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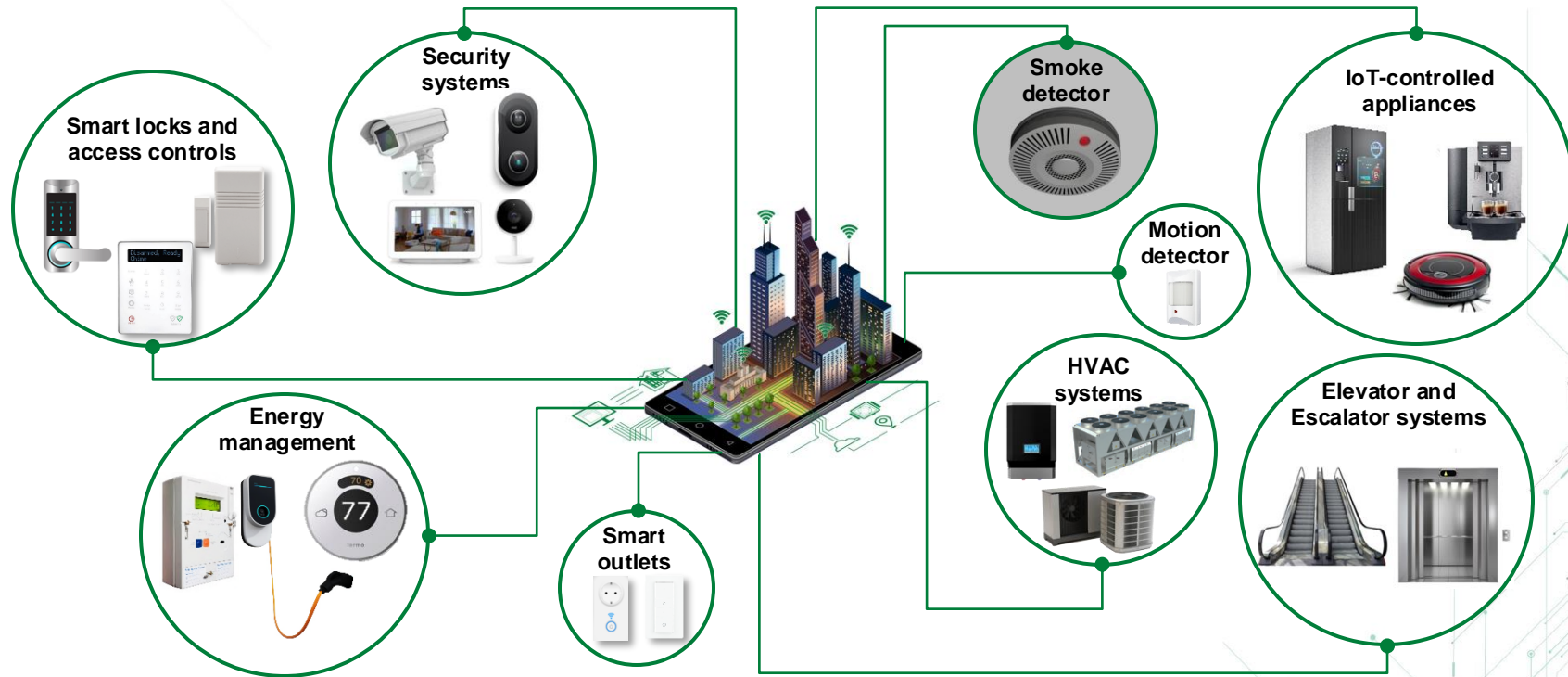
# Smoke and Heat Detectors



Building Solutions

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# Smart buildings and homes are equipped with intelligent technologies that make life more convenient and energy efficient



