

## Eltako Blue Net – the blue wireless network in the building



**The Eltako Wireless System –  
Switch To Total Freedom**

### **FVS-Safe**

Server with installed  
FVS Wireless Visualisation and  
Control Software



### **BSC-BAP**

Wireless LAN access point  
(receiver and transmitter)  
approx. 200 to 400 m<sup>2</sup> per BSC-BAP



### **FAM-USB**

Wireless antenna module  
(receiver and transmitter)  
with USB port



**Eltako Blue Net** is the wireless network for all buildings.  
Server-assisted building monitoring, control and visualisation.  
Secure data management with Eltako FVS-Safe and the factory installed  
Eltako FVS Wireless Visualisation and Control Software

- Monitoring and transmitting of wireless information independent of the size of the building and number of locations.
- Eltako BSC-BAP wireless LAN access points each for approx. 200 to 400m<sup>2</sup> building surface area with data buffer and automatic management of important functions.
- Eltako FAM-USB wireless antenna module for smaller buildings.
- Transmitting of wireless telegrams over long distances using Eltako FPV12 wireless Powernet connectors over the power mains.
- Transmitting of energy meter information directly from the meter SO interface to one of the USB interfaces of the FVS-Safe computer using Eltako FPZ12 Powernet meter connectors.

# Eltako Blue Net – the blue wireless network in the building

**Eltako Blue Net** <sup>1)</sup> is the wireless network for all buildings. Server-controlled building monitoring, control and visualisation. Secure data management <sup>2)</sup> by means of **Eltako FVS-Safe** <sup>3)</sup> and the factory installed **Eltako FVS Wireless Visualisation and Control Software** <sup>4)</sup>.

Monitors and transmits wireless information independent of the size of the building and number of locations.

**Eltako BSC-BAP wireless LAN access points** <sup>5)</sup> for 200 to 400m<sup>2</sup> building surface area including large data buffer and automatic management of key functions.

**Eltako FAM-USB wireless antenna module** for smaller buildings.

Transmits wireless telegrams over long distances using **Eltako FPV wireless Powernet connectors** over the power mains <sup>6)</sup>.

Transmits energy meter information directly from the meter SO interface to one of the USB interfaces of the FVS-Safe computer using **Eltako FPZ12 Powernet meter connectors** <sup>6)</sup>.

The **Eltako Blue Net** is prepared to set up an encrypted data link to power supply companies. This is a precondition for future load-dependent tariff controls in the **Smart Net** <sup>7)</sup>. **Eltako** also supplies the associated **Smart Meters**.

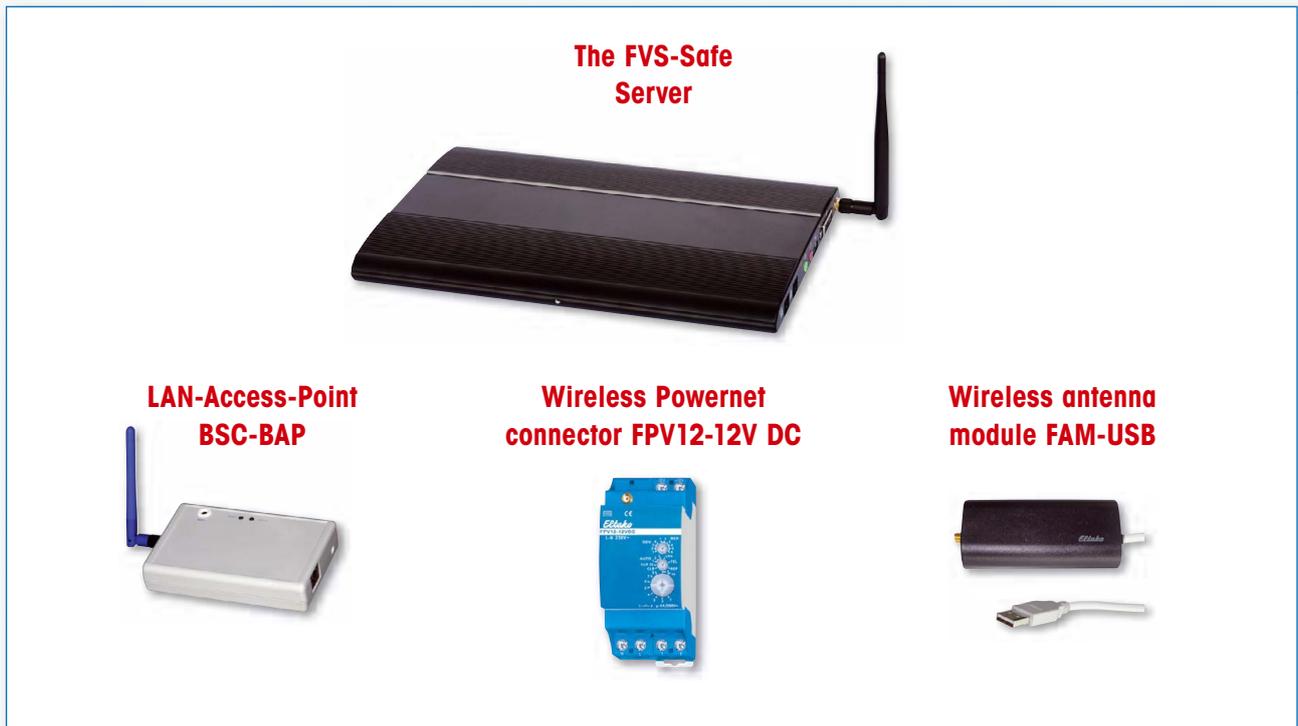


- <sup>1)</sup> The Blue Network (wireless network). Derived from the Eltako corporate colour blue which is the symbolic colour for environmental protection and sustainability in numerous countries – e.g. in the USA.
- <sup>2)</sup> All data and events are saved to a database for a predefined period. A net storage capacity of up to 75 GB is available for data. As protection against data loss, data is stored redundantly on a hard disc partition using a special process. In addition, data can be stored externally, e.g. on a USB stick.
- <sup>3)</sup> The Eltako FVS-Safe is a flat fanless server which can either be secured under a table top or to the rear of an appropriately equipped monitor using one of the VESA mounts contained in the scope of delivery. The Windows 7 operating system is also installed as well as the Eltako FVS Wireless Visualisation and Control Software.
- <sup>4)</sup> The FVS Wireless Visualisation and Control Software visualises the switch positions of actuators and the consumption of connected meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be switched using preset software links. All you need to do then is click the mouse or touch the monitor screen. This is not included in the scope of delivery to allow the user to select the solution according to his personal requirements. It could also be an existing TV set. A notebook can be connected to the computer at any time. The connecting cable is contained in the scope of delivery.
- <sup>5)</sup> The BSC-BAP wireless LAN access points communicate with all components in the Eltako Blue Net wireless network. They exchange information by intercommunication and with the computer using TCP/IP over the ETHERNET. Every BSC-BAP covers a building surface area of approx. 200 to 400m<sup>2</sup>. This is dependent on the construction of the building.
- <sup>6)</sup> The wireless network is an ideal supplement to the wireless network and additionally uses the power mains (Powernet) to transmit information over large distances up to 300 metres. However, compared with wireless components, Powernet components are very expensive and therefore they are not a practical general substitute for wireless.
- <sup>7)</sup> If required, the power supply company can retrieve the load profile of a building and offer the appropriate tariffs. Tariffs are then saved in the computer so that you can perform and display a calculation of costs. Control information can also be saved so that certain consumers are only switched on depending on the tariff in order to lower energy costs.

