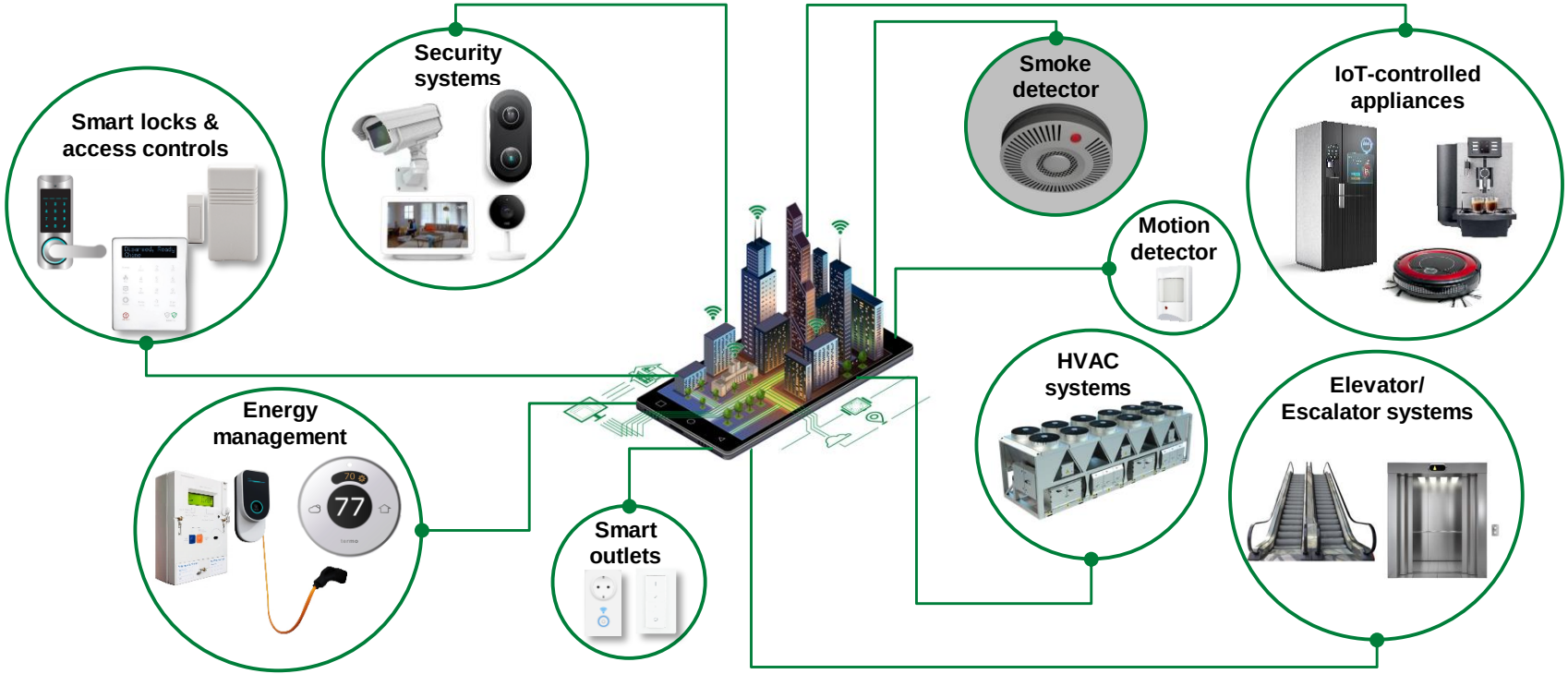
Smoke and Heat Alarm System

Building automation

Littelfuse®

Expertise Applied | Answers Delivered

Smart buildings & homes are equipped with intelligent technologies that make lives more convenient and energy efficient



Littelfuse offers protect, control, and sense technologies to improve the safety, reliability, and energy efficiency of buildings.

