



COMPENDIUM
HOSPITALITY

LOXONE

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Preface

Dear hoteliers, restaurateurs and Partners,

the hotel industry has received little attention from the building technology sector in recent decades. Many have built mechanically operated rooms with switches and thermostats out of concern for their guests. Personally, I can understand this sentiment, as few systems focus on the guest experience and come with easy-to-use, purposeful software.



Other manufacturers build components, sell them at a high price, and only third-party systems allow software intelligence to be installed.

Meanwhile here at Loxone, we have set ourselves the goal of playing in the Champions League. For us, this means developing and producing complete solutions rather than just components. Loxone develops all products in-house, which guarantees a fast response time and a high level of expertise in the areas of application.

As a provider of a complete solution, you have no excuse if the system fails. Taking on this responsibility is a matter of course for us as a manufacturer. Loxone has many products that, when combined in one installation, make it possible to bring the needs of the hotel operator into excellent symbiosis with simplicity for guests and employees of different hierarchies. The guest experience is at the heart of our solutions.

Perfection can only be achieved through a lot of practice. For us, there is no alternative to allowing products and software to mature to perfection in our own installation. At the Loxone Campus in Austria, we have implemented what is state-of-the-art for us in 2023. Warehouse, office, restaurant, meeting space, wellness area, rooms and more are all part of the installation.

As a hotel operator, we know that the best overnight occupancy rate and the contribution margin generated by it melts away like an ice cube in freshly brewed coffee with maintenance efforts and energy costs.

The energy crisis started in 2022. Within a few weeks, energy costs have risen many times over, and the world has changed abruptly. Within a few weeks, Loxone had a comprehensive solution to get costs under control with the Energy Manager and the Energy Monitor. All these features are free of charge and part of the product via updates. This is only possible if a product consists of a lot of software. At Loxone, the product portfolio consists of 85% software and 15% hardware. Most manufacturers of products build hardware and sell it at a higher price than Loxone. Software is bought separately, although the interfaces

between the hardware and software between manufacturers are usually not very stable, which leads to high maintenance costs and disruptions in the event of updates or power failures.

Even if it is not always easy, it is certainly on us to take on all this responsibility and offer products with unique performance. This is a matter of honour for us, of which we are proud.

Since Loxone was founded in 2009, our credo has been: 'The limit of what is feasible lies not in the product but in the mind.'. To date, we are proud to have implemented over 300,000 projects worldwide, with a wide variety of challenges.

For an installation to do what is sensible and smart, it needs a good product architecture, which starts in the planning phase. To make the planning stage more successful, we have compiled a few points. On the one hand, it is divided into areas of application such as hotel rooms, reception and much more. On the other hand, it is divided into topics such as lighting, heating, air conditioning, ventilation, audio, etc. You can also find installation tips in this Compendium.

I hope we can make it easier for you to gain an insight into the complex world of building technology and hope you enjoy reading it.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas Moser', with a long horizontal flourish extending to the right.

Thomas Moser
Group CEO, Product Architect



Introduction

Automation solutions play a crucial role in the modern hotel and restaurant industry.

The topic of energy efficiency in particular is often in the spotlight. On the one hand, to save costs and on the other hand, to reduce a company's ecological footprint. Does a room need additional lighting when there is sufficient daylight? Should the heating system be active while the windows are open? Loxone is the only solution in the world that can be used to implement a holistic, manufacturer-independent energy management system.

In addition, automation solutions can elevate the guest experience and convenience to unprecedented levels. Imagine a hotel bar: how can the perfect atmosphere be ensured at any time of the day through the targeted use of music and lighting?

In fast-paced times like these, the flexibility of building control also plays a decisive role. The Loxone system is largely software-based and enables companies to adapt quickly to changing conditions.

Challenges

In this chapter, we shed light on the complex requirements for building automation in the hotel and dining industry. We show how intelligent systems can solve these challenges to increase operational efficiency and create an unparalleled guest experience.

Reception

The reception is the linchpin of a hotel. By integrating building automation, you can not only improve the guests' comfort, but also manage operational challenges more effectively.



With Loxone, you give your employees a powerful tool that remains easy to use despite the comprehensive range of features. If, for example, the temperature in the wellness area needs to be adjusted, this can be done quickly and easily in the Loxone App. No technical staff is required.

The check-in process itself can be organised in an uncomplicated and flexible way: Managing individual access authorisations for guests is no longer a problem. Whether it's access to the wellness area or the use of an EV charger - your employees can set up individual authorisations quickly and easily.

The option of self-check-in allows guests to check into their rooms independently of reception - for example by receiving an individual access code or a digital key card. This process can be fully automated and customised, which not only saves time but also frees up your staff. Guests benefit from a smooth arrival experience, while you make administration efficient and reduce waiting times.



To ensure an optimal guest experience, it is also important that disturbances such as emergency exits or sauna doors being left open for too long are immediately reported to the reception. The Loxone system ensures that such important information is forwarded promptly to enable quick action. This is extremely easy to do with a product that consists of 85% software.

TOP FEATURES

- > User-guided access via the Loxone App
 - Up to the last level, if required
 - It depends on the user's permissions
- > Quick intervention in parameters such as sauna temperature, opening hours, pool cover, etc.
- > Simple assignment of individual access authorisations
- > Central reporting point for technical alarms
 - E.g., in the case of rain while doors are open
 - "No Room Service Today" requests
 - And much more

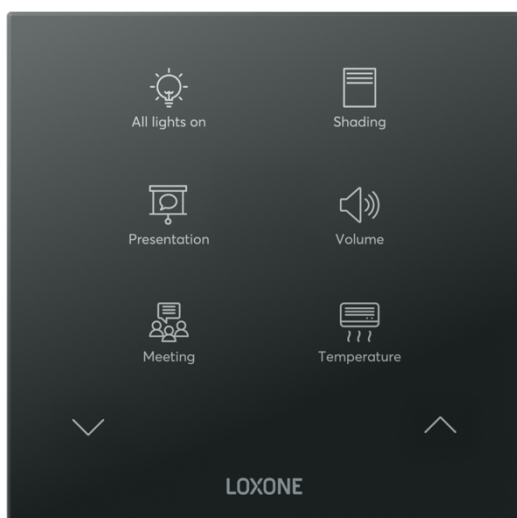
Conference Rooms

The requirements for conference rooms are diverse and complex. They range from creating an adaptable space that supports different event formats and remains easy to use despite its extensive technical equipment, to ensuring comfort and connectivity for participants, to efficiently managing energy and resources.

Thanks to the integration of light, shading, air conditioning, and multimedia technology, building automation allows the room to be quickly and easily adapted to the individual needs of use.



With the Touch Pure Flex, we offer an intuitive control element for central control of the entire room.



Example configuration of a Touch Pure Flex



or:

configurator.loxone.com

Another crucial aspect is access authorisation. Not only does the speaker have a key for the conference room, but also the participants have access authorisation. This will be issued quickly and easily for the participants at check-in. It is not necessary to grant access to the seminar area manually (i.e., lock and/or unlock doors traditionally).

To ensure an environment conducive to concentration, good air quality in the room is essential. Regardless of whether there are 5 or 50 people in the room, the automatic room ventilation control adjusts the ventilation independently. It considers humidity, temperature and CO₂ levels to always ensure ideal air quality.

TOP FEATURES

- > Easy to use via Touch Pure Flex or Loxone App
- > Individual access authorisation
- > Automated room ventilation control

Our recommendation:

In conference rooms, automatic features should be used sparingly. Automatic lighting control based on presence and lighting conditions can quickly become disruptive during a presentation where full darkness is required.

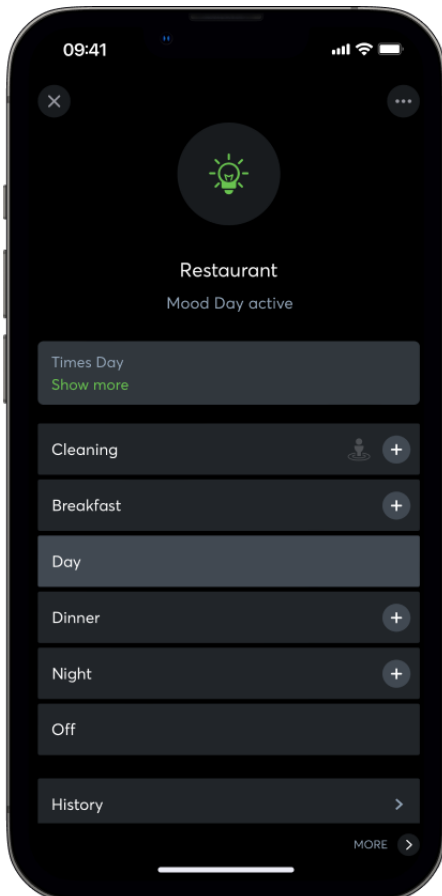
Restaurant & Bar

In restaurants and bars, atmospheric lighting and a high-quality sound experience make a significant contribution to a pleasant ambience. Operators have specific ideas and wishes regarding the ambience of their location, which are strongly influenced by factors such as light, music, air conditioning, and decoration. To ensure an optimal guest experience, manual intervention by guests or staff, for example regarding the selection of music, is, therefore, usually not desired.

