LEM

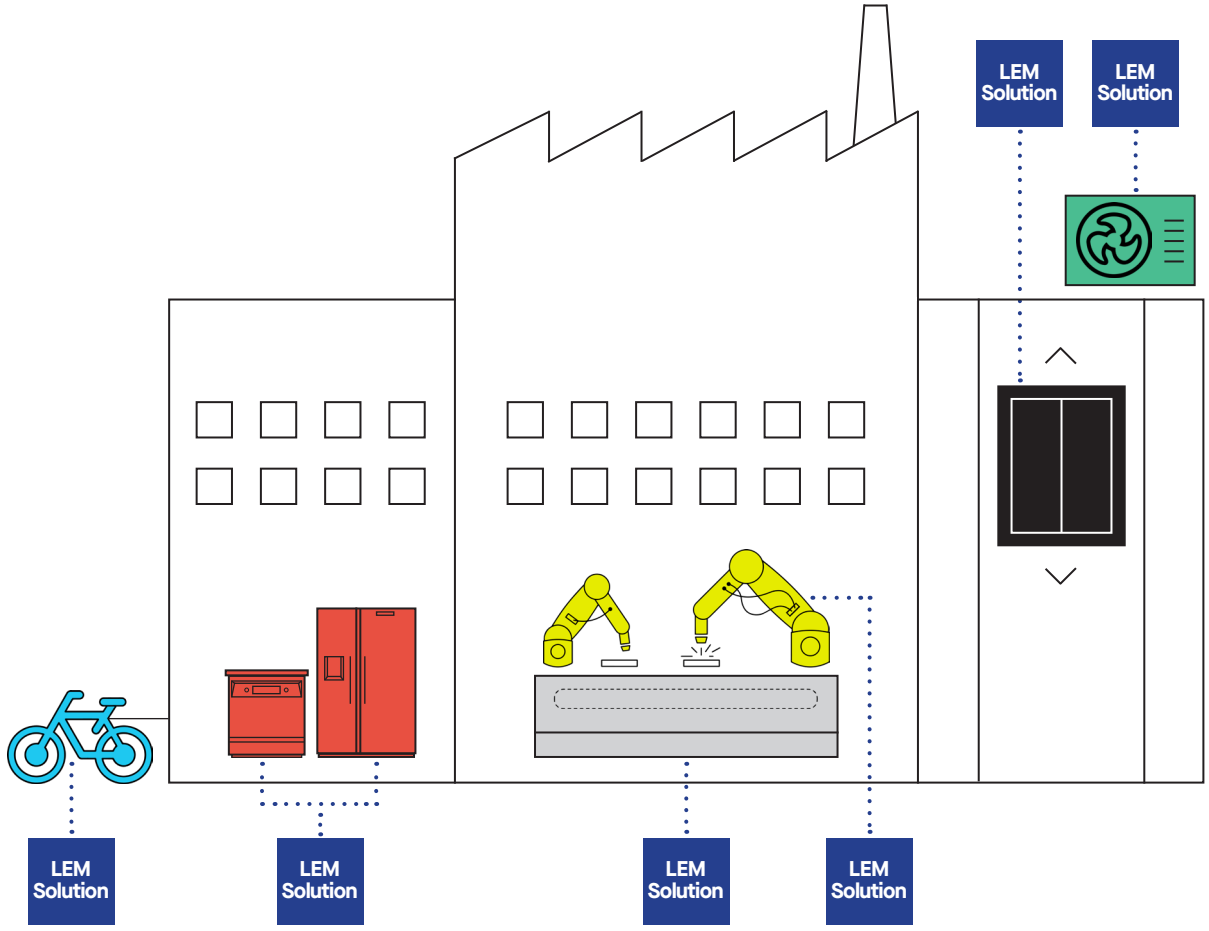
Life Energy Motion

INDUSTRIAL SOLUTIONS

Electrical Measurment Solutions for Industrial Applications

Industrial Solutions

Industrial current sensors are essential components in automated systems and industrial processes enhancing efficiency, accuracy, and safety across a wide range of industries. The choice of sensor depends on the specific application requirements, including the type of measurement, environment, and desired accuracy. By ensuring the safe and efficient operation of electrical equipment, LEM's current sensors offer improved performance, reduced downtime, and enhanced safety across various industrial applications.



