OUR VISION OF SMART CITIES

LEMcity

The intelligent electricity network (Smart Grid) is the backbone of every Smart City. Today's cities consume 75% of the energy. Smarter Buildings accounting for 40% of energy use provide customers with information of their usage to make smarter decisions.

Smarter equipment is needed for the Smart Grid to provide reliable integration of distributed renewable energies, energy storage and electric vehicle charging stations.

LEM improves the grid by measuring electrical parameters (current and voltage, AC and DC, etc.) allowing control rooms to automate, monitor remotely and share real-time data of their equipment.

By working closely together with our OEM customers, we provide innovative, accurate, reliable, easy-to install, non-intrusive sensors for better performance on the grid and smarter cities.

→ OUR ACTIVITIES

Founded in 1972, LEM is the market leader in designing and manufacturing current and voltage transducers worldwide. We:

- → Act as Pure play components company.
- → Produce components for electrical parameter measurements.
- → Offer full-standard or customized (private label) portfolio.
- → Support innovative Smart-up's.
- → Follow Industrial standards, Six Sigma method, IEC standards and UL.

→ LEM CITY COMPONENTS

ART Series

Flexible Rogowski Coil

Most accurate flexible AC measurements with unique "Perfect Loop" coil clasp

- → Accuracy Class 0.5
- → Position error < 0.4 %
- → Thin, Flexible, Light weight
- → Diameter 50-300 mm
- → No saturation
- → Electrostatic shield

ATO Series

Split-Core Current Transformer

Compact easy clip-on without disconnection for accurate AC measurements

- → Accuracy Class 1, Class 3
- → Range: 10 A to 125 A
- → Diameter 10-16 mm
- → Output: 1 mA/A , 333 mV and 225 mV @ I_{Pr}
- → Standard IEC 61869-2

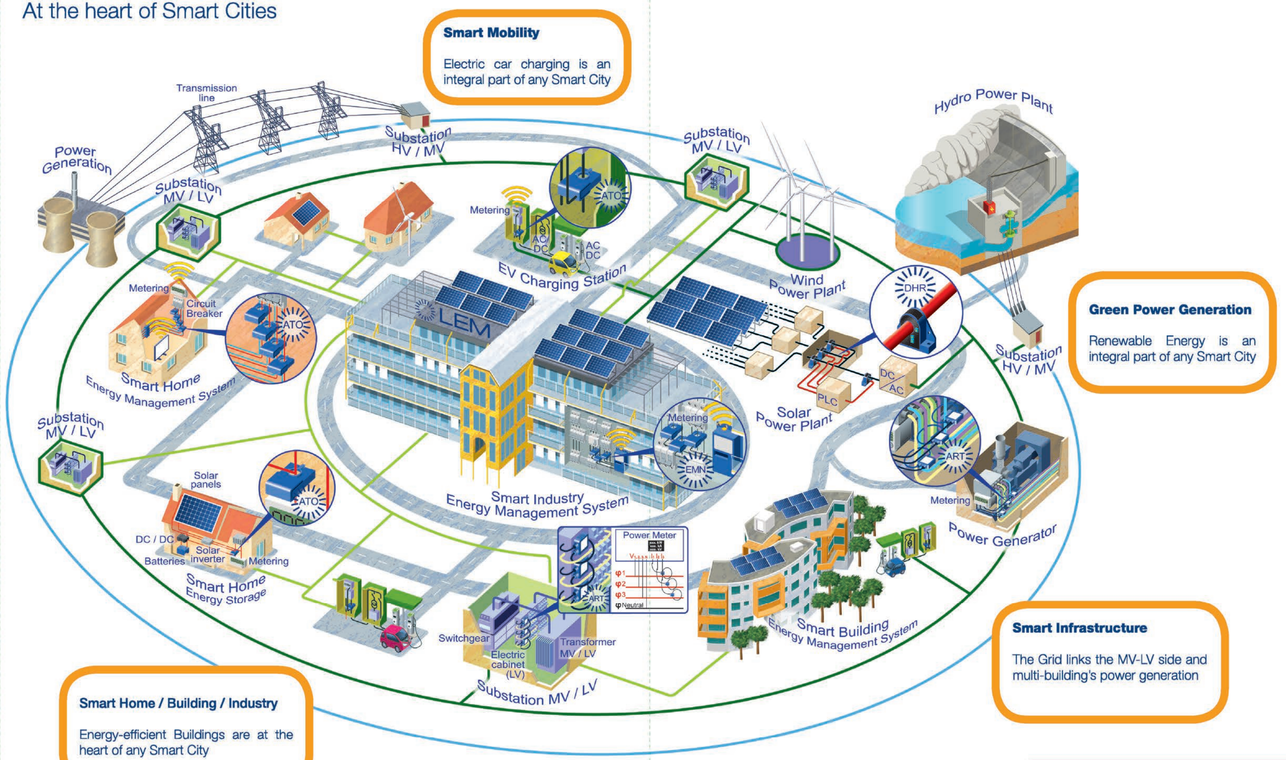
EMN Series

Wireless Energy Meter Node "Wi-LEM"

