

Percept Current Sensors >

Addressing the need for highly accurate busbar current sensing in automotive and industrial applications, Percept Current Sensors employ a coreless differential Hall-Effect design and proprietary electronics packaging to significantly reduce sensor size and weight, simplify installation, suppress stray magnetic fields, and ensure low sensitivity and offset errors.

ADVANTAGES AND FEATURES

Saves space with miniaturized package size

The miniaturized, low-mass, vertically inserted busbar-mounted current sensor is up to 86% lighter and half the size of competing products while facilitating automated production processes.

Optimizes system accuracy

The current sensor offers accuracy of $\pm 2\%$ over the temperature range and product lifetime with high linearity and very low sensitivity errors and offset errors.

Provides superior immunity to electromagnetic interference

The differential Hall-effect design enables use in dense applications by suppressing noise from stray magnetic fields that are common in electric vehicle and motor drive applications.

Sensor Type	Coreless differential Hall-effect current sensor
Current Range	± 450.0 to $\pm 1,600.0A$
Supply Range	4.5 to 5.5V
Output Modes	Full differential; single ended
Sensing	Bidirectional
Operating Temperatures	-40 to $+125^{\circ}C$ (AEC-Q100 Grade 1)

Simplifies system integration

The current sensor is calibrated in the busbar at the Molex end-of-line test stage, improving accuracy and reliability while simplifying its integration into the final application.

Improves design flexibility

The sensor-in-busbar design is independent of busbar width and thickness, while a DuraClik connector is used to streamline system integration.

Offers a versatile range of capabilities

Current sensors are available in industrial-grade and automotive-grade options; full-differential and single-ended output modes; and with bidirectional sensing.



Percept Current Sensor in Busbar,
450.0 to 800.0A



Percept Current Sensor, Optional
Sensor-Only Packaging



Percept Current Sensor in Busbar,
900.0 to 1,600.0A

Percept Current Sensors

MARKETS AND APPLICATIONS

Automotive

Automotive electrical main drives
Automotive powertrains
Auxiliary drives
Battery main switches
High-voltage traction inverters
Motor and load control systems
Overload and over-current detection systems

Industrial

Electrical drives
Battery-management equipment
Industrial inverters
Power distribution and charging systems
Power supplies

Electrical and Power

AC and DC power-monitoring devices
Current-monitoring equipment



High-Voltage Traction Inverters



*Power Distribution
and Charging Systems*



Current Monitoring Equipment

SPECIFICATIONS

Reference Information

Packaging: Tray
RoHS: Yes
Halogen Free: Yes

Electrical

Supply Voltage: 4.5 to 5.5V
Current: +/-450.0 to +/-1,600.0A
Insulation Voltage (max.): 5,000V AC RMS
Output Modes: Full differential, single ended
(semi-differential available as custom solution)
Sensing: Bidirectional
(unidirectional available as custom solution)
Sensitivity:
Single Ended: 1.125 to 4.0 mV/A
Full Differential: 2.25 to 8.0 mV/A

Mechanical

Length: 32.06mm
Width: 8.55mm
Height: 21.77mm
Clearance: 12.00mm
Structure Type: Vertically inserted
Connector: DuraClick, 6-circuit type

Physical

Housing: SPS HB
Busbar Material: Copper
Busbar Surface Plating: Tin
Operating Temperatures: -40 to +125°C
(AEC-Q100 Grade 1)

www.molex.com