

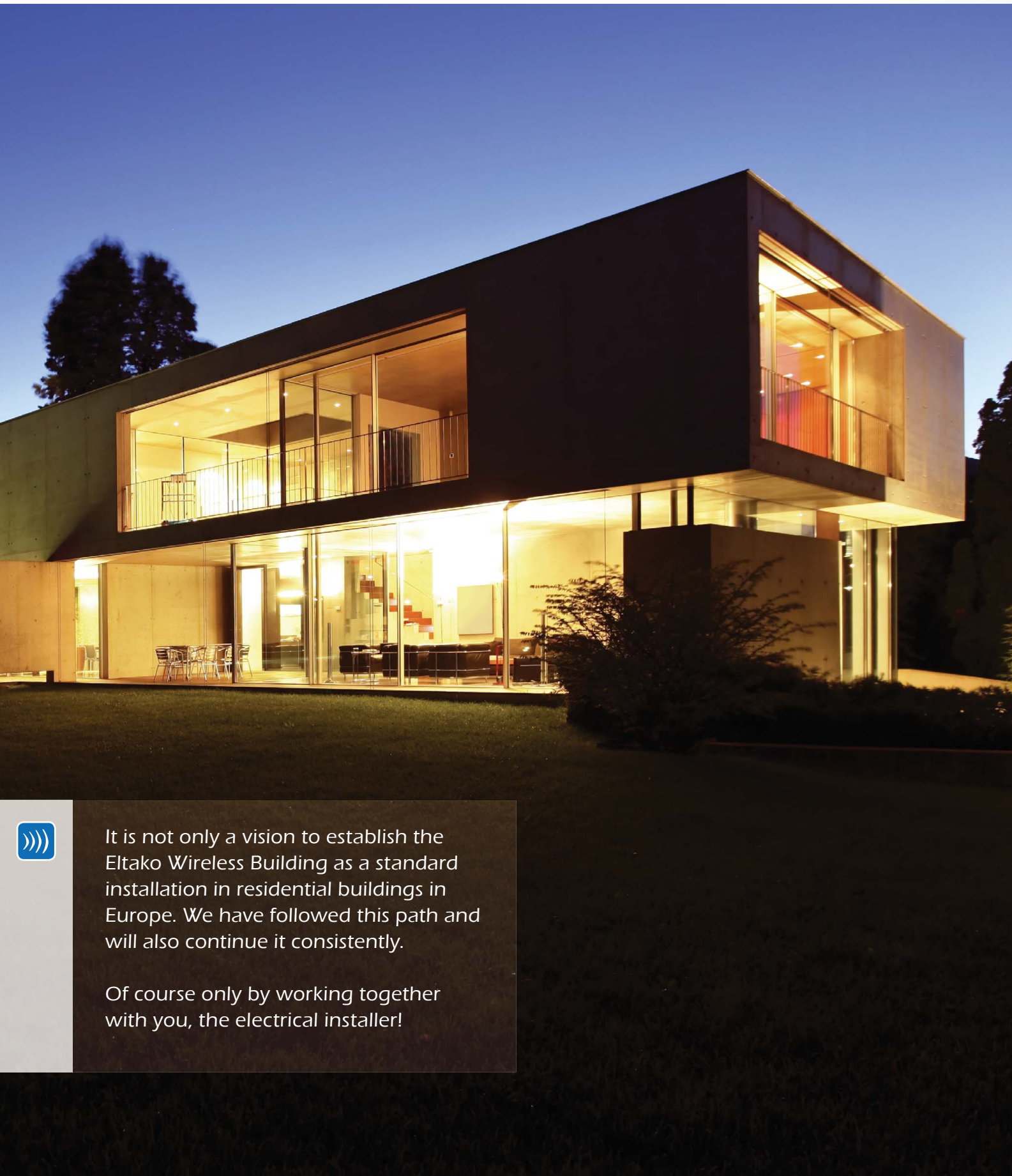


Eltako – The Wireless Building

The future of electrical installations
in residential buildings

Installation instructions
for electrical specialists





The Wireless Building has its own laws
which we understand better every day.
We want to share this knowledge with
you so that we smoothly learn to install
this technology

- 01 planning of range
The precise planning of the transmission path is prerequisite for a properly operating system.
- 02 maintenance
Due to the batteryless EnOcean technology the system is very low-maintenance. Substantial costs and maintenance effort can be saved.
- 03 encoding
Absolute security and safety – due to the encoded signal transmission of the wireless building.
- 04 price and costs
It's amazing but the costs for a wireless installation are comparable with a conventional standard installation – with increased comfort!