Like a spider in a web the FVS-Safe server 'feels' all 'vibrations' in the network. It detects every single wireless telegram within the entire building. This is the work of the **BSC-BAP wireless LAN access points** which capture all signals and send them to the computer via ETHERNET. Or the **FAM-USB wireless antenna module**. Or the **FPV12 and FPZ12 wireless Powernet connectors** which use the power mains to send information over large distances to the computer. No conventional bus lines within the entire building are required for this, so you can definitely save costs here.

There is more to the server and its assistants than listening, they can also send control commands and information over the **Eltako wireless network**. For example, to control a building's energy supply, to supply fresh air, control shading elements optimally or switch lighting from a central point.

Reliable calculations show that optimised automatic building control is required to implement the **zero energy building** or even the **+ energy building**.



## The basis with sensors and actuators

Without **Eltako sensors and actuators** no information or control commands can be sent over the wireless network. They form the basis for the **Eltako Wireless** and of course they operate without a server if there is no requirement for centralised building monitoring, centralised building control or visualisation.

**Eltako sensors** for switch commands, temperature, brightness, motion, humidity and air quality run partly without external power supply.

Batteryless and cordless **Eltako FFT, FT4, FHS** and **FMH wireless pushbuttons** generate their own power requirements for wireless telegrams when operated. **Eltako FAFT, FAH, FBH, FTF, FTK** and **FTR sensors** generate their power requirements from a solar cell and save excess energy from daylight to storage capacitors so that there is sufficient energy for trouble-free functioning in the dark.

Further Eltako sensors have a higher power requirement which they cannot generate themselves and therefore require an external power supply.

**Eltako actuators** are the backbone of **Eltako Wireless**. They only evaluate directly addressed wireless telegrams in order to switch or control any number of consumers in the building. Some have a **bidirectional function**. This allows them to send back their switch states to the server or displays or directly initiate other functions via actuators. In addition, these actuators may also function as repeaters.

Of course there are specific actuators for either centralised or decentralised installation – as with all conventional **Eltako switchgear**. If the **Eltako RS485 bus** is installed centrally with rail mounted devices in switch cabinets, an **Eltako FAM12 antenna module** is used to communicate with the actuators. The RS485 bus can also be used composite or without wireless by means of the **Eltako FTS12 pushbutton input module**.

**Eltako Blue Net uses all Eltako Wireless components in an ingenious way and can be installed even in small installations. The components are all downwards-compatible!**

All sensors and actuators communicate within the Eltako wireless network by means of telegrams using the world-wide standard of **EnOcean Alliance**. The batteryless and cordless wireless modules in the Eltako Wireless pushbuttons are produced by **EnOcean** in Munich as well as the wireless microchips in the other sensors and actuators.

**Eltako** therefore develops and manufactures **all** the sensors and actuators it offers. These are of course compatible with all products made by other manufacturers within the enormous international EnOcean family.

### A short selection of our wireless sensors and actuators



**FT4F**  
Flat pushbutton  
without battery or  
wire



**FT2SF**  
Flat wireless sensor  
pushbutton with  
two touch surfaces



**UFB-Harmony One+E**  
Universal remote  
control from  
LOGITECH



**FMH2S-wr**  
Mini hand-held  
transmitter for  
calling systems



**FBH63AP**  
Motion/brightness  
sensor



**FTR55D**  
Temperature controller  
with display



**FSA12**  
Switching actuator  
ES/ER/EW



**FUD12NPN**  
Dimming actuator  
500W



**FSR61NP**  
Switching  
actuator



**FUD61NP**  
Dimming actuator  
without N

## You can start small with Eltako Wireless.

An actuator with two batteryless and cordless wireless pushbuttons is already a very elegant solution to the problem of missing pushbuttons. The old light switch is replaced by a wireless actuator preceded by a wireless pushbutton and any number of other wireless pushbuttons can be fitted. Then of course, the wireless actuator can also be a wireless dimming actuator.

**At the other end of the unlimited and wide spectrum of possibilities with Eltako Blue Net**, there are networked skyscrapers with hundreds of wireless sensors and wireless actuators, in groups or grouped floor by floor, monitored, controlled and visualised by FVS-Safe servers and installed FVS software.

## The 4 stages on the Eltako Wireless success ladder

### Stage 1

A few wireless sensors and wireless actuators to improve or expand an existing installation. Generally with actuators installed decentrally.



### Stage 2

Several wireless sensors and wireless actuators to renovate an existing building or construct a new building but without centralised monitoring, control or visualisation. With actuators installed decentralised and/or centralised.



### Stage 3

Several wireless sensors and wireless actuators in a residential building with centralised monitoring, control or visualisation. With a FVS-Safe Blue Net Server and a FAM-USB wireless antenna module which includes a software license for FVS-Home. Actuators mainly installed centrally and supplemented by decentralised installation.



### Stage 4

Many wireless sensors and wireless actuators in a large building with centralised monitoring, control or visualisation. With the Eltako FVS-Safe Blue Net Server, software license for FVS-Professional and BSC-BAP wireless LAN Access Points. Actuators partly installed centrally, partly installed decentrally in suspended ceilings.



# Centralised installation of actuators

Centralised installation in the 'intelligent distribution' has advantages and disadvantages compared with decentralised installation in switch boxes or suspended ceilings.

The main disadvantage is long wires since each actuator and consumer requires a direct connection.

However, the additional material consumption and the routing costs are immediately compensated since only a single receiver module (FAM antenna module) is required for centralised installation and only a single power supply (SNT12-230V/12V DC switch mode power supply unit), whereas every single decentralised actuator requires an integrated receiver and power supply.

Another disadvantage is the longer wireless links from the pushbuttons to the distributor. However, the disadvantage very quickly becomes an advantage: distances are reduced by a rather low-cost FA250 receiving antenna or even a high performance FA200 receiving antenna with a gain of 7 dBi. An FVS-Safe server can even be installed.

