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Press Releases PREH CURRENT SENSOR SETS A NEW STANDARD FOR ACCURACY

New current sensor with an extended range and lifespan from Preh E-Mobility

NOVI, Mich. – Preh's E-Mobility division has developed a new high-precision current sensor. This is offered separately, as well as part of an integrated battery control unit (BCU). Preh has also produced an innovative BCU for current 48-volt systems.

The high-precision current sensor was designed for passenger car applications with up to 400-volt systems and continuous currents of up to 500 amps. Commercial vehicle applications feature sensor performance values of 800V/500A. This ASIL C standard-designed sensor system reaches 0.1 percent initial calibration, with an accuracy of 0.35 percent, even after 10 years. Thus the Preh sensor measures more accurately than previous systems by a factor of four.

Preh Division Manager Michael Bischoff said, "This compact sensor with a controller area network (CAN) connection was conceived so that its measuring accuracy allows for a more precise calculation of range and battery cell life. Measuring and testing technology for the Preh current sensor was developed in cooperation with the Preh IMA Automation division. Our customers obtain a complete solution at their disposal, because all this know-how is bundled together by Preh."

Preh is already the series supplier for the battery management ECU in the BMW i3 and i8, as well as for various ActiveHybrid models. In a further stage of development, the high-precision current sensor has been integrated with a battery management controller, as well a charging resistor and pre-charging and high-voltage relays in a BCU. The BCU is designed to the highest safety standards, ensuring an all-pole disconnection of the lithium-ion battery from the vehicle. This separation is implemented by a relay in the positive and negative path. It also provides a pre-charging circuit, which avoids damage when closing the relay. The Preh BCU is designed for battery voltages up to 400 volts, with maximum continuous currents of 350 amps and peak currents of up to 500 amps.

Bischoff added, "With the current sensor and BCU, we have extended our previous range for battery management that has been proven in the series. For this, we are working intensively into the future area of 48-volts. Because of our comprehensive advanced engineering in this field, we were recently contracted by a global automobile manufacturer for series development of a low-voltage BCU."