

Keep cooking and carry on!

Ensure people can cook safely and discretely monitor their wellbeing



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The logo for unicook, featuring the word "unicook" in a lowercase, sans-serif font. Above the letter "i" is a dark grey oval shape.

Agenda

1. Introduction: The increasing risk of cooking fires

Source of home fires, electric hobs and risk factors

2. The significance of BS EN 50615 (category B) and Airis

BS EN 50615 requirements, fire prevention, cooker shut-off device technology and evolution

3. Airis fire and smoke prevention: Beyond BS EN 50615

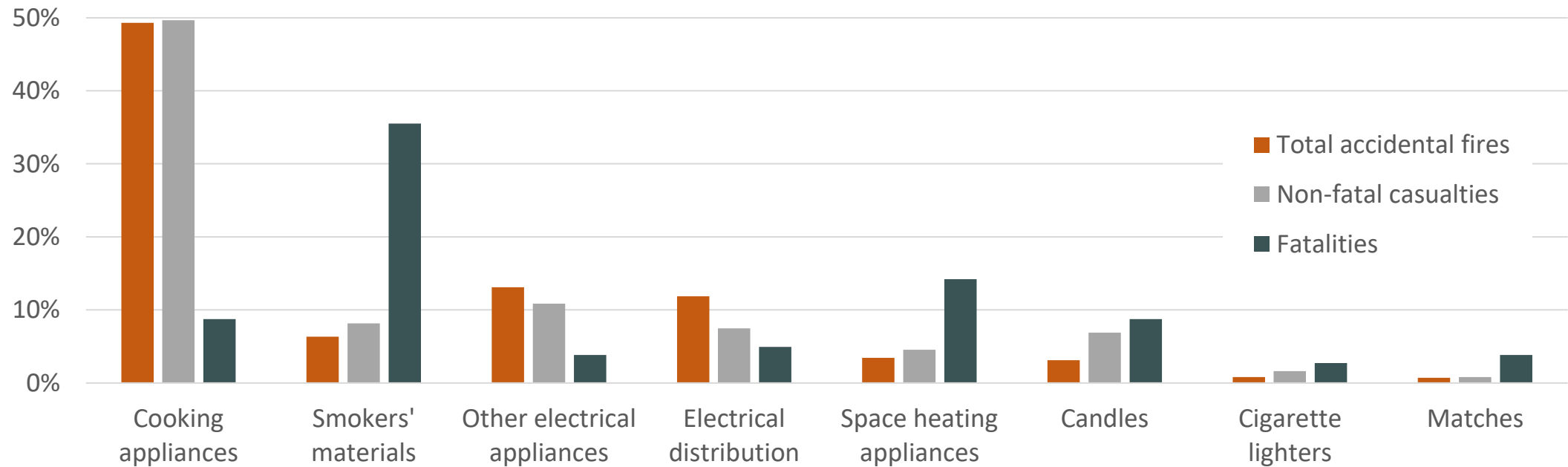
How Airis works, fail safe design, applications and Airis Cloud

4. Summary

The key benefits and ROI and a sample of UK Installations

1. Introduction: The increasing risk of cooking fires

Sources of home fires



Percentage of fires, non-fatal casualties and fire-related fatalities in accidental dwelling fires by selected sources of ignition, England; 2016/17

1. Introduction: The increasing risk of cooking fires

Increasing risk: Electric hobs are more dangerous than gas

Although only 60% of cookers were electric, four out of five (79%) reported cooking fires were powered by electricity. **The risk is 2.5 times higher.**

All cooking equipment combined caused an even larger share (49%) resulting in 510 civilian fire deaths, 5470 civilian fire injuries, and \$1.2 billion in direct property damage per year.¹

In a 1999 study in the USA, 83% of frying fires began in the first 15 minutes of cooking.

Source 1: NFPA Research: Home structure fires involving cooking equipment, Marty Ahrens, November 2017 (USA)

1. Introduction: The increasing risk of cooking fires

The induction effect

Grease fire on induction cooktop

SAFERA

1. Introduction: The increasing risk of cooking fires

Combining increasing risk factors

- Fires are more prevalent with electric hobs
- Gas is being phased out for sustainability
- Induction hobs may further increase the risk of a fire
- Improved life expectancy is increasing the number of elderly living in the community
- 1 million people expected to have dementia by 2021 (source: Dementia UK)
- **There are ~ 10,000 kitchen fires per year*, how quickly will this increase? ***

*source: Dept. for Communities and Local Government



2. The significance of BS EN 50615 Category B and Airis

What is BS EN 50615?

