

DAWN Mini ADAQ

Overview

Have a question? Please see our [FAQ](#).

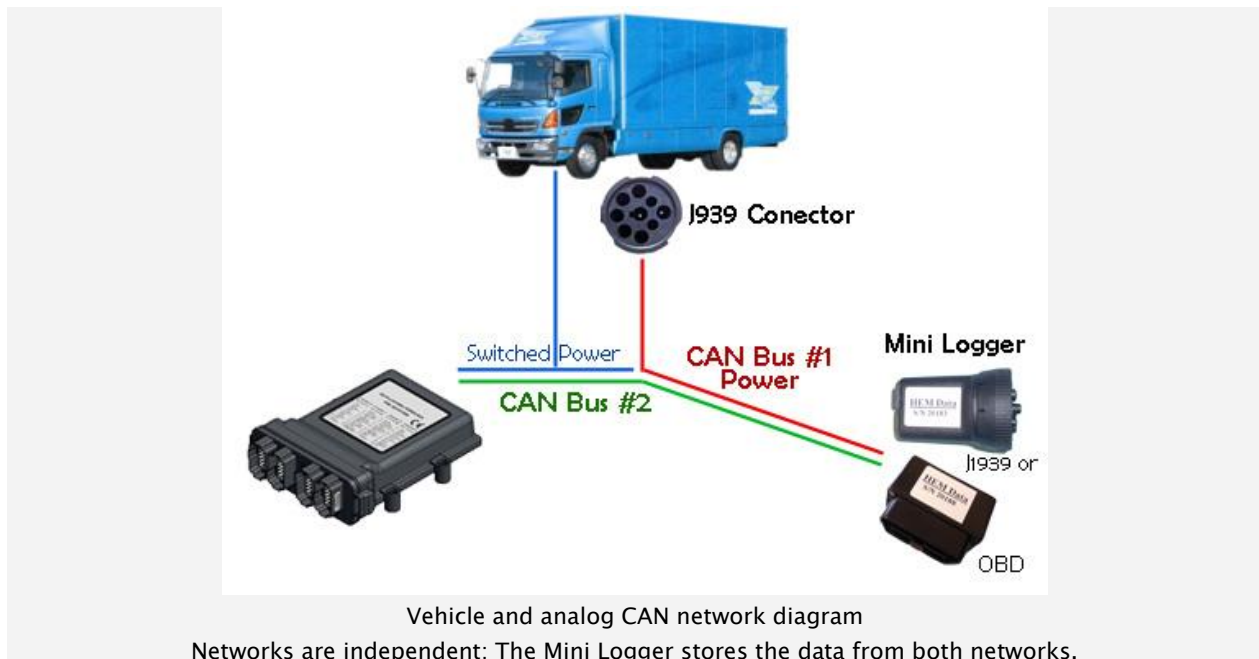
The DAWN Mini ADAQ™ measures a variety of input types including voltage, current, temperature, digital, frequency, PWM, and inclination. It outputs measured data to a CAN network.



The Mini ADAQ is used with either the OBD or J1939 Mini Logger to store the data or transfer data via cellular or WiFi to a website, PC or mobile application.

Data Acquisition System

The figure below shows a schematic of the DAWN Mini system to acquire both in-vehicle network and analog data. The system uses two CAN networks that are independent. One is the standard in-vehicle network acquiring heavy duty or light duty vehicle data. The other is an instrumentation network using the Mini ADAQ to acquire analog data. The vehicle network will not see the instrumentation network; only the Mini Logger will. It is not required to acquire in-vehicle network data to acquire analog data.



More than one Mini ADAQ can be used to acquire additional channels. Different models can be combined to meet the number of channels and type needed. Channels are software

programmable. This provides significant hardware expandability so that 3rd party sensors and measurement systems may be added or removed easily.

CAN transmit messages are individually configurable and all inputs, excluding internal inputs, are configurable and are associated with fault detection.

The Mini ADAQ has rugged construction meeting the IP67 specification. A voltage input is a high impedance input protected against shorts to GND or Vcc. Its small size means it is easy to install for in-vehicle testing and other field testing applications. The Mini ADAQ works well for a wide range of applications including performance, monitoring, R&D, and duty cycle measurements.

Models

The DAWN Mini ADAQ Analog-to-CAN Expansion Modules models include:

1. **Mini ADAQ 1400™ with 14 channels:**
 - 4 thermocouples – (Type J, K, T). Averaging options: none, moving, repeating
 - 7 analog (0–5V, 0–10V, 0–20mA, 4–20mA) – each channel is software programmable
 - 3 Universal (frequency, PWM, digital, thermistor, voltage, current)
2. **Mini ADAQ 1000™ with 10 analog channels**
 - (0–5V, 0–10V, 0–20mA, 4–20mA)
3. **Mini ADAQ TC4™ – 4 thermocouple channels**
 - (type B, E, J, K, N,R,S, or T)
4. **Mini ADAQ TC20™ – 20 thermocouple channels**
 - (type B, E, J, K, N,R,S, or T)
5. **Mini ADAQ INCLN™**
 - The inclinometer measures inclination angles in two directions.

In addition, the Mini ADAQ 1400 measures internally generated sensor excitation voltages (+5V ref), cold junction temperature values utilized in thermocouple voltage to °C conversion and power supply voltage.

The A/D is 12 bits for the 1000 and 1400 models. The sample rate is user-selectable between 0.1 to 200 samples/sec for each input (channel).

The TC models use a 24 bit A/D. The maximum sample rate per channel is 10 Hz. The thermocouple inputs and the two on-board cold junction temperature sensors are multiplexed to the ADC chip. It has a programmable filtering for either 50Hz or 60Hz. The ADC provides a minimum 100dB normal mode rejection of the line frequency and its harmonics. Temperature is measured in °C, with a 0.001°C resolution. When installed properly, the scanner will send temperatures with +/- 1°C accuracy typical at ambient temperature.

HEM Data Corporation

17320 Twelve Mile Road · Southfield, MI 48076

800.436.4330 · 248.559.5607