



ELECTRONICS
READY FOR
THE FUTURE

**WILL TECHNOLOGY EVER
HAVE FEELINGS?**

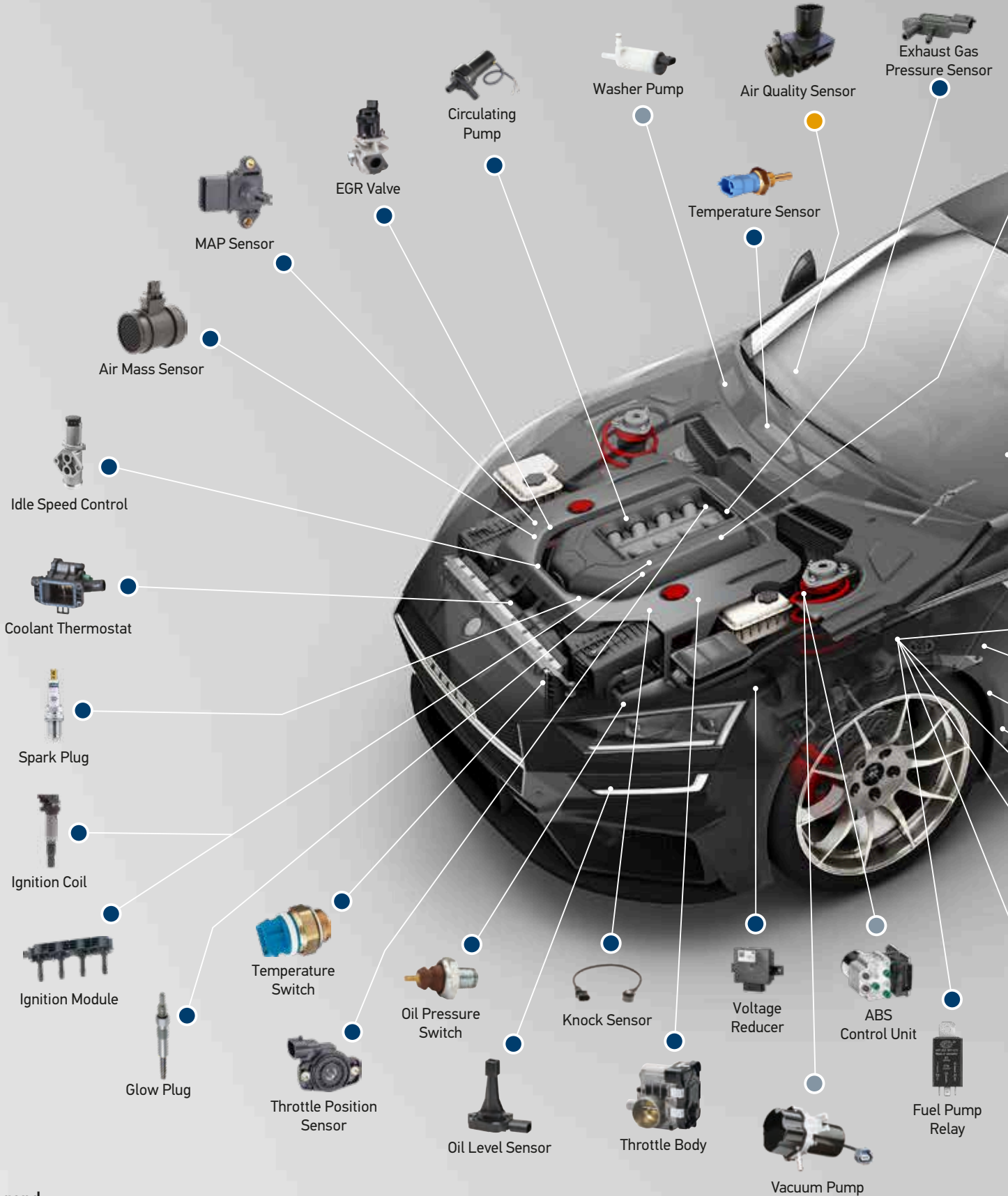
Scan the QR code and place your smartphone here.