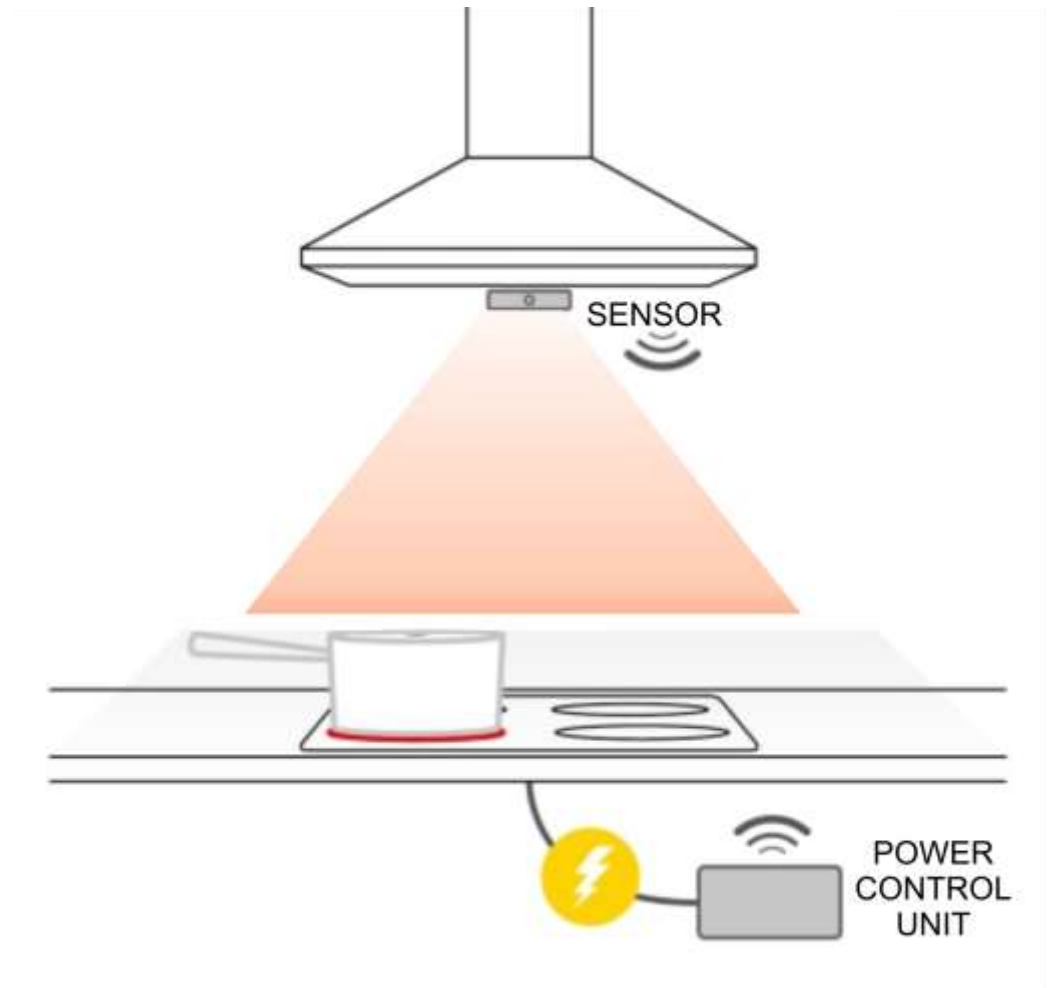
- A relatively new standard issued in 2015
- Category A: Requirements for devices that extinguish fires started by cooking on a hob
- **Category B: Requirements for devices that *prevent* fires from occurring whilst cooking on a hob**
- BS EN 50615 Category B certified products: tested to **ensure prevention of a fire** on a hob



2. The significance of BS EN 50615 Category B and Airis

How does Airis work?

- Airis comprises a sensor and a power control unit
- The multisensor sensor monitors cooking in several ways
- The power control unit connects to the power supply of a hob.
- When the multisensor detects factor(s) that are high risk for a fire, the power to the hob is automatically switched off.