What remains are only the familiar advantages:

very simple installation, well arranged wiring, easy replacement, rapid upgrading and no need to open up plaster, wallpaper etc. on site. Some functions cannot be implemented anyway due to space constraints in the switch box.

**Very often the ideal solution is a combination of centralised and decentralised installation.**

## Schematic diagram

Eltako Wireless System with centralised mounting of DIN rail mounted actuators



Decentralised installation in switch boxes or suspended ceilings has advantages and disadvantages compared with centralised installation in distributors and switch cabinets.

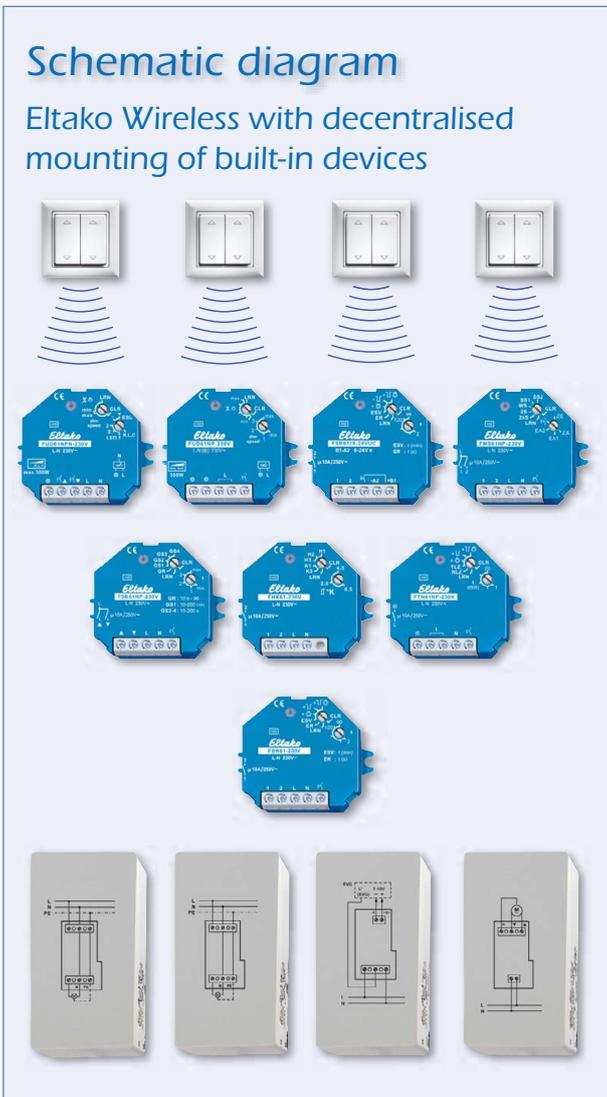
The main disadvantage is the material resources required for decentralised actuators since each actuator must comprise its own receive electronics and power supply.

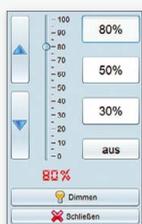
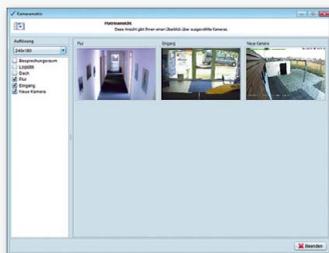
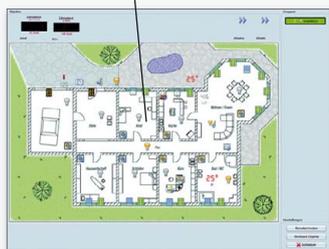
However, additional material resources are immediately compensated as there is no direct connecting wire required between each actuator in the distributor and the consumers with the decentralised installation.

If a FVS-Safe server is installed with a FAM-USB, repeaters may be required to span large distances. In many cases, it is sufficient to equip the FAM-USB wireless antenna module with a low-cost FA250 antenna or a high performance FA200 antenna with a gain of 7 dBi. Greater distances can be easily managed by a BSC-BAP in a LAN network with the FVS-Safe as server.

Decentralised installation offers enormous advantages, especially with extensions and light renovations. Wireless sensors can be installed 'cleanly' almost anywhere. Actuators can be simply fitted in existing switch boxes with the switching wire routed to the consumer or they can be mounted directly in the consumer.

**Very often the ideal solution is a combination of centralised and decentralised installation.**





## Monitoring and controlling of electrical loads

The operating state of electrical loads, such as lights, roller shutters, PCs, TVs, etc. is monitored and can be controlled. Terminal units and entire rooms or floors can be switched to 'power off' at the click of a mouse.

To prevent data losses, PCs are shut down and switched off before disconnecting from the power mains.

## Monitoring windows and doors

The state of windows (open/closed/tilted) and doors (open/closed) are visualised in real time. Signals from HOPPE window handles and/or FTK window/door contacts are evaluated. A combination of handle and FTK is also possible. All changes of state are also saved on demand in the database as 'History'.

## Monitoring sensors

By connecting sensors, the system can detect and display parameters such as temperature, brightness, humidity and motion. As with doors and windows, sensor data can of course be evaluated in graphic form.

Statistics such as temperature, etc. can be compiled using the integrated 'History' function.

## Integrating USB and IP cameras

IP and USB cameras made by leading manufacturers (the list of supported cameras is constantly growing) can be integrated and this allows optimum building surveillance. Single images or entire video streams can be sensor-controlled or recorded at the click of a button.

## Dimming the absolute value

Lights can be dimmed to a precise percentage or to 3 individually adjustable values.

## Timer

The integrated timer can execute actions fully automatically without any intervention by the user. For example, this function allows the shutdown of all PCs and electrical appliances in office buildings from Monday to Friday at 18.00.

At home, the coffee machine can be switched on at 7.00 on weekdays – or at 10.00 on Sundays.

Presence can be simulated by switching lights on and off automatically to raise security.

## Visualisation of SmartMetering



At all times, you can quickly retrieve easily understandable up-to-date state information by means of graphic displays. For example, evaluations are provided on energy consumption over a specific period down to the smallest detail.

- Switching dependent on consumption
- Displaying, recording and evaluating parameters
- Supporting electricity, gas and water meters
- Displaying costs based on saved kWh prices
- Sending emails automatically at specific times

## Interconnecting buildings

Buildings can be logically interconnected. A change of state in one building can then lead to control in another. Opening a window can cause the ventilation to switch off.



## Light scenes and shading scenes

When scenes are taught in, 4 different light scenes and/or shading scenes are retrievable by pressing a wireless pushbutton or universal remote control pushbuttons. Scenes such as 'Central ON' and 'Central OFF' or 'Central UP' and 'Central DOWN' can be saved.



## Remote access via Internet/mobile phone

All monitoring and control functions are executable over the Internet or by mobile phone from all over the world. Both access to the system and data transmission are securely encrypted.