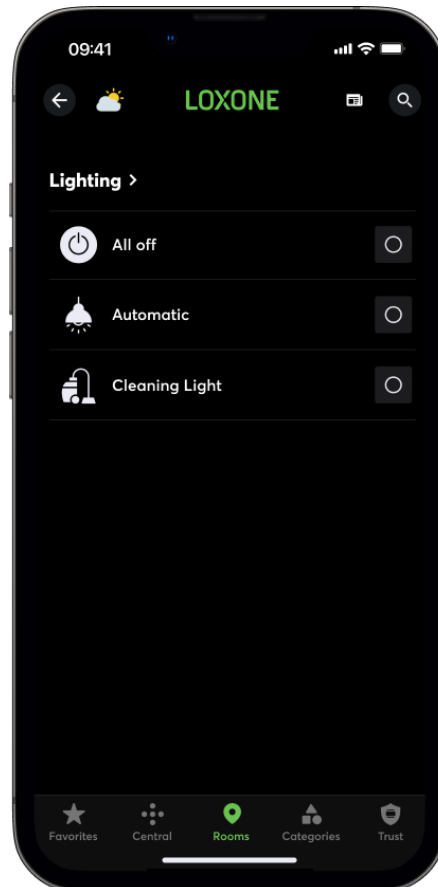


With Loxone, you can use lighting moods and music to define the ambience that fits perfectly within your gastronomy concept. The Miniserver ensures that lights and music are automatically activated depending on brightness, time of day, etc.

On request, the concept changes several times a day – completely unnoticed by the guests thanks to smooth transitions. From a relaxed breakfast to a lively bar. Changes can be made quickly and easily – but only by authorised persons.

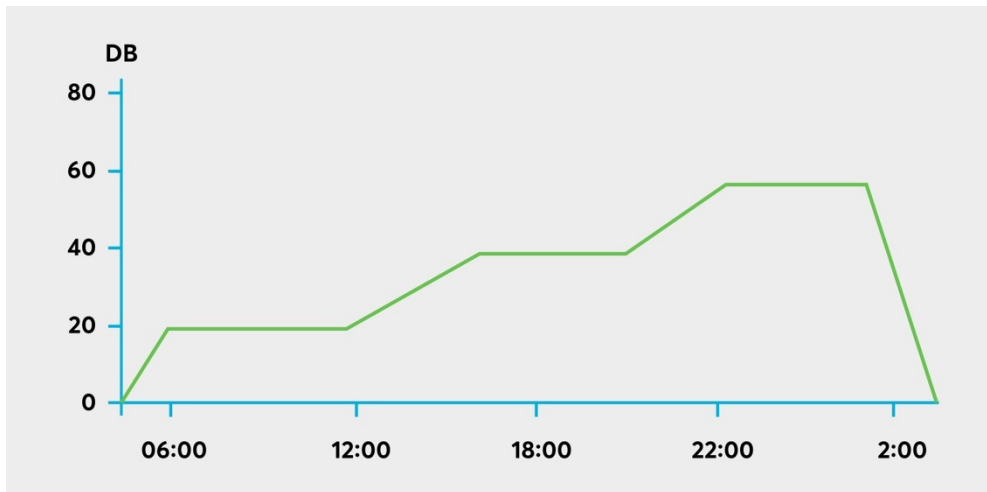


Lighting control from the restaurant manager's point of view



Lighting control from an employee's point of view

Open-plan kitchen concepts are becoming increasingly popular but pose a particular challenge for room ventilation control. Precise, automated ventilation control, based on the overpressure principle, significantly improves air quality and, thus, enhances the overall experience.



Our recommendation:

High-quality sound and carefully selected music help create a welcoming atmosphere for guests. Quadral experts have developed loudspeakers that create a uniform and high-quality sound carpet in the room.



TOP FEATURES

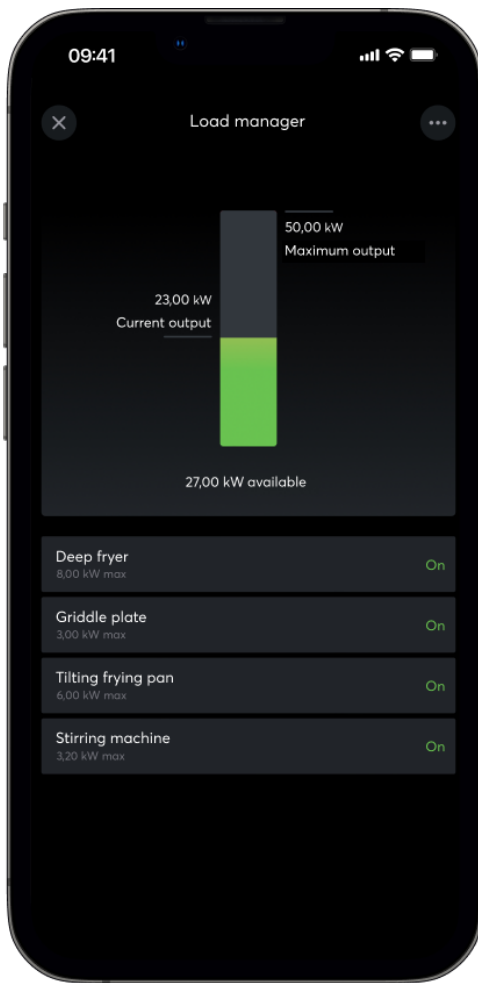
- > Sound carpet in Hi-Fi quality
- > Individual volume adjustable for each speaker
- > Automated room ventilation control
- > Automatic adjustment of light and music
 - Breakfast
 - Day
 - Dinner
 - Bar
 - Cleaning
- > Precise control of light & music
 - Music and lighting moods can be easily changed at any time via the app for those authorised
 - Selective intervention options for personnel

Kitchen

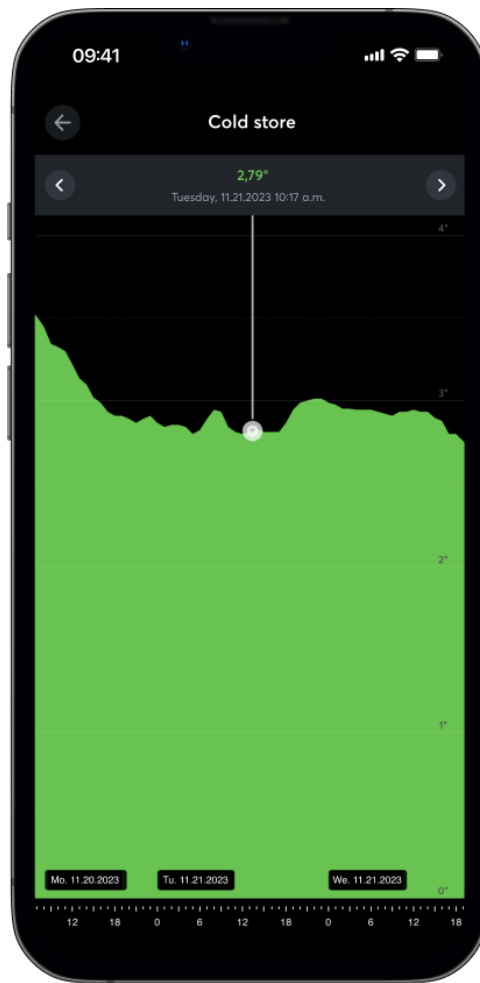
The kitchen is the heartbeat of any restaurant. Traditionally, very load-intensive consumers can be found here, which can contribute to an overload of the building infrastructure in the worst case. Especially in the kitchen, intelligent load management, therefore, offers decisive advantages. Almost all professional kitchen appliances are suitable for load management.

In addition, it should be considered that in the commercial sector, network fees are often calculated based on the 1/4h cycle. An overrun of power can, thus, not only lead to a failure of the power supply, but also cause considerable additional costs. With Loxone's load management, these peak loads can be monitored and avoided. What's best: Loxone's solutions consist of 85% software, which is free of charge.

Another challenge is the monitoring of cold rooms. This is often where the goods are stored, i.e., a lot of money. A door accidentally left open can lead to costly damage. The Miniserver can monitor the doors as well as temperatures, and capture and record them free of charge. These can then be provided for regulatory authorities. In critical situations, an individual alarm chain is triggered automatically.



Load Manager Visualization



Cold Storage Temperature Statistics

TOP FEATURES

- > Peak load management
- > Cold store monitoring
- > Statistics recording & data logging

Auditorium & Event Space

Event spaces are a versatile area that usually has extensive technical equipment such as projectors, screens, sound systems and much more. Ideally, all of these components should act as a unit. With the Loxone Miniserver, the individual components can be easily integrated and operated, so that even untrained personnel can use the technical equipment, through simple one-switch operation, for instance.

Large rooms also pose special challenges for ventilation and heating technology. If 100 people enter a room at the same time, the temperature rises rapidly, while the CO₂ content increases. An HVAC system controlled by the Loxone Miniserver can react quickly to these changing conditions. Only a minimum of hardware is required for this, 85% is solved by software, which is free of charge as is usual with Loxone.



