

VISOCALL IP.

Product Catalogue.

HEALTH CARE

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S E C O N E T

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VISOCALL-IP

General

Constantly growing requirements of customers as well as the break-neck speed development of the market require a unique type of system development. Schrack Seconet AG has succeeded to build an IP platform with an integrated nursecall system as well as many other useful and extra functions.

To be able to combine security and services regards a comprehensive degree of know how.

Many different types of protocol and a vast range of connections to foreign systems as well as services such as telephone, TV and Internet access billing have been integrated in VISOCALL-IP.

No two projects are ever the same, yet they all have the same platform in which functions and ease of use are successfully combined.

VISOCALL-IP offers optimal solutions:

- „Standard Installation“ for all established forms of patient care.
- All IP devices are independent devices within the structured cabling system.
- System switches are used to ensure the optimal distribution of all protocols in the system.
- Radio streaming wherever it is required
- Ready for video streaming.
- Simple to use devices for simple functions
- System Description
- Characteristic System Properties

Systemdescription

1 Characteristic System Properties

1.1 Standards

VISOCALL-IP fulfils the following standards and regulations in their entirety:

- DIN-VDE 0834 – Call systems in hospitals, care homes and similar establishments, valid from 1 April 2000
- DIN VDE 0834 / Part 1 – Device specifications, installation and operation, valid from 1 April 2000
- DIN VDE 0834 / Part 2 – Environmental conditions and electromagnetic compatibility, valid from 1 April 2000

As well as all standards and regulations referred to in these standards.

Furthermore the system's power supply conforms to the standards for:

Electrical safety:

- EN60601 Classification VDE 0750 / 03.1996
- EN60950 Classification VDE 0805 / 03.2003
- EN50178 Classification VDE 0160 / 04.1998

The structured cabling for the VISOCALL-IP must conform fully to the standard

- EN50173-1 Class D dependent on CAT5e

Test logs are compulsory for every commissioning process.

All VISOCALL-IP system components conform to environmental class I, whilst all components which are installed in sanitary units, bathrooms etc. conform to environmental class II. In accordance with VDE0834 part 2 this means:

- Environmental class I: +5°C to +40°C *) with an relative air humidity of up to a maximum of 85%
- Environmental class II: +5°C to +40°C with a relative air humidity of up to a maximum of 95%

*) +55°C when installed in medical supply units

When planning and constructing nurse-call systems the currently applicable regional regulations must also be observed from the installation to the operation of call systems in hospitals, old people's homes and similar establishments. Many of the VISOCALL-IP system's properties considerably exceed these requirements.

VISOCALL IP is certified by the Austrian Electrotechnical Association (OVE) pursuant to DIN VDE 0834-1:2000-04 and DIN VDE0834-2:2000-04.

2 The Communications Platform

VISOCALL-IP allows the realisation of every practically occurring system configuration. Indication signals and indications on displays showing plain text on all communication terminals and ward terminals optimise the operating process just as automatic safety features do in critical cases. It unites several traditional systems in a single system and for future-looking reasons, as the name suggests, uses IP technology, and fully integrates TCP/IP, UDP and FTP protocols in their entirety.

In its basic structure, the overall system contains the following system functions:

- Nurse-call communications system with comprehensive signalling and speech connections between patients and nursing staff, as well as between fellow nursing staff members.
- Nursecall system with comprehensive signalling connections between patients and nursing staff, as well as between fellow nursing staff members.
- IP telephony handsets conforming to standards H.323 and SIP built into the patient handsets.
- Smartcard system for processing and billing telephone, television and internet access charges in accordance with different charging models.
- Integrated electroacoustic functions, such as the digitalization and distribution of up to 32 radio programs and playing in of additional external LF signals.
- Intranet and Internet access for patients.
- Additionally there are further measures in place to permit video streaming.

System architecture

As a consequence of the current market orientation towards network-based technology, manufacturers of nursecall systems have also been requested to deploy such technologies. However, not only should the structured cabling, but also the tried and tested bus structure should be possible to realise in such a system.

In conformance with standards, however, a separate network must be established for this system. The appropriation or use in the in-house data network is only allowed, if the conditions are observed in accordance with the “L3-NSP system integration” specification (in its most recent valid edition). It is not permissible to deploy or use the internal in-house data network. Microcomputer systems equipped with the necessary software, which function autarchically and which are distributed around the premises, are used to fulfil all described functions and features. Superordinated and/or centralised controller devices were not deployed for safety reasons. In the event of an end device failing, all other system components and functions must remain available in their entirety.

The network for the VISOCALL-IP requires a guaranteed data transfer rate of 100Mb/s. Data packets are prioritised to ensure the safe and rapid transfer of critical data e.g. call or alarm messages.

The structured cabling for all IP modules must be approved and tested in accordance with EN 50173-1 Class D for CAT5e.

Centralised configuration

The possibility exists to configure every individual module connected to the network and to upload the firmware from a centralised location in the system. The entire system can be reconfigured at any time to cover system extensions or modifications. Software and firmware upgrades can also be carried out at any time. The configuration process is carried out in a centralised manner using proprietary system software.

Remote Maintenance

Access for remote maintenance is also set up via the system server, with whose help the manufacturer, acting in consultation with the system operator, can perform the following services:

- Modification of configuration of individual system modules;
- Modification of the configuration of the entire system;
- Carrying out firmware updates to even affect the individual system devices;
- In the event of a fault, various log files can be read out for evaluation purposes;
- Check of faults and failures in the system.

2.1 Integrated nursecall system,

Autarchic Computer Systems

All system devices are fitted with autarchically functioning computer systems and software covering the entire range of services. All speech connections are also established autarchically. The required storage media use FlashProm technology. These media permit a software upgrade at any time during operation.

Independent Structure

All system devices are connected to so-called system switches. To allow the ports to be used in an optimal fashion, the functional links, which are independent of the physical assignment of the modules, are assigned via the system configuration.

All remaining system components are connected to the SWI9 system switch over the data bus wiring and are integrated into the entire system in this way.

Individual Functional Areas

Since the system structure is non-hardware based, it is possible to form individual functional areas at any time using the system configuration, without affecting or disrupting the continuous operation of the system. This ensures the utmost flexibility for the operator, whilst still ensuring substantial cost savings.

Infinitely variable system construction

Even just a pair of communications terminals connected to one another by means of a system switch form a complete nursecall communications system containing all features (call forwarding, speech connections, simultaneous system queries and announcements etc.). Every system can be constructed using a bottom-up approach by connecting various system devices next to one another – virtually separated communications islands for e.g. bathrooms, treatment wards and intensive care wards can also be created.

System-related Care

The system considers each ward as an individual sector, in which the system-related patient care issues are directly dealt with by nursing staff in the ward itself. All calls made by patients reach nursing staff members immediately, and are followed up by them either using the system's speech circuits or by visiting location where the call originated from. Each ward contains a ward terminal, at which the current functional state of the system can be ascertained, and can be acted upon accordingly.

"Decentralised" wards must be able to be combined practically to permit operation of the system with reduced staffing levels. Nursing staff are not bound to a specific area. All functions (including call forwarding and speech connections etc.) extend to all interconnected wards and can be queried at every ward terminal, as well as at every communications terminal. The interconnection of groups can be activated or deactivated at any time. In particularly critical situations, the interconnection process is carried out in a completely automatic manner.