# Market trends and drivers for smoke and heat detectors

## Market trends and drivers

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

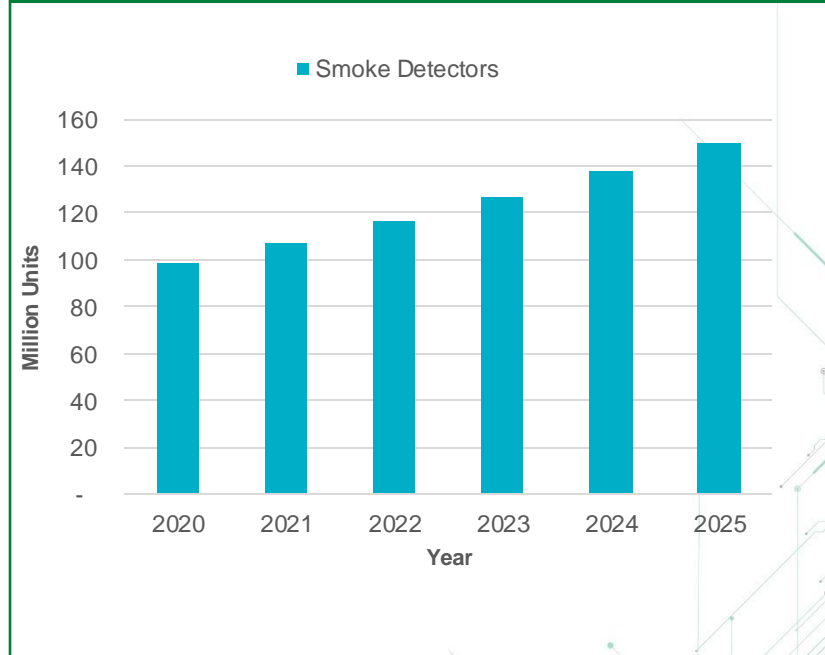
Increasing awareness and regulations for fire safety of all buildings is a key factor in driving global growth

Commercial is the largest segment, accounting for over half of all sales volumes. The residential segment is expected to 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 market

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)

# Littelfuse solutions for smoke and heat detectors

1

## Power supply and DC-DC converter

Fuse, MOV, TVS Diode



2

## Alarm

Reed Relay, SCR



### Acronyms:

MOV: Metal Oxide Varistor

TVS: Transient-Voltage Suppression

SCR: Silicon-Controlled Rectifier

NTC: Negative Temperature Coefficient



3

## Temperature sensor

NTC



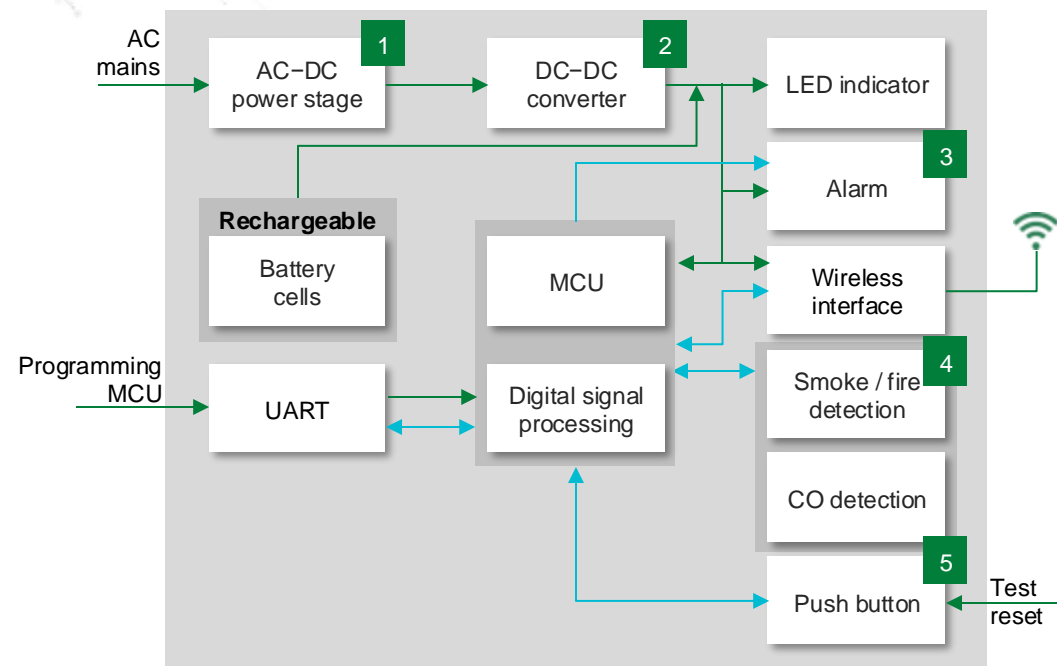
4

## Test and reset buttons

Tactile Switch



# Smoke and heat alarm functional block diagram



**Legend:**  
→ Power  
→ Data

**Acronyms:**  
AC: Alternate Current  
DC: Direct Current  
LED: Light Emitting Diode  
MCU: Microcontroller Unit  
UART: Universal Asynchronous Receiver-Transmitter  
CO: Carbon Monoxide