TOP FEATURES

- > Easy-to-use media control
- > Easily adaptable lighting moods
- > Automated room ventilation control

Wellness & Spa

The wellness area is intended to be a place of complete relaxation for guests, where even small details can have a big impact on their well-being. Disturbing factors such as inappropriate or too-loud music, a temperature that is too cool in the resting area or unpleasant lighting can affect the overall experience. However, a customised and automated wellness environment by Loxone can significantly improve the guest experience. At the same time, it helps to increase energy efficiency and helps to save time and costs.



Pool

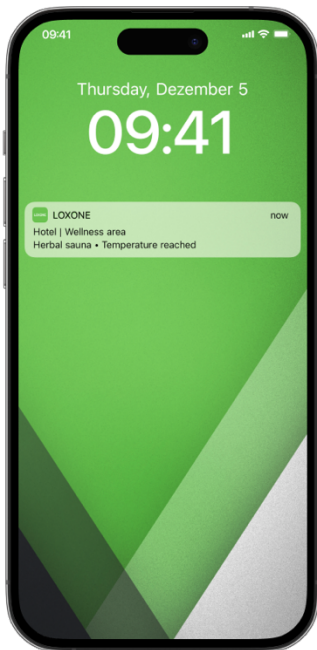
There are numerous ways to save energy when implementing a pool landscape. For example, inform facility management when a pool is not in use to close it to preserve heat and reduce energy consumption. You can also use the waste heat from the cooling technology to heat the pool area or the water cost-effectively.

Automation also offers great potential in the monitoring and maintenance of a pool. This allows you to automatically trigger technical alarms – e.g., in the event of significant water loss, a high temperature deviation, or a pump failure. Early notification allows you to react quickly, save maintenance costs and prevent significant follow-up costs.

Sauna

In the sauna area, a lot of energy can be saved through automation. For example, through presence-based control of the sauna heater. Or through the use of sensors that make it possible to inform the building services or the reception as soon as a sauna door is open for a longer period of time.

If a guest wishes to make changes, such as adjusting the sauna temperature, they can do so quickly and easily via the Loxone App.



Push notification of the Loxone App



Relaxation Rooms

The atmosphere in relaxation rooms is created by a combination of lighting, music, and room temperature. A system automated with Loxone makes it possible to define scenarios based on time of day or seasons to always ensure an ideal environment.

Dimmable lights and LED strips that create soft gradients contribute to a sense of calm, while the integrated audio system delivers relaxing sounds. The technology remains discreetly in the background while contributing to the well-being of the guests.

TOP FEATURES

- > Automated energy management
- > Reporting of incidents
- > Perfect guest experience thanks to automated lighting, audio, and air conditioning
- > Service call button

Hotel Rooms

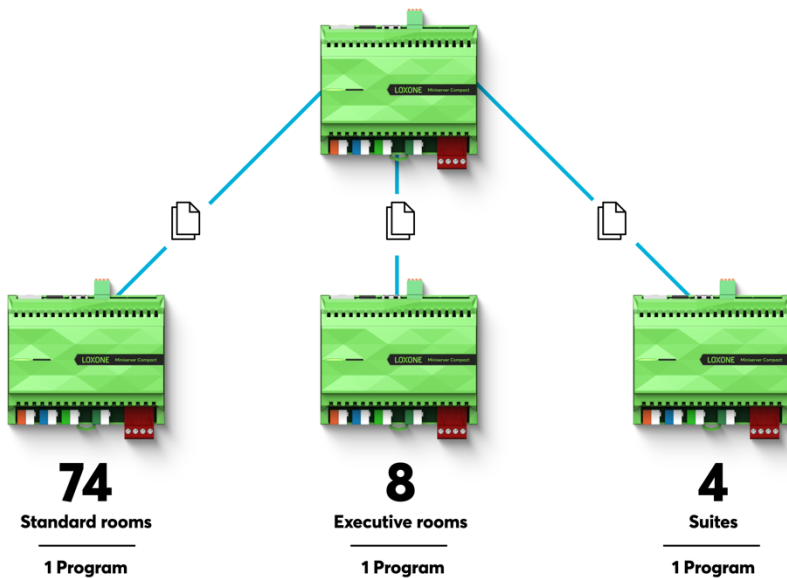
A hotel room must not only be comfortable and inviting, but also meet the diverse needs and expectations of guests. Loxone's integration offers the opportunity to create a customised experience that both increases operational efficiency and improves the guest's stay.

For example, the commissioning and maintenance of a large number of rooms has been complicated and time-consuming. With the Multiplier, we have created a special tool that allows you to set up and manage a variety of similar rooms with minimal effort. Parameterisation and programming only need to be done once and can then be transferred to all other rooms. It doesn't matter if it's 10 or 100 rooms.



or:

www.loxone.com/en/en/kb/multiplier-project/



A particular challenge in hotel rooms is easy operation. A wide variety of technical equipment, from lighting to shading and air conditioning to multimedia systems and curtains, are usually controlled with a wide variety of devices. The operation of this hodgepodge is not comfortable for the guest. That's why we created the Touch Pure Flex. This is manufactured individually according to the requirements of the space, on a single-piece basis, and guarantees easy operation of the rooms.



Example configuration of a Touch Pure Flex



or:

configurator.loxone.com

Our recommendation:

At the Loxone Campus, we have been mindful to use automatic features carefully in the rooms, as we do not want to patronise our guests.

TOP FEATURES HOTEL ROOMS

- > Simple operating concept via Touch Pure Flex
- > Multiplicator project for easy configuration, maintenance, and cost savings
- > Reset to Default: at check-out, all areas (shading, audio, lighting, etc.) are automatically reverted to the default settings
- > Eco mode when you are away (shading only in case of overheating)



Common Areas

In areas such as storage rooms, corridors, changing rooms and toilets, people often forget to turn off the lights. In contrast to hotel rooms and conference rooms, it is important to control the lighting largely automatically, depending on the presence. At the Loxone Campus, the energy-saving basic lighting requires 80% less energy than the normal lighting.

Especially in regard to storage rooms, intelligent access control is another special challenge. Valuable items such as spirits, wines, and technical equipment like projectors are stored there, which is why access should be reserved for selected people. With the NFC Code Touch, a personalised access system can be implemented, which also has extensive options in terms of history and logging. This avoids anonymous access and curbs fraud attempts.



or:

www.loxone.com/en/en/products/security-products

TOP FEATURES

- > Automatic lighting, ventilation, and air conditioning
- > Personalised access authorisation
- > Log of recent authorisations
- > Time- or presence-controlled locking of entrance doors

Practical Experience

"The hotel industry is at a turning point: rising energy prices, staff shortages and guests who expect a personalised and sustainable guest experience are demanding new approaches. With over 30 years of experience in the industry, I know that innovation is needed right now. As the epicentre of building automation, the Loxone Campus shows how hoteliers can overcome these challenges with intelligent technology.



The technology in combination with the architecture enables a sensational guest journey: from the fully automated self-check-in, the intuitive control of temperature, music and lighting in the hotel room to the impressive ambience of the entire hotel - this creates real enthusiasm among guests.

When it comes to energy management, we rely on intelligent automation that not only optimises consumption and thus saves costs, but also protects the environment. For example, the room temperature is automatically lowered as soon as a room is unoccupied, and the lighting only switches on when required.

In addition, the workload on staff is noticeably reduced. Routine tasks such as checking open windows or doors and switching off appliances are taken over by automation. This gives the team more time to concentrate on the guests - a decisive advantage in view of the increasing staff shortage. Loxone makes the hotel industry more efficient, sustainable and future-proof - for guests, staff and operators alike."

Paul Schwaiger
General Manager Loxone Campus

Features

We are often perceived as a manufacturer of hardware – but our hardware products are only the tip of the iceberg. First and foremost, we are software manufacturers. After all, 85% of our total development efforts go into our software tools. They are also what set us apart from all other systems on the market. So, you could say you pay for 15% (hardware) and get the full range of features of Loxone's powerful software solution.



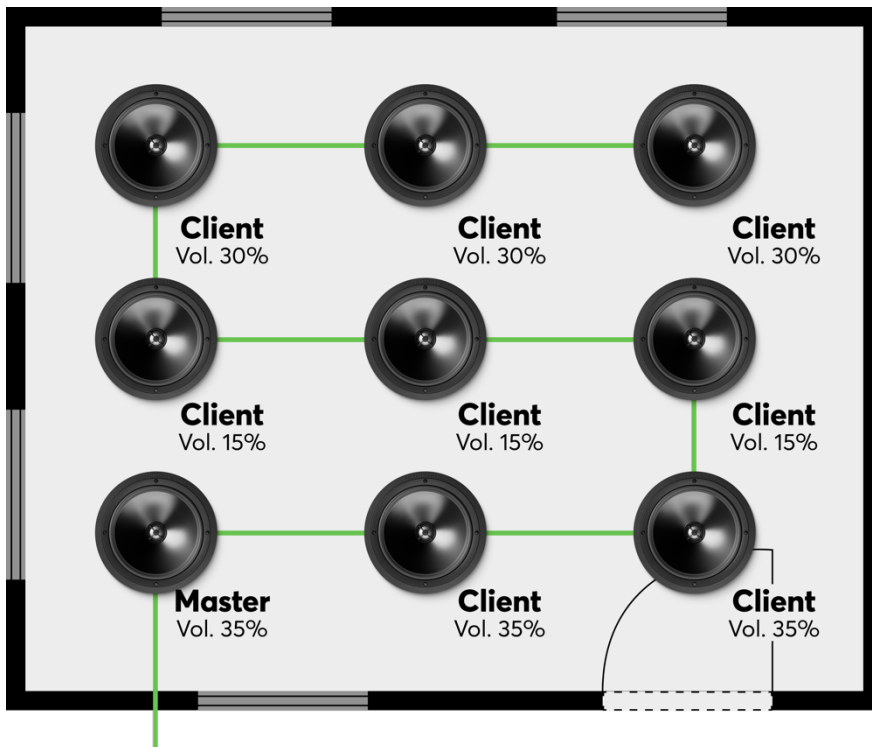
Audio

Conventional wiring-configured audio systems often have two major drawbacks. On the one hand, they often form islands within the building technology. On the other hand, they are very cost-intensive – in terms of purchase, installation, maintenance, as well as operation.