FVS-ToGo runs from a USB stick and leaves no trace on an external computer. Unsuccessful access attempts are detected and logged.



## Building reporting by email

A state change in individual buildings can be reported on request by email. For example, the user can be informed by email while he is travelling when someone enters a room or when someone rings at the door.



## Safety

The FVS software offers you maximum security:

- Encryption protects against software manipulation
- FVS-ToGo hardware encryption on USB stick
- Data transmission by clients are generally encrypted for external access

# Smart metering with Eltako Blue Net

Observing power consumption is a recognised way to sharpen awareness about energy consumption and to realise how consumers are driving up costs at what time of the day. If automatic countermeasures are taken – e.g. appliances with high consumption are only switched on at low tariff periods – this knowledge and the corresponding efforts take on a practical ecological and economic purpose.

**Eltako Wireless offers Smart Metering in several stages. From a low-cost solution in the home up to a professional solution in large buildings for genuine energy management.**

## Stage 1 in a home

A FWZ single-phase energy meter transmitter module in a circuit measures power consumption and sends wireless telegrams to the Eltako wireless network. We manufacture transmitter modules such as FWZ12 rail mounted devices for central installation up to 16A and 65A, or the FWZ61 build-in device for decentralised installation up to 16A.

An FEA55LED energy consumption indicator receives these wireless telegrams and displays realtime consumption and normal rate / off-peak by LEDs.



## Stage 2 in a home

Consumption measurement as for Stage 1. A FEA55D digital energy consumption indicator with display and a memory for consumption parameters receives the wireless telegrams. Realtime consumption and accumulated consumption are displayed constantly. The consumption over the past hours, days, months and years is also retrievable.



## Stage 3 in a home or a building

Power consumption is queried directly from the energy meters via their SO interfaces and sent over the Eltako wireless network by an FSS12 energy meter transmitter module. An integrated load shedding relay can switch off consumers if a preset consumption is exceeded.

Energy consumption in Stages 1 and 2 can be indicated by a FEA55 or by means of the FVS-Energy FVS Wireless Visualisation and Control Software or the FVS of the FVS-Safe. FVS-Energy is downloadable free of charge from the Eltako website.



## Stage 4 in all residential, office and commercial buildings

Up to 30 energy meters in a group can be connected by their SO interfaces to the FPZ12 wireless Powernet meter connector. Up to 3 meters per FPZ12. These FPZ12s transmit meter information over the power mains (Powernet). This information can be read out with other FPZ12s at any point in the internal building power mains and either transmitted over the Eltako wireless network or directly sent via an USB connection to FVS-Safe.

The data is displayed, evaluated and stored using the FVS Wireless Visualisation and Control Software of the FVS-Safe server. This can also be performed by FEA55 energy consumption displays in individual homes, departments or machine locations.





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## FVS-Safe



### Blue Net-Server FVS-Safe

FVS-Safe is a flat and fanless server which can be fixed under a table top or to the rear of a monitor fitted with one of the VESA mounts contained in the scope of delivery.

**The Windows 7 operating system (included in the price) is also installed as well as the Eltako FVS Wireless Visualisation and Control Software (not included in the price) which is activated by a FVS-Home or FVS-Professional license key.**

All data and events are saved to a database for a predefined period. There is a net memory capacity of up to 75GB available for data. As protection against data loss, data is stored redundantly on a hard disc partition using a special process. In addition, data can be stored externally, e.g. on an USB stick.

The installed FVS Wireless Visualisation and Control Software visualises the switch positions of actuators and the consumption of connected meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be made using preset software links. Then you only need to click the mouse or touch the monitor screen. This is not included in the scope of delivery to allow the user to select the solution according to his personal requirements. It could also be an existing TV set. A notebook can be connected to the computer at any time.

Software and license encryption by CodeMeter from WIBU-Systems. External data communication using 256-bit encryption.

**Without ETHERNET or WLAN, only a FAM-USB is required to communicate with the wireless network. This device and the supplied license key activate the FVS-Home software. At least one BSC-BAP is required for ETHERNET as well as a license key to activate the FVS-Professional software. This license key can also upgrade the system from FVS-Home to FVS-Professional.**



### Technical data

operating system	Windows 7 HP
CPU	Intel® Atom N270 1.6GHz
chip set	Intel® 945GSE
RAM	1 GB SO-DDRII RAM 800MHz
hard disk	2.5" HDD SATA 160GB
ports left	1 x serial port, 3 x USB
ports right	1 x DVI-I (VGA via adapter), 1 x USB 2.0 2 x Intel LAN 10/100/1000 Mbit, 2 x audio 6-channel HD
power consumption	approx. 10 watts (standby), approx. 14 watts (idle), approx. 17 watts (full load)
ventilation	silent, passive cooling
dimensions (HxWxT)	2 x 26 x 18 cm
wall mount	VESA standard
Weight	ca. 1.25 kg

**FVS-Safe**

Eltako Blue Net computer

EAN 4010312311127

**888,00 €/pc.\***

Recommended retail prices excluding VAT.

\* Price excluding software license

## FVS-Home



**Wireless visualisation and control software for up to 100 wireless sensors and up to 128 wireless actuators, 5 cameras and 25 timers.**

The FAM-USB wireless receiver with USB connection is required in addition for reception at the server and to send wireless telegrams from the server. FVS-Home is already included in the price and the license key is included with the FAM-USB. Updates for the installed FVS software can be downloaded from the Internet free of charge.



FAM-USB

## FVS-Professional



**Wireless visualisation and control software for LAN links. Up to 250 wireless sensors, unlimited number of actuators, 25 wireless cameras and 250 timers.**

At least one BSC-BAP LAN Access Point is required in addition for reception at the server and to send wireless telegrams from the server. The software is activated by a license key. Updates for the installed FVS software can be downloaded from the Internet free of charge.

One FAM-USB can also be used in addition to the BSC-BAP.



BSC-BAP

Performance features	FVS-Home	FVS-Professional
Number of supported sensors and energy meter transmitter modules	100	250
Number of supported actuators	128	128 per BSC-BAP
Number of supported cameras	5	25
Number of supported timers	25	250
Supports BSC-BAP	-	unlimited
SQL database in scope of delivery	✓	✓
Sends text messages/e-mails	✓	✓
Supports FVS-ToGo	✓	✓
Supports Eltako Mobile	✓	✓
Supports Clients	✓	✓ (A Client is included in FVS Professional.)
256 bit encryption	✓	✓

<b>FAM-USB with license FVS-Home</b>	USB wireless receiver	EAN 4010312305003	<b>149,60 €/pc.</b>
<b>FVS Professional license</b>	License key	EAN 4010312302002	<b>540,00 €/pc.</b>
<b>BSC-BAP</b>	Wireless LAN-Access-Point	EAN 4010312302040	<b>298,00 €/pc.</b>

Recommended retail prices excluding VAT.

