



Vehicle Testing and Performance

Reliable, Stand-Alone Data Acquisition for Vehicle Testing and Performance



Campbell Scientific's vehicle data-acquisition systems (VDASs) are used by manufacturers for design and engineering, and then for monitoring and tracking performance in manufactured vehicles that include not only cars but locomotives, airplanes, tractors, buses,

heavy trucks, drilling rigs, and motorcycles. Our systems are versatile, portable, and reliable. From scorching summers to frigid winters, wind tunnels to abusive test tracks, our data acquisition systems provide accurate, timely, and reliable data.

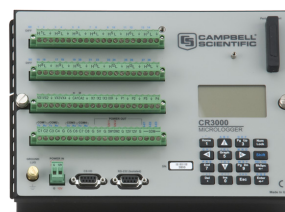
Custom Systems

Most of the systems we sell are customized. Tell us what you need and we'll help you configure a system that meets your exact needs.

Dataloggers

We offer a range of dataloggers, from the most basic system with just a few channels to expandable systems that measure hundreds of channels. Scan rates can be programmed from a few hours to 100,000 times per second, depending on the datalogger model.

Our dataloggers can store data transmitted from the vehicle's on-board computer via CANbus, allowing time-synchronized storage of vehicle computer data with the data acquisition system's independently measured data. The number and type of channels on most of our VDAS are expandable using multiplexers and other measurement peripherals.



CR3000

CR9000X



Sensors

Because our dataloggers are compatible with almost every commercially available sensor, you can use the sensors that best meet your application. Most sensors connect directly to the datalogger, eliminating costly external signal conditioning. Typical sensors

used with our systems include: thermocouples, pressure transducers, pulse pickups, flow transducers, potentiometers, strain gages, load cells, digital switches, accelerometers, LVDTs, GPS sensors, and tilt sensors.

Communications

The availability of multiple communications options for retrieving, storing, and displaying data also allows the VDAS to be customized to meet exact needs. Onsite communication options include direct connection to a laptop, CompactFlash cards, Wi-Fi, and field

displays. Telecommunication options include short-haul, telephone (land-line, voice-synthesized, and cellular), radio frequency, multidrop, and satellite.

More info: 435.227.9040

campbellsci.com/vehicle-testing

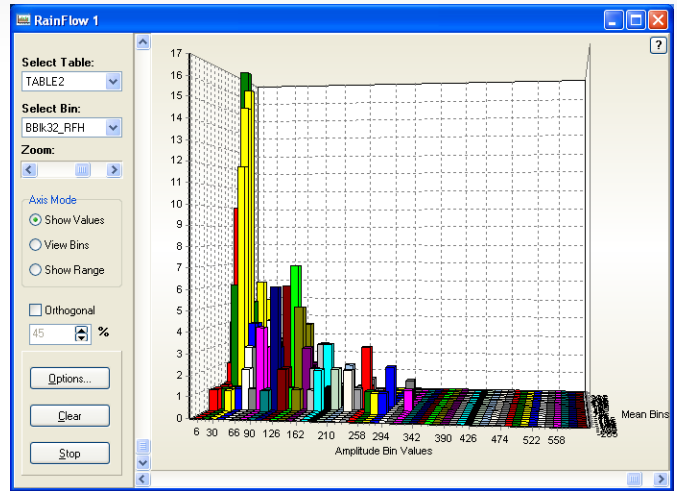


Software

Our PC-based support software simplifies the entire data acquisition process, from programming to data retrieval to data display and analysis. Robust error-checking ensures data integrity. We can even help you post your data to the Internet.

The VDAS often uses our RTDAQ software, which is targeted for high-speed data acquisition applications. This versatile software supports a variety of telecommunication options, manual data collection, and extensive data display. It also supports non-invasive field calibration of sensors—incorporating the appropriate multipliers and offsets into the datalogger program.

RTDAQ includes easy-to-use program generators, as well as full-featured program editors. RTDAQ is shipped, at no extra cost, with our CR9000X dataloggers. RTDAQ is also compatible with our CR1000, CR3000, CR800, and CR850 dataloggers, although the software is purchased separately.



Data displayed as rainflow histograms can be processed for extended periods of time, not just a limited number of cycles.

Testing Possibilities

Our VDASs have been instrumental in testing the following:

General Vehicle Testing

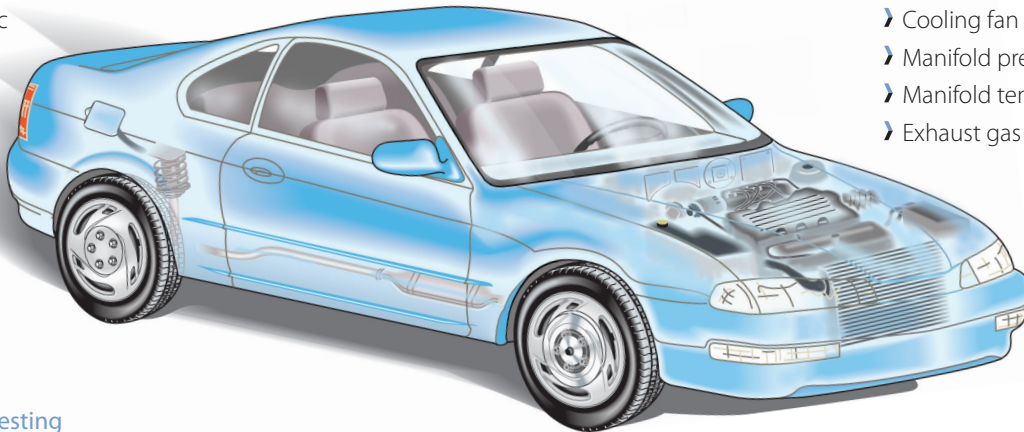
- › Chassis monitoring
- › Road noise
- › Vehicle speed
- › Steering
- › Air bag
- › Distance traveled
- › Humidity
- › Hot and cold soaks
- › Wind tunnel
- › Altitude
- › Geographic location

Climate Control Testing

- › Ambient air temperature
- › Supply air temperature
- › Solar radiation
- › Fan speed
- › Interior temperature
- › Time to comfort
- › AC on and off
- › Refrigerant pressures

Engine Monitoring

- › Oil pressure
- › Oil temperature
- › Water pressure
- › Water temperature
- › Fuel injector timing
- › Crank position
- › RPM
- › Noise level
- › Heat detection
- › Catalytic converter
- › Cooling fan speed
- › Manifold pressure
- › Manifold temperature
- › Exhaust gas temperature



Suspension Testing

- › Strut pressure
- › Spring force
- › Travel
- › Mounting point stress
- › Deflection

Fuel System Testing

- › Line pressure
- › Tank pressure
- › Temperature
- › Flow

Brake Testing

- › Line pressure
- › Pedal pressure/travel
- › ABS
- › Line/pad temperature