2. The significance of BS EN 50615 Category B and Airis

The EN50615 effect

- cooker shut-off device devices became mandatory in Norway in 2010 in all new builds and kitchen renovations
- Used by several fire services in the England, Wales and Scotland
- A recommendation to be included in the next edition of electrical wiring regulations



2. The significance of BS EN 50615 Category B and Airis

Where are Airis devices commonly installed?

- studio apartments
- high-rise residential
- build-to-rent
- co-living
- Aparthotels
- student accommodation
- assisted/sheltered accommodation
- social housing
- retired living



3. Airis fire and smoke prevention: Beyond BS EN 50615

Airis hardware

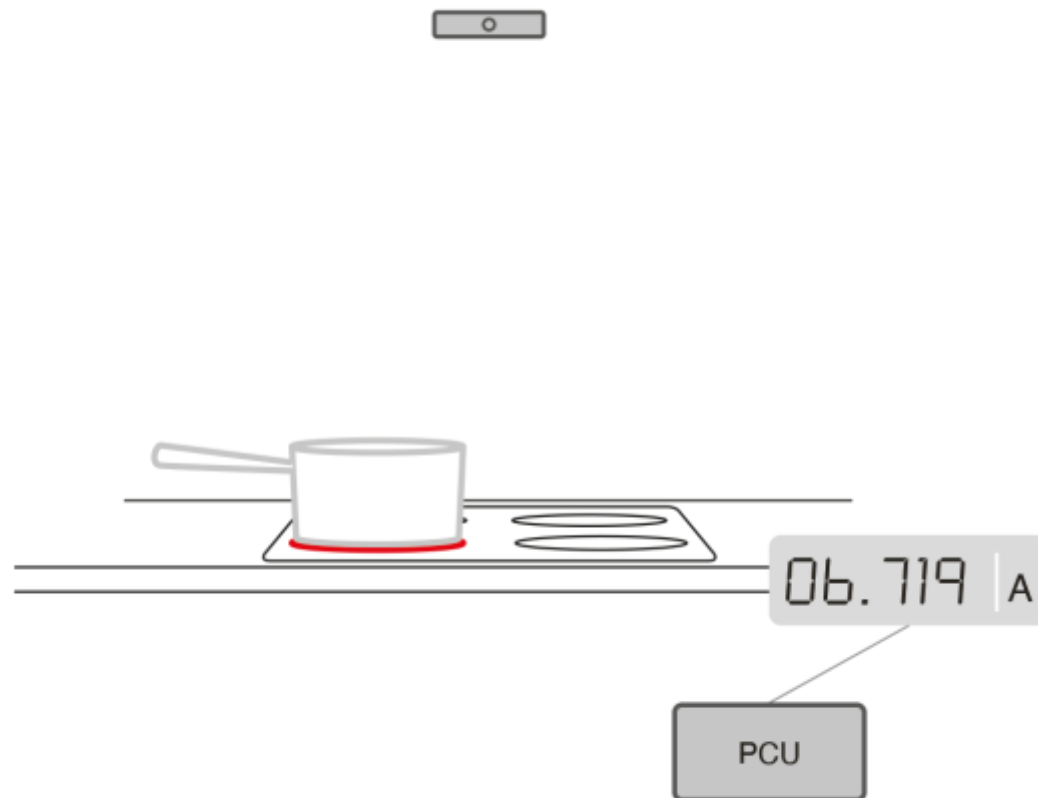
- Optional leak detection
- False alarms virtually eliminated
- Detection of food burning or a pan boiling dry
- Much earlier intervention - preventing smoke
- Wireless cloud connection for vulnerable person monitoring