# Additional licenses for FVS-Cam and FVS-Client

## Mobile phone apps, FVS-Mobile and WIBU stick FVS-ToGo

4

### FVS-Cam

**An additional FVS-Cam license allows you to expand visualisation to 5 USB and IP cameras within a building.**

In their basic equipment levels, FVS-Home visualises up to 5 cameras and FVS-Professional up to 25 cameras. The drivers for commercial cameras are included in the software. New cameras are added in upgrades.

<b>FVS Cam license</b>	Expansion kit each for 5 cameras	EAN 4010312302019	<b>68,00 €/pc.</b>
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### FVS-Client

**An additional license for FVS-Client permits the expansion of FVS-Safe by one external access (Client).**

In basic equipment level, the FVS-Professional supports one Client, on the other hand FVS-Home does not. The precondition is an additional IP connection between FVS-Safe and the Internet or an Intranet.

**The most important external access (Client) is the link to a mobile phone, in particular one of the new Smartphones.**

The FVS-Safe software with one client supports mobile phones such as the iPhone, Blackberry and others with Android software, and all Java-capable mobile phones. Also the iPad.

For the iPhone, iPad and all mobile phones equipped with Android software, **FVS Mobile apps** can be downloaded free of charge from the Internet shops of Apple and Google.

The mobile phones are then capable of visualising, controlling and accessing installed USB and IP cameras. Authentication and data transmission are encrypted.

<b>FVS Client license</b>	to activate one Client	EAN 4010312311110	<b>98,00 €/pc.</b>
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### FVS-ToGo

**The WIBU CodeMeter file on the 1 GB 'Metal Secure' USB stick is one Client and permits world-wide encrypted access to the FVS-Safe from any Windows PC equipped to access the Internet.**

Visualisation and control can be executed depending on the authorisation saved. Visualisation also with USB and IP cameras.

Authentication and data transmission are protected by the 256-bit hardware key. It leaves no evaluatable trace on the PC used. The free data memory can be used for personal codes and data. One license key is included.

<b>FVS-ToGo Stick 1 GB</b>	with WIBU CodeMeter file	EAN 4010312305119	<b>140,60 €/pc.</b>
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Recommended retail prices excluding VAT.

**BSC-BAP**



**Wireless LAN Access Point with ETHERNET interface for operation with a FVS-Safe server in conjunction with the FVS-Professional Wireless Visualisation and Control Software.**

100 MBit LAN.

Delivery including configuration software and power supply unit.

The BSC-BAP receives all wireless telegrams from the Eltako wireless network from a building area of approx. 200 to 400m<sup>2</sup> and forwards them via ETHERNET to the FVS-Software server. It also transmits wireless telegrams at the instigation of the software in the Eltako wireless network.

Housing dimensions l x w x h: 110 x 75 x 25 mm.

**BSC-BAP**

Wireless LAN-Access-Point

EAN 4010312302040

**298,00 €/pc.**

**FAM-USB**



**Wireless antenna module (receiver and transmitter) with USB port to operate a FVS-Safe server in conjunction with the FVS-Home Wireless Visualisation and Control Software.**

USB plug Type A with 1 m connecting cable.

Internal antenna and additional SMA socket to connect an external antenna.

When an external wireless antenna FA250 is connected in an optimised position, the transmit/receive range is significantly increased.

**It is only permitted to connect an external high performance receiving antenna FA200 if wireless signals are only received and not transmitted.**

Housing dimensions l x w x h: 78 x 39 x 22 mm.

**The license for the FVS-Home software is included in the price of the FAM-USB. One license key is included.**

**FAM-USB with FVS-Home license**

Wireless USB receiver/transmitter

EAN 4010312305003

**149,60 €/pc.**

## FPV12-12V DC



	-12V	+12V
⊙		
N	L	1 2

**Wireless Powernet connector to transmit wireless telegrams over the 230V power mains. With 32 data channels. Only 0.7 watt standby loss. Also settable as repeater. If required, a wireless antenna FA250 or FA200 can be connected.**

Modular device for DIN-EN 60715 TH35 rail mounting.  
2 modules = 36mm wide, 58mm deep.

**FPV12s are used to input wireless telegrams into the power mains and output them to the wireless network at another location. An FPV12 can operate in both directions. Up to four FPV12s and FPV12USBs can be combined into a group to enter or output telegrams at various points in the power mains.**

The 12V DC power supply is provided by a switching power supply unit SNT12-12V DC that is only 1 or 2 modules wide. With a power consumption of 12W or 24W, it can also power actuators as a rail mounted device.

The length of the 230V transmission line between input and output can be up to 300 metres. It is dependent on the contact resistance of the intermediate connections and the cable layout. If Powernet telegrams are not coupled into other external cables via parallel lines, this can be arranged using a phase coupler FPP12 so that output can be made to any line.

Up to 32 sensors with their fixed ID numbers saved can be taught-in in the input FPV12. When these sensors are taught-in in the actuators, new unique ID numbers are issued by the output FPV12. This ensures that the actuators only execute the commands of the output FPV12, even if the original wireless telegrams arrive there.

Every FPV is equipped with a **fault relay** for safety applications. This closes the floating contact 1-2 for 3 seconds if the output FPV sends no receive confirmation within a preset time or the data buffer overflows.

Up to 24 consecutive incoming wireless telegrams are buffered and pushbutton signals are transferred as first priority. Transmission takes place in compliance with CENELEC B in the range from 95 to 125 KHz at up to 2.5Kbps.

The **red LED** accompanies the teach-in process and indicates incoming wireless telegrams in operation by blinking briefly. The green LED indicates received Powernet telegrams in operation by blinking briefly.

**FPV12-12V DC**

Wireless Powernet connector

EAN 4010312305249

**193,50 €/pc.**

## FPV12USB-12V DC



	-12V	+12V
N	L	1 2

**Wireless Powernet connector to transmit wireless telegrams from the 230V power mains via the USB interfaces directly to the FVS-Safe server. Only 0.7 watt standby loss.**

Modular device for DIN-EN 60715 TH35 rail mounting.  
2 modules = 36mm wide, 58mm deep.

**Up to four FPV12s and FPV12USBs can be combined into a group to enter or output telegrams at various points in the power mains.**

For power supply, cable length and fault relay, see the FPV12-12V DC description

July 2011.

**FPV12USB-12V DC**

Wireless Powernet connector

EAN 4010312311219

**193,50 €/pc.**

## FPZ12S0-12V DC



		-12V	+12V
		S03+	S0- S02+
E1	E2	S01+	S0- S02+
N	L		

**Wireless Powernet meter connector with 3 S0 inputs to transmit meter telegrams over the 230V power mains. Only 0.7 watt standby loss.**

Modular device for DIN-EN 60715 TH35 rail mounting.  
2 modules = 36mm wide, 58mm deep.

