STRAINSENSE
MAKING SENSE WITH SENSORS

@STRAINSENSE LIMITED

NEX[DAQ]: Automotive Applications

Call today
+44 (0)1908 305960

Email
sales@strainsense.co.uk

Website
strainsense.co.uk

Common Measurement Systems

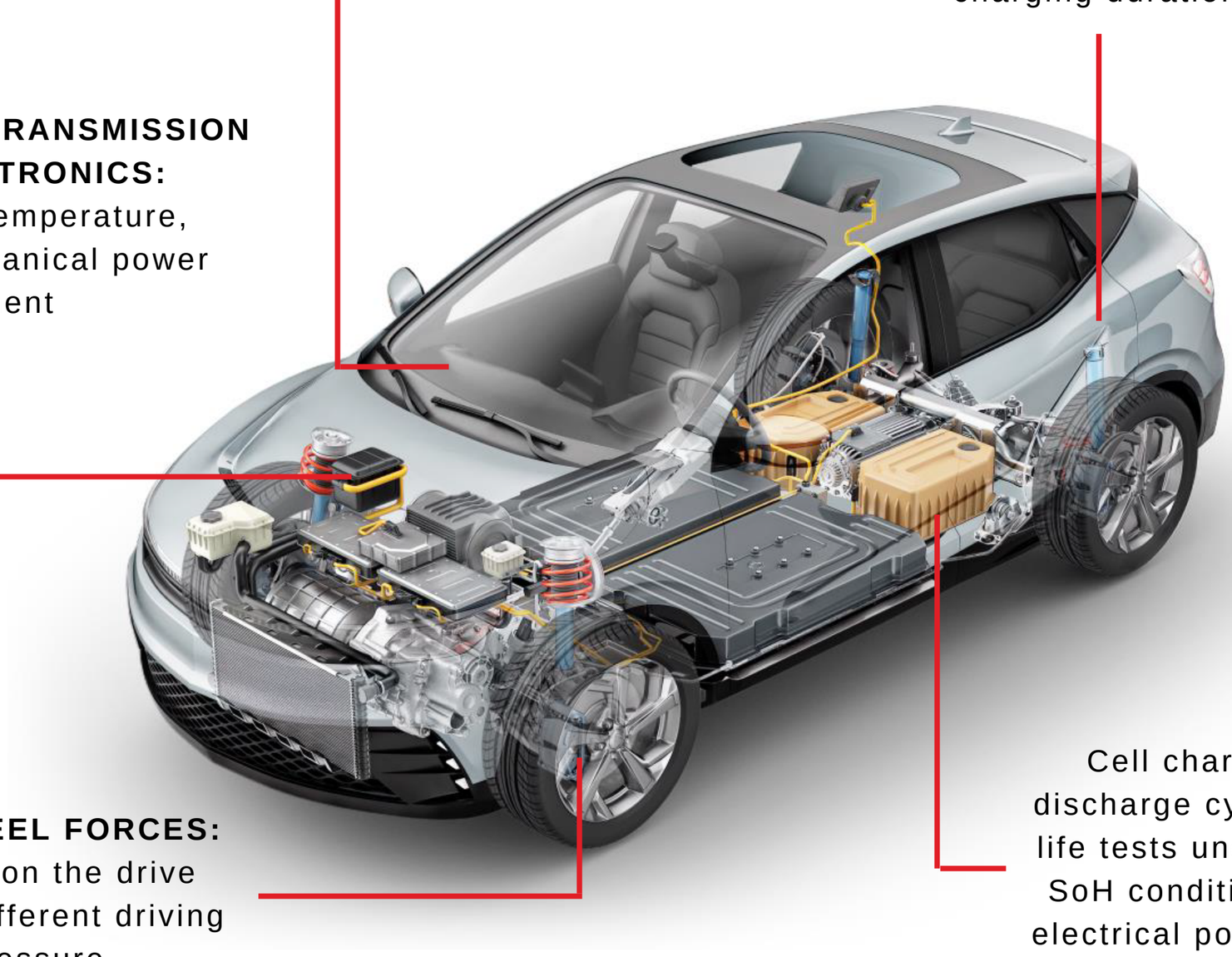
- often only support one or few dedicated sensor types
- do not provide enough or the right input channels
- are not made for harsh environments
- are difficult to supply in a vehicle
- are often bulky and heavy
- do not offer CAN-FD

How Can The NEX[DAQ] Help You?