In addition, large areas are often not feasible with amplifier-based systems, as long distances must be bridged. 100V audio systems, which would solve the problem of line lengths, are not convincing in terms of sound quality and require expensive hardware.

With the Audioserver, Loxone offers an innovative solution that has been specially developed to reliably perform its service in 24-hour continuous operation for the entire (building's) life. At the same time, the system is completely flexible, can be seamlessly integrated into the building automation system and is freely scalable.

To provide sound for large areas - both intelligently and with the best audio quality throughout - we have developed a digital, bus-based master-client audio system. This makes installation extremely easy, and the error rate is reduced to a minimum.



Unlike usual, no server rack is required for installation. The Audioserver is installed alongside other Loxone components in the control cabinet to save space. Like the rest of the building technology, it can be installed by a qualified electrician. With a power consumption of just 2 watts (in idle mode), it is also extremely energy efficient.

Loxone offers perfectly matched speakers for the Audioserver. From the almost invisible [Install Speakers](#) to the powerful [Satellite Speakers](#) for outdoor use, there is a suitable solution for every application.

TOP FEATURES

- > Automated sound system in the wellness area, common areas, bar and restaurant
- > Easy to use and quick adjustments via the Loxone App
- > Convenient TTS (Text-to-Speech) messages
- > Custom announcements
- > Easy cabling
- > Unmatched value for money



or:

www.loxone.com/enen/products/audio/master-client-technology

Music Sources & Music Formats

Loxone's fully integrated audio solution offers a comprehensive feature set in terms of music sources and music formats:



Spotify



TuneIn



SD-Card



Apple AirPlay 2



USB



Line-In



Network



Our recommendation:

In the Loxone Campus's restaurant, the volume and music selection are automatically adjusted – suitable for different times of the day and occasions. There are areas with reduced volume.

Control

Intelligent automation saves many repetitive tasks. Even though the automated functions mean that it is no longer necessary to constantly press a button or open an app, there are still situations in which the use of switches is more practical. And, of course, staff and guests can always remain in control of the system. At the same time, the operation must be intuitive, user-friendly and in real-time.

One System for the Entire Building

The reduction to a single, consistent operating standard creates simplicity. All aspects of the building can be operated according to the same standard and there is no need for training for individual areas.

Whether it's changing the lighting in the lobby, controlling the temperature of the sauna, or assigning individual access authorisation – all of this can be done according to the same operating standard without the support of a technician.

Fewer Controls, More Clarity

Clarity and intuition are at the forefront of Loxone controls. You don't need a multitude of switches, buttons, etc. to control a room.

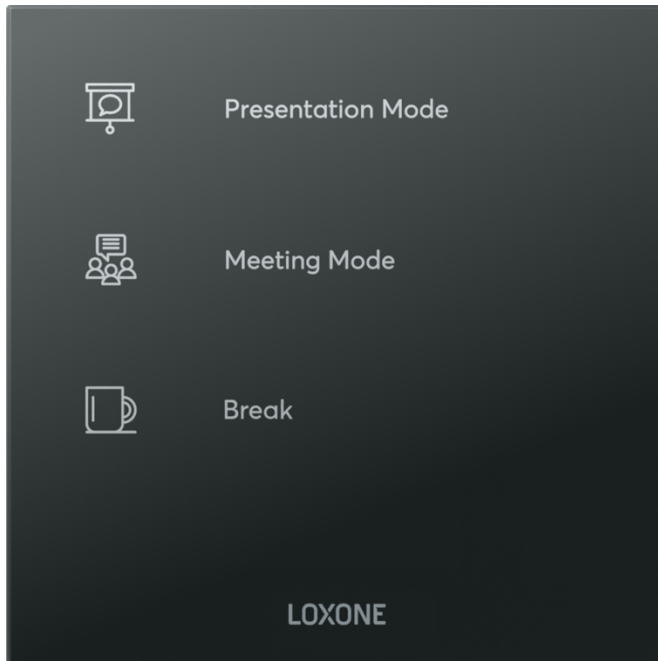
Thanks to the Loxone Switch Standard and the Touch Pure Flex, operation remains as simple as possible for staff and guests without cluttering the walls with controls.



Touch Pure Flex Hotel Room Template



Touch Pure Flex Restaurant Template



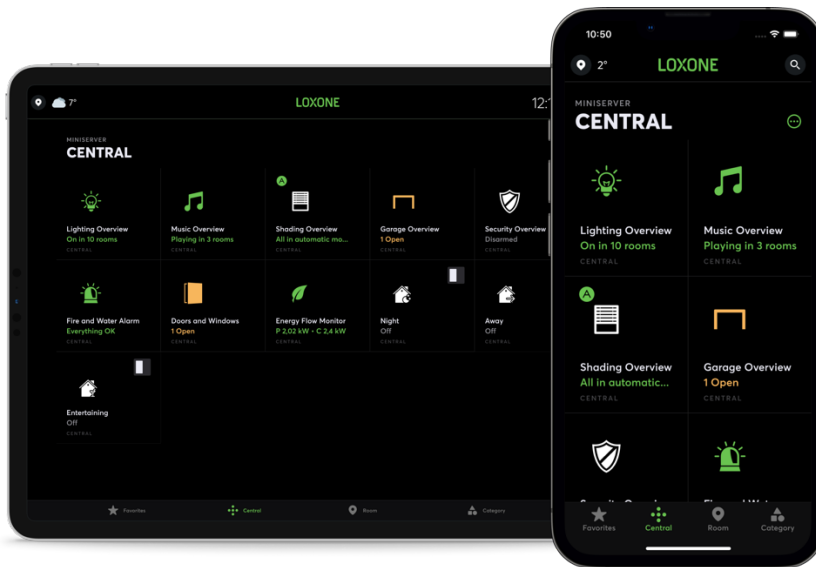
Touch Pure Flex Meeting Room Template

Worth knowing:

Loxone's controls not only enable easy control, but they also provide data on temperature, humidity, and CO₂ – depending on the version. These can be used directly for intelligent automation.

The Loxone App

All the functionality of a smart building in one application – that’s the free Loxone App. Whether on a tablet on the wall or on a smartphone: with the app, intuitive and precise operation of all areas is always at your fingertips. The Loxone App can be customised so that different users, such as hotel management, housekeeping staff, technicians, or receptionists, can only access the features that are important to their workspace.



Practical example:

The hotel management is authorised to adjust the lighting and music of the entire restaurant, if necessary, while the kitchen staff can only change the lighting inside the kitchen.

Access

In every hotel and restaurant, there are areas and features that are only accessible to certain employees or guests. Conventional access systems are often complex, and changes can only be made with great effort. Most of the time, customisations, such as adding new users or changing access permissions, require a system administrator.

Loxone offers a comprehensive yet user-friendly solution for assigning access authorisations. These features can be integrated seamlessly into the overall system. Adjustments can be made easily and independently via the Loxone App, without the need for specialist personnel.

Practical example:

A tradesperson receives a time-limited key card to carry out maintenance of the elevators. This key card can be created quickly and easily with the help of the Loxone App.



