

Description

Electronic driver assistance systems are used increasingly often in motor vehicles to support the driver in different situations. Due to mounting tolerances, a calibration of these sensors is usually necessary. VisiCon offers a wide variety of calibration devices for all common driver assistance systems. These can be combined modularly with each other and with systems for headlight aiming and/or wheel alignment.



All systems are designed and manufactured according to the calibration specifications of the sensor manufacturer and our customer’s requirements. From concept development over mechanical, electrical and software design to manufacturing, installation and commissioning, VisiCon is your one-stop shop.

Benefits for our customers

- Broad experience in the calibration of all common driver assistance systems.
- Modular design of all calibration units.
- Can be flexibly combined, e. g. with headlight aiming and/or wheel alignment systems.

Technical Data

	Features, functions etc.
Centering	Via pneumatic roll pusher
Systems for calibration	E. g. ACC, NightVision, light carpet, lane departure warning, lane change assistant, adaptive headlight assistant, rearview camera, 360° camera, turning assistant, ...
Operation modes	Automatic (controlled by host, PLC), manual
Communication	With headlight: CAN Bus/LIN Bus With rig: PLC, digital I/O Profibus, ProfiNet
Connection to higher-level systems	e. g. via ASAM, SIEMENS ECOS, DSA, Cirrus, CASCADE, NAFS

Components

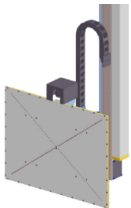


Centralizer: The centralizer is used to level and align the vehicle along the axis of symmetry. This defined and reproducible position of the vehicle is required for the correct measurement and adjustment of the driver assistance systems.



ACC (Adaptive Cruise Control): Depending on the type of ACC sensor, VisiCon offers different solutions for calibration, e. g.:

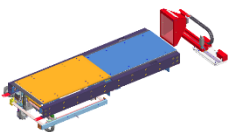
- **Calibration via reflector:** A reflector is positioned inside the radar lobe of the ACC antenna and reflects the radar waves back to the ACC sensor. By this, the deviation of the beam direction to the driving direction is determined and can be corrected accordingly.
- **Calibration via Light Collecting Box (LCB):** The LCB is equipped with a power LED which illuminates a mirror on the ACC antenna. The reflection is projected on the diffusing disc of our Light Collecting Box and our image processing software calculates the angular deviation from the target position. Depending on the ACC sensor, an internal correction of the angular deviation is done by the control unit or a manual/semi-automatic adjustment with an adjustment tool is carried out.



NightVision: The calibration is done with a calibration target equipped with heating wires. The infrared camera calculates the deviation of the pattern to the nominal position and readjusts itself.



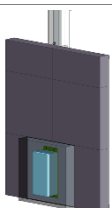
Gantry: For reproducible positioning of calibration components such as ACC and NightVision targets.



Light carpet: The light carpet illuminates the ground in the entry area of the vehicle. For an ideal illumination the light modules have to be calibrated accordingly. For this purpose, VisiCon has developed a special adjustment device: First, the light image is captured with the traversable projection boxes. With our in-house image processing software, the light image is then evaluated and the illumination unit is adjusted up to the target value by using an automatic adjustment tool.



Lane departure warning, adaptive headlight assistant, rearview camera, 360° camera: The function of these assistance systems is usually based on image processing. The used cameras have to be calibrated to determine the positions reliably. For this, calibration targets are used which are either moved into the visual range of the camera(s) or are permanently mounted (e. g. on the floor or behind the vehicle).



Lane change assistant, turning assistant: These assistant systems work radar-based. Doppler generators are positioned around the vehicle (fixed on the floor or traversable at a gantry). They simulate an approaching vehicle by frequency shifting and thus enable the calibration of the vehicle.