



SECURITY AND COMMUNICATION

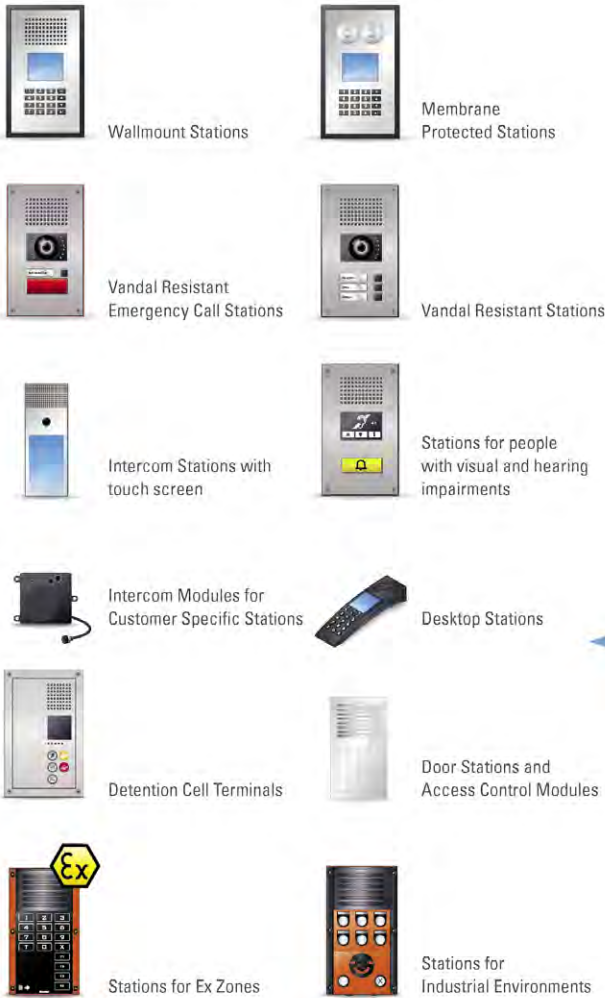
for People, Buildings and Assets.

COMMEND INTERCOM LANDSCAPE

COMMEND provides communication with a system: solutions designed and manufactured with people and the environment in mind. The COMMEND product portfolio covers every Intercom need, from simple point-to-point intercom systems to complex integrated solutions. COMMEND's building-block design concept ensures that all of the various security systems like CCTV, Access Control, Mobile Radio etc. combine to form a single, easy-to-use-and-manage platform.

Intercom Terminals

Commend manufactures Intercom terminals for every application and environment – including, for example, stations with anti-bacterial surfaces for hospitals, vandal resistant help points for subway stations, and vigorously robust units with explosion-proof certification for the petrochemical industry.



Intercom Control Systems

Control Desk systems by Commend provide a continuous system-wide overview to support instant reaction in case of an emergency. Even the most complex Intercom networks or video and control functions can be handled with ease, thanks to the clearly structured Commend solution user interfaces for CONDUCTOR and DUETTO.



Control Desk solutions

Intercom Server

The Commend Hardware and Software Intercom Servers (SIS) form the core element of our Intercom solutions. As dedicated "audio specialists" and interface managers the Servers integrate seamlessly into security systems to give them a strong, reliable voice.



Software Intercom Terminals

Commend's Software Intercom Terminal transforms regular Smartphones, Tablets or regular Windows-based PCs into Intercom Stations and gets Intercom communication mobile.



Configuration and Remote Maintenance

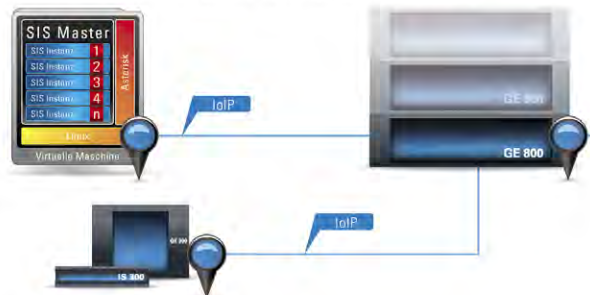
The Intercom systems can be configured and maintained either from within their own data network or remotely via connections over the Internet.

System diagnostics, adding additional features and extending system capacity is easily provided and is achieved remotely on a software license basis.



Local Networking

Hardware-based Intercom Servers can easily be networked locally via a variety of different technologies. Upgrading the number of plug-in slots allows for easy installation of additional subscriber, interface and input/output cards. Software Intercom Servers can be upgraded with licenses and it takes only a few clicks to add extra instances (subscribers and functions). What is more, software-based and hardware-based Servers can be linked together via IP network connections.



Software Intercom Control Systems

What has happened? Where and when has it happened? How can one help the caller? STUDIO provides the necessary information within a single, uniform software application. All Control Desk functions of the Intercom Server support interactive on-screen visualisation.



Control Desk Management – STUDIO

ICX Protocol

InterCom eXchange protocol (ICX) provides a standard, open protocol for communication between Intercom Servers, Commend software applications and other third party systems.

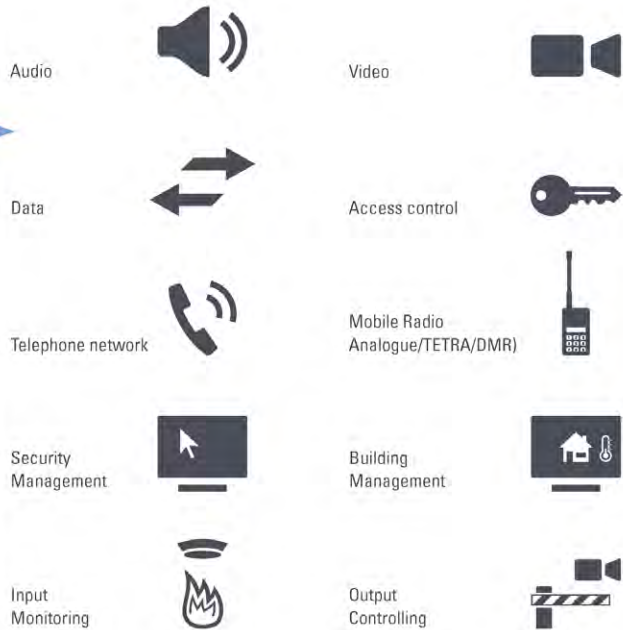


ICX/IP
ICX/RS232C

IoIP
Digital
Analogue

Standard Interfaces

Commend Intercom systems support widely available standards such as OPC, SIP, TETRA, as well as a large number of existing and well-proven interfaces to third-party systems.



Custom Interfaces

Implementing custom tailored audio, data and video interfaces is no problem either. Supported options range from the use of simple signal contacts for control and messaging purposes to the full integration of third-party systems.

System Integration



Worldwide Networking

IP connections (LAN/WAN) enable worldwide multi-site networking for communication in Commend's trademark high quality. Up to 30,000 subscribers can communicate within these networks.



Public Address and Induction Loop Amplifiers

Advanced networking technologies and unique functions such as IVC (Intelligent Volume Control) are the hallmark of the Commend Amplifier and IP Loudspeaker series. They are designed for universal use in applications up to complex Public Address and Intercom solutions.

Audio Amplifier



IP-Loudspeaker



Audio Induction Loop Amplifier



BECAUSE EVERY WORD COUNTS.

Because every word counts, everything speaks for solutions from COMMEND. Because every second may be decisive, people need a technology which not only functions, but is 100 percent reliable – in all situations, 24 hours a day.

At COMMEND, we are fully aware of our responsibilities as every day, millions of people worldwide rely on us. Whether in the London Underground system, in a multi-storey car park in France, in a steel mill in china or in a hospital in the USA: effective communications and security are our driving forces.

For this reason, we continue each day to develop and work on solutions which are better, solutions which are simpler but which at the same time open up new possibilities. Solutions which not only serve their purpose, but which also provide a feel-good factor. The feeling of security and trust.

With this product catalogue, we provide you with information on the latest state-of-the-art technology from COMMEND. Because every word counts, we will be pleased to hear from you and listen to your opinions – whether relating to our products, our organisation or simply to the COMMEND brand.

Write to us at: marketing@commend.com



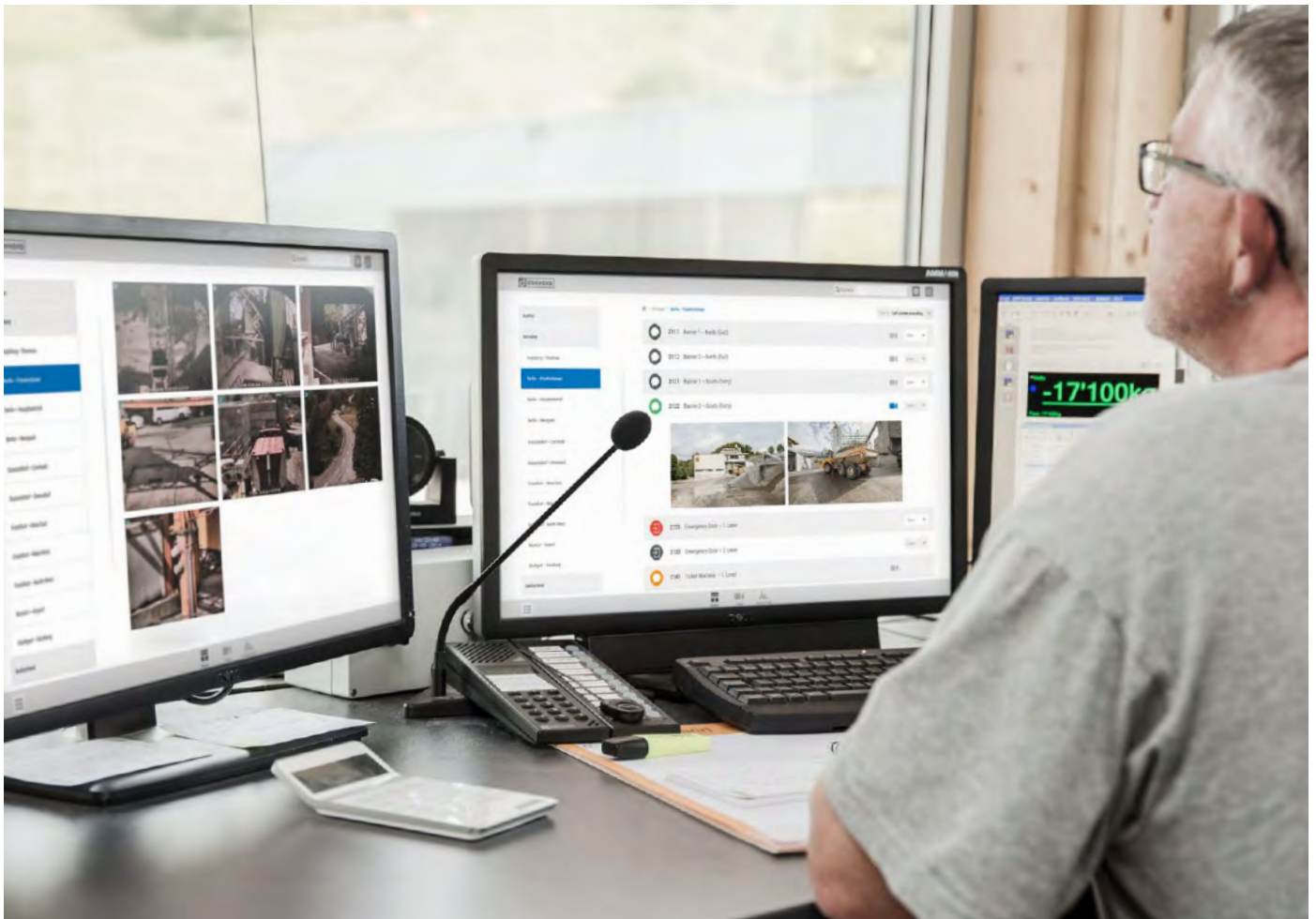
INTERCOM LANDSCAPE

Open the cover and discover
the solution competence of
COMMEND.



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SPEECH. IMAGES. DATA.

Information that enhances security.

For security with enhanced communication.

This includes the networking of visual and audible information. Commend has developed a digital system platform that meets the highest security

and communication requirements – with a uniform operating interface, interactive, modular and adaptive.



On one platform. In one network.

- **Multi-functional terminals.** Terminal devices and user interfaces that employ state of the art DSP technology.
- Intercom Servers for any environment. From **hardware-based Servers** for systems of any size, to **Software Intercom Servers** for virtualised IT infrastructures.
- **Local networks.** The central Intercom control unit serves as the interface manager for a speech-image-data network.
- Global networks. Local networks are interconnected via standardised protocols to form global communication networks.
- Modern structures. Digital **system networking via IP.**
- **Easy programming.** The configuration of the Intercom server is carried out with a user-friendly PC program.
- Flexible **VoIP interface for SIP connections** – easy integration of SIP telephones and VoIP servers into Intercom systems.




Actual distance: 3,935 km // Felt distance: 1 m

A natural communication experience as loud and crystal clear as a face-to-face conversation...
...made possible by a Commend Intercom system.

22:47
UTC +10 h
Incoming call from a car park in Perth.
A customer is having difficulties paying with her credit card at the exit gate.

22:48
UTC +10 h
The call centre agent responds to the request by talking the customer through the payment process, then wishes her a nice evening.

 Perth

Sydney 



Discover the outstanding
Audio Technology from Commend
audio.commend.com

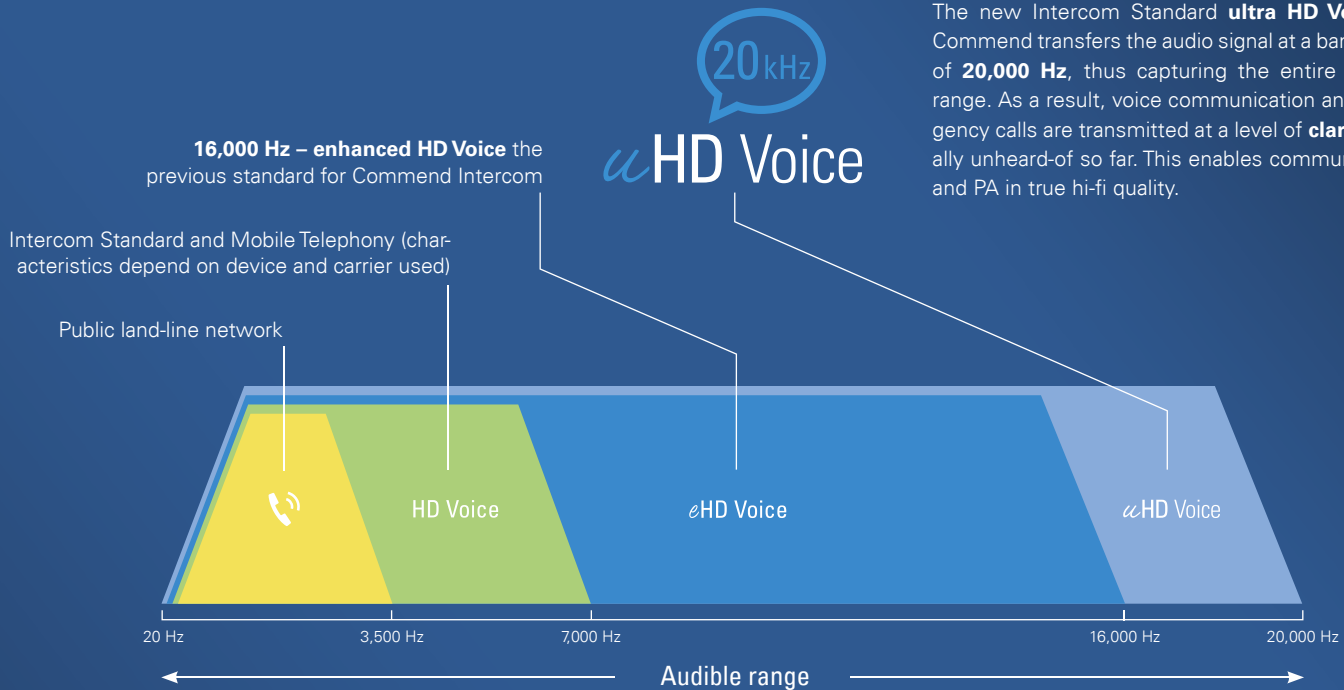
ULTIMATE SPEECH INTELLIGIBILITY IN ANY SITUATION

Since its foundation over 40 years ago, Commend has been researching and perfecting the speech quality of its systems to provide customers and users with the highest possible speech intelligibility even under the harshest conditions.

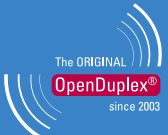



In the multi-faceted world of Intercom acoustics, everything down to the smallest influencing factor is taken into consideration when it

comes to perfecting acoustic qualities – from basic physical sound properties to signal processing and the selection of individual electronic components.

In doing so, Commend keeps extending the technical frontier. **Passion for Audio by Commend**

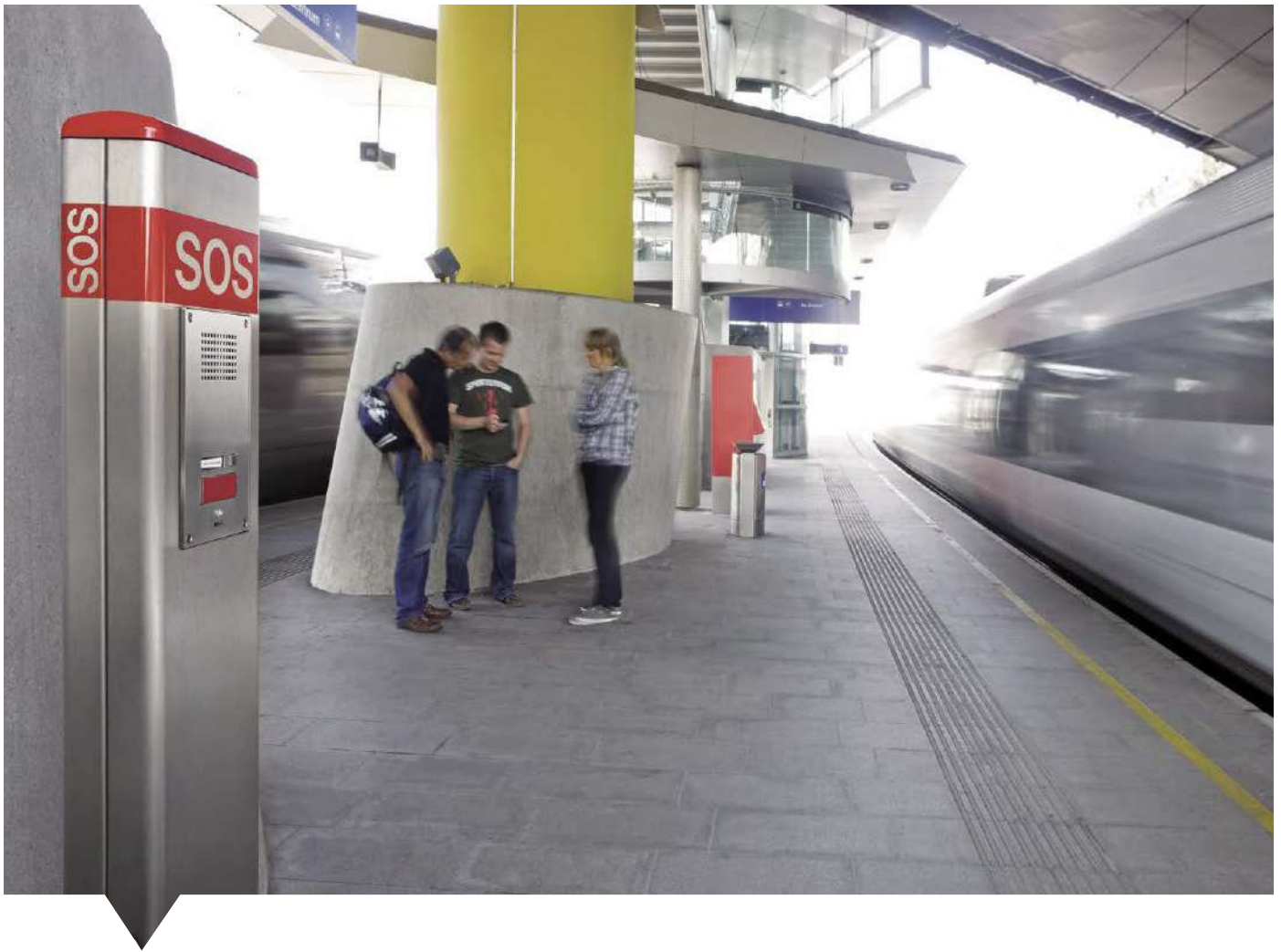


The new Intercom Standard **ultra HD Voice** by Commend transfers the audio signal at a bandwidth of **20,000 Hz**, thus capturing the entire audible range. As a result, voice communication and emergency calls are transmitted at a level of **clarity** literally unheard-of so far. This enables communication and PA in true hi-fi quality.

 <p>Natural Communication</p>	<p>IVC</p> <p>Intelligent Volume Control</p>	 <p>High Volume</p>	 <p>Background Noise Suppression</p>	 <p>Loudspeaker-Microphone Monitoring</p>
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Audio Facts

- **OpenDuplex®** – Commend Standard for **natural conversation** experience since 2003 – simultaneous loud speaking and listening.
- **STI (Speech Transmission Index) 0.96** – measured under acoustic laboratory conditions; STI is a standard measure for speech intelligibility. It has a possible maximum value of 1.00, which corresponds to perfect intelligibility.
- Clear voice transmission at **high volumes** with **intelligent volume control (IVC)** to ambient noise conditions.
- Dynamic **background noise suppression** virtually eliminates all ambient noise.
- **Loudspeaker/microphone monitoring** – ensures the availability of the Intercom station while reducing the need for manual verification of its functionality.
- **Audio Monitoring** – user security with support for fully automated system actions (e. g., emergency call) at defined noise levels
- **Public Address functions**
- **Audio recording** and **lip synchronous Audio/Video recording** of conversations for documentation and evidence keeping purposes.
- **Peer2Peer Audio** reduces network and server load to ensure efficient use of resources.
- **Conference Call function** for simultaneous talking with multiple conversation partners.
- **Speech activity detection** senses when calls are finished (no microphone signal) and terminates the connection automatically.
- **Simplex mode** for applications requiring controlled communication – e.g., security solutions based on the ‘push-to-talk/release-to-listen’ method.
- **Equalizer** for fine-tuning Intercom stations to ambient acoustic conditions.



INTEGRATION. CONVENIENCE. SECURITY.

Requirements met with Perfection.

Complete systems from one source.

The current trend in security and communication requires comprehensive and compact system solutions that integrate all elements of communication.

Commend offers a large number of features that facilitate the creation of purpose made communication and security solutions for each application area.



Building Security | Transport & Infrastructure | Industry & Production

Intercom Facts

- Central control. **Control desk systems** and graphical user interfaces for speech, video, control and display functions.
- Easy integration. **Integration into 3rd Party systems** (fire alarm, CCTV, BMS, Intruder etc.).
- Absolute reliability. **Emergency call system** with speech, data and video transmission, emergency calls from elevators in compliance with EN 81.
- The second communication level. Intercoms in offices that employ digital technology.
- Perfect integration of **PA systems** in excellent 16 kHz eHD Voice speech quality.
- Robust reliability. **Industrial Intercoms** for light, commercial and heavy industry.
- Secure connections. Integration of telephone and mobile telephony.
- Digital Voice Server. Digital speech processing for announcements and speech recording.
- Project specific solutions. Special **Intercom Modules** for the meeting customer specific design requirements.
- Desktop **Counter Intercom systems** for communication in highest speech quality.



BUILDING SECURITY

Efficient, profitable and secure

It's part of every building operator's job to keep an eye on economic efficiency and profitability. After all, managed real estate is supposed to yield a profit. However, real estate operators also bear an enormous responsibility where security is concerned. The legal requirements imposed on operators fill numerous pages. We at Commend cannot prevent crises or rule out unforeseen events. **However, our communication systems ensure that everything runs smoothly in case of an emergency.** They do so by helping to minimise unnecessary effort while providing ultimate security and keeping downtimes as short as possible.

What are the risks that a building communication system must be able to deal with? Which elements are essential in individual cases? What can and should be done? How can we make everyday life easier, more secure and less worrisome for building operators? It's questions like these that we at Commend are considering every day. And yes, we do find answers to them.

Building Communication by Commend helps people find their way, keeps them informed, assesses situations, raises emergency alarms and evacuates.



EN 62820-2
ADVANCED SECURITY
BUILDING INTERCOM



Our offer – your benefits

Communication by Commend is not limited to mere access control or monitoring of sensitive areas and premises. **Audio and video, integrated Public Address, security applications for Smartphones and smooth data exchange provide support in everyday situations but also – and especially – in case of disruptions and crises.** Intercom solutions by Commend provide the ability to respond without delay, helping to maintain operations and avoid costs resulting from unforeseen events.

Commend's powerful visualisation software also keeps security staff informed about relevant areas and events. Staff who need to be able to leave their stationary control desk can take advantage of applications that bring full mobile access with all essential features and functions to their smartphone or tablet. **Standard-compliant "Advanced Security Building Intercom", talking cameras, or convenient multi-touch door Intercom stations** – at Commend, our solutions are all about people, buildings and assets. Technology serves as a means to this end.

BUILDING SECURITY BY COMMEND

Solutions that ensure protection and security for people and assets.



Leading the way at the point of access

Multi-functional buildings are no longer accessed simply via an entrance and a latchkey. Users today have a variety of constantly changing interests, requirements and needs to be met; they require different means of pedestrian or vehicular access and work in different offices or business units. Whatever their need, Commend's communication systems lead the way – quite literally.



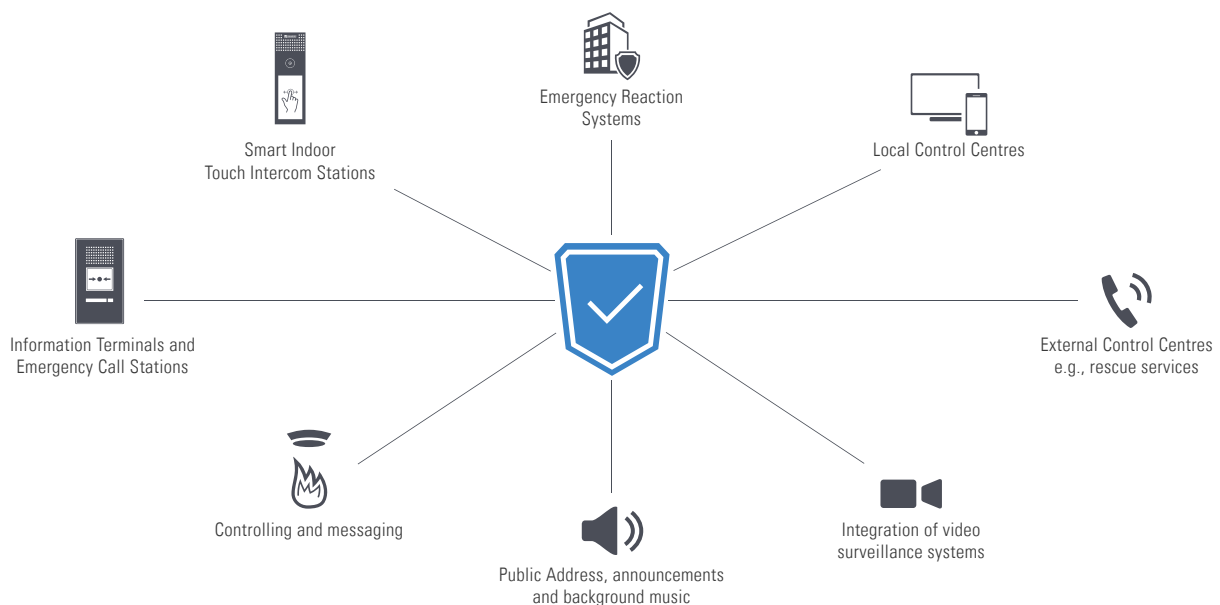
Emergency Reaction Systems

Our emergency reaction systems can be used in many different ways to make sure that disruptions, emergencies or other dangerous situations **can be responded to without delay.** Forming the core element of these solutions, Commend's servers are exceptionally powerful and highly efficient. They act as an interface to external systems such as video, Public Address, radio and telephone communication – i.e., to all security-related components – to help manage relevant risks.



An up-lifting communication experience

Our communication systems allow you to communicate even with persons using the lifts at any time. We also provide secure, standards-compliant Intercom solutions for fire service lifts. Our portfolio includes a variety of control desk concepts, ranging from individual query stations to user-friendly visualisation that provides an instant overview of the entire system to enable short response times.





Schools, Universities and Education Facilities

Horrific as it is to think about, public buildings are increasingly becoming scenes of extreme violence. Especially schools and universities are experiencing a growing need for security to ensure the personal safety of teachers and students and to protect their assets. **We have developed a special security concept** that enables a reliably fast response in case of disruptions or emergencies – not just inside the building itself, but throughout the entire premises.



Corporate Buildings, Office Complexes and Campuses

These buildings must provide protection and safety in everyday situations as well as in emergencies. **Being able to respond quickly and adequately in dangerous circumstances is a huge advantage.** The (literally) central element of the solution that makes it all possible is the multi-functional Control Centre. It keeps every corner of the building or firm's premises in focus and adjusts easily to changing requirements. **Its dedicated range of functions helps to ensure all-round security – easily, smoothly and, most of all, discreetly.**



Public Administrative Buildings

In court buildings and administrative facilities, the need for security technology is growing as a result of rising security-related challenges. The motto that "trust is good but verification is better" is reflected in security airlocks and CCTV monitored points of access becoming commonplace. Although very rarely, it does happen that security staff have to make a decision whether to clear a building for security reasons. **Commend ensures reliable alerts, delivers essential in-time information, and helps to take appropriate measures.**



Hospitals and Healthcare Facilities

The fact that our technology can save lives is nowhere demonstrated more dramatically than in a hospital. Where precious minutes can decide the life or death of a patient, the ability to communicate and pass on information without delay is literally vital. **Commend's security and communication solutions for medical and healthcare environments enable direct communication** across building complexes and remote sites. They also monitor points of access and medical devices, provide assistance and react instantly to faults or emergencies.



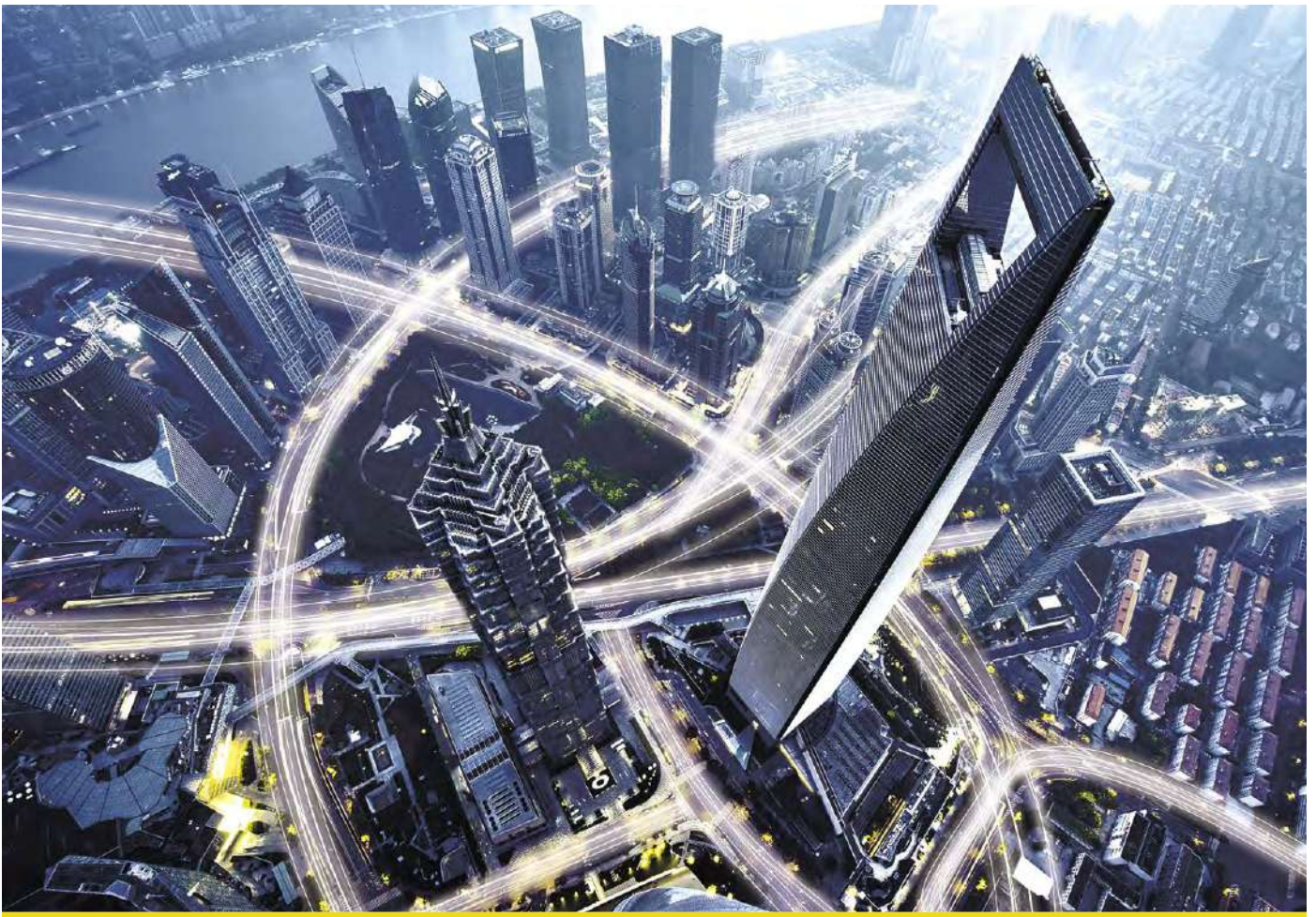
Shopping Centres

Shopping malls are highly popular, attracting huge numbers of customers. They are visited – on occasion even stampeded – by thousands of shoppers every day. However, not every visitor has the same innocent intentions. Alarms are set off frequently, even by trivial things like smoke from a frying pan. **Communication systems by Commend not only provide secure pedestrian and vehicular access, they also support the staff.** If a sensor triggers an alarm, security staff can use instant call connections to quickly assess the situation and decide on the need to take further steps.



Data Processing Centres

Our lives are being measured in more and more detail based on collected data – information that needs to be stored and protected at data processing centres. **Commend communication systems enable a level of infrastructure monitoring** that would otherwise require vast staff resources but is economically viable for any operator, thanks to our solution concepts.



TRANSPORT & INFRASTRUCTURE

Help at the push of a button

At Commend we always take the worst-case scenario into account, whether it's on motorways or bridges, in tunnels or on railway lines, in train or bus stations – i.e., wherever there is a large number of people about. Some may call this pessimism. We use it to sharpen our senses and to drive our innovations. That is because **for us, the security of people, systems and infrastructures always comes first.** As a result, we concentrate on what we do best: develop communication solutions, i.e., technology that makes everyday life easier and provides protection in critical situations.

People have a natural need for security. If an emergency strikes, they want to be alerted and kept informed. They want guidance and, if necessary, be evacuated as quickly as possible – no matter when or where, whether at the airport check-in desk, in the middle of the underground car park or while riding uphill on the ski lift. **Our information and emergency call systems ensure that your call is heard. So it's a good to know they are always on call, literally, at the simple push of a button.** Breakdown? Emergency? Fire on the roof? Our Control Desk systems provide a quick overview of what's going on, helping staff to respond quickly and adequately.



Our offer – your benefits

At Commend, the secure way is the goal – securely access controlled, video monitored, equipped with multi-functional Intercom stations and modules for announcements, complete with interfaces for playing back pre-recorded messages or good music, and always ensuring optimum speech intelligibility, even in case of loud background noise. **In good times and bad, communication solutions by Commend are there when you need them.** They provide objective security and help to create a pleasant atmosphere – for car park users, for example, helping them to get over that uneasy feeling on the way to their car at night by playing the subtle strums of Clapton's guitar in the background... Relaxed customers are happy customers. We at Commend like to look closely, listen intently, analyse carefully and use the results to develop optimised solutions.

After all, the challenges a car park manager or loading crane operator has to master is completely different from the ones an airport operator has to deal with. Of course, time is money everywhere, **and maintaining security, economic efficiency and profitability while generating extra turnover is key.** Customers have come to appreciate our extensive knowledge and expertise in this area.

Intercom systems by Commend are designed to make everyday life secure, helping staff to take appropriate action in case of disruptions or emergencies. **Innovation is our life insurance** We have to know what our customers will be requiring in years to come, even before they do. This way, we can be at hand with the proper solutions when they need them.

SOLUTIONS FOR TRANSPORT & INFRASTRUCTURE

Commend – your reliable provider of help and information in everyday situations



Communication provides information

Music has been proven to lower adrenaline levels and lifting the mood. Luckily, there is no need to conduct an orchestra in your car park or stairway to please your customers. **Commend Public Address solutions** delivering soft beats through the loudspeaker **can help to reduce stress levels** and improve the overall customer experience. Good sound not only hits the right note, **it can also profit you financially**. Running paid audio advertisements, for example, allows you to generate extra income. In some cases, however, all that's needed is a means of **pointing your customers the right way**, of providing them with an Intercom station and the answer to their question how to get from the car park to the station.