BA Systems:

Building automation systems are centralized, interconnected networks that control and monitor a building's electrical and mechanical systems.

HVAC Systems:

HVAC systems are critical for maintaining air quality and energy efficiency in residential, commercial, and industrial buildings.

Robotics:

Industrial robotics involves the use of robots in manufacturing and other industrial environments to automate repetitive, hazardous, or precision tasks.

Drives:

Industrial motor control is crucial for the operation of machinery and equipment in various sectors such as manufacturing, transportation, and energy.

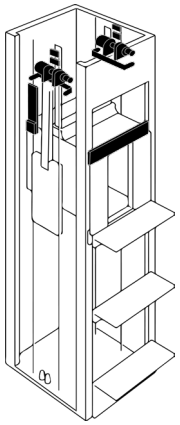
Personal Mobility:

Personal mobility solutions, such as electric scooters, wheelchairs, bicycles, are utilized for their convenience, eco-friendliness, and efficiency.

White Goods:

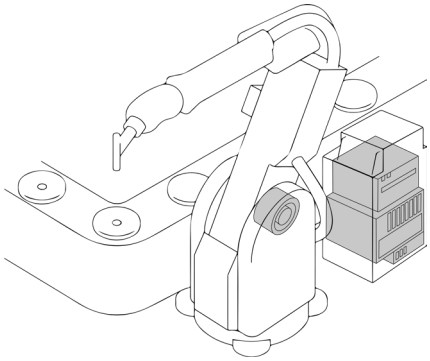
White goods refer to large household appliances, typically white in color, such as refrigerators, washing machines, dishwashers, and ovens.

Building Automation



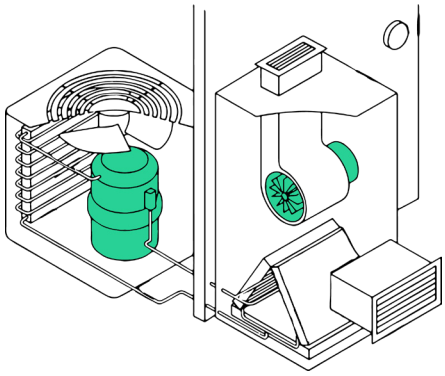
Current sensors play a vital role in building automation systems by monitoring and managing electrical loads, ensuring energy efficiency, safety, and system reliability. These sensors measure the flow of electrical current in various circuits and provide real-time data that is utilized for controlling lighting, security systems, and other building infrastructure.

Drives



Current sensors in industrial motor control systems are crucial for monitoring and managing the performance of motors. Integrating current sensors into these systems is essential for achieving efficient, safe, and reliable operation, contributing to improved performance, reduced energy costs, and enhanced safety in industrial environments.

