



RIDE AND HANDLING

DEWETRON systems offer a rugged and portable design for in-vehicle use and fulfill the requirements of a high channel count for vehicle dynamics.

The system covers a wide range of input types such as voltage, strain, temperature and also for GPS, Video, CAN and OBD II. In addition to the application of Ride and Handling testing, the systems are engineered to be expanded with additional hardware and software features.

YOUR BENEFITS

- > Synchronized multichannel data acquisition without phase errors
- > Guaranteed compatibility with the whole system
- > Compact & rugged equipment for in-vehicle use
- > Multisensor inputs (voltage, acceleration, strain, etc.)
- > Aliasing free sampling and flexible filtering capabilities
- > Real-time mathematics
- > Support for Kistler RoaDyn® measurement wheels
- > Export to different file formats

RIDE AND HANDLING SENSOR INSTALLATION

Depending on the measurement goal, many different sensors are required for different tests. With a DEWETRON Ride and Handling system you can use all established sensors available on the market.

The following table shows recommended sensor equipment for each test and the physical parameters of the primary measurement systems. Synchronous and aliasing-free acquisition of the physical channels is guaranteed and all mathematical processing for additional channels can be done online.

	MEASUREMENT WHEEL	WHEEL VECTOR SENSOR	MEASUREMENT STEERING WHEEL	HEIGHT LEVEL SENSOR	INERTIAL PLATFORM	GPS/DGPS	WHEEL TEMPERATURE	STRAIN GAUGE	BRAKE PRESSURE	BRAKE TEMPERATURE	SYNCHRONOUS DATA ACQUISITION
BRAKE TEST	○		○	○	○	●	○		●	●	●
ISO LANCE CHANGE TEST (ISO 3888-1)	○	○	●	●	●	●					●
VDA-EVASION TEST (ISO 3888-2)	○		●	●	●	●					●
STATIONARY CIRCLE TEST (DIN ISO 4138)	○	○	●	○	●	●					●
BRAKING FROM STATIONARY CIRCLE TEST (ISO 7975)	○	○	●	○	●	●	○		●	○	●
LOAD CHANGE FROM STATIONARY CIRCLE (ISO 9816)	○		●	●	●	●					●
FISHHOOK TEST (NCAP)	○		●	●	●						●
VEHICLE TRANSFER FUNCTION	○	●	●	●	●						●
RAOD LOAD DATA	●	○	●	●	●	○	●	●	●	●	●

○ = optional ● = standard

SYNCHRONOUS INPUT SIGNALS



- GPS POSITION
- VELOCITIES
- ACCELERATIONS AND ROTATIONAL RATES
- ROLL, PITCH, YAW
- CAN/FLEXRAY BUS DATA
- MEASUREMENT STEERING WHEEL
- OPTICAL VELOCITY SENSORS
- WHEEL VECTOR SENSOR
- DRIVING ROBOTS
- LIGHT BARRIER
- BRAKE FORCE
- PEDAL TRAVEL



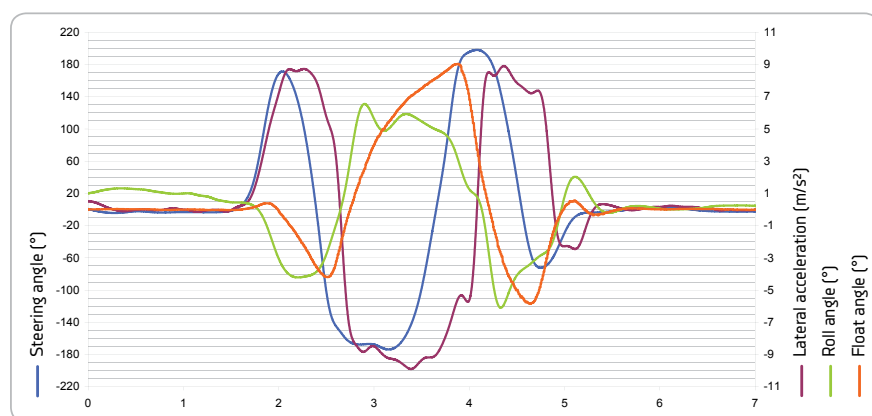
SENSOR DATABASE AND TEDS

A comprehensive list of sensors and all their parameters, including scaling, units and calibration date information is just a click away in the sensor database.