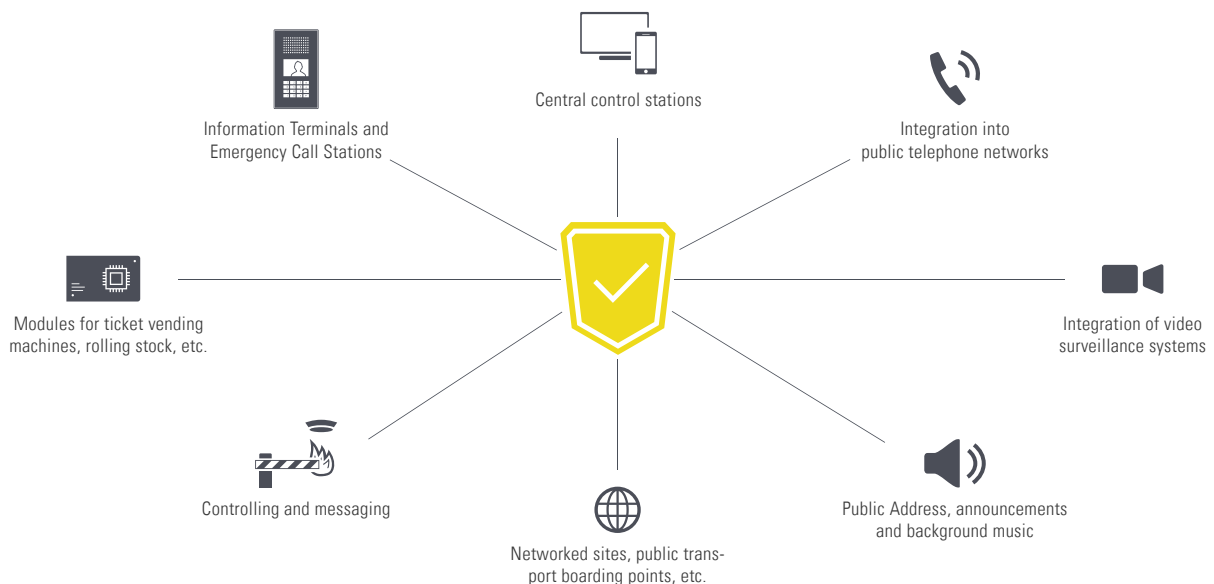
Instant help in case of problems

A barrier refusing to clear the way for a passing vehicle may not be a disaster, but it's an inconvenience nonetheless. **With a Commend Intercom station, the problem can be solved in no time**, turning the customer's frown upside down at the push of a button, so to speak. The lifts, on the other hand, may sometimes get stuck, going neither up nor down. A reassuring "Don't worry, help is on the way!" can go a long way towards de-escalating an otherwise stressful situation.



Showing the way in emergency situations

Being able to listen and take appropriate timely action can save lives. **Help calls are forwarded to staff at the Control Desk who are able to provide assistance and take appropriate further steps.** In an emergency, Commend Intercom Systems can show the way to the nearest exit or out of a danger area and provide incident-related information.





Car Parks

They tend to be located high above ground or deep below: parking garages. It takes intelligent communication solutions **to prevent motorists getting stuck in endless queues – a situation that is likely to raise the level of their frustration as well as that of toxic exhaust fumes in the air.** Commend's solutions range from barrier-free, multi-functional Intercom stations in front of and inside parking facilities to Control Desks that offer intuitive, fast and error-free operation and the ability to issue alerts in case of emergencies such as a build-up of toxic gases.



Airports

At airports, real emergencies are, thankfully, rare. Unfortunately, disruptions aren't. And they can put a heavy burden on the budget. The costs incurred by airport operators for security incidents or delayed flights can easily run very high, as can the resulting challenges for security staff, who are expected to remain calm and collected in the midst of bustling crowds of people. **Commend technology is designed to support airport staff in managing both their tasks and the many passengers** who often can't see their way through the flood of information.



Transport Interchanges, Railway- and Bus-Stations

Many railway stations have been experiencing a sharp rise in criminal activity in recent years. This has brought on a call to step up in security in these locations. Whether it's emergency Call Stations capable of withstanding vandalism, video surveillance systems with automatic camera activation or integration support for TETRA mobile radio communication – **thanks to Commend, the railway station as a "conflict area" is now getting a whole lot more secure.** Rather than fire hazards, the burning problem for passengers is often just their inability to find their way around. This is where Information Terminals or Public Address systems can prove invaluable in getting them on the right track.



Rolling Stock, Busses and Cable Cars

Millions of people use bus, railway, underground or aerial cableway services every day. They expect passenger security, especially guaranteed **assistance whenever they need it – even on a train at full speed or in a cableway car between stations.** Commend hardware and software is designed to serve their security needs.



Motorways, Tunnels and Toll Roads

When getting behind the steering wheel, drivers want to reach their destination without any incidents. A malfunctioning barrier at an unattended toll booth, a vehicle breakdown or, if the worst comes to the worst, a collision: the devil never sleeps. **Commend makes sure you always get through.** We offer Emergency call stations that withstand even extreme environmental conditions (noise, moisture, dirt and vandalism) and provide voice and video connections in outstanding quality. Staff at the Control Desk get a quick overview of the situation that enables them to respond quickly and alert rescue services if necessary.



Ports and Waterways

Dock workers have a tough job that comes with a lot of responsibility. They know that life is not just a long quiet river. Usually they are under a lot of pressure from every direction, as tons of freight have to be loaded onto huge cargo ships every day. Access control, alarm systems, durable Intercom stations or integrated industrial mobile radio: **Commend's security and communication solutions are like a "bridge over troubled waters", perfectly tuned to the demanding requirements** of terminals and container gantry cranes and are suitable for all kinds of waterways and sluiceways.



INDUSTRY & PRODUCTION

Clear, targeted and effective

Our engineers and product development specialists are fully committed to improving workplace communication for our customers, helping them to boost their profit through efficient workflows low costs thanks to fast troubleshooting. **As a result, our customers keep benefiting from what we have been doing for more than 45 years.** In industrial firms and facilities employees must be able to rely on high-quality communication, reliable alarm activation, as well as video support and system control – solutions that are designed to withstand even extreme environmental conditions. Obviously, it makes a big difference if a communication system is used in the chemical or pharmaceutical industry, or in production or logistics. **Special challenges require special solutions.**

At Commend we invest significant resources in the development of new products and systems, and we take great care to verify every underlying concept before a product design gets its go-ahead. This is because there are important issues at stake. In fact, is there anything more important than personal security, health and life? This may sound dramatic, but it's true. In designing our products we also keep economic efficiency in mind: **How can our solutions help to optimise processes?** After all, cost efficiency is a crucial requirement for any Commend system.



Our offer – your benefits

Intercom systems by Commend help to improve occupational safety. Clear, easily intelligible communication prevents misunderstandings and helps to avoid accidents. In case of an emergency, users can easily place a quick help call using the nearest Intercom station or a mobile device. This helps to ensure the staff safety. Loud and clear, even in noisy environments: the speech quality provided by Commend systems is extremely high to ensure optimum acoustic clarity.

Seeing is believing: Visualisation-based solutions with floor plans and video displays help staff to stay on top of things, allowing them to quickly trace the source of alarm calls and prevent false alarms. If needed, connections to internal as well as external help and rescue forces can be set up at a moment's notice. One thing is

certain: there is a lot at stake in an emergency, as any (further) mistake might have fatal consequences.

Commend system solutions have many other talents as well: enabling access control and management, for example. Keeping unauthorised persons off the premises can reduce the danger of industrial espionage, theft and vandalism considerably.

We want to make the world a safer place – and we don't mind if our solutions also help our customers earn money: **Our communication solutions boost efficiency** while providing a quick and easy way for your staff to stay in touch and coordinate with each other. As a result, downtimes are reduced dramatically and processes become much more efficient.

SOLUTIONS FOR INDUSTRIAL ENVIRONMENTS

Perfect communication for efficiency and safety



Optimised team communication

Hissing, rattling, roaring, rumbling – that’s the sound of Industry. **Clear, easily intelligible communication is crucial in industrial environments where there is loud background noise.** Keeping in touch with team members in remote locations and coordinating workflows quickly is just as essential. **It saves time – and time, of course, is money!** From Intercom stations and smartphone apps to loudspeakers, from integrated radio and telephony to optimised speech intelligibility through background noise suppression: Commend communication solutions are designed to simplify and speed up everyday work.



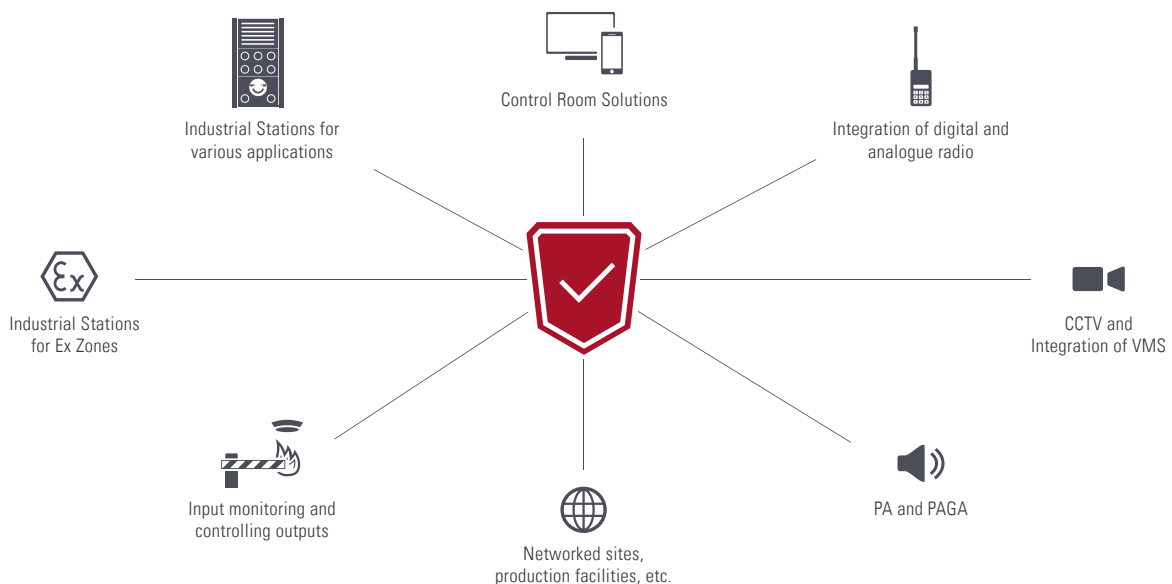
Instant emergency response

Disruptions or emergencies ranging from harmless to life-threatening – in industrial environments, there is danger lurking everywhere. Whether caused by human error or a technical failure, **an emergency requires instant, professional help – every second counts.** Commend communication systems help by triggering alarms and providing an instant overview of the situation. In order to assist Control Centre staff, they can initiate essential processes and establish communication connections to internal and external emergency services.



Acoustic and visual surveillance at the Control Desk

The Control Desk is the first point of contact, the security centre where all lines converge. It is from here that security staff operate by **coordinating, monitoring and supervising.** Fortunately, to do so they don’t have to rely on their ears alone. Commend’s visualisation-based solutions with on-screen floor plans and video displays allow them to assess the situation quickly and accurately. If a help call turns out to involve an emergency, the Commend Incident Response System assists staff in taking the necessary steps. The system’s assistive functions can be based on a pre-set action plan or partially automated.





Manufacturing Industry

At factories, production lines, warehouses or distribution centres **efficiency is a top priority, and smooth workflows are crucial to keeping things going.** Commend provides integrated communication equipment that is designed to keep downtimes and set-up times to a minimum. Our solutions are always custom tailored to their specific application environment.



Metal Industry

Steel production involves working temperatures of up to 1,500 degrees centigrade. **Any mishap can lead to a situation where communication becomes a (burning) hot challenge.** Commend's robust Intercom stations and equipment such as mobile radio and PA systems interface smoothly to provide reliable, instantly available communication lines even under hot or explosive conditions.



Energy and Public Utilities

Whether at power stations, waterworks, gas stores, substations or water purification/treatment plants, energy (supply) facilities **require hard-wearing, industrial-strength communication solutions, for one thing. For another,** facilities like these often depend on the ability to **network across multiple sites**, sometimes over thousands of kilometres. Commend technology offers system solutions that are designed to cater to the specific security and economic requirements of their application environment.



Oil and Gas Industry

Accidents or failures in the oil and gas industries can be expensive and – far worse – they can endanger health or even cost lives. This is why security and communication solutions for these environments are subject to extremely high standards. As Commend systems are required to work flawlessly under these conditions, they perform continuous self-checks. This improves security and ensures extra protection for staff.



Chemical Industry

The premises of chemical plants can reach the size of a small town, with highly reactive substances rushing through complex networks of pipes and ducts. Ensuring occupational safety means complying with high security standards that include the availability of smooth, fail-safe communication. Commend's instant two-way voice communication connections provide ultimate speech intelligibility and enable site-wide announcements via integrated PA-systems. This way, they help to reduce security risks in these often explosive environments.



Pharmaceuticals and Clean Rooms

Pharmaceutical companies: centres of research and development for the medicines that help to save lives and cure a host of illnesses. **The security and clean room standards in their laboratories and production facilities are extremely high** and include extensive technical requirements. While this is understandable, it also makes on-site communication difficult. Commend develops technically advanced communication solutions and special equipment to suit the specific requirements of pharmaceutical working environments.



Logistics Centres

At logistics centres and large industrial complexes with multiple entry and exit gates, loading ramps and unloading bays, routing the arriving lorries and delivery vans to the proper locations can be quite a logistic problem in and of itself. Commend Intercom stations installed at the gates support the drivers with direct call connections to the operator at the logistics centre. They can easily route the vehicles to the respective production halls and delivery points. **Not only does that require hardly any staff, it also saves time and helps to expedite loading and unloading activities.**

COMMEND CUSTOMIZED SOLUTIONS

Customised Hardware and Software

Our promise: The right solution for every customer requirement. In case our standard product portfolio does not cover your required solution, our team of hardware and software specialists will develop a tailored concept that meets your needs and implement it in proven Commend quality. The following list provides a few examples.



Public Security

The Challenge: Cities and communities are faced with the growing problem of vandalism, assault and attack incidents, not just by night, but increasingly also at daytime. In addition to the existing installed camera systems, there is a growing demand for the ability to address assailants directly and to enable emergency calls. To avoid the negative image of a general "surveillance", the terminals should also serve as information points.

The Solution: A combined Information/SOS Alarm Point Station with built-in microphone and loudspeaker. The device comes equipped with a large emergency call button and an information request button. Several extension options are available to suit individual needs: camera for direct video contact with emergency callers; monitor for visual feedback from call centre; audio amplifier and horn loudspeaker for addressing bystanders at longer distances; rotating beacon for indicating emergency situations, etc.; touch screen for information purposes.



Individual solutions for Parking Management

The Challenge: All incoming calls within the interconnected multiple car park facility are handled by staff at the Control Centre. The customer wanted a visualisation software that had to provide a straightforward graphical overview of response times for incoming calls and the current workload.

The Solution: A software application based on the ComSDK package from our Studio software series provides Control Centre staff with a live status overview. This includes a list of incoming calls of the current day and the day before. The customer can see at a glance how many staff are on-line and ready to take calls. Key details shown include the overall workload and response times. Being able to monitor these details allows the operator to react quickly and assign more staff at peak times.



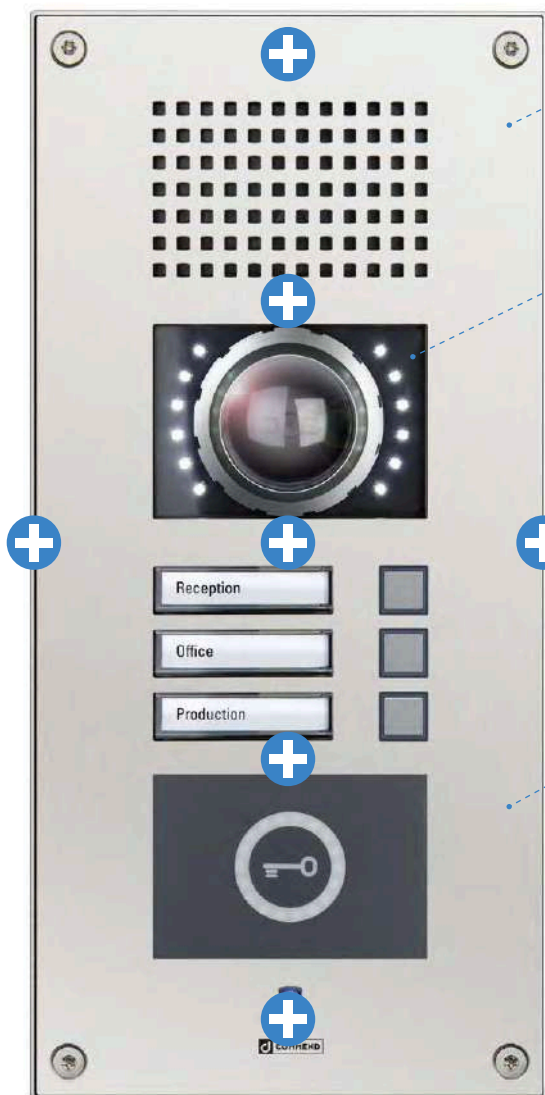
Emergency call systems in Elevators and Lifts

The Challenge: Provide a compatible Lift Intercom station with low space requirements and support of multiple manufacturers. Basic requirements included, among others: Remote checking of call button functions, playback of storey-specific information announcements, and an inductive loop system for hearing aid support.

The Solution: The Intercom station is based on a space-saving loudspeaker/microphone module. The module provides several options, including connection of a push-button and various in-/outputs. The electronic control array can be mounted out of the way on the lift car roof and is connected to the module unit. Also mounted on top of the lift car roof are an emergency call button and a separate microphone and loudspeaker unit that serve a communication system for maintenance staff.

Our special solutions portfolio includes

- Customer-specific Intercom stations
- Help Points, e.g., Emergency Call Stations
- Software Developer's Kit for Commend's Intercom Client & Studio software
- Control Desk GUIs, e.g., with Commend's Intercom Client software
- User interfaces, e.g., for industry-specific Control Desks or touch screens
- Browser-based user interfaces
- Interfaces to third-party systems



Technology

VoIP SIP Digital Analog 16 kHz 7 kHz

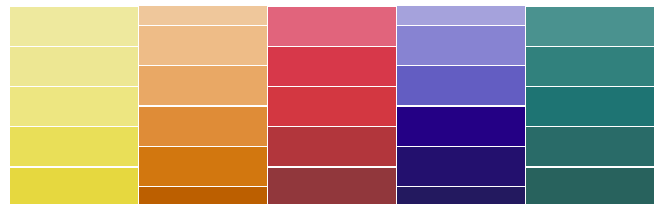
Basic Functions & Modules



Surface & Colour



More than 200 classic RAL colours available



Ask your local Commend partner for further information.

www.commend.com/contact



PRODUCTS BY COMMEND

Designed and Made in Austria



From idea to function...

Pushing the quality frontier from the usual mediocre market standards to the cutting edge of what is technically possible: this has always been Commend's trademark policy.

It is also why Commend's development laboratories are always buzzing with activity. Specialists for hardware, firmware, mechanical engineering and software development work hand-in-hand with each other to meet market demands in shaping ultimate quality Intercom from initial ideas to finished products. Existing products are subject to continuous extension and optimisation, as they are tailored to constantly rising customer demands.

Well prepared for long-term use

Our product development, design, selection of components, and quality assurance – everything is dedicated to ensure a long running life in the customer's application environment. The result

are products whose longevity comes with a great pay-off for customers: proven Commend Evergreen Engineering bridges the product generation gap to ensure that existing devices integrate fully with latest generation Intercom 2.0 systems – even after decades.

The Commend Audio Lab (Anechoic Chamber)

The Commend Audio Lab is a dream come true for audio and hi-fi specialists: it offers them a unique high-tech environment, complete with an anechoic chamber and Matlab supported development environment that will make every passionate audio engineer's heart beat faster. Achieving ultimate sound quality and clarity of speech connections is the key focus here – a goal that is constantly refined towards the outer limits of what is technically possible today. And where our fundamental research is concerned, we like to aim even further.



QUALITY TESTED

Reliable. Well designed.

Where performance becomes audible

Our production facilities in Salzburg (Austria) are the birthplace of the stuff that Intercom dreams are made of. Highly automated and clean production facilities ensure that millions of electronic components are brought together to create products that satisfy our clients' demands and deliver excellent audio quality that makes their users prick up their ears.

Where it says Commend, there's quality inside

That this is much more than just a promotional claim is the result of our **100% double quality assurance test** – spot-checks alone are simply not enough.

1. Each and every component is subjected to a fully electronic quality test procedure in a special test adapter.
2. The second-level quality assurance test checks each device's configuration, functions and audio quality.



Certified Quality: ISO, ATEX, IP, IK, RoHS, REACH ...

Our products are frequently required to withstand the toughest of conditions (noise, dirt, extreme temperatures, vandalism and much more). They are tested and certified in accordance with international standards to ensure top performance, whatever the weather.

Standardised development and manufacturing processes as per EN ISO 9001:2015, certified by BVQI (Bureau Veritas International, Austria; Cert. No. AT12464Q) provide the solid basis for continued further development at Commend International.



INTERCOM TERMINALS

A CONCERT OF SECURITY AND EFFICIENCY

The new Commend Concerto Series. Security meets Aesthetics.

Commend's performance and perfection are set to raise security communication to a new level of a superior concert experience. Concerto Intercom stations, the world's first Intercom stations with "Emergency Mode," bring together security, communication, design and functionality to provide the best of all worlds. The devices come fully

Crystal clear sound

Two loudspeakers and high-quality audio technology ensure a perfect listening and speaking experience with up to 20 kHz speech quality.

Straightforward communication

without interfering background noise, thanks to two concealed digital MEMS microphones, which enhance the voice sound to ensure perfect speech intelligibility.

Design and quality

Made from carefully chosen high-quality materials, the Intercom stations are equally suited for mounting on a wall or placing on a desktop.

equipped to support your daily work and, most importantly, to ensure security in crisis situations. Whatever their stage, the digital guardians from Commend always stay on top of things and excel with a leading performance in everyday situations and in case of an emergency.

In an emergency, every second counts

The stations' Emergency Mode provides instant information, relevant data and helpful functions to enable fast, decisive action.

Always ready for action

Built-in motion sensors enable the stations to react rapidly in a variety of ways, e.g., by displaying information graphics or playing back voice messages.

Cybersecure

Effective protection of IT infrastructures from digital and physical cyber attacks.

SECURITY AND FUNCTIONALITY IN PERFECT HARMONY



id5



od10





OUTDOOR STATIONS WITH TOUCH SCREEN – SERIES OD10

Key features:

- Suitable for outdoor and indoor use
- IP 65 and IK 07 rating
- High-quality front panel made from 3 mm hardened glass
- Bright 10-inch multi-touch display
- With built-in colour video camera
- Installation kits for flush and surface mounting, with interlocking mechanism
- Emergency Mode provides helpful functions to enable fast, decisive action

- OpenDuplex® for natural, hands free communication with high volume
- Crystal clear uHD Voice speech quality
- Continuous line and function self-monitoring
- Easy add-on options via USB port

Technical specifications: Two digital MEMS microphones; 2.5 W Class-D amplifier; two 8 Ω loudspeakers with special membrane; PoE+ (IEEE 802.3at/Class 4); two USB ports.

OD10 TDCM

20 kHz IP 65 SIP

Multi-functional Intercom Station suitable for outdoor use with brilliant 10-inch touch screen with 800 × 1280 pixel resolution.

IP-based web video camera (140° horizontal angle, 104° vertical angle), high-luminosity aperture, max. resolution 1280 × 960 pixels (1.2 megapixels), H.264 and Motion JPEG (MJPEG) video streams, frame rate 30 pictures/second.

Dimensions when flush mounted: W 175 mm, H 325 mm, D 20 mm 3,000 g
 Dimensions when surface mounted: W 175 mm, H 325 mm, D 40 mm



INDOOR STATIONS WITH TOUCH SCREEN – SERIES ID5

Key features:

- Suitable for desktop use and wall mounting
- High-quality front panel made from high quality glass, with loudspeaker grill made from high-grade steel, set in an aluminium bezel
- Bright 5-inch multi-touch display
- Optionally available with built-in colour video camera
- Installation kits for flush and surface mounting, with interlocking mechanism
- OpenDuplex® for natural, hands free communication with high volume

- Crystal clear uHD Voice speech quality
- Continuous line and function self-monitoring
- Easy add-on options via USB port

Technical specifications: Two digital MEMS microphones; 2.5 W Class-D amplifier; two 8 Ω loudspeakers with special membrane; power supply via PoE (IEEE 802.3af); two USB ports.

ID5 TDCM

20 kHz IP 40 SIP

Multi-functional Indoor Station, brilliant 5-inch touch with 720 × 1280 pixel resolution, and integrated wide-angle colour video camera.

IP-based web video camera with wide viewing angle (128° horizontal angle, 96° vertical angle), high-luminosity aperture, max. resolution 960 × 1280 pixels (1.2 megapixels), H.264 and Motion JPEG (MJPEG) video streams, frame rate 30 pictures/second.

Dimensions when flush mounted: W 86 mm, H 228 mm, D 11 mm
 Dimensions when surface mounted: W 86 mm, H 228 mm, D 31 mm

ID5 TD

20 kHz IP 40 SIP

Multi-functional Indoor Station, brilliant 5-inch touch with 720 × 1280 pixel resolution.

Dimensions when flush mounted: W 86 mm, H 228 mm, D 11 mm
 Dimensions when surface mounted: W 86 mm, H 228 mm, D 31 mm



ACCESSORIES FOR SERIES CONCERTO

Power Injector PA 25W POE-DC

Power adaptor for external power supply; optimised for installation with Surface-Mount Kit WSSH 50V or Flush-Mount Kit WSFB 50V; connects to Intercom station via Ethernet cable; input range 24 – 48 V AC $\pm 20\%$; conforms to IEEE 802.3af/at.

W 34,5 mm, H 130 mm, D 20 mm 80 g



Input/Output Module EB3E2A-AUD

I/O add-on module for the Intercom Station: adds three inputs as floating contacts and two relay outputs, as well as connection ports for a loudspeaker, microphone, headset and handset; optimised for installation with Surface-Mount Kit WSSH 50V or Flush-Mount Kit WSFB 50V; connects to Intercom station via USB cable.

W 37 mm, H 135 mm, D 17 mm 70 g



IP Secure Connector IP-CON

Optional protect switch box that safeguards your network connection. In case of an unauthorised attempt to remove the Intercom station, the IP Secure Connector will disconnect the Intercom station from the network. As an added benefit, the IP Secure Connector provides an external power source via PoE+ as well as two additional floating inputs and three relay outputs.

W 59 mm, H 262 mm, D 26 mm 415 g



Audio Induction Loop Extension Kit AFIL-USB

IEC 60118-4 compliant induction loop amplifier kit for transmitting Intercom audio signals to hearing aids; Sticker for the station front included; connects to a USB port on the Intercom station.

W 16 mm, H 200 mm, D 12 mm 140 g



USB Output Module EB1A

Relay output (make contact) for retrofitting into Intercom stations of the Indoor Series; connects to a USB port on the Intercom station; colour: black.



Desktop Kit ID5 DKHS

This kit allows Intercom stations from the Indoor Series to be placed conveniently on a desktop. To ensure optimum usability, the ID5-DKHS positions the device at a 45° angle. It comes with a handset that plugs into the USB port on the Intercom station.

W 170 mm, H 174 mm, D 140 mm 800 g



Desktop Kit ID5 DK

This kit allows Intercom stations from the Indoor Series to be placed conveniently on a desktop. To ensure optimum usability, the ID5-DK positions the device at a 45° angle.

W 85 mm, H 67 mm, D 120 mm 280 g



Desktop Kit ID5 DKAD

This kit allows Intercom stations from the Indoor Series to be placed conveniently on a desktop. With the ID5-DKAD, the tilt angle of the Intercom station can be adjusted individually to any setting between 30° and 60°.

W 105 mm, H 85 mm, D 106 mm 164 g



Surface-Mount Kit OD10 SH

Surface-Mount Kit with anti-tamper contact, made of powder coated sheet steel, for installing Series OD10 Intercom Stations.

W 171 mm, H 323 mm, D 18 mm 1,000 g



Flush-Mount Kit OD10 FB

Flush-Mount Kit made of stainless steel, for installing Series OD10 Intercom Stations. The wall box is intended for installation in a cavity wall.

W 170 mm, H 322 mm, D 27 mm 1,200 g



Flush-Mount Box OD10 FBS

Wall box made of stainless steel, for installation in brick or concrete walls. To install a Series OD10 Intercom Station, you will also need a Flush-Mount Kit OD10 FB.

W 175 mm, H 328 mm, D 50 mm 1,400 g



Surface-Mount Kit ID5 SH

Surface-Mount Kit made from polycarbonate, for installing Series ID5 Intercom Stations.

W 85 mm, H 228 mm, D 21 mm 130 g



Flush-Mount Kit ID5 FB

Flush-Mount Kit made from polycarbonate, for installing Series ID5 Intercom Stations. The wall box is intended for installation in a cavity wall.

W 84 mm, H 226 mm, D 60,5 mm 265 g



Flush-Mount Box ID5 FBS

Wall box made from polycarbonate, for installation in brick or concrete walls. To install a Series ID5 Intercom Station, you will also need a Flush-Mount Kit ID5 FB. Colour: red

W 92,5 mm, H 233,5 mm, D 64 mm 165 g



Wallmount Stations

Perfect industrial communication

Multi-functional main and sub stations for indoor and out door use. Apart from voice and video communication, the stations also allow for the control of other systems. In an in-house training room, for example, the projector can be switched on and off, lights switched on and off and blinds opened and closed – all via a wallmount station.

Applications

- Training and recreation rooms
- Warehouses, workshops and passageways
- Outdoor or door station for works premises or car parks



WALLMOUNT STATIONS – SERIES WS 810P | 800P

Key features:

- Intercom stations with Colour-TFT or Mono-LCD display
- Back-lit standard keypad and function keys
- Resistant polycarbonate construction
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kit WSFB 50P and Surface Mount Kit WSSH 50P; Desktop/Wallmount Kit WSDK 50P (for surface mount version only).

Technical data: Electret microphone; 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED // Analogue 4-wire stations: 2 inputs for floating contacts and 2 Open Collector outputs; red call status LED.

WS 810P

16 kHz IP 66 IoT

Wallmount station with Colour-TFT display for graphical menu interface and display of IP based video streams or analogue video signals in PAL or NTSC.

3.5” TFT display; resolution: 320 x 240 pixels; 65,000 colours

WS 810P I IP – Communication via IoT

📏 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm 📦 920 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm



WS 800P

16 kHz IP 66 IoT SIP Digital Analogue

Wallmount station with Mono-LCD display.

Illuminated Mono-LCD display with 128 x 64 pixels.

WS 800P I IP – Communication via IoT

SIP-WS 800P IP – Communication via SIP (7 kHz HD Voice)

WS 800P D Digital 2-wire

WS 800P A Analogue 4-wire

📏 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm 📦 820 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm





WALLMOUNT STATIONS – SERIES WS 200P

Key features:

- Intercom stations with built-in colour video camera
- Illuminated call buttons and label areas
- Resistant polycarbonate construction
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kit WSFB 50P and Surface Mount Kit WSSH 50P; Desktop/Wallmount Kit WSDK 50P (for surface mount version only).

Technical data: Electret microphone; 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED // Analogue 4-wire stations: 2 inputs for floating contacts and 2 Open Collector outputs; red call status LED.

WS 200P CM


16 kHz IP 66 IoTP

Wallmount station with call buttons, integrated colour video camera with illumination, built-in heater, viewing angle mechanically adjustable horizontally/vertically by 30°.

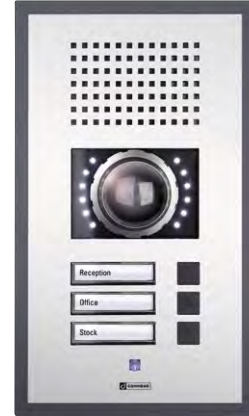
IP network camera with M-JPEG video format (max. resolution 640 x 480 pixels) or as analogue camera for colour systems PAL or NTSC.

WS 201P I CM 1 call button – IP – Communication via IoTP

WS 203P I CM 3 call buttons – IP – Communication via IoTP

 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm
(dimensions do not include 20 mm camera top clearance)

 950 g




WS 201P CA

16 kHz IP 66 IoTP

Wallmount station with one call button, integrated colour video camera with illumination, viewing angle mechanically adjustable horizontally/vertically by 30°.

Video streams H.264 (MPEG-4 Part 10/AVC) and M-JPEG with max. resolution 1440 x 900 Pixel (1.3 MP); compatible to video components e.g. NVRs; support of video functions like motion detection, recording, etc.

WS 201P I CA 1 call button – IP – Communication via IoTP

 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm
(dimensions do not include 20 mm camera top clearance)

 950 g



WS 200P

16 kHz IP 66 IoTP SIP Digital Analogue

Wallmount station with call buttons.

WS 201P I 1 call button – IP – Communication via IoTP

SIP-WS 201P 1 call button – IP – Communication via SIP (7 kHz HD Voice)


WS 201P D 1 call button – Digital 2-wire


WS 201P A 1 call button – Analogue 4-wire

WS 203P I 3 call buttons – IP – Communication via IoTP

SIP-WS 203P 3 call buttons – IP – Communication via SIP (7 kHz HD Voice)

WS 203P D 3 call buttons – Digital 2-wire

 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm

 750 g



Membrane protected Intercom Stations

Sealed surface for even better protection

These Master Stations have been developed to meet the specific needs of medical facilities, clean rooms and light industrial environments. Despite their membrane-sealed surface, they provide convenient, efficient communication with excellent speech quality. What is more, they are fully protected against dust, dirt and water jets. The special membrane on the front panel is dirt-resistant and can be cleaned quickly and easily with regular over-the-counter detergents and disinfectants. The large membrane protected keys are easy to use, even when wearing protective gloves. A built-in amplifier provides the necessary sound volume in areas with high ambient noise levels.

Typical applications

- Light industry (production facilities and workshops)
- Medical environments (operating theatres and laboratories)
- Clean rooms, indoor and outdoor areas



MEMBRANE PROTECTED INTERCOM STATIONS – SERIES WS 810F | 800F

Key features:

- Closed-sealed membrane surface, detergent and disinfectant resistant
- Intercom stations with Colour-TFT or Mono-LCD display
- Resistant polycarbonate construction
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kit WSFB 50P and Surface Mount Kit WSSH 50P; Desktop-/Wallmount Kit WSDK 50P (for surface mount version only).

Technical data: Electret microphone; 2.5 W Class "D" amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED // Analogue 4-wire stations: 2 inputs for floating contacts and 2 Open Collector outputs; red call status LED.

WS 810F

16 kHz IP 66 IoTP

Membrane protected wallmount station with Colour-TFT display for graphical menu navigation, caller ID and display of IP based video streams or analogue video signals.

3.5" TFT display; resolution: 320 x 240 pixels; 65,000 colours.

WS 810F I IP – Communication via IoTP

📏 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm 📦 920 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm



WS 800F

16 kHz IP 66 IoTP SIP Digital Analogue

Membrane protected wallmount station with Mono-LCD display.

Illuminated Mono-LCD display with 128 x 64 pixels.

WS 800F I IP – Communication via IoTP

SIP-WS 800F IP – Communication via SIP (7 kHz HD Voice)

WS 800F D Digital 2-wire

WS 800F A Analogue 4-wire

📏 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm 📦 820 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm





MEDICAL AND CLEAN-ROOM STATIONS – SERIES WS 800F MD

Key features:

- Closed-sealed membrane surface, detergent and disinfectant resistant
- Intercom stations with Colour-TFT or Mono-LCD display
- Resistant polycarbonate construction
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kit WSFB 50P and Surface Mount Kit WSSH 50P; Desktop/Wallmount Kit WSDK 50P (for surface mount version only).

Technical data: Electret microphone; 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED

WS 800F MD

16 kHz IP 66 SIP Digital

Membrane protected medical and clean room station with Mono-LCD display and anti-bacterial membrane covered surface.

Illuminated Mono-LCD display with 128 x 64 pixels.

SIP-WS 800F MD IP – Communication via SIP (7 kHz Voice)

WS 800F D MD Digital 2-wire – Complies with IEC 60601-1 (2nd Edition)

Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm 820 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm



EXTENSION MODULES FOR SERIES WS

The wallmount and membrane protected Intercom stations of Series WS can be custom enhanced with powerful extra features by means of extension modules. These can be mounted above, below or on either side of the Intercom station, or positioned freely within the room. For example, loudspeaker modules are usually placed fairly high up for indoor or outdoor public address purposes. These extension modules are protected against dust, dirt and water jets and carry an IP 65 rating. Surface Mount and Flush Mount Kits are available separately – see Accessories.

Camera Module WSCM 50P

IP 66

Camera module with colour video camera, adjustable white balance and built-in heater. Can be used as an IP network camera (M-JPEG video format with max. resolution of 640 x 480 pixels) or as analogue camera for colour systems PAL or NTSC. Viewing angle mechanically adjustable horizontally/vertically by 30°. Polycarbonate construction.

External power supply via 22 – 24 V AC / 20 – 35 V DC power adapter or via PoE IEEE 802.3af.

Dimensions when flush mounted: W 165 mm, H 140 mm, D 13 mm 450 g
Dimensions when surface mounted: W 165 mm, H 140 mm, D 51 mm
(dimensions do not include 20 mm camera top clearance)



TFT Display Module WSTM 50P

IP 66

Colour-TFT display module for IP based video streams or analogue video signals in PAL or NTSC. Polycarbonate construction.