PASSION FOR ELECTRONICS

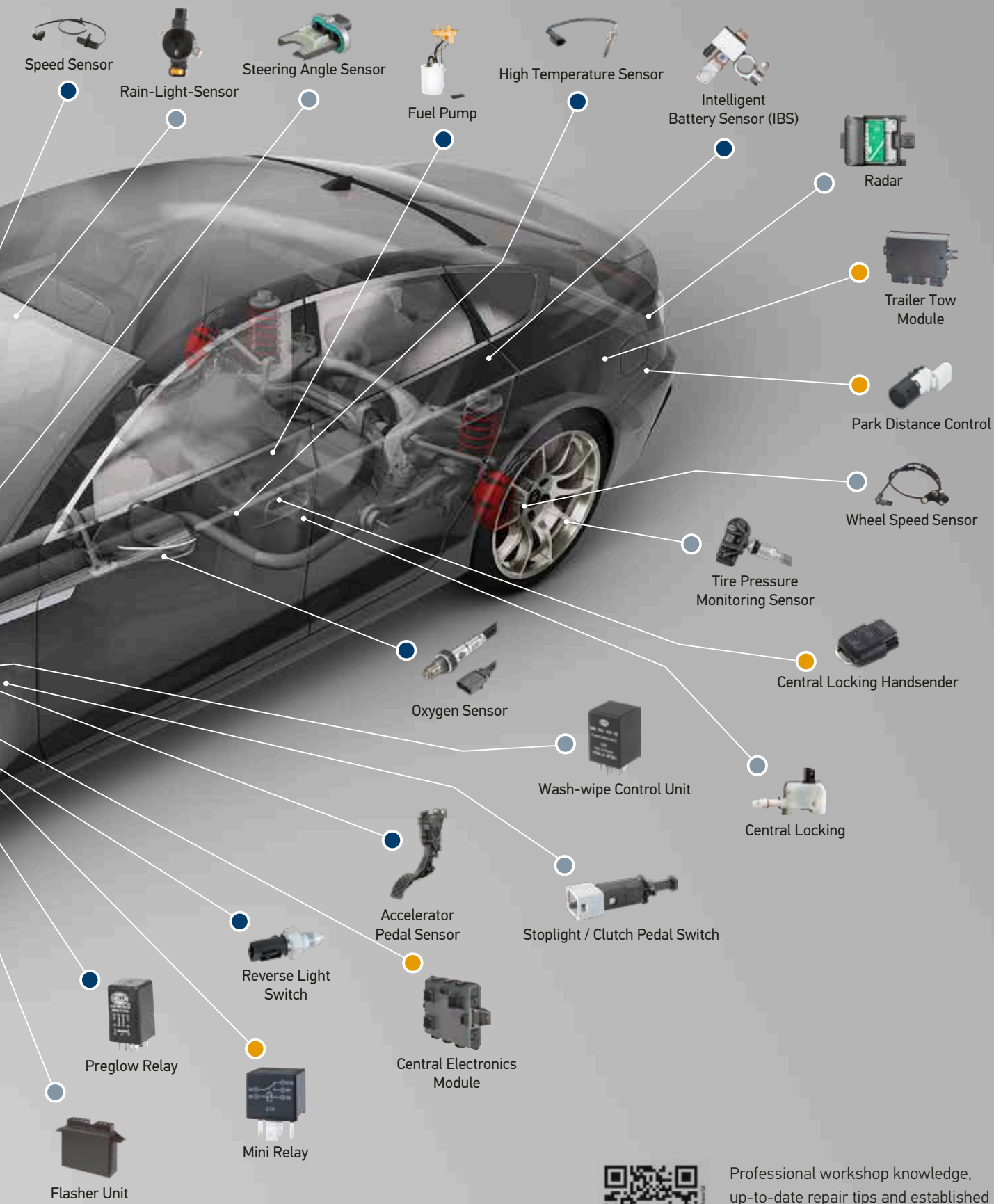
With HELLA and Hella Gutmann, OE expertise meets diagnostics.

