# Amplex **check**marks™

## Intelligent Assisted Living

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# It's all about caring

**Protecting our loved ones is critical for keeping our elderly comfortable at home as long as possible – providing a better life.**

Smarter Homes is assistive technology that helps people live independently in their own home. It is about supporting independence while providing assurance and alerts to family, friends or carers when needed.

## How does it work?

Sensors can check for changes in temperature, humidity and movement, including the opening and closing of doors, fridges and medicine cabinets. Smart plugs can turn electrical appliances on and off based on time of use or by registering dangerous situations like smoke and flooding. Lamps can be controlled to adapt the light colours and intensity based on activity and time of day – all to make life more safe and easy.

Monitoring and alerts are delivered to family, friend or carer's smartphone, thereby keeping them informed or alerted. Ideally this will just to keep the family informed that the resident is fine, remembers to eat, have tea and take medicine.

Settings can be tailored around the usual daily routines. Sensors are carefully placed in strategic locations that the resident accepts and can be removed without trace. No wiring is needed as sensors are 'long life' battery powered. Settings are easily made using a smartphone app, regardless if you are doing a simple installation or a large scale deployment.

No internet connection is required. A small gateway using the mobile network is simply plugged into a spare socket.

The family can easily download the **check**marks™ app, scan a QR code on the gateway – no special training is needed. Simplicity is key.

## What does it provide?

Over the past years many assisted living applications have been installed, but typically each one only solve one problem. The downside is that if you need more functionality you need to install several systems in parallel, making the setup expensive and hard to manage. **check**marks™ tries to embrace all sensor types, to provide all the functionality that is needed in a home, making it inexpensive and simple to configure, maintain and operate. **check**marks™ is continuously evolving, adding new sensors and updated functionality to the benefit of both old and new customers.

- Easy to use apps for both iPhones/iPads and Android devices
- Alarms based on environmental conditions, activity, smoke, etc.
- Monitoring of activity like opening the fridge or pill cabinet, making of tea/coffee etc.
- Control of equipment like heat, lamps and home appliances
- Secure solution – encryption in **check**marks™ is better than most bank systems
- Based on open standards for easy connectivity

If you are looking for a future-proof solution that will protect homes and is open to new sensors and technologies, **check**marks™ will be the core of your infrastructure.

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# Mary's story

Mary has lived in a housing society outside Manchester since 1968. She's not quite as independent as she once was. Even though her daughter Sophie visits at least three times a day, they both jumped at the opportunity to take part in the Smarter Homes project.

Mary had some discreet 'Assistive Technology' sensors installed in her home – the Amplex **check**marks™ solution – taking little more than 30 minutes. These now provide Sophie with an extra level of assurance whenever she is not there. Sophie can use the app on her smartphone at any time to check when Mary was last up and about, when she lastly opened her fridge (drinking her favourite milk) and the temperature in her bungalow.

This was all installed free of charge as part of a project, where the housing society is working with the local council as well as organisations and academic researchers at the leading edge of this technology. The cost to Mary is just 31p per week in electricity!

For Mary and Sophie the trial has already proved its value. Mary had a fall one morning and Sophie was able to spot on her app that all was not well. Sophie whizzed by and found Mary on the floor – a little confused and bruised but otherwise OK. Sophie visits frequently, but it could still have been many hours before Mary received help.

For others this could have been far longer.

Our hope is that Mary and Sophie along with many others will be able to benefit from this technology in the future. Sophie is quite clear that she never wants to go back to being without this extra level of assurance. Next step is to find Mary some non-slip socks!

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# Sensors that makes sense

## IoT sensors will add smartness to the home for assisted living

All **check**marks™ sensors have multiple functionalities that can be utilised across the installation. For instance, all wireless sensors have a built-in thermometer, so that you can keep an eye on the temperature across all rooms. All sensors run on battery to make the installation seamless.

