

# LEM

Life Energy Motion

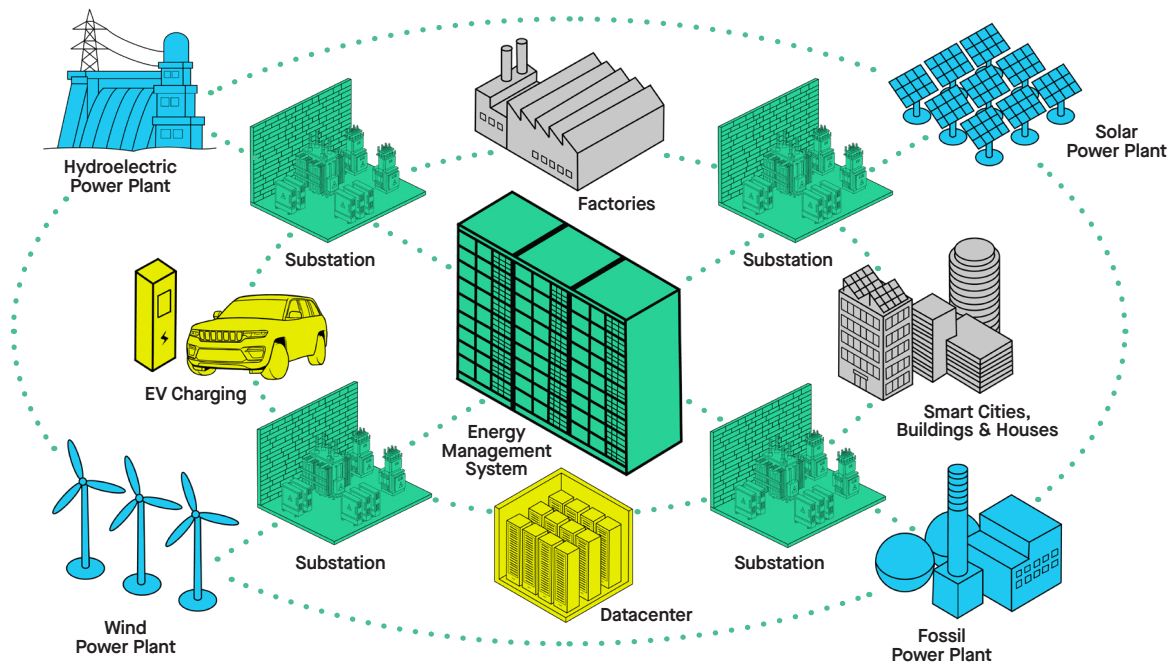
# SMART GRID SOLUTIONS

Electrical Measurement Solutions for Smart Grid Applications



# Smart Grid Solutions

The electrical grid is transforming to meet new demands—from the rise of electric vehicles to the growth of renewable and distributed energy sources, as well as the increasing electrification of building cooling systems. Data centers and energy storage systems have also become essential parts of today’s energy landscape. Managing these increasingly complex and decentralized networks requires smart infrastructure powered by accurate, real-time data. LEM’s current sensors provide that insight, enabling precise monitoring and optimization of energy production, distribution, and consumption to enhance reliability, reduce waste, and support a more flexible, resilient grid.



## Rogowski Coils:



	ART	ARU	ARH
<b>Description</b>	Standard Rogowski Coil	Outdoor Rogowski Coil	High Temp Rogowski Coil
<b>Sensitivity (50Hz)</b>	22.5 mV/kA	100 mV/kA	22.5 mV/kA
<b>Operating Temp</b>	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
<b>Precision Class</b>	0.5	0.5	0.5
<b>Protection Degree</b>	IP57	IP68	IP57
<b>Phase Displacement</b>	0.004°	0.007°	0.004°
<b>Ratio Error</b>	0.75	1	0.75
<b>Secondary Cable</b>	Included	Included	Included
<b>Integrator</b>	Available Separately	Available Separately	Available Separately