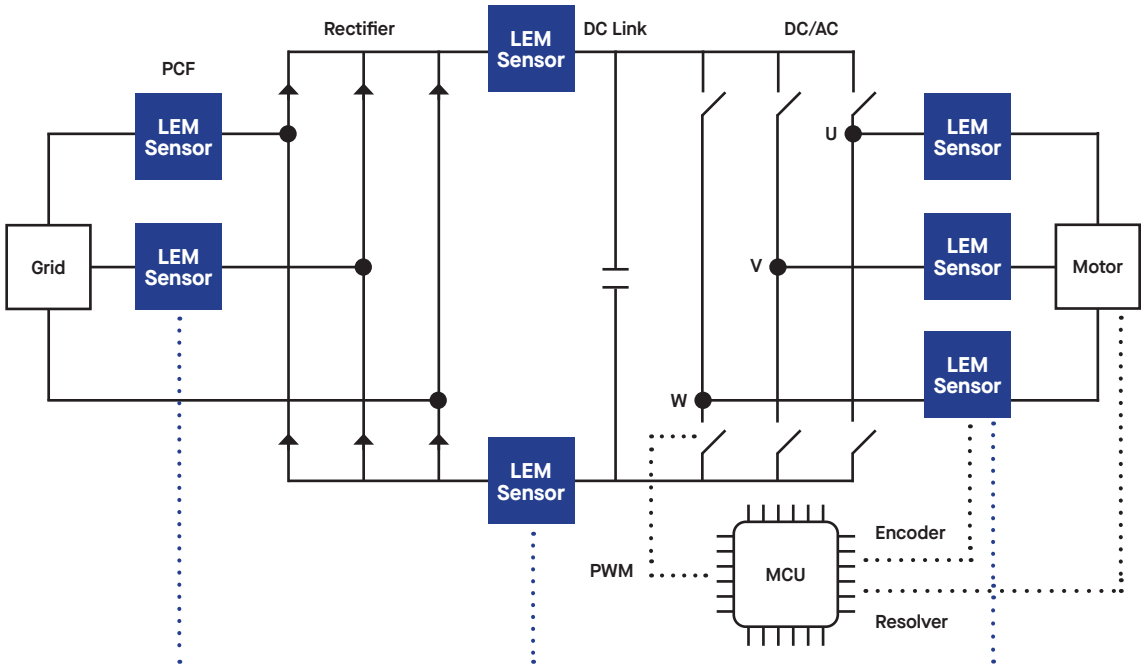
HVAC Systems



In HVAC (Heating, Ventilation, and Air Conditioning) systems, current sensors play a crucial role in monitoring and controlling electrical loads. These ensure efficient, reliable, and safe operation, contributing to the overall performance and sustainability of building management systems.

	 GO SME	 GO SMS	 HMSR SMS	 HMSR-DA	 LESR/LKSR	 CASR/CKSR	 LAH
Bandwidth	300kHz	300kHz	300kHz	300kHz	300kHz	300kHz	100kHz - 200kHz
Consumption	20mA	20mA	20mA	24mA	20.5mA	15mA	10mA - 19mA
Current Range Max	25A - 37.5A	10A - 75A	15A - 75A	10A - 75A	20A-150A	20A - 180A	55A - 200A
Supply Voltage	3.3V - 5V	3.3V - 5V	3.3V - 5V	3.3V - 5V	5V	5V	12V - 15V
Mounting	SMD SOIC 8	SMD SOIC 16	SMD SOIC 16	SMD SOIC 16	PCB	PCB	PCB
Output	Analog	Analog	Analog	Digital	Voltage	Voltage	Current
Overall Accuracy	1.3% - 3%	1.3% - 3%	1% - 3%	1% - 3%	0.5% - 0.7%	0.8% - 1%	0.3% - 0.41%
Response Time	2µs	2µs	2µs	2µs	0.4µs	0.3µs	0.5µs
Technology	ICS	ICS	ICS	ICS	Closed Loop Hall Effect	Closed Loop Fluxgate	Closed Loop Hall Effect

Electrical Layout



PFC Sensors:
Required for heat-pumps, optional for most GP drives.

DC Link Sensors:
Optional; utilized to detect short circuits and isolation faults.

Phase Current Sensors:
Essential to motor control algorithm, sensing fast ripple current over large voltage changes.

GP drives utilize three analogue sensors while servo and robotics utilize two digital sensors for low noise and high accuracy.

ICS will replace O/L and shunt + isolators for I<100A.

LA 150-P

150kHz
10mA
212A
12V - 15V
PCB
Current
0.5%
0.5µs
Closed Loop Hall Effect

HOB

1000kHz
22mA - 24mA
125A - 250A
3.3V - 5V
PCB
Voltage
1.2% - 1.45%
0.2µs
Open Loop Hall Effect

HLSR

90kHz - 450kHz
19mA
25A - 300A
3.3V - 5V
PCB
Voltage
1%
2.5µs
Open Loop Hall Effect

HO-NP

250kHz - 350kHz
25mA
20A - 375A
5V
PCB
Voltage
1% - 1.15%
2.5µs
Open Loop Hall Effect

LWSR

200kHz
18mA
380A
4.75V - 5.25V
PCB
Voltage
0.83%
2µs
Closed Loop Hall Effect

LZSR

200kHz
18mA
270A - 450A
4.75V - 5.25V
PCB
Voltage
0.68% - 0.83%
-
Closed Loop Hall Effect