Additional Standardised Programs

The system devices can have additional programs fitted for manual and fully-automatic adaptations to situations at any time, as well as for working in conjunction with other systems. Moreover, all displays show individual room descriptors when system messages are shown.

Enhanced Device Intelligence

Communications terminals and patient terminals are prepared with digital processing for 99 audio programs. Every system switch contains an interface to an external TV device, which can be assigned to a specific room via the configuration. Additional functions can be installed and configuration parameters changed accordingly on a room to room basis. Even parameters which affect entire wards are programmed from a central location. The same applies to the individual room labels.

Faults or failures which might occur are automatically recognised by this technological platform, and indicated and automatically forwarded. The following hierarchy applies in this process:

- At control panels and ward terminals they are signalled separately and unambiguously as a fault or a failure, with the relevant event being recognisable without any risk of misunderstanding.
- On the displays of communications terminals, in the first instance, only the functional restriction in the affected area are signalled. These measures allow faults or failures to be minimised in terms of time that they occur for, thereby keeping restrictions to operation to as low an extent as possible.
- The service monitor easily shows the faults and supporting the search for these faults. The technician is able to change the system and to diagnose and analyse the fault storage. Receipted faults are stored on the server with the correct time-stamp and all notices.

Furthermore, such events should also be forwarded from available system interfaces to a mobile end device or a pager to the responsible in-house technician.

Display indicators, membrane keypad

Communications terminals and ward terminals are fitted with a full graphic display. The call area (ward), call location and call type are indicated on this display in plain text. Plain texts and various indicating signals as operator hints are used to optimize the functional process.

Additionally, there are 12 character corridor displays, on which the same information is displayed. These large displays are also available for other applications, as explained in greater detail below. However, for safety reasons, the information relating to nurse call issues has priority in every instance. All system devices are fitted with membrane keypads for hygiene reasons or to permit simple cleaning. Patient terminals are shipped as sealed units that are splash resistant.

Patient terminal plug connection

The plug and socket connection between the patient terminal and the accompanying plug socket in the wall or in the media duct is carried out in such a way, that regardless of which direction the cable is pulled in, a slight pull on the cable is enough to automatically release the plug. In so doing, neither the plug, nor the plug socket nor any other components sustain any form of damage. The disconnection of the plug and socket connection is automatically recognised by the system as a disconnection call.

Surfaces of plastic components and membrane keypads

The membrane keypads of the communications terminals and the patient terminals as well as the plastic cases of the patient terminal are fitted with an anti-microbial surface. Antimicrobial surfaces reduce the risk of an outbreak of infections transmitted by contact with the surfaces of the unit. This preventive measure increases hygiene conditions and minimises the spread of infections.

Maximum Operational Security and Security against System Failure

Hardware and software-based measures as part of the complete concept offer maximum security in both normal operating processes and in critical alarm situations. Further details regarding these safety precautions can be found in the functional description which follows later. Total system-related failures are therefore impossible in the VISOCALL-IP system. By using room-autarchic computer systems in all important devices, in the event of failures (e.g. wire breaks on the data cabling etc.), all other sections of the system will continue to function fully in their entirety, even if the areas in question only consist of two switches.

Automatic Software Download

If a system module requires changing whilst the system is operational, then the management center, which is connected to the network, recognises this automatically. The relevant firmware, software and configuration data are then automatically sent to the module and saved there: The ability of the rest of the system to function is not compromised in any way.

Self monitoring

Constant self-monitoring of all the components in the system, as well as constant self-monitoring of all data and call circuits, ensures that failures or faults are automatically detected. At the same time, fault indications are generated automatically and safety functions carried out.

Storage of data

In the event of a power failure, information remained saved for an unlimited time. This information is then restored automatically once the power returns.

Safety features

Automatic call forwarding and automated monitoring processes at regular intervals, preventing the blocking and disconnection of call and speech circuits.

2.2 Integration of a telecommunications system

Interface to the telecommunications system

The telecommunications system is physically connected to the VISOCALL-IP using CAT5e cabling and a router (our ServerSwitch). The protocol stack is created both in accordance with the H.323 standard as well as the SIP standard.

2.3 Integration of a billing system

A cash-free and personnel-saving smartcard system, VISOTAX PLUS, is integrated into the VISOCALL-IP communications platform for charging of fees for telephony, television and online charges.

Billing servers, payment stations and system workstations can be incorporated into the existing cabling structure at any time. Interfaces to the telecommunications system, to the TV system and the Internet applications server enable charges arising to be logged for each person using the system.

The patient terminals described in this document are therefore be fitted with contact-free smartcard readers, which capture all the relevant user data and forward it to the corresponding system modules.

2.4 Integration of an electroacoustic system

VISOCALL-IP supplies digitalised LF signals over the system network for the transmission of radio signals to patient beds. A module which can be fitted in a cascade configuration is installed in a central location in the building, which contains both an FM tuner and also has other inputs for additional LF signals. All these signals are digitised by this module and transferred to the system network. The system configuration offers the possibility to filter these streaming signals accordingly and to transmit them only to the communications and patient terminals to which they are intended to go. Additionally for certain signals, it must be possible to have “compulsory reception” for defined modules.

2.5 Integration of the Intranet and Internet

This integration process is carried out in two different ways:

Using laptops

An RJ45 socket has been integrated in the connection module for connecting the patient terminal, to which a laptop can be connected. Consequently, the user, according to the privileges granted by the smartcard used, will be able to consume various online services over the system network. The smartcard will simultaneously be used for billing of these services.

Using multimedia terminals

As an alternative to the aforementioned solution, the system also allows so-called multimedia terminals to be used. In this instance, such a terminal is to be permanently installed next to every patient bed, and to be connected to the system network. The patient terminal itself is held in a mechanical fitting on the multimedia terminal. The operation of the multimedia terminal in online mode is by means of a combined keyboard with trackball. The smartcard used allows the services to be provided to be selected as well as the possibility to bill the online service charges that are incurred.

Security guaranteed by VLAN

For security reasons an internal VLAN is formed for patient laptops and multimedia terminals. This ensures that Internet users do not have any opportunity to log into the hospital network or to examine data packets in this way.

Quality of service

Specific IP parameters in the TCP/IP protocols ensure that all data relevant for safety are distributed within the network and can be indicated on the intended end devices without delay. In addition, this also increases the security of the system and counteracts any possible interference from other data packets.

2.6 Combined functions with other systems

The following interfaces were incorporated in the VISOCALL-IP:

Fire detector system

Automatic forwarding of fire alarms using serial data protocol. These messages are forwarded to specific parts of the system in the entire system depending on the location in which they were triggered. The assignment of where which type of alarm should be indicated is determined in the system configuration. Furthermore the VISOCALL-IP also forwards these messages to the alarm server or to defined mobile end devices over the system interfaces.

Disorientation System

Automatic forwarding of alarms from the SecurWATCH disorientation system, if confused patients or residents leave the confines of the establishment with being noticed. In this serial protocol, all data (e.g. name of the person concerned as well as the area in which they are located) are contained, that are forward by VISOCALL-IP to the defined modules. These alarms are also forwarded to the alarm server or to defined mobile end devices over the system interfaces.