- Independent workshops benefit from HELLA's original equipment expertise and comprehensive electronics portfolio.
- With professional workshop equipment and diagnostic tools from Hella Gutmann, all drive types and assistance systems can be serviced.
- Comprehensive repair know-how for workshops to get cars back on the road faster.



Legend:

- Emissions
- Safety
- Comfort



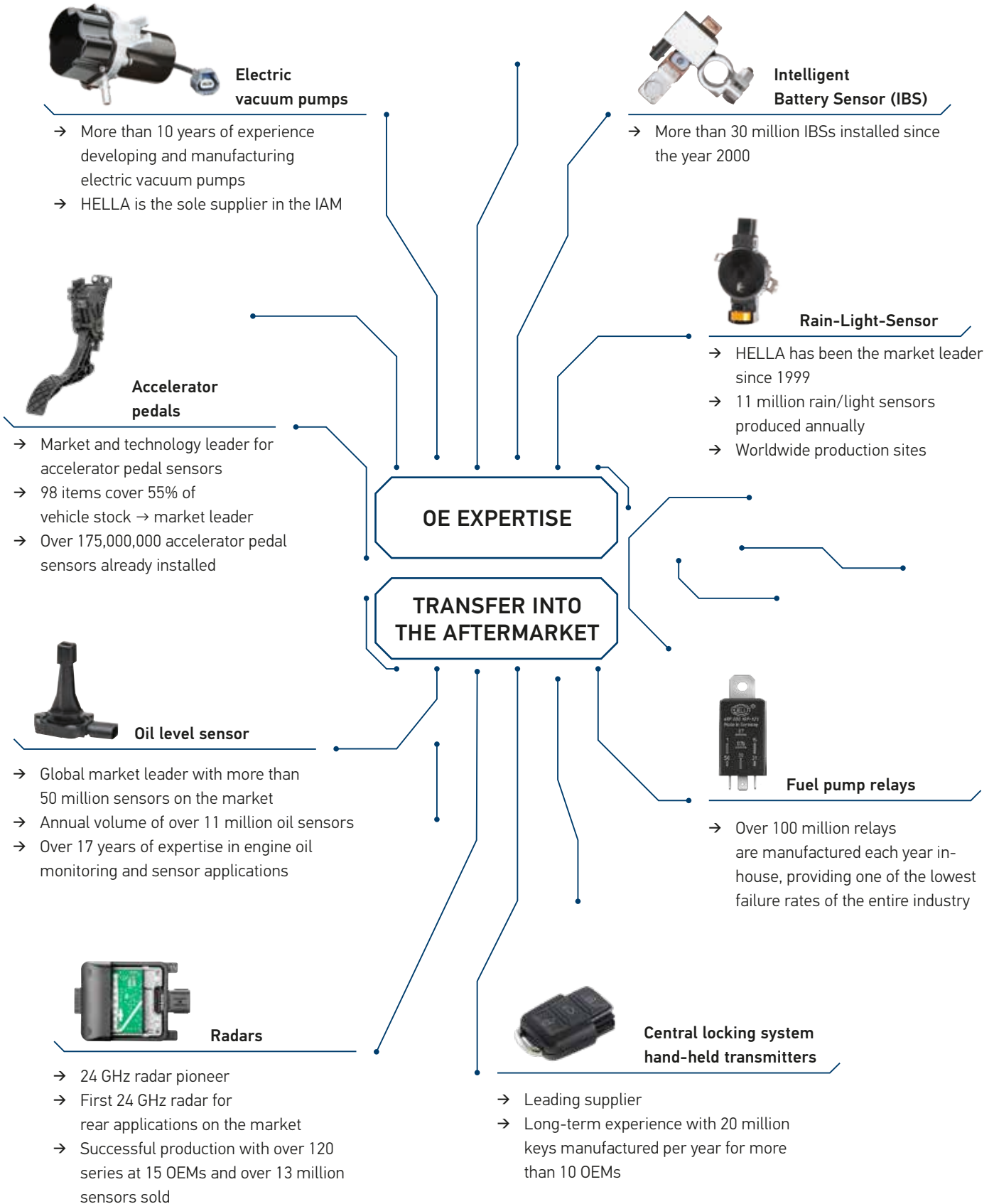
Professional workshop knowledge, up-to-date repair tips and established diagnostics know-how – in the HELLA TECH WORLD.