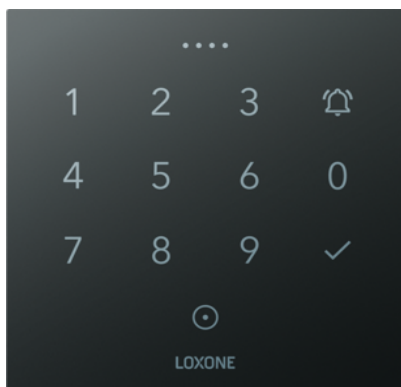
or:

www.loxone.com/enen/products/security-products



Spotlight Special: Access system at Loxone Campus:

www.loxone.com/enen/blog/loxone-campus-commercial-access-control

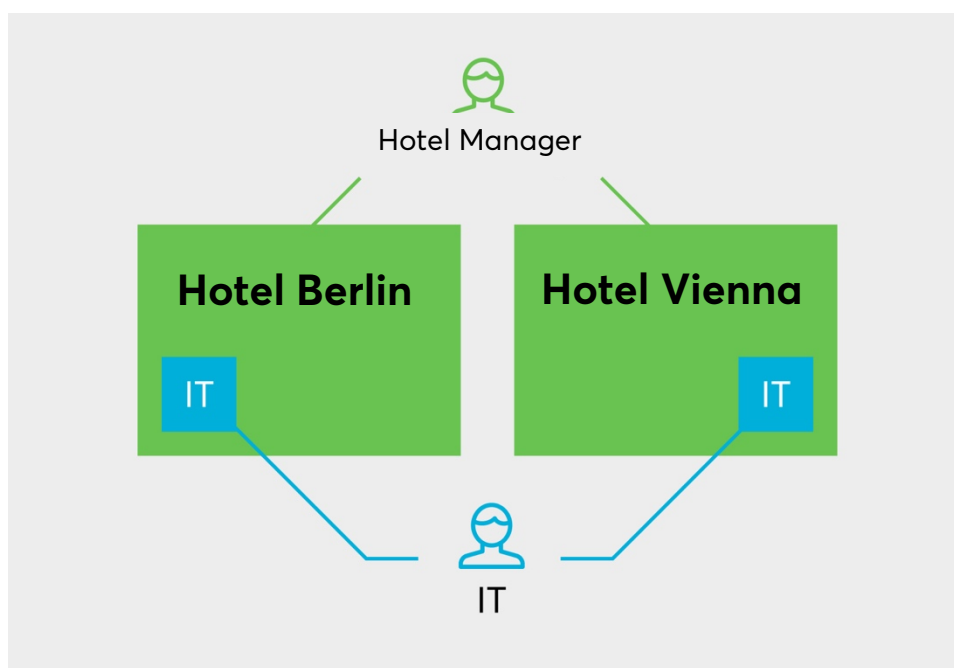


NFC Code Touch

User Management

The management of access authorisations is closely linked to user management. Both access to certain areas and the authorisation to perform functions via the Loxone App are linked to individual users or groups of users. New users can be easily created and assigned to the appropriate groups. All of this can be done independently without specialist personnel via the Loxone App.

We have developed a unique feature especially for larger companies: Loxone Trust. It provides employees with cross-site user management without having to create it individually.



TOP FEATURES

- > Individual user and rights management
- > Logging & tracking
- > Time-dependent codes / one-time codes
- > Cross-site user/access management
- > Low cost per key thanks to NFC cards
- > In the event of loss, NFC Cards can be blocked or replaced easily, quickly, and inexpensively

Shading

Loxone's intelligent automatic shading system ensures comfort, energy efficiency and privacy.

Especially for hotels and restaurants, the increased energy costs can be an immense challenge. To heat and cool your rooms as energy-neutrally as possible, the shading is automatically controlled based on the position of the sun, interior temperature, and presence. This way, the heating and cooling system, for instance, are supported at no additional costs while saving money in the long run.

At dusk, the shading elements can close automatically, if required. This offers an automated level of privacy in a hotel room, for example.

Despite all the advantages of automated shading in hotels and restaurants, it should only be used selectively so as not to disrupt the guest experience. And, of course, users must always retain control over the shading of a room. If the automatic system is manually overridden, it remains deactivated for the rest of the day.

In certain situations, automated functions should even be largely done away with. For example, in a conference room that is currently in use, all automatic rules could be automatically deactivated.

TOP FEATURES

- > Intelligent control depending on daylight, position of the sun, indoor temperature and much more
- > Reduce energy costs thanks to intelligent automation
- > Unique guest experience thanks to comfort features such as light alarm clocks
- > Maintenance-free, long-lasting system
- > Safety features such as fire, storm and frost protection
- > Control of numerous shading elements such as blinds, roller shutters, awnings, Venetian blinds, etc.
- > Easy to use with Loxone Touches or App



or:

www.loxone.com/enen/products/smart-blinds

Lighting

Lighting has a decisive influence on our well-being and the power to completely change the ambience of a location.

Especially in larger installations and public areas such as event rooms, many light sources of different types are used frequently. This makes operation complicated and often requires the use of a special lighting technician.

An automated lighting control system ensures optimal lighting of the rooms, depending on presence and daylight. The software automatically adjusts the lighting throughout the day.

In the Loxone App, the lighting can be easily and quickly adapted to the individual needs of your guests. There is no need for a specialist.

TOP FEATURES

- > Intelligent automation depending on brightness, time, presence and much more
- > Simple and intuitive control of all light sources via Loxone Touches or in the Loxone App
- > High energy efficiency due to presence-dependent control
- > Integration of a wide variety of light sources and standards such as DALI, DMX and more

We recommend the use of 24V DC bulbs, these can be dimmed continuously and flicker-free and the control via the 24V RGBW dimmer is very affordable.

Good to know:

The trendy Glorious Bastards restaurant in the Loxone Campus impresses with its unique ambience and is a marvel of lighting moods. A wide variety of light sources and lighting technologies have been combined here. Almost unnoticed by the guests, the lighting changes automatically throughout the day. From a relaxed breakfast to a cosy dinner and a casual bar atmosphere.



or:

www.loxone.com/en/en/products/lighting-products

Heating, Cooling & Ventilation

Studies show that over 40% of the energy consumption of hotels, restaurants, pubs, cafes, etc. is accounted for by space conditioning – i.e., heating, ventilation and air conditioning (HVAC). Building automation offers various ways to increase the efficiency of the largest energy consumer in your building and massively reduce energy costs.

The system learns autonomously when it needs to start heating or cooling to achieve a certain desired temperature at a given time in the most energy-efficient way possible.

If a guest is not in their room, the air conditioning works in eco mode. If a window is open, the air conditioning is completely deactivated.

When present, guests have the option to adjust the temperature quickly and easily in their rooms according to their personal preferences. The prerequisite for this is a fast-reacting heating and cooling system.

In public areas, such as restaurants and seminar rooms, good air quality and circulation are also essential to creating a healthy and pleasant environment.

TOP FEATURES

1. High energy efficiency through intelligent automation such as presence-based control
2. Easy customisation by the guest via Loxone Touches and the Loxone App
 - After a check-out, all settings are automatically reset to the defined default settings
3. Air quality monitoring and control
4. Low-maintenance, reliable system
5. Integration of different heating systems



or:

www.loxone.com/enen/products/room-climate-control

*Source: Carbon Trust "Energy efficiency guide: Hospitality sector"
<https://www.carbontrust.com/our-work-and-impact/guides-reports-and-tools/energy-efficiency-guide-hospitality-sector>

Energy Management & Energy Monitoring

According to the UK Government's ECUK report by the Department for Energy Security & Net Zero*, buildings are responsible for 40% of the country's energy consumption. With holistic energy management, this energy consumption could be reduced by half.

The focus is on recording and visualising all energy consumers and producers in the building. Whether it's heating, cooling or electrical energy. To visualise and optimise all energy flows, a building needs a central control system: the Loxone Miniserver. This connects all the (energy) components of a building and ensures that they work as efficiently as possible, both individually and in combination.

There are three main steps to energy management with Loxone:

1. Recording and visualising energy flows: The first step to true energy management is to know where the energy in the building goes, how much it consumes and how much it produces. Loxone's Energy Flow Monitor plays a central role in this. All data can be displayed in real time in an appealing visualisation in the Loxone App. Based on this information, a clear overview of the current energy status of the building is created and targeted optimisation measures can be taken. It is important to note the exact differentiation between power (kW) and energy (kW/h).
2. Reduction of basic consumption: Loxone can be used to find ways to reduce the base load, for example by automatically switching off unnecessary loads. In addition, potential energy leaks are revealed. For example, frequent energy wasters are air conditioners or ventilation systems that run on high levels even though there is no one in the room.
3. Shifting energy consumption: With Loxone's unique software, energy consumption can be shifted to times when energy is cheaper or even free – especially when solar energy is available.

* Source: GOV.UK "Energy consumption in the UK 2024"
<https://www.gov.uk/government/statistics/energy-consumption-in-the-uk-2024>



The Energy Flow Monitor in the Loxone App

Good to know:

A trend is emerging across Europe: more and more electricity providers are offering tariffs with dynamic electricity prices. In the UK, this is already the case with Octopus Agile, for example. On the spot market, electricity is traded in real time at prices based on supply and demand, which is why prices sometimes vary massively. With the Loxone Config 'Spot Price Optimiser', you can take the price fluctuations of the spot market into account in your energy management and save money.

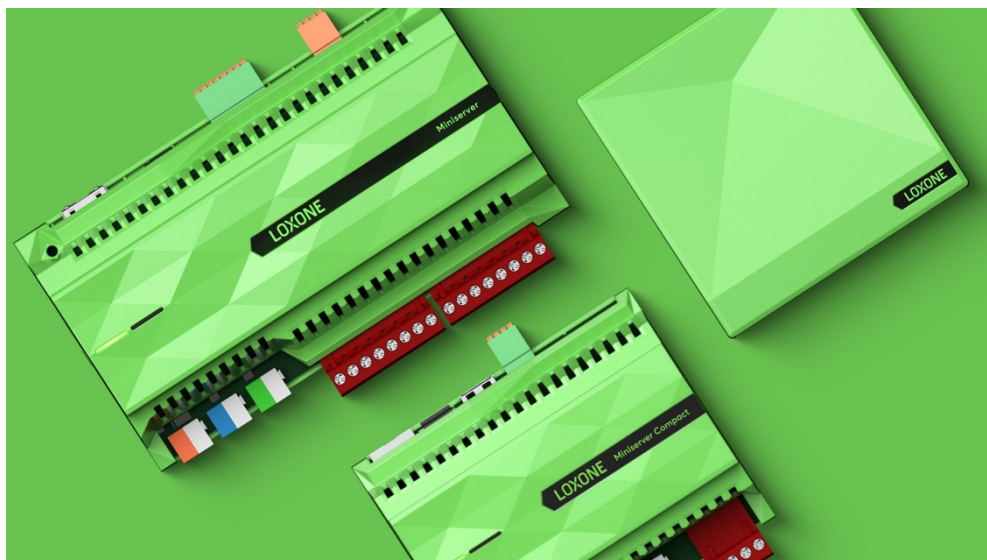


or:

www.loxone.com/enen/products/energy-management

Planning

Miniserver Architecture



The Miniserver is the brain of every Loxone installation. In contrast to other systems, there are hardly any components that make decisions independently, which simplifies structuring and configuration. Centralisation enables comprehensive automation, simplifies configuration, and ensures greater operational reliability.