Alarm server

Forwarding of the relevant type of call and the location of the call as plain text using the serial data protocol. The information to be forwarded is executed by the relevant interface and must be activated individually. Furthermore, it is ensured that calls which have not been acknowledged within a preconfigured period of time must be passed on to the alarm server as repeated calls.

Mobile end devices

Transmission of the type of call and the call location as plain text as well as connection of speech communications between the nurse call system and the mobile end device in both directions. The quantity of possible speech channels is defined by the virtual extensions in the telecommunications system. E.g. if 40 extensions are made available, then it is possible for up to 40 devices to speak at once. In the event that a speech connection has already been established, reminders are set for all staff categories separately from the mobile end device. For security reasons, a repeat message must be sent to the relevant mobile device after a pre-configured time, for reminders which have been sent from the mobile unit and which have not been acknowledged.

TV Devices

Operation of system TV devices, both using conventional tube technology as well as modern LCD TV technology from patient terminals. TV sound is also to be incorporated into the patient terminal.

Other foreign systems

Furthermore, there are also system interfaces, which connect the widest range of systems bidirectionally with VISOCALL-IP. These functional connections are made using potential-free inputs and outputs. For messages that are sent to the VISOCALL-IP system, clear message texts are assigned. It is also possible to forward messages to the alarm server or to the mobile system.

3 Basic Installation

Infinitely variable system construction

Every system switch has 9 IP ports, one of which is used as the uplink (100Mb), with the other 8 ports (100Mb each) being available for IP system components. Two connected communications terminals (KMT) already form an autonomous and functional system with all the relevant functions required for a call system. Every type of system can be formed as a result of the structured cabling.

3.1 Wiring

VISOCALL-IP is a security system, which was designed in the first instance for the integration of nurse call functions. Visocall IP uses structured LAN cabling, which is already used in the IT world. This IP-based structure is also used for other functions, but the security functions for VISOCALL-IP set out in the standard VDE0834 must continue to have absolute priority. It is therefore necessary to prioritise cabling and connectors for the system. As a result of this the following requirements arise:

- CAT5e cable of the type F-UTP 4x2x0.5 AWG24
- The relevant connectors as prescribed by Schrack Seconet AG
- Checking of the LAN structure in accordance with EN 50173-1 Class D

As a renowned company with a great deal of experience in the communications and security branches, SCHRACK-SECONET AG explicitly advises, that guidance must be given with regard to the cable types and the accompanying RJ45 connectors for the VISOCALL-IP system. The issue of security and safety is of primary importance, with patient wellbeing being our concern. All other and additional functions are to be viewed as optional extras.

As a result of structured LAN cabling using CAT5e (F-UTP 4x2x0.5 AWG24) and the recommendation of cable marking, it is ensured that it can not be possible for cables to be mixed up. RJ45 connection sockets on the IP bus and I/O bus components make fitting easier, reduce the expenditure on the installation and increase maintenance-friendliness.

3.2 Optimal concept for devices

Components which have been thoroughly thought out down to the finest details are a hallmark of the VISOCALL-IP device concept:

System switch

For fitting in cavity ceilings and 19" switching cases.

Connection module

For fitting into double countersunk switchboxes or installation units for hospital rooms (media ducts).

Connection Module Light

To be built into double countersunk switchboxes or installation units for hospital rooms (service ducts). Connection to the data bus using RJ45 sockets 4 RJ11 sockets for connecting various basic components.

Connection Module B1

to be built into double countersunk switchboxes or installation units for hospital rooms (service ducts) and for management of one bed (push button). Can either be connected to an SM light or one of the various types of room electronics modules using 2 x RJ11 sockets.

Connection Module B2

To be built into double countersunk switchboxes or installation units for hospital rooms (service ducts) and for management of two beds (push buttons). Can either be connected to an SM light or one of the various types of room electronics modules using 2 x RJ11 sockets.

Push button

Simple manual call components with call button and two lighting buttons that function independently of one another.

Patient terminal

Various versions available - the optimal solution for every use.

Button modules

For toilets, bathrooms and day rooms etc.

Lamp modules

For signalling on a room, area and ward-related basis, using LED technology.

Communications terminals

Autarchic communications and data centres, with integrated speech communication and membrane keypad.

Room terminals

Simple room component without speech communication, with membrane keypad and chooseable with or without a display. To be built into double countersuck switchbox (Call button, present button and doctor call button). Is connected to the I/O bus 2 RJ45 and comprises of amount other items 5 RJ11 sockets for connecting various basic components.

Electronics for rooms

Simple electronic circuitry without speech connection, fitted into a special installation case. Is connected to the I/O bus 2 RJ45 and comprises of amount other items 5 RJ11 sockets for connecting various basic components.

Sound Interface

Sound streaming via LAN. 64kb/s per program.

Text displays

For quick, comprehensive and clear signalling.

Ward Terminal

With a ¼ VGA colour display and interactive buttons.

Control Panel

Colour graphical monitor system for an optional overview and easy operation.

Servicemonitor

For fault indication on a PC. Password-protected access for up to 16 users.

Power supplies

For supplying power to the ward or a particular sector (24V=).

Accessories

Single or double switchboxes, LED lamps

3.3 Realisation of all types of system

The freely programmable platform allow

- Decentralised systems or/and
- Centralised systems or/and
- Combination systems

to be formed. It is possible to change from one type of system to another at any time. The platform allows the creation of: Communication islands for bathrooms and therapy wards with an independent sequence of functions within each type of system.

3.4 Combination with other systems

VISOCALL-IP can work in combination with a wide range of other systems:

- In combination with Schrack Seconet's automatic billing system
- In combination with lighting controls
- In combination with the wireless paging system
- In combination with mobile end devices
- In combination with the IT system
- In combination with the fire alarm system
- In combination with the in-house IT system
- In combination with the disorientation system

VISOCALL-IP is the symbiosis of the complex requirements placed on future looking communications systems in the healthcare sector, of the highest level of security and optimal operating comfort and maintenance-friendliness. All these features are bundled together with state-of-the-art technology and a timeless design.

4 The types of system

VISOCALL-IP makes it possible to implement any type of system conforming to VDE 0834/part 1 whilst additionally offering practice-specific customisability.

- Global measures can also be implemented for decentralised systems (using possible extensions).
- There are no limitations to the number of possibilities for extending VISOCALL IP's functions and configurations. All important system devices contain single chip processors with comprehensive software, which permits the required functions to be carried out.
- Any system configuration is possible, based upon a standard installation of the system, by simply connecting communications terminal, ward terminals and control panels to the switches. If all types of connector are present, then it is possible to use or remove any type of device at any time. Devices automatically recognise the current status of the system.

4.1 Decentralised systems

Decentralised nurse-call communication systems consider each ward as an individual sector, in which the system-related interests of patient care by nursing staff in the ward are detected directly.

All calls by patients reach nursing staff immediately, and are followed up by the nursing staff either via using the system's speech circuits or by them going to the place where the call originated.

Each ward is equipped with a ward terminal, from which the current functional status of the system can be ascertained, and can be acted upon accordingly. The communications terminals offer support in all important rooms.

Decentralised stations can be combined practically for operation with reduced staffing levels. Nursing staff are then not bound to a specific area. These functions (e.g. call forwarding, speech connections) are also incorporated into all interconnected wards and can be queried at every communications terminal and every ward terminal. The interconnection of groups can be activated and deactivated again at any time. In critical cases, an interconnection process occurs automatically.