3. Airis fire and smoke prevention: Beyond BS EN 50615

Power measurement

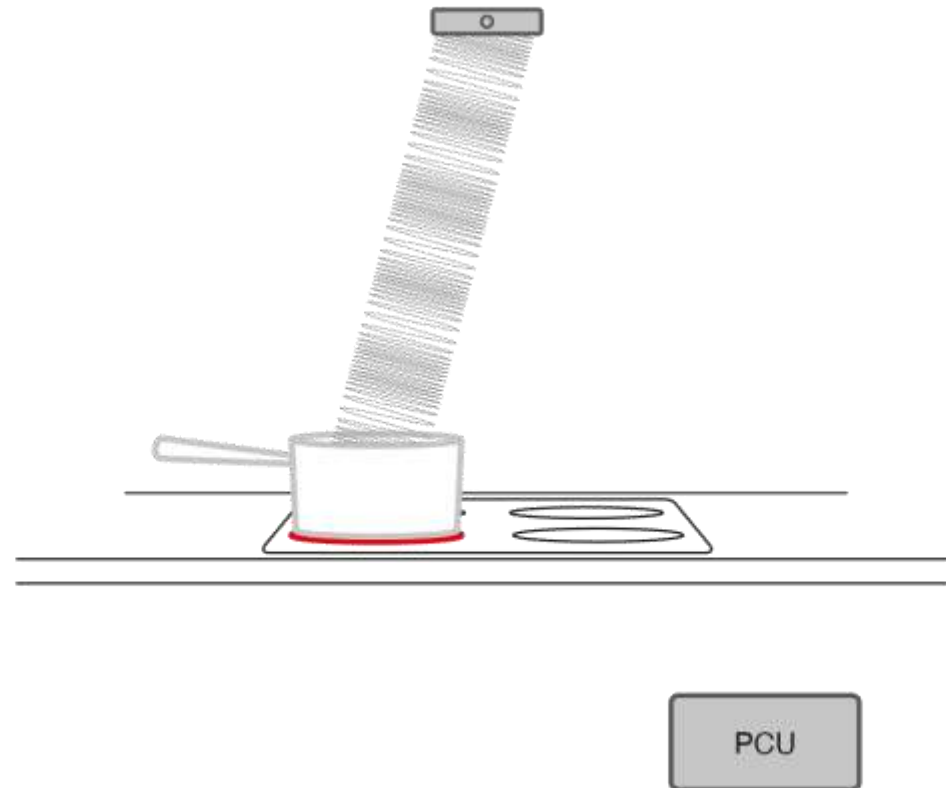
- PCU constantly monitors current to hob
- Identifies the type of hob
- Sends power information to the multisensor



3. Airis fire and smoke prevention: Beyond BS EN 50615

Temperature measurement

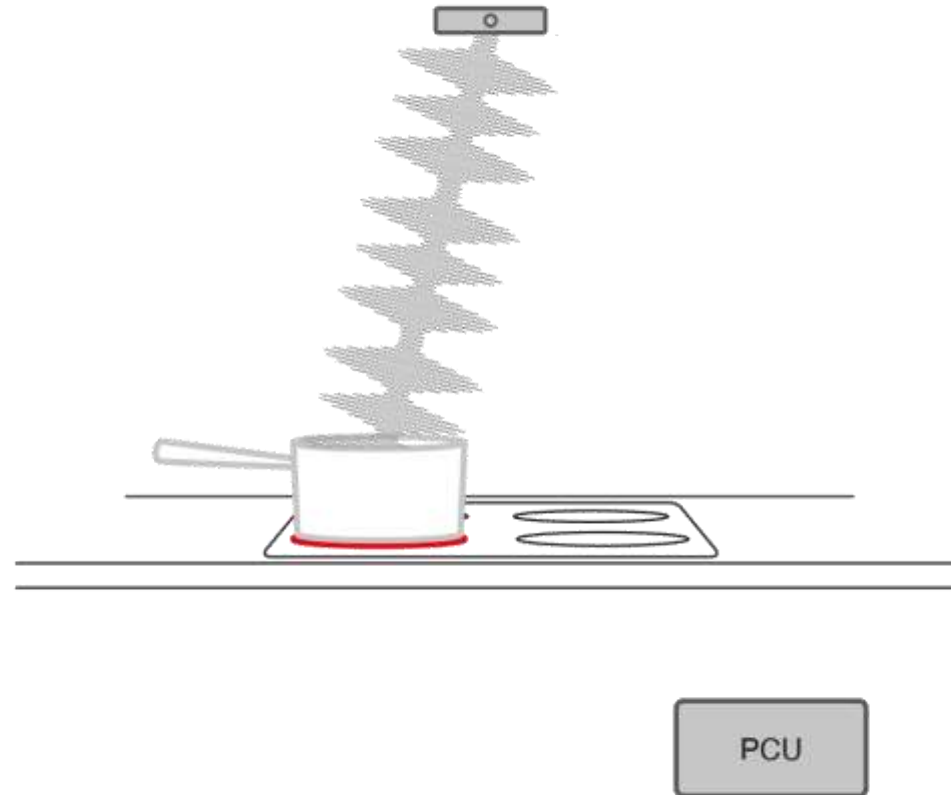
- Infrared sensors monitor cooking temperature
- Ambient temperature also monitored