Depending on the size of the project and the specific project requirements, several [Miniservers](#) can work separately or in combination. This enables free scalability of the system and allows the automation of even large-scale projects. In such projects, the choice of the correct communication type and the correct distribution of the Miniservers is crucial.

Our recommendation:

By using several decentralised Miniservers, you save time in configuration and, at the same time, ensure increased reliability.

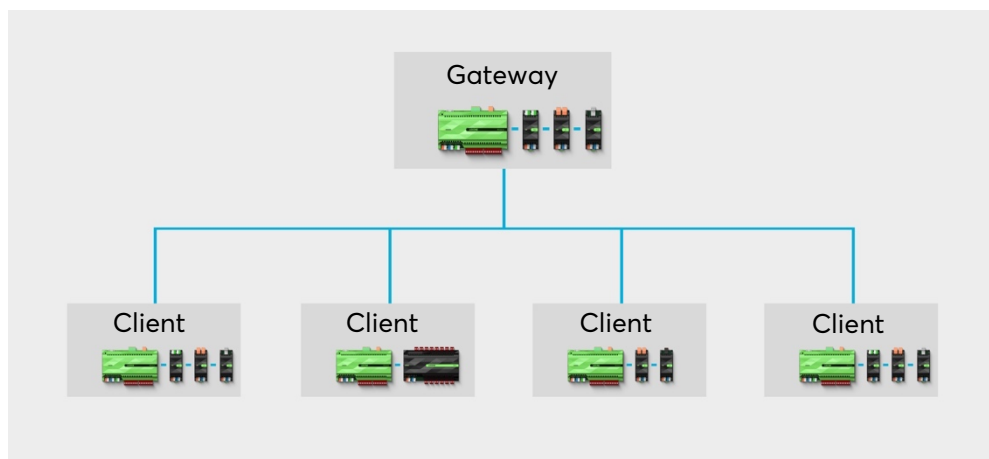


or:

www.loxone.com/enen/products/miniserver

Gateway-Client:

In a Gateway-Client system, a Miniserver as a gateway manages other Miniservers that are linked as clients. One advantage is that the individual client Miniservers work independently, and the rest of the installation continues to function, for example during maintenance work on a client.



Good to know:

Where is Gateway-Client technology used on Loxone Campus?

- > In the office, where individual Miniservers control each of the separate areas
- > In the restaurant
- > In the hotel corridors
- > In the parking areas and in outdoor areas
- > In the wellness area
- > In the seminar area

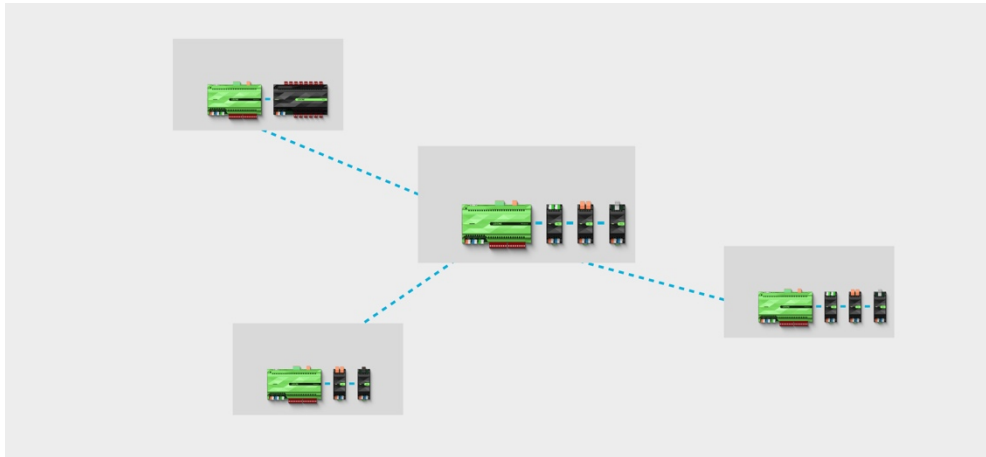


or:

www.loxone.com/enen/kb/gateway-client

Network Intercommunication:

Network intercommunication is an efficient and elegant way to exchange value between Miniservers. Digital, analogue, and text values can be sent and received. The communication method is suitable, for example, for the exchange of weather information, power, and meter values as well as individual control commands. Network intercommunication is ideally suited for integrating self-sufficient areas into the overall system.



Good to know:

At the Loxone Campus, network intercommunication is used in the following areas:

- > For communication between the hotel room and the reception
- > To send control commands
- > To communicate heating or cooling requirements
- > Between Gateway-Client Systems



or:

www.loxone.com/enen/kb/network-intercommunication

Tree Intercommunication

Tree Intercommunication is an encrypted communication method via the Tree interface of various Miniservers. As with network intercommunication, digital, analogue and text values can be transmitted. One advantage would be that communication takes place independently of the network, which leads to increased reliability.



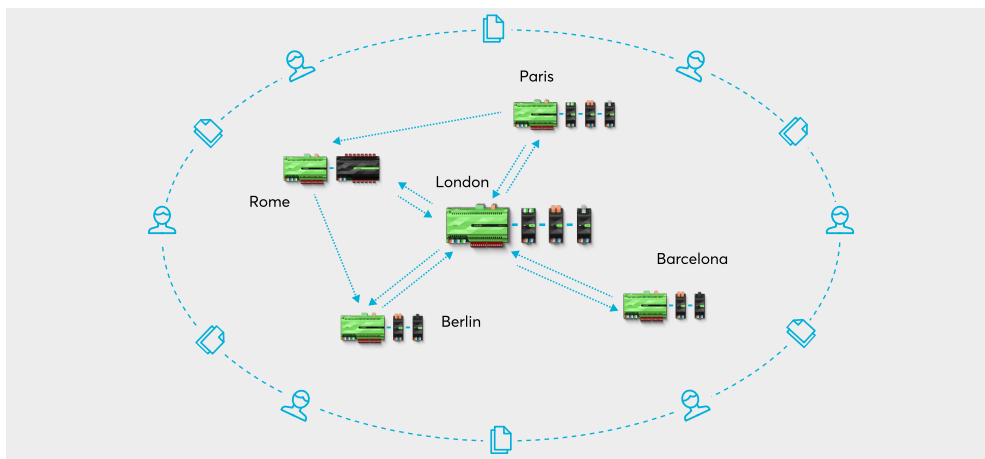
or:

www.loxone.com/enen/kb/tree-intercommunication

Trust

The so-called Trust is a trust relationship between different Miniservers. As part of the Trust, it is possible to transmit users, user groups and their data across locations and in TLS encryption, including via internet connections. Digital, analogue and text values can also be sent.

In a hotel chain with different locations, a trust network provides employees with quick and uncomplicated access to the respective branches across locations, depending on their authorisations.



Good to know:

All Miniservers in the Loxone Campus are in a common Trust. The Miniservers at the Loxone Campus also have a Trust to the Miniservers of our international branches. This means that a user from one location can easily be given access to other locations with the same credentials.



or:

www.loxone.com/enen/kb/trust

Implementation

Cabling

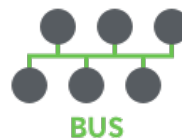
Tree & Tree Turbo

When constructing a modern building, cabling is a factor that should not be underestimated in terms of planning and installation. In a hotel or restaurant, it wouldn't be uncommon to have miles of cable pulled throughout the building.

With the development of Loxone Tree, we have pursued a clear goal: to reduce the cabling and installation effort of switches, sensors, and lighting. And all this without compromising on flexibility or functionality.

The Tree Extension forms the basis for the Loxone Tree technology. 50 Tree devices can be connected to one Tree branch. For easy wiring, we have created a special cable.