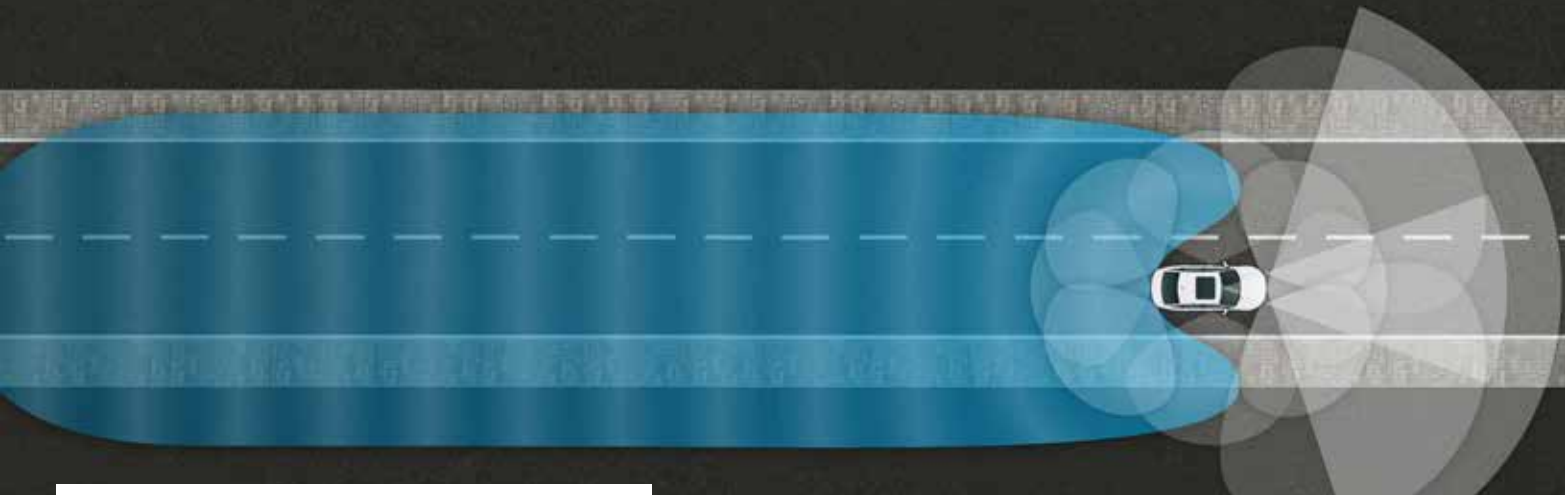
ELECTRONICS AND ELECTRICS FROM HELLA

WHY?

The independent aftermarket particularly benefits from our long-standing original equipment expertise, because HELLA, with its comprehensive and innovative electronics product range,

is one of the leading suppliers in this area. Countless automobile producers around the world place their trust in HELLA's quality products.





Scan the QR code and discover how HELLA is equipped for the future of electronics!



Radar sensors are used in various assistance systems to measure distance in driver assistance systems at the front and rear.

HELLA 24 GHZ RADAR SENSORS

HELLA has been manufacturing radar sensors in the 24 GHz narrow-band range for over a decade. Back in 2005, HELLA introduced the first generation of 24 GHz radar sensors. The sensor system is compatible with the standard functions of blind spot detection, lane change assistant and rear parking assistance, which have since become established.