3.5" Colour-TFT display; resolution: 320 x 240 pixels; 65,000 colours; External power supply via 22 – 24 V AC / 20 – 35 V DC power adapter or via PoE IEEE 802.3af.

Dimensions when flush mounted: W 165 mm, H 140 mm, D 13 mm 410 g
Dimensions when surface mounted: W 165 mm, H 140 mm, D 51 mm



Audio Induction Loop Amplifier Module WSIL 50P

IP 66

IEC 60118-4 compliant audio induction loop amplifier module for transmitting Intercom audio signals to hearing aids; integrated induction loop; front panel made from polycarbonate

External 15 – 26 V DC power supply; input impedance 10 kΩ; frequency response 80 Hz – 8 kHz; max. loop voltage 6.5 V; loop resistance 0.1 Ω – 1.0 Ω effective resistance; MLC (Metal Loss Correction) 0 to -3dB/octave.

Dimensions when flush-mounted: W 165 mm, H 140 mm, D 13 mm 800 g
Dimensions when surface-mounted: W 165 mm, H 140 mm, D 51 mm





Loudspeaker Module WSLM 52P

IP 66

Active loudspeaker module with 2 loudspeakers for use in high-noise environments.
Polycarbonate construction.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 2 W nominal power; sound pressure max. 100 dB/W/m.

 Dimensions when flush mounted: W 165 mm, H 140 mm, D 13 mm  250 g
Dimensions when surface mounted: W 165 mm, H 140 mm, D 51 mm





Loudspeaker Module WSLM 56P

IP 66

Active loudspeaker module with 6 loudspeakers for use in very high-noise environments.
Polycarbonate construction.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 6 W nominal power; sound pressure max. 108 dB/W/m.

 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm  590 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm





Loudspeaker Module WSLM 52F

IP 66

Active loudspeaker module with 2 loudspeakers for use in high-noise environments.
Polycarbonate construction with closed membrane surface.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 2 W nominal power; sound pressure max. 100 dB/W/m.

 Dimensions when flush mounted: W 165 mm, H 140 mm, D 13 mm  250 g
Dimensions when surface mounted: W 165 mm, H 140 mm, D 51 mm





Loudspeaker Module WSLM 56F

IP 66

Active loudspeaker module with 6 loudspeakers for use in very high-noise environments.
Polycarbonate construction with closed membrane surface.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 6 W nominal power; sound pressure max. 108 dB/W/m.

 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm  590 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm



Dummy Module WSDU 52P



IP 66

Half height format. Polycarbonate construction.

WSDU 52P Standard version

WSDU 52P AM Version with access reader symbol

WSDU 52P TW Version with transparent window


 Dimensions when flush mounted: W 165 mm, H 140 mm, D 13 mm  140 g
Dimensions when surface mounted: W 165 mm, H 140 mm, D 51 mm



Dummy Module WSDU 50P

IP 66

Full height format. Polycarbonate construction.



 Dimensions when flush mounted: W 165 mm, H 280 mm, D 13 mm  240 g
Dimensions when surface mounted: W 165 mm, H 280 mm, D 51 mm



Handset Module WSHS 50P-JST

IP 40

Handset with integral "Push to Talk" button. Polycarbonate construction; with JST connector.

 Dimensions when surface mounted: W 82 mm, H 280 mm, D 51 mm  420 g



Expansion Card WSEB RJ45

Expansion card for integration in cameras and TFT display extension modules of Series WS. Installing an IP Intercom station with an extension module for a camera or TFT display typically requires two ports on the switch. The expansion card provides an additional downlink port on the module. This solution occupies only one port on the switch; it also requires less cabling and still leaves the option of simply adding these modules later on as needed.



Audio Induction Loop Amplifier - Extension Card WSEB IL

IEC 60118-4 compliant audio induction loop amplifier extension card for transmitting Intercom audio signals to hearing aids; induction loop and adhesive label for front panel included; suitable for installation in Series WS wall-mounted Intercom stations (without camera or TFT display).

External 15 – 26 V DC power supply; input impedance 10 k Ω ; frequency response 80 Hz – 8 kHz; max. loop voltage 6.5 V; loop resistance 0.1 Ω – 1,0 Ω effective resistance; MLC (Metal Loss Correction) 0 to -3dB/octave.



ACCESSORIES FOR WALLMOUNT AND MEMBRANE PROTECTED INTERCOM STATIONS – SERIES WS

Flush Mount Kit WSFB 50P

Flush Mount Kit for flush mounting of Series WS Intercom stations and extension modules – full height format.

W 160 mm, H 275 mm, D 54 mm / thickness on installation surface 13 mm 380 g



Flush Mount Kit WSFB 52P

Flush Mount Kit for flush mounting of Series WS Intercom stations and extension modules – half height format.

W 160 mm, H 134 mm, D 54 mm / thickness on installation surface 13 mm 230 g



Surface Mount Kit WSSH 50P

Surface Mount Kit for surface mounting of Series WS Intercom stations and extension modules – full height format.

W 160 mm, H 275 mm, D 47 mm / thickness on installation surface 51 mm 300 g



Surface Mount Kit WSSH 52P

Surface Mount Kit for surface mounting of Series WS Intercom stations and extension modules – half height format.

W 160 mm, H 135 mm, D 47 mm / thickness on installation surface 51 mm 150 g



Surface Mount Kit WSSH 54P

Polycarbonate Surface Mount Kit for Dummy Module WSDU 54P and Handset Module WSHS 50P; half-width format. Using the handset module in combination with an Intercom station with Desktop Kit requires two Connector Kits WSCP 50SH

W 77 mm, H 275 mm, D 47 mm / thickness on installation surface 51 mm 160 g



WSDM P

Tool for easy opening polycarbonate and membrane stations of Series WS.



Desktop and Wallmount Kit WSDK 50P

This kit allows Series WS Wallmount stations and extension modules with a surface mount box to be used as desktop units. Doing so requires the appropriate Surface Mount Kit. The same kit can also be used for mounting devices (e.g. loudspeaker modules) on slanted walls. Material: powder coated steel.

W 119 mm, H 66 mm, D 162 mm 400 g



Connector Kit WSCP 50P SH

This optional extension kit allows for interconnecting surface mount boxes of Series WS wallmount stations.

W 42 mm, H 118 mm, D 1,5 mm

Ethernet Socket RJ45-MONT

The ethernet socket can be used to fix the inflexible connection cable to the surface or flushmount boxes of Series WS. The included connection cable (Length: 0.3 m) is then used to connect to the station.



Wallmount Stations with Handset function



WALLMOUNT STATIONS – SERIES EE 320 | EE 420

Key features:

- Digital or analogue stations
- 6-digit alphanumeric display (16-segment)
- Standard keypad and function keys
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Handset function
- Available in bright red for use as emergency call stations
- Version available with restricted dialling
- Polycarbonate construction

Technical data of EE 320A und EF 320A: Power supply via Intercom Server (optional external power supply for longer cable lengths or external loudspeakers); 2.5 W Class "D" amplifier; 8 Ω loudspeakers; Electret microphone; multi-functional LED.

Technical data of EE 420: Power supply via Intercom Server; 50 Ω loudspeakers; Electret microphone; red call status LED.

EE 320A

16 kHz Digital

Digital 2-wire wallmount station with display, standard keypad and function keys. The unit can be removed from its holding frame to use it as a handset for private conversations.

EE 320AS Black

EE 320AG Light Grey

EE 320AR Bright Red

W 73 mm, H 232 mm, D 57 mm 460 g



EE 420

16 kHz Analogue

Analogue 4-wire wallmount station with display, standard keypad and function keys. The unit can be removed from its holding frame to use it as a handset for private conversations.

EE 420S Black

EE 420G Light Grey

W 73 mm, H 232 mm, D 57 mm 442 g



Vandal Resistant Intercom Stations

Protection against malicious damage

In some areas, wanton destruction is a frequent occurrence. This range of Intercom stations are protected against malicious attacks by durable front panels made from high grade steel, poke protection and special screws. The robust construction provides full protection against water jets, dirt and dust. Continuous monitoring function ensures reliable availability around the clock.

Applications:

– Outdoor areas – Public locations – Doors and gates – Parking lots and garages



VANDALISM-RESISTANT INTERCOM STATIONS – SERIES WS 300V | 200V

Key features:

- Vandalism-resistant
- IP 66 and IK 09 rating
- Poke protection and special screws
- Front plate made from 3 mm V-2A steel
- Intercom stations with built-in video camera
- Backlit call buttons and label fields
- OpenDuplex® for natural hands-free communication with high volume capacity
- Crystal clear speech quality
- Continuous line and function self-monitoring
- Expansion modules for even more functions

Accessories: Flush-Mount Kit WSFB 50V and WSFB 50V SS FL, Surface-Mount Kit WSSH 50V and Rain Protection Roof WSRR 50V. // WS 300V: Power Injector PA 25W POE-DC, Input-/Output Module EB3E2A-AUD, IP-Secure-Connector IP-CON.

Technical data: Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE // WS 300V: Two digital MEMS microphones; USB and Mini-USB; two multi-functional LEDs // WS 200V: Electret microphone; 3 inputs for floating contacts and 2 relay outputs; multi-functional LED // Analogue 4-Wire: 50 Ω loudspeaker; red call status LED.

WS 300V

20 kHz IP 66 SIP

Vandalism-resistant Intercom station with backlit call buttons, label fields, and built-in colour video camera with camera light;

IP-based web video camera with wide viewing angle (128° horizontal angle, 96° vertical angle), high-luminosity aperture, max. resolution 960 × 1280 pixels (1.2 megapixels), H.264 and Motion JPEG (MJPEG) video streams, frame rate 30 pictures/second.

WS 301V CM 1 call button – IP – communication via SIP

WS 303V CM 3 call buttons – IP – communication via SIP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,200 g

WS 200V CM

16 kHz IP 66 lolP

Vandal resistant station with call buttons, integrated colour video camera with illumination, built-in heater, viewing angle mechanically adjustable horizontally/vertically by 30°.

IP network camera with M-JPEG video format (max. resolution 640 x 480 pixels) or as analogue camera for colour systems PAL or NTSC.

WS 201V I CM 1 call button – IP – Communication via lolP

WS 203V I CM 3 call buttons – IP – Communication via lolP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,700 g

WS 200V CA

16 kHz IP 66 lolP

Vandal resistant station with one call button, integrated colour video camera with illumination, viewing angle mechanically adjustable horizontally/vertically by 30°.

Video streams H.264 (MPEG-4 Part 10/AVC) and M-JPEG with max. resolution 1440 x 900 Pixel (1.3 MP); compatible to video components e.g. NVRs; support of video functions like motion detection, recording, etc.

WS 201V I CA 1 call button – IP – Communication via lolP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,700 g



WS 200V

16 kHz IP 66 IoT SIP Digital Analogue

Vandal resistant station with call buttons.

WS 201V I	1 call button – IP – Communication via IoT
SIP-WS 201V	1 call button – IP – Communication via SIP (7 kHz HD Voice)
WS 201V D	1 call button – Digital 2-wire
WS 201V A	1 call button – Analogue 4-wire
WS 203V I	3 call buttons – IP – Communication via IoT
SIP-WS 203V	3 call buttons – IP – Communication via SIP (7 kHz HD Voice)
WS 203V D	3 call buttons – Digital 2-wire

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,500 g



VANDAL RESISTANT INTERCOM STATIONS – SERIES WS 500V | 800V

Key features:

- Vandal resistant design
- IP 66 and IK 07 rating
- Poke protection and special screws
- Front plate made from 3 mm V-2A steel
- Back-lit keypad and function keys
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kits WSFB 50V and WSFB 50V SS FL, Surface Mount Kit WSSH 50V and Rain Protection Roof WSRR 50V.

Technical data: Electret microphone; 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED.

WS 500V CM

16 kHz IP 65 IoT

Vandal-resistant Intercom station with backlit keypad, 3 function keys, bell/call button and key button to enter access code.

Integrated colour video camera with adjustable white balance and built-in heater; M-JPEG video format (max. 640 x 480 pixels); horizontal/vertical viewing angle adjustable mechanically by an additional 30 degrees.

WS 500V I CM IP – Communication via IoT

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,700 g



WS 800V

16 kHz IP 66 IoT SIP Digital

Vandal resistant station with standard keypad and LCD graphic display.

Illuminated LCD display with 128 x 64 pixels; white backlight.

WS 800V I	IP – Communication via IoT
SIP-WS 800V	IP – Communication via SIP (7 kHz HD Voice)
WS 800V D	Digital 2-wire

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,300 g



Vandal Resistant ADA/DDA Compliant Stations



VANDAL RESISTANT ADA/DDA COMPLIANT STATIONS – SERIES WS 311 V DA | 211V DA

Key features:

- Vandal resistant design
- IP 66 and IK 09 rating (WS 211V DA IK 07 rating)
- Poke protection and special screws
- Front plate made from 3 mm V-2A steel
- Integrated IEC 60118-4 compliant loop amplifier
- Large icons and very bright LEDs for Call Requested, Call Established, Door Opener Active
- Large, easy-to-use call button with tactile bell symbol
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Expansion modules for even more functions

Accessories: Flush-Mount Kit WSFB 50V and WSFB 50V SS FL, Surface-Mount Kit WSSH 50V and Rain Protection Roof WSRR 50V. // WS 300V: Power Injector PA 25W POE-DC, Input-/Output Module EB3E2A-AUD, IP-Secure-Connector IP-CON.

Technical data: 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE // WS 300V: Two digital MEMS microphones; USB and Mini-USB; two multi-functional LEDs // WS 200V: Electret microphone; 3 inputs for floating contacts and 2 relay outputs; multi-functional LED

WS 311V DA

20 kHz IP 66 SIP

Vandalism-resistant, multi-functional Intercom station with backlit call button, integrated colour video camera with camera light, four pictograms, and built-in induction loop module for barrier-free buildings and living space. Conforms to requirements for people with visual and hearing impairments and accessibility regulations in accordance with the Equal Opportunities for the Disabled Principle.

IP-based web video camera with wide viewing angle (128° horizontal angle, 96° vertical angle), high-luminosity aperture, max. resolution 960 × 1280 pixels (1.2 megapixels), H.264 and Motion JPEG (MJPEG) video streams, frame rate 30 pictures/second.

WS 311V CM DA 1 call button – IP – communication via SIP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,400 g



WS 211V DA

16 kHz IP 66 IoIP SIP Digital

Vandal resistant, multi-functional Intercom station with three pictograms, large call button and built-in induction loop module for indoor and outdoor areas; special functions for barrier-free buildings and living space. Conforms to requirements for people with visual and hearing impairments and Accessibility Regulations in accordance with the Equal Opportunities for the Disabled Principle. Country-specific text and/or symbol labels for the button are available on request.

WS 211V I DA IP – Communication via IoIP

SIP-WS 211V DA IP – Communication via SIP (7 kHz HD Voice)

WS 211V D DA Digital 2-wire

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,430 g



Vandal Resistant Emergency Call Stations

Assistance and information at the push of a button

These vandal resistant Intercom stations have many uses. In public areas they serve as information and help points for passers-by to request help and receive assistance in cases of emergency.

The technology ensures excellent speech quality and clarity, regardless of the ambient noise level. Continuous monitoring function ensures reliable availability around the clock. The durable high grade steel front plates with poke protection and special screws provide protection against vandalism. The compact construction is fully protected against water jets, dirt and dust. The extra large emergency call buttons are easily visible even distance and activate easily and reliably.

Applications:

- Public transport stations
- Public areas, parks and city centres
- Parking lots and garages
- Leisure facilities
- Schools and universities



VANDAL RESISTANT EMERGENCY CALL STATIONS – SERIES WS 311V | 211V | 210V

Key features:

- Vandal resistant design
- IP 66 and IK 09 rating
- Poke protected and fitted with special security screws
- Front panel made from 3 mm thick V-2A steel
- Intercom stations with built-in colour video camera
- Back-lit call buttons and label areas
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush-Mount Kit WSFB 50V and WSFB 50V SS FL, Surface-Mount Kit WSSH 50V and Rain Protection Roof WSRR 50V. // WS 300V: Power Injector PA 25W POE-DC, Input-/Output Module EB3E2A-AUD, IP-Secure-Connector IP-CON.

Technical data: Class "D" amplifier; two 8 Ω loudspeakers; External power supply or PoE // WS 300V: Two digital MEMS microphones; USB and Mini-USB; two multi-functional LEDs // WS 200V: Electret microphone; 3 inputs for floating contacts and 2 relay outputs; multi-functional LED // Analogue 4-Wire: 50 Ω loudspeaker; red call status LED.

WS 311V

20 kHz IP 66 SIP

Vandalism-resistant Intercom station with backlit call buttons, label fields, and built-in colour video camera with camera light.

IP-based web video camera with wide viewing angle (128° horizontal angle, 96° vertical angle), high-luminosity aperture, max. resolution 960 × 1280 pixels (1.2 megapixels), H.264 and Motion JPEG (MJPEG) video streams, frame rate 30 pictures/second.

WS 311V CM 1 call button – IP – communication via SIP

W 164 mm, H 279 mm / wall stand-off height depends on mounting kit used 1,200 g



WS 211V CA

16 kHz IP 66 IoIP

Emergency call station with one call button, integrated colour video camera with illumination, viewing angle mechanically adjustable horizontally/vertically by 30°.

Video streams H.264 (MPEG-4 Part 10/AVC) and M-JPEG with max. resolution 1440 × 900 Pixel (1.3 MP); compatible to video components e.g. NVRs; support of video functions like motion detection, recording, etc.

WS 211V I CA 1 emergency call button – IP – Communication via IoIP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit 1,700 g



WS 210V CM

16 kHz IP 66 loIP

Emergency call station with call buttons, integrated colour video camera with illumination, built-in heater, viewing angle mechanically adjustable horizontally/vertically by 30°.

Optional external power supply 22 – 24 V AC / 20 – 35 V DC; IP network camera with M-JPEG video format (max. resolution 640 x 480 pixels) or as analogue camera for colour systems PAL or NTSC.

WS 211V I CM 1 emergency call button – IP – Communication via loIP

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,700 g



WS 210V

16 kHz IP 66 loIP SIP Digital

Emergency call station with call buttons.

WS 211V I 1 emergency call button – IP – Communication via loIP

SIP-WS 211V 1 emergency call button – IP – Communication via SIP (7 kHz HD Voice)

WS 211V D 1 emergency call button – Digital 2-wire

WS 212V I 1 emergency call button and 1 regular call button – IP – Communication via loIP

SIP-WS 212V 1 emergency call button and 1 regular call button – IP – Communication via SIP (7 kHz HD Voice)

WS 212V D 1 emergency call button and 1 regular call button – Digital 2-wire

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,500 g



VANDAL RESISTANT EMERGENCY CALL STATIONS – SERIES WS 211V M

Key features:

- Vandal resistant design
- IP 66 and IK 10 rating
- Poke protected and fitted with special security screws
- Front panel made from 3 mm thick V-2A steel
- Emergency mushroom button with continuous function check (NC Contact)
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Continuous line and function checks
- Extension modules for additional functions

Accessories: Flush Mount Kits WSFB 50V and WSFB 50V SS FL, Surface Mount Kit WSSH 50V and Rain Protection Roof WSRR 50V.

Technical data: Electret microphone; 2.5 W Class “D” amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 3 inputs for floating contacts and 2 relay outputs; multi-functional LED.

WS 211V M

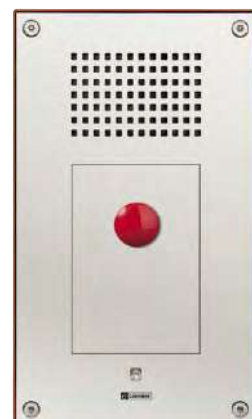
16 kHz IP 66 loIP Digital

Vandal resistant emergency call station with mushroom button

WS 211V I M 1 emergency call button – IP – Communication via loIP

WS 211V D M 1 emergency call button – Digital 2-wire

W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
1,500 g





VANDAL RESISTANT EXTENSION MODULES – SERIES WS



The Series WS Intercom stations can be custom enhanced with powerful extra features by means of extension modules. These can be mounted above, below or on either side of the Intercom station, or positioned freely within the room. For example, loudspeaker modules are usually placed fairly high up for indoor or outdoor public address purposes. The front panel made from 3 mm thick V-2A steel, (optional) sabotage detection contacts and special screws provides optimum protection against vandalism for these modules. Surface Mount and Flush Mount Kits are available separately – see Accessories.

Camera Module WSCM 50V

IP 66

Vandal resistant camera module with colour video camera with adjustable white balance and built-in heater. Can be used as an IP network camera (M-JPEG video format with max. resolution of 640 x 480 pixels) or as analogue camera for colour systems PAL or NTSC. Viewing angle mechanically adjustable horizontally/vertically by 30°.

External power supply via 22 – 24 V AC / 20 – 35 V DC power adapter or via PoE IEEE 802.3af.

 Dimensions when flush mounted: W 164 mm, H 139 mm, D 14 mm  875 g
Dimensions when surface mounted: W 164 mm, H 139 mm, D 50 mm
(dimensions do not include 20 mm camera top clearance)





TFT Display Module WSTM 50V

IP 66

Vandal resistant Colour-TFT display module for IP based video streams or analogue video signals in PAL or NTSC.

3.5" TFT display; resolution: 320 x 240 pixels; 65,000 colours; External power supply via 22 – 24 V AC / 20 – 35 V DC power adapter or via PoE IEEE 802.3af.

 Dimensions when flush mounted: W 164 mm, H 139 mm, D 14 mm  820 g
Dimensions when surface mounted: W 164 mm, H 139 mm, D 50 mm





Audio Induction Loop Amplifier Module WSIL 50V

IP 66

IEC 60118-4 compliant audio induction loop amplifier module for transmitting Intercom audio signals to hearing aids; integrated induction loop; front panel made from 3mm V-2A steel.

External 15 – 26 V DC power supply; input impedance 10 k Ω ; frequency response 80 Hz – 8 kHz; max. loop voltage 6.5 V; loop resistance 0.1 Ω – 1,0 Ω effective resistance; MLC (Metal Loss Correction) 0 to -3dB/ octave.

 Dimensions when flush-mounted: W 164 mm, H 139 mm, D 14 mm  1,100 g
Dimensions when surface-mounted: W 164 mm, H 139 mm, D 50 mm





Loudspeaker Module WSLM 52V

IP 66

Vandal resistant active loudspeaker module with 2 loudspeakers for use in high-noise environments.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 2 W nominal power; sound pressure max. 100 dB/W/m.

 Dimensions when flush mounted: W 164 mm, H 139 mm, D 14 mm  695 g
Dimensions when surface mounted: W 164 mm, H 139 mm, D 50 mm





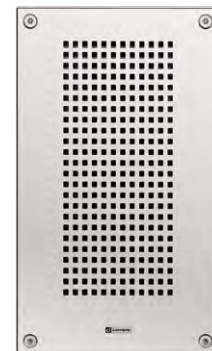
Loudspeaker Module WSLM 56V

IP 66

Vandal resistant active loudspeaker module with 6 loudspeakers for use in very high-noise environments.

Power supply: 12 – 24 V AC / 15 – 35 V DC; frequency range: 200 – 16,000 Hz; 6 W nominal power; sound pressure max. 108 dB/W/m.

 W 164 mm, H 279 mm / thickness on installation surface depending on mounting kit
 1,500 g



Dummy Module WSDU 52V

IP 66

Vandal resistant dummy module. Half height format.

WSDU 52V AM Version with access reader symbol

WSDU 52V TW Version with transparent window

 Dimensions when flush mounted: W 164 mm, H 139 mm, D 14 mm  490 g
Dimensions when surface mounted: W 164 mm, H 139 mm, D 50 mm




Direct Dialling Button Module WSDD 53V

IP 66

Vandal resistant module with three illuminated direct dialling buttons and labels. Connects directly to an IP based or digital Intercom station of Series WS and to devices with input level detection (Intercom Modules ET 808A, ET 908A, etc.).

Optional external 12 – 24 V AC / 15 – 35 V DC power supply for illumination.

Dimensions when flush mounted: W 164 mm, H 139 mm, D 14 mm  730 g
Dimensions when surface mounted: W 164 mm, H 139 mm, D 50 mm




Direct Dialling Button Module WSDD 59V

IP 66

Vandal resistant module with nine illuminated direct dialling buttons and labels. Connects directly to an IP based or digital Intercom station of Series WS and to devices with input level detection (e.g. Intercom Modules ET 808A, ET 908A, etc.).

Optional external 12 – 24 V AC / 15 – 35 V DC power supply for illumination.

W164 mm, H 279 mm / thickness on installation surface depending on mounting kit
 1,630 g



Expansion Card WSEB RJ45

Expansion card for integration in cameras and TFT display modules of Series WS. Installing an IP Intercom station with an extension module for a camera or TFT display typically requires two ports on the switch. The expansion card provides an additional downlink port on the module. This solution occupies only one port on the switch; it also requires less cabling and still leaves the option of simply adding these modules later on as needed.



Audio Induction Loop Amplifier - Extension Card WSEB IL

IEC 60118-4 compliant audio induction loop amplifier extension card for transmitting Intercom audio signals to hearing aids; induction loop and adhesive label for front panel included; suitable for installation in Series WS wall-mounted Intercom stations (without camera or TFT display).


External 15 – 26 V DC power supply; input impedance 10 k Ω ; frequency response 80 Hz – 8 kHz; max. loop voltage 6.5 V; loop resistance 0.1 Ω – 1,0 Ω effective resistance; MLC (Metal Loss Correction) 0 to -3dB/ octave.



ACCESSORIES FOR SERIES WS 300V | 311V | 311V DA

Power Injector PA 25W POE-DC


Power adaptor for external power supply; optimised for installation with Surface-Mount Kit WSSH 50V or Flush-Mount Kit WSFB 50V; connects to Intercom station via Ethernet cable; input range 24 – 48 V AC \pm 20%; conforms to IEEE 802.3af/at.

W 34,5 mm, H 130 mm, D 20 mm  80 g



Input/Output Module EB3E2A-AUD

I/O add-on module for the Intercom Station: adds three inputs as floating contacts and two relay outputs, as well as connection ports for a loudspeaker, microphone, headset and handset; optimised for installation with Surface-Mount Kit WSSH 50V or Flush-Mount Kit WSFB 50V; connects to Intercom station via USB cable.

W 37 mm, H 135 mm, D 17 mm  70 g



IP Secure Connector IP-CON


Optional protect switch box that safeguards your network connection. In case of an unauthorised attempt to remove the Intercom station, the IP Secure Connector will disconnect the Intercom station from the network. As an added benefit, the IP Secure Connector provides an external power source via PoE+ as well as two additional floating inputs and three relay outputs.

W 59 mm, H 262 mm, D 26 mm  415 g



Audio Induction Loop Extension Kit AFIL-USB

IEC 60118-4 compliant induction loop amplifier kit for transmitting Intercom audio signals to hearing aids; Sticker for the station front included; connects to a USB port on the Intercom station.

W 16 mm, H 200 mm, D 12 mm  140 g

ACCESSORIES FOR VANDAL RESISTANT STATIONS – SERIES WS

Flush Mount Kit WSFB 50V

Flush mount box for flush mounting vandal resistant Series WS Intercom stations and extension modules – full height format. Other RAL colours are available on request.

WSFB 50V SS	High-grade steel finish levelling frame
WSFB 50V OR	Pure Orange (RAL 2004) levelling frame
WSFB 50V SS FL	Suitable for completely flush installations
WSFB 50V SS MC	Suitable for metal cabinets/columns/facades

📏 W 164 mm, H 279 mm



Flush Mount Kit WSFB 52V

Flush mount box for flush mounting vandal resistant Series WS extension modules – half height format. RAL colours are available on request.

WSFB 52V SS	High-grade steel finish levelling frame
WSFB 50V SS MC	Suitable for metal cabinets/columns/facades

📏 W 164 mm, H 139 mm



Surface Mount Kit WSSH 50V

Surface mount box made from 1.5 mm thick high-grade steel for surface mounting vandal resistant Series WS Intercom stations and extension modules – full height format. Other RAL colours are available on request.

WSSH 50V SS	High-grade steel
WSSH 50V WA	White Aluminium (RAL 9006)
WSSH 50V OR	Pure Orange (RAL 2004)
WSSH 50V OR EM	Pure Orange (RAL 2004) with inscription "SOS"
WSSH 50V YL EM	Yellow (RAL 1016) with inscription "HELP"

📏 W 164 mm, H 279 mm, D 50 mm / thickness on installation surface 50 mm 📦 945 g



Surface Mount Kit WSSH 52V SS

Surface mount box made from 1.5 mm thick high-grade steel for surface mounting vandal resistant Series WS extension modules – half height format. Other RAL colours are available on request.

📏 W 164 mm, H 139 mm, D 50 mm / thickness on installation surface 50 mm 📦 635 g



Rain Protection Roof WSRR 50V

This optional rain protection roof for Vandal resistant Series WS Intercom stations and extension modules (full height format) provides even higher protection in adverse weather conditions. Material Stainless steel.

📏 W 164 mm, H 277 mm, D 80 mm 📦 465 g



Sabotage Detection Switch WSSK 50V

Micro switch for sabotage surveillance of Vandal resistant extension modules
Not suitable for loudspeaker modules WSLM 56V or WSLM 52V, or Direct Dialling Button Module WSDD 59V.

WSSK 50V SH	For surface mounted extension modules
WSSK 50V FB	For flush mounted extension modules

Ethernet Socket RJ45-MONT

The ethernet socket can be used to fix the inflexible connection cable to the surface or flushmount boxes of Series WS. The included connection cable (Length: 0.3 m) is then used to connect to the station.





VANDAL RESISTANT STATIONS – SERIES EF 962

Key features:

- Vandal resistant design
- Poke protected and fitted with special security screws
- Front panel made from 3 mm thick V-2A steel
- Emergency mushroom or high grade steel button with continuous function check (NC Contact)
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality
- Indicator LEDs and pictograms for Call Requested, Call Established and Door Opener Active

Accessories: Basic housing GUEF 962 (required for surface mounting and flush mounting), surface mount box EF 62

Technical data: Electret microphone; 2.5W Class "D" amplifier; two 8 Ω loudspeakers; External power supply or PoE (IEEE 802.3af); 1 input for floating contacts and 1 relay output.

EF 962M

16 kHz IP 54 IoT SIP

Vandal resistant emergency call station with emergency call button (mushroom button).

EF 962HM 1 emergency call button – IP – Communication via IoT or SIP
(7 kHz HD Voice for Communication via SIP)

W 110 mm, H 151 mm / thickness on installation surface depending on mounting kit
700 g



EF 962

16 kHz IP 54 IoT SIP

Vandal resistant station with call button made from high grade steel.

EF 962H 1 call button – IP – Communication via IoT or SIP
(7 kHz HD Voice for Communication via SIP)

W 110 mm, H 151 mm / thickness on installation surface depending on mounting kit
700 g



VANDAL RESISTANT STATIONS – SERIES EF 862

Key features:

- Vandal resistant design
- Poke protection and special screws
- Front plate made from 3 mm V-2A steel
- OpenDuplex® and IVC for natural, hands free communication with high volume
- Crystal clear speech quality

Accessories: Basic housing GUEF 62 (required for surface mounting and flush mounting), surface mount box EF 62

Technical data: Electret microphone; Power supply via Intercom Server (option: external floating power supply for longer cable lengths); Integrated 2.5 W amplifier (1.5 W output when using built-in 8 Ω loudspeaker); multi-functional LED; 1 input for floating contacts and 1 relay output.

EF 862M

16 kHz IP 54 Digital

Vandal resistant emergency call station with emergency call button (mushroom button).

EF 862AM 1 call button – Digital 2-wire

W 110 mm, H 151 mm / thickness on installation surface depending on mounting kit
685 g



EF 862

16 kHz IP 54 Digital

Vandal resistant station with call button made from high grade steel.

EF 862A 1 call button – Digital 2-wire

W 110 mm, H 151 mm / thickness on installation surface depending on mounting kit
685 g





VANDAL RESISTANT STATIONS – SERIES EF 562

Key features:

- Vandal resistant design
- Poke protection and special screws
- Front plate made from 3 mm V-2A steel
- Natural, hands free communication with high volume

Accessories: Basic housing GUEF 62 (required for surface mounting and flush mounting), surface mount box EF 62

Technical data: Electret microphone; 50 Ω loudspeakers; line length up to 4,200 m; red call status LED.

EF 562M

16 kHz IP 54 Analogue

Vandal resistant emergency call station with emergency call button (mushroom button).

W 110 mm, H 151 mm / thickness on installation surface depending on mounting kit
 650 g



EF 562

16 kHz IP 54 Analogue

Vandal resistant station with call button made from high grade steel.

W 110 mm, H 151 mm / thickness on installation surface depends on mounting kit
 650 g



ACCESSORIES FOR SERIES EF962, EF 862 AND EF 562

Basic housing GUEF 62

Basic housing for Series EF 862 and EF 562, made from 1.5 mm hot galvanised sheet steel. Required for surface mounting and flush mounting.

W 90 mm, H 131 mm, D 48 mm 436 g



Basic housing GUEF 962

Basic housing with RJ45 adapter for Series EF 962, made from 1.5 mm hot galvanised sheet steel. Required for surface mounting and flush mounting.

W 90 mm, H 131 mm, D 48 mm 436 g



Surface Mount Box EF 62

Surface mount box with rain protection roof for outdoor use, made of 1.25 mm thick galvanised sheet steel, powder coated.

EF 62G Grey (RAL 9006)

EF 62O Pure Orange (RAL 2004) with "SOS" labelling

EF 62NIRO High-grade steel

W 114,5 mm, H 155 mm, D 84 mm 631 g



Surface Mount Box EF 62W

Surface mount box without rain protection roof for indoor use, made of 1.25 mm thick galvanised sheet steel, powder coated in RAL 9016 (White).

W 114,5 mm, H 155 mm, D 55 mm 631 g



Building Security – Protection for People and Valuables

Doors and access points, one might say, provide the first impression of a company or building. Arriving visitors must not be intimidated by strict, impersonal security measures. However, security must not be neglected either. Apart from visitor flow and protected areas, many other factors need to be taken into consideration when it comes to access control solutions – especially people and their individual needs. From door Intercom stations and access readers to software modules, they allow for guiding and controlling the movements of people within buildings without being obstructive while still ensuring the required protection of sensitive areas.

Typical applications:

- Speech communication solution for doors, gates, barriers and turnstiles.
- Integration into columns, plinths and letterbox systems.



DOOR INTERCOM MODULES

Key features:

These Intercom modules provide excellent speech quality at access points and in transit areas. Their timelessly modern design matches that of Siedle's Vario Series. As a result, doors, gates and airlocks – whether indoors or outdoors – integrate smoothly and fully with the Intercom system.

Technical data: Electret microphone; power supply via Intercom Server; loudspeaker with special membrane for optimum sound quality and high volumes; // Digital 2-wire: Class "D" amplifier; Relay output for direct connection of a door opener; Input for floating contacts;

ET 861A | ET 661

16 kHz Digital Analogue

Door station module with one call button.

ET 861AWE	Digital 2-wire – White
ET 861ASI	Digital 2-wire – Silver
ET 861ADG	Digital 2-wire – Dark Grey
ET 861AAG	Digital 2-wire – Anthracite gray
ET 661WE	Analogue 4-wire – White
ET 661SI	Analogue 4-wire – Silver
ET 661DG	Analogue 4-wire – Dark Grey
ET 661AG	Analogue 4-wire – Anthracite gray

W 99 mm, H 99 mm, D 9 mm 200 g



Desktop Stations



IP DESKTOP STATIONS – SERIES EE 900

Key features:

- IP and DSP technology
- Standard keypad and function keys
- Illuminated LCD graphic display
- OpenDuplex® for natural, hands free communication
- High volume capacity thanks to digital Class "D" amplifier
- Multi-functional LED for visual user guidance and information
- Built-in switch

Technical data: Graphic display (8 lines at 14 characters each); 8 Ω loudspeaker with special membrane for optimum speech quality; Class "D" amplifier with 2.5 W (1.5 W output with built-in loudspeaker); Connection for optional handset or headset; Power can be supplied via PoE IEEE 802.3 af – see PoE Injector under Accessories.

EE 900AS

16 kHz VoIP

Master and control desk station with illuminated LCD graphic display and standard keypad with "T" and "X" keys, six function keys, and programmable handset function. Colour black.

Typical applications: Use as a control and desktop station.

W 66 mm, H 58 mm, D 240 mm 500 g

EE 972AS

16 kHz VoIP

Master and control desk station with gooseneck microphone, illuminated LCD graphic display, standard keypad with "T" and "X" keys and six function keys. Colour black.

Typical applications: Control desk and command station.

W 179 mm, H 58 mm, D 240 mm / Length of gooseneck: 430 mm 800 g



ACCESSORIES FOR SERIES EE 900

PoE Injector

PA15WPOE PoE Injector – Single Port 15,4 W PoE Adapter (including changeable plug attachments for Europe, the UK, USA and Australia)

ASKKAT5-3S Network cable, 3 m, black





2-WIRE DSP DESKTOP STATIONS – SERIES EE 811

These digital Master Stations are based on DSP technology in a timeless, ergonomic design for handsfree OpenDuplex® speech connections. They come with a large rear-illuminated graphical display and are capable of displaying multiple messages (e.g., alarms). A bright multi-function LED is provided for visual feedback and user guidance.

Technical data: Graphic display (8 lines at 14 characters each); Power supply via Intercom Server (optional external

power supply for longer cable lengths or external loudspeakers); 8 Ω loudspeaker with special membrane for optimum speech quality; 2.5 W Class “D” amplifier (1.5 W with built-in loudspeaker, 2.5 W with external 4 Ω loudspeaker); Connection port for external loudspeaker; 1 input for floating contact; 1 Open Collector output; relay contact can be retro-fitted; Plug-in port for handset or headset; 3 m connection cable.