The following topologies are possible with a maximum cable length of 500m:

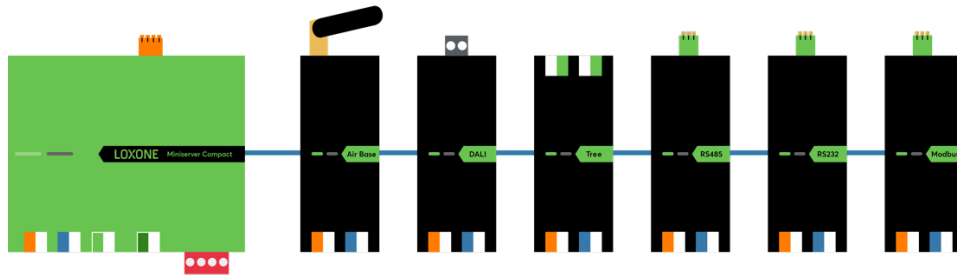


or:

www.loxone.com/enen/kb/tree-extension

Link

The functionality can be expanded via the Miniserver to meet the project requirements. This is done via the so-called Link interface. The Miniserver can be expanded with up to 30 Extensions offering additional specifications such as inputs and outputs and numerous interfaces. The Link wiring must be linear. The Link is the bus connection in the cabinet.



or:

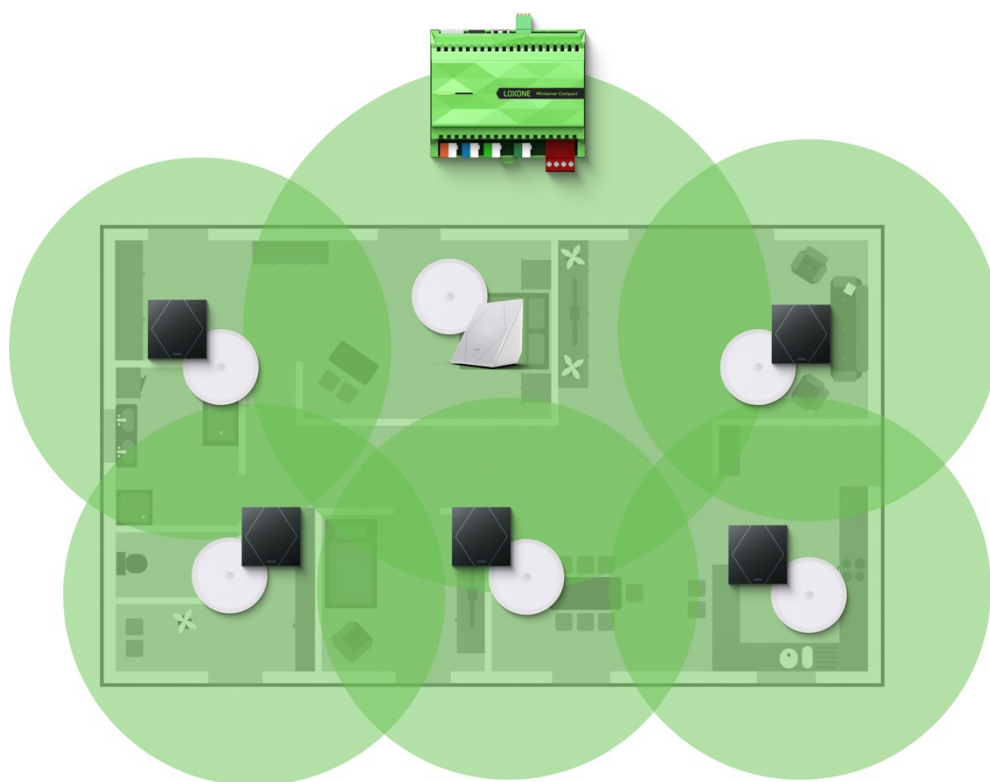
www.loxone.com/enen/kb/link

Air

The wireless Loxone Air technology has been specially developed for those who don't have the opportunity to pull cables but equally so, don't want to go without modern building automation.

Loxone Air uses so-called mesh technology. Any Loxone Air device with a permanent power supply increases the range and stability of the overall system.

The Loxone Air wireless interface allows you to connect up to 128 Air devices. You can add the Loxone Air interface in an installation using the Air Base Extension, the Miniserver Compact, Miniserver Go, or – for up to 49 Air devices – the Tree to Air Bridge. Loxone Air has been specially designed for building automation and is able to integrate a large number of compatible devices.

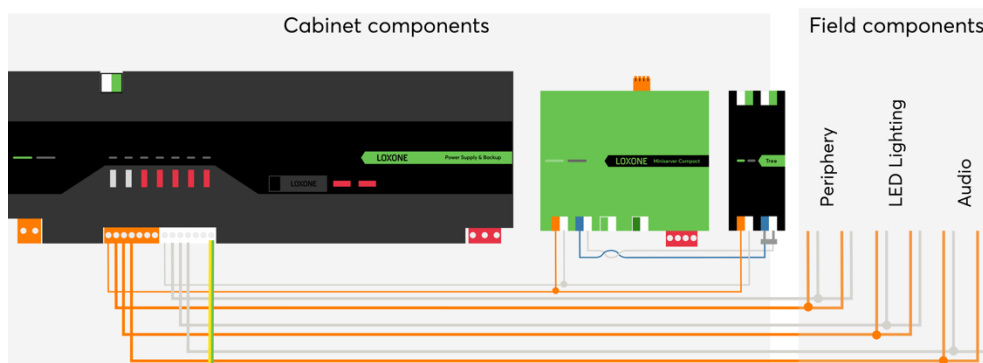


or:

www.loxone.com/enen/kb/air

24V DC Supply

The operating voltage for Loxone products is 24V DC. A division of the 24V supply into several circuits is strongly recommended, as with 230V. This effectively prevents a total failure of the system caused by an external factor such as a short circuit or overload. The Loxone products are suitable for a PELV as well as SELV installation. We always recommend choosing the PELV installation, since a SELV installation is often not possible because an unwanted connection with the protective conductor (PE) is created via devices or earthed cable shields. In the event of an indirect lightning strike, this leads to high equalising currents via electronic devices and can damage them.



We recommend separate 24V DC circuits for:

- > Miniservers and Extensions
- > Field devices (presence sensors, Touch switches, etc.)
- > LED lighting
- > Audio

For an even more reliable power supply, we recommend our Power Supply & Backup. The DIN rail power supply unit takes over the power supply for your Loxone products – it can also be connected to an external 36V DC battery to power much of the installation in the event of a power failure.



or:

www.loxone.com/enen/kb/power-supply-backup

Installation

Periphery & Network

The network design can be flexibly adapted to your specific project requirements. However, it is important that the Miniservers are allowed to communicate with each other. This communication can be implemented either via routed subnets or within a single network. A prerequisite for a successful and fast installation is a fully functioning and reliable network.

Good to know:

In the Loxone Campus, the following network segments were implemented as VLAN:

- > General office space
- > Warehousing & logistics
- > Owner level
- > Hotel & restaurant
- > Plant rooms (cold rooms, ventilation, ...)
- > Experience Zone

Communication is allowed between these segments.

Cabinet Devices

An existing, reliable network infrastructure greatly simplifies the installation process. If the Miniserver and the computer from which the Miniserver is configured are on the same network (even without an active internet connection), the Miniserver can be easily and quickly identified, paired and configured.

Good to know:

In a company with a professionally managed network, we recommend:

- > Assign a static IP address to the Miniservers
- > Assign a unique host name to the Miniservers
- > Network Documentation for the Miniservers

To be able to get a quick overview in the event of an error, we rely on clear and structured labelling at the Loxone Campus. As an example of this, we have set the hostnames of the Miniservers and Audioservers according to a specific naming convention.

MS	HO	C10
Miniserver	Hotel	Cabinet 10
AS	GL	BA
Audioserver	Glorious Bastards	Bar

This makes it possible to see at a glance which device it is, what it is responsible for, and where it is located.

After the successful installation of the Miniserver, the connected Extensions can now be searched for and found. Here, too, it is important to ensure precise labelling and documentation.



or:

www.loxone.com/enen/kb/tree-branch/

Field Devices

All Loxone field devices are equipped with a status LED. This indicates whether the wiring has been carried out correctly.

Flashing Red/Green rapidly	Device was selected in Loxone Config and is identifying.
Flashing Green or Off	Device has just been paired or has restarted and is now online.
Flashing Orange	Tree wiring is fine. Device has not been paired yet.
Flashing Red	Device cannot connect to the Miniserver via the Tree interface. Check the Tree wiring and Extension.



or:

www.loxone.com/enen/kb/led-states/

In the Spotlight: LED Spots

The Loxone RGBW Tree LED Spots are equipped with a special mode to help during installation. This mode makes it possible to check the success of the connection during installation: a green LED indicates a working connection, while a red LED indicates a wiring connection error.

Good to know:

This feature has proven to be very useful, especially in the auditorium at the Loxone Campus. More than 200 spots were installed at a height of 10m. As the use of a scissor lift platform was necessary for the installation of the spots, the special mode made it much easier to check that the wiring was correct as each one was connected.

Labelling and Documentation

Control Cabinet Devices

The correct labelling of the Loxone peripherals is essential and, at the same time, forms the basis for the documentation. In Loxone Config, both the row and position in the panel can be added. This, in combination with the status LED, ensures that the devices can be easily identified later.