Single or three phase energy meter with Open protocol transmission

- → Current 20-5000 A
- → Voltage 90-500 V AC
- → Comprehensive monitoring
- → Cut installation costs
- → Easy commissioning

At the heart of Smart Cities



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AC CURRENT MEASUREMENT

INDUSTRY 4.0

	I_{PN} - I_{Pr} (A)	Power Supply	Case	Output	Series	
AC Amp Input to AC Voltage Output	> 500…2000	Self-Powered	Flexible	20.1 mV/kA @ 50 Hz	RT 500…2000	
	> 10…10000	Self-Powered	Flexible	22.5 mV/kA @ 50 Hz	NEW - Class 0.5 ART-B22-Dxxx	
AC Amp Input to DC Voltage Output	5-150	Self-Powered	Split-Core	0-5 V DC (RMS) 0-10 V DC (RMS)	AT 5…150 B5/10	
	10-200	Self-Powered	Split-Core	0-10 V DC (RMS)	AK 50…200 B10	
	10-200	Self-Powered	Solid	0-10 V DC (RMS)	AK 50…200 C10	
	10-400	+24 V DC	Split-Core	0-5 V DC (RMS) 0-10 V DC (RMS)	AP 50…400 B5/10	
	10-400	+24 V DC	Split-Core	0-5 V DC (TRMS) 0-10 V DC (TRMS)	APR 50…400 B5/10	
AC Amp Input to DC 4-20 mA Output	5-150	Loop-Powered +20…30 V DC	Split-Core	4-20 mA DC (RMS)	AT 5…150 B420L	
	2-200	Loop-Powered +24 V DC	Split-Core	4-20 mA DC (RMS)	AK 5…200 B420L	
	2-200	Loop-Powered +24 V DC	Solid	4-20 mA DC (RMS)	AK 5…200 C420L	
	10-400	Loop-Powered +12…24 V DC	Split-Core	4-20 mA DC (RMS)	AP 50…400 B420L	
	2-200	Loop-Powered +24 V DC	Split-Core	4-20 mA DC (TRMS)	AKR 5…200 B420L	
	2-200	Loop-Powered +24 V DC	Solid	4-20 mA DC (TRMS)	AKR 5…200 C420L	
	10-400	Loop-Powered +12…24 V DC	Split-Core	4-20 mA DC (TRMS)	APR 50…400 B420L	
	375-750	Loop-Powered +24 V DC	Solid	4-20 mA DC (TRMS)	AKR 750 C420L J	
	1000-2000	Loop-Powered +24 V DC	Solid	4-20 mA DC (TRMS)	AKR 2000 C420L J	
AC Amp Input to AC Amp Output	50	Self-Powered	Split-Core	Instantaneous 0-16 mA	TT 50-SD	
	100	Self-Powered	Split-Core	Instantaneous 0-33 mA	TT 100-SD	

AC CURRENT MEASUREMENT - NEW ATO SERIES

	I_{PN} (A)	Power Supply	Case	Output	Series	
AC Amp Input to AC Amp Output	75	Self-Powered	Split-Core	Instantaneous 0-75 mA	NEW ATO-75-B1I-D10	
	125	Self-Powered	Split-Core	Instantaneous 0-125 mA	NEW ATO-125-B1I-D16	
AC Amp Input to AC Voltage Output	10, 15, 16, 20, 30, 32, 50, 60, 63, 75	Self-Powered	Split-Core	225 mV @ I_{PN} 333 mV @ I_{PN}	NEW ATO-xxx-B225-D10 ATO-xxx-B333-D10	
	60, 63 ,75, 100, 125	Self-Powered	Split-Core	225 mV @ I_{PN} 333 mV @ I_{PN}	NEW ATO-xxx-B225-D16 ATO-xxx-B333-D16	