EE 811A

16 kHz Digital

Master and central control station with illuminated graphic display and standard keypad with “T” and “X” keys, six function keys, and programmable handset function.

Typical applications: Use as a control and desktop station.

EE 811AS Black

W 66 mm, H 58 mm, D 240 mm 500 g

EE 872A

16 kHz Digital

Master and control desk station with cardioid gooseneck microphone, illuminated graphic display, and standard keypad with “T” and “X” keys and six function keys.

Typical applications: Control desk and command station.

EE 872AS Black

W 179 mm, H 58 mm, D 240 mm / Length of gooseneck: 430 mm 800 g

EE 872A EG

16 kHz Digital

Master and control desk station with active add-on loudspeaker, cardioid gooseneck microphone, illuminated graphic display, and standard keypad with “T” and “X” keys and six function keys. Special screws and adhesive bonding make these Intercom stations particularly durable.

Typical applications: Use as a control and command station in environments with high ambient noise levels.

Class “D” amplifier with 15 W speech signal; sound pressure: 82 dB/W/m (1 kHz); impedance: 8 Ω; magnetically shielded; external 15 V DC power supply; plug-in power adapter PA20W15V is available separately – see Accessories.

EE 872AEGS Black

W 205 mm, H 95 mm, D 280 mm / Length of gooseneck: 430 mm 800 g





2-WIRE DSP-DESKTOP STATIONS – SERIES EE 311

Digital master stations in DSP-technology and ergonomic design, for hands free speech in OpenDuplex®, with display for caller identification and indication of multiple messages (e.g. alarms). A bright, multi-functional LED allows for visual signals and user guidance.

Technical data: 6-digit alphanumeric display (16-segment); power supply via Intercom Server (optional: external power

supply for greater line length or external loudspeaker); built-in Class "D" amplifier with 2.5 W (1.5 W power with built in loudspeaker or 2.5W with external 4 Ω loudspeaker); built-in 8 Ω loudspeaker with special membrane type for optimal sound quality; connection possibility for external loudspeaker; one input for floating contact; one open collector output; connection of handset or headset possible; 3 m connection cable.

EE 311A

16 kHz Digital

Master station with standard keypad, complete with "T" and "X" keys and six function keys, and programmable handset function.

Typical applications: Office use and use as control desk and command station.

EE 311AS Black

EE 311AG Light Grey

W 66 mm, H 55 mm, D 230 mm 380 g



EE 301A

16 kHz Digital

Master station with standard keypad, complete with "T" and "X" keys and three function keys. Without position switch and handset/headset connection port.

Typical applications: Office use and use as control desk and command station.

EE 301AS Black

EE 301AG Light Grey

W 66 mm, H 55 mm, D 230 mm 380 g



EF 311A

16 kHz Digital

Substation with restricted dialling ("T", "0", "X") and programmable handset function.

Typical applications: Substations for offices, supermarket checkouts, etc.

EF 311AS Black

W 66 mm, H 55 mm, D 230 mm 360 g



EE 372A

16 kHz Digital

Master and control desk station with cardioid gooseneck microphone and standard keypad with "T" and "X" keys and three function keys.

Typical applications: Control desk and command station.

EE 372AS Black

W 179 mm, H 57 mm, D 230 mm / Length of gooseneck: 430 mm 715 g





4-WIRE DESKTOP STATION – SERIES EE 411

Analogue master stations in ergonomic design, for hands-free speech even from great distances, with display for caller identification and indication of multiple messages (e.g. alarms). A bright call LED indicates clearly

if the station is active. The LCD screen enables scrolling of incoming calls, detailing all call numbers.

Technical data: 6-digit alphanumeric display (16-segment); Power supply via Intercom Server; 3 m connection cable.

EE 411

16 kHz Analogue

Master station in desktop version with reinforced silicone keypad (standard keypad with "T" and "X" buttons as well as three function keys), built-in programmable handset function.

Typical applications: Offices, control desk station in small systems.

EE 411S Black

EE 411G Light Grey

W 66 mm, H 55 mm, D 230 mm 370 g



EE 401

16 kHz Analogue

Master station in desktop version with reinforced silicone keypad (standard keypad with "T" and "X" buttons as well as three function keys); without position switch.

Typical applications: Offices, control desk station in small systems.

EE 401S Black

EE 401G Light Grey

W 66 mm, H 55 mm, D 230 mm 370 g



EE 472

16 kHz Analogue

Master station – Control Desk – desktop version, with gooseneck microphone with cardioid characteristic and anti-tilt stand. Reinforced silicone keypad (standard keypad with "T" and "X" buttons as well as three function keys).

Typical applications: Control Desk and Command stations.

EE 472S Black

EE 472G Light Grey

W 179 mm, H 57 mm, D 230 mm / Length of gooseneck: 430 mm 700 g



EF 401

16 kHz Analogue

Substation with restricted dialling possibilities ("T", "0", "X").

Typical applications: Substation in offices, supermarket check-outs, etc.

EF 401S Black

EF 401G Light Grey

W 66 mm, H 55 mm, D 230 mm 350 g





4-WIRE DESKTOP STATIONS – SERIES EE 400

Analogue master stations in ergonomic design, for hands free speech even from great distances, with individually designable index field that can be used to show call numbers and other important information. A bright call LED indicates clearly if the station is active. Compatible with the

previous Intercom Server generation GE 416, GE 501 and GE 601.

Technical data: Power supply via Intercom Server; 3 m connection cable.

EE 400

16 kHz Analogue

Master station in desktop version with reinforced silicone keypad (standard keypad with "T" and "X" buttons).

Typical applications: Offices.

EE 400S Black

EE 400G Light Grey

W 66 mm, H 55 mm, D 230 mm 350 g



ACCESSORIES

Plug-in power adapter PA20W15V

20 W switching power supply with high efficiency output; Primary: 90 – 264 V AC; 0.67 A; Secondary 15 V DC; including changeable plug attachments for Europe, the UK, USA and Australia.



EW 401

Wall-bracket for the desktop station Series EE 311A, EE 400 and EE 411.

EW 401S Black

EW 401G Light Grey

W 73 mm, H 235 mm, D 58 mm 160 g



EW 102

Wall-Mount Bracket for Series EE 200, EE 300 and EE 400 Desktop Intercom Stations.

EW 102 Transparent

W 72 mm, H 52 mm, D 42 mm 28 g



Your Individual Intercom Station

The right choice for individual solution, with modules by Comrend it is always going to be the best one. The modules allow for Intercom stations to be built in accordance with customers' requirements and integrated into custom housings or panels. What is more, they make it possible to equip various terminals (ticket vending machines, info terminals, ATMs, etc.) with efficient, space-saving Intercom units. This way, operators can offer their customers extra services with added value.

Applications

- Implementation of special Intercom stations
- Integration into panels and enclosures
- Call terminals and emergency facilities, e.g. for help points, lifts, etc.



IP-MODULES

These modules connect to the Intercom Server over the IP network by direct connection to the Ethernet (LAN/WAN). A built-in switch with downlink function allows for

direct connection of another IP device (e.g., IP-camera). The module supports DSP functionalities such as OpenDuplex®, Audio Monitoring and function monitoring.

ET 908H

16 kHz loIP SIP

IP-based module with switch and RJ 45 ports for IP Uplink/Downlink. Ready for connection of a keypad with 18 keys or three single buttons, a loudspeaker, a microphone, a headset or handset, and the supplied call status LED. Line input for audio feed (e.g. music, radio conference, etc.).

ET 908H IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
Version with horizontally installed RJ 45 ports – without microphone

ET 908H-1 IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
Version with vertically installed RJ 45 ports – without microphone

W 130 mm, H 65 mm, D 21 mm 220 g



ET 908HM

16 kHz loIP SIP

IP-based module with switch, microfon MIC 480 and RJ 45 ports for IP Uplink/Downlink. Ready for connection of a keypad with 18 keys or three single buttons, a loudspeaker, a microphone, a headset or handset, and the supplied call status LED. Line input for audio feed (e.g. music, radio conference, etc.).

ET 908HMI IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
Version with horizontally installed RJ 45 ports – with microphone MIC 480

ET 908HMI-1 IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
Version with vertically installed RJ 45 ports – with microphone MIC 480

W 130 mm, H 65 mm, D 21 mm 220 g



ET 962H/HR

16 kHz loIP SIP

IP-based Intercom Module in rugged installation enclosure with integrated electret microphone, loudspeaker and multi-functional LED. Supports optional connection of up to 3 call buttons.

Power supply via PoE (Power over Ethernet IEEE 802.3af); 2.5 W class "D" final amplifier (1.5 W amplifier power with integrated 8-Ω loudspeaker); loudspeaker with special membrane for optimum speech quality; 1 input for floating contact, and 1 relay output. Optional: I/O expansion with expansion board EB2E2AHE, providing 2 additional inputs for floating contacts and 2 relay outputs.

ET 962H IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);

ET 962HR IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
EN 50155 compliant (EN-Standard for railway applications)

W 109 mm, H 87.5 mm, D 45 mm (without Ethernet cable) 220 g



ET 970H/HR

16 kHz loIP SIP

IP-based Intercom Module in rugged installation enclosure with integrated electret microphone and multi-functional LED. Supports optional connection of up to 3 call buttons.

Power supply via PoE (Power over Ethernet IEEE 802.3af); 2.5 W class "D" final amplifier; plug-in port for external loudspeaker (4 - 50 Ω); 1 input for floating contact, and 1 relay output. Optional: I/O expansion with expansion board EB2E2AHE, providing 2 additional inputs for floating contacts and 2 relay outputs.

ET 970H IP – Communication via loIP or SIP (7 kHz HD Voice for Communication via SIP);
with microphone MIC 480

ET 970HR IP – Communication via loIP or SIP (7 kHz HD Voice); with microphone MIC 480;
EN 50155 compliant (EN-Standard for railway applications)

W 109 mm, H 87.5 mm, D 45 mm (without Ethernet cable) 220 g



2-WIRE DSP MODULES

Digital modules with DSP-technology for easy communication in OpenDuplex®. Used in situations where stations are permanently mounted and special requirements to the station are made. The digital construction allows

line-saving cabling. The DSP-technology enables a host of additional features, such as loudspeaker/microphone function tests or Audio-Monitoring. New features can easily be added in the future via software update.

ET 811A

16 kHz Digital

Module supplied as a build-in kit for building of digital master stations, with large, illuminated graphic display for caller identification and message indication. Includes full keypad, loudspeaker and microphone. Connection possibility for headset, headphones or gooseneck microphone, one input for floating contacts, one open collector output, possibility for later installation of a relay.

Typical applications: Mounting in control panels/desks.

Electret microphone; Power supply via Intercom Server (optional: external floating supply for greater line length); built-in Class "D" amplifier with 2.5 W (1.5 W output power with supplied loudspeaker resp. 2.5 W with 4 Ω loudspeaker); 8 Ω loudspeaker with special membrane type for optimal sound quality; connection possibility for external loudspeaker.

Main print: W 79 mm, H 173 mm, D 18 mm 450 g
Loudspeaker print: W 58 mm, H 83 mm, D 35 mm



ET 808A

16 kHz Digital

Module for building customised master stations and substations. Ready for connection of a keypad with 18 keys or three single buttons, a loudspeaker, a headset or handset, the supplied call status LED plus a built-in microphone. Line input for audio feed (e.g. music, radio conference, etc.).

Power supply via Intercom Server (option: external floating power supply for longer cable lengths or for loudspeakers with less than 8 Ω resistance); 2.5 W Class "D" amplifier (2.5 W output when using 4 Ω loudspeaker, 1.5 W when using 8 Ω loudspeaker); 3 inputs for floating contacts and 2 relay outputs (switching contacts). Optional: I/O expansion with expansion board EB2E2AHE, providing 2 additional inputs for floating contacts and 2 relay outputs.

ET 808A Intercom Module with weatherproof built-in electret microphone MIC 480

ET 808AME Intercom Module without microphone

W 130 mm, H 65 mm, D 24 mm 200 g



ET 862A

16 kHz Digital

Module in rugged installation enclosure with integrated electret microphone, loudspeaker and multi-functional LED. Supports optional connection of a keypad (12-button matrix) or up to 12 call buttons.

Power supply via Intercom Server (external floating power supply for longer cable lengths available as an option); 2.5 W Class "D" amplifier (1.5 W output when using built-in 8 Ω loudspeaker); Loudspeaker with special membrane for optimum speech quality; 1 input for floating contact, and 1 relay output. Optional: I/O expansion with expansion board EB2E2AHE, providing 2 additional inputs for floating contacts and 2 relay outputs.

W 109 mm, H 87,5 mm, D 40 mm 195 g



ET 870A | ET 871A

16 kHz Digital

Module in durable installation housing with weatherproof build-in electret microphone MIC 480 and integrated multi-functional LED. Supports optional connection of up to 2 call buttons.

Power supply via Intercom Server (option: external floating power supply for longer cable lengths or for loudspeakers with less than 8 Ω resistance); 2.5 W Class "D" amplifier (1.5 W output when using 8 Ω loudspeaker, 2.5 W when using 4 Ω loudspeaker); 1 input for floating contact, and 1 relay output. Optional: I/O expansion with expansion board EB2E2AHE, providing 2 additional inputs for floating contacts and 2 relay outputs.

ET 870A Intercom Module without loudspeaker, with connection port for external loudspeaker

ET 871A Intercom module with built-in 8 Ω loudspeaker

W 109 mm, H 87,5 mm, D 40 mm ET 870A 205 g, ET 871A 220 g



4-WIRE MODULES

With Analogue 4-wire modules it is possible to realise low-cost, customer specific intercom terminals. The various measurements and functionalities ensure a fitting intercom module for all areas of application. In particular

for building of special stations, where the shape of the housing, buttons, material, IP-rating and so on must be individually adapted.

ET 508

16 kHz Analogue

Module for building of suW stations, Compact measurements for easy installation. A special circuit allows excellent speech quality even in loud areas. Prepared for connection of a microphone, a loudspeaker, five single buttons and a red operation lamp.

Typical applications: Due to its small measurements this build-in kit fits perfectly into standard installation boxes.

Microphone input for electret or dynamic microphone; Power supply via Intercom Server; connection for a loudspeaker greater than 16 Ω .

W 50 mm, H 50 mm, D 18 mm 42 g



ET 509

16 kHz Analogue

Module, developed in particular for Simplex operation, including loudspeaker and microphone. Prepared for connection of an external call button.

Typical applications: Compact Intercom terminals, built into control desks that are permanently switched to listen to the area which initiated the call.

Omnidirectional electret microphone; Power supply via Intercom Server; loudspeaker with special membrane type for optimal sound quality.

W 85 mm, H 55 mm, D 20 mm 145 g



ET 562

16 kHz Analogue

Intercom module in rugged build-in housing with mounting tabs, complete with built-in microphone and loudspeaker. A duplex controller ensures highest possible speech quality even with high ambient noise, and from a great distance. Possibility of connecting up to 3 call buttons.

Omnidirectional electret microphone; Power supply via Intercom Server; loudspeaker with special membrane type for optimal sound quality.

W 109 mm, H 87.5 mm, D 40 mm 162 g



ET 570 | ET 571

16 kHz Analogue

Intercom module in durable mounting frame with mounting tabs; includes weather-resistant, omnidirectional add-on Electret Microphone MIC 480. The built-in 2 W amplifier ensures sufficient sound volume on site. Ready for connection of a call button.

ET 570 – requires external power supply (12 – 24 V AC or 16 – 24 V DC); loudspeaker to be connected must be 8 Ω or higher.

ET 571 – requires external power supply (12 – 24 V AC or 16 – 24 V DC); built-in 8 Ω loudspeaker with special membrane for optimum speech quality.

ET 570 Intercom Module loudspeaker with connection port for external loudspeaker

ET 571 Intercom Module with built-in 8 Ω loudspeaker

W 109 mm, H 87.5 mm, D 40 mm ET 570 190 g, ET 571 205 g



INPUT/OUTPUT MODULES

ET 8E8A-IP

IoIP

Remote in/output module for management of inputs and outputs far from the central. The connection to the module is realised via a ethernet line with up to 100 m length (depending on cable type and power supply). IP downlink to connect further IP devices. Mounting is possible in a 19" rack on a DIN rail or with the supplied rail for wall mounting. Line-monitoring from ET 8E8A-IP to Intercom Server.

8 inputs for floating contacts; 8 relay outputs 30 V/3 A (4 make and 4 switch over); power supply via PoE (IEEE 802.3af).

W 150 mm, H 110 mm, D 60 mm (incl. mounting rail, screws and dowels) 850 g



ET 8E8A

Digital

Remote in/output module for management of inputs and outputs far from the central. The connection to the module is realised via a 2-wire line with up to 3,000 m length (depending on cable type and power supply). Mounting is possible in a 19" rack on a DIN rail or with the supplied rail for wall mounting. LEDs for status indication for all inputs and outputs. Line-monitoring from ET 8E8A to Intercom Server.

8 inputs for floating contacts; 8 relay outputs 30 V/3 A (4 make and 4 switch over); power supply via Intercom Server (optional: power supply for greater line length).

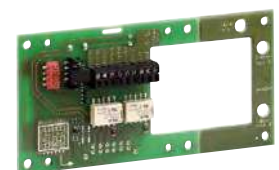
W 105 mm, H 62 mm, D 105 mm (incl. mounting rail, screws and dowels) 350 g



EB2E2AHE

Option board for I/O expansion of Intercom modules connection of 2 inputs as floating contacts, as well as 2 relay outputs.

W 130 mm, H 65 mm, D 12 mm 30 g



EB8E4A

Option board for I/O expansion of Intercom modules (ET 808A) connection of 8 inputs as floating contacts, as well as 4 relay outputs.

W 130 mm, H 65 mm, D 12 mm 30 g



DEVELOPED TO RESIST IN ALL AREAS

The new Commend Industry Series 7000. Versatile and Efficient.



EX 7000

Industrial environments with Ex Zones

GAS

IIC

Highest Explosion Hazard Group

Zone 1	II 2G Ex db eb ib IICT6 Gb
--------	----------------------------

Zone 2	II 3G Ex db ec ic IICT6 Gc
--------	----------------------------

T6

Highest Temperature Class

DUST

IIIC

Highest Explosion Hazard Group

Zone 21	II 2D Ex tb ib IIIC T80°C Db
---------	------------------------------

Zone 22	II 3D Ex tc ic IIIC T80°C Dc
---------	------------------------------

T80°C

Excellent Temperature Class



EE 7000

Industrial environments without Ex Zones



CERTIFIED FOR EX ZONES

The "EX" line of Series 7000 has been developed with painstaking attention to the demanding requirements for hazardous and explosive environments. By focusing on the highest safety levels, simple operation and futureproof scalability, Series EX 7000 is especially designed for reliable communication in this areas. It's based on a rugged, corrosion-resistant and lightweight housing, enabling simple and rapid installation, and at the same time eliminating expensive routine servicing and maintenance costs.

IECEX ATEX CNEX EAC



VERSATILE WITH 72 VERSIONS

Where communication is concerned, the requirements of the various branches of industry could not be more different. While one industry is focussed on mobility, another necessarily needs stationary terminals. Not to forget the need of flexible operation modes - from point-to-point communication, group conferences and party lines up to paging and PAGA.

This is why Series 7000 is designed to cover all possible scenarios while ensuring consistent, uniform operation anywhere, from regular industrial facilities to explosion-prone areas (Ex zones).




AUDIO QUALITY FOR EFFICIENCY


Maintaining optimum speech intelligibility even against loud background noise is essential to ensure efficient processes and straightforward coordination among co-workers. This is where our highly efficient 20-Watt Class-D amplifiers come in. They provide the outstanding volume capacity with 16 kHz speech quality and assist users with helpful features such as OpenDuplex® for hands-free communication and IVC (Intelligent Volume Control) for auto-adjusting the volume level to ambient acoustic conditions.

Industrial Station with full keypad and 4 function keys – Series 7504

16 kHz IP 66 Digital




integrated loudspeaker				without loudspeaker			
		with handset				with handset	
							
100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC
Ex Zone 1 and 21 classified environment							
EX 7504D 1 AC S	EX 7504D 1 DC S	EX 7504D 1 AC S H	EX 7504D 1 DC S H	EX 7504D 1 AC	EX 7504D 1 DC	EX 7504D 1 AC H	EX 7504D 1 DC H
Ex Zone 2 and 22 classified environment							
EX 7504D 2 AC S	EX 7504D 2 DC S	EX 7504D 2 AC S H	EX 7504D 2 DC S H	EX 7504D2 AC	EX 7504D 2 DC	EX 7504D 2 AC H	EX 7504D 2 DC H
Industrial environment							
EE 7504D AC S	EE 7504D DC S	EE 7504D AC S H	EE 7504D DC S H	EE 7504D AC	EE 7504D DC	EE 7504D AC H	EE 7504D DC H

 W 175 mm, H 344 mm, D 102 mm / without loudspeaker and handset


 W 175 mm, H 344 mm, D 127 mm / without handset

Industrial Station with 8 function keys – Series 7008

16 kHz IP 66 Digital

integrated loudspeaker				without loudspeaker			
		with handset				with handset	
							
100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC
Ex Zone 1 and 21 classified environment							
EX 7008D 1 AC S	EX 7008D 1 DC S	EX 7008D 1 AC S H	EX 7008D 1 DC S H	EX 7008D 1 AC	EX 7008D 1 DC	EX 7008D 1 AC H	EX 7008D 1 DC H
Ex Zone 2 and 22 classified environment							
EX 7008D 2 AC S	EX 7008D 2 DC S	EX 7008D 2 AC S H	EX 7008D 2 DC S H	EX 7008D 2 AC	EX 7008D 2 DC	EX 7008D 2 AC H	EX 7008D 2 DC H
Industrial environment							
EE 7008D AC S	EE 7008D DC S	EE 7008D AC S H	EE 7008D DC S H	EE 7008D AC	EE 7008D DC	EE 7008D AC H	EE 7008D DC H


 W 175 mm, H 344 mm, D 102 mm / without loudspeaker and handset

 W 175 mm, H 344 mm, D 127 mm / without handset

Industrial Station with party line keypad – Series 7P04

16 kHz IP 66 Digital

integrated loudspeaker				without loudspeaker			
		with handset				with handset	
							
100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC	100 – 240 V AC	22 – 60 V DC / 18 – 30 V AC
Ex Zone 1 and 21 classified environment							
EX 7P04D 1 AC S	EX 7P04D 1 DC S	EX 7P04D 1 AC S H	EX 7P04D 1 DC S H	EX 7P04D 1 AC	EX 7P04D 1 DC	EX 7P04D 1 AC H	EX 7P04D 1 DC H
Ex Zone 2 and 22 classified environment							
EX 7P04D 2 AC S	EX 7P04D 2 DC S	EX 7P04D 2 AC S H	EX 7P04D 2 DC S H	EX 7P04D 2 AC	EX 7P04D 2 DC	EX 7P04D 2 AC H	EX 7P04D 2 DC H
Industrial environment							
EE 7P04D AC S	EE 7P04D DC S	EE 7P04D AC S H	EE 7P04D DC S H	EE 7P04D AC	EE 7P04D DC	EE 7P04D AC H	EE 7P04D DC H

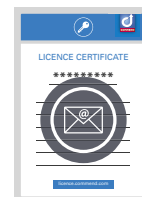
 W 175 mm, H 344 mm, D 102 mm / without loudspeaker and handset

 W 175 mm, H 344 mm, D 127 mm / without handset

ACCESSORIES FOR SERIES 7000

L-EX-AF-OUT

Licence for activation of the second amplifier and power relay, enables drive of high-power loudspeakers and external audible or visual signal devices





INDUSTRIAL STATIONS – SERIES EE 8000

Series EE 8000 Stations are designed specifically to withstand extreme temperatures, moisture and dirt, and providing clearly intelligible audio communication even in areas with extreme ambient noise. This way, they contribute significantly to enhanced safety and smooth workflows in various and extreme applications. The products of the Series EE 8000 are used successfully in numerous projects and industrial applications such as metal and mining, manufacturing industry, oil and gas, chemical industry or energy and public utilities. Because of their useful qualities, the stations are also installed in ports, waterways, tunnels and highways.

Technical data: IP 66 rating; Power supply 24 – 42 V AC/40 VA or 22 – 60 V DC/40 W; built-in Class "D" amplifier with 25 W speech power, 8 Ω; 2 floating relay outputs (30 V/3 A) and 2 inputs for floating contacts. Microphone sensitivity adjustable in a range of 30 dB; speaking distance adjustable 3 cm to 5 m (dependent on ambient noise and microphone sensitivity); ambient noise level up to max. 120 dB.

EE 8158M

7 kHz IP 66 Digital

Station with 8 programmable LED buttons, built-in loudspeaker and universal microphone. The DSP-technology facilitates a single microphone with both omnidirectional and noise cancelling characteristics. Button labels are included for marking the buttons' functions. The cable glands are within the extent of supply.

W 175 mm, H 312 mm, D 145 mm 3,200 g



EE 8238M

7 kHz IP 66 Digital

Station with a full keypad, universal microphone, and 2 programmable LED buttons. The DSP-technology facilitates a single microphone with both omnidirectional and noise cancelling characteristics. An external loudspeaker is required for this station. The cable glands are within the extent of supply.

W 175 mm, H 312 mm, D 145 mm 2,960 g



EE 8108M

7 kHz IP 66 Digital

Station with 2 programmable LED buttons, built-in loudspeaker and universal microphone. The DSP provides the characteristics of both a noise cancelling microphone and an electret microphone. The cable glands are within the extent of supply.

W 175 mm, H 312 mm, D 145 mm 3,100 g



EE 81ADMSOS

7 kHz IP 66 Digital

Station imprinted with 'SOS' on the front and side panels, built-in loudspeaker, universal microphone, LED button and a large red mushroom button imprinted with 'SOS'. Both buttons can be assigned with various functions. The DSP technology facilitates a single microphone with both omnidirectional and noise cancelling characteristics. This station has no lateral expansion openings. The cable glands are within the extent of supply.

W 175 mm, H 312 mm, D 145 mm 3,100 g





BASIC HOUSING – SERIES EE 8000

The modular concept of this system allows a flexible, customer specific configuration of digital heavy industrial stations. One basic and two expansion housings can be

combined. This way industrial stations with up to 50 freely programmable direct dialling buttons can be configured.

EE 8999M

IP 66

Basic housing with three module slots, includes electronics, cable glands, expansion openings on four sides and dummy plugs.

W 175 mm, H 312 mm, D 122 mm 2,300 g



EE 8999MSOS

IP 66

Basic housing with three module slots, includes electronics, cable glands, 'SOS' imprint on both sides (hence the expansion openings are only at the top side and bottom of the unit).

W 175 mm, H 312 mm, D 122 mm 2,300 g



EE 8999S

IP 66

Expansion housing with three module slots, includes electronics, cable glands, expansion openings on all four sides and dummy plugs. The mounting kit (EE 8999-KIT) for expansion housings has to be ordered separately.

W 175 mm, H 312 mm, D 122 mm 2,240 g



ACCESSORIES

EDI 600

IP 66

Empty housing without electronics and modules, for accommodation of distribution boards, terminal strips or additional electronics. Required cable glands are included.

W 175 mm, H 312 mm, D 122 mm 2,080 g

















MODULES – SERIES EE 8000

There are modules for dialling, modules with inscribable direct dialling buttons, microphone modules and a

loudspeaker module. The modules are connected to the PCW of the housing and can be combined as desired.

Product Code	Module Code		
EM 600	0	Dummy module for covering empty module slots or for mounting of customer specific buttons.	
EM 6A0	A	Dummy module imprinted with 'SOS' for covering empty module slots.	
EM 650	1	Loudspeaker module for industrial stations. The loudspeaker features high sound pressure and excellent intelligibility of speech. Impedance 8 Ω.	
EM 6CA	C	Camera module with colour video camera and LED light; vertical/horizontal viewing angle mechanically adjustable by additional 30°; video streams are possible in H.264 (MPEG-4 Part 10/AVC) and M-JPEG format at resolutions up to 1440 x 900 pixels (1.3 MP).	
EM 602	2	Keypad module with buttons 1 to 6 as part of a full keypad. The buttons can be assigned with various functions.	
EM 603	3	Keypad module with buttons 7 to X as part of a full keypad. The buttons can be assigned with various functions.	
EM 606	4	Keypad module with 6 buttons that can be custom-labelled. The buttons can be assigned with various functions. Tags are included for labelling the buttons.	
EM 605	5	Keypad module with 6 LED buttons that can be custom-labelled. The buttons can be assigned with various functions. Tags are included for labelling the buttons.	
EM 660	6	Microphone module with a universal microphone and 2 buttons. The two buttons can be assigned with various functions. Optional button labels L and X are included in extent of supply. *	
EM 680	8	Microphone module with a universal microphone and 2 LED buttons. The two buttons can be assigned with various functions. Optional button labels L and X are included in extent of supply. *	
EM 681	D	Microphone module with a universal microphone, 1 LED button and 1 large red mushroom button imprinted with 'SOS'. The two buttons can be programmed with various functions. *	
EM 680	B	Microphone module with a universal microphone, white conversation lamp and large red mushroom button imprinted with 'SOS'. The button can be assigned with various functions. *	

Detention Cell Terminals

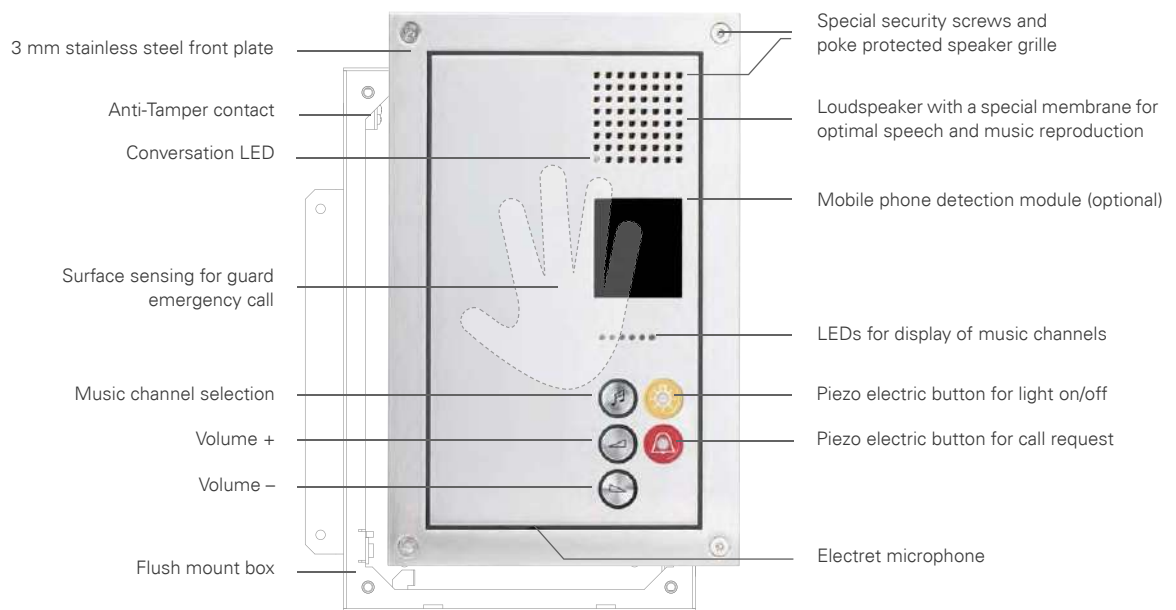
2-Wire Detention Cell Terminal

Commend's Detention Cell Intercom terminal was specifically designed for prison and police cells, correctional and court holding facilities, custody suites, forensic laboratories, etc. To further enhance security, cell terminals not only provide speech communication, they also facilitate control functions signalling, mobile phone detection and emergency alarm calls.

Innovative technologies combined with a modular approach ensures a future-proof investment. The optional mobile phone detection module combats the problem of detainees being illegally in possession of mobile

phones. The surface sensing feature helps protect guards whilst in the cell, in critical situations the guard only needs to touch the front plate to activate the guard alert.

Digital 2-wire DSP technology allows Audio-Monitoring and OpenDuplex® as well as loudspeaker/microphone surveillance, which in combination with programmable line monitoring ensures that the operational status of the detention cell intercom terminals is known at all times.



Cell Installation

Option 1 – Mounting with integrated electronics

- UP 030 flush mount box
- EW 330 | EW 330S cell electronics module
- EF 031x front plate



Option 2 – Mounting with remote electronics

- Cell electronics module mounted on "top hat" DIN rail or in surface mount box
- UP 030 flush mount box
- Connectivity board for connection of cell electronics module with front plate
- EF 031x front plate





EF 031 FRONT PLATE SERIES

The front plates are made of 3 mm stainless steel with a brushed surface. Special security screws and speaker grille protect against damage and the insertion of foreign substances, debris, etc. The front plates are suited for flush wall mount using the UP-030 flush mount box.

Technical data: Integrated 2.5 W power amplifier (1.5 W over integrated loudspeaker); 8 Ω loudspeaker with a special membrane for optimal speech reproduction; electret microphone.

EF 031-1

7 kHz Digital

Front panel with piezo electric buttons for call/help request, microphone and loudspeaker.

EF 031-1 Front panel

W 179 mm, H 279 mm, D 3 mm 1,660 g



EF 031-2

7 kHz Digital

Front Panel with 2 piezo electric buttons for call/help request, light, microphone and loudspeaker.

EF 031-2 Front panel

EF 031-2R Front panel with antenna window for installation of a Mobile Phone Detection Module

W 179 mm, H 279 mm, D 3 mm 1,660 g



EF 031-2M

7 kHz Digital

Front Panel with 2 piezo electric buttons for call/help request, light, microphone and loudspeaker. 3 buttons (TCT technology) for music selection and volume adjustment; 6 LEDs for indicating music channels.

EF 031-2MR Front panel with antenna window for installation of a Mobile Phone Detection Module

W 179 mm, H 279 mm, D 3 mm 1,740 g



FLUSH MOUNT BOX

Flush in-wall mounting box for accommodation of EF 031x front plates and EW 330 cell electronics. Two diagonally

located sabotage break contacts. The flush mount box is to be ordered separately for preparatory mounting.

UP 030

Flush in-wall mounting box for accommodation of EF 031x front plates and EW 330x cell electronics. 5 cable feeds (20 mm diameter) in top and bottom and one in each sidewall.

W 183.5 mm, H 283.5 mm, D 63.5 mm (excluding plaster tabs) 1,700 g
W 223.5 mm, H 283.5 mm, D 63.5 mm (including plaster tabs)





CELL ELECTRONICS

Various electronics modules are available for mounting options 1 and 2 (integrated or remote electronics). Additionally, there are electronics modules with integrated surface sensing with which front plates can be made touch-sensitive for guard alerts etc. As an alternative to the EF 031 Series of front plates, analogue intercom modules can be connected. This allows for custom front plate design. Please note: Electronics modules and flush mount boxes need to be ordered separately.

Technical data: External 24 V AC/8.5 VA or 24 – 35 V DC/8.5 W power supply; power consumption: 3.5 W standby, 8.5W max at 24V AC (current min. 130 mA/h min. /350 mA/h max. at 24 V AC); 10 floating input contacts; 6 relay outputs (3 breakers and 3 two-way contacts); 60 V DC/V AC – 1A; 30 V DC/V AC – 2A.

EB 330

7 kHz Digital

Cell Electronics Flush Mount Kit for integrated installation and connection of an EF 031 front panel.

EB 330 Cell Electronics Flush Mount Kit

EB 330S Flush mountable cell electronics module with surface sensing function

W 147 mm, H 162 mm, D 25 mm 360 g



EB 330AH

7 kHz Digital

Cell Electronics Surface Mount Kit for set-off installation (e.g. in risers) and connection of Front Panel EF 031. The module comes attached to a mounting plate with a DIN rail bracket.

EB 330AH Cell Electronics Surface Mount Kit

EB 330AHS Flush mountable cell electronics module with surface sensing function

W 150 mm, H 162 mm, D 69,5 mm 800 g
(incl. fitting panel suitable for "top hat" DIN rail mounting and flap)



EB 330A

7 kHz Digital

Cell Electronics Surface Mount Kit for set-off installation (e.g. in risers) and connection of Front Panel EF 031. The Surface Mount Kit comes in a protective housing.

EB 330A Cell Electronics Surface Mount Kit

EB 330AS Flush mountable cell electronics module with surface sensing function

W 160 mm, H 296 mm, D 90 mm 1.680 g



IP Converters



IP CONVERTER

IP Converter ET 901 installs between the Ethernet connection (LAN/WAN) and any Intercom Terminal. This will turn the station into a fully-featured IP Intercom station.

Technical data: External power supply via power adapter (24 V AC or 28-35 V DC, 8.4 W) or via PoE (Power over Ethernet) IEEE 802.3af; Connections via RJ 45 ports for IP Uplink / Downlink and Intercom; audio bandwidth 16 kHz for digital 2-wire Intercom stations, and 7 kHz for analogue 4-wire Intercom stations.

ET 901

IoIP

IP Converter Box with built-in switch for Intercom terminals.

Typical applications: Offices, warehouses, switch-boxes, etc.

ET 901-D Connection of digital 2-wire Intercom terminals

ET 901-A Connection of analogue 4-wire Intercom terminals

W 159 mm, H 49 mm, D 78 mm 280 g



ET 901HE

IoIP

IP Converter as plug-in board with built-in switch for Intercom terminals.

Typical applications: For integration into existing housings.