DRIVE MODULE:
Electrical and mechanical power of the drive train of BEV and HEV, speed, rotation, acceleration, NVH

CONDUCTIVE & INDUCTIVE CHARGING:
Analysis of the charging process and charging infrastructure, efficiency, energy loss, power, charging efficiency, flow rate, electromagnetic compatibility (EMC) with charging stations (harmonics), load profile & charging duration.

ELECTRIC MOTOR, TRANSMISSION & POWER ELECTRONICS:
NVH, efficiency, temperature, electrical and mechanical power measurement



DRIVE TRAIN & WHEEL FORCES:
force measurement on the drive shafts (also during different driving situations), pressure

BATTERY:
Cell characterization, charge-discharge cycles, efficiency, losses, life tests under different conditions, SoH conditions, SoH, End-of-Line, electrical power, temperature, range test, powertrain, electrical components, etc.

NEX[DAQ] Applications

WLTP Tests:

The NEX[DAQ] together with a MSI2-V-600 and current clamps work is the ideal solution for driving range testing. Additional data sources like the vehicle CAN(-FD) bus and a GPS signal can be acquired for verification.

Driving Comfort Test:

A lot of effort is invested in the passengers driving comfort as they shall enjoy the ride and want to feel safe. The NEX[DAQ]s 8 input channels can be used for connecting i.e., 2 triaxial accelerometers for measuring the acceleration affecting the passengers and in addition 2 microphones to measure interior and exterior noise.

Component Testing:

The NEX[DAQ] can be used to monitor low voltage signals and for example the status of solenoid valves. Even Order Analysis is easy to accomplish when using the NEX[DAQ].

Thermal Management Test:

With our NEX[DAQ] and our XR modules, thermal management tests are an easy task.

Trouble Shooting:

The NEX[DAQ] is compact, robust and lightweight. It easily fits in every case and that makes it your ideal travel buddy. It simply is the must-have for every test and measurement engineer.

Simple NVH Test:

Microphones and accelerometers can be connected for air- and structure borne noise related tests. As the NEX[DAQ] is fanless it can be put close to the DUT to minimize the cable lengths.

NEX[DAQ] Is The Ideal DAQ System

> to identify the cause of problems - especially when you need several sensors like:

- Accelerometer
- Microphone
- Speed and angle sensors
- CAN or CAN-FD interface

> with multiple power supply options:

- Power-over-Ethernet oder USB-C
- or powered by the vehicle supply or a power bank

> for low-channel-count measurements with per channel

- sample rate capability up to 1 MS/s

Compact & portable
Multiple power supply options
IP67 rating
Fanless
-20°C to +70°C