**To input meter telegrams in the power mains, up to 10 FPZ12S0s and therefore 30 meters can be connected to form one group.**

Up to 3 meters and their meter readings can be metered in the input FPZ12 via the display by pressing MODE and SET. At the same time, you can define from which output FPZ12 meter messages can be evaluated.

Meter telegrams can be output from the power mains either by one or several FPZ12USBs and their USB interfaces directly into an FVS-Safe or by FPZ12Fs into Eltako wireless networks.

For power supply and cable length, see the FPV12-12V DC description.

July 2011.

## FPZ12S0-12V DC

Wireless Powernet meter connector

EAN 4010312311387

193,50 €/pc.

## FPZ12F-12V DC



		-12V	+12V
N	L		

**Wireless Powernet meter connector to transmit meter telegrams from the 230V power mains into the Eltako wireless network.**

**With exchangeable antenna. Only 0.7 watt standby loss. If required, a wireless antenna FA250 or FA200 can be connected.**

Modular device for DIN-EN 60715 TH35 rail mounting.  
2 modules = 36mm wide, 58mm deep.

**To output meter telegrams, up to 30 FPZ12Fs for 30 meters can be connected to form a group. Every FPZ12F sends only telegrams whose authorisation are saved in the FPZ12S0.**

For power supply and cable length, see the FPV12-12V DC description.

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## FPZ12F-12V DC

Wireless Powernet meter connector

EAN 4010312311394

193,50 €/pc.

## FPZ12USB-12V DC



		-12V	+12V
N	L		

**Wireless Powernet meter connector to transmit meter telegrams from the 230V power mains via the USB interfaces directly to the FVS-Safe server. Only 0.7 watt standby loss.**

Modular device for DIN-EN 60715 TH35 rail mounting.  
2 modules = 36mm wide, 58mm deep.

**To output meter telegrams in the power mains in up to 30 server networks, up to 30 FPZ12USBs for 30 meters can be connected to form one group. Every FPZ12USB sends only telegrams whose authorisation is saved in the FPZ12S0.**

For power supply and cable length, see the FPV12-12V DC description.

July 2011.

## FPZ12USB-12V DC

Wireless Powernet meter connector

EAN 4010312311400

193,50 €/pc.

### 1. Scope of supply



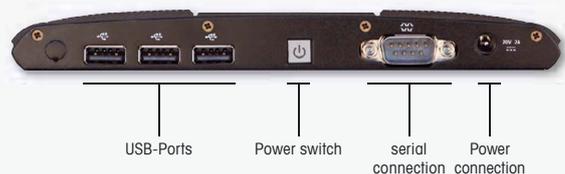
- FVS-Safe with factory installed software
- Power supply unit and connecting cables
- VESA wall mount
- Driver CD and Windows 7 Setup CD
- Installation instructions
- Network cable (crossover)

### 2. Technical data of the FVS-Safe

#### Technical data

operating system	Windows 7 HP
CPU	Intel® Atom N270 1.6GHz
chip set	Intel® 945GSE
RAM	1 GB SO-DDRII RAM 800MHz
hard disk	2.5" HDD SATA 160 GB
ports left	1 x serial port, 3 x USB
ports right	1 x DVI-I (VGA via adapter), 1 x USB 2.0 2 x Intel LAN 10/100/1000 Mbit, 2 x audio 6-channel HD
power consumption	approx. 10 watts (standby), approx. 14 watts (idle), approx. 17 watts (full load)
ventilation	silent, passive cooling
dimensions (HxWxT)	2 x 26 x 18 cm
wall mount	VESA standard
weight	ca. 1.25 kg

### 3. FVS-Safe connectors



When installing, make sure that the devices are attached using the wall mount in order to ensure optimum cooling

#### 4a. Set up FVS-Safe with monitor, keyboard and mouse

1. Plug a monitor (DVI connection), a keyboard (USB) and a mouse (USB) to the connections specified in 3.
2. Connect the Eltako FVS-Safe to the power mains. FVS-Safe starts automatically.
3. Enter the FVS-Home or FVS-Professional software license key and make the required settings in the FVS software.  
Here, refer to the FVS manual or the following short description "6 steps to success" for a direct start with the FAM-USB.

#### 4b. Set up FVS-Safe with remote access to a notebook

1. Plug the supplied network cable (crossover) to the LAN1 connection of the FVS-Safe and notebook which is used to set up the system.
2. Connect the Eltako FVS-Safe to the power mains. FVS-Safe starts automatically.
3. Change the network setting of your notebook to IP(v4) address 192.168.168.1 to set up a connection. Deactivate all other network connections to avoid complications.
4. Start your Internet browser and enter the following in your address line:  
http://192.168.168.100:5800
5. After completing your input, the VNC Authentication window opens for you to enter the standard password for the VNC configuration [password: EltakoFVS]. Confirm by clicking on "OK" to set up the connection. Now you have full access to FVS-Safe via your browser. First enter the software license key and then make all the necessary settings. Here, refer to the FVS manual or the following short description "6 steps to success" for a direct start with the FAM-USB.

#### 5. Network information (IP addresses of the FVS-Safe)

1. LAN1 (as depicted in 3.) is only meant for direct connection to a notebook and is set permanently to IP(v4) address 192.168.168.100.
2. LAN2 is meant for data communication via TCP/IP in the network and Internet access. Here the FVS-Safe can be connected to the existing router. A fixed IP address is not set here. The automatic issue of IP addresses (DHCP) is used.

#### 6. Resetting to delivery-status

1. Before system reset, please make sure that the keyboard, mouse and monitor are connected to FVS-Safe.
2. Start FVS-Safe until the message "Press F9 to reset system" is displayed on booting. Press the F9 within 10 seconds. Windows is then loaded with a special setting for system reset.
3. Select "Start recover" in the menu displayed. The reset process starts and the system then reboots to the delivery-status.

#### 7. Backup/restoring a database

1. To back up the database, select "Overview". In the delivery-status, an icon labelled "Sich-Postgres-DB" is displayed in the base level. Start this link to back up the database to a file that is saved to the "Backups" folder on the desktop.
2. To load an existing or a new database, use the "FVSRecover" link on the desktop. When this program starts, a window opens for you to select the database you want to load. Click on "Search" to select the directory and the file. Confirm the loading process by selecting "Start".