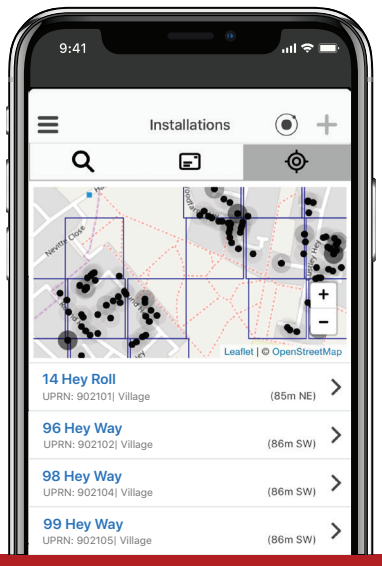
But the smartness of the system comes with the intelligent way we handle all the data across sensors. This is mainly done in the gateway, and increases the safety and availability of the system.

A combination of various artificial intelligence technologies in the gateway utilises the data to provide actions and alarms. If we have seen that the resident is staying much longer in the bathroom than normal, the relatives or the care center are notified. We also store data on the gateway for 100 days so that **check**marks™ can learn from the past and get more clever. The balance is to minimise false alarms without ignoring the alarms that really count.

This is why it is important for Amplex to continuously improve **check**marks™ and update our customers with the latest findings and adjustments – we like to be better and better at what we do, ensuring that all our customers will benefit.

## Quick and intuitive installation – also at scale

Amplex expertise from large scale utility deployments within smart energy solutions has been applied to **check**marks™ to ensure that deployment at scale can be easily managed. The geo-aware app will automatically find the nearest location and a quick scan of the gateway will automatically set the gateway up with a predefined configuration. The system will immediately look for sensors, so that the installer can easily set these up. Every minute saved during installation is money in the bank.




The **Activity Sensor** checks if the occupant moves, **doesn't get stuck in the bathroom**, gets up in the morning and moves around as normal. If not, the relatives may be alerted.

The **Smart Plug** protects your home appliances by **automatically turning off your coffee machine** or electrical blanket when you forget about it. It even counts the number of times the kettle has been boiling to ensure life is as it's supposed to be.

The **Flooding Sensor** will alert you and yours if you forgot to turn off the bathtub or if you have a situation in your basement. It **protects against electrical shocks** as it can turn off all your home appliances that are protected by the smart plug.

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The **Smoke Sensor** is the basic home protection that is applied everywhere. Our sensor is a bit more smart as it signals your relatives and others that can help. It even **turns off your toaster** and all other home appliances to stop the source of the smoke.

The **Panic Button** is a long life necklace or wrist band push button to get immediately attention.

The **Humidity Sensor** monitors detects **damp** and **mold-creating** conditions and warns if the indoor climate is unhealthy. Many elderly **forgets to ventilate** the house, which can cause asthma and allergy.

The Gateway talks to all kinds of open standard sensors and communicates to the central server using mobile network or WiFi.

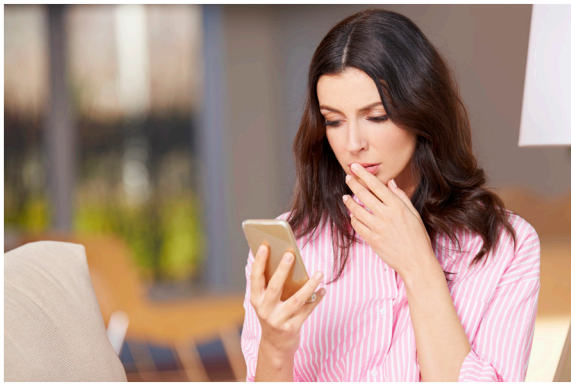
The **Magnetic Sensor** provides a number of smart functions: It can be used to detect if the resident is **in or out**, if he **takes his medicine, forgets to eat** and how frequently he **is making tea** or coffee. All made to ensure that the resident is in good health.

Any wireless **IKEA LED bulb** can be controlled and automated so that it **turns on automatically** when the light level is low, if there is movement, or if somebody opens the door. The light is turned off again when it's not needed.



An **LED light panel** or LED bulb provides circadian control using bright blue colours during day hours which gradually will be changed to more warm and calm colours during evening. Circadian lighting can have a very **positive effect on sleep, dementia, aggressive behaviour** and overall wellbeing.

**Wireless thermostats** can be remotely adjusted by relatives to ensure that the **indoor temperature is optimal.** Many elderly tend to forget to adjust the heat in the autumn causing dangerous situations.