- > Linear scaling and offset
- > Non linear scaling
- > Polynomial scaling
- > Calibration table

If necessary it's possible to zero the sensor or even to renew the calibration parameters. This guarantees the reproducibility, traceability and quality of your measurement results.

To make the sensor setup even more automated, our signal conditioning modules support TEDS (Transducer Electronic Datasheet), which is the new „smart sensor interface“. It is a table of parameters (manufacturer ID, model number, serial number, version, and many more) that identifies the transducer.



RIDE AND HANDLING APPLICATION

Cars and trucks are designed on computers, and built by robots under computer control. But there is no substitute for testing the car with a human being, under a wide variety of road conditions and environments. That's where ride handling tests start. Most vehicle manufacturers have their own test track or proving grounds, where they can put their prototypes to the test. What everyday people consider „subjective criteria“ like how a car „feels“ under certain conditions must be precisely quantified and then tested over and over again within an optimization loop, on every vehicle.

DEWETRON measurement systems support standardized tests guarantying reproducible and comparable results which are important for a globalized comparison of test results. During the testing process, efficient setup time and simple system handling are key to efficient measurement. Our unique software and compact units with rugged construction make DEWETRON products popular for ride and handling, drivability, vehicle dynamics, and related applications.

TYPICAL TESTS FOR RIDE AND HANDLING

- > Stationary circle test (DIN ISO 4138)
- > ISO Lane Change Test (ISO 3888-1/2)
- > Braking from stationary circle test (ISO 7975)
- > VDA-evasion test according to ISO 3888-2
- > Load change from stationary circle test according to ISO 9816
- > Steering angle step and sinus test according to ISO 7401, 13674-1,-2 (with steering robot)
- > Fishhook Test (NCAP)
- > FMVSS-126 (Sine with Dwell)

MULTISENSOR INPUT

Each channel of a multisensor input supports different sensor types via MSI (Modular Smart Input) modules. These interfaces are automatically detected and configured by the software.

- > Thermocouple
- > PT100, PT1000, etc.
- > Voltage
- > Acceleration

CONFIGURATION EXAMPLES



	DEWE2-M4 (with Ride and Handling configuration)	DEWE2-M7s (with Ride and Handling configuration)	DEWE2-A13 (with Ride and Handling configuration)
Analog input channels	2 free slots for opt. TRION™ series modules	5 free slots for opt. TRION™ series modules	11 free slots for opt. TRION™ series modules
Digital channels	8 DIO and 2 CTR or 8 DI		
Channel expansion	Yes		
CAN interfaces	4		
Video	DEWE-CAM-GIGE-120 or USB		
Display	External MOB-DISP-x		17" (1920 x 1080)
Power supply	11 to 32 V _{DC} (max. 10 to 36 V _{DC}) isolated; incl. external AC power supply		100 to 240 V _{AC} (max. 90 to 264 V _{AC})
Dimensions (W x D x H)	318 x 253 x 108 mm 12.5 x 10 x 4.3 in.	258 x 230 x 177 mm 10.2 x 9.1 x 7 in.	450 x 246 x 303 mm 17.7 x 9.7 x 11.9 in.
Weight	Typ. 3.8 kg (8.6 lb)	Typ. 4.9 kg (10.8 lb)	Typ. 15.0 kg (33 lb)
TRION™ series modules are available for almost all kinds of sensors			

SENSORS & ACCESSORIES



CAM-SPLIT-BOX



DEWE-POWERBOX-11
Power distribution box



ADMA-G-PRO+