HO-P

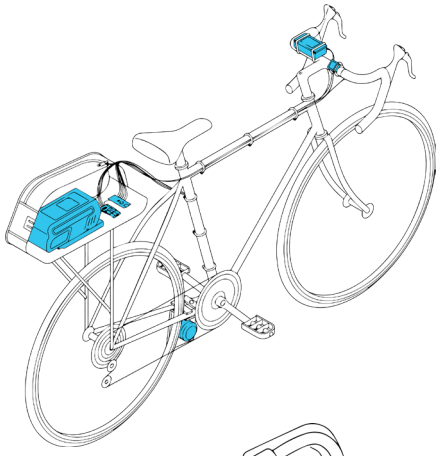
100kHz - 250kHz
25mA
15A - 625A
5V
PCB
Voltage
1% - 1.35%
3.5µs
Open Loop Hall Effect

HO-S

100kHz
25mA
125A - 625A
5V
Panel
Voltage
1% - 1.25%
3.5µs
Open Loop Hall Effect

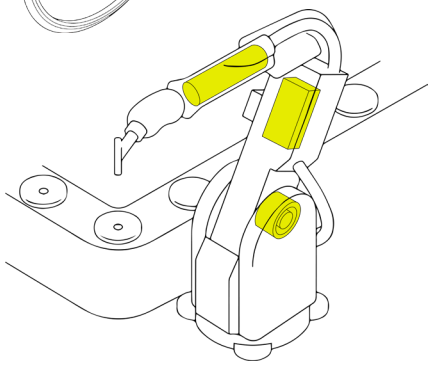
Personal Mobility

In personal mobility devices, such as electric scooters, e-bikes, wheelchairs, and other compact electric vehicles, current sensors monitor the flow of electrical current in various circuits, providing critical feedback for motor control, battery management, and overall system performance.



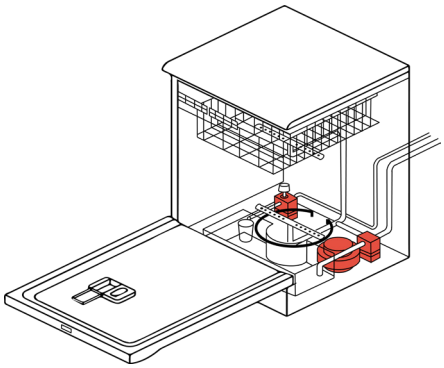
Robotics

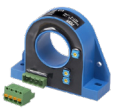
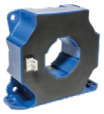
Current sensors in robotics are crucial for monitoring and controlling electrical currents in various components, such as motors, actuators, and power systems. These sensors provide feedback enhancing the performance and reliability of robotic systems.