ET 901HE-D Connection of digital 2-wire Intercom terminals

ET 901HE-A Connection of analogue 4-wire Intercom terminals

W 130 mm, H 24 mm, D 65 mm 230 g



OPTION BOARDS

Option boards offer additional powerful features, enabling specific applications to easily be solved.

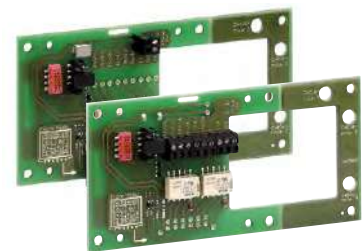
I/O Module EB2E2A

Option board for I/O expansion of IP Converter box ET 901 for connection of 2 inputs as floating contacts, as well as 2 relay outputs.

EB2E2A Expansion of IP Converter ET 901

EB2E2AHE Expansion of IP Converter ET 901HE

W 130 mm, H 65 mm, D 12 mm 30 g



IP CONVERTER FOR 2-WIRE CONNECTIONS

The IP Converter for 2-Wire Connections enables the installation of modern high-speed data communication networks in buildings that do not have structured network connections in place. Using the IP Bridge Module, existing infrastructures can be used and existing Ethernet networks can be extended via 2-wire connections.

Technical specifications: External power supply on the transmitter end via power adapter (48 V DC, 65 W); A transmitter can control up to four receivers and provide Power over Ethernet (IEEE 802.3at) for connected devices; the unit supports transfer rates of up to 93Mbit/s and cable lengths of up to 2,000m; temperature range: -40°C to +70°C; Plug-and-Play capable – no manual configuration necessary.

Accessories: Top-hat rail Mounting Kit ET 901-HSH35

IP BRIDGE

IoIP

IP Converter Box for 2-wire connections, with metal casing.

Typical applications: buildings with obsolete networking infrastructures; facilities requiring extensive cable lengths; upgrading of 2-wire solutions; etc.

W 39 mm, H 26 mm, D 156 mm



Audio Induction Loop Amplifier



AUDIO INDUCTION LOOP AMPLIFIER – SERIES AFIL

Key features:

- IEC 60118-4 compliant design
- High efficiency, low thermal footprint
- Flexible integration into individual installation environments
- Same function range as MLC and AGC; designed for easy start-up and fault-free operation

Technical specifications: Input impedance 10 k Ω ; Frequency response 80 Hz – 8 kHz; max. loop voltage 6.5 V; loop resistance 0.1 Ω – 1,0 Ω effective resistance; MLC (Metal Loss Correction) 0 to -3dB/ octave; external power supply 15 – 26 V DC;

AFIL

Audio induction loop amplifier module with polycarbonate casing, for transmission of audio signals to hearing aids; induction loop not included.

W 159 mm, H 49 mm, D 87 mm 300 g



AFIL EB

Audio induction loop amplifier module without casing, for transmission of audio signals to hearing aids; induction loop not included.



Audio Induction Loop Extension Kit AFIL-USB

IEC 60118-4 compliant induction loop amplifier kit for transmitting Intercom audio signals to hearing aids; Sticker for the station front included; connects to a USB port on the Intercom station.

W 16 mm, H 200 mm, D 12 mm 140 g



ACCESSORIES FOR IP CONVERTERS & AUDIO INDUCTION LOOP AMPLIFIER

Mounting bracket for IP Converter

ET 901-HSH35 Mounting bracket for mounting the IP Converter box to a DIN-rail in a switch rack.



Power supply unit for IP Converter PA20W30V

20W high efficiency switched-mode power supply. Primary: 90–264 VAC; Secondary: 30V DC; 0.67 A

PA20W30V-EU Version for Europe

PA20W30V-CA Version for UK, USA, Australia



Switched-Mode Power Supply PA65W48V

65 W primary switched-mode power supply adapter with high efficiency output. Primary: 100 – 240 V AC; Secondary: 48 V DC; 0 °C to +40 °C; Colour: black. Power cords must be ordered separately.

W 53 mm, H 115 mm, D 38 mm 270 g



Power Cord

KAB-C13-EU Version for Europe

KAB-C13-UK Version for UK

KAB-C13-US Version for USA

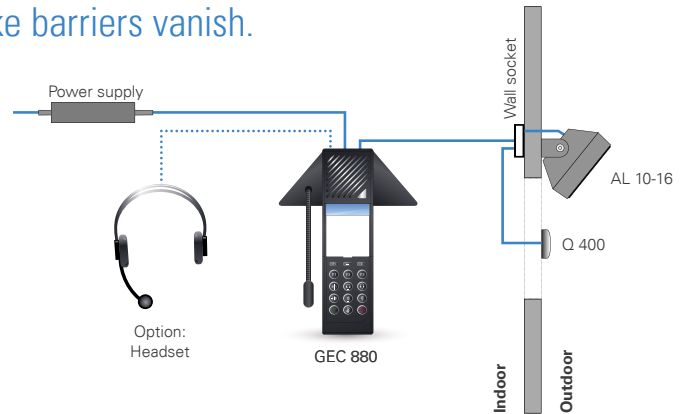
KAB-C13-AU Version for Australia

1,5 m



Counter intercom systems from Commend make barriers vanish.

The most modern communication systems are required wherever glass or walls form barriers between staff and the general public. Despite the existence of such barriers, natural and personal speech comprehension should be possible. Commend counter intercom systems satisfy these requirements completely. Thanks to the special speech processor control, naturally sounding speech and full comprehension are guaranteed under all conditions.



SERIES GEC 880

The digital counter intercom GEC 880 is equipped with powerful features. The system automatically adapts to the acoustic conditions on site and provides plentiful output power. An additional amplifier can be connected to enhance the output even further.

The modular construction of the system allows manifold counter intercom configurations. The base of these is an intercom terminal that is available in two versions (with and without gooseneck microphone).

Technical data: Connections: RJ 45 port for outdoor microphone, outdoor loudspeaker, call button/proximity switch and RJ 10 port for a headset/handset. Integrated amplifier with 10/15 W output power. One input for floating contact. Connection option for additional amplifiers, e.g. induction loop amplifiers.

GEC 881

15 kHz Digital

Digital desktop counter call station with plastic reinforced silicon keypad and built-in microphone with omnidirectional characteristic for unrestricted speech. Keypad with 15 keys, printed with easily understood non-verbal pictograms. Extent of supply: Wall mounting box for surface mounting, 3 m connection cable. Colour: Black. Further accessories must be ordered separately.

W 66 mm, H 55 mm, D 230 mm 280 g



GEC 882

15 kHz Digital

Digital desktop counter call station with plastic reinforced silicon keypad, anti-tilt device and cardioid type goose neck microphone. Keypad with 15 keys, printed with easily understood non-verbal pictograms. Extent of supply: Wall mounting box for surface mounting, 3 m connection cable. Colour: Black. Further accessories must be ordered separately.

W 179 mm, H 280 mm, D 230 mm / Length of goose neck: 422 mm 440 g





SERIES GEC 480

Cost effective counter intercom system with base functionality for simple applications with normal acoustic conditions and low to medium ambient noise. Volume for both sides can be individually set from the inside station. Optionally a proximity sensor or call button can be added on the customer side to activate the system.

Technical data: Power supply via included mains adapter; conversation modes Open (full duplex), Open PLUS (feedback reduce full duplex) or Simplex; built-in amplifier with 2 x 4 W at 4 Ω; gooseneck microphone (electret noise cancelling microphone) hypercardioid characteristic for max. 50 cm speaking distance; frequency range 200 Hz to 12 kHz. Power supply unit 100–240 V AC, 50–60 Hz, 400 mA included. Country-specific power supply available

GEC 480

12 kHz Analogue

Counter Intercom System as desk station with gooseneck microphone. Colour: Black. Microphone Q 400 for outside station and power supply 230 V included in extent of supply.

Power supply unit with 230 V AC, 6 VA/12 V AC, 500 mA.

W 179 mm, H 280 mm, D 230 mm / Length of gooseneck: 430 mm 1,185 g



GEC 481

12 kHz Analogue

Counter Intercom System as desk station without microphone for outside station. Colour: Black. Power supply 230 V included in extent of supply.

Power supply unit with 230 V resp. 120 V AC, 6 VA / 12 V AC, 500 mA.

GEC 481S with 230 V plug-in power adapter

GEC 481S U without plug-in power adapter

W 179 mm, H 280 mm, D 230 mm / Length of gooseneck: 430 mm 1,185 g

ACCESSORIES

AL 10-16

IP 44

Compact, high efficiency column speaker. Weatherproof polyamide housing for indoor and outdoor use. Can be rotated and tilted. Mounting bracket included.

Frequency range 220 to 16,000 Hz; 12/15 W output power; Sound pressure 94 dB/W/m (1 kHz); Max. sound pressure 110 dB; Impedance 16 Ω.

AL 10-16S Black

AL 10-16W White

W 100 mm, H 300 mm, D 98 mm (including brackets) 1,780 g



Power supply unit PA30W15V

30 W primary switched-mode power supply adapter with high-efficiency output. Power cords KAB-C13 must be ordered separately.

Primary: 90 – 264 V AC; Secondary: 15 V DC; –5°C to +40°C.

W 42 mm, H 106 mm, D 76 mm 200 g



Power Cord

KAB-C13-EU Version for Europe

KAB-C13-UK Version for UK

KAB-C13-US Version for USA

KAB-C13-AU Version for Australia

1,5 m



Microphones and Headsets

MIC 800 | MIC 473

Gooseneck microphone with hyper cardioid characteristic for building of special stations or control desks. With nut for mounting in build-in panels. Colour Black.

Sensitivity 4.2 mV/Pa; directional hyper cardioid characteristic to the front; cable length 0.28 m (shielded).

MIC 800SW Version with RJ10 connector

MIC 800SWJ Version with JST connector

MIC 473SW Version for installation via screw terminal

Length 400 mm / Bore diameter 10 mm



MIC Q400

Miniature, cardioid-type extension microphone. Housing made from impact-resistant and distortion-free plastic, can be bonded to a flat surface. Improved acoustics. Colour: Black.

Typical applications: As outside microphone for counter intercoms.

Sensitivity 15 mV/Pa; directional characteristic: cardioid; frequency range: 100 Hz – 8 kHz; cable length 2.8m (shielded)

MIC Q400 Version for installation via screw terminal

MIC Q400AJ Version with 3.5 mm jack

W 24 mm, H 43 mm, D 14 mm 58 g



MIC 480

Omnidirectional Electret microphone for installation in up to 10 mm thick glass or aluminium panels; weather proof (IP 53 rating). Colour: Black.

Typical applications: As Intercom terminals in parking gates, ticket vending machines, lift control panels or as external microphone for desktop counter intercom systems.

Sensitivity: 7.1 mV/Pa; hypercardioid characteristic; shielded cable.

MIC 480S-08 Cable length 0.8 m; version for installation via screw terminal

MIC 480S-12 Cable length 1.2 m; version for installation via screw terminal

MIC 480 Cable length 4 m; version for installation via screw terminal

MIC 480AJ Cable length 2 m; version with 3.5 mm jack

Diameter 14 mm x D 20 mm



MICROPHONE WIND GUARD

Microphones are subject to acoustic problems when exposed to windy environments or air streams caused by passing vehicles. A good wind guard breaks up the energy-rich air streams and air swirls, thus eliminating the energy that causes acoustic distortions. Commend Products are used primarily in outdoor areas. Emergency call stations on motorways, toll roads and railway stations are only a few of the main application environments. Here the devices must

withstand ambient conditions such as rain, frost, dust and other environmental influences. Commend has developed a special wind guard attachment made of plastics, which has a unique brush shape to ensure supreme speech intelligibility. Problems such as icing over or becoming encrusted with dust is a thing of the past, thanks to the windBRUSH®!

Microphone wind guard – windBRUSH®

Microphone wind guard in unique brush shape (patent pending) for ultimate speech intelligibility. Quick and easy to install on any MIC480.

WIND MIC480 Brushes black.

Diameter 25 mm, D 13 mm 20 g



Headset HS 1

Lightweight, wired headset for series GEC 880 and all compatible devices (EE 811A, Conductor, etc.). Connection cable KAB-HS1-RJ has to be ordered separately. Colour: Black.

📦 246 g

Illustration picture



KAB-HS1-RJ

Adapter cable QD to RJ10 for headset HS1 for connection to Intercom Terminals with headset socket and station series GEC 880. Cable length: 0.5 – 2.0m (Spiral cable).





SOFTWARE TERMINALS

THE CONVENIENT MOBILE SOLUTION







Software Terminals by Commend

Overview of software terminals

Commend Software Terminals come with support for the VoIP and SIP Intercom protocols and the most common operating systems:

- The **Mobile Client** for **Android**® turns your mobile phone or tablet into an Intercom station with worldwide connectivity.
- The **Mobile Client** for **iOS**® provides networking support for your iOS devices.
- The **Intercom Client** for **Windows**® transforms any Windows-based computer into an Intercom station.
- The **Intercom Client** for **Android**® provides ultimate flexibility for your tablet or mobile phone.

Mobile Client and Intercom Client – Overview

	 Mobile Client		 Intercom Client	
				
Supported Protocols	SIP	SIP	VoIP	VoIP
Window Layout	Telephone/Tablet	Telephone/Tablet	Telephone/Tablet	Modular single windows
Scalable	Full-screen	Full-screen	Full-screen	Custom scalable
Caller List	Yes	Yes	Yes	Yes
Background Operation	via iOS Message Centre	Yes	Yes	Yes, including num-block binding
Audio Quality	7 kHz HD Voice		7 kHz HD Voice (16 kHz eHD Voice when used with Commend hardware)	
Audio Codecs	G.722, G.711 a-law, G.711 u-law, and many more		G.722	Extended
Special Functions	SIP Early Media Support, server-based and server-less operation, HD video support		Direct volume adjustment; private mode	Direct volume adjustment; private mode
Connection	Status bar	Status bar	Display only	Status bar
Video Quality	HD Video H.264, MPEG-4, VP8		HD Video http/MJPEG	HD Video Extended



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Google Play and the Google Play logo are trademarks of Google Inc.

Turning mobile phones and tablets into a mobile Intercom station

Using the Mobile Client, you can transform mobile phones and tablet devices into Intercom stations with worldwide connectivity. The clear advantage of this solution is that you always have your mobile terminal at hand to answer calls without delay. Whatever you need, whether it's an easy-to-use terminal for handling calls from your outdoor Intercom stations, or a door/gate control function for receiving outdoor camera

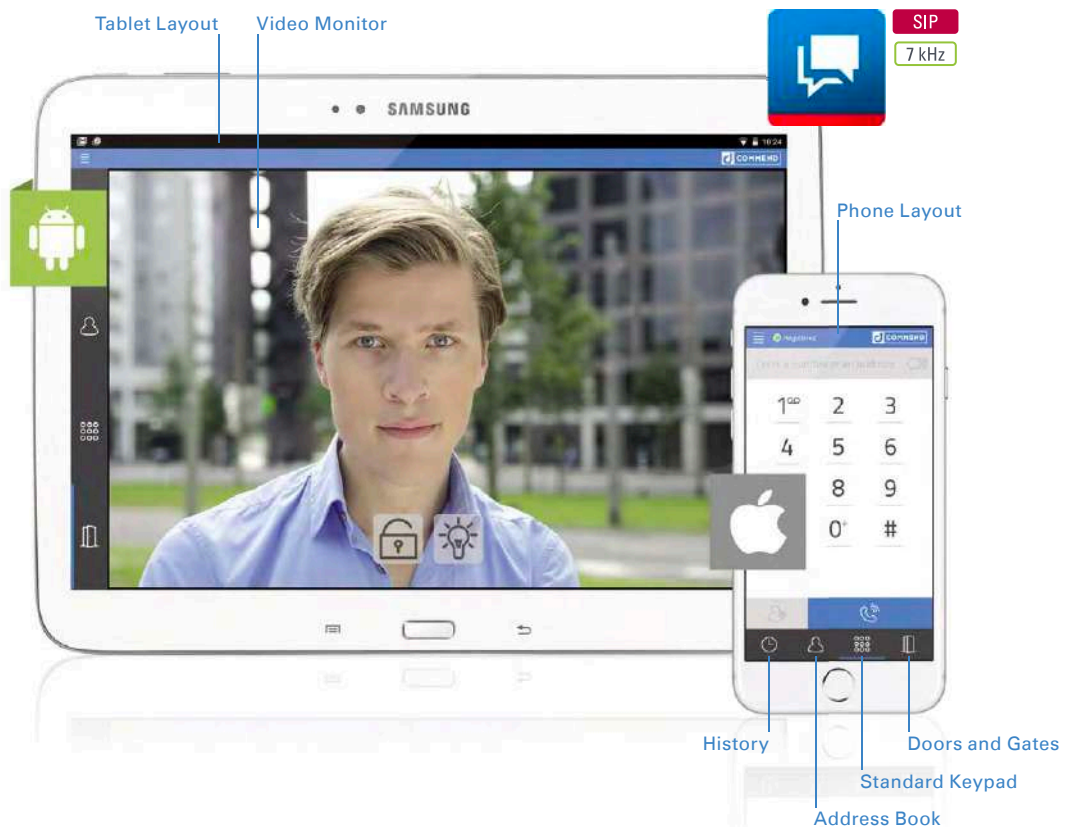
images, or maybe extended call options such as conference call support – the Commend Mobile Client is at your service to integrate your iOS and Android devices smoothly into the World of Commend. The Mobile Terminal integrates with various infrastructures, from simple home network applications with serverless peer-to-peer communication up to complex business networks with sophisticated server architectures.

Key Features

- HD Video support
- Secure communication TLS, DTLS
- Peer-to-Peer Audio and Video connections without the need for a Media Relay Server
- Support for SIP Early Media, SIP servers, and serverless communication
- Low bandwidth mode for audio calls over 2G networks

Sample applications

- Premium Home solutions
- Solutions for office and administrative buildings
- Mobile solutions for efficient parking management



Mobile door and gate access control

The intuitive user interface is optimised specifically for use with smartphones and tablets, putting controls for functions such as call lists, home actions and access control right at your fingertips. Some functions can be used during ongoing calls, e.g., turning on the lights in the reception area or unlocking doors. Early Media technology provides additional user convenience with the ability to view the video image of a call connection before accepting the call.

Mobile Client – available in the App Store and Play Store

You can download the Commend Mobile Client for mobile phones or tablets free of charge from the Apple App Store and the Google Play Store. Once you have completed the quick and easy SIP account setup wizard, your app is ready to receive calls. The premium add-on feature for Door and Access Control is available as an in-app purchase. It provides the added ability to view live video streams (e.g., front door CCTV video) from any location. What is more, you can switch on building lights or unlock doors remotely without the need for an active call connection.

Custom tailored Virtual Intercom Stations for ultimate mobility, flexibility and convenience

Use your Commend Intercom stations to your maximum advantage: With proven hardware solutions for large-scale Control Desks, rough environments and any application requiring seamless hardware and software interaction to meet your requirements. Take advantage of the benefits of software-based Intercom Clients in all tasks that require flexibility and location independence.

Fully mobile and integrating seamlessly with existing equipment, they deliver reliable performance in a minimum of space and adjust easily to individual user needs. Ideally suited for call centres, embedded terminals, maintenance and office management, the Commend Software Intercom Clients enhance your scope of action while boosting system security.



Secure technology for optimum communication

Expand your freedom of movement – installing the software-based Intercom Client lets you use your notebook as a Commend Intercom station. This way, you are free to expand your existing Control Desks if you want to handle communication peaks or add an instant integrated Intercom solution to your machine control panel.

What is more, Commend's exceptionally high sound transmission quality also allows you to get the most from your other equipment. Combined with optional equipment such as a headset or gooseneck microphone, the Software Client solution makes for a perfect productive working environment.

Commend Software Intercom Clients are designed with ultimate fail-safety in mind. They work reliably on various different operating systems, which makes them easy to integrate into existing devices. Your company notebook? Your private mobile? A tablet device in the control room? Utilise existing hardware from within the Commend Software Intercom Client.

Enhancing performance, optimising costs

With the right combination of Commend hardware and Software Intercom Clients you can get the most from your resources while bringing mobility and a new level of service quality to your business.

Of course, the Software Intercom Client provides the same familiar appearance of its hardware counterpart – including numeric keypad, function keys and display. And of course you can also adjust its settings to your individual needs and wants.

You can browse conveniently through the subscriber directory, open gates at a simple click or tap, and even control building management equipment with perfect ease. When you have to leave the Control Desk, you can take all of its functions with you,

as the Software Intercom Clients speak Windows as fluently as Android. Your mobile Software Intercom Client installs easily on your existing computers, telephones and tablet devices to make the most of your equipment.



SOFTWARE INTERCOM CLIENT

Technical specifications: Connection to the Intercom Servers is via Intercom over IP (IoIP®). Each Software Intercom Client instance requires one IP port on an IP subscriber card (similar

to ET 901). The IP address and IP address must be specified during configuration. For Windows and Android.

ICCAA Audio Licence

7 kHz IoIP

Standard Intercom Client functions, including Audio functionality for up to 7kHz, depending on audio hardware used.

L-ICCAA1	Licence for 1 Client
L-ICCAA1-4	Licence for 4 Clients
L-ICCAA1-8	Licence for 8 Clients



ICCNA Non-Audio Licence

IoIP

Standard Intercom Client functions, without direct audio support Audio functionality only in combination with Commend Audio hardware (e.g., ET 908A, EE 811A, EE 900A, etc.).

L-ICCNA1	Licence for 1 Client
L-ICCNA1-4	Licence for 4 Clients
L-ICCNA1-8	Licence for 8 Clients



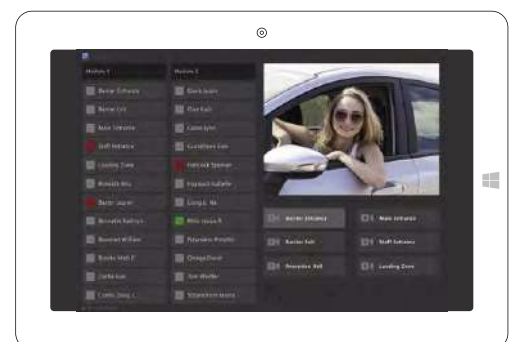
Example with Tile Layout

ICCCDA Direct Dialling Licence

IoIP

Licence for 12-button Direct Dialling module as Software Intercom Client expansion option. The supported maximum number of modules depends on the type of Software Intercom Client used.

L-ICCCDA	Licence for 1 Module (12 Direct dialling buttons)
L-ICCCDA 4	Licence for 4 Modules (4 x 12 direct dialling buttons)
L-ICCCDA 8	Licence for 8 Modules (8 x 12 direct dialling buttons)



Video Licence for Android ICCVA

IoIP

Video Licence as Software Intercom Client expansion option; enables the display of an IP Video image on the Software Intercom Client and provides access to the integrated camera from within the Intercom network. Bi-directional video, Surveillance Mode, etc.

L-ICCVA	Licence for 1 Client
L-ICCVA-4	Licence for 4 Clients
L-ICCVA-8	Licence for 8 Clients





SOFTWARE INTERCOM CLIENT SDK

Add Commend Intercom power to your Windows and Linux applications. The Software Development Kits for Windows

and Linux allow Commend partners to implement powerful integrated Intercom applications quickly and easily.

Build your own Commend Intercom station

Machine operating terminals, automation controls, Control Desk solutions – enhance your equipment with user interfaces that are precision tailored to your requirements. With the Commend Intercom SDKs, integrating helpful Intercom functions into special applications is a breeze. This makes for a seamless user experience while saving valuable resources.

The Intercom SDKs offer a wide range of interfaces for controlling the Software Developer's Kit core. They come with a range of functions for perfect audio processing. In combination with the respective components they ensure superior audio quality even under extreme ambient conditions.



For illustration purposes only



For illustration purposes only

Typical applications

- Speech-only applications, e.g. for pay-on-foot machines or gate terminals
- Direct dialling buttons for activating outputs and display of inputs
- Intercom stations with one key

Key benefits

- Easy to integrate
- Individual design of graphical user interfaces (GUIs)
- Individually definable scope of user interfaces
- Optional integration into building management systems

ACCESSORIES

MIC Q400

Miniature, cardioid-type extension microphone. Housing made from impact-resistant and distortion-free plastic, can be bonded to a flat surface. Improved acoustics. Colour: Black.

Typical applications: As outside microphone for counter intercoms.

Sensitivity 15 mV/Pa; directional characteristic: cardioid; frequency range: 100 Hz – 8 kHz; cable length 2.8m (shielded)

MIC Q400 Version for installation via screw terminal

MIC Q400AJ Version with 3.5 mm jack

W 24 mm, H 13 mm, D 43 mm 58 g



MIC 480

Omnidirectional Electret microphone for installation in up to 10 mm thick glass or aluminium panels; weather proof (IP 53 rating). Colour: Black.

Typical applications: As Intercom terminals in parking gates, ticket vending machines, lift control panels or as external microphone for desktop counter intercom systems.

Sensitivity: 5.6 mV/Pa; hypercardioid characteristic; shielded cable.

MIC 480S-08 Cable length 0.8 m; version for installation via screw terminal

MIC 480S-12 Cable length 1.2 m; version for installation via screw terminal

MIC 480 Cable length 4 m; version for installation via screw terminal

MIC 480AJ Cable length 4 m; version with 3.5 mm jack

Diameter 14 mm x D 20 mm





UNIFIED PA

MORE POSSIBILITIES, ONE PLATFORM

Unified PA Solutions by Commend. Smart and holistic.

The Unified PA solution is an essential part of Commend's holistic solution approach. This approach provides unique opportunities for operators and efficiency for users in daily operations. For example, it allows any station to make announcements. At the same time, the uniform platform makes it possible to react immediately to announcements and even to respond via the loudspeakers as well as via the stations.

Our solutions are used in buildings, industrial facilities and in public infrastructures from transport to smart cities to ensure enhanced safety and efficiency.



Based on modern IP-networked technology

for ultimate flexibility and scalability



Compatible with other systems

to reduce cost of ownership and enable integrated overall solutions



Raises the bar of classical PA system functionality

by adding two-way audio features and programmable logic functions



Works with virtualized servers or even serverless

to provide even more cost competitive and specialized solutions



Ensures end-to-end system monitoring

as required for security and safety solutions



Power and energy efficiency at its best

due to fewer system components, de-central concepts and modern class-D technology



Smart IP Amplifiers for Unified PA

Series AF amplifiers come with a high power profile and versatile outputs. As a result, the devices are universally suitable even for complex PA and Intercom solutions. All models are well-suited for a wide range of applications due to their compact housing, efficient design and high performance. They are optimised for installation in 19" racks or decentralised on-site installation. This increases flexibility and reduces cabling costs as well as power and energy consumption. Besides, they are easy to network and provide a range of safety functions such as loudspeaker line monitoring and audio monitoring. This makes Commend PA solutions not only reliable but also highly efficient.

Last but not least, existing PA systems can be modernised step by step. Since Commend IP amplifiers can be used with VoIP and SIP, they can be easily and seamlessly integrated into Commend Intercom systems or VoIP/SIP-PBX systems. The devices also offer a unique level of upward compatibility, and new functions can be easily added via software download.



IP AMPLIFIER – SERIES AF

Key features:

- 20 to 500 watts of output power
- Available in IP (VoIP/SIP), digital and analogue versions
- 70 V/100 V audio output with loudspeaker line monitoring (excluding AF 20)
- Low impedance audio output; min. impedance: 4 Ω (Series AF 20 & AF 50)
- Class-D amplifier, optimised for high efficiency at low operating temperatures
- Short circuit and overload protected
- Suitable for decentralised on-site use
- Rugged polycarbonate and metal housings
- Line monitoring between amplifier and Intercom Server
- Can be used as an interface to PA systems

Technical Data: Audio input adapted to the output of Intercom Server subscribers or standard audio components (input impedance: 10 Ω; input signal sensitivity 390 mV – 3 V); level adjustable audio output; status LEDs for status and error indication; different main and backup power supply options, including 100-240V AC, 24V DC and PoE // Digital and IP based amplifiers: Line output for combination with standard audio components; microphone input; 2 floating inputs and 1 relay output; 0–10 V control input; support for connection of expansion boards; graphic equaliser for sound adjustment; integrated switch (IP version); optional operation via PoE or power supply via Intercom Server at reduced output.

AF 500

16 kHz VoIP SIP

500 Watt IP amplifier with metal housing, 1U.

AF 500H IP – Communication via VoIP or SIP (7 kHz HD Voice for communication via SIP)

W 401 mm, H 44 mm, D 251 mm 3,200 g



AF 250

16 kHz VoIP SIP

250 Watt IP amplifier with metal housing, 1U.

AF 250H IP – Communication via VoIP or SIP (7 kHz HD Voice for communication via SIP)

W 401 mm, H 44 mm, D 251 mm 3,200 g



AF 125

16 kHz VoIP SIP

125 Watt IP amplifier with metal housing, 1U.

AF 125H IP – Communication via VoIP or SIP (7 kHz HD Voice for communication via SIP)

W 401 mm, H 44 mm, D 251 mm 3,200 g



AF 50

16 kHz loIP SIP Digital Analogue

50 Watt amplifier with polycarbonate housing, 1U

AF 50H IP – Communication via loIP or SIP (7 kHz HD Voice for communication via SIP)

AF 50D Digital 2-wire

AF 50A Analogue 4-wire

W 201 mm, H 44 mm, D 260 mm 1,600 g



AF 20

16 kHz loIP SIP Digital Analogue

20 Watt amplifier with audio interface and polycarbonate housing.

AF 20H IP – Communication via loIP or SIP (7 kHz HD Voice for communication via SIP)

AF 20D Digital 2-wire

AF 20A Analogue 4-wire

W 159 mm, H 49 mm, D 87 mm 240 g



AF 20A EB

16 kHz Analogue

20-Watt amplifier add-in module, without housing (PCB-only); Analogue version; suitable e.g. for integration into Intercom terminals requiring extra volume capacity.

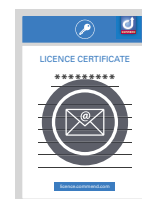
AF 20A EB Analogue 4-wire

W 130 mm, H 82 mm, D 16 mm 67 g



Licence for loudspeaker line monitoring L-AF-LM

License to activate loudspeaker line monitoring for IP and digital amplifiers with 70V/100V audio output.



Smart IP Loudspeakers for Unified PA

The wide range of innovative functions that powers the network-compatible Commend IP loudspeakers sets them apart from any classic Public Address solution. The integrated microphone, for example, supports new audio features such as IVC (Intelligent Volume Control) for the automatic adjustment of the volume setting to ambient noise, even during message playback. This ensures a high level of acoustic intelligibility, even at extreme, changeable background noise. Additional benefits include the duplex and call-back functions, as well as the "Audio Monitoring" feature, which allows for ambient acoustic surveillance and automatic triggering of actions such as voice announcements or emergency calls. The different product versions enable flexible use from rough outdoor areas to protected indoor areas.

Since IP-based loudspeakers by Commend can be used with VoIP and SIP, they integrate easily and seamlessly into Commend Intercom or VoIP/SIP-PBX systems. Another feature distinguishing the loudspeakers from classic Public Address systems is their upward compatibility. This way, a new functions can easily be added via a simple software download.



IP LOUDSPEAKER – SERIES AFLS

Key features:

- Network loudspeaker individually addressable and configurable
- Microphone for duplex and call-back functionality
- OpenDuplex® and IVC for natural, hands-free communication at high volume levels
- 16 kHz eHD Voice speech quality (7 kHz HD Voice when using SIP connections)
- Continuous line and function self-checking
- Easy adding of new functions via software update
- Different designs for indoor, outdoor and industrial applications
- No need for central amplifiers – ideal for small-sized and remote PA zones

Technical specifications: Power supply via PoE (IEEE 802.3af); nominal load 10 W; nominal impedance 4 Ω; 10 W Class "D" final amplifier; 2 inputs for floating contacts and 2 relay outputs.

IP Horn Loudspeaker

16 kHz IP 66 IoIP SIP

IP horn loudspeaker, designed specifically for Public Address in rough, industrial conditions (e. g., industrial sites, railway stations, etc.); Built-in electret microphone with automatic volume adjustment to ambient noise (IVC) and other functions; Max. sound pressure: 118 dB; Light Grey.

AFLS 10H HG IP – Communication via IoIP or SIP (7 kHz HD Voice for Communication via SIP);

W 180 mm, H 120 mm, D 230 mm 1,800 g



IP Projector Loudspeaker

16 kHz IP 54 IoIP SIP

IP projector loudspeaker, designed specifically for Public Address in buildings and halls (e. g., parking garages, exhibition halls, indoor event venues, etc.); Built-in electret microphone with automatic volume adjustment to ambient noise (IVC) and other functions; Max. sound pressure: 101 dB.

AFLS 10H PW IP – Communication via IoIP or SIP (7 kHz HD Voice for Communication via SIP);

Diameter 145 mm, D 210 mm 1,850 g



IP Ceiling Loudspeaker

16 kHz IP 54 IoIP SIP

IP ceiling loudspeaker, designed specifically for installation in ceilings and buildings (e. g., schools, conference rooms, hotels, etc.); 1 Microphone port; Max. sound pressure: 105 dB.

AFLS 10H CW IP – Communication via IoIP or SIP (7 kHz HD Voice for Communication via SIP);

Diameter 167 mm, D 112 mm 850 g



Accessories

DIN rail mounting kit ET 901-HSH35

DIN rail mounting kit for AF 20 amplifiers.



Wallmount and desktop mounting kit PF-WM

Wallmount and desktop mounting kit for AF 50, AF 125, AF 250 and AF 500 amplifiers.



Rack mounting kit PF-RM-1HE

19" rack mounting kit (1U) for one or two amplifier AF 50 side-by-side or for rack mounting one AF 125, AF 250 and AF 500 amplifier.



Switched-Mode Power Supply PA60W24V

60 W primary switched-mode power supply adapter with high efficiency output. Primary: 100 – 240 V AC; Secondary: 24 V DC; 0 °C to +40 °C; Colour: black. Power cords must be ordered separately.

W 61 mm, H 157 mm, D 43 mm 410 g



Power Cord

KAB-C13-EU Version for Europe

KAB-C13-UK Version for UK

KAB-C13-US Version for USA

KAB-C13-AU Version for Australia

1,5 m





INTERCOM CONTROL SYSTEMS

Control Desk Management STUDIO

STUDIO by Commend – visualises, controls and automates

Extreme situations such as car accidents or technical faults are just as much part of the job description of STUDIO as 'normal' communication within office applications. STUDIO always provides an instant overview of the system and enables quick reaction in emergencies. All control desk functions of the Intercom Server are displayed on one or several monitors. Interactive icons (on-screen symbols) represent calls and error or alarm messages; they change colour depending on the required level of attention. Reaction plans, help texts, logging details and much more can be displayed

in additional on-screen windows. Individually definable status windows provide a quick, general overview of the STUDIO system, showing the operator all important information at a glance. No matter whether it is manual or automated control, STUDIO offers the possibility of integrating a wide range of outputs of the Intercom world (barriers, doors, heaters, lighting, etc.) and third party devices into the STUDIO project visualisation for easy viewing and control.

All information at a glance – WHAT, WHEN, WHERE, HOW

To enable quick assistance in case of an emergency, the following details should be provided: What has happened? Where has it happened? When did it happen? How can one help? STUDIO makes the source of all this information conveniently accessible through a uniform software. Plans with relocatable icons will support the comprehensive locating of an event. Based on pre-defined priority levels, the software switches automatically to the appropriate plan in case of critical event. This helps the operator to

stay focused on the most urgent events at all times. Crystal clear speech communication and directly integrated video support help the operator to evaluate situations quickly and correctly. On-screen windows indicating response measures and help texts support the operator in making the correct decisions. ComREPORT logs the when, what and where of each event, along with the actions and decisions taken by the operator (i.e. the how).

The daily challenges at the control desk



Basic Features

- Automatic switching between plans, flashing on-screen items, zooming, notification sounds and the display of overviews in status windows help operators to focus their attention on important events.
- Various visualisation and alarm options.
- E-mail notification in case of system events.
- Multi-monitor support ensures more clarity and a better overview, with options for saving individual layout profiles and free positioning of plan overviews, status windows, actions, etc.
- Subscriber lists for direct call dialling/ending can be loaded as part of the facility configuration profile or imported from Excel or CSV files.
- State-of-the-art client-server architecture.
- Flexible, scalable licensing model to suit individual requirements.

Planset

- Individual user privileges define the ability to access/view plans and icons.
- Depending on their privileges, users can access only specific plansets.
- Plans are organised into plan/map hierarchies (countries, cities, car parks, etc.). These hierarchies can each be assigned several plans (e.g., car park levels).
- Controlled access to specific plans and all sub-plans, or only to specific individual plans.

User Privileges

- Users can be divided into individual roles, users and user groups.
- Access to plansets, permissions and groups based on user privileges.
- The user language can be set for each user individually.

Video integration

- Main monitor, preview monitors and surveillance monitors (video scanning function).
- Automatic video display on preview monitor for incoming calls.
- Automatic additional video display on master monitor during call.
- Integration of various common Video-over-IP solutions (e.g. Axis, Bosch, Mobotix, etc.).



STUDIO MODULES

STUDIO is a powerful family of software products for a professional control desk management. Challenges in control desk management such as solving complex situations and time critical reactions require the visualisation of the Intercom system to fulfil an essential need: providing natural communication in HD audio quality.

The STUDIO family offers modules and products which make it easy and convenient to stay informed and in charge.