#### 8. Passwords of FVS Safe

1. **Windows administrator password:**  
User: Service      password: EltakoFVS
2. **Windows user account:**  
User: User      password: Password
3. **VNC (remote access):**  
password: EltakoFVS
4. **VNC (view only, no write access):**  
password: Password

## 1. Licensing



FAM-USB

1. Connect a monitor (DVI connection), a keyboard (USB) and a mouse (USB) to the sockets as depicted in 3. on page 8 or create a remote access as described in items 4a. and 4b. on pages 8 and 9 of the Setup Manual for the FVS-Safe.
2. Connect the Eltako FVS-Safe to the power mains. FVS-Safe starts automatically.
3. License the software by selecting "Enter info/license/license key". This is also stated in the supplied license description of the FAM-USB.

## 2. Install and detect FAM-USB

1. Connect FAM-USB to an USB connection. The Windows hardware detector starts automatically and installs the driver.
2. Start the software and change to the main view of Eltako FVS using "Overview".
3. Select "Configuration\PC interfaces" from the menu bar to find the previously correctly installed FAM-USB by "Auto-detection". Mark and save the displayed FAM-USB (recognised by the ID number) to terminate the process.

The system is now prepared to receive and send wireless signals.

## 3. Teach-in wireless pushbutton for lighting

1. To teach-in a wireless pushbutton, select "Teach-in\Teach-in dialog" from the menu bar.
2. Operate the wireless pushbutton to be taught-in to make it visible in the right field under "New sensors".
3. To allocate it to the wireless pushbutton, drag and drop it to the left section "Assigned sensors".  
To terminate the teach-in process, click on "End" or start the process at 2. for other wireless pushbuttons.

The wireless pushbutton is then displayed on screen as a lamp icon.

(\* Click the left mouse button, hold down, drag and drop by releasing the left mouse button.)

## 4. Create FVS actuator

1. To visualise a switch actuator in the system, it must first be created as a FVS actuator.  
Select "Edit/create/edit actuators" from the menu bar.
2. Select the FAM-USB and confirm by clicking on "Select".
3. Change the actuator type in "Switch actuator (OFF / ON)", give the actuator a name of your choice (e.g. light) and select "Add" to create the FVS actuator.
4. The created FVS actuator is then displayed in the list of existing actuators. Close the window by selecting "End".

## 5. Teaching-in

1. To teach in the created FVS actuator into an Eltako wireless actuator, select "Teach-in\FVS into actuators" from the menu bar.
2. Mark the FVS actuator to be taught-in and set the wireless actuator to "LRN" as described in the operating manual of the switching device.
3. Select the required signal setting (On or Off).
4. Click on "Teach-in". The successful transmission of the wireless signal is indicated by the "Teach-in" button flashing green.
5. To teach-in other signal settings or actuators, please start at 2. again or end the teach-in process by selecting "End".

The current switching state of the actuator (On/Off) is displayed on screen as a lamp icon with a blue arrow.  
Click this icon to change its state.

## 6. Linking the wireless pushbutton and actuator

1. To switch the actuator (lamp icon with blue arrow) using the taught-in wireless pushbutton (lamp icon), the two icons must be interlinked.
2. To generate the link, drag and drop the lamp icon of the wireless pushbutton on the actuator lamp icon with the blue arrow.  
When the two icons are overlayed in this direction, the actuator icon turns green before the wireless pushbutton icon is dropped.

The current switching state of the wireless pushbutton/actuator link (On / Off) is then depicted on screen as a lamp icon and can also be changed by clicking or pressing the wireless pushbutton.

## General requirements

Preconditions for using FVS-Mobile are Eltako FVS-Home or FVS-Professional software with a free Client license and a Java-capable mobile phone (MDIP 2.0) or a BlackBerry, iPhone/iPad or with Android software and the corresponding app from the Apple or Google shop.

## Settings in Eltako FVS-Home or FVS-Professional

First perform some settings in Eltako FVS-Home or FVS-Professional (see Eltako FVS-Home or FVS-Professional Manual, chapter 16). In the Profile Manager, define a profile with access rights. Then create an FVS Mobile Client in the Client menu. Assign the previously defined profile to the Client. Finally activate Client access in the main view.

## Setting up FVS-Mobile



Start view

Start the FVS-Mobile application. The view depicted here appears on your mobile phone:

The "Link" button creates a link to the Eltako FVS-Home or FVS-Professional software. "Options" opens a submenu where you can perform link settings. The "Info" button supplies you with information on your Eltako FVS-Mobile version.

Press "Options" to perform link settings. In analogy to this, open the "Edit mobile" window in Eltako FVS-Home or FVS-Professional.



Link options

A device number then appears on the display of your mobile phone. Enter this number in Eltako FVS-Home or FVS-Professional in the "Mobile key" field.

Then enter the same name in the "Name" field of the mobile phone as displayed in Eltako FVS-Home or FVS-Professional.

The "Profile" and "Profile name" fields refer to the profiles of the mobile phone and need not be completed.

In the "Server" field, enter the IP or the URL of the FVS-Safe or the computer on which the Eltako FVS-Home or FVS-Professional software is installed.

If "Camera stream" is off, the camera only displays a single image when you call it up. If the switch is set to On, a live stream is displayed.

"Autoconnect" creates a link to the Eltako FVS-Home or FVS-Professional server when you start Eltako FVS-Mobile.

Note: If you have no flat rate for data transmission, it is recommended to set the link to "manual".

After completing all the fields, press the "Key" button in Eltako FVS-Home or FVS-Professional. This calculates a key which is displayed to you in a new dialog. Enter the displayed key in your Eltako FVS-Mobile application under "Key".

Then press the "Activate" button in Eltako FVS-Mobile. After successful activation, you can use Eltako FVS-Mobile.

## Explanation of icons



Opens an existing subgroup or creates a link to a camera.



Opens a menu to control an actuator or triggers a link.



Switches actuators on or off.



Slide control for dimming light, for example.

## Navigation



Group view

Start the FVS-Mobile application on your mobile phone and click on "Link" if the link fails to set up automatically. Click on the "FVS-Mobile" button to return to the Start view.

The Group view appears. The Group view displays all existing groups. If access to the configuration is released in the user profile of FVS-Home or FVS-Professional software, other settings can be performed using the "Config" button.



Server options

This figure shows the functions in the main view of Eltako FVS-Home or FVS-Professional.



Object overview

Here you see the objects in a group.

You can switch actuators by clicking on the switch icon. You can also regulate the dimmer by clicking and sliding.



PC group view

This figure shows a PC in a PC group.



Control of a PC

You can switch the power supply on or off using the menu button of a PC and boot or shut down the PC. The same applies to the PC group.



Camera image with objects

As standard, the associated objects in this group are displayed under the camera image. The button at the bottom right changes to the camera control panel and the left button returns to the object view.



Camera image

This figure shows the functions provided by the camera. Use the control panel to zoom the image in or out and to change the display zone.