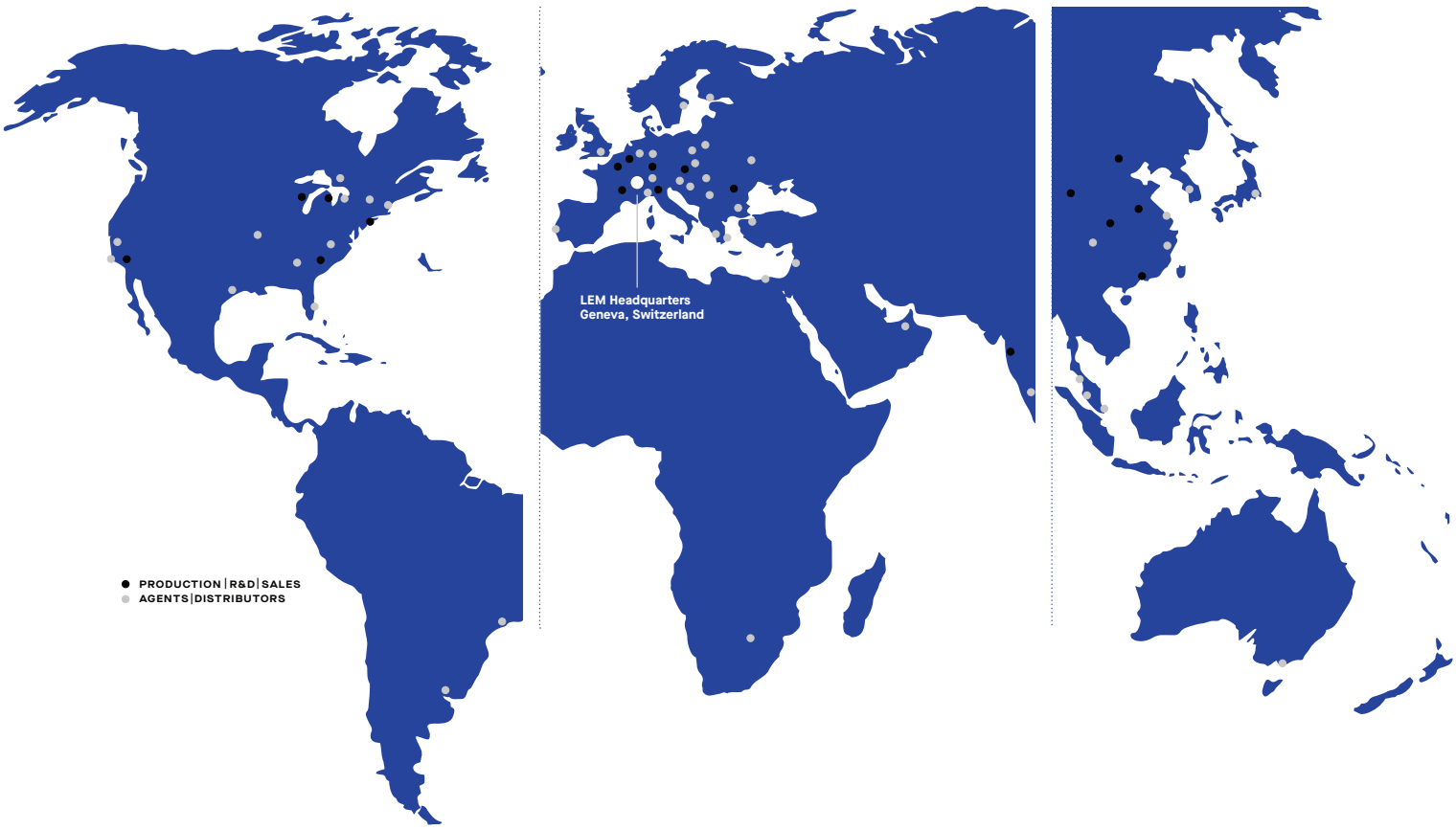
White Goods

In white goods, such as refrigerators, ovens, washing machines, and dishwashers, current sensors are essential for monitoring electrical consumption, ensuring safe operation, improving energy efficiency, and enhancing performance.



							
HAS	**HOYS**	**DHR**	**LF 210/310/510**	**HOYL**	**LF 1010**	**LF 2010**	**OLCI FRS**
50kHz	180kHz	20Hz - 6000Hz	100kHz - 200kHz	140kHz	200kHz	200kHz	1000kHz
15mA	25mA	30mA	33mA - 49mA	25mA	49mA	49mA	80mA - 140mA
150A - 900A	250A - 1400A	600A - 1800A	200A - 1920A	500A - 2000A	2700A - 3400A	2700A - 3400A	9000A
15V	3.3V - 5V	20V - 50V	12V - 24V	5V	15V - 24V	15V - 24V	12V - 24 V
Panel	Panel	Panel	Panel	Panel	Panel	Panel	On Primary Fastening
Voltage	Voltage	Voltage / Current	Current	Voltage	Current	Current	Voltage / Current
1%	1% - 1.25%	1%	0.2% - 0.6%	1%	0.4%	0.3%	0.5%
3µs	3µs	2µs	0.5µs	3µs	0.5µs	0.5µs	0.2µs
Open Loop Hall Effect	Open Loop Hall Effect	Open Loop Hall Effect	Closed Loop Hall Effect	Open Loop Hall Effect	Closed Loop Hall Effect	Closed Loop Hall Effect	Open Loop Coreless

Global Support Network



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