4.2 Centralised Systems

Centralised nurse call communications systems possess a control panel covering all wards in the building.

- All calls are indicated on this control panel and are in particular queried by trained staff members. The tasks to be carried out in the various wards are then forwarded to the nursing staff members working in that area via the system's speech circuits. Communication with nursing staff and patients is carried out via the communications terminals or patient terminals. Other sectors can also be integrated in to the functions section of the control panel.
- Any ward can be detached from the control panel at any time and then function in a decentralised manner. Speech transmission in every detached ward remains possible, even when the area does not contain any ward terminals. Equally, each decentralised ward can also be reconnected to the control panel. If the control panel is unmanned, then all wards function as decentralised wards. The type of system can be changed at the push of a button, or, in critical instances, automatically.

4.3 Combination systems

Combination systems make it possible to selectively use both types of care systems listed above.

- All types of system can be used with the corresponding query locations. Activated configurations can function separately from one another or in harmony with one another. It is possible to change from one type of system to another at the press of a button or (in critical instances) automatically.
- Combination systems offer the advantages of both decentralised and centralised forms. The (decentralised) wards that are no longer being operating centrally can also be combined with one another. It is therefore possible, for example, to have all wards displayed the control panel by day, whilst each ward is decentralised during the night. Otherwise, all wards can function as decentralised ones, whilst a control panel is activated for the centralised night watch duty, on which checks or combining of functions can be carried out.

4.4 Communication Islands

By using various terminals, independent communications islands can be formed without the need for any particular arrangements. They are created, for example, for care wards. If organisationally required, then these communications islands can also be interconnected with other wards.

4.5 Group Care

In certain cases it is necessary to define care groups within individual wards (communication islands). Different nursing staff members are responsible for different patient groups. Calls made in a care group remain within the group and are then also treated within the group. In the event that there is no prompt reaction, the calls are automatically forwarded. Up to 255 care groups can be defined per VISOCALL-IP system. The division of care groups in to wards or across several wards is then dependent on the requirements of the customer.

5 The system functions

VISOCALL-IP does not require superordinated controls – neither for functions, nor for speech circuits.

- All system functions are stored, ready-for-use, in the microcomputers of the autarchic communications terminals and query locations.
- The management center recognises all system components in the system as required (system switches, communications terminals, patient terminals, all types of call button combinations, lamp modules etc.) and thereby allows low-effort configuration and customer-specific programming.
- The system devices communicate over TCP/IP with one another and make the relevant assigned functional decisions autarchically.
- Every important function (doctor call, diagnostic call, emergency call etc.) can be monitored via the system interface and can be transferred to other systems or communications processes.

The following functions are as standard. Additional property-specific customisations can be carried out using the system's software structure.

The light signals, call signals and intervals between signals etc. correspond to the standard VDE0834/1-2000. When explaining about the functions and system components the terms used in the standards are also used.

5.1 Call types and priorities

All types of calls listed further below are ranked according to priority within the entire system. If different calls are triggered at the same time, then all system devices will automatically display the highest ranking call in first place. Only once this call has been dealt with, will the next call within the priority list be treated. If two calls with equal priority are triggered, then the system works in strict chronological order, with the first of the calls of equal priority being treated first.

The following call types, corresponding to the basic priorities mentioned are available:

1. Fire alarm
2. Heart alarm
3. Doctor call
4. Diagnostic call
5. Disorientation call
6. Bathroom or WC emergency call
7. Room emergency call
8. Bed emergency call
9. Bathroom or WC call
10. Room call
11. Enhanced patient call from his bed or associated disconnection call
12. Patient call from his bed or associated disconnection call
13. Disconnection call
14. Message from a foreign system
15. Service call
16. Telephone call
17. Fault
18. Failure

General Requirements

All events generated in or by the system are transferred to the mobile end devices and alarm server interface. Moreover, they are also recorded in chronological order in a log file, and can be displayed or printed out as necessary. All keys within the system that trigger calls are fitted with a so-called finder light in accordance with VDE0834, so that the call buttons are also easy to locate in darkened rooms.

5.2 The Fire Alarm

This event is automatically generated by the BMZ Integral fire detector system. It is passed on to the VISOCALL-IP communications system via a unidirectional system interface, and is indicated on differing end devices dependent on the configuration.

The following parameters can be configured for this:

- The display text for the event to be displayed,
- In which ward(s) it should be indicated,
- Whether the indication should occur only where there is staff presence marked or at every terminal,
- Forwarding of the event to other system interfaces (e.g. mobile end devices or alarm server)
- The duration for which it is to be indicated in the configured end devices,

It is indicated optically on the terminal on the display (including information about the area in which the fire was detected) as well as acoustically with a quick call rhythm (alarm call pursuant to VDE0834). This event can not be acknowledged within the VISOCALL-IP system. It can only be cancelled via the fire detector system.

5.3 The heart alarm

This is a remote call made by the nurse to the doctor or to a reanimation team in an emergency. This call occurs when nurse presence is set at the communications terminal and is indicated optically and acoustically on other terminals where doctor or nurse presence is marked. If required, this heart alarm can also be queried. If required this heart alarm can also be queried. The call is signalled using a blue flashing light and an acoustic signal with a fast call rhythm (alarm call pursuant to VDE0384). The organisation of the call or the alarm is adapted to the requirements of the hospital.

The heart alarm is only able to be cancelled by pressing the doctor presence key at the terminal from which the call was triggered. Once this call has been queried, there is also the opportunity to activate a reminder.

5.4 The Doctor Call

This is a remote call made by the nurse to the doctor in an emergency. The call is made where nurse presence has been marked on the communications terminal and is indicated optically and acoustically on other terminals where doctor presence is marked (with information on the display about the precise call location). If required it is also possible for this call to be queried. The call is signalled using a blue flashing light and an acoustic signal with a normal call rhythm (emergency call pursuant to VDE0384). The doctor call is either cancelled by pressing the doctor presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.5 Diagnostic Call

This call is automatically triggered by a monitoring device at the patient's bed, and is indicated at the other terminals where nurse presence has been marked both optically (with information on the display about the precise call location including the bed number) as well as acoustically. The call can not be queried and is followed up by the nurse directly. The call is signalled using a red flashing light and an acoustic signal with a fast call rhythm (alarm call pursuant to VDE0384). The call is cancelled directly from the external monitoring device, with cancellation from within the communications system not being permitted.

5.6 Disorientation Call

This type of call is generated automatically by the external SecurWATCH disorientation alarm system, and informs staff members that a person who is not allowed to has left a defined local area.

This event is passed on to the communications system by means of a unidirectional system interface, and should be indicated at differing end devices dependent on the configuration.

The following parameters can be configured for this call:

- In which ward(s) it should be indicated,
- Whether the indication should occur only where there is staff presence marked or at every terminal,
- Forwarding of the event to other system interfaces (e.g. mobile end devices or alarm server)

The indication occurs at terminals where nurse presence has been set optically on the display (with information about the person concerned and the area that they have left) and acoustically in fast call rhythm (alarm call conformant to VDE0834). The call can not be queried and is followed up by the nurse directly.

The call is manually cancelled by pressing the relevant cancel button on a ward terminal intended for this purpose.