3. Airis fire and smoke prevention: Beyond BS EN 50615

Smoke and steam analysis

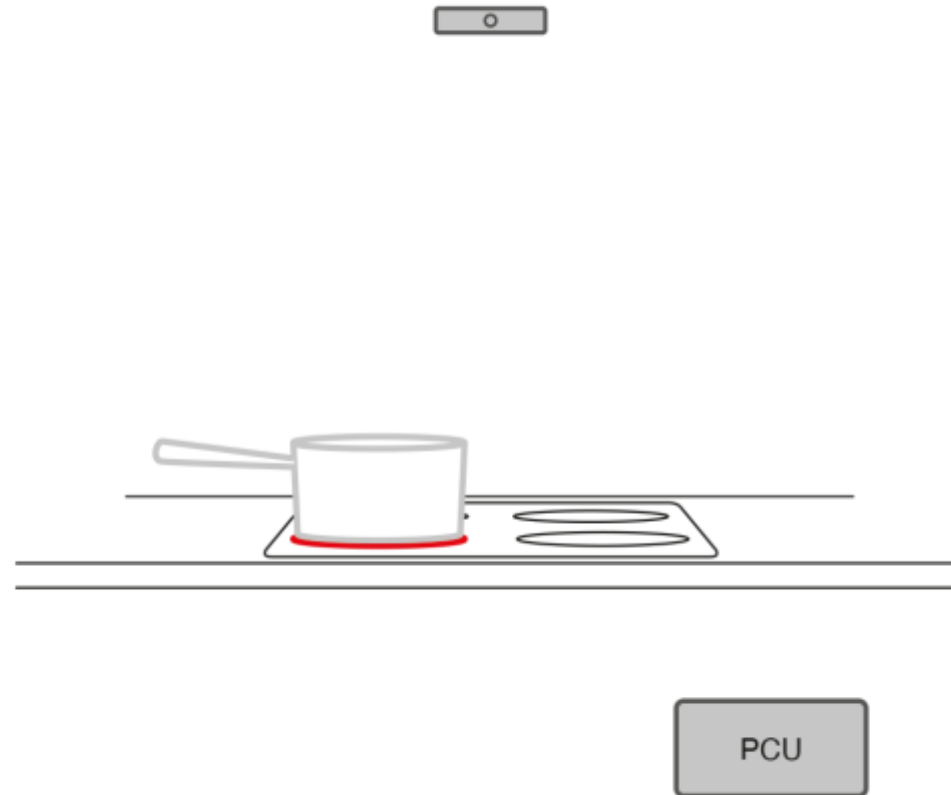
- AI algorithms analyse infrared readings
- Smoke and steam affect the amplitude



