries to environmentally friendly, robust, and maintenance-free NiMH technology, has also been optimized, said the company.

The series is particularly suitable for multi-channel measurement tasks on test benches, in the laboratory or in mobile machinery and vehicles. Depending on the size of the housing, up to 128 channels can be acquired, stored, and processed online with one system. If several systems are networked, thousands of channels can be synchronized in one measurement. For example, hundreds of strain gauges on an aircraft wing can be measured precisely and synchronously for fatigue strength testing or thousands of temperatures on a power plant turbine can be measured for efficiency determination.

As with all of the company’s measurement systems, the configuration and operation is done via the Studio measurement software. In addition to configuration, operators can create their own display and user interfaces that are tailored to their needs.

The devices can also be operated independently without a PC and offer networking options via Ethernet or wirelessly via Wi-Fi or UMTS. The Spartan-N generation features an integrated web server for convenient access via browser or smartphone. This makes it possible to remotely monitor characteristics, curves and online analyses at any time via a self-configurable web interface.

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