5.7 Bathroom or WC emergency call

This is a call made by a nurse from a sanitary room (WC, shower etc.) with marked nurse presence. The call can not be queried and must be followed up by the nurse directly. The call is signalled using a red and white flashing light and an acoustic signal with a fast call rhythm (emergency call pursuant to VDE0384). Furthermore, all system displays recognise this call as such in an unambiguous manner and make details known about the room in question.

The call is cancelled either using a separate cancellation button or by using the accompanying presence button at the communications terminal.

5.8 Room Emergency Call

This is an emergency call made by a nurse from a room within the ward. The call is made where nurse presence has been marked on the communications terminal and is indicated optically and acoustically on other terminals where nurse presence is marked (with information on the display about the precise call location). The call is signalled using a red flashing light and an acoustic signal with a fast call rhythm (emergency call pursuant to VDE0384). If required this call can also be queried from the KMT. The room emergency call is either cancelled by pressing the nurse presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.9 Bed Emergency Call

This is an emergency call made by a nurse from a patient bed. The call is made where nurse presence has been marked on the communications terminal and is indicated optically and acoustically on other terminals where nurse presence is marked (with information on the display about the precise call location including bed number). The call is signalled using a red flashing light and an acoustic signal with a fast call rhythm (emergency call pursuant to VDE0384). If required this call can also be queried from the KMT. The bed emergency call is either cancelled by pressing the nurse presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.10 Bathroom or WC call

This call is made by the patient from a sanitary unit (toilet, shower, etc.). The call can not be queried and must be followed up by the nurse directly. The call is signalled using a red and white continuous light and an acoustic signal with a slow call rhythm (call pursuant to VDE0384). Furthermore, all system displays recognise this call as such in an unambiguous manner and make details known about the room in question.

The call is cancelled either using a separate cancellation button or by using the accompanying presence button at the communications terminal.

5.11 Room call

This is a call made by a patient from a room within the ward. This call is indicated at other terminals with nurse presence set both optically on the display (with information about the precise call location) and acoustically. The call is signalled using a permanent red light and an acoustic signal with a normal call rhythm (call pursuant to VDE0384). If required this call can also be queried from the KMT. The room call is either cancelled by pressing the nurse presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.12 Enhanced patient call

This is a call made by a patient from their bed, who is e.g. severely ill or has just undergone an operation. This call is indicated at other terminals with nurse presence set both optically on the display (with information about the precise call location including bed number) and acoustically. The call is signalled using a permanent red light and an acoustic signal with a normal call rhythm (call pursuant to VDE0384). If required this call can also be queried from the KMT. The room call is either cancelled by pressing the nurse presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

The ward sister is responsible for making the decision to upgrade individual patients, with the programming being carried out via the ward terminal or the control panel. This type of call has a higher priority than standard patient calls.

5.13 Patient Call

This call is made by the patient from their patient bed. This call is indicated at other terminals with nurse presence set both optically on the display (with information about the precise call location including bed number) and acoustically. The call is signalled using a permanent red light and an acoustic signal with a normal call rhythm (call pursuant to VDE0384). If required this call can also be queried from the KMT. The room call is either cancelled by pressing the nurse presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.14 Disconnection call

This call is automatically made, as soon as the connection plug of a patient terminal is pulled out of its connection module. This call is indicated at other terminals with nurse presence set both optically on the display (with information about the precise call location including bed number) and acoustically. The call is signalled using a permanent red light and an acoustic signal with a normal call rhythm (call pursuant to VDE0384). The call can not be queried and must be followed up by the nurse directly. The room call is cancelled by setting nurse presence on the terminal.

If a patient terminal is consciously disconnected by staff e.g. to clean it, a disconnection call can be circumvented by simultaneously pressing a specific combination of keys.

5.15 Message from a foreign system

These messages are generated by foreign systems and inform the relevant staff members in this way via the indication elements existing for the described system. These events are transmitted using potential-free contacts to the communications system and are indicated on various system end devices dependent on the system's configuration.

The following parameters can be configured:

- Text is highlighted to show which event is concerned,
- The event is locally assigned,
- Which staff members should receive the message (nurses, service staff, doctors or technicians)
- If nurses, service staff or doctors are to be informed about the message, then it is to be indicated either when presence has been marked or always,
- Forwarding of the event to other system interfaces (e.g. mobile end devices or alarm server)
- The priority of the call
- Call transmission either by continuous contact or a wiping contact
- Optical and acoustic indication of the message in the system conformant to VDE0834

Indication on the terminals is optically on the display with details about the location and the event as well as acoustically accordingly to the configured acoustic signal conformant to VDE0834. The calls are not queryable and are followed up by staff members directly.

The call is cancelled, depending on the foreign system's configuration, either by the foreign system itself (by opening the continuous contact) or manually by pressing the relevant cancel button on a ward terminal intended for that purpose.

5.16 Service call

This is a call made by a patient from their patient bed using a special service call button on the patient terminal. This call is indicated at other terminals with service staff presence set both optically on the display (with information about the precise call location including bed number) and acoustically. The call is signalled using a permanent red light and an acoustic signal with a normal call rhythm (call pursuant to VDE0384). This call can also be queried if required. The service call is either cancelled by pressing the service staff presence key at the terminal from which the call was triggered or by remotely cancelling the call once a call query has taken place. Once this call has been queried, there is also the opportunity to activate a reminder.

5.17 Fault message

The fault message is automatically detected by the communications system in the event of wire breaks or similar events and is indicated immediately on all ward terminals and control panels that can be reached, both optically and acoustically, as well as being forwarded to other systems such as mobile end devices, central management systems or alarm servers via various interfaces. The optical messages on the display contain pertinent information, from which it is possible to ascertain the approximate location of the fault. This message is cancelled once the fault itself has been dealt with, however it is possible to suppress the acoustic indication for a configured period of time after pressing a key on the ward terminal.

5.18 Failure message

The failure message is automatically detected by the communications system in the event of the complete failure of a system switch or of an IP module and is indicated immediately on all ward terminals and control panels that can be reached, both optically and acoustically, as well as being forwarded to other systems such as mobile end devices, central management systems or alarm servers via various interfaces. The optical messages on the display contain pertinent information, from which it is possible to ascertain the approximate location of the failure. This message is cancelled once the failure itself has been dealt with, however it is possible to suppress the acoustic indication for a configured period of time after pressing a key on the ward terminal.

6 Standard functions

6.1 Treating the call at the ward terminal

Call queries are handled on a room-by-room basis down to the patient terminals. The nurse can receive one call after the other in accordance with the priority of the calls as well as in a free order. Each call is instantly recognisable as being queryable or not queryable. In order to optimise the operating procedure, the relevant information is shown as plain text on the display using different colours and symbols.

It can also be configured that the call can be cancelled simply by pressing a button.

Queryable Calls on modules intended for this person

After the call has been queried, a speech connection is established to the caller, which is displayed by means of an attention reminder to both parties in the conversation. Additionally, the type of call and location of the call are also displayed. Once the conversation has been ended, each call can be remotely cancelled or be replaced by a reminder.

Non Queryable calls

They are also immediately displayed according to type of call and location of call after having been received. The call is cancelled at the location where the call was triggered, which can additionally be ascertained by means of a reminder.

Appearance on the display

Up to 4 currently pending calls can be displayed simultaneously on the ward terminal. It is possible to view all the calls using the scroll function. On the right hand side next to the call symbol the type of call and call location is displayed as plain text.