3. Airis fire and smoke prevention: Beyond BS EN 50615

Human presence monitored

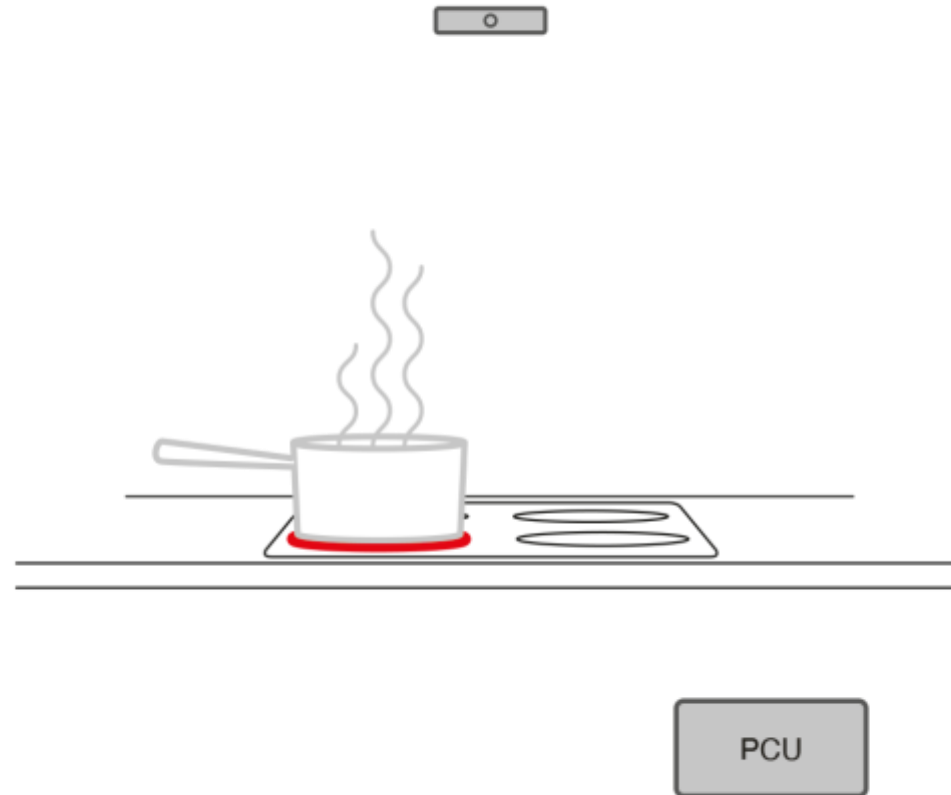
- Multisensor detects when someone is close to the hob
- Algorithms take presence into account before alarming/cutting power



3. Airis fire and smoke prevention: Beyond BS EN 50615

Shut-off

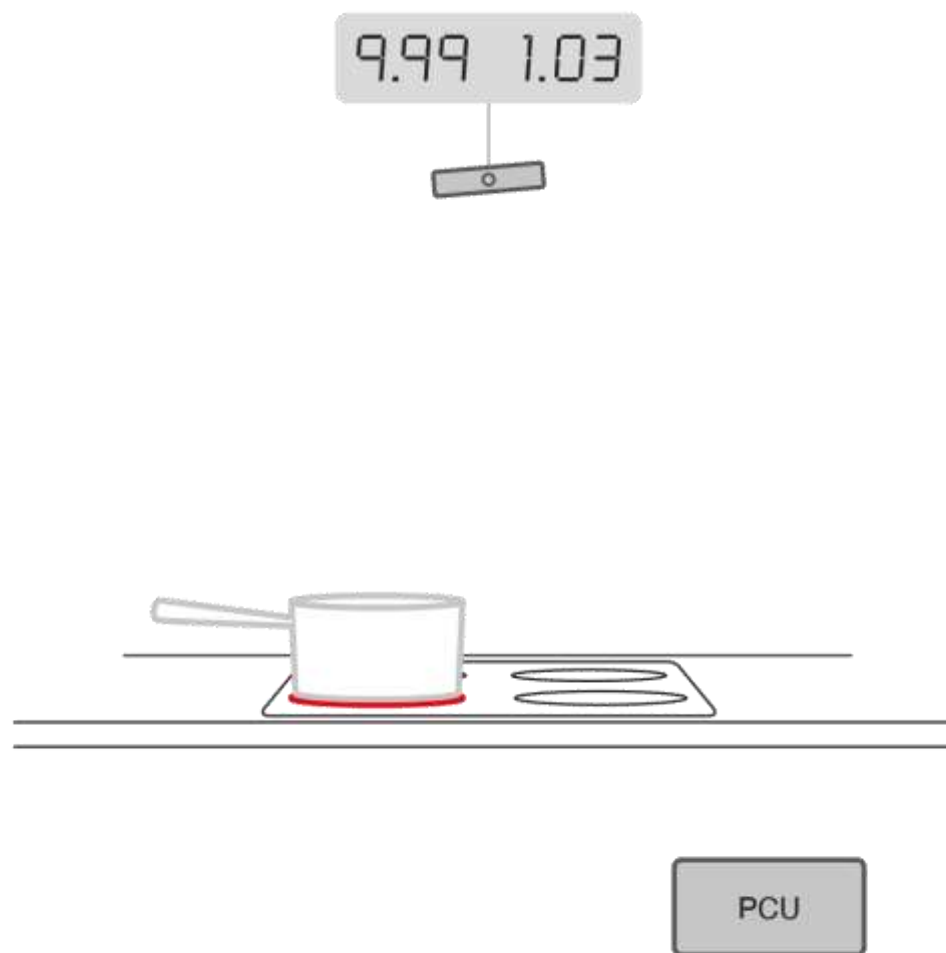
- Sensor instructs PCU to disconnect the power
- A pan is too hot, has boiled dry or food is burning
- Easily reset by user