01 02



03 04



The transmission power and transmission frequency of the Wireless Building in the 868 MHz band are limited, so there is little wireless traffic in this band. Our sensors and actuators only transmit wireless telegrams if this is really necessary. The batteryless or wireless sensors can do this in any case only when needed. The transmission power of Eltako Wireless Building is only about 0.01 watts, the transmission power of a smartphone however 0.25 to about 1 watt!

In fact, you can install a reliable, inexpensive, safe and comfortable Wireless Building with 868 MHz sensors and actuators.

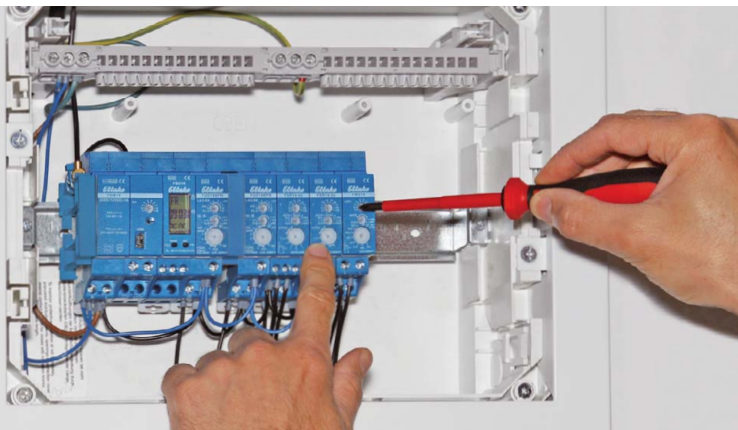
The **range** has to be paid attention to when it comes to planning and implementation. In addition, the Wireless Building has to be made sustainable for the future. Electronics does not live forever and their **maintenance** must therefore simply be unconditionally. If needed the Wireless Building has to have a standard **encoding** to prevent unwanted external access. All this, of course, to a relatively attractive **price**.

These four factors – **range, maintenance, encoding and price** – largely determine the type of installation of the Wireless Building.



It is not only a vision to establish the Eltako Wireless Building as a standard installation in residential buildings in Europe. We have followed this path and will also continue it consistently.

Of course only by working together with you, the electrical installer!



For the sustainable Wireless Building actuators should be installed as modular devices in distribution cabinets – regardless of the nature and use of the building.

05

The decentralised mounting of the actuators in wall-in boxes has its own charm but should be limited to retrofitting and simple renovation because of the complicated maintenance and higher costs. It would not be acceptable in the future to look for many built-in devices in a building at the end of their lives, to remove panels and to teach-in replacement items. In addition, each in-wall actuator has its own expensive wireless unit which also requires expensive storage for the encoding.

Actuators for wall-in boxes should be mounted behind the switches so they are easily replaceable. Not hidden, for example, in roller shutters.

However the distribution cabinets are always accessible. A backup of the programmed functions and an uploading in exchanged actuators will be part of the new modular series 14 with an USB connection and a software tool. In addition functions can be realised which are not possible for in-wall actuators due to space reasons. The wireless unit including encoding is only available once in the wireless antenna module. That's why RS485-bus connected actuators are cheaper than the built-in devices. Energy meters are also very easy to integrate over the RS485 bus, even if they are on a different floor.