6.2 Treating calls from the communications terminals

Communications terminals with presence marked are automatically activated in decentralised systems for call diversion and secondary queries. As a result the nurse can be reached in every important room in the ward, and is therefore informed of existing calls. Linking to the network happens according to the priority hierarchy, and each call is immediately recognised as being queryable or non-queryable.

If several calls occur simultaneously, then the call which according to the configuration has the highest ranking is displayed automatically. It is simultaneously possible to recognise that other calls exist that are waiting to being dealt with. Staff members have the opportunity via a "scroll function" to see all other calls and to attend to the calls based on their own decision.

Queryable calls

When a queryable call is accepted, a speech connection to the person making the call is made. Once the conversation has been ended, each call can be remotely cancelled or be replaced by a reminder.

Non Queryable calls

They are recognisable as such straightaway and can only be acknowledged from the location where the call was triggered.

Appearance on the display

The displays on the communications terminals are fully graphical, with a resolution of 128x64 pixels and must indicate the relevant call type, call area, call location and at least 16 characters of additional information in plain text form. Additional calls made during the conversation are signalled by a changing display.

The displays on the patient terminals are also fitted with a 128 x 64 pixel full graphic display, with in this case the main priority being that hints for operation must be given.

6.3 Call answering at room terminals

Room terminals with presence marked are automatically activated in decentralised systems for call forwarding. As a result the nurse can be reached in every important room in the ward, and informed of outstanding calls. Calls are connected based on the priority scheme.

Non Queryable calls:

They can be recognised as such straightaway and can only be acknowledged from the location where the call was triggered.

Appearance on the display:

The displays on the communications terminals are fully graphical with a resolution of 128x64 pixels and indicate the relevant call type, call area, call location and at least 16 characters of additional information in plain text form. Additional calls made during the conversation are signalled by a changing display.

6.4 Reminder

A reminder allows the indication (marking, identification) of rooms, which are to be visited by a member of the nursing staff as a follow-up to a call. A reminder is generally activated by nursing staff themselves, in the event that there is no reply from the person making the call when querying a call, or if there is no speech connection for a call, or if there is an engaged tone, or if other calls are to be queried before going to the location of the call or if calls are delegated to other nursing staff members. Up to three reminders can be activated at communications terminals or at the ward terminal or at the control panel – for:

- Nurses Green flashing
- Helper nurses Yellow flashing
- Doctors blue flashing

The cancellation of a reminder in a “marked” room occurs by setting the relevant presence.

6.5 Room call

The nurse at the ward terminal or the control panel can also establish communications to every individual communications terminal in that area even when there is no call outstanding. At terminals where presence has not been marked a mute is automatically put in place, which can be lifted by replying from this terminal. The room telephone call is signalled optically and acoustically at the selected terminal.

6.6 The Patient Telephone Call

The nurse at the ward terminal or the control panel can also establish communications to every individual patient terminal within that area even when there is no call outstanding, with a mute function automatically being activated, which can be deactivated by a return call from the patient terminal. The patient telephone call is signalled optically and acoustically at the patient terminal.

6.7 Ward announcement (collective announcement)

Staff members at the ward terminal, the control panel and the communications terminal can make announcements at all configured terminals. These announcements are simultaneously possible both by separate staff category (nurse, service staff doctor) as well as in all rooms within a zone.

- Presence-related announcements only reach the communications terminals of the ward being called, at which members of the relevant staff members have marked their presence. This applies both to doctor and nurse presence.
- Collective announcements reach all communications terminals and patient terminals within the ward, regardless of whether presence has been marked or not.
- General announcements reach all communications terminals and patient terminals in the entire system

6.8 Manual ward interconnection

This allows the manual formation of care areas, which consist of two or more wards. The indication, call forwarding and possibility to query every call is then extended in accordance with the priorities set to all ward terminals and communications terminals in this area. Additionally ward lamp modules or corridor displays indicate calls or reminders from all interconnected wards. The displays on the ward terminals and communications terminals are able to display the name of the ward when calls are being forwarded.

6.9 Automatic Call Forwarding

If calls have not been able to be dealt with within a pre-configured time due to the fact that staff members are all busy, it is possible to forward a call to one or more other pre-configured care groups. This continues to take place until all calls have been dealt with. All other functions are identical to those for manual interconnection.

6.10 Group Care

Group care makes it possible to assign rooms within a ward or even across several wards into logical groups. This can either be done as a one-off event or during normal system operation. Up to 255 different care groups are possible within a VC-IP system. Calls from a care group remain exclusively within this group as long as they are answered promptly. If this is not the case in an individual instance, then the call is automatically forwarded and received by the ward terminal or the control panel.

6.11 Ward-by-ward centralisation

It is possible for centralisation to block call forwarding and the ability to query the call at communications terminals across the whole ward. All calls from the ward are only displayed at the ward terminal and can then only be queried from here. Centralisation is said to have occurred, if, for example, all calls are queried by a nurse at the ward terminal, which will be delegated to other nursing staff in the ward for dealing with.

6.12 Global Centralisation

It is possible for centralisation to block call forwarding and the ability to query the call both at communications terminals as well as at the ward terminal. All calls from the ward are only displayed at the centralised control panel and can then only be queried from here. Centralisation is said to have occurred, if, for example, all calls are queried by a staff member at the control panel, which will be delegated to other nursing staff in the ward for dealing with.

6.13 Variable Assignment of Rooms and Wards

During the commissioning process of the communications system, it is configured which end devices are functionally assigned to which room or to which ward. Logical units, such as rooms, sanitary rooms, wards, storeys etc. are formed regardless of their physical structure by various software parameters. This variable assignment of individual rooms to the wards can also be carried out by the nursing staff during operation. On the one hand, it is possible to carry out the necessary for group nursing in a very easy way, and whilst on the other hand, rooms from adjacent wards can be integrated into the ward or be transferred to another ward in the event of wards being under-occupied or over-occupied.

6.14 Monitoring function

In specific cases, e.g. in maternity wards or children's wards, the system allows the possibility to "eavesdrop on rooms". For a users defined number of rooms these function is easily activated by the settings of the DZT. The rooms will be monitored periodically. Die time cycle will be programmed. This function is configured during the commissioning process. This function can be activated/disabled manually at any time at the ward terminal.

In order for staff members to continue to have the possibility to query calls, the eavesdropping function must be interrupted automatically when a call has been made for safety reasons. Once the call has been ended, the eavesdropping function is automatically restarted.

6.15 Test and Service Functions

In accordance with the standards listed at the beginning of the document, all system devices are automatically monitored to check that they are functioning properly. Errors detected by the system are indicated on the ward terminal or control panel as either “failures” or “faults” depending on their cause. Devices and parts of the system that are not affected continue to function without their functioning being impeded. Test functions which can be carried out at any time, for displays, LEDs and audible alarms, enable the problem-free testing of these system components.

6.16 Regulated Call forwarding

The querying of a call ends it being displayed on other system devices, although new calls are immediately displayed again. A conversation can neither be influenced nor terminated from another location. It is also not possible to listen in on conversations.

6.17 Automatic Call Termination

To avoid speech circuits getting blocked, patient calls are terminated after a specific time period. A conversation automatically cancels the call, even when someone forgets to cancel the call at the end of the conversation.