#### Fellbach

Eltako Headquarter  
Hofener Straße 54  
70736 Fellbach  
☎ 0711 94350000  
☎ 0711 5183740  
✉ info@eltako.de  
✉ kundenservice@eltako.de

#### Baden-Württemberg

Klaus Zölb  
72184 Eutingen-Weitingen  
☎ 0176 13582510  
☎ 07457 5732  
✉ zaelss@eltako.de

#### Bavaria (North)

Horst Rock  
91126 Schwabach  
☎ 09122 61179  
☎ 09122 61159  
✉ rock@eltako.de

#### Bavaria (South)

Elka Hugo Krischke GmbH  
82024 Taufkirchen  
☎ 089 3090409-0  
☎ 089 3090409-50  
✉ krischke@eltako.de

#### Berlin/Brandenburg/ Saxony (East)

Olaf Knobel  
15746 Groß-Köris  
☎ 033766 21240  
☎ 033766 21241  
☎ 0176 13582503  
✉ knobel@eltako.de

#### Hamburg/Schl.-Holstein/Bremen

Gunnar Wetteborn  
25355 Barmstedt  
☎ 0176 13582502  
☎ 04123 6834673  
✉ wetteborn@eltako.de

#### Hesse

Carsten Hasenau  
36041 Fulda  
☎ 0661 48017939  
☎ 0661 48017940  
☎ 0176 13582522  
✉ hasenau@eltako.de

#### Technical support, BlueNet support:

☎ +49 176 13582514 ✉ thuenta@eltako.de  
☎ +49 711 94350002 ✉ technik-beratung1@eltako.de  
✉ FVS@eltako.com

#### Export Sales Manager:

☎ +49 711 94350005 ✉ export@eltako.de

#### Mecklenburg-Vorpommern/ Brandenburg (North)/ Saxony-Anhalt (North)

Klaus-Peter Schmitz  
18276 Sarmstorf  
☎ 03843 215884  
☎ 03843 215884  
☎ 0176 13582501  
✉ schmitz@eltako.de

#### Lower Saxony

Detlef Hilker  
31840 Hessisch Oldendorf/Barksen  
☎ 05152 6984480  
☎ 0173 3180390  
✉ hilker@eltako.de

#### North Rhine-Westphalia (East)

Kay Westphal  
44265 Dortmund  
☎ 0176 13582506  
☎ 0231 734171  
✉ westphal@eltako.de

#### North Rhine-Westphalia (West)

Paul Frieg  
46395 Bocholt  
☎ 0176 13582507  
☎ 02871 310988  
✉ frieg@eltako.de

#### Rhineland-Palatinate/Saarland

Rainer Brilmayer  
55411 Bingen  
☎ 0176 13582516  
✉ brilmayer@eltako.de

#### Thuringia/Saxony (West)/ Saxony-Anhalt (South)

Andreas Misch  
39240 Calbe/Saale  
☎ 0176 13582505  
☎ 039291 72132  
✉ misch@eltako.de

#### Belgium/France/ Luxembourg

Serelec n.v.  
B-9000 Gent  
☎ +32 9 2234953  
☎ +32 9 2254679  
✉ info@serelec-nv.be

#### Denmark

SOLAR A/S  
DK-6600 Vejlen  
☎ +45 76 961200  
☎ +45 76 971279  
✉ bora@solar.dk

#### Gulf area

M/S Golden Sand Trading  
U.A.E. - Dubai  
☎ +9 71 43595611  
☎ +9 71 43595473  
✉ vasu2000@emirates.net.ae

#### Great Britain

Rayleigh Instruments Ltd.  
GB-Essex SS6 7XH  
☎ +44 1268 749304  
☎ +44 1268 745001  
✉ sales@rayleigh.co.uk

#### Iceland

Reykjafell Ltd.  
IS-125 Reykjavik Iceland  
☎ +35 4 5886010  
☎ +35 4 5886088  
✉ reykjafell@reykjafell.is

#### Israel

Avital B.S. Ltd  
Il-Holon  
☎ +97 23 5587717  
☎ +97 23 5587720  
✉ avitalbs@zahav.net.il

#### Italy

Representative Tommaso Scrofani  
I-64025 Pineto TE  
☎ +39 085 4167364  
☎ +39 085 9491796  
☎ +39 347 3774888  
✉ scrofani@eltako.com

#### Netherlands (North)

Representative Hans Oving  
NL-7701 TE Dedemsvaart  
☎ +31 523 616688  
☎ +31 523 616607  
☎ +31 6 21816115  
✉ oving@eltako.com

#### Netherlands (South)

Representative Dennis Schellenberg  
NL-5854 PC Bergen (LB)  
☎ +31 6 50419067  
☎ +31 485 802720  
✉ schellenberg@eltako.com

#### Austria (West)

Representative Robert Goedicke  
☎ +43 664 1823322  
✉ goedicke@eltako.com

#### Austria (East)

Representative Jürgen Harnisch  
☎ +43 699 18139294  
✉ harnisch@eltako.com

#### Portugal

TEV Lda.  
P-4470 Maia 1  
☎ +35 122 9478170  
☎ +35 122 9485164  
✉ tev.lda@mail.telepac.pt

#### Russia

ATLAS Group JSC  
RU-127591 Moscow  
☎ +7 495 6423463  
☎ +7 495 6433565  
✉ eltako@atlasgroup.ru

#### Sweden (North)

Representative Patrick Savinainen  
S-69332 Degerfors  
☎ +46 070 9596906  
✉ patrick@eltako.com

#### Sweden (Middle)

Representative Patrick Savinainen  
S-69332 Degerfors  
☎ +46 070 9596906  
✉ patrick@eltako.com

#### Sweden (South)

Representative Dan Koril  
S-57010 Korsberga  
☎ +46 070 3201102  
✉ dan@eltako.com

#### Switzerland

Demelectric AG  
CH-8954 Geroldswil  
☎ +41 43 4554400  
☎ +41 43 4554411  
✉ info@demelectric.ch

#### Spain

Representative Thomas Klassmann  
E-08397 PINEDA/Poble Nou  
☎ +34 93 7692419  
☎ +34 93 7660119  
☎ +34 650 959702  
✉ klassmann@eltako.com

#### South Africa

Innomatic (Pty) Ltd - Franz Markt  
ZA - Midrand  
☎ +27 11 8400840  
✉ sales@innomatic.co.za

#### Czech Republic

Representative Peter Loužecký  
CZ-40011 Ústí nad Labem  
☎ +420 475 621132  
☎ +420 475 621185  
☎ +420 724 175676  
✉ louzeczy@eltako.com



Eltako GmbH

Hofener Straße 54, D-70736 Fellbach

☎ +49 711 94350000 ☎ +49 711 5183740  
✉ info@eltako.de 🌐 www.eltako.de 🌐 www.eltako-funk.de



enocean<sup>®</sup> alliance  
MEMBER