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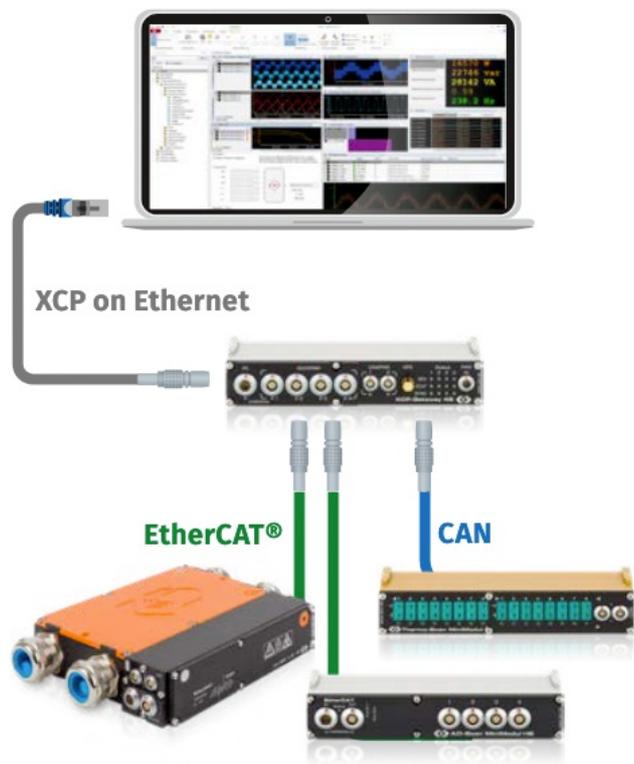
DATA ACQUISITION SYSTEM

Cloud-based electric vehicle development

Vector and CSM launched the E-Mobility measurement system for development of electric mobility applications. CSM also introduced the UniCAN 3 ETH data logger.

XCP-Gateways combine CAN and Ethercat measurement technology in high and low voltage applications (Source: CSM, Vector)

The modular hardware and software tool-box consists of measurement modules, interfaces, and software for data acquisition and synchronization of large data amounts. Measurement and logging of analog data, ECU (electronic control unit) data, and in-vehicle networks data are possible. Measurement setups can be configured from a few sensors up to hundreds of measurement points. The system offers a cloud-based data management with data mining.

The E-Mobility Basic measurement system allows essential measurement tasks in high-voltage and low-voltage environments. It consists of CSM measurement modules and HV Breakout modules. Measurement of current, voltage, temperature, torque, acceleration, strain, vibration, flow, moisture, pressure, speed, frequency, etc. is possible. The expandable system is interconnected via CAN and/or Ethercat using the XCP-Gateway(s). Application-specific configuration depends on the measured variables, required sampling rate, and application area. Software for data acquisition, visualization, real-time analysis, and management is included. The CSMconfig software is integrated for direct configuration of the measurement modules.

The basic system can be extended with Vector tools to record further measurement data. The measurement configuration can be transferred to the Vector VP loggers with a touch of a button. The Vector VN and VX network interfaces are used to acquire data from in-vehicle networks and ECUs. This data is synchronized with the analog measurement values acquired via CSM modules.

The CSM UniCAN 3 data logger and the recently introduced UniCAN 3 ETH data logger complement the Vector CSM E-Mobility measurement system with another data-logging option. The device is used for acquisition of signals via CAN (nine ports), Ethernet, and digital I/Os. It is suitable for fleet tests to record data from various sources and to transmit them remotely. Supported protocols include CAN-on-Ethernet, Autosar, XCP-on-Ethernet, etc. Data can be transmitted via the LTE mobile communication network and the logger configuration can be changed remotely. Furthermore, connections via WLAN or LAN as well as the exchange of the CF card (compact flash) are offered. Optional features such as CANsend, CAN stimulation, wake-on-CAN, or CAN FD allow for application-specific configuration. The CSMuniconf software allows to configure the logger project management for fleet tests and the automatic data processing into individual output formats.

UniCAN 3 ETH data logger can be used for fleet tests to record data from various sources and to transmit them remotely (Source: CSM, Vector)