Wayside Intelligence - Data Acquisition Unit

KB Signaling's Wayside Intelligence is an advanced IoT, Data, and Analytics platform purpose-built for the rail wayside. It provides modern solutions for data acquisition and edge processing, enabling railroads to digitalize operations and adopt a cost-effective, data-driven approach to condition monitoring. By transforming distributed asset data into actionable insights, Wayside Intelligence supports safer and smarter rail mobility.

KB SIGNALING™

Wayside Intelligence Data Acquisition Unit

Key Benefits

- Part of a modern data-driven system management solution
- Single product for recording, monitoring, and alerting, based on a variety and range of signals
- Integrated CRC log validation
- Provides connected technology for the cost of a wayside recorder
- Connects directly to vital circuits
- Compliant with AREMA and CENELEC standards

General Description

The Data Acquisition Unit (DAU) is a multi-mission event recorder and reporter that captures and logs data and events at wayside locations. Using a common software baseline, the DAU can be applied as a fully featured crossing recorder, high sample-rate data recorder, and autonomous reporting device. Integral data authentication provides proof of recorded data integrity. Its safety-proven interfaces allow direct connection to vital circuits with no additional isolation required. The DAU supports a variety of data transfer protocols, allowing it to stand alone or be easily integrated into any office or condition monitoring system.

Customer Benefits

Safety Built-In Analytics Capabilities

The DAU can be easily deployed as a conventional Crossing Event Recorder, as a standalone Remote Terminal Unit (RTU), or as part of a larger management system. It provides high quality data sampling and streaming, leading to advancements in railroad digitalization. Recorded data is stored in flash with an authentication hash, allowing validation of data integrity without maintaining chain of custody. This small but powerful wayside data device can be connected to a WSDMM Edge Processor for advanced data routing, visualization, and analytics.

Economical Crossing Monitor

As an event recorder and reporter, the DAU can monitor multiple inputs to allow detection of alarms, with or without active crossing recording. These alarms and notifications can be transferred via web services, e-mail/SMS, or through IP routed protocols such as SNMP and TCP/IP. Monitored channels can also activate one of the six outputs, allowing functions such as triggering a local warning after an out-of-service jumper is detected.

Rail-Grade Hardware

The DAU Event Recorder and Reporter is compliant to AREMAand CENELECstandards. Unlike other RTU and recording products, the DAU can interface directly to vital circuits due to its built-in input isolation and vital physical interface design. It is a robust solution which can be deployed at wayside locations throughout the World.

Flexible Product

The DAU is easily configurable with a text editor or a GUI-based configuration creation tool. Operation and configuration does not require any custom software. Triggers provide for local logging, status reporting, and even high sample-rate recording of all channels based on events from a single channel or any combination of channels. The DAU stands alone and can be easily integrated into any back-office system.

Wayside Intelligence
Data Acquisition Unit

Data Acquisition Unit Application and Use Cases

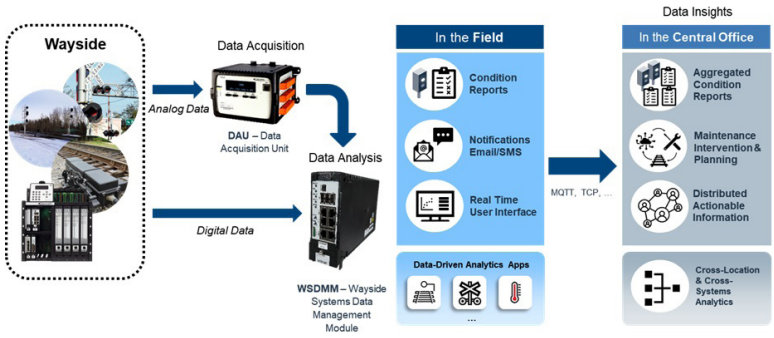
The DAU is KB Signaling's data acquisition solution for connected systems and analytics. It may be provisioned as a stand alone recording and reporting device, or as part of a scalable platform, from the simplest to the most complex system management and analytics solutions. The reported data and protocols are standards based, making it a universal solution. Where it is applied as a legacy overlay, it has the added benefit of identically emulating data format and content provided by more modern KB Signaling connected systems.

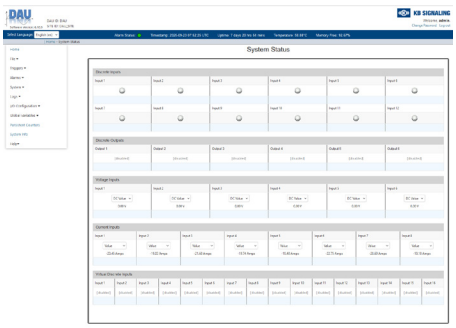
The DAU can be used to collect data with the precision and fidelity required for analytics of switch machines, track circuits, DC power systems, and highway grade crossings. It can monitor a wide combination of voltage, current, and contact closures.

When applied as a classic system management data acquisition device, the DAU supports remote monitoring, recording and reporting of critical wayside functions, autonomous threshold-based alerting for monitored inputs, and wayside equipment instrumentation.

Equipment Characteristics

I/O	8 analog current inputs (0-100V/±80V, DC) 6 analog voltage inputs(0-200V/±80V/±800V, DC or AC) 12 isolated discrete voltage inputs (0-150/200VDC) 6 general purpose outputs (500mA per output)
Sample rate	Up to 100ms resolution for input logging 1ms high-sample rate from streaming data
Storage	Internal Flash, capable of storing up to 1 million events Removable SD card (SD card not included)
Alerting	On triggering of an event or combination of events from multiple inputs or periodically
Connections	3 Ethernet 100Base-T (1 front , 1 top, and 1 bottom) 1 USB and 1 isolated asynchronous serial RS-232
Isolation	2kV in accordance with AREMA 2016, part 11.5.1
Battery input	9.5-30VDC power input, AREMA compliant Integral DC/DC converter for AREMA compliant isolation
EMI	FCC Part 15, Class A, AREMA 11.5.1, AREMA 11.5.2, EN-50121-4
Safety standards	CE, EN-50122-1
Standards compliance	AREMA communications and signaling, section 11.5.1, Class C, EN 50125-3
Temperature	-40 to 70ºC





DAU User Interface

Contact your KB Signaling Business Development Manager
Call 1-800-825-7090, or Email us at aso.techsupport-kb@alstomgroup.com for more information today

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