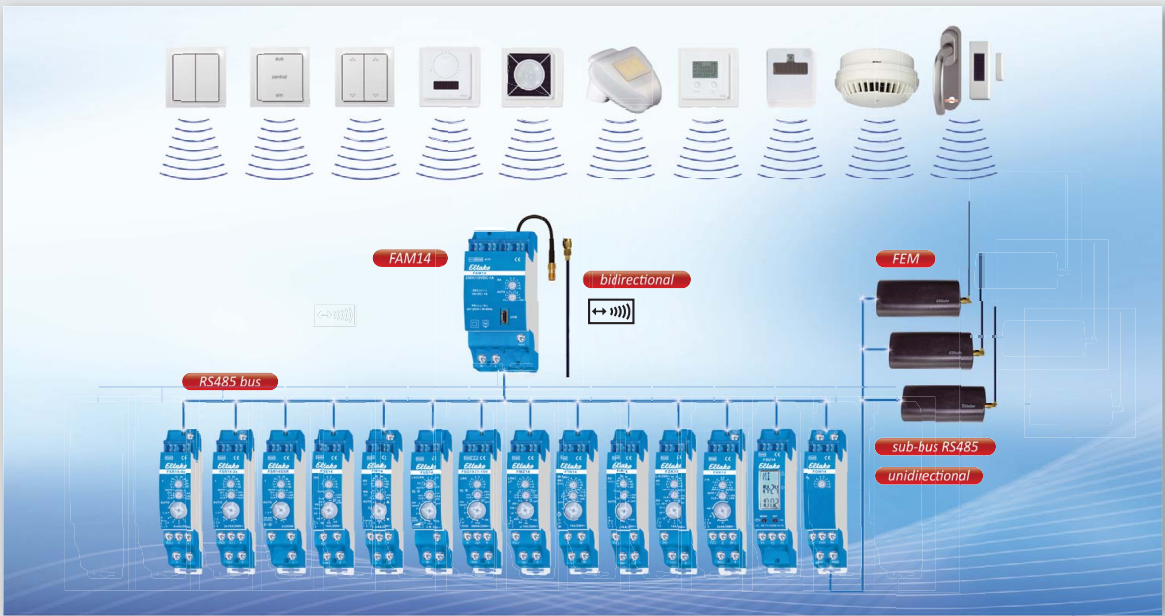
The classical one-family house with basement, ground and top floor allows many installation methods of the actuators as modular units. The new series 14 is so flexible that any electrician can retain his familiar and proven method of installation.



Important is the arrangement of the antennas and / or repeater. The wireless antenna module FAM14 is conveniently centrally installed in the building. The bi-directional wired Eltako RS485 bus connects this antenna module with all actors. It does not matter where they are. Either all together in a distribution or spread over several sub-distributions. The actuators are connected with simple plug-in bridges regarding bus and power supply.

A standard shielded 4-conductor telephone cable is enough for a bus to connect multiple distributions.

Over a RS485-sub-bus up to three additional antennas can be arranged in the building so that the reception of wireless sensor telegrams is guaranteed everywhere. In addition - or alternatively - repeaters can be used which do not require a bus connection.