3. Airis fire and smoke prevention: Beyond BS EN 50615

Fail-safe design

- Pitch and roll measured
- Removal prevents cooking
- Orientation measured to ensure effective sensing



3. Airis fire and smoke prevention: Beyond BS EN 50615

Airis vulnerable person support

For elderly people and those with chronic conditions such as dementia, epilepsy, Multiple Sclerosis, Parkinson's Disease, acquired brain and sight loss etc.

SMS and email notifications available:

- The resident has not cooked for themselves for over 24 hours
- Cooking has taken place at an unusual time
- Airis has intervened to prevent a fire or smoke
- Airis has intervened more than a specified number of times
- The kitchen too hot, too cold or too humid



3. Airis fire and smoke prevention: Beyond BS EN 50615

Airis Cloud Server

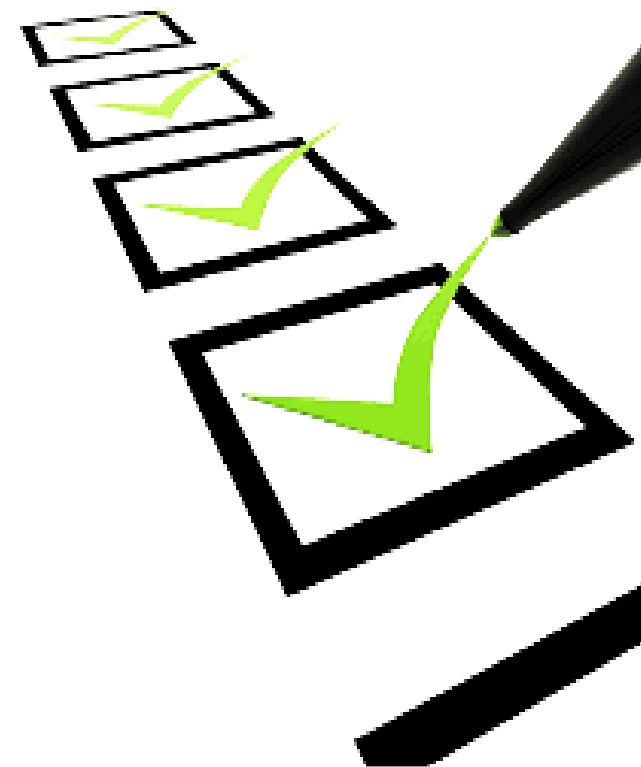
- Stores comprehensive data from all devices within an organization
- Concise views on a company-wide and group (e.g. scheme or building) basis
- Immediate alerts, particularly valuable for the care of vulnerable residents



2. Airis fire and smoke prevention: Beyond BS EN 50615

Airis: Benefits and ROI

- Preserve independence and dignity
- Reduce calls to the fire service
- Monitor resident's wellbeing
- Low-cost new or retrofit installation
- Low cost of purchase and installation, maintenance free
- Automatic alerts to failure via the cloud
- Fire **and** smoke **prevention** is better than detection!



4. Airis fire and smoke prevention: Beyond BS EN 50615

Airis Installations in the UK

- **Housing providers:** Home Group, Five Villages HA, HB Villages, Leonard Cheshire, YMCA, YWCA
- **Fire and Rescue Services:** Berkshire, Cambridgeshire, East Sussex, Kent, North Wales
- **Developers:** include Berkeley Homes, Balfour Beatty, Hermes Property Trust, ISG
- **Universities:** Newcastle, Brighton, Buckingham, Cambridge, Greenwich, Leeds, Leicester, Manchester, Northampton, Oxford, Southampton, Surrey, Sussex




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Airis fire and smoke prevention: Beyond BS EN 50615

Thank you for your time!

If you'd like more information, please call me on 07973 307786
or email at peter@unicook.co.uk