ComWIN



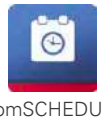
ComVIDEO



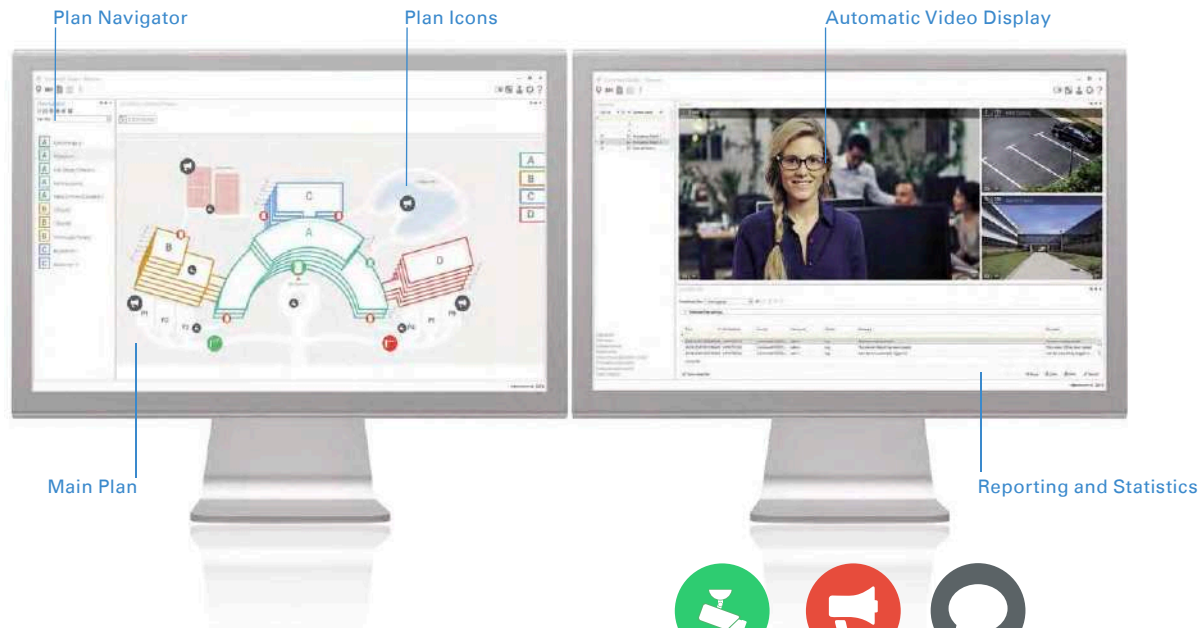
ComREPORT



ComREC

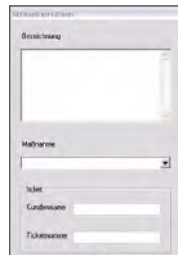


ComSCHEDULE



ComWIN Measures

- Flexible design of dialogues for input of remarks or illustrations of required actions, measures and information.
- Display of documents (HTML, PDF, etc.) or images as a measure.
- Individual illustration of workflows to support the operator.
- Detailed logging of operator input in ComREPORT.



ComWIN Icons

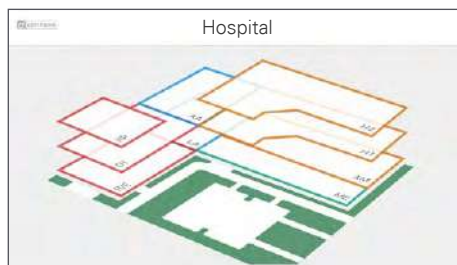
- Individually designable icons (PNG, JPEG, BMP, GIF or XAML format) for indicating any type of situation.
- Icon graphics can be configured and positioned on plans as needed.
- Situations and events can be assigned differently coloured icons to reflect different levels of priority and urgency.
- Sound signals and flashing on-screen elements direct attention to important issues and events.
- Optional integration of animated icons in GIF or XAML format.

ComWIN Plans

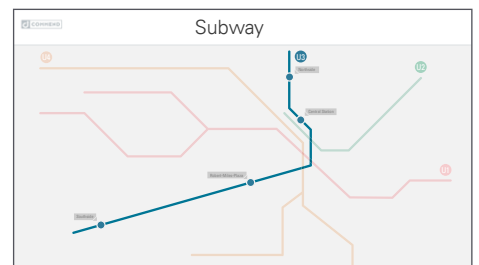
- Individually custom configurable plans (overview plans, vertical plans, construction plans, structural and area plans, etc.) in highest graphic resolution.
- ComWIN plans allow for displaying any type of buildings, elements, routes or information.
- The Plan Navigator or navigation icons can be used to switch back and forth between the individual plans of a ComWIN project.
- In case an emergency situation is detected, ComWIN automatically switches to the respective plan.



Parking



Hospital



Subway

ComWIN – Module for Visualisation

ComWIN is the visualisation module of the STUDIO family. Using a ComWIN base licence, one ComWIN Client can be run. Further extension of ComWIN is possible by purchasing additional licences for clients as well as licences to add more data points. The visualisation can be operated in network multi-user mode by adding Client licences.

E-WIN-BASE-SPD Licence: ComWIN base licence, including one visualisation client, and 100 data points

E-WIN-CPF Licence: ComWIN Client

E-WIN-DP5-SPD Licence: ComWIN Extension: 500 additional datapoints



ComWIN Webclient – Visualisation

The ComWIN Web Client is a simplified version of the ComWIN Native Client. No installation required, just a network connection and a browser.

- Fast implementation of easy-to-use control desks consisting of a desktop station, a monitor and a Web Client.
- Easy to configure and use, enables quick reaction to calls and quick return on investment.
- No training required.
- Full multi-client capability allows for operating and processing several Web Clients and a caller list simultaneously.
- Easy to update via the central server.
- Full access from the convenience of the usual work desk. STUDIO control desk settings can be applied as needed throughout the system.

The Web Client uses the licences of the ComWIN native client



ComVIDEO Module – Module for Video viewing

This application integrates live video streams from Video-over-IP sources into the security and communication solution. The video images are arranged on-screen in a clearly structured grid for easy viewing.

- Master monitor, preview monitors, surveillance monitors (video sequencing function).
- Automatic video display on preview monitor when receiving call requests.
- Automatic video display on master monitor during call
- Intuitive operation via drag-and-drop (e.g. switching to another view or camera)
- Integration of many common Video over IP solutions (e.g. Axis, Bosch, Mobotix, Samsung) see "Supported cameras and codecs for ComVIDEO" for details.

E-VID-CPF Licence: ComVIDEO Client

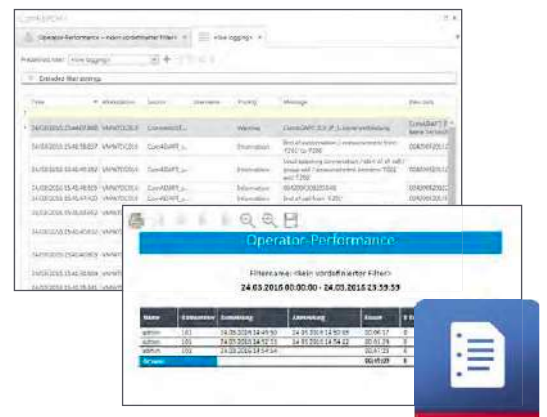


ComREPORT – Module for Reporting and Statistics

ComWIN Modul ComREPORT logs all system events and writes all system messages to an SQL database. This comprehensive system archive can be accessed and compiled into custom reports by means of configurable data filters.

- Consistent logging of all events and data on the Intercom System
- Statistical data analysis for Intercom systems, Emergency Call system and Call Centre systems
 - Number of calls: Temporal distribution over days/weeks/months/years
 - Call waiting time: This indicates the customer's waiting time before the call was answered
 - Operator performance: This registers the log-in times, calculated average call duration, number of calls processed, and call details
- Full Microsoft® SQL Server support – SQL Server 2012 to 2016.
- Report Designer for custom designing reports

E-RPT-CPF Licence: ComREPORT Client



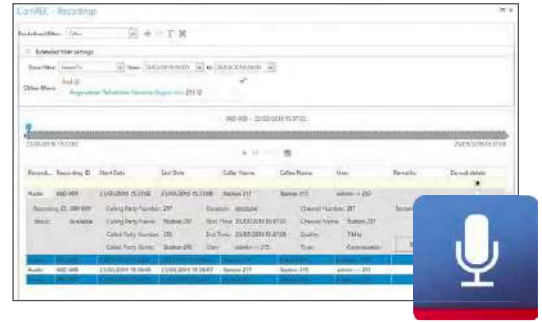
ComREC – Module for Audio Recording

ComREC is a software based recording solution which can handle up to 100 simultaneous recordings and stores them in a single database for further use. It is a Windows® based software and the standard protocol RTP is used.

- Record RTP audio streams from Intercom Servers and/or directly from supported IP Terminals
- Analogue, digital or radio (6T) subscribers can be recorded via the Intercom Server
- It is possible to record up to 100 simultaneous audio streams and save up to 10 million recordings; per IP-card it is possible to use up to five simultaneous clients
- Audio files are stored in the file system either on the local server or in the network, meta data (call information, timestamp, etc.) is stored in a SQL database (not included)
- Additional to client licences for every ComREC client, a licence for every recording channel on the Intercom Server is required.

E-REC-CPF Licence: ComREC Client

L-IP-REC1 Licence: RTP Recording Channel at the Intercom Server or Intercom Terminal; is needed for each recording channel

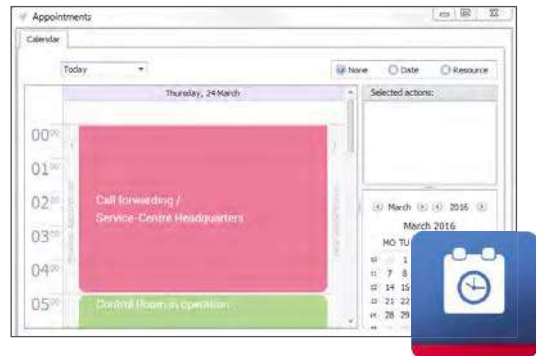


ComSCHEDULE – Module for Time-Scheduled Planning and Control

This application, which comes integrated in ComWIN, allows for running functions and procedures of the Intercom system on a definable time schedule. For example, the Scheduler can set ComWIN data points or run various actions in the form of workflow procedures. A wide range of individual solutions are supported, from automated call forwarding during the night shift to fixed-time test calls (eg. for lift emergency call stations) and controls for announcements. Administering scheduled events and series of events is easy, thanks to dialogue windows and views familiar from applications such as MS Outlook®. The application is integrated into the ComWIN_server service and can be used without a ComWIN Visualisation License.

- Scheduling and planning of Intercom functions
- Support for individual events or event series (easy wizard-based scheduling)

E-SCH-CPF Licence: ComSCHEDULE Client



STUDIO Backup-Server – Redundancy and reliability

STUDIO systems which require a high reliability can be designed redundantly by using the STUDIO backup server. STUDIO Clients automatically connect to the backup server when a connection error to the STUDIO server is detected. As soon as the connection is available again, the clients automatically connect back to the main server.

- Additional fallback level in case of error
- Automatic switchover and seamless operation

E-ST-BK-SPD Licence: STUDIO backup server including 100 data points

E-WIN-BKD5-SPD Licence: STUDIO backup server ComWIN extension: 500 data points

INTERFACES

Video Management Systems

E-VID-MST-SPD Licence: Integration of Milestone systems into ComVIDEO

E-VID-NUUO-SPD Licence: Integration of NUUO systems into ComVIDEO

E-VID-SAMS-SPD Licence: Integration of Samsung SRD Video Recorder into ComVIDEO

E-VID-SEE-SPD Licence: Integration of Seetec systems into ComVIDEO

E-VID-VDG-SPD Licence: Integration of VDG systems into ComVIDEO



TAPI

E-WIN-TAPI-SPD Licence: Integrating telephone systems via TAPI (Telephony Application Programming Interface) under STUDIO



Parking Management Systems

E-WIN-SKI-SPD Licence: Integration of Skidata systems into STUDIO

E-WIN-SBA-SPD Licence: Integration of Scheidt & Bachmann systems into STUDIO

E-WIN-DES-SPD Licence: Integration of Designa systems into STUDIO



Fire Alarm Systems

E-WIN-SHP-SPD Licence: Integration of Hektatron Fire Alarm Systems into STUDIO



Network and File Systems

E-WIN-SNMP-SPD Licence: Integration of SNMP into STUDIO

E-WIN-FIL-SPD Licence: Integration of file monitoring into STUDIO



OPC Client

E-WIN-OPC-SPD Licence: Integration of OPC into STUDIO



More interfaces available on request.

ComSDK enables the integration of third-party systems or databases – see under ComSDK for details.



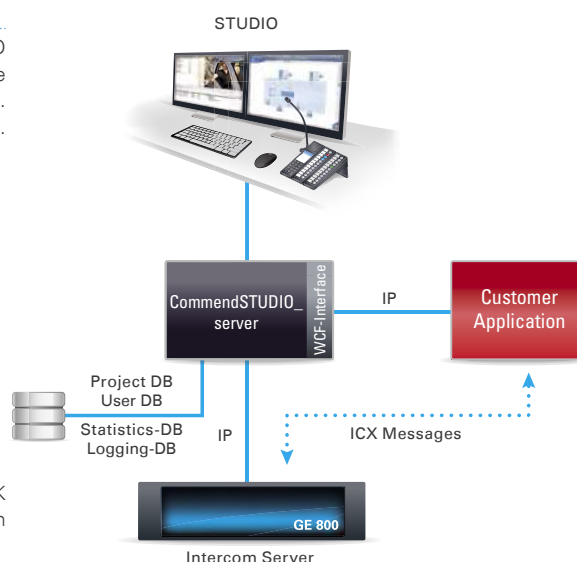
ComSDK – Tailored Control Station Solutions

The software interface on STUDIO_server supports individual solutions to tailor STUDIO operator workstations precisely to the customer's needs. As a result, it is possible to integrate third party systems or databases and to implement solutions without ComWIN visualisations. This means that ComSDK may also be used without a ComWIN Visualisation License.

- Individual allocation of reassurance messages to emergency call stations.
- Database registration of monitored persons and automated display of personal details during calls.
- Integration of accounting systems for car park call centres
- Detention cell telephony: Administration of telephone numbers that the detained person is allowed to call (e.g. lawyer), and automated evidential recording of calls.
- Sending of on-screen messages to displays of Intercom call stations, and management of message templates
- Automated announcements, generated with text-to-speech function

One license per CommandS_server may be activated; there is no limit on the number of SDK applications that may be implemented and run in parallel. The application package comes with a full developer's manual of the software interface.

E-SDK-SPF Licence: Integration of ComSDK into ComWIN



Control Desk System CONDUCTOR

Everything under control. Simplicity in concert with power.

Like the harmonious interplay between orchestral instruments, the reliable, well coordinated interplay of the components in a communication and security solution is absolutely essential. Using different hardware and software technologies requires central coordination and control – the essential star

quality of all Commend Control Desk solutions. This allows you to keep even the most complex of Intercom infrastructures and integrated external systems under easy, fast and reliable control from a central point.

Comprehensive Control Desk solutions by Commend.

Good conductors can get in tune with the audience, too. Thanks to its modular design, the CONDUCTOR can be fine-tuned in accordance with individual user requirements. As with all Commend systems, the CONDUCTOR's technology and design have been carefully developed with the users and

their environment in mind. Crystal clear 16 kHz eHD Voice speech quality and an extra-high volume capacity are just as essential to Commend's new, comprehensive Control Desk concept as full mobile system access.



Superior speech intelligibility

- 100 dB volume capacity – unique in the industry
- 16 kHz eHD Voice speech quality
- OpenDuplex® for hands-free talking in rooms with high ambient noise levels

Full Overview

- Various display versions with optimised user guidance
- Custom configurable button illumination colours and flashing rhythms to indicate operating status
- Acoustic notification via custom sounds

Security meets durability

- Software routines keep monitoring the device's functionality
- IP 50 rating
- High resistance against chemicals and physical impact
- Suitable for extreme ambient conditions at temperatures up to +70°C

Investment protection

- Upwards compatible
- High product life cycle combined with long-term availability

CCTV integration

- Display of video camera images on Intercom System – for identifying persons, detecting critical situations and assessing activities correctly as they happen
- Optional integration of recording systems

Scalable to any need

- Modular 'building blocks' type system
- Quick and easy to expand
- Fast and easy to install, either as desktop unit or fitted Control Desk console

User-friendliness included

- Intuitive, context-based control
- Large buttons and label areas
- Fast, targeted access to specific Intercom stations, automated announcements with pre-recorded messages, RF conference calls, door and gate controls
- Console unit can be tilted to adjust to ambient seating and viewing conditions



CONTROL DESK BASIC TERMINAL – SERIES CD 800P | CD 810P

Key features:

- Modular Control Desk Solution
- Control Desk Basic Terminal with TFT or LCD display
- Eight 3-colour LED illuminated direct dialling buttons
- Extension modules for up to 104 direct dialling buttons in total
- Illuminated standard keypad
- IP 50 rating
- Polycarbonate construction
- Expansion modules for even more functions

Technical data: Omnidirectional electret microphone for up to 7 m speaking distance; Integrated 2.5 W Class 'D' amplifier; two 8-ohm loudspeakers; Max. sound pressure 99 dB; Supports PoE and optional external power supply: 20 – 30 V DC; Direct dialling buttons and Touch Screen Module require a separate power supply; 2 inputs for floating contacts and two relay outputs 30 V / 1 A; Multi-functional LED (Colours: rot, green, blue);

CD 810P I

16 kHz IP 50 IoTP

Control Desk Basic Terminal with TFT Display for graphical menu navigation and display of IP-based video streams.

3.5" TFT display; resolution: 320 x 240 pixels; 65,000 colours.

W 262 mm, H 196 mm, D 45 mm 1,270 g



CD 800P I

16 kHz IP 50 IoTP

Control Desk Basic Terminal with LCD graphic display.

Illuminated LCD display with 128 x 64 pixels; white backlight.

W 262 mm, H 196 mm, D 45 mm 1,200 g



EXTENSION MODULES FOR SERIES CD

Thanks to its modular design, the Control desk adjusts perfectly to individual requirements. The extension modules are easy to install by simple connection to the Basic Terminal.

Direct Dialling Button Module CDDD 32P

IP 50

Up to 3 modules with 32 direct dialling buttons can be attached to a Basic Terminal.

The dialling buttons can be programmed as needed: direct dialling with call indication (conversation, call, emergency call), output functions, e.g., for switching lighting fixtures, triggering processes, opening doors and gates, displaying system status information such as door and gate status details.

32 direct dialling buttons with 3-coloured LEDs and four label areas; external 20 – 30 VDC power supply required for first Direct Dialling Button Module – this also powers any additional Direct Dialling Button Modules; recommended power adapter: PA30W24V.

W 262 mm, H 196 mm, D 45 mm 1,040 g



Gooseneck Microphone Module CDMI 50P HD

IP 50

Extension module with gooseneck microphone and headset connector port. Red LED ring for call indication. Cardioid electret microphone. Material: polycarbonate.

W 55 mm, H 196 mm, D 43 mm; gooseneck microphone length: 365 mm 570 g



Headset Module CDHD 50P

IP 50

Extension module with headset connector port. Material: polycarbonate.

W 55 mm, H 196 mm, D 43 mm 350 g



Handset Module CDHS 50P

IP 40

Handset with "Push to Talk" key. Material: polycarbonate.

W 55 mm, H 238.5 mm, D 74 mm 530 g



ACCESSORIES

Desktop Kit CDDK

Desktop Kit for Basic Terminal, Direct Dialling Button Module and Touch Screen Module. Tilting angle: 20° – 65°; Colour: black.

W 190 mm, H 80 mm, D 50 mm 560 g



Plug-in Power Adapter PA30W24V

30 W switched-mode power supply adapter with high-efficiency output.

Primary: 90 – 264 V AC; Secondary: 24 V DC.

PA30W24V-EU Version for Europe

PA30W24V-CA Version for UK, USA and Australia



Control Desk System DUETTO

One device to bring together different worlds. SIP telephony and Intercom in one device.

Compact but powerful, the new Control Desk DUETTO brings together highly developed functionality and superior flexibility. Designed as a space-saving master Intercom station for desktop use or wall-mounting, it combines VoIP and SIP to provide the best of both worlds. The DUETTO integrates

Control Desk solutions with building automation, video communication and video surveillance. As a result, it opens up a world of possibilities for visitor management with excellent video-enhanced communication, even in areas with limited space. Perfect communication via Intercom and telephone



Superior speech intelligibility

DUETTO comes with powerful acoustic capabilities in Commend's typical extra-high audio quality. Equipped with 20 kHz audio support and intelligent acoustic algorithms, the DUETTO sets the standard for excellent speech intelligibility, noise suppression and automatic voice focussing.

Modern video-enhanced Intercom station

Being able to see each other makes communicating information easier. With integrated bi-directional video, the DUETTO optimises the communication experience from the get-go. As a result, visitors feel welcome from the first moment of making contact.

DUETTO also provides high-quality surveillance video to help staff assess sensitive situations quickly and correctly. External video sources, such as weather or traffic cameras, can be integrated seamlessly as well.

Powerful Control Desk in a compact design

No longer restricted to the reception desk environment, modern Control Desks have already found their way into the office, where they offer the operating convenience of a regular desktop device. They can be networked with other systems to integrate seamlessly into the everyday working environment.

DUETTO not only controls communication, it also serves as a switching hub for lighting, shading, heating and multimedia devices. It manages emergency calls and call requests, provides status information and provides an overview of all communication lines.

Well integrated

The DUETTO Video Control Desk enables the integration of telephone and Intercom Control Desks with a compact user interface. Building automation systems for the control of lighting, shading, heating, multimedia etc. integrate just as easily.

As a Control Desk system, the DUETTO also allows for handling two calls in parallel. This way, no emergency call goes unanswered and visitors are not kept waiting at the gate during an ongoing conversation.

Intuitive operation with 7" touch display

The large-sized touch display offers excellent viewing qualities with a viewing angle of almost 180°. The display of multiple pending tasks provides an excellent overview. Easily recognisable interaction controls and symbols ensure intuitive, reliable operation throughout.

Future-proof system architecture

Used as a desktop station or mounted on a wall, the DUETTO adapts perfectly to any space requirements and acts as a convenient all-purpose hub for IP video, SIP and Commend Intercom lines.

Custom-tailored functionality

You decide what ideal user convenience should look like. The powerful DUETTO Screen Designer lets you define and adjust your own on-screen layouts. Using the web interface, you can use logic rules to set up your own dynamic user interface for the device.



COMPACT CONTROL DESK – SERIES EE 980

Key features:

- Compact Control Desk solution
- Large 7-inch IPS touch display
- Optionally available with built-in megapixel camera
- OpenDuplex® for natural hands-free communication with high volume capacity
- Crystal clear uHD Voice speech quality
- Enclosure made from robust high-grade polycarbonate

- Suitable for desktop use and wall mounting
- Easy to configure via Web Interface

Technical specifications: External power supply or via PoE (IEEE 802.3af); 3 USB 2.0 connections; WLAN ready; MicroSD slot for memory expansion; 2 inputs, active or passive, analogue or digital (configurable); 2 digital outputs; multi-functional LED.

EE 980

20 kHz IP 20 loIP SIP

Control Desk Terminal with IPS display for graphical menu navigation and display of IP video streams. Desktop and Wall-Mounting Kit not included.

7-inch IPS display, 800 x 480 pixel resolution, and IPS technology.

EE 980 IP – Communication via loIP or SIP
(16 kHz eHD Voice for Communication via loIP)

SIP-EE 980 IP – Communication via SIP

W 270 mm, H 138 mm, D 37 mm 998 g



EE 980 CM

20 kHz IP 20 loIP SIP

Control Desk terminal with integrated megapixel camera and IPS display for graphical menu navigation and display of IP video streams. Desktop and Wall-Mounting Kit not included.

7-inch IPS display, 800 x 480 pixel resolution, and IPS technology.

EE 980 CM IP – Communication via loIP or SIP
(16 kHz eHD Voice for Communication via loIP)

SIP-EE 980 CM IP – Communication via SIP

W 270 mm, H 138 mm, D 37 mm 998 g



ACCESSORIES

Handset

IP 20

Handset for EE 980 Control Desk Terminal; JST connector.

EE HS9 Black



USB Output Module EB1A

Relay output (make contact) for retrofitting into Intercom stations of the Indoor Series; connects to a USB port on the Intercom station; colour: black.



PoE Injector

PA15WPOE PoE Injector – Single Port 15,4 W PoE Adapter (including changeable plug attachments for Europe, the UK, USA and Australia)

ASKKAT5-3S Network cable, 3 m, black



Desktop Kit

Desktop Kit for EE 980 Control Desk Terminal; tilt angle: 35° – 70°.

EE DK9 Black



Wall-Mounting Frame

Wall-mounting frame for EE 980 Control Desk Terminal;

EE SH9 Silver



Digital Control Desk System EE 380A

EE 380A – Clear, Compact, Multi-functional.

The digital control desk system EE 380A is a new, compact intercom terminal concept, which perfectly suits the demands of small to medium sized central control workplaces. It provides good control and easy operation in situations where many calls are directed to one central point.

Up to 4 modules with 12 direct access buttons can be connected to a base station. The buttons can be assigned to various functions: direct dialling with call indication (conversation, call, emergency call); output functions, e.g. switching light circuits, starting processes, operating doors and gates etc.; indication of input messages, e.g. status of doors, gates and barriers.

The button modules are equipped with 3-colour LEDs, at which calls or

system statuses (for example) can be indicated clearly. Thanks to its newest DSP-technology, the base station offers OpenDuplex® with crystal clear speech quality and standard functions such as loudspeaker/microphone surveillance. Firmware is upgradable for future functionality.

Applications

- Control rooms
- Areas with high ambient noise levels



CONTROL DESK SYSTEM BASE STATIONS

Modular construction enables the system to be optimally configured to a variety of different control desk applications. The base of each control desk is an intercom terminal, available in 4 different versions (with or without gooseneck microphone and with or without an additional loudspeaker). This helps to find the right terminal for each working environment, whether in a quiet office or in a noisy, busy control room.

Technical data: 6-digit alphanumeric display (16-segment); Connection via RJ 11, socket for A/B, mini DIN socket for connection to EM-module, 4-way modular socket for headset, handset or earphones. Built-in Class "D" amplifier with 2.5 W (1.5 W power with built-in 8 ohm loudspeaker or 2.5 W with external 4 ohm loudspeaker). One input for floating contacts and one open collector output.

EE 380AA

16 kHz Digital

Basic terminal with cardioid gooseneck microphone, standard keypad with "T" and "X" keys and three function keys; for connection of up to four keypad modules EM 302.

EE 380AAS Black

W 179 mm, H 57 mm, D 230 mm / Length of gooseneck: 430 mm 740 g

EE 380ABEG

16 kHz Digital

Basic terminal with cardioid gooseneck microphone, active add-on loudspeaker, standard keypad with "T" and "X" keys and three function keys; for connection of up to four keypad modules EM 302EG. Special screws and adhesive bonding make these Intercom stations particularly durable.

Class "D" amplifier with 15 W speech signal; sound pressure: 82 dB/W/m (1 kHz); impedance: 8 ohms; magnetically shielded; 15 VDC external power adapter; plug-in power adapter PA20W15V is available separately – see Accessories.

EE 380ABEGS Black

W 205 mm, H 96 mm, D 271 mm / Length of gooseneck: 430 mm 1,340 g



EE 380AC

16 kHz Digital

Basic terminal with electret microphone, standard keypad with "T" and "X" keys and three function keys; for connection of up to four keypad modules EM 302. Also suitable for wall mounting with wall mount kit.

EE 380ACS Black

W 66 mm, H 55 mm, D 230 mm 440 g



EE 380ADEG

16 kHz Digital

Basic terminal with cardioid gooseneck microphone, active add-on loudspeaker, standard keypad with "T" and "X" keys and three function keys; for connection of up to four keypad modules EM 302EG. Special screws and adhesive bonding make these Intercom stations particularly durable.

Class "D" amplifier with 15 W speech signal; sound pressure: 82 dB/W/m (1 kHz); impedance: 8 ohms; magnetically shielded; 15 V DC external power adapter; plug-in power adapter PA20W15V is available separately – see Accessories.

EE 380ADEGS Black

W 205 mm, H 96 mm, D 271 mm 1,220 g



KEYPAD AND HANDSET MODULES

Up to four keypad modules can be connected to the basic terminals. This gives each control desk terminal its unique range of functionalities: direct dialling to and from Intercom

terminals, switching of outputs and display of system status details. The basic terminal and modules are interlinked via a bus system; connections are by way of Mini-DIN ports.

EM 302

Keypad modules with 12 keys (with 3-colour LEDs) for Basic Terminals EE 380AA and EE 380AC.

External power supply: 12 – 24 V AC / 15 VA; 15 – 35 V DC / 15 W; Plug-in power adapter not included – see Accessories.

EM 302S Black

W 66 mm, H 55 mm, D 230 mm 400 g



EM 302 EG

Keypad modules with 12 keys (with 3-colour LEDs) for Basic Terminals EE 380ABEG and EE 380ADEG.

Power supply via Basic Terminal EE380ABEG or EE380ADEG (15 V DC).

EM 302EGS Black

W 104 mm, H 80 mm, D 45 mm 440 g



Handset Module EE-HS3

Handset module with "Push to Talk" button. Material: polycarbonate.

Power is supplied via the base terminal.

EE-HS3 Black

W 66 mm, H 80 mm, D 230 mm 500 g



ACCESSORIES

Plug-in power adapters PA 20W

20 W primary switched-mode power supply adapter with high-efficiency output. Primary: 90 – 264 V AC; 0,67 A.

PA20W30V-EU Secondary: 30 V DC – Version for Europe (excl. UK)

PA20W30V-CA Secondary: 30 V DC – Version for UK, USA, Australia

PA20W15V Secondary: 15 V DC – Including changeable plug attachments for Europe, the UK, USA and Australia.





INTERCOM SERVER

Performance Characteristics



Audio

- 7 kHz audio bandwidth (HD Voice) or 16 kHz (eHD Voice)
- Conversations in OpenDuplex® (for DSP-stations)
- Audio Monitoring (with PRO 800)
- Speech recordings (with PRO 800)
- Up to 40 music channels can be received
- Tone signals for different operation states, tone generator to create different tone signals



General Intercom Features

- Up to 8-digit calling numbers
- All Calls and Group Calls (up to 90 programmable groups) with automatic answer
- Handset function
- Automatic disconnection of conversations after a set time, programmable per subscriber
- Inquiry/further connection
- Automatic re-call in instances when line is busy; acoustic and optical indication of waiting subscribers
- Privacy fix programmable or activated at Intercom Station
- Feed-in of waiting information for busy, privacy or further connection
- Priority call with automatic/manual disconnection of busy or private subscribers
- Send re-call request
- Direct dialling for all or individual subscribers, also programmable at the station
- Hierarchy function (programmable)
- Manifold functions for inputs and outputs (dialling simulation for inputs, attendant contacts)
- Various possibilities of call forwarding and call transfer (automatic, manual, transfer chain)
- Call History (list of time stamped calls)



Doors and Gates

- Door station with one or multiple door opening contacts
- Ability to listen to the door station whilst opening
- Automatic cancelling of the conversation after door opening after a programmable time
- Indication of door status in the display
- Ringing at one station or a group of stations
- Forwarding of Group ringing
- Ability to broadcast waiting information whilst ringing
- Transfer of door calls to telephone dialer with possibility of opening
- Access control – 1 to 4 digit codes
- Programmable number of re-attempts for code entry, security call to a control station in case of misuse



Video

- Control of video management systems (VMS) and video switchers
- Allocation of main monitors, observation monitors and preview monitors to a station
- Automatic camera switching for calls, call requests, input messages and ringing
- Time delay for camera disconnection after door opening
- Connection of cameras and definition of scanning sequences for certain monitors via button code



Conference, Radio-conference

- Conference calls with unlimited number of subscribers
- OpenDuplex® conference call (with PRO 800)
- Up to 40 different conferences with automatic connection of predefined subscribers
- Feed-in of up to 48 radio conferences, listen and speak
- Listening of up to 8 freely definable radio conferences simultaneously



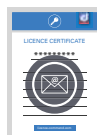
Alarming

- Silent alarm activation (e.g. employment offices)
- Alarm function with playback of message (e.g. evacuation alarm)
- Initiate alarms via button or input (e.g. foot switch)
- Up to 8 different alarms simultaneously
- Automatic change of priorities and alarm groups after programmable time
- Cancel alarm with code
- Audio alarm transmission with alphanumeric display (one programmable group)
- Reception of chime signal



Central Control Functions

- Indication of call requests from stations at a control desk station
- Indication of input messages at a control desk station
- Function monitoring of microphone, loudspeaker and connection lines of the stations
- Line monitoring of input contacts
- Parallel indication and operation of functions at several central control stations
- Manifold possibilities for call transfer (manual call transfer, call transfer after programmable time, day / night switching)
- Audio-Monitoring
- Dynamic call distribution (Call Centre)



Licensing (with PRO 800)

- Features can be unlocked via Licences
- Unlocking can be performed locally or via remote maintenance

Feature levels

The various applications and functions of the subscribers (Intercom Stations) require the appropriate feature levels (B, D, P). The higher levels provide the entire feature set of the next-lower level plus some additional functions. Feature levels can be unlocked with a licence key.

See the PRO Manual for a detailed list of functions.

B	Basic Intercom	Substations
D	Control Desk Intercom	Control Desk Intercom Stations, Video Control
P	Customised Intercom	Mixed licenses from the feature levels B & D

INTERCOM SERVER AS AN APP

Commend's Software Intercom Server for virtualised IT platforms



Up to 1,120 IP subscribers per virtual machine

112 IP subscribers per instance

The world's first 100% software-based Intercom Server VirtuoSIS by Commend is designed specifically to integrate seamlessly into the flexible, dynamic world of virtual IT environments.

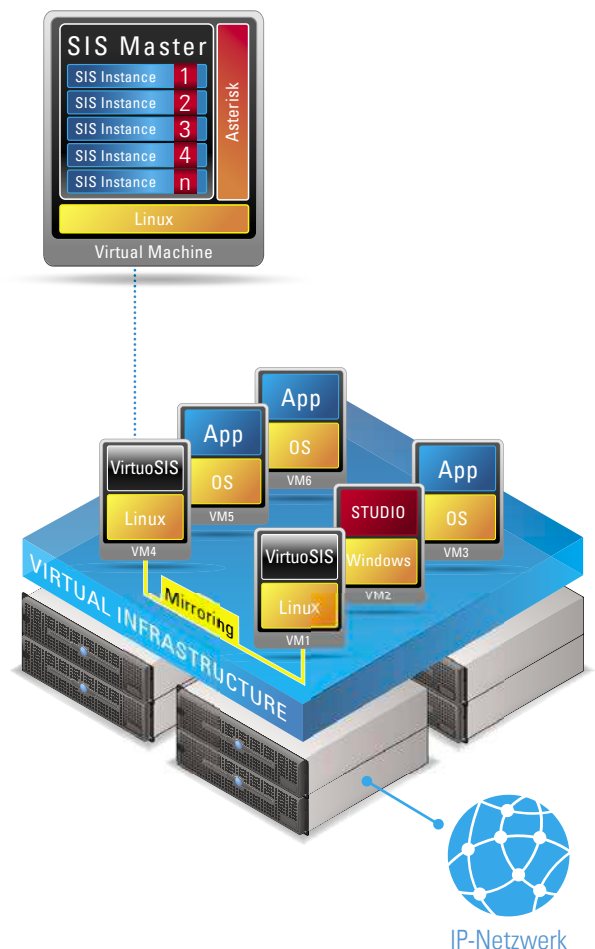
It is here that the new Software Intercom Server shows its true talents and great benefits: same functionality as its hardware-based cousins at remarkably low investment and operating costs. As a 'fellow inhabitant' of the virtual server landscape without the need for any separate hardware, the Software Intercom Server is child's play to maintain and requires no extra personnel.

Embedded into the virtual server infrastructures, the server can take advantage of the usual extra-high **backup and security mechanisms**. This automatically ensures the essential **high availability** that has become a hallmark of Commend solutions.

Ultimate Availability – Ultimate security (Fault Tolerance*)

Entire virtual environments can be stored and migrated reliably without interruptions. This eliminates the need for planned downtimes, enabling continued operation at levels up to a fully interruption-free switch-over. Full operation can be resumed quickly after unplanned interruptions.

* The Fault Tolerance (FT) option by VMWare provides continued availability in case of a server failure.





SOFTWARE INTERCOM SERVER – VIRTUOSIS

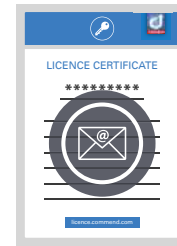
Key features:

- Software Intercom Server based on Linux (Debian 64 bit) for virtualised IT platforms
- Ready for use on virtualisation platforms vSphere by VMWare, and Hyper-V by Microsoft
- Ultimate Availability – Ultimate Security
- Flexible licensing options – expandable at a mouse click
- Intercom system for up to 25,000 subscribers
- Supports IP-based, digital and analogue Stations
- Supports Commend SIP products and 3rd-party SIP phones
- VoIP connectivity via SIP trunk to IP-PBX servers and service providers
- VoIP connectivity to PSTN via SIP gateways
- Supports all Intercom functions and performance levels
- Networkable with all IP Intercom Servers via LAN or WAN
- Networkable with the Intercom Servers S3, S6 and GE 800 via NET
- IP interfaces: ICX over IP, RTP, SIP over TLS and (S)RTP as well as IoIP®
- Convenient configuration via PC software CCT 800
- IPv4 for IoIP®
- IPv4 and IPv6 for SIP clients/trunk connections
- Supports Commend Solution Apps, e.g. ComPLC

Base Licences

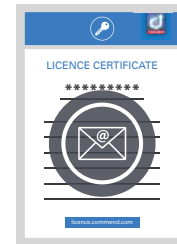
Per Virtuosis Master, one base licence is required.