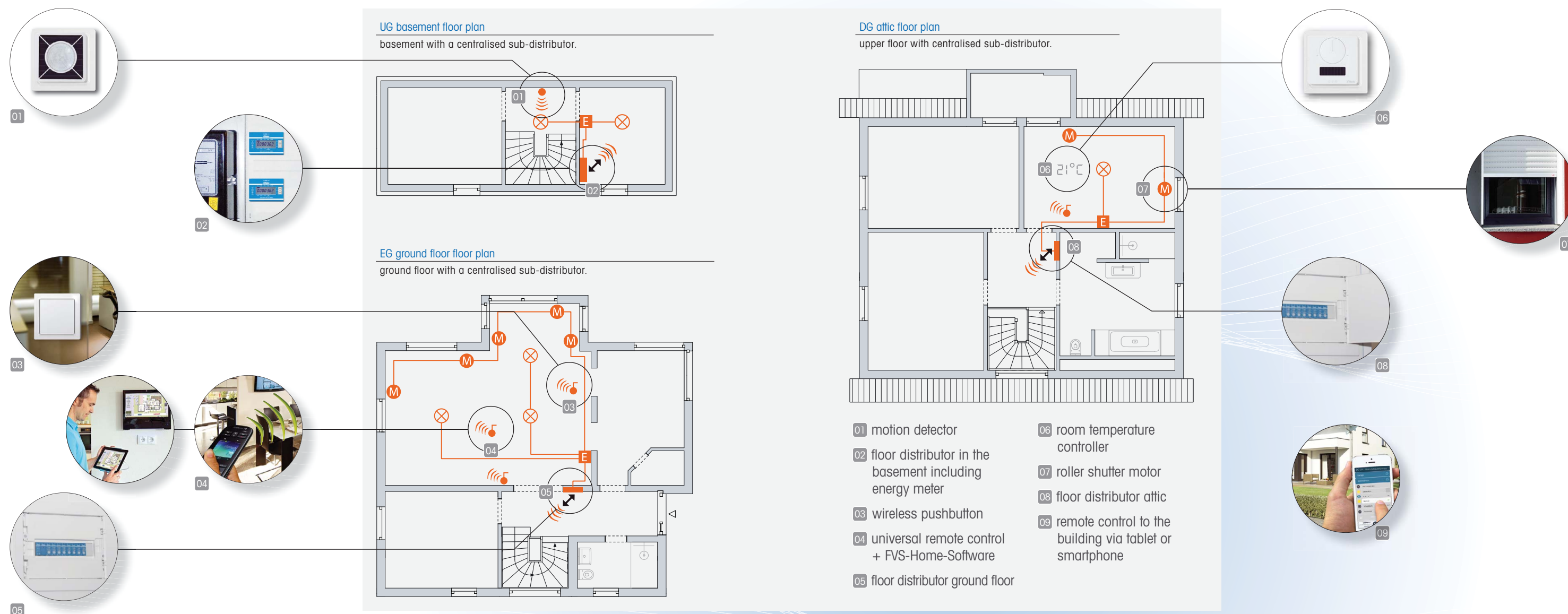
05 centralised mounting

In the centralised mounting the actuators will be installed in a sub-distribution cabinet and a RS485 bus will be built. The consumers will be controlled centrally from the sub-distributor. The picture shows the 14 series with jumpers instead of cross wiring.

06 RS485 bus rail-mounted devices

The new Series 14 is bidirectional, so it can send and receive. A sub-bus with additional antenna modules can be added at any time.

06



For the one-family house we recommend the mounting of the wireless actuators in a distribution cabinet or sub-distributor per floor.

The bidirectional wireless antenna module FAM14 is located in the distributor on the ground floor at the ground floor actuators. The bus line of the Eltako RS485 bus is shielded with a normal telephone line to the distributor and also performed in the attic for distribution in the basement.

These sub-distributors are preferably directly above and below the basement distributor so that it's radioed as vertical as possible through the concrete ceiling when using repeaters.

The wireless antenna of the FAM connects the sensors of the basement and the attic with the RS485 bus. Normally an external antenna is not required. If the range to the farthest sensors is not sufficient, repeaters are installed. One repeater each as a rail-mounted device in the distributors in the basement and the attic. And one repeater each on both sides of the longest diagonal of each floor, about midway between the distributor and the end of the diagonal. The repeaters on the diagonals of several stories should also be arranged vertically, so that an optimal wireless connection is guaranteed.

With this method of installation every wireless sensor telegram is received by a maximum of 2 times and forwarded - just as it should be.

Repeaters are much cheaper than additional antennas to be sold into the downstream of a bus. Quite apart from the visibility and the installation costs of the antenna including special cable to the distributors. However the repeaters either disappear in the distributor or are mounted in-wall next to the box due to the power outlet.