6.18 Backing up of data

The memory modules of the system computer saves its current state of information in the event of a power failure for an unlimited period of time, and restores it once the power returns.

If there is a power cut during a conversation, then the affected room is marked with a reminder when the power returns.

6.19 Switching of Lighting Circuits

Every patient handset contains two lighting buttons with integrated guide lighting. They are used for indirectly controlling of two lighting circuits (e.g. a “reading light” and “room lighting”).

6.20 Receiving radio programmes

All communications terminals and patient terminals are able to receive digitised radio programs. For this purpose, a system is housed in a central location, which receives the radio programs from the network of aerials and digitises them and distributes them to the end devices over the communications network. Other external LF signals can also be incorporated in digitised form using this centralised receiver module. These signals are either treated by the system configuration as additional programs or act as acoustic warning messages from foreign systems. In the latter case, it can be configured in which areas of the hospital this signal should be transmitted via the communications terminals as a staff announcement, and which category of staff should receive the signal.

7 Additional Functions of the System

The plastic case and operating membranes of the patient terminal are now shipped, without exception, in an anti-microbial version. The operating membranes of the communications terminals are also fitted with the same characteristic. Antimicrobial surfaces reduce the risk of an outbreak of infections transmitted by contact with the surfaces of the unit.

This preventive measure increases hygiene conditions and minimises the spread of infections. Patient terminals are available as splash-resistant units. Furthermore, these modules also have the possibility to receive wireless signals, which make the patient terminal “remote controllable” e.g. as devices for controlling surrounding conditions for the severely disabled or similar systems.

The corridor displays can carry out other tasks in idle mode, e.g.:

- Displaying the date and time
- Displaying individual texts, which can be defined from a PC and can be changed at any time, with the following types of operation to be realised
- a single PC controls a display,
- A PC controls up to 32 corridor displays, with it being possible for all the displays to show different texts,
- Several PCs control a single display,
- Several PCs control up to 32 corridor displays.

The use of normal light bulbs is no longer permissible anywhere in the entire system. All lighting must use LED technology, however there are also standards to be observed regarding the strength of lighting (in particular VDE0834/Part 1 – point 5.1.10).

8 System devices

Using the aforementioned system devices it is possible, in practice, to create any type of system imaginable. Functions are automatically adapted using the device's in-built software. The system devices correspond to the relevant VDE and DIN standards. For connection to cabling, they have an RJ45 connector either in its standard form, or with a special self-disconnecting mechanical property.

- Switchboxes and double switchboxes for use in installation in cavity walls and concealed installation are as standard (as described in section 11 "Installation Accessories") and can also be obtained elsewhere. The same is also true for the various wiring materials.
- Some system devices are delivered as individual pieces for economic reasons and installation purposes. These parts for shipping are listed alongside the relevant devices, including their article numbers.
- Precise advice and recommendations for the selection, planning and configuration of system devices in the various types of room within a hospital can be found in the chapters "**Planning and Installation**" (in a separate document) and "**Placement of devices**" (also in a separate document) which feature many diagrams and examples.

8.1 Communication and security from your hospital bed



Patient terminal as a handheld unit

Moveable and easy to manoeuvre like a telephone receiver, it is the ideal communications device for the hospital bed. The following functions are available as standard:

- call nursing staff,
- voice connection with staff members,
- operate reading light and room lighting and
- listen to the radio.

The following options are possible:

- Making telephone calls
- Controlling the room's television and receiving TV sound
- Operating the patient's television and receiving TV sound
- Pre- and post-paid outgoing telephone calls

Staff members use the same device if they require assistance. Every device contains a single chip processor with its own software for bed-autarchic intelligence.



Push button as a handheld unit

Moveable and easy to manoeuvre like a telephone receiver, it is the ideal communications component for the hospital bed. The following functions are available:

- call nursing staff,
- operate reading light and/or room lighting

Staff members use the same device if they require assistance. Every device is fitted with a self-disconnecting plug.

8.2 Communication and safety in every room



Communications terminal

The room autarchic communications centre for every important room. From here nursing staff members and doctors can:

- indicate their presence,
- clear calls,
- acknowledge and query calls,
- Set reminders
- call for assistance and even
- make ward announcements.

Each communications terminal contains its own computer system with multifunctional software and many new advantages – e.g.:

- Centralised firmware upload
- Multiple line full graphic display with scroll function
- Radio reception via streams
- Membrane keys, wear-free LEDs etc.



Room Terminal

The centralised communications centre for every important room. From here nursing staff members and doctors can:

- indicate their presence,
- investigate calls,
- set reminders,
- call for assistance

Every room terminal contains a processor with multifunctional software and many advantages - e.g.:

- Centralised firmware upload
- Multiline full graphic display with scroll function
- membrane keys, wear-free LEDs etc.

8.3 Communication and security in the ward's nurses room



Ward Terminal

The ward terminal is mainly used in the event of a decentralised system being in effect. Its large colour screen display and the surrounding functions keys arranged around it clearly display information for the user, such as:

- Presence lists arranged by room,
- Signalling and querying of calls, both chronologically and selectably
- Setting of reminders,
- Bed, room and group announcements etc.
- Ward interconnections
- Enforcement of centralisation of areas
- Upgrading of patient calls
- Activation of group care
- Recognition of faults and failures

Password-protected programmer level and selection by room of group care and selection by bed of enhanced bed calls.

Datasheets

1 General Modules

Generally housed in a server room, the general modules are housed centrally in a single location, which are usually built into a 19" cabinet for each system.



Nr.: FC010090

Management Centre

The system service is used during the commissioning of the system for reading in the system topology, for uploading the firmware and the system configuration, for operating interfaces to foreign systems, for logging of all system events and as a central location for system configuration and remote maintenance. This server is not used for centralised controlling of the integrated nursecall system. An USB-Dongle gives via Licences access to the software modules (chapter 2 and chapter 10). In the event that the server is not available for the system during normal operation, then its functions are carried out in their entirety by VISOCALL-IP.

The minimum requirements for the server are as follows:

- Intel Xeon 3220 2,4GHz or similar
- 2 GB RAM
- 1 x 160GB HDD
- 1 x DVD harddrive
- 1 x Gbit LAN Ethernet RJ45
- 1 x serial connection RS232 and 2 x USBV2.0
- 1 x PCI or 1 x PCIe socket
- support for SUSE Linux enterprise Server from V10.1

Dimensions: 42,5x430x560mm (WxHxD)

ATTENTION: Due to the depth of the Management Centre and the cable that must be connected, it is essential that when using a 19" cabinet that the depth of the cabinet is a minimum of 800mm.

Description:	Type:	Article No.:
Management Center	MC-IP	FC010090
USB-Dongle	USB-DONGLE	FC010089

Optional:

Description:	Type:	Article No.:
Harddrive	HDD-SATA-MC	FC010080
DVD drive	DVD-MC	FC010081
Interface	RS232-MC	FC010085



Nr.: FC010030

Management Center (redundantes Netzteil)

The management center with redundant power supply in Tower variation.

Dimensions: 444x205x605mm (WxHxD)

Description:	Type:	Article No.:
Management Center redundant	MC-IP-R	FC010030
Netzteil 400W redundant	NG-MC-R	FC010038
Harddrive	HDD-SATA-MC-R	FC010082

Optional:

Description:	Type:	Article No.:
Harddrive	HDD-SATA-MC-R	FC010082
Built in set for 19" Rack	RACK-MC-R	FC010039



Nr.: FC010031

Management Center Desktop

The management center in Desktop variation.