DC & AC CURRENT MEASUREMENT

	I_{PN} (A)	Power Supply	Case	Output	Series	
AC + DC Amp Input to DC Voltage Output	100-1000	External +20..50 V DC	Solid	0-5 V DC (TRMS) 0-10 V DC (TRMS)	DHR 100...1000 C5/10	
	500-2000	External +20..50 V DC	Split-Core	0-5 V DC (TRMS) 0-10 V DC (TRMS)	AHR 500...2000 B5/10	
	4000...20000	External +/- 15 V DC	Solid	0-10 V DC (TRMS)	HAZ 4000...20000-SRU	
AC + DC Amp Input to DC 4-20 mA & 0-20 mA Output	100-1000	External +20..50 V DC	Solid	4-20 mA DC (TRMS)	DHR 100...1000 C420	
	500-2000	External +20..50 V DC	Split-Core	4-20 mA DC (TRMS)	AHR 500...2000 B420	
	4000...20000	External +/- 15 V DC	Solid	0-20 mA DC (TRMS)	HAZ 4000...20000-SRI	
	4000...20000	External +/- 15 V DC	Solid	4-20 mA DC (TRMS)	HAZ 4000 20000-SRI/SP1	

DC CURRENT MEASUREMENT

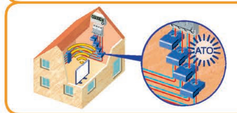
	I_{PN} (A)	Power Supply	Case	Output	Series	
DC Amp Input to DC Voltage Output	50-400 Bipolar	External +20..45 V DC	Split-Core	0-5 V DC @ + or - I_{PN} 0-10 V DC @ + or - I_{PN} Unipolar	DK 100...400 B5/10	
DC Amp Input to DC 4-20 mA & 0-20 mA Output	50-400 Bipolar	External +20..45 V DC	Split-Core	4-20 mA DC (20 mA @ + or - I_{PN})	DK 100...400 B420	
	50-400 Bipolar	External +20..45 V DC	Split-Core	4-20 mA DC (12 mA @ 0 A)	DK 100...400 B420 B	
	50-100 Bipolar	External +20..45 V DC	Solid	4-20 mA DC (12 mA @ 0 A)	DK 20...100 C420 B	
	50-400 Bipolar	External +20..45 V DC	Split-Core	0-20 mA DC @ + or - I_{PN}	DK 100...400 B020	

At the heart of our planet's energy measurements. **INDUSTRY 4.0**

OUR APPLICATIONS

→ Power Generator

The electricity is conducted to the network and measured at the output of the generator through the ART current sensors, which are connected to the energy meter.

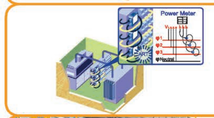


→ Home Energy Management (HEM)

HEM with ATO current sensors to inform the occupants of their energy use by displaying the result of these measurements in order to better control consumption.

→ Battery Monitoring System (BMS)

Automated, compact and simple to install, home energy storage with BMS + ATO current sensors allows independence from the grid, emergency backup and avoiding peak demand rates.



→ MV/LV Substation

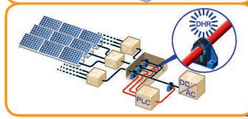
A Smart Meter installed in the LV panel measures the transformer's health with non-intrusive ART current sensors allowing safe commissioning on a "live" transformer.

→ Submetering

To reduce the electricity consumption in a building, the Wi-LEM (EMN+ATO/ART) energy solution provides site managers and users with the power consumption of equipment, departments, floors, buildings...

→ EV Charging Station

The challenge is to provide fast charging without stressing the energy grid with multiple AC-DC chargers. The charger uses the ATO sensor to measure the AC current.



→ Solar Power Plant

The detection of any defective solar string, reducing the total output of the installation, must be made in real time. A simple way to detect this is to check the current produced by each group of strings with the DHR transducer.

OUR CONTACTS

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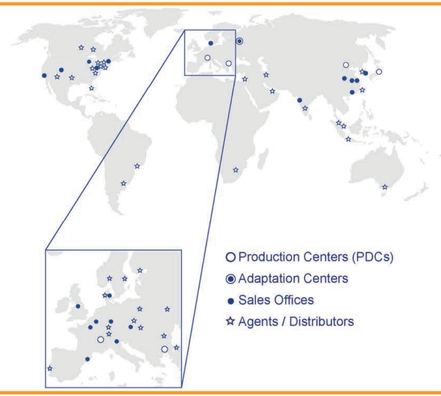
www.lemcity.com

LEM has local roots but global reach with same quality around the world !



- ○ Production Centers (PDCs)
- ◉ Adaptation Centers
- ● Sales Offices
- ☆ Agents / Distributors

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Application Guide

ENERGY SENSING FOR SMARTER CITIES

Measuring the Smart Grid - the Backbone of Smart Cities

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