The radar sensor records and evaluates speed, angle and distance information for objects up to 70 m behind the vehicle. The LFMSK (linear frequency modulation shift keying) method has been used in this application ever since the first generation of devices. When this method is applied, the distance and relative speed of multiple targets can be measured and determined with just one signal (chirp) whose frequency changes over time.

The third radar generation uses an advanced FM variant whose modulation bandwidth is limited to max. 200 MHz. The system operates at an average transmission power of 13 dBm (EIRP) in a frequency band between 24.05 and 24.25 GHz. The resulting spatial resolution of 0.75 m is suitable for the rear-vehicle functions implemented.

The monopulse method is used for determining angles. The system carries out a phase comparison of the radar reflections across the different receiving paths using specific signal-processing approaches.

The fourth generation of radar sensors integrates an additional safety function – the exit assistant. This allows dangerous

situations (e.g. passing vehicles) to be detected at an early stage before exiting the vehicle and warns vehicle occupants.

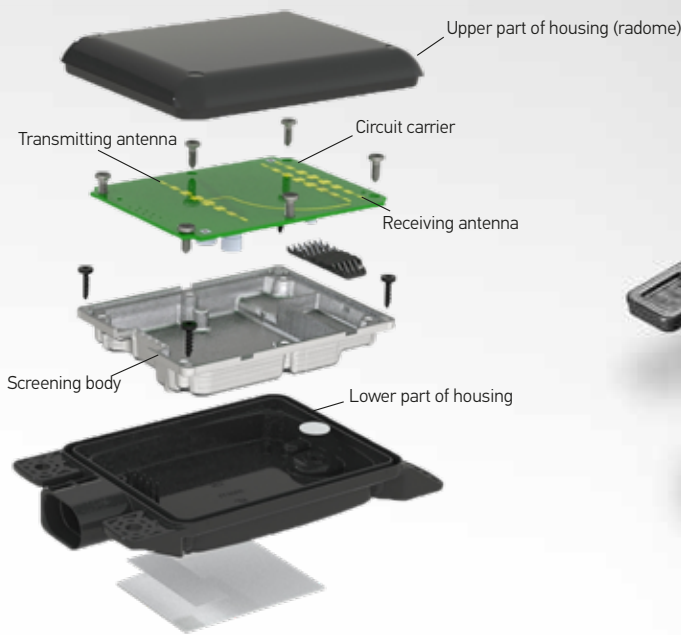


When do radar sensors have to be changed?

- After mechanical damage, e.g. an accident.
- If the driver assistance systems fail due to internal short circuits, contact faults in the connections, a missing supply voltage or a missing earth connection.

The relevant cause of failure must also be eliminated.

STRUCTURE OF THE RADAR SENSOR



AREAS OF APPLICATION

Depending on the sensor generation, the following applications can be integrated:

Blind Spot Monitoring

This function monitors the area in the driver's blind spot and warns the driver of dangerous situations when changing lanes. The sensor works at close range.



Rear pre-crash system

The rear pre-crash system tracks vehicles approaching from behind and, in the event of an imminent collision, pre-activates safety devices such as airbags, seat belts etc.



Lane change assistant

The lane change assistant makes driving safer by warning the driver if a lane change might be unsafe. A warning distance of 70 m gives the driver enough time to stop the lane change. This function ensures maximum safety when driving on highways/motorways.



Rear cross traffic alert

The rear cross traffic alert warns the driver of approaching vehicles when manoeuvring out of a parking space. The function is activated by selecting reverse gear and is based on the radar sensor's side detection capability.



Vehicle exit assistant

The vehicle exit assistant monitors the area to the right and left of the vehicle doors; on both the front passenger side and the driver side at the front and rear. The function warns the vehicle occupants if the car door cannot be opened safely.



THE WHOLE WORLD OF ELECTRONICS



OE EXPERTISE FROM HELLA COMBINED
WITH DIAGNOSTICS KNOW-HOW FROM
HELLA GUTMANN - FOR ALL-ROUND FAST
AND PROFITABLE WORKSHOP SOLUTIONS.