Dimensions: 365x175x426mm (WxHxD)

Description:	Type:	Article No.:
Management Center Desktop	MC-IP-D	FC010031

Backbone Switch

This switch is used to make the connection between the SWI9 system switch and the management center and conforms to the requirements of VISOCALL-IP. The following different types are currently available:



Nr.: FC010092



Nr.: FC010091



Symbolfoto



Symbolfoto



Nr.: DF010091--LWL

Server Switch

Uplink connections: 4 x 1Gb uplink ports, RJ45
(GBIC capable, possibility for LWL)

Connections downlink: 24 x 1Gb downlink ports, RJ45

Ward Switch

Uplink connections: 2 x 1Gb uplink ports, RJ45
(GBIC capable, possibility for LWL)

Connections downlink: 24 x 100Mb downlink ports, RJ45

Cisco Catalyst 3750-24TS-24

Uplink connections: 2 x 1Gb uplink ports, SFP (optic fibre)

Connections downlink: 24 x 100Mb downlink ports, RJ45

Cisco Catalyst 3750-48TS-48

Uplink connections: 4 x 1Gb uplink ports, SFP (optic fibre)

Connections downlink: 48 x 100Mb downlink ports, RJ45

Hirschmann RS20-0800M2M2SDAE

Up/Downlink 8 x 100Mb downlink ports, RJ45

Hirschmann RS20-0800M2M2SDAE

Up/Downlink: 4 x 100Mb downlink ports, RJ45

Description:	Type:	Article No.:
Server Switch	SRV-SWITCH	FC010092
Ward Switch	ST-SWITCH	FC010091
Cisco Catalyst 3750-24TS-24	---	auf Anfrage
Cisco Catalyst 3750-48TS-48	---	auf Anfrage
RS20-0800T1T1SDAE	---	auf Anfrage
RS20-0400T1T1SDAE	---	auf Anfrage

GBIC usage

For connecting optical fibre to the HP2626 or HP2824 backbone switches, with the following specifications:

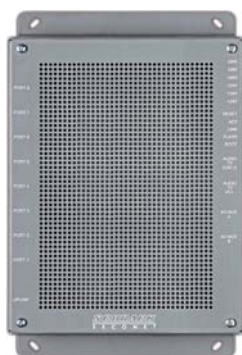
- 1 x LC 1000Base-SX Port Plug-in Module
- Full duplex Gigabit, Multimode with range of up to 550m
- Cable types 62.5/125µm or 50/125µm (core/shield), Gradient index, low metal content, Multimode optical fibre, in accordance with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a

Diameter	Range	Bandwidth
62,5µm	2-220m	160MHz
62,5µm	2-275m	200MHz
50µm	2-500m	400MHz
50µm	2-550m	500MHz

Dimensions: 12,3 x 13,7 x 56,9mm (H x W x D)

Weight: 20 g

Description:	Type:	Article No.:
Mini GBIC Modul SX-LC	GBIC-HP	DF010091--LWL



Nr.: FC010008

System Switch

The system switch forms a decentralised communications node for exchanging data between the connected system devices and the rest of the, and is supplied with 24V DC by the ward power supply. It contains 87 IP ports for connecting IP capable end devices, as well as a connection for another data bus for all other system modules. Furthermore, it acts as the data and audio interface to a room TV device and is fitted in a shielded metal case for surface mounting in the distribution case or in a false ceiling, and consists of:

- 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX), galvanically isolated conformant with EN 60950 and VDE 0834
- 87 x RJ45 sockets, each with a 100Mb IP system port (IEEE802.3 100BaseTX) for connection of all IP capable system modules
- 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX) for connecting communications terminals, ward terminals as well as control panel PCs,
- Control LEDs for indicating the current operating state
- 2 x RJ45 sockets for connecting the external data bus,
- All IP system modules are supplied with power by means of proprietary Power over LAN technology,
- Data and audio interface to a TV device (galvanically isolated) with corresponding interface
- RSIG interface to a system TV device
- Output for connection of an external amplifier (e.g. for loudspeakers in corridors)
- 2 screw-type terminals for connecting the 24V DC supply voltage,

Dimensions: 34 x 150 x 230mm (H x W x D)

Description:	Type:	Article No.:
Systemswitch	SW19	FC010008



Nr.: FC38100-

Accessories:

Description:	Type:	Article No.:
Sign nurse call bl/wh	S LTR	FC38100-



Nr.: FC010520

Sound Interface

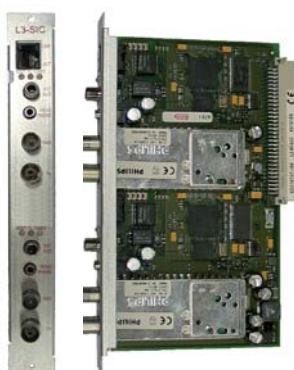
The sound interface is intended for receiving and digitising up to 16 radio programs. These radio programs are fed into the communications network via a switch as so-called audio streams. The FM tuners which are integrated into the individual modules are equipped for being tuned for the frequency range between 87.5 and 108.0 MHz with automatic fine tuning. Moreover, the sound interface offers the opportunity to convert externally generated audio or other LF signals into audio streams and to also distribute these over the network. Such LF signals can, e.g. in the event of an alarm, have “mandatory reception characteristics” and can be prioritised. The sound interface consists of:

- Module rack for fitting in a 19” cabinet (14 height units)
- 230V power supply circuit with connection cable and plug
- 8 connection slots for fitting the sound interface controllers

Supply voltage: 230V/50Hz
 Input surge current: 25 A
 Power consumption: < 280W
 Fuses: 4A slow acting

Operating temperature: 0 to +40°C in presence of natural convection
 Relative air humidity: 5 to 95% without condensation
 Air pressure: > 80kPa, up to 2000m above sea level

Dimensions: 600 x 445 x 225mm (H x W x D)
 Weight: 15 kg



Nr.: ED010737

Sound Interface Controller

The sound interface controller is used for supplying the sound interface and for receiving and digitising 2 radio programs, consisting of:

- 2 FM tuners with a frequency reception range between 87.5 and 108 MHz
- Automatic fine tuning
- 2 control headphones outputs
- Control LEDs for indicating the current operating state
- 2 external LF inputs for receiving external audio signals
- Controller circuit board with accessories for fitting in to the sound interface

Description:	Type:	Article No.:
Sound Interface	SDI	FC010520
Interface Controller	SIC	ED010737



Symbolfoto

19" Network Cabinet

Used for housing devices and VISOCALL-IP system components, consisting of:

- Half cylinder lock incl. key
- 19" cable inlet panel, 1 height unit
- Toolless shelf floor 19"
- 19" pull out shelf floor
- Keyboard shelf including keyboard
- Mouse shelf
- 7-way power bar with overvoltage protection, 1 height unit
- Ceiling-based ventilation group incl. thermostat
- 1 fan

Dimensions: 1970 x 600 x 225mm (H x W x D)

Description:	Type:	Article No.:
19" Network Cabinet	Schrank-IP	on Demand



Symbolfoto

19" System rack

Used for housing