L-SIS-PRO(v.X)	Virtuosis Base Professional (v.X) for up to 10 Virtuosis Instances
L-SIS32-PRO(v.X)	Virtuosis Base Starter licence (v.X) for 1 Virtuosis Instance with up to 32 subscribers



Upgrade Licences

L-SIS-PRO(v.X)U	Upgrade licence for Virtuosis Professional (v.X)
L-SIS32PRO(v.X)U	Upgrade licence for Virtuosis Starter (v.X)
L-SIS32-UPG	Upgrade licence from Virtuosis Starter to Virtuosis Professional
L-UG-1D	Upgrade licence for 1 subscriber to feature level D (for IoIP and SIP subscribers)
L-UG-8B	Upgrade licence for 8 subscribers from feature level A to feature level B (for SIP subscribers only)



Subscriber Licences

L-SIS-IP-2B	Licence for 2 subscribers, feature level B
L-SIS-IP-8B	Licence for 8 subscribers, feature level B
L-SIS-IP-32B	Licence for 32 subscribers, feature level B
L-SIS-IP-2D	Licence for 2 subscribers, feature level D
L-SIS-IP-8D	Licence for 8 subscribers, feature level D
L-SIS-SIP-8A	Licence for 8 SIP subscriber, feature level A
L-SIS-SIP-2B	Licence for 2 SIP subscribers, feature level B
L-SIS-SIP-8B	Licence for 8 SIP subscribers, feature level B
L-SIS-SIP-2D	Licence for 2 SIP subscribers, feature level D
L-SIS-SIP-8D	Licence for 8 SIP subscribers, feature level D

Network Licences

L-SIS-LAN-4	Licence for 4 LAN connections
L-SIS-LAN-8	Licence for 8 LAN connections
L-SIS-WAN-8	Licence for 8 WAN connections
L-SIS-MI	Licence for more than 2 network interfaces

SIP-Trunk Licences

L-SIS-SIPT8B	Licence for SIP trunk, 8 channels, feature level B
L-SIS-SIPT1D	Licence for SIP trunk, 1 channel, feature level D
L-SIS-SIPT8D	Licence for SIP trunk, 8 channels, feature level D

Upgrade Subscriptions

E-SIS-USUB1	Upgrade Subscription for Virtuosis - 1 year contract, 15% of the licence price of the System per year
E-SIS-USUB3	Upgrade Subscription for Virtuosis - 3 year contract, 12% of the licence price of the System per year
E-SIS-USUB5	Upgrade Subscription for Virtuosis - 5 year contract, 10% of the licence price of the System per year

Interface Licence

L-SIS-ICX	Single licence for ICX interface
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In addition, various platform independent licences are available (e.g. Intercom Client, Mobile Client, STUDIO and ComPLC).

CONNECTED WITH THE FUTURE

Commend's Intercom Server S6 and S3: The ultimate Intercom Appliance

S6 → ultimate Intercom Appliance
→ up to 448 Subscribers per Server
→ 19" Technology (1U)

S3 → compact Intercom Appliance
→ up to 112 Subscribers per Server
→ optimised for wall-mounting

- 16kHz eHD Voice
- VirtuoSIS on board
- VoIP and SIP
- Easy to expand
- Backwards compatible

Designed as a powerful **all-in-one Intercom Appliance**, the new **S6 and S3 Server Series** now brings to regular server rooms what used to be limited to specialised IT environments: the full spectrum of powerful **VirtuoSIS technology**, and more – in the form of a **compact all-in-one** hardware and software **package**.

Seriously scalable

A single **S6** Server can host up to **448 Subscribers**, a **compact S3** Server at least up to **112 Subscribers** – the exact number and features for your system are up to you, thanks to **easily extensible software licenses**. Need more Intercom stations, new functions or the latest software? Forget costly system extensions – a few mouse clicks is all you need to upgrade your System to your liking. This way, you'll have your newly enhanced system up and running in no time.

Software with all the right connections

Would you like to upgrade a software-based Intercom server but don't have the proper infrastructures? No problem. The S6 and S3 comes fully equipped and is driven by powerful software that brings together all the benefits of Commend VirtuoSIS technology: **high-level fail safety, crystal clear voice and video communication, easy maintenance/upgrading, and low costs**.

Life-Enhancing "Evergreen" Technology

Although the S6 and S3 are Commend's most innovative server products to date, they still conform to our hallmark "Evergreen" policy to provide **full compatibility with previous system generations**. This is a big plus when it comes to step-by-step upgrading of existing systems, as it allows the S6 to form a powerful, yet flexible link between previous-generation devices and future communication and security technologies.



INTERCOM SERVER – S6

Intercom Server S6 is a mono-socket rack server that is powered by Commend's proven VirtuoSIS Intercom Server software (VirtuoSIS Starter Licence). Optimised for rack installation, it's setting new server room standards with its industry-leading performance and energy efficiency. The S6 ensures uninterrupted operation and system availability.

Applications:

- Building Communication – Communication solutions for parking operators

Key features:

- Ultimate availability and security
- Optimised for rack installation (1U, min. depth 800 mm)
- The communication solution integrates smoothly with existing IT infrastructures
- Physical separation of IT and communication server (unlike virtual Intercom solution)
- Compact all-in-one package including powerful hardware and pre-installed VirtuoSIS Intercom Server software
- Provides full range of VirtuoSIS functions
- Flexible licensing scheme for VirtuoSIS Intercom Server software
- Extremely low operating costs thanks to high energy efficiency

S6

16 kHz 7 kHz IoT SIP

Intercom Server S6 Optimised for rack installation; Intercom Server Software VirtuoSIS pre-installed (incl. VirtuoSIS Starter Licence L-SIS32-PRO, Rack mounting kit).

Maximum number of subscribers

IP / SIP up to 448 Subscribers / Server

IP interfaces for programming, remote maintenance and operation

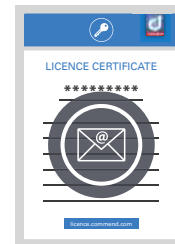
S6 Server without power cord (Country-specific power cords C13 see Accessories)

W 483 mm, H 43 mm, D 572 mm (19", 1U) 16.5 kg



Software Licenses and available Upgrade Levels

See Software Intercom Server – VirtuoSIS





INTERCOM SERVER – S3

As an all-around Intercom Server, the S3 is designed for industrial applications and comes pre-installed with Commend's proven VirtuoSIS Intercom Server software (VirtuoSIS Professional licence). Optimised for wall-mounting, it combines high performance with low space requirements. The S3 ensures uninterrupted operation and is designed to satisfy the most demanding security and communication requirements.

Applications:

- Small and medium sized Communication Solutions – Networked Server Landscapes

Key features:

- Ultimate availability and security
- Optimised for wall-mounting (optional rack-mount kit available)
- The communication solution integrates smoothly with existing IT infrastructures
- Physical separation of IT and communication server (unlike virtual Intercom solution)
- Compact all-in-one package including powerful hardware and pre-installed VirtuoSIS Intercom Server software
- Provides full range of VirtuoSIS functions
- Flexible licensing scheme for VirtuoSIS Intercom Server software
- Extremely low operating costs thanks to high energy efficiency

S3

16 kHz 7 kHz VoIP SIP

Intercom Server S3 optimised for wall-mounting; Intercom Server Software VirtuoSIS pre-installed (incl. VirtuoSIS Professional Licence).

Maximum number of subscribers

IP / SIP up to 112 Subscribers / Server

IP interfaces for programming, remote maintenance and operation

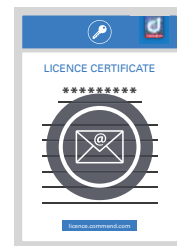
S3 Server with wallmount kit; without power cord (Country-specific power cords C7 see Accessories)

W 250 mm, H 191 mm, D 52 mm 2.0 kg



Software Licenses and available Upgrade Levels

See Software Intercom Server – VirtuoSIS



Rack mounting kit RM-S3-2RU

19" Rack mounting kit (2U) for an Intercom Server S3.

W 560 mm, H 140 mm, D 270 mm 1.8 kg



Intercom Server – GE 800

XXL-Intercom Solutions
896 IP-Subscribers per Housing
19" Technology

100% IP

eHD Voice Audio Experience

14,280 Servers in one Network

Intercom Server – GE 300

Compact Intercom Solutions
80 IP-Subscribers
Design Housing for Wall Mounting

Green IT Power Management

Backwards Compatibility

99.998% Availability

100% DIGITAL, 100% IP

The IP Intercom Server GE 800 and GE 300 set new standards. With the IP and digital bus concept and the huge power reserves of the DSP-processors (400 MIPS), they are prepared for the future.

100% Flexible, 100% Compatible

The IP Intercom Servers flexibly adapt to all requirements and are compatible with all previous system generations. All IP, digital and analogue stations of Comrend can be connected to the IP Intercom Servers GE 800 and GE 300.

Simple Networking

IP-technology makes it possible. Networking of IP Intercom Servers within a rack via the built-in switch as well as cross border networking of locations is easier than ever before. The system is scalable as required and grows with the requirements of the operator and users.

16 kHz Audio Experience

Enhanced HD Voice transmits voice communication, emergency calls and music with previously (literally) unheard-of clarity. At the same time the new IP Intercom Servers assume the tasks of PA-servers and allow the consolidation of PA and Intercom onto a single platform.

Green IT

The power concept of the Intercom Server according to "Green IT" means high degree of efficiency with an optimal energy balance.

Integrated speech storage

The Subscriber Cards all have built-in speech storage. This allows storing of individual messages (waiting information, info or alarm messages) which can be played back across the entire system, flexibly and at various times.

Integrated speech recording

As soon as a certain volume level is exceeded, the Audio Monitoring feature automatically initiates a call – e.g.: when somebody screams for help in a lift. Via the integrated speech recording a certain time frame before call initiation is recorded and can be played back, therefore the reason for call initiation can be determined and the required measures can be initiated.

Configuration and Remote Maintenance via IP

Configuration and maintenance of the Intercom system are a simple task within the own data network as well as over the internet (password protected). Even updates of the operating system via IP become a reality as well as the unlocking of required functions.

Licensing of Features

If additional features or subscribers are required a Licence key is enough to activate them immediately. No hardware is needed and activation can be carried out locally or via remote maintenance over IP.



SERVER

IP Intercom Server in 19" Technology for up to 25,000 subscribers in a local network. Allows connection of IP, 2-wire, 4-wire stations. Housed in an elegant industrial design with 3 rack units for mounting in 19" racks. Integrated functions for door and gate control, alarm, video integration,

control desk, etc. The manifold networking concepts allow security and communication systems with up to 14,280 networked Intercom Servers. Up to 30,000 subscribers can communicate with each other within these networks. It is also possible to forward calls to the public telephone network

GE 800

16 kHz 7 kHz

Rack housing in 19" technology with 14 free slots for cards in Euro format. Fix slots for the included G8-GEP processor card, G8-NET networking card and G8-GEN power supply card.

Maximum number of subscribers

IP	896	Subscribers per housing
Digital 2-Wire	56	Subscribers per housing
Analogue 4-Wire	56	Subscribers per housing

One AF-input (for music or alarm), two inputs for floating contacts, two relay outputs, RS232 and IP-interface for (remote) programming or maintenance.

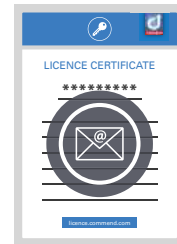
GE 800	Server without transformer
GE 800AU	Server, complete with Transformer power supply for Australia
GE 800EU	Server, complete with Transformer power supply for Europe
GE 800UK	Server, complete with Transformer power supply for UK
GE 800UL	Server with UL-Certification without power supply

W 483 mm, H 133 mm, D 229 mm (19", 3U) 5,800 g



Server Licences GE 800

L8-PRO6U	Upgrade to PRO 800 Version 6.x (existing installations)
L8-ICX	Licence for 1 ICX Interface
L8-NETLAN4	Networking Licence G8-NET with 4 additional LAN-connections
L8-NETLAN8	Networking Licence G8-NET upgrade to 8 LAN-Connections
L8-NETWAN4	Networking Licence G8-NET with 4 additional WAN-Connections
L8-NETWAN8	Networking Licence G8-NET upgrade to 8 WAN-Connections



PLUG-IN SERVER G8-IP-32

Key features:

- Connection of up to 64 IP subscribers per Plug-In Server
- Up to 14 Plug-In Servers per IP Intercom Server GE 800 for connection of a maximum total of 896 fully functional IP subscribers
- Video support and keyboard functionality for all 896 subscribers
- 16 kHz eHD Voice speech quality
- Up to 6,796 inputs and outputs per GE 800
- Plug-In Servers run autarkically (i.e. self-sufficiently)

- Enhanced fail safety and reduced Single Points of Failure (SPOF) thanks to de-centralised intelligence
- Ideally suited for redundancy concepts
- Green IT design for low standby energy consumption

Technical data: Power supply via Intercom Server; VoIP® protocol based on UDP/IP; Ethernet IEEE 802.3, 802.1q, IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), QoS / Diffserv (RFC 2474); 8 MB data memory for pre-recorded audio messages (up to 128 message files per Plug-In Server G8-IP-32)

G8-IP-32

16 kHz 7 kHz VoIP

IP Plug-In Server for connection of up to 64 IP subscribers via Ethernet (LAN/WAN).

Connection via the Ethernet port of the IP Intercom Server.

G8-IP-32	Basic Server card for 32 subscribers – 30 with Feature Level B and 2 with Feature Level D
L8-IP-32-32B	Licence for upgrade to 64 subscribers – 62 with Feature Level B and 2 with Feature Level D
L8-IP-32-2D	Subscriber Licence for upgrade to 4 subscribers on Feature Level D
L8-IP-32PRO6U	Licence for upgrade to PRO 800 Version 6.x (existing installations)

W 167 mm, H 100 mm, D 20 mm 170 g





SUBSCRIBER CARDS

Subscriber cards are used to process speech communication and subscriber specific controls on an Intercom Server. For connection of IP, digital and analogue subscribers, various cards in 4 feature levels (B, D and P) are available. The cards

of the higher levels contain all the features of the lower ones plus more. With feature level P individual levels can be allocated to each subscriber.

G8-IP

16 kHz 7 kHz IoT

IP DSP Subscriber card for connection of up to 8 IP-Subscribers via Ethernet (LAN/WAN).

A maximum of 14 G8-IP cards can be used in a GE 800 IP Intercom Server.

Connection via the Ethernet port of the IP Intercom Server.

G8-IP-4B Basic card for 4 subscribers, Feature Level B

L8-IP-4D Licence for feature level D

L8-IP-4P Licence for feature level P

L8-IP-8B Licence for 8 subscribers, Feature Level B

L8-IP-8D Licence for 8 subscribers, Feature Level D

L8-IP-8P Licence for 8 subscribers, Feature Level P

L-IP-REC-1 Licence for one IP/RTP Recording Channel

W 167 mm, H 100 mm, D 20 mm 180 g



G8-GED

16 kHz 7 kHz Digital

DSP Subscriber card for connection of up to 4 digital subscribers via 2-wire lines. A maximum of 14 G8-GED cards can be used in a GE 800 IP Intercom Server. One conversation per subscriber is possible simultaneously (non-blocking).

Connection can be carried out via various installation boards – see section: Installation Boards.

G8-GED-4B Basic card for 4 subscribers, Feature Level B

L8-GED-4D Licence for Feature Level D

L8-GED-4P Licence for Feature Level P

W 167 mm, H 100 mm, D 20 mm 220 g



G8-GET

16 kHz 7 kHz Analogue

DSP Subscriber card for connection of up to 4 analogue subscribers via 4-wire lines. A maximum of 14 G8-GET cards can be used in a GE 800 IP Intercom Server. Per subscriber one conversation is possible simultaneously (non-blocking). With the Licence L8-GET-DSP DSP-Features (see datasheet) can also be used with analogue stations.

Connection can be carried out via various installation boards – see section: Installation Boards.

G8-GET-4B Basic card for 4 subscribers, Feature Level B

L8-GET-4D Licence for Feature Level D

L8-GET-4P Licence for Feature Level P

L8-GET-DSP Licence for DSP features on G8-GET subscriber cards

W 167 mm, H 100 mm, D 20 mm 220 g





INPUT/OUTPUT CARDS

Input/output cards are used for reading in of floating contacts and/or operating of controls such as door openings or barriers via floating relay contacts (depending on type).

G8-16A

Plug-in card with 16 relay outputs (10 make contacts, 6 as make contacts with common ground).

Connection via installation board G8A-I with 37-way D-Submin plug or G8A-K with screw terminals (neither are included in extent of supply).

W 167 mm, H 100 mm, D 20 mm 208 g



G8-16E

Plug-in card with 16 inputs for floating contacts, with or without line monitoring. Read in of 5 line conditions (Idle, Active 1, Active 2, Short, Line break).

Connection via installation board G8A-I with 37-way D-Submin plug or G8A-K with screw terminals (neither are included in extent of supply).

W 167 mm, H 100 mm, D 20 mm 161 g



G8-8E8A

Plug-in card with 8 inputs for floating contacts and 8 relay outputs (4 of which are make contacts, 4 as make, open or switch over contacts). Read in of 5 line conditions with inputs (Idle, Active 1, Active 2, Short, Line break).

Connection via installation board G8A-I with 37-way D-Submin plug or G8A-K with screw terminals (neither are included in extent of supply).

W 167 mm, H 100 mm, D 20 mm 190 g





INTERFACE CARDS

Data interfaces for integration and connection to external systems, such as telephones, PCs, mobile radios, etc.

G8-IF

Powerful IP Interface Card with up to 4 virtual TCP/IP interfaces for using the ICX protocol via IP networks; equipped with two 9-pin D-Submin connectors for output via RS 232 interface port. This allows for integrating third party systems (e.g. video switcher, access control systems or host computers) to IP Intercom Servers via IP networks or RS 232 using the Command Standard Protocol.

Connection via the Ethernet port of the IP Intercom Server and Installation Board G8A-V24 with two 9-pin D-Submin connectors for output via RS 232 (included).

G8-IF Basic card with 4 virtual TCP/IP interface ports and 2 RS 232 interface ports

L8-IF-ICX Licence for one additional ICX Interface (maximum is 6)

W 167 mm, H 100 mm, D 20 mm 250 g



G8-AUD

16 kHz 7 kHz

Digital connection card for Intercom Servers with 4 channels for Plug-&-Play connection to various PA or radio systems. All audio inputs and outputs have a galvanic separation, electronic level adaptation as well as a graphic equalizer for correction of the sound quality. Besides the ideal coupling capability, the card offers 4 floating contacts for control tasks and a 8 MB flash memory for speech recordings.

Connection via own installation boards (not included in extent of supply).

G8-AUD-4B Basic card with 4 channels, Feature Level B

L8-AUD-4D Licence for upgrade of G8-AUD-4B to Feature Level D

W 167 mm, H 100 mm, D 20 mm 243 g (G8-AUD-2), 257 g (G8-AUD-4)



G8-TEL

Telephone DSP Interface for connection of the Intercom system to an analogue subscriber of a telephone system or directly to a standard telephone line. Telephone mode for direct dialling of desired telephone number from an Intercom station; Auto Dialler mode with automatic dialling of freely programmable dialling sequences initiated by calls or call requests. Freely configurable speech storage for acoustic identification and messages (e.g. waiting information) in dialler mode. DTMF-telephones can operate functions in the Intercom system (e.g. after dialling for door opening, etc.).

Connection via installation board G8A TEL (included in extent of supply).

W 167 mm, H 100 mm, D 20 mm 272 g



NETWORK CARDS

Plug-in cards for networking Intercom Servers via LAN/WAN (TCP/IP) or multiplexers/media converters.

G8-LAN

IP Network card G8-LAN supports direct addressing of up to 16 Intercom Servers. Up to 32 conversations, music programmes or radio channels are supported simultaneously. For more details see datasheet or manual.

Connection via the Ethernet port of the Intercom Server.

G8-LAN-8 Basic card for 8 LAN Connections

L8-LAN-16 Licence for 16 LAN Connections

L8-WAN-8 Licence for 8 WAN Connections

W 167 mm, H 100 mm, D 20 mm 180 g



INSTALLATION BOARDS

G8A-C

Installation board for subscriber cards G8-GED or G8-GET, interface card G8-AUD with 4 shielded RJ 45 sockets.

60 g



G8A-CP

Installation Board for Subscriber Card G8-GED-4 with 4 shielded RJ 45 ports, including option for connecting an additional power supply via the subscriber line.

67 g



G8A-I

Installation board for subscriber cards G8-GED, G8-GET and G8-TEL, input / output cards G8-16A, G8-16E, G8-8E8A as well as interface card G8-AUD with 37-way D-Submin plug.

55 g



G8A-K

Installation board with screw terminals for flexible mounting, for subscriber cards G8-GED and G8-GET interface card G8-AUD as well as input / output cards G8-16A, G8-16E and G8-8E8A.

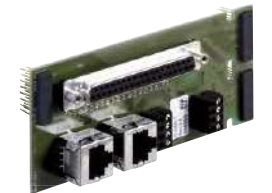
60 g



G8A-T

Installation board for two subscriber cards G8-GED or G8-GET as well as G8-AUD with 37-way D-Submin-plug.

84 g



G8A-GEN2

Installation board with 2 low voltage inputs for two independent power adapters (PA7 power adapter or 24 VDC) for redundant power supply to the Intercom Server.

80 g



Intercom Server – GE 300



SERVER

IP Intercom Server GE 300 is ideally suited as a stand-alone server for small and medium-sized Intercom applications or as network node in large Intercom networks. Allows for connecting IP, 2-wire, 4-wire stations. The compact housing is suitable for wall mounting. Built-in functions for

door and gate control, alarms, CCTV integration, control desks, etc. The diverse networking concepts enable security and communication systems with up to 14,280 networked Intercom Servers. Up to 30,000 subscribers can communicate within these networks.

GE 300

16 kHz 7 kHz

Basic housing with five plug-in slots.

Maximum number of subscribers

IP	40 Subscribers per housing
	80 Subscribers with expansion housing GEZ 300
2-Wire Digital	20 Subscribers per basic housing
	40 Subscribers with expansion housing GEZ 300
4-Wire Analogue	20 Subscribers per basic housing
	40 Subscribers with expansion housing GEZ 300

One AF-input (for music or alarm), two inputs for floating contacts, two relay outputs, RS 232 and IP interface for (remote) programming or maintenance.

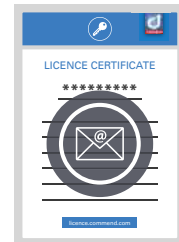
GE 300	Server without power supply
GE 300EU	Server, complete with power supply for Europe (excl. UK)
GE 300CA	Server, complete with power supply for the UK / USA / Australia
GE 300WR	Server without power supply, wide range input 20 – 36 V DC

W 310 mm, H 210 mm, D 77.5 mm 2,300 g



Server Licences

L3-PRO6U	Upgrade to PRO 800, Version 6.x (existing installations)
L3-ICX	Licence for 1 ICX Interface (on-board)
L3-LAN-4	Networking Licence for 4 LAN connections (on-board)



GEZ 300

Expansion housing including Power supply with five plug-in slots for subscriber cards and/or interface cards. Connection to the IP Intercom Server via ribbon cable.

GEZ 300	Expansion housing without power supply
GEZ 300EU	Extension housing, complete with 230V power supply for Europe (excl. UK)
GEZ 300UK	Extension housing, complete with 240V power supply for the UK
GEZ 300US	Extension housing, complete with 120V power supply for the USA
GEZ 300AU	Extension housing, complete with 230V power supply for Australia

W 310 mm, H 210 mm, D 77.5 mm 2,300 g



GEI 300

Interface housing with two slots for G8-interface cards (application in GEI 300 interface housing is shown on the respective cards – see datasheet). Connection to the IP Intercom Server GE 300 or the expansion housing GEZ 300 via ribbon cable.

W 310 mm, H 210 mm, D 77.5 mm 1,200 g





SUBSCRIBER CARDS

Subscriber cards handle speech communication as well as subscriber specific functions. For connection of IP, digital and analogue subscribers various cards in 4 feature level (B, D and P) are available. The cards of the higher levels contain

additional features to the lower ones. With feature level P individual feature levels can be allocated to each subscriber. The number of subscribers and the individual feature levels can be unlocked using the Licence key.

G3-IP

16 kHz 7 kHz IoT

IP DSP subscriber card for connection of up to 8 IP subscribers via Ethernet (LAN/WAN). Up to five G3-IP cards can be used with a GE 300 IP Intercom Server, as well as five additional ones in Expansion Central GEZ 300.

Connection via the Ethernet port of the IP Intercom Server.

G3-IP-4B	Basic card for 4 subscribers, Feature Level B
L3-IP-4D	Licence for Feature Level D
L3-IP-4P	Licence for Feature Level P
L3-IP-8B	Licence for 8 subscribers, Feature Level B
L3-IP-8D	Licence for 8 subscribers, Feature Level D
L3-IP-8P	Licence for 8 subscribers, Feature Level P
L-IP-REC-1	Licence for one IP/RTP Recording Channel

W 60 mm, H 160 mm, D 20 mm 140 g



G3-GED

16 kHz 7 kHz Digital

DSP subscriber card for connection of up to four 2-wire digital subscribers. Up to five G3-GED cards can be used with a GE 300 IP Intercom Server, as well as five additional ones in Expansion Central GEZ 300. One call per subscriber is possible at the same time (non-blocking).

Connection via pluggable screw terminals.

G3-GED-4B	Basic card for 4 subscribers, Feature Level B
L3-GED-4D	Licence for Feature Level D
L3-GED-4P	Licence for Feature Level P

W 60 mm, H 160 mm, D 20 mm 188 g



G3-GET

16 kHz 7 kHz Analogue

DSP subscriber card for connection of up to four 4-wire analogue subscribers. Up to five G3-GET cards can be used with a GE 300 IP Intercom Server, as well as five additional ones in Expansion Central GEZ 300. The L3-GET-DSP Licence allows use of the DSP features (see datasheet) also with analogue Intercom stations.

Connection via pluggable screw terminals.

G3-GET-4B	Basic card for 4 subscribers, Feature Level B
L3-GET-4D	Licence for Feature Level D
L3-GET-4P	Licence for Feature Level P
L3-GET-DSP	Licence for DSP features on G3-GET subscriber cards

W 60 mm, H 160 mm, D 20 mm 198 g





INPUT/OUTPUT CARDS

Input/output cards are used for reading in of floating contacts and/or operating of controls such as door openers or barriers via floating relay contacts (depending on type).

G3-16A

Plug-in card with 16 relay outputs (4 of which are make, open or switch over contacts, 12 only as make contacts).

Connection via pluggable screw terminals.

W 167 mm, H 100 mm, D 20 mm 209 g



G3-16E

Plug-in card with 16 inputs for floating contacts, with or without line monitoring. Read in of 5 operation states (Idle, Active 1, Active 2, Short, Line break).

Connection via pluggable screw terminals.

W 167 mm, H 100 mm, D 20 mm 150 g



G3-8E8A

Plug-in card with 8 inputs for floating contacts and 8 relay outputs (make, open or switch over). Read in of 5 operation states with inputs (Idle, Active 1, Active 2, Short, Line break).

Connection via pluggable screw terminals.

W 167 mm, H 100 mm, D 20 mm 185 g



NETWORK CARDS

Plug-in cards for networking Intercom Servers via LAN/WAN (TCP/IP) or media converters.

G3-LAN

The IP network card supports central management of up to 16 Intercom servers. Up to 8 conversations, music programmes or radio channels are supported simultaneously. For more details see datasheet or manual.

Connection is via the network connection port of the IP Intercom Server.

G3-LAN-8 Basic card for 8 LAN Connections

L3-LAN-16 Licence for 16 LAN Connections

L3-WAN-4 Licence for 4 WAN Connections

L3-WAN-8 Licence for 8 WAN Connections

W 167 mm, H 100 mm, D 20 mm 140 g





INTERFACE CARDS

Data interfaces for integration and connection to external systems.



G3-IF

Powerful IP Interface Card with up to 4 virtual TCP/IP interfaces for using the ICX protocol via IP networks; equipped with two 9-pin D-Submin connectors for output via RS 232 interface port. This allows for integrating third party systems (e.g. video switcher, access control systems or host computers) to IP Intercom Servers via IP networks or RS 232 using the Command Standard Protocol.

Connection is via the network link of the IP Intercom Server or via two 9-pin D-Submin connectors for RS 232.

G3-IF Basic card with 4 virtual TCP/IP interface ports and 2 RS 232 interface ports

L3-IF-ICX Licence for one additional ICX Interface (maximum is 6)



 W 60 mm, H 160 mm, D 20 mm  150 g



G3-TEL

Multi-functional telephone interface for connection of the Intercom system to an analogue subscriber of a telephone system or directly to a standard telephone line. Telephone mode for direct dialling of the desired telephone number from an Intercom station, Auto Dialler mode with automatic dialling of freely programmable dialling sequences initiated by calls or call requests. Freely configurable speech storage for acoustic identification and messages (e.g. waiting information) in dialler mode. DTMF-telephones can operate functions in the Intercom system (e.g. once call has been received on a remote telephone all after dialling functions are available).

Connection via RJ11 telephone socket.

 W 60 mm, H 160 mm, D 20 mm  350 g



G8-AUD

16 kHz 7 kHz

Digital connection card for Intercom Servers with 4 channels for Plug-&-Play connection to various PA or radio systems. All audio inputs and outputs have a galvanic separation, electronic level adaptation as well as a graphic equalizer for correction of the sound quality. Besides the ideal coupling capability, the card offers 4 floating contacts for control tasks and a 8 MB flash memory for speech recordings.

Connection via own installation boards (not included in extent of supply).

G8-AUD-4B Basic card with 4 channels, Feature Level B

L8-AUD-4D Licence for upgrade of G8-AUD-4B to Feature Level D

 W 167 mm, H 100 mm, D 20 mm  190 g (G8-AUD-2), 200 g (G8-AUD-4)



Concentrated Power – IS 300



Server IS 300

State of the art compact IP Intercom Server for up to 64 IP based subscribers. Non-blocking for up to 32 conversations (Server internal). Ultimate fail safety under all conditions, thanks to vibration resistance in accordance with IEC Standard 61373. Housed in a stylish, space saving and maintenance free design with 1 rack unit (1U). Three easy installation options: rack, desk, wallmount. Green IT with extra low power consumption (2.2 W). Fully backward compatible to digital (2-wire) and analogue (4-wire) stations via IP converter ET 901. Expandable to a 30,000 subscriber Intercom Server network.

Powerful

IS 300 unites the performance of a fully featured Intercom 2.0 Server with the benefits of a smart, size optimised product design. Whether as a desktop unit, a wallmount device or installed in a 19" rack – IS 300 delivers proven Commend Intercom performance wherever it is needed.

Reliable

Availability and security are non-negotiable when personal wellbeing and lives are at stake. This is why IS 300 is in a wholly new design that eliminates movable and wearing parts as possible failure sources. The result is a significantly higher performance and availability profile of the overall system.

Vibration-proof

Heavy traffic environments or industrial locations: when things get shaking, the vibration proof solid state design of IS 300 in accordance with IEC Standard 61373 ensures unshakable functionality even under the roughest of ambient conditions.

Environmentally friendly

Ecologically focussed engineering on Commend's high quality level was a key driving force in the development of IS 300. The result is a powerful multi-purpose Intercom Server with resource optimised technology that has one of the industry's lowest power consumption profiles. IS 300 is proof of Commend's commitment to the motto that high Intercom performance and sustainability are no contradiction in terms.

Flexible

With the power of Intercom over IP (IoIP®) inside, IS 300 enables implementations from 2-subscriber installations to 30,000 multi-server networks. Combined with support for any Intercom technology and a scalable licensing model, IS 300 provides a solution package for any Intercom need.



SERVER

Key features:

- Up to 64 fully-featured IP-based subscribers (each with video support and standard keypad) per IS 300 Intercom Server
- "Non-Blocking" feature for up to 32 call lines (within Server)
- Ultimate fail safety under all conditions, thanks to vibration resistant standard Solid-State Design
- 16 kHz eHD Voice audio quality and P2P Audio for maximum speech intelligibility (suitable, e.g. for PA systems)
- Speech Memory: e.g. group calls with anti-feedback protection
- No batteries or moving fans = no need for regular maintenance

- Easy to install in any of three ways: in Server rack, on desktop or wall-mounted
- Green IT for extra-low power consumption
- Interfaces: OPC, TETRA, ComWIN, Intercom Client, ComSCHEDULE, ComREPORT, ComVIDEO, ICX Data Interface, e.g. for integrating third-party systems

Technical data: External power supply: 12–24 V DC; Power consumption: 2.2 W; Speech storage memory: 8 MB; 450 seconds in 16 kHz quality; 900 seconds in 7 kHz quality; up to 128 individual audio files per IS 300.



IS 300

16 kHz 7 kHz IoT

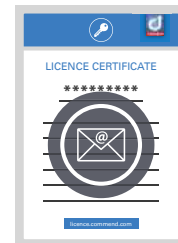
IP Intercom Server IS 300 for up to 64 IP based subscribers. Ultimate scalability for up to 64 subscribers (maximum of four subscribers with Feature Level D). Includes four subscriber Licences (2B/2D) and power supply unit PA20W15V for Europe, UK, USA and Australia

W 201 mm, H 44 mm, D 255 mm (1U) 1,560 g

IS 300 Server Licences

Licences are for PRO 2.0 and higher.

L-IS3-PRO6U	Upgrade to PRO 800 Version 6.x (existing installations)
L-IS3-2B	Licence for 2 subscribers, Feature Level B
L-IS3-4B	Licence for 4 subscribers, Feature Level B
L-IS3-8B	Licence for 8 subscribers, Feature Level B
L-IS3-2D	Licence for 2 subscribers, Feature Level D (up to 4 Level D subscribers)
L-IS3-ICX	Single Licence for ICX Interface (on board)
L-IS3-LAN-2	Network Licence for 2 LAN connections (one of them for redundancy purposes)
L-IP-REC-1	Licence for one IP/RTP recording channel



Wallmount and desktop mounting kit PF-WM

Wallmount and desktop mounting kit for Intercom Server IS 300 or amplifier AF 50.



Rackmounting kit PF-RM-1HE

19" rack mounting kit (1U) for one or two Intercom Server IS 300 side by side.



Intercom Server for Small-Sized Solutions – GE 150



SERVER

Intercom Server power in a compact format – ideal as a stand-alone solution for small sized applications, including full support of analogue 4-wire Intercom stations and modules. In a design that is compact enough for wall-mounting, the GE150 Server offers proven Comend Intercom

functionality, including integrated door/gate control and alarm functions, call forwarding to a telephone network, etc. Both the Server and expansion cards can easily be upgraded to a fully-featured GE 300 Server via Licences. Have a growing business? Your GE 150 will grow with it.

GE 150

16 kHz 7 kHz Analogue

Basic housing with five plug-in slots.

Maximum number of subscribers

4-Wire Analogue 20 Subscribers per basic housing

One AF-input (for music or alarm), two inputs for floating contacts, two relay outputs, RS 232 and IP interface for (remote) programming or maintenance.

GE 150 Server without power supply

GE 150EU Server, complete with power supply for Europe (excl. UK)

GE 150CA Server, complete with power supply for the UK / USA / Australia

L15-LOG Licence to activate logging of up to 500 ICX messages

W 310 mm, H 210 mm, D 77.5 mm 2,300 g



UPGRADE LICENCES

GE 150 offers exactly what you need, either via plug-in expansion cards or by a simple Licence upgrade. This way,

you can customise your GE 150 up to the full feature range of a Comend GE 300 Server.

Upgrade Licences

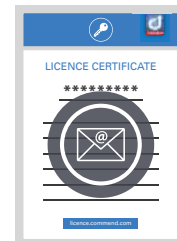
L15-GE300 Upgrade from GE 150 to GE 300

L15-G3-GET Upgrade from G15-GET-4B to G3-GET-4B

L15-G3-TEL Upgrade from G15-TEL to G3-TEL

L15-G3-8E8A Upgrade from G15-8E8A to G3-8E8A

L15-G3-16E Upgrade from G15-16E to G3-16E



SUBSCRIBER CARDS

Individually configurable voice communication and control for each connected subscriber couldn't be easier, thanks to the flexible G15-GET subscriber card.

G15-GET

16 kHz 7 kHz Analogue

DSP subscriber card for connection of up to four 4-wire analogue subscribers. Up to five G15-GET cards can be used with a GE 150 Server.

Connection via pluggable screw terminals.

G15-GET-4B Basic card for 4 subscribers, Feature Level B

L15-GET-4D Licence for Feature Level D

W 60 mm, H 160 mm, D 20 mm 198 g





INTERFACE CARDS



The easy-to-install G15-TEL interface card offers an efficient way to integrate third-party telephone systems into the Intercom Server environment. Equipped with this plug-in card, the GE150 Server integrates seamlessly with analogue subscribers on existing telephone systems and even allows for the direct connection of trunk lines. This way, an Intercom station can easily be turned into a telephone (“Telephone Mode”) with the Intercom keypad as a dialling

pad – all at the simple touch of a button. In “Dial Mode” incoming calls can be set to trigger individual auto-dialling sequences. The card also provides a configurable voice sound memory, which enables the automatic playback of identification messages and automated announcements (e. g., waiting loops, etc.). For extra convenience, users can access to a range of Intercom functions (e. g., for opening doors or gates) simply by dialling a control code.