2 interfaces for CAN-FD and XR-module connection

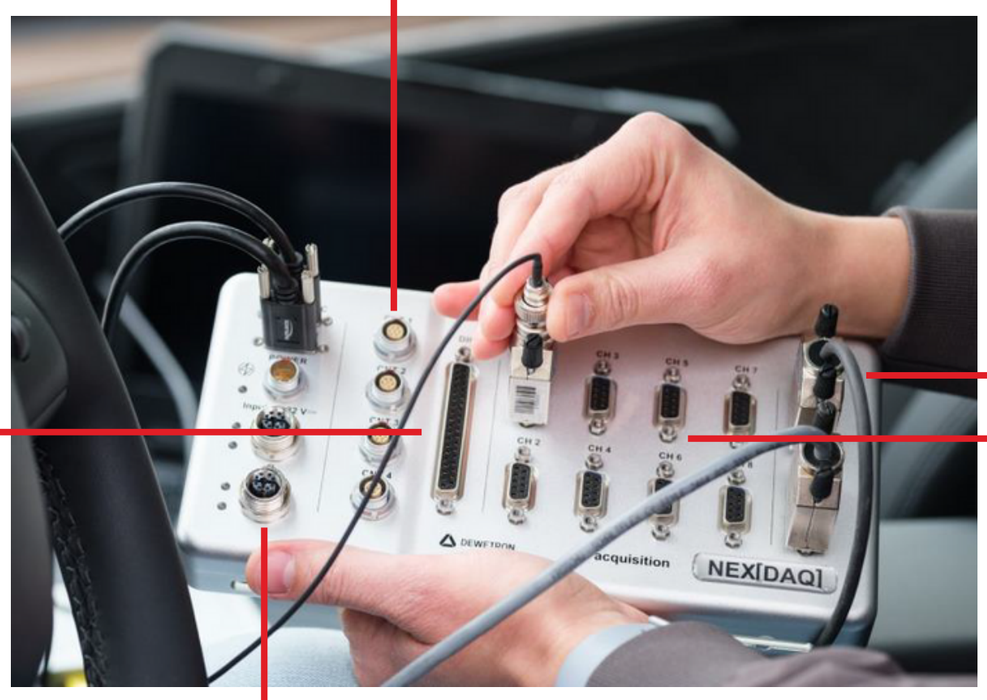
XR modules for low-speed channel expansion, e.g. for many temperature

4 ADVANCED COUNTER
(e.g. for encoder)

8 DI + 4 DO
8 COUNTER

SYNCHRONIZATION
via Ethernet, PTP, IEEE1588

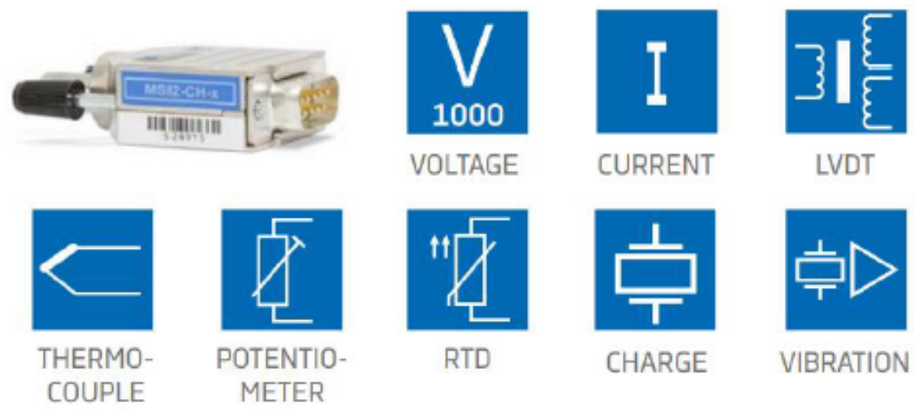
ETHERNET or USB-C
CONNECTION to PC
for data transfer



UNIVERSAL ANALOG INPUT CHANNELS
(native direct inputs + additional via MSI)

NATIVE INPUTS

ADDITIONAL INPUT SIGNALS: Every common analog sensor is supported with DEWETRON's MSI sensor adapters



NEX[DAQ] Features

Mounting Options:

You can fix the NEX[DAQ] in the measurement environment in several ways like with belt, DIN rail or screws.

Expandable:

Daisy chain multiple NEX[DAQ]s to a multi-channel-system. A single cable is sufficient for data transfer and synchronization via Ethernet PTP/IEEE1588

It already comes with OXYGEN:

OXYGEN is our intuitive & easy-to-use measurement software.

Standard Software Features:

> Analysis & post-processing

> Visualization

> Math & calculation

> Trigger features

> FFT analysis

> Export features

> Reporting

> ... many more features available!

OXYGEN runs without restrictions on Windows and Linux based operating systems. The Linux distributions Red Hat Enterprise Linux 8 (RHEL8) and Ubuntu are supported.