Installation location	
Installation location	
Panel	8 Space
Row in Panel	1
Position in panel row	2

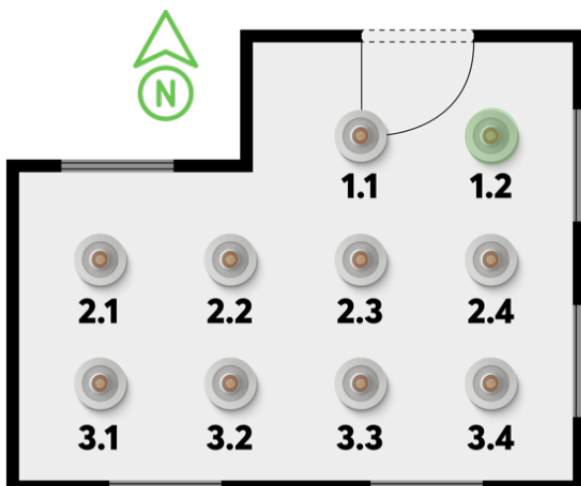
Example: Miniserver in Space 8

Field Devices

If the installation location of the field device is clear and the device performs its function where it is mounted, the position is indicated in the "Name" field. In this example, it is one of the LED spots in a room identified as "8 Box N". Of all the spots installed here, this one is in the first row (1), second position (2), i.e., 1.2. The numbering always starts in the cardinal direction north to south. The [LED spots](#) are numbered from left to right: 1.1 / 1.2 / 1.3 / 2.1 / 2.2 / 2.3.

General	
Name	1.2
Description	
Hint Text	Edit...
Connection	13000001.21.13114F5F.0.B038AE66
<input type="checkbox"/> Display Diagnostic Inputs	
Category	Lighting
Room	8 Box N
Object Type	Tree Device
Extension	Tree Extension (Schaltschrank R01 P03,...
Lighting Group	Spots (8 Box N)

Example: LED spot in room "8 Box N" installed in the first row, in the second position.



If the device, such as a Nano 2 Relay Tree - which is responsible for opening the entry door from the car park - is not installed in the place where it performs its function, the installation location must be specified. In this case, the relay that opens the entrance door to the underground car park is mounted in a terminal box in the entrance way.

General	
Name	Entry Door Underground Car Park
Description	
Hint Text	Edit...
Connection	13000001.21.13114F3D.1.B03FCBA9
<input type="checkbox"/> Display Diagnostic Inputs	
Room	Lounge Staircase
Object Type	Tree Device
Extension	Tree Extension (C-Level R01 P05, 13:11:...
Settings	
<input checked="" type="checkbox"/> Monitor online status	
Serial number	B0:3F:CB:A9
Device type	Nano 2 Relay Tree
Application	Universal
Threshold for current detection [mA]	100
Installation location	
Installation location	Terminal Box Entry Way Downstairs

Maintenance & Service

Loxone Exosphere

Loxone Exosphere is an innovative, cloud-based platform that aims to revolutionise the management and maintenance of Miniserver fleets across various sites. Complementing existing Loxone products, Exosphere offers the following key features:

- > **Device Management:** Users can maintain all Miniservers at the same time. This includes features such as updates and backups, which can be performed for individual Miniservers as well as in bulk for entire fleets.
- > **Collaborate:** Exosphere enables the creation of workspaces where teams can collaborate and manage tasks efficiently. With the Loxone Config Cloud Connector, users will be able to store projects in the cloud and make them accessible to team members. A built-in Credential Manager will provide end-to-end encrypted storage for passwords and connection information.
- > **Observe:** Users can easily search for and analyse data from Miniservers and display it in different types of charts. Fully customisable dashboards provide a comprehensive view of key data, and system schemas make it possible to graphically display the system data of Miniserver fleets.

To meet different requirements, Exosphere is available in two versions - Pro and Enterprise. These differ in terms of functionality and price structure.

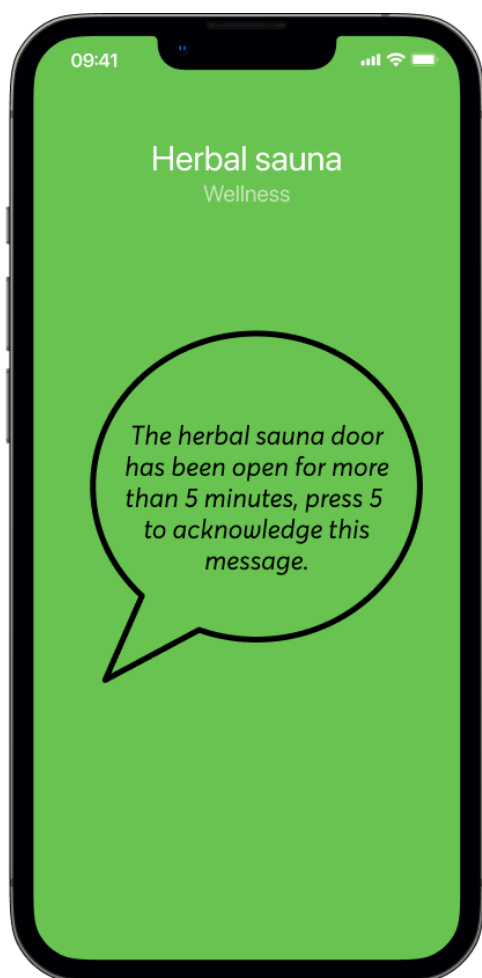
In summary, Exosphere will be a powerful solution for Loxone Partners and commercial users to efficiently manage, maintain and monitor extensive Miniserver fleets.

Alarms & Error Messages

Technical Alert

Technical glitches can spoil the guest experience or cause significant damage. For example, a sauna that is too cold due to a door left open is an (energy-intensive) nuisance for the guest, while a failure of the cooling technology in the restaurant area can cause considerable monetary damage.

That's why, with the Loxone Miniserver, we offer numerous options for simple and effective alerting in the event of technical malfunctions. An effective way to draw attention to a malfunction is to raise the alarm via a phone call. The Miniserver can activate exactly that via an alarm chain.



Loxone Caller Service

Alarm chain:

- > Reception
- > In-house technician 1
- > In-house technician 2
- > Hotel manager
- > Owner

Alarm

An intelligent building equipped with Loxone devices can detect unauthorised access and report it. The 360° safety system can also sense an escape of water, and warn of hazards such as fire or smoke, ensuring optimal safety.

TOP FEATURES

- > Any number of alarm zones
- > Presence simulation
- > Logging feature
- > Status of windows and doors (open/closed)

Our recommendation:

If an area is not protected via access control, the Miniserver can be used to provide a discreet alarm in the event of unauthorised entry. If, for example, a guest enters the wellness area outside of regular opening hours, the system can activate reduced lighting. In addition, a text-to-speech (TTS) message is generated and played via the audio system, informing the guest that he or she is in the area outside of the intended usage times.

Power Outage / Network Failure

The entire home and building automation system must be designed to be fail-safe. This means that in the event of a fault (power failure) no damage occurs to functionality, provided there is suitable electrical protection in place too. In practice, this means that after a power failure, the entire system resumes its service on its own without the intervention of a technician.

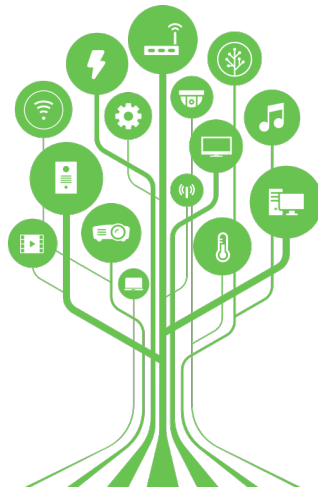
Tips for a reliable system:

- > Static IP addresses of all network devices
- > Fail Safe Mode
 - e.g., ventilation to 50% if network fails
- > Avoid dependencies
- > Remanence (the state before a power failure is automatically restored)

Connection to Third-Party Systems

Interfaces

Loxone is an open system. Regardless of the manufacturer and the area of application – if a product has a suitable interface, it can be integrated into the Loxone building automation system. That could include ventilation systems, TVs, KNX peripherals, etc...



Extensions & Protocols

Tree	Air	Digital Input/Output	Analog Input/Output	M-Bus
Modbus RTU	Modbus TCP	RS232	RS485	DMX
Internorm	Fröhling	Schüco	1-Wire	EnOcean
Infrared	EEBus	BACnet IP	Network (LAN)	SIA DC-09
Apple HomeKit	Apple AirPlay 2	Home Connect	Miele@home	KNX

Library

Thanks to the open Loxone system, you can develop your own templates for our interfaces and make them available to the world via our Loxone Library.



or:
library.loxone.com

Your Project – From idea to reality

Are you interested in finding out more about Loxone or are you ready to discuss implementing this solution in a project?

We are here to help you on your way to an intelligent, comfortable, secure and energy-efficient building.

Loxone UK Ltd

Email: office@loxone.co.uk

Phone: +44 1183 204 9930

Are you looking for inspiration and want to see Loxone for yourself?

Visit our website to learn more about the world of building automation in the hospitality industry. We've got exciting reference projects and blog posts with more tips for you.



or:

www.loxone.com/enen/commercial/hospitality/

Interested in being a Loxone installer and attending our training?

Contact us to schedule a free consultation or demo without any obligations.



or:

www.loxone.com/enen/partners/become-an-installer/

Do you want to experience Loxone for yourself?

Book a visit to our complete showroom in Theale, Reading. Located just off J12 of the M4, adjacent to the Theale Train Station.



or:

www.loxone.com/enen/smart-home/experience-loxone/

Notes

