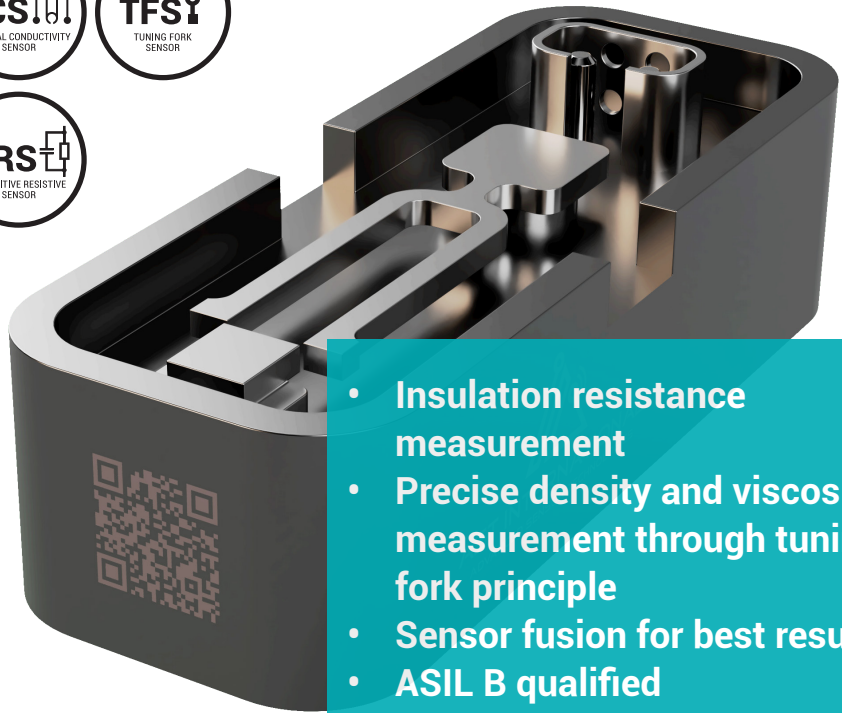
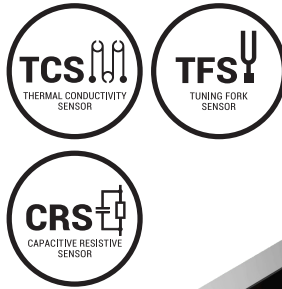


# BATTERY COOLANT FLUID Sensor

## for direct cooling (cell immersion) of BEV batteries

Property monitoring of the fluid used for **direct cooling of EV batteries** (direct immersion) is an essential task for the safe operation of the vehicle. Especially the **insulation resistance** of the fluid is a critical parameter but also the information about the **degrading of other parameters** will help to define the **optimum time for maintenance**. AST's BCF-Sensor is able to determine the **insulation resistance**, the **relative dielectric constant**, the **density** and the **viscosity** of the fluid. This **multi dimensional approach** gives an **outstanding prediction performance for maintenance need**. The sensor is qualified according ASIL B.



- Insulation resistance measurement
- Precise density and viscosity measurement through tuning fork principle
- Sensor fusion for best results
- ASIL B qualified

The measurement of the density is carried out with the **tuning fork principle**. The measurement of frequency and damping allows the exact determination of **density and viscosity**.



An alternative embodiment of the sensor (shown in the picture above) allows the the measurement of the **thermal conductivity** of the cooling liquid.

### Technical data:

Measuring range insulation	0 to 100 $\mu\text{S}/\text{cm}$
Measuring accuracy insulation	$\pm 1 \mu\text{S}/\text{cm}$
Measuring range epsilon r	0 - 100
Measuring accuracy epsilon r	$\pm 1$
Measuring range density	100 – 3000 $\text{kg}/\text{m}^3$
Measuring accuracy density	$\pm 30 \text{ kg}/\text{m}^3$
Measuring range viscosity	0.3 – 200 $\text{mPa}\cdot\text{s}$
Measuring accuracy viscosity	$\pm 0.1 \text{ mPa}\cdot\text{s}$
Interface	CAN/LIN

AST International is a leading provider of **customized sensors and controls** for automotive, domestic appliance, and industrial applications. Our products stand out on account of their **cutting-edge sensor technology**, best quality and reliability.



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