The New CL Series ● Automotive Measurement Steering Wheels

Maximum reliability and long-term stability - the new CL telemetry steering wheel series for passenger cars, trucks and busses

The second generation of CL1 and CL2 passenger car telemetry steering wheels was – like its predecessors – developed from a standard steering wheel. During vehicle dynamic tests the CL telemetry steering wheel with integrated sensors simply replaces the vehicle's standard steering wheel. Special flange adapters, which are already available and in use with many vehicles, allow fast and easy backlash-free mounting. Even active Electronic Stability Programs (ESP) are fully supported! Like the standard steering wheel the new CL series provides advanced integrated function keys: autozero for both steering angle and steering torque, shunt calibration and function lock, there are now 4 new switching functions available which can be triggered manually (Start/Stop triggers or event markers etc). The signals can be retrieved directly at the reproducer unit on electrically isolated connectors.

All new CL telemetry steering wheels now have as standard, an integrated inductive power supply providing continuous running wireless operation. The rechargeable battery, that was fitted in the earlier CL1 and CL2 model steering wheels, is no longer required (an upgrade option exists for these). The reproducer unit - with its moderate dimensions of 80 x 105 x 185 mm (H x W x D) - meets the latest application requirements of minimized electronic units. It integrates the RF amplifier for data communications, the entire analogue signal conditioning for simultaneous data output of all signals,
a high-visibility LED display, the power supply unit (input voltage range from 8-32 Vdc), and last but not least the power oscillator for the inductive power supply. The reproducer unit provides an optional CAN interface for integration with other data acquisition systems and PC’s for further data recording and analysis.

Introducing the CL3 and CL4 telemetry steering wheels, the long wait for high-precision truck and bus telemetry steering wheels is finally over. They are both based on a Mercedes-Benz standard truck steering wheel and provide the same standard features as the CL1 and CL2 for passenger cars: inductive power supply, autozero, and shunt calibration via the steering wheel keyboard, as well as an optional CAN interface. The truck telemetry steering wheels can measure steering torque, steering angle, and steering speed. The CL4 – like the CL2 – additionally measures the angular acceleration on the steering wheel annulus and vibrations in x, y, and z-axis on the end of the steering column.

NEW Measuring at predefined steering angle stops, even via CAN: the new steering angle limit controller CLW

A real highlight for vehicle dynamic test drives that require a well-defined steering angle, is the new electro-hydraulic steering angle limit controller CLW. For both left and right turns different stop angles can be set, respectively. They can be both activated together or individually. The stop angle information can be adjusted on the steering wheels’ reproducer unit, or optionally retrieved via the CAN bus. Once the adjusted steering angle has been reached, the controller hydraulically activates its locking. The lock protection is kept while keeping a push-button pressed, and unlocks after release. Above all, the measured steering torque can be used to over ride the stop after exceeding an unlock-torque. The new CLW controller is very slim: the "brake disk" only measures around 2 mm, and the brake caliper only measures approximately 40 mm. The latter being located outside the steering column.

The steering angle limit controller CLW can be run with all existing CAETEL CL1 to CL4 telemetry steering wheels as well as with the new steering wheel interlink module CLS. Using the CAN interface it can even run "stand-alone".

The new CL3 telemetry steering wheel for trucks exceeds its expectations...

The brand-new CLW controller for predefined steering angle measurements
NEW Measuring by retaining the original standard steering wheel: the new steering wheel interlink module CLS

Introducing the entirely newly developed steering wheel interlink module CLS, CAESAR fulfils the well-known demand of a standard measurement steering wheel that keeps its original standard features. The interlink module is fitted between the standard steering wheel and the standard steering column. Adapting onto the steering column the proven CL1 to CL4 adapters are used. Towards the standard steering wheel a customized flange is fitted. Compared to the standard, the entire height exceeds the original by only 65 mm – and that’s normally within the tolerance of currently used steering column height adjustments. Visually the module is barely noticeable. Additionally, it has been designed for both passenger cars and truck steering systems. Importantly the standard steering wheel features such as airbag and switches remain entirely unaffected!

The steering angle measurement ranges are 200° and 1200°, and 10 Nm and 100 Nm for steering torque (optionally 10 Nm and 200 Nm). The signals on the reproducer unit are output via two analogue channels for both steering angle and steering torque, respectively. Both signals are also available optionally via CAN and via a parallel digital output. Since the original buttons on the steering wheel are used for their proprietary use, autozero for both steering angle and steering torque is set via the reproducer unit. A combination between the steering wheel interlink module CLS and the steering angle stop controller CLW is equally possible as is using it together with the steering robot from ABD.

As your competent partner and leading supplier of premium telemetry systems, CAESAR DataSystems now offers a capable and full range of measurement modules to capture the physical steering parameters in virtually all vehicle types and for most existing measurement applications. Both the new CL Telemetry Steering Wheel Series and the State-of-the-Art Steering Wheel Controller modules CLW and CLS, qualifies CAESAR’s’ title of being the reference market leader in high-precision measurement steering wheels. We are happy to discuss your individual system requirements. Just contact us!