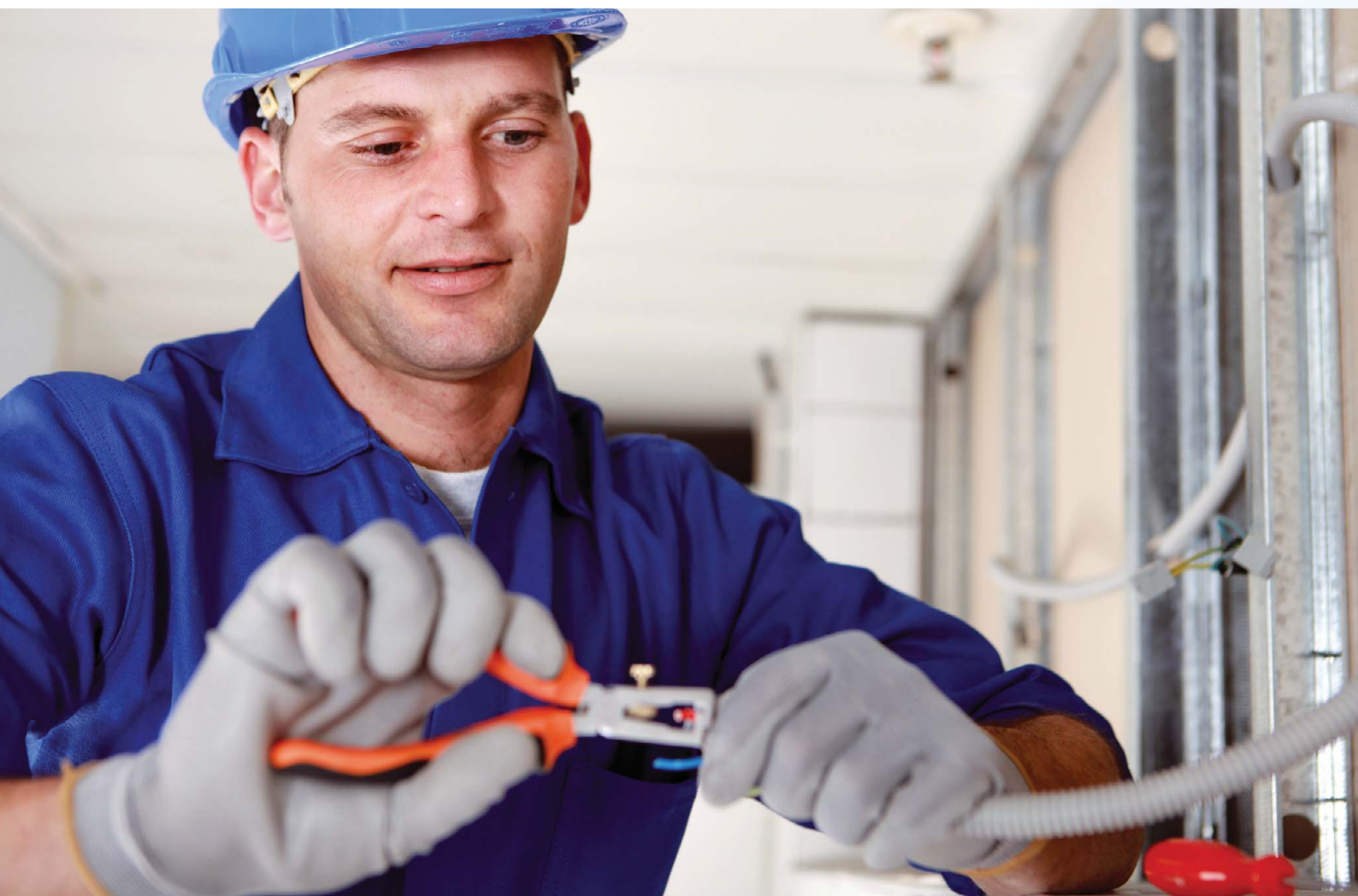
Use of wireless building visualisation and control software GFVS-3.0 with the computer GFVS-Safe II.

With a low cost gateway information from the FAM14 passed to the RS485 bus and the responds of bidirectional actuators are headed directly to the FVS-server. Likewise, manual or automated instructions from the FVS are transferred into the bus.

An apartment in an apartment house

The apartment corresponds to the ground floor of the one-family house and is therefore installed identical. If energy meters should be connected in the basement, it is possible at any time via a powernet connection.

In new constructions we recommend a conduit for an RS485 bus line in addition to the energy meters.



You as an electrical specialist are the specialist for future-oriented technologies.

Explore the possibilities of Eltakos Wireless Building and offer your customers the most diverse solutions in the building installation.

Benefiting from EnOcean technology the low maintenance and easy to install system offers significant competitive advantages over a wired installation.

*We would be pleased
to send you our brochure!*