# App for relatives

## Great overview + all the necessary details

Getting the app up and running for the resident or for a relative is very easy. Download our app to your smartphone or tablet, scan the QR code on the resident gateway and you are done – quick and easy.

The app provides access to an overview of the home and the behavior of the resident. The **check**marks™ app is self-configuring based on the sensors installed in the home, and tiles show the needed information for each room. Specialised tiles show information such as which room the resident is presently in, last time the fridge was opened, the number of times the kettle was used and when the medicine cabinet was opened. All to give a quick update.

Various triggers will also raise alarms to the smart phone, like if the resident has been in the bathroom for a long time, if the resident forgot to eat or take medicine etc.

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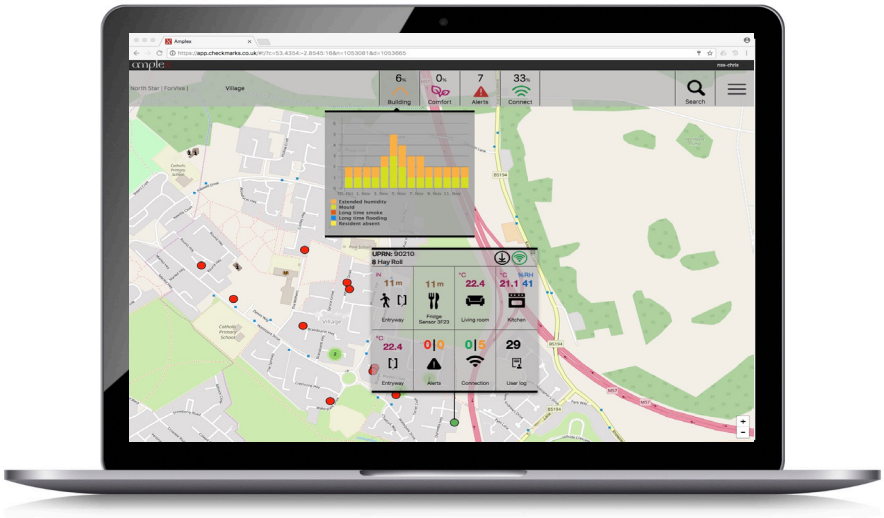
# Dashboard

## The big picture spiced with relevant KPIs

Successful communities optimise all available resources to empower their caregivers to achieve a higher standard of care. In doing so, both residents and caregivers benefit, which creates an atmosphere of trust and assurance. In this environment, success is measurable.

By providing information that may potentially reduce accidents in the home and the risk of other emerging health concerns, seniors may be able to stay independent longer. At the same time, healthcare providers can develop more tailored care plans using the **check**marks™ data, that make them confident they are performing their job at the highest level. Care becomes more personal when it is determined by actual needs and resident privacy is prioritised without unnecessary intrusions.



KPIs give large communities an instant overview of the progress of building issues and resident comfort initiatives, and pinpoints where specific needs must be addressed.

Shifting from a scheduled rotation to a needs-based delivery can increase the care quality and will have a positive impact on the savings as time is spent where it's needed.

**check**marks™ is a highly configurable solution where various parameters can be adjusted according to community requirements. Amplex provides specialised mobile apps for relatives, caretakers and installers, optimising the solution for individual requirements.

Making it possible for the elderly to stay longer in their home instead of moving to a nursing center will improve their quality of life. At the same time, it of course saves money for the municipality, up to 125 euros per day and resident. So now may be the time to get all the advantages of digital healthcare packed in one feasible solution.

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## Smarter Footprint

Saving is in our DNA. No matter if it is power, water, cooling or district heating. Saving resources is a must to secure a high quality of living in the long-term.

Amplex originated from the area of remote control and management of streetlight systems. Later our focus expanded to include intelligent metering, Energy Management, Smarts Grid and Water Monitoring solutions. Most recently we have added checkmarks™ – helping elderly and relatives in their day-to-day life and thereby increasing their quality of living from day one. For us it was not a big jump to go from traffic safety to home safety.

Our solutions have unlimited scalability and are built on open platforms. With a modular, carrier-neutral platform, we provide real-time data from the field. Along with a constantly growing partner network, we have established a global presence and a solid experience in implementing efficient solutions in any environment.

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