## Rogowski Coil Integrators:



	AI-P1A	AI-PMUL
<b>Current Range Max</b>	5000A	5000A
<b>Installation</b>	DIN Rail	DIN Rail
<b>Operating Temp</b>	-25°C to +70°C	-25°C to +70°C
<b>Rogowski Coil Sensitivities</b>	22.5, 70, 80, 85, 100, 120 mV/kA	22.5, 70, 80, 85, 100, 120 mV/kA
<b>Current Measurement Range</b>	100, 200, 300, 400, 500, 600, 800, 1000, 1500, 2000, 4000, 5000	100, 200, 300, 400, 500, 600, 800, 1000, 1500, 2000, 4000, 5000
<b>Output Signal</b>	0-1A	0-20 mA, 4-20 mA, 0-5 V, 0-10 V, 225 mV @Ip, 333 mV @Ip
<b>Accuracy Class</b>	0.5	0.5

# Power Monitoring:

Current sensors continuously monitor key electrical parameters to ensure that power delivered by the grid meets required standards. When power quality drops, industrial equipment can suffer damage and overall efficiency declines. By tracking these conditions in real time, current sensors make it possible to detect issues early and take corrective action. LEM's current sensors provide comprehensive power-quality monitoring—capturing electrical characteristics such as harmonics and voltage levels, as well as verifying the continuity of energy supply to identify outages.

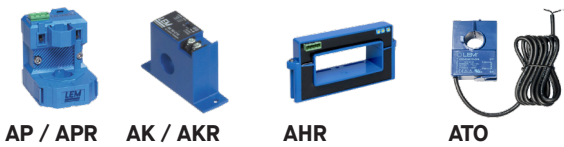
# Integration of Renewable & Distributed Energy Resources:

Distributed generation—driven largely by solar panels and wind turbines—is now a core part of modern energy systems. These renewable sources are integrated into LV and MV grids with the support of current sensors. LEM's sensors monitor the power output from these installations and keep the supply balanced across all phases, allowing utilities to manage intermittent generation more effectively. The result is improved grid stability and a more efficient, reliable distribution of renewable energy.

# Infrastructure for EV & Datacenters:

The energy transition in road transportation hinges on building a robust EV charging ecosystem that meets a wide range of needs—from overnight residential charging to high-power en-route stations, and from everyday passenger vehicles to long-haul electric trucks. Current sensors play a central role in this system. They not only track charging performance and energy transfer in real time, but also enable intelligent energy management at charging sites. When paired with on-site energy storage, these sensors help operators smooth demand spikes, optimize load balancing, and maintain reliable, efficient charging even during periods of heavy use.