G15-TEL

Multi-functional telephone interface for connection of the Intercom system to an analogue subscriber of a telephone system or directly to a standard telephone line.

Connection via RJ11 telephone socket.

 W 60 mm, H 160 mm, D 20 mm  350 g



INPUT/OUTPUT CARDS



This I/O card expands the GE 150 Server’s range of functions with the ability to read floating contacts and (depending on the card model) control doors and gates via floating relays. It provides eight additional inputs for floating contacts as well

as eight additional relay outputs (make contact, open contact, transfer switch). What is more, it can also read up to five input states: Idle, Active 1, Active 2, Short, and Line Break.

G15-8E8A

Plug-in card with 8 inputs for floating contacts and 8 relay outputs (make, open or switch over). Read in of 5 operation states with inputs (Idle, Active 1, Active 2, Short, Line break).

Connection via plugable screw terminals.



 W 167 mm, H 100 mm, D 20 mm  185 g



G15-16E

Plug-in card with 16 inputs for floating contacts, with or without line monitoring. Read in of 5 operation states (Idle, Active 1, Active 2, Short, Line break).

Connection via plugable screw terminals.

 W 167 mm, H 100 mm, D 20 mm  150 g



POWER SUPPLIES

Power Supply PA7

Power supply in country-specific versions 24 VAC/80 VA for supply of servers, amplifiers and industrial stations, includes mounting kit for 19" DIN-rail.

PA7-230VEU Version for Europe

PA7-240VUK Version for UK

 L 107.5 mm, W 71.3 mm, D 63 mm  1,940 g





Switched-Mode Power Supply PA60W24V

60 W primary switched-mode power supply adapter with high efficiency output.

Primary: 100 – 240 V AC; Secondary: 24 V DC; 0 °C to +40 °C; Colour: black.

C13 Power cord must be ordered separately.

 W 61 mm, H 157 mm, D 43 mm  410 g





Switched-Mode Power Supply PA1-S3

65 W primary switched-mode power supply adapter with high efficiency output.

Primary: 100 – 240 V AC; Secondary: 19 V DC, 3.42 A; Colour: black.

C7 Power cord must be ordered separately.

 W 45 mm, H 105 mm, D 30 mm  230 g



CABLES

Connection Cable

Prefabricated 32-way connection cable with D-Submin plug for G8A-I, G8A-T, GEAI, GEAI 700R and GEAT 700R. Twisted pair cable with a lead diameter of 0.5 mm.

ASK 32-5 Length: 5 m

ASK 32-10 Length: 10 m

ASK 32-20 Length: 20 m

Length: 5 m  640 g / Length: 10 m  1,240 g / Length: 20 m  2,500 g




Power Cord C13

KAB-C13-EU Version for Europe

KAB-C13-UK Version for UK

KAB-C13-US Version for USA

KAB-C13-AU Version for Australia

 1.5 m



Power Cord C7

KAB-C7-EU Version for Europe

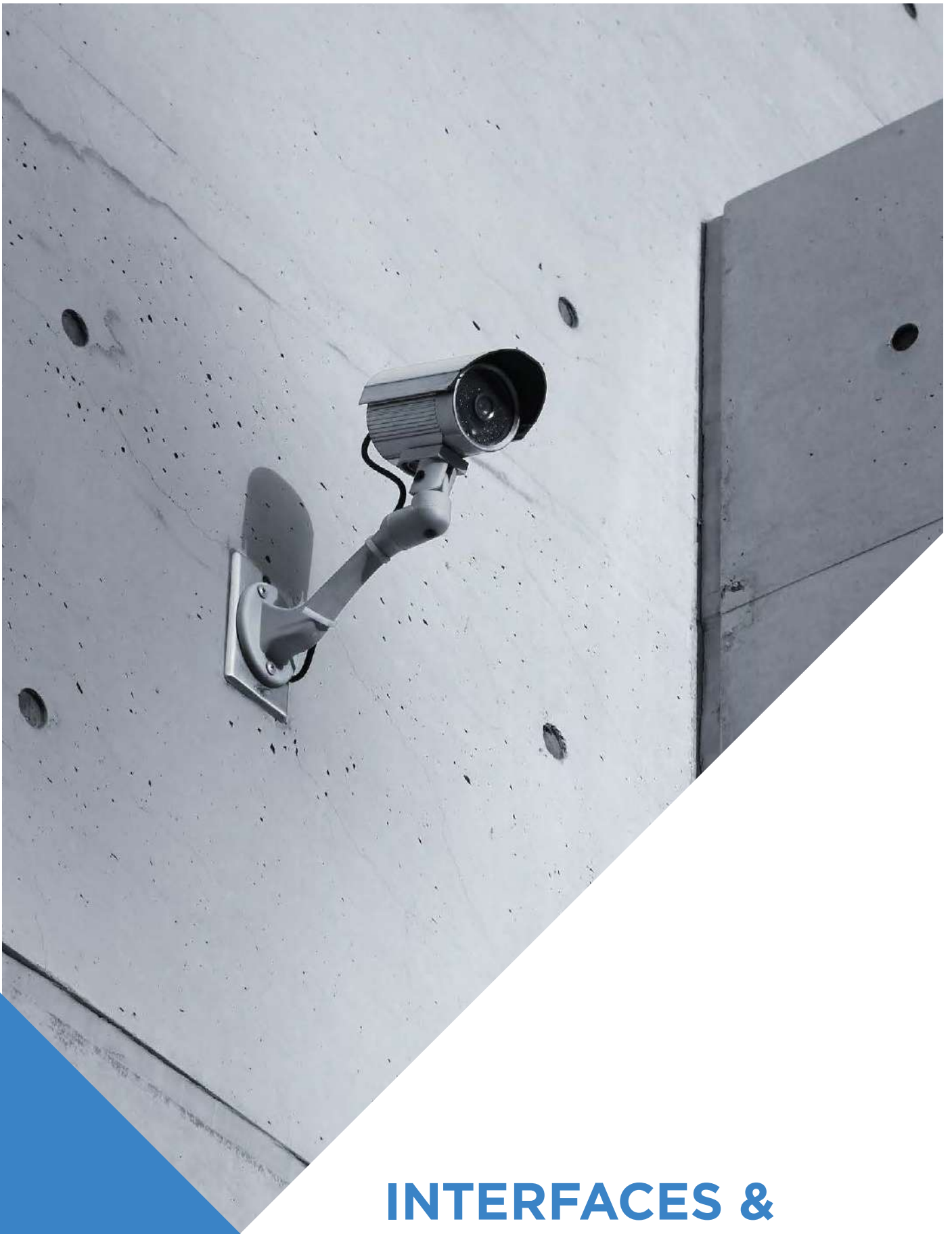
KAB-C7-UK Version for UK

KAB-C7-US Version for USA

KAB-C7-AU Version for Australia

 2.0 m





INTERFACES & INTEGRATION

SMART SYSTEMS WORK TOGETHER

Interfaces and Technology Partners

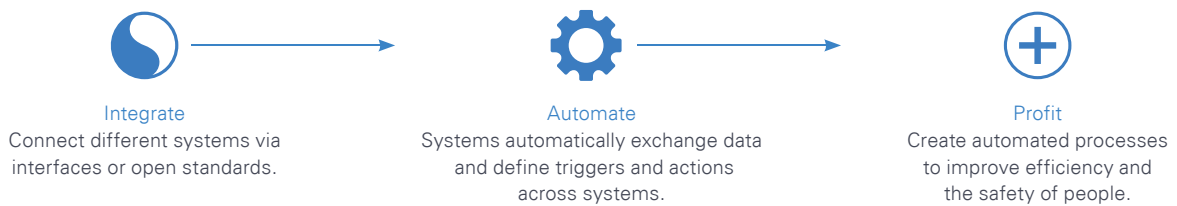
Complete systems from one source.

The current trend in security and communication requires comprehensive and compact system solutions that integrate all elements of communication. Commend offers a large number of features that facilitate the creation of purpose made communication and security solutions for each application area.



Open for any Interface

Where security and communication systems are concerned, it is essential for the many different components to work together smoothly. A constant exchange of data, video and audio streams allows these systems to utilise their full potential and enable perfectly integrated solutions for the benefit of the customer. Commend Intercom systems support standards such as OPC, SIP and TETRA, DMR, Modbus, KNX, SNMP and others, offering a variety of existing, well tested interfaces to third-party systems.



“Our Team Players”

Intercom Servers are not just ‘audio professionals’, they also function as interface managers that integrate seamlessly into security applications.



Customised interfaces

Audio, data and video interfaces can be implemented easily to suit individual requirements. Options range from the use of simple signal contacts for control and messaging purposes to the full-scale integration of third-party systems.

ICX Protocol



The Intercom eXchange protocol (ICX) is an open protocol for integrating interfaces. Using ICX, third-party systems can communicate with Commend components to exchange data, messages and control commands. What is more, the ICX protocol also enables the control of audio and video equipment to support a wide variety of solutions.

Options for future interfaces

The ICX protocol can be implemented conveniently with an SDK (Software Developer’s Kit) for the required external system. This enables both systems to ‘talk the same language’ and establish data exchange connections.

Communication protocols of external (third-party) systems are implemented directly on the Intercom Server, where they are converted to Commend’s ICX protocol.





CERTIFIED AND WELL-SUPPORTED

Commend's Technology Partner Programme

Let's join forces to provide solutions and mutually complementary systems.

- **Satisfied customers** – Smart systems that complement each other can now join forces to provide customers with the tailored overall solutions they want.
- **A partnership with many benefits** – Joint marketing of our interfaces and solutions allows us to open up bigger markets. Take advantage of our worldwide distribution network.
- **Quality and reliability** – Our laboratories perform trials and run tests on new versions to maintain high compatibility and quality standards. Results are documented and certified – see our “Certified” programme for details.
- **Certification** provides reassurance for customers and facilitates the sales process.
- **Support and Contact** – Our Technology Partners benefit from constantly available contact and support services. Together we can develop new ideas, solutions and innovations.
- **There is a lot for us to achieve together!**

		
Inspection and System Testing		
Project-specific tests	✓	✓
Customer-specific trial systems at Commend (to be provided by technology partners)		✓
Comprehensive testing and quality control provided by Commend		✓
Documentation and Certification		
Basic documentation and system descriptions	✓	✓
Commend Extranet access (software and documentation)	✓	✓
Instant notification when new updates are available	✓	✓
Commend documentation and manuals		✓
Certification and confirmation		✓
Contact and Support		
Personal contact	✓	✓
Access to trainings and workshops		✓
Technical project support		✓
Marketing		
Use of technology partners' logos	✓	✓
Inclusion on the List of Commend Technology Partners on Commend web sites	✓	✓
Inclusion on the List of Technology Partners and presentation of the interface in the Commend Product Catalogue		✓
Worldwide support of marketing activities (newsletters, fairs/exhibitions, case studies, etc.)		✓

The complete list of Supported and Certified Interfaces is available online.

www.commend.com

Commend Certified Interfaces

	Manufacturer Licence	Details	Category
	Avigilon ComPLC Interface —	With this ComPLC 4.0 bidirectional data interface, it is possible to exchange alarms between the Avigilon Control Center and Commend.	
	Dallmeier Leo Interface —	Integrating Dallmeier equipment into the Commend Studio environment adds the ability to display video streams from cameras connected to a Dallmeier Leo video system.	
	Designa System Interface E-WIN-DES-SPD	With the integration of a Designa system into the Commend Studio environment, it is possible to display and directly control the status of access systems and ticket vending machines.	
	Geutebrück GeViScope Interface —	The integration of Geutebrück into the Commend Studio environment enables the display of video streams from cameras connected to a Geutebrück Series Geviscope or G-Core video server.	
	Lenel OnGuard Interface L-IF-LENEL1	Integration support for OnGuard enhances the security system with additional Intercom functions. Especially where Audio functions are concerned, the interface is a perfect extension that benefits the overall system.	  
	Milestone Systems XProtect Interface E-VID-MST-SPD	The ability to integrate Milestone equipment into the Commend Studio environment makes it possible to display video streams from cameras connected to a Milestone Series XProtect video server.	
	Milestone Systems Server Interface L-IF-MILEST	The Milestone XProtect Server Interface analyses the TCP data packets coming from the Commend Server to automatically trigger pre-defined actions.	 
	Motorola / Sepura / Hytera Digital Radio Interface L-TETRA L-DMR	This interface enables the seamless integration of TETRA and DMR radio equipment into Commend Intercom systems. This way, it is possible to join radio conversations via Commend Intercom stations. Authorised Intercom terminals within the IP network are also able to access digital mobile radio functions, such as group switching.	  
	NUUO Titan NVR Server E-VID-NUUO-SPD	Integrating NUUO equipment into the Commend Studio environment adds the ability to display video streams from cameras connected to a NUUO Titan NVR video system.	
	Pelco Pelco Endura Server Interface L-IF-PELCO	This interface provides a communication link between the Intercom system and the Pelco Endura platform. The main purpose of this TCP-based interface is to make Softvideo functions available and to add the ability to trigger video alarms on Pelco systems.	  
	Hanwha Techwin Wisenet Samsung SRD Video Recorder E-VID-SAMS-SPD	The integration of Wisenet Samsung into the Commend Studio environment enables the display of video streams from cameras connected to a Series SRD video recorder.	
	Hanwha Techwin ComPLC Webhook Connection —	Bidirectional data connection via ComPLC. Generic events can trigger individual actions in Hanwha Wave. Video Interface and recording via ONVIF Profile S or MJPEG.	





**Manufacturer
Licence**

Details

Category



Scheidt & Bachmann
System Interface
E-WIN-SBA-SPD

With the integration of an S&B system into the Commend Studio environment it is possible to display and directly control the status of access systems and ticket vending machines.



SDS
System Interface
L-CS-C

Commend provides an interface to the SDS shooter detection system via the Commend ComPLC program. This allows the system to detect shots and automatically initiate incident response measures such as pre-recorded evacuation announcements.



SeeTec
Seetec Cayuga Interface
E-VID-SEE-SPD

With the integration of Seetec into the Commend Studio environment it is possible to display video streams from cameras connected to a Seetec Series Cayuga video server.

VIDEO



Siemens Siveillance
Server Interface
L-IF-MILEST

The Siemens Siveillance interface analyses the TCP data packets coming from the Commend Server to automatically trigger pre-defined actions.

AUDIO DATA



Skidata
System Interface
E-WIN-SKI-SPD

With the integration of a Skidata system into the Commend Studio environment, it is possible to display and directly control the status of access systems and ticket vending machines.

DATA



TKH Security
Speeq EVAQ Interface
-

Commend provides an interface to Speeq's EN54 certified voice alarm evacuation system EvaQ via the Commend ComPLC program. This enables the execution of various PA functions (so-called "EVAC functions").

AUDIO



TKH Security
iProtect Interface
-

The Security Management System iProtect provides an interface to the Commend Intercom System via the ICX protocol. The interface enables iProtect to switch outputs within the Intercom system and to visualize Intercom events on their GUI.

DATA



TKH Security
Server Interface
L-IP-REC-1

This interface enables the lip-synchronous recording of calls by integrating the VDG system with the Commend system via the ICX protocol.

VIDEO AUDIO DATA



TKH Security
VDG Sense Interface
E-VID-VDG-SPD

Integrating VDG equipment into the Commend Studio environment adds the ability to display video streams from cameras connected to a VDG Sense video system.

VIDEO



30+

Currently more than 30 listed
technology partners

Become a Commend Technology Partner

www.commend.com

Connections between the Building Management System and Intercom System

In building automation, equipment such as fire detection systems, intruder alarms, ventilation controls and many others are connected to a building management system via an interface based on the OPC UA (Open Platform Communications Unified Architecture) standard. Almost every building management system on the market today supports OPC. The ComOPC Server provides the central connection point

between the Intercom system and the OPC clients and manages the controlling communication between them. The ComOPC Server interprets ICX messages of the Intercom system and translates them into data points for the OPC clients.

The ComOPC UA Server is also listed on the official website of the OPC foundation at www.opcfoundation.org.

ComOPC Licences

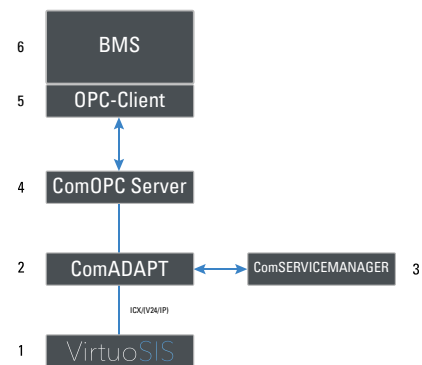
ComOPC licences are required in order to licence Intercom objects (e.g. subscribers, inputs or outputs) for communication. The following ComOPC licences are available:

E-OPC-100-SPD	100 Intercom Objects
E-OPC-1000-SPD	1,000 Intercom Objects



System Architecture

- Intercom Server** VirtuoSIS / S6 / S3 / GE 800 / GE 300 / IS 300 / GE 700 / GE 200.
- ComADAPT** is the central communication tool between Intercom Server and the ComOPC Server.
- ComSERVICEMANAGER** is an application for the configuration and management of ComADAPT and the ComOPC Server.
- ComOPC Server** processes the message coming from the Intercom system and forwards the OPC client's commands to the Intercom system.
- OPC-Client** (may be multiple clients) active within BMS.
- BMS** – Building Management Systems, such as Bosch, OnGuard, SiPass, Siemens, etc.

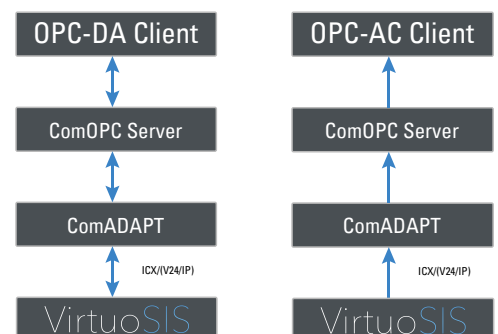


Event Procedure OPC-DA

OPC-DA allows a Building Management Systems (BMS) e.g. to display and control the status of an Intercom system.

Event Procedure OPC-AC

OPC-AC is designed for the reception of alarms and event signals in order to enable e.g. event-driven workflows, operation and logging.



Smart boost for logic control

Mit dem ComPLC Softwarepaket bietet Commend eine umfangreiche Lösung, die die Steuerung von Fremdsystemen in einem Intercom System einfach, effektiv und flexibel macht.

Die Software kann in Kombination mit den in den Intercom Servern integrierten I/O-Steuerfunktionen genutzt werden und eröffnet die Möglichkeit,

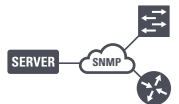
direkt mit Fremdsystemen durch die Standardprotokolle wie Modbus/TCP (für Industrieanlagen), KNX (für Gebäudesysteme) und Commend's eigenes ICX-Protokoll (für Intercom Equipment) zu kommunizieren. So ist es möglich, ganz nach Kundenwunsch eine Vielzahl von Abläufen und Steuerfunktionen inkl. Abhängigkeiten innerhalb der verwendeten Systeme zu konfigurieren.

Functions

- Windows-based graphical design application
- Stand-alone execution of the designed sequences on VirtuoSIS
- The virtual application card of VirtuoSIS is configured automatically by ComPLC designer
- Use of ICX messages
- Support of webhook commands via HTTP and HTTPS
- Configuration of individual functional components
- Ready for KNX interface to connect up to 50 KNX NET/IP gateway devices
- Ready for Modbus interface to connect up to 50 slave devices
- Bidirectional data interface to the Avigilon Control Center to receive and send alarms
- Integrated online mode for tracing operations in real-time

Applications

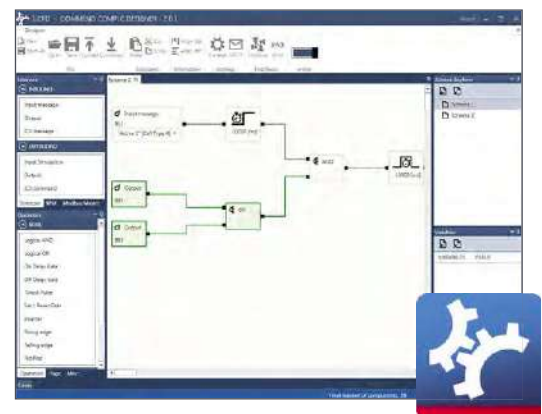
- **Automatic sending of e-mails** in case of specific Intercom system events (e.g. if a device or connection fails).
- **Time-controlled event sequences** involving any combination of devices (e.g. door opens in the morning and closes in the evening; a building alarm is armed automatically one minute after locking the main entrance door)
- **Automatic time-scheduled volume adjustment** for Intercom stations and loudspeakers (e.g. high volume during the day, low volume overnight)
- **Monitoring of third-party equipment via SNMP** (e.g. automatically texting IT staff or showing a message at the control desk in case of a router failure)
- **Configuring airlocks for access controlled doors**, as used in banks or high-security areas (see example below)
- **And many more possibilities ...**



Licence for ComPLC (v.X)

ComPLC can be installed on the Software Intercom Server VirtuoSIS.

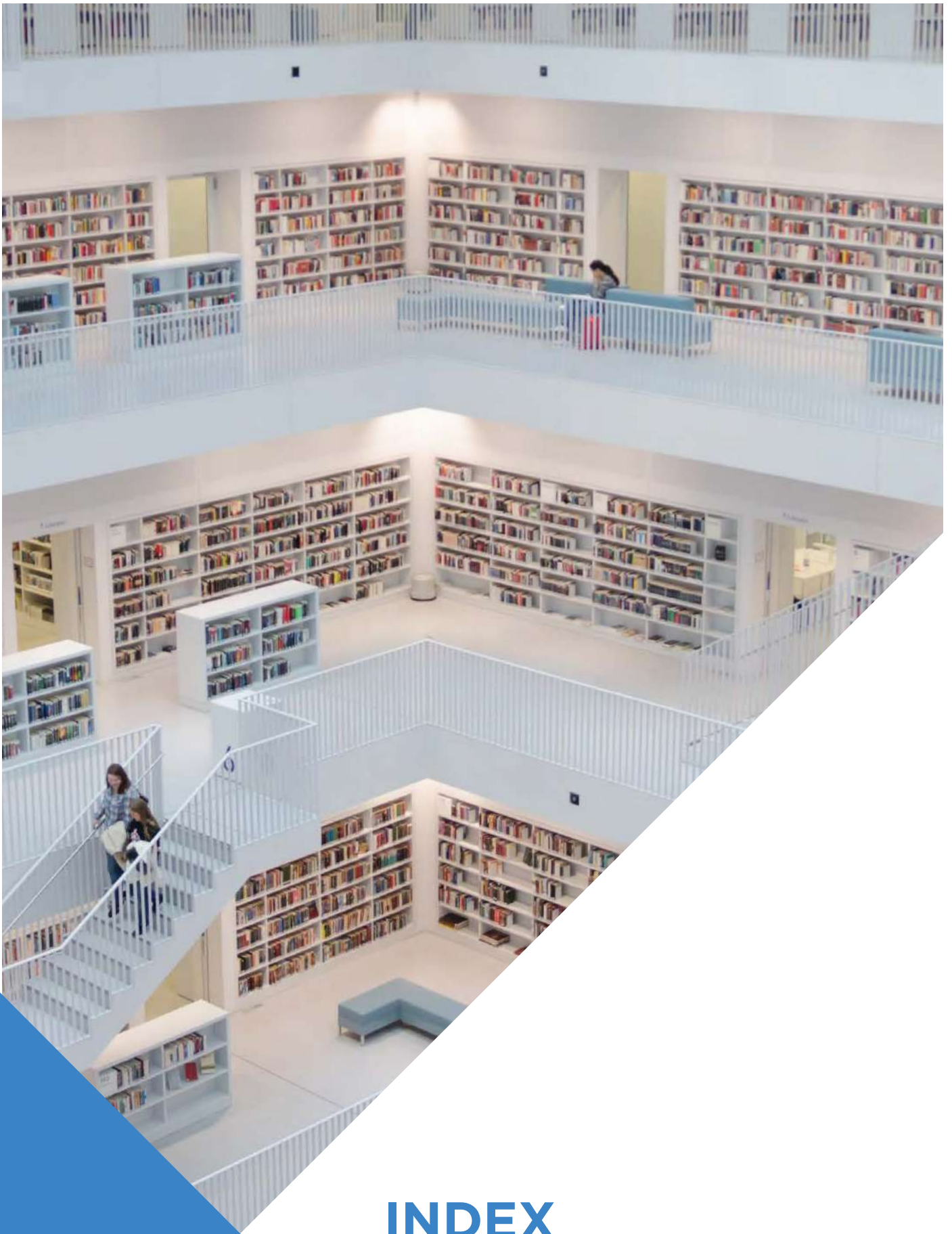
L-PLC-50	Licence for 50 licence-based input/output components (stacking of several licences is possible).
L-PLC-200	Licence for 200 licence-based input/output components (stacking of several licences is possible).
L-PLC-KNX	Licence for use of configuration of one KNX connection in ComPLC (stacking of several licences is possible)
L-PLC-MODBUS	Licence for use of configuration of one Modbus connection in ComPLC (stacking of several licences is possible)
L-PLC-SNMP	Licence for use of the SNMP function in ComPLC
L-PLC-MAIL	Licence for use of the e-mail function in ComPLC
L-PLC-WEBCOM	Licence for use of webhooks in ComPLC
L-PLC-AVIGIL	Licence to send and receive alarms between ComPLC and the Avigilon Control Center



VirtuoSIS Licence for ComPLC

One base licence is required per Software Intercom Server VirtuoSIS when ComPLC is carried out via a virtual application card:

L-SIS-PRO(v.X)	Base licence PRO 800 version (v.X)
L-SIS32-PRO(v.X)	Base licence PRO 800 version (v.X)



INDEX

GLOSSARY

Analogue/4-wire Technology – The transmission of the audio signal between intercom server and intercom stations is analogue over 4 wires (2 wires for the microphone signal, 2 wires for the loudspeaker signal). It is possible to superpose digital data, e.g. display information, dialling information, etc. Subject to disturbances when long cables are used and costly for cabling.

Appliance – An Appliance is a combined system of computer hardware and software specially optimised for this hardware, which essentially serves an application.

Asterisk® – Asterisk® is the world's leading open source telephony engine and tool kit. Offering flexibility unheard of in the world of proprietary communications, Asterisk® empowers developers and integrators to create advanced communication solutions... for free.

ATA – An Analogue Telephone Adapter (ATA) is a device used to connect common analogue telephones to a digital telephone system like VoIP.

Bus-Cabling – Topology in which all systems are supplied with data from a bus. Offers easy cabling, however problems with the bus can cause all connected units to fail. See → star-cabling.

Call-Request – Request for a conversation where the conversation is only established when the call-request was accepted by the called station. A → control desk station can accept and handle several call-requests at a time.

Client Software – as opposed to server software, refers to software applications that are typically installed on a local workstation, control desk or office PC to provide on-screen intercom control and management functions. A "mobile intercom client", for example, is an app that runs on a mobile device (i. e., the "client") and provides the functions of an intercom station, control desk, etc. in the shape of a graphical user interface.

Close-up Microphone – Microphone that records sound from close-up (ideal distance 5 cm) and neglects noise from greater distances (e.g. ambient noise). Ideal for noisy environments.

Codec – A codec is a software part which compresses or decompresses digitalised voice (or video) so it can fit through a limited communication channel such as a dial-up Internet connection.

Command Stations – Master station with gooseneck microphone, frequently used in control rooms.

Communication Server → Intercom server

Connection – Linking of Intercom Servers, e.g. via a tieline (line-connection over 2 or 4 wires), where not all functionalities of the intercom servers connected are available. Programming and/or maintenance for each Intercom Server connected can take place separately and locally.

Control Desk – Command station that also integrates various control functionalities. E.g. display of messages, switching of outputs, etc. Control desks are usually used in control rooms, often together with a visualisation software on a control desk PC (GUI – graphic user interface).

Control Desk Visualisation – Special visualisation software for a control desk PC which shows all functionalities of the control desk in a very clear manner on plans and where the functionalities can be controlled using a mouse. Additional functionalities can include: action plans, help text, etc.

Control Desk Station – Intercom station in a control desk. Typically part of the control desk system, when using a control desk software (GUI) it is a simple master station next to the PC.

Control Desk System – Modular control desk, where all control and reporting functionalities are done with individual displays and function buttons. Control desk systems allow easy display and control on a uniform user interface.

Conversations – Speech communication between two Intercom stations.

Digital / 2-wire technology – The transmission of the audio signal between Intercom Server and Intercom stations is digital, the A/D resp. D/A converter is in the Intercom station. Digital audio transmission is the basic requirement for networking Intercom Systems. When using analogue Intercom stations a channel card is needed to digitise the analogue signal.

DNS – The Domain Name System (DNS) translates between host names (e.g. www.commend.com) and their corresponding IP addresses and vice versa.

Door Call – Call request coming from a door station.

DSP – Digital Signal Processor: a micro-processor treating audio data in a digital manner. In Intercom Systems a DSP can be used for new functionalities like Audio Monitoring or loudspeaker microphone surveillance and it enables OpenDuplex®.

Duplex – Communication where the duplex-controller automatically switches the speech direction from the speaker to the listener (from the louder to the softer side). Loud background noise influences this speech control so that the speech direction must be controlled manually (PTT – push to talk, see → Simplex). A perfect solution is → OpenDuplex®.

Duplex Controller – Circuit used in duplex mode to switch the speech direction from the speaker to the listener (from the louder to the softer side).

E1-Standard – Standardised interface for data and audio, frequently used for → multiplexers or → media converters.

eHD Voice – Enhanced HD Voice by Commend transfers the audio signal at a bandwidth of 16,000 Hz, thus capturing the entire frequency spectrum of the human voice.

Electret Microphone – Microphone using a semiconductor as sound converter (capacitive process). This technology makes very tiny microphones possible.

Emergency Call – Call request with high priority (will be prioritised ahead of other calls), typically coming from a Help Point.

ENUM – ENUM refers to a set of standards and protocols which are used to translate the international dial plan (E.164) between a VoIP network and the → PSTN network. ENUM heavily relies on → DNS.

ESXi – Basic hypervisor by VMware (used by vSphere).

Fault Tolerance (FT) – The capability of a system to cope with potential failure (e. g., due to a power outage or server failure). In virtual systems, the term refers to a particular patented technology to ensure this with extreme reliability on a very high level. In effect, it allows for a complete virtual server to fail and another one to kick in instantly without a noticeable disruption of service.

Firewall – A firewall is a dedicated appliance, or software running on another computer, which inspects network traffic passing through it and denies or permits passage based on a set of rules.

H.323 – H.323 is a VoIP protocol used mainly by → PSTN providers for audio communication around the globe.

HD Voice – Transmits voice communication at an audio bandwidth of 7,000 Hz.

HDSL – High Data Rate Digital Subscriber Line: a powerful and cost effective means of transmitting digital data over copper wires.

Hypervisor – This is a computer program that accommodates a virtual machine. The virtualised operating system instances are called „guest systems“.

IAX – The open Inter-Asterisk eXchange protocol (IAX) is used primarily by Asterisk® → VoIP Servers to communicate with each other.

Intercom over IP (IoIP®) – Intercom over IP is a real-time protocol using IP-networks for networking Intercom Servers and connecting Intercom Terminals. It features much better speech transmission than VoIP thanks to a higher audio bandwidth of 7 kHz.

Intercom Central → Intercom Server

Intercom Server – The heart of an Intercom System: switches conversations between subscribers and transmits data to and from auxiliary systems with the help of interface cards. Built in a modular way, so for the functionalities required subscriber cards and interface cards are used. The functionalities of the whole Intercom System are programmed individually.

Intercom Station – The operator terminals of an Intercom System. Displays show the conversation partner, alarms or status information of integrated auxiliary systems, the keypad allows to dial-up a conversation partner or to control auxiliary systems.

Intercom Terminals → Intercom Stations

Interface – Link to other systems (both to other Intercom Servers as well as from Intercom Servers to auxiliary systems).

IoIP® – Intercom over IP – Intercom over IP: use of IP-networks for networking intercom servers. Compared to VoIP (Voice over IP), a standard for telephones, the advantage of much better speech transmission as using a higher bandwidth of 7 kHz stands out.

IP – Internet Protocol: asynchronous protocol for the packet transmission of information through a common network, e.g. the Internet (www – world wide web).

IP-Rating – Protection of a housing according to EN 60529: two figures indicate the protection against the intrusion of particles (mainly dust) and water. E.g. IP 54 is a usual requirement for door stations, IP 65 is a standard for heavy industrial stations.

ISDN – Integrated Services Digital Network: Internationally standardised system for digital telephones which defines both transmission and signalling.

LAN – Local Area Network: network limited to a small and closed environment, typically within a building, e.g. a company network. Usually a LAN is designed as an IP-network.

Master Station – Intercom station from which other subscribers can be dialled freely. Master stations have a full keypad.

Media Converter– Device that converts signals between two transmission means using different technologies, e.g. from E1 standard to fibre optic.

Multiplexer – Device that switches several inputs to one output, the data from several inputs are interlocked using various methods.

NAT – Network Address Translation (NAT) is a widely used technique used in routers which translates between an internal network (LAN) and an external network (WAN). A router using NAT is usually open for outgoing traffic but a barrier for incoming traffic.

Networking – Connection of Intercom Servers and/or Intercom Systems where the whole Intercom System behaves as one single system, i.e. all functionalities are available throughout the whole system. Programming and maintenance of the whole system can take place from one location and one intercom server. Technologies used include: copper wires, fibre optic, SO (ISDN) lines or IP-networks.

Noise-cancelling Microphone – Microphone built in a special manner so that sounds from a greater distance (e.g. background noise) are cancelled and sounds from shorter distances are transmitted much clearer. Ideal for noisy environments.

OpenDuplex® – Technological intercom innovation by Comend. Due to this special technology both sides of a communication can talk at high volume and listen simultaneously, hands-free in crystal-clear speech quality. Thus Intercom Systems by Comend offer perfect natural communication without the feeling of being limited by a technical device. Communication becomes independent of acoustic condition, like lo ud or sudden background noise.

OVA – Open Virtualization Archive – OVA is a manufacturer independent, open standard for providing images of virtual machine for various platforms. This standard is also used for the Software Intercom Server (SIS) by Comend.

Package Transmission – Asynchronous method for the transmission of data, mainly in networks. Datastreams are divided into packages, which are re-assembled in the correct order at the receiving end. Varying delays in the network must be respected.

PSTN – The Public Switched Telephone Network (PSTN) consists of all of the world's public telephone networks including landline and mobile phone networks.

QUALITY OF SERVICE (QoS) – Procedure in IP networks that prioritises certain connections and / or data packets by granting a defined delay and bandwidth. QoS is also used for the prioritisation of audio data in shared IP networks.

RTP – The Real-time Transport Protocol (RTP) is used in → SIP phones and describes how digitalised and → encoded audio data is transmitted over the internet.

S0 – Network access interface for → ISDN

SCCP – The Skinny Client Control Protocol (SCCP) is a proprietary protocol used by Cisco Systems for their telephony solutions.

SDP – The Session Description Protocol (SDP) is used in → SIP phones for the initialization or termination of phone calls.

SIP – A communications protocol commonly used for making voice and video calls over IP (Internet Protocol) networks. Special SIP-capable intercom stations enhance basic SIP functions (e. g. call initiation and switching) with more powerful intercom functions (conditional routing, directories, high-definition audio, etc.).

Simplex – Conversation possible only in one direction and where the speech direction must be switched manually, e.g. by pressing the T-button (PTT – press to talk).

SMD – Surface Mounted Devices: very small electronic components mounted on the surface, makes high integration of electronic circuits possible.

Soft Client – A Soft Client is a program, running on a personal computer which replaces a common telephone by using software and a headset.

Speech Channel – Speech path, corresponding to one conversation, in an Intercom System. In analogue Intercom Systems the number of speech channels simultaneously available is often limited.

Star-Cabling – Typical cabling for Intercom Systems: all intercom stations are cabled directly to the Intercom Server in a star-like topology. Offers high operational security as the failure of one Intercom station or one line does not affect the rest of the system.

Subscriber – Interface of the Intercom Server where an Intercom station is connected.

Sub-Station – Intercom stations which can only call predefined subscribers on an Intercom System, often only as call-request. Sub stations usually have only a single call button or a restricted keypad.

Synchronous Data Transmission – All procedures where datastreams are transmitted continuously without interruptions.

TCP/IP – Transmission Control Protocol: protocol for secure data transmission using IP, e.g. for downloads from the Internet or for e-mails. Handshake adapts automatically to the available transmission rate.

UDP – Universal Datagram Protocol: protocol for data transmission without handshake, e.g. used for speech transmission or streaming in networks.

VoIP – Voice over IP – VoIP is the overall term for telephony solutions via IP networks.

VoIP Server – A VoIP Server is a dedicated computer which acts as a private branch exchange providing connections between VoIP and ordinary telephones, the → PSTN and other VoIP servers, networks and Asterisk®.

VirtuoSIS – Software Intercom Server

Visualisation – A software capable of providing a visual overview of an installed system to enable fast and easy user interaction. In car park intercom systems, for example, visualisation software runs on control desks and provides a graphical overlay of the individual intercom stations at gates, pay points, etc. This gives operators gives operators easy point-and-click access to all components to configure and control intercom-based audio and video communication, even across multiple sites.

vMotion – Special term used by VMware for migrating (moving) a virtual machine from one physical server (host) to another while it is running.

VPN – A Virtual Private Network (VPN) is a secured, private link though another network. It is commonly used to connect two remote locations over the Internet.

vSphere – Hypervisor based solution by VMware.

WAN – Wide Area Network: network limited to a defined environment, which can include several locations of a company, e.g. several LANs form a WAN.

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