



NEWS RELEASE

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Curtiss-Wright Expands Industry Leading Axon™ DAU for Flight Test with New Thermocouple ADC Module

New AXN/TDC/401 Thermocouple ADC Module brings 15 grounded or isolated thermocouple input channels, 3 PT50/PT100 channels and a built-in top-block sensor to Axon DAUs

EUROPEAN TEST AND TELEMETRY CONFERENCE 2019 (ETTC 2019), TOULOUSE, France (Booth #12-16) – **June 11, 2019** – Curtiss-Wright's Defense Solutions division today announced that its Aerospace Instrumentation business unit, a leading supplier of flight test instrumentation (FTI) system solutions, has introduced a new module that further expands the capabilities of its industry-leading [Axon™ data acquisition unit \(DAU\)](#). The [AXN/TDC/401 Thermocouple ADC Module](#) can condition and digitize up to fifteen (15) analog thermocouple channels and three (3) 4-wire RTD channels (dedicated for PT100). It also provides a top-block built-in temperature sensor. With best-in-class accuracy, the module's additional features include high channel density, open channel detection (helps customers fault find), separate lookup table per channel and built-in cold junction (i.e. not separate kit). The AXN/TDC/401 performs linearization for the selected cold junction sensor and thermocouple, and compensates the thermocouple channel accordingly. Any of the module's three PT50/PT100 channels or top-block built-in temperature sensor can be selected as cold junction compensation. The module offers Open thermocouple detection via pull-down resistors for thermocouples to indicate open thermocouple channels.

About the Axon DAU

Curtiss-Wright's commercial-off-the-shelf (COTS) Axon DAU is one of the industry's fastest and most flexible data acquisition systems (DAS). It combines unprecedented flexibility with outstanding reliability for demanding applications, and enables flight test engineers to quickly develop, install and scale a highly reliable data collection solution for FTI that easily adapts to evolving

requirements. With a 1 Gbps Ethernet link dedicated to each data acquisition module distributed on the test platform, Axon can currently deliver a throughput of 380 Mbps. It features increased integration flexibility through the use of unique Axonite™ remote mountable modules (unmatched 10m link distance) and wireless topologies. It also uniquely supports iNET, DARV3, Chap 10, iNET-X and IENA.

About the AXN/TDC/401 Module

At the heart of the AXN/TDC/401 is a hard-wired state-machine that oversamples all channels at a rate between 50 ksps and 100 ksps, and digitally filters any noise above the user-programmable cutoff frequency. This is achieved using cascaded 15-tap FIR filters with output rate decimation, followed by a final FIR or IIR filter. If IIR filtering mode is selected, the last digital filter in the filtering chain is an 8th or 16th order (selectable) Butterworth filter. If FIR mode is selected, the last digital filter in the filtering chain is a 49-tap Kaiser window, Beta 6 filter. The module provides three (3) independently configurable output streams per channel, enabling different sample rate, cutoff, and filter types to be selected for each output stream. All signals are sampled simultaneously. At the start of an acquisition cycle, if several channels are sampled at different sampling rates, all channels are aligned.

AXN/TDC/401 Performance Features

- Cold junction compensation, 3.125 kHz b/w
- 15 grounded or isolated thermocouple input channels (at 12.5 ksps)
- 3 PT50/PT100 channels and one built-in top-block sensor for junction compensation
- Supports multiple thermocouple types with digital cold junction compensation and programmable thermocouple type per channel
- Accuracy (0.5°C typical for K-type in -50 to 150°C range, 1°C typical outside this range)
- 16-bit simultaneous sampling with three configurable output streams on each channel
- User defined linearization and compensation for errors in the entire measurement chain
- Open thermocouple detection
- Applications
- Thermocouple temperature measurements

Live Technology Demonstrations

In its booth at ETTC 2019 (Booth #12-16), Curtiss-Wright will host a live demonstration of the Axon System that will feature the AXN/TDC/401, as well as the recently announced AXN/ENC/401, an

IRIG-106 PCM encoder module, AXN/UBM/401, a 16-channel RS-232 / 422 / 485 Serial bus Monitor / Packetizer, also demonstrated are the AXN/ABM/401, a 24 channel ARINC-429 Parser Packetizer, AXN/ADC/401, 8 channel flexible analog module and the AXN/ITE/01U, a remote Axon module housing mounted 10 meters away from the DAU itself. The Axon System live demo features an example of a fully integrated system with the latest technologies for FTI. Shown will be two Axon units, an Acra KAM-500 DAU and a Gigabit Ethernet (GbE) ADSR data recorder connected via a high speed NSW-12GT 12 port gigabit switch.

Axon Quick Start Kit Option

Curtiss-Wright also offers an Axon Quick Start Kit (QSK). The Axon QSK (AXN/QSK/001) enables FTI engineers to rapidly familiarize themselves with the DAU, as it includes everything needed in the supplied flight case. The QSK is also 100% usable in a full flight test campaign and can be augmented with more modules, Axon chassis, or other DAUs from Curtiss-Wright. The Axon QSK lets FTI engineers easily familiarize themselves with our innovative new Axon data acquisition platform. With its miniature size and unprecedented flexible installation options, Axon lets FTI engineers lower the weight of equipment and wiring, gather more data, and meet demanding time schedules while ensuring that none of their critical data is lost during flight test. Available at a one-time only introductory cost, the Axon QSK makes it easier for FTI engineers to discover for themselves why Axon represents the future of flight test, missile and aircraft monitoring applications.

The Benefits of Complete DAU System Solutions

Axon systems are easy to integrate and expand. Multiple Axon modules can be integrated into a single Axon chassis. The Axon chassis, Axon user modules, and Axonite remote housing are designed to work with Curtiss-Wright's TTC DAU and KAM-500 DAU family of products, including high-speed cameras, data recorders, and switches. Axon DAUs provide the most powerful and modern solution on the market by combining unprecedented flexibility with outstanding reliability for demanding applications. Axon modules and chassis, now available in 6, 9, and 16-slot configurations, enable FTI engineers to quickly configure and deploy the vast amounts of data acquisition required to support demanding flight test, missile test, and space developmental/operation flight instrumentation programs.

Sales inquiries: Please forward all Sales and reader service inquiries to ds@curtisswright.com.

For more information about the Curtiss-Wrights Defense Solutions division, please visit www.curtisswrightds.com.

About Curtiss-Wright Corporation

Curtiss-Wright Corporation is a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships. The company employs approximately 9,000 people worldwide. For more information, visit www.curtisswright.com.

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