## Current Transducers & Transformers:



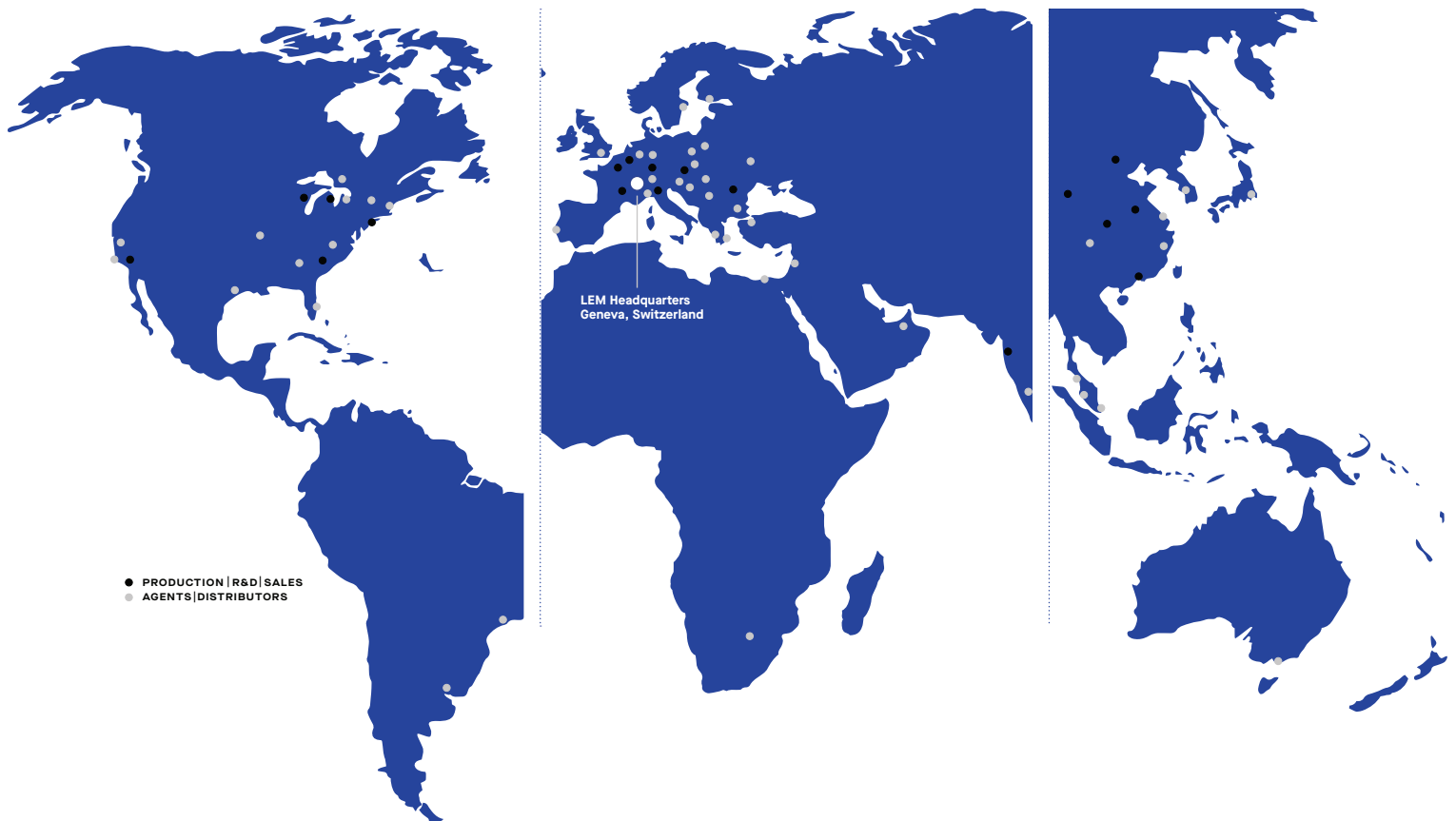
	AP / APR	AK / AKR	AHR	ATO
<b>Description</b>	AC Transducer with Split Core	Compact AC Transducer with Split Core	Split Core Transducer for High Current	Split Core Power Current Transformer
<b>Current Range</b>	10, 25, 50, 75, 100, 150, 200, 300, 400 A	Small Size: 2-200 A Big Size: 2000 A	500, 800, 1000, 1500, 2000 A	5-125 A
<b>Output Signal</b>	4-20 mA RMS 0-5 V DC 0-10 V DC	4-20 mA RMS 0-5 V DC 0-10 V DC	4-20 mA RMS 0-5 V DC 0-10 V DC	225 mV 333 mV
<b>Operating Temp</b>	-25°C to +70°C	-25°C to +50°C	-40°C to +70°C	-10°C to +55°C
<b>Supply Voltage</b>	12-24V DC	24V DC	20-50V DC	
<b>Error @I<sub>p</sub> (25°C)</b>	<±1%	<±1%	<±1%	Accuracy Class 1
<b>DC Availability</b>		DC Version Available	DC Version Available	

## EV Charging & DC Systems:



	DCBM	DCES	DCES RDU
<b>Description</b>	DC Energy Metering	DC Energy Metering / Power Monitoring	DC Energy Metering / Power Monitoring
<b>Rated Current</b>	400 A / 600 A	600 A / 1500 A	600 A / 1500 A
<b>Rated Voltage</b>	1000 V DC	1000 / 1500 V DC	1000 / 1500 V DC
<b>Operating Temp</b>	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>Communication</b>	Ethernet + APIs	RS485 + APIs / CAN	RS485 + APIs / CAN
<b>Accuracy Class</b>	Class B / 1% Bi-Directional	Class B / 1% Bi-Directional	Class B / 1% Bi-Directional
<b>Display</b>	Yes	Without Display	Yes
<b>Measurement</b>	Energy, Power, Current, Voltage, Temp	Energy, Power, Current, Voltage, Temp	Energy, Power, Current, Voltage, Temp

# Global Support Network



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