	Technology	Series
1	Fuse	<a href="#">875, 263, 373, 392</a>
	MOV	<a href="#">LA, Xtreme</a>
2	TVS Diode	<a href="#">SMCJ</a>
3	SCR	<a href="#">EC103M</a>
	Reed Relay	<a href="#">HE3600</a>
4	NTC	<a href="#">KW, KT, USUG1000</a>
5	Tactile Switch	<a href="#">KSC, KMT0</a>





Click the product series in  
the table below for more info

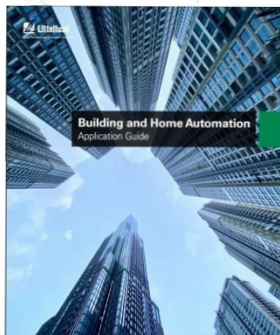
# Benefits of recommended Littelfuse solutions

	Technology	Function in application	Product series	Benefits	Features
1	Fuse	Protects power stage from overcurrent events	<a href="#">875, 263, 373, 392</a>	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 lines	<a href="#">LA, Xtreme</a>	Reduces customer qualification time by complying with regulatory safety standards such as UL/IEC	Meets wide-set surge withstand specifications: 40–530 J (2 ms)
2	TVS Diode	Protects sensitive electronic components from voltage transients	<a href="#">SMCJ</a>	Improves system reliability by clamping the voltage at safe levels during transients	1500 W peak pulse capability; low, dynamic resistance; 0402 footprint
3	SCR or Reed Relay	Triggers the output alarm	<a href="#">EC103M</a>	Offers excellent unidirectional switch for face control applications and sensitive gate SCRs are easily triggered with microAmps of current	Voltage capability up to 600 V; surge capability up to 20 A
			<a href="#">HE3600</a>	Offers low power consumption, high isolation, and immunity to environmental effects	Miniature single in-line package; external magnetic shield option
4	NTC	Senses temperature	<a href="#">KW, KT, USUG1000</a>	Accurate temperature sensing	High reliability; small form factor; fast thermal response
5	Tactile Switch	Tests and resets the device	<a href="#">KSC, KMT0</a>	Offers a wide range of operating forces, rugged sealing and resistant to corrosion, and a very long operating life	Ultra-low current consumption; operating life up to 1 million cycles; most devices are IEC 60068-2-42:2003 qualified

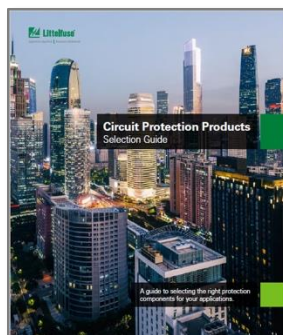


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Building Automation  
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Circuit Protection  
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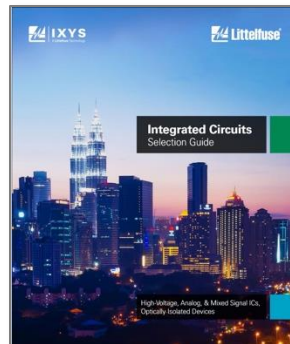


Sensor Selection Guide



Power Semiconductor  
Guide

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Integrated Circuit  
Selection Guide



C&K Switches  
Selection Guide

# Local resources supporting our global customers



## Legend

- Sales
- R&D
- Manufacturing



# Partner for tomorrow's electronic systems

## Broad product portfolio

We are an industrial technology manufacturing company empowering a sustainable, connected, and safer world

## 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 to anticipates your needs and ensures a seamless experience

## Compliance & regulatory expertise

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

## Testing capabilities

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

## Global manufacturing

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



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