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Market trends and drivers for smoke and heat alarm

Market trends and drivers

Global smoke detector unit shipments are expected to increase from 98M in 2020 to 150M units in 2025

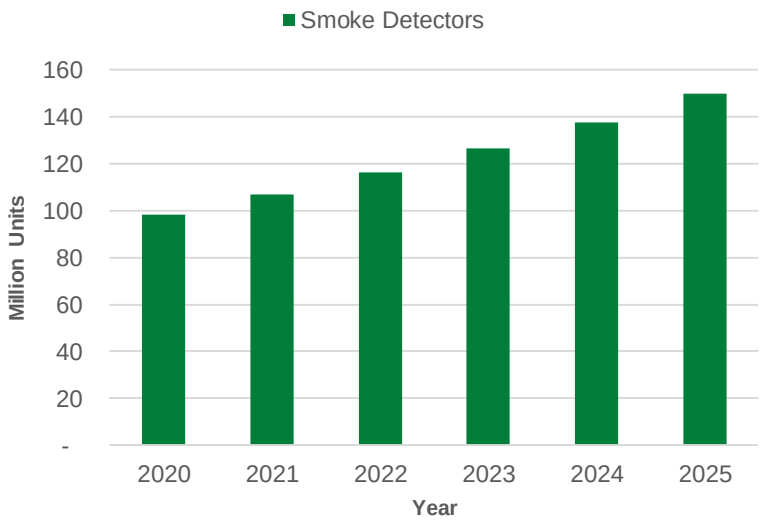
Rising awareness and regulation for fire safety of all buildings is a key factor in driving global growth

The commercial segment is the largest, marking up over half of the volumes. The residential segment is expected grow the fastest, driven by population growth and urbanization

The Americas and Europe are the largest markets currently, however Asia Pacific is the fastest growing

Wireless smoke detectors are battery powered and can be Wi-Fi enabled to be part of the smart home or building ecosystem

Rapid growth at ~8.8% CAGR



Source: *Smoke Detector Market (Grand View Research, May 2019)*

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Littelfuse solutions for smoke and heat alarm system

Power supply and DC/DC converter

- Fuse
- MOV
- TVS diode

Alarm

- Reed relay
- SCR

Temperature sensor

- NTC

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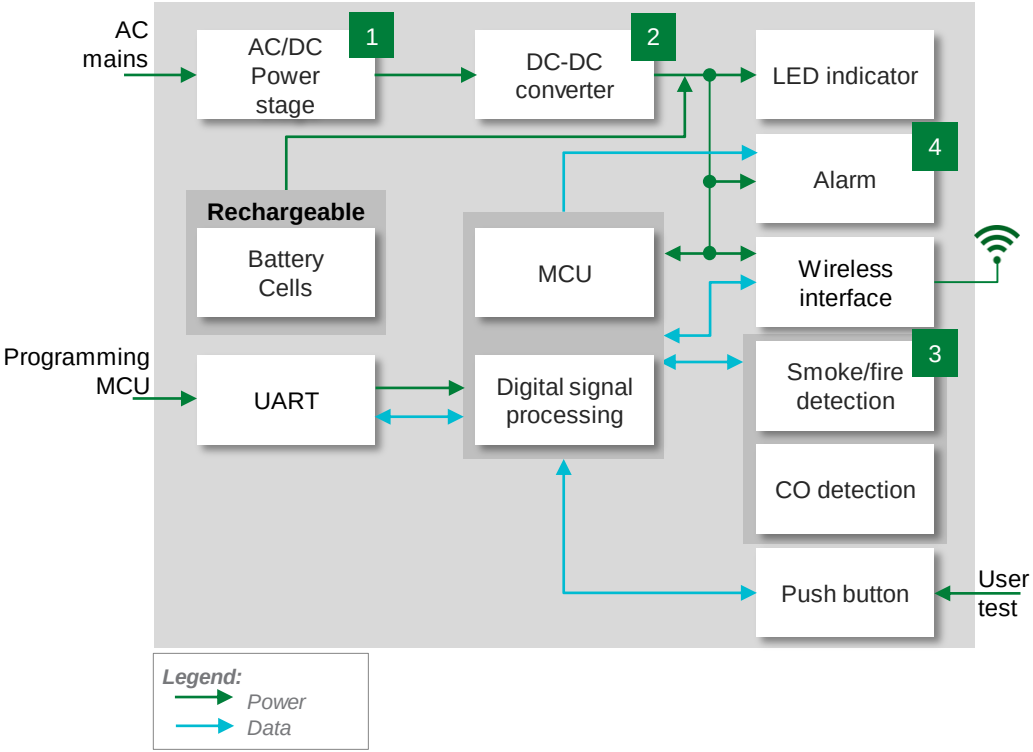
Click on the product series in the table below for more info

Smoke and heat alarm functional block diagram



	Technology	Series
1	Fuse	875, 263, 373, 392
	MOV	LA
2	TVS diode	SMCJ
3	NTC	KW, KT, USUG1000
4	SCR	EC103M
	Reed relay	HE3600

Click on the product series in the table below for more info

Benefits of recommended Littelfuse solutions

	Technology	Function in application	Product series	Benefits	Features
1	Fuse	Protects power stage from overcurrent events	875, 263, 373, 392	Reduces customer qualification time by complying with regulatory safety standards such as UL/IEC	Third-party compliance (UL/IEC); low internal resistance; shock safe; vibration resistant
	MOV	Helps protect power unit from voltage surges and lightning events on AC line	LA	Reduces customer qualification time by complying with regulatory safety standards such as UL/IEC	Can meet wide-set surge withstand specifications: 40–530 J (2 ms)
2	TVS Diode	Protects sensitive electronic components from voltage transients	SMCJ	Improves system reliability by clamping the voltage at safe levels during transients	1500 W peak pulse capability; low, dynamic resistance; 0402 footprint
3	NTC	Temperature sensing	KW, KT, USUG1000	Provides accurate temperature (component/ambient) for enabling safe device operation	High reliability; small form factor; fast thermal response
4	SCR or Reed Relay	Used to trigger the alarm	EC103M	Excellent unidirectional switch for face control applications; Sensitive gate SCRs are easily triggered with microAmps of current	Voltage capability up to 600 V; surge capability up to 20 A
			HE3600	Low power consumption; high isolation; immune to environmental effects	Miniature single in-line package; external magnetic shield option

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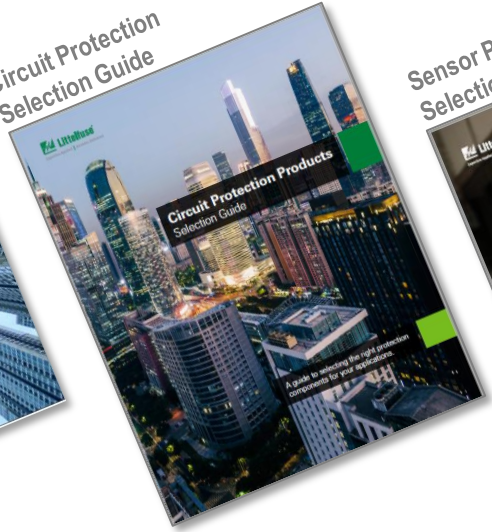
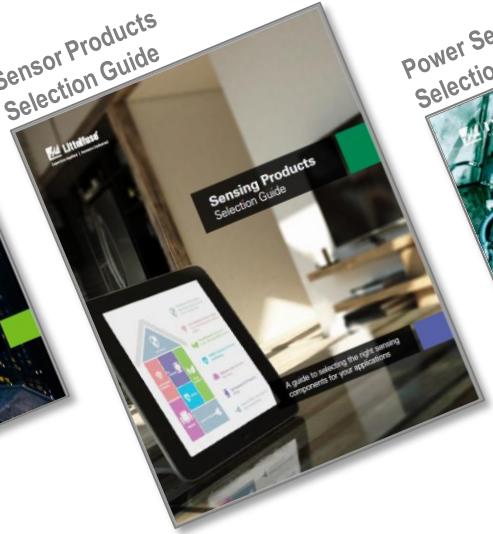
Additional information can be found on Littelfuse.com

Building automation application guide

Circuit Protection Selection Guide



Sensor Products Selection Guide



Power Semiconductor Selection Guide

Click on images to open the catalogs

Integrated Circuits Product Catalog

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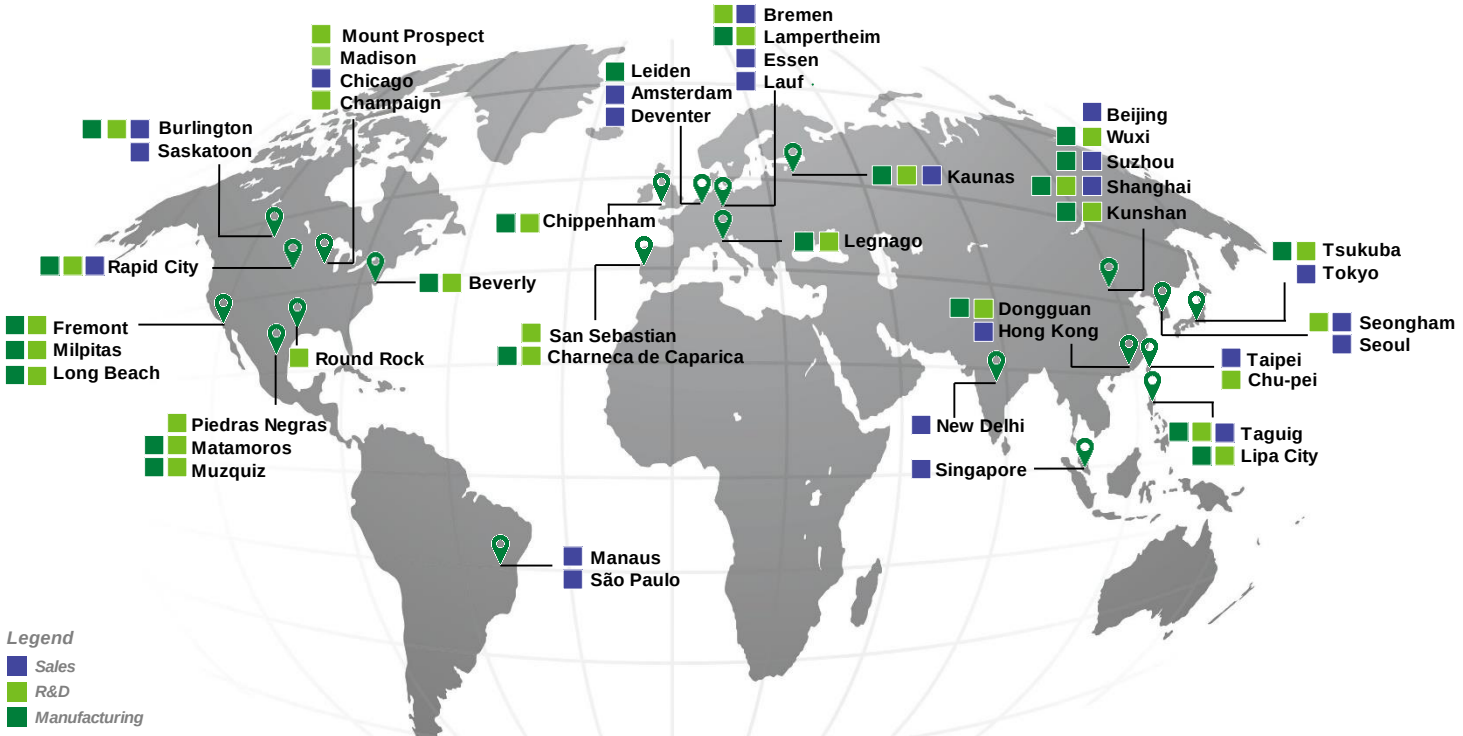
Local resources supporting our global customers



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Partner for tomorrow's electronic systems

Broad product portfolio

A global leader with a broad product portfolio, covering every aspect of protection, sensing, and control

Application expertise

Our engineers partner directly with customers to help speed up product design and meet their unique needs

Global customer service

Our global customer service team is with you to anticipate your needs and ensure a seamless experience

Compliance & regulatory expertise

We help customers in the design process to account for requirements set by global regulatory authorities

Testing capabilities

We help customers get products to market faster, we offer certification testing to global regulatory standards

Global manufacturing

We offer high-volume manufacturing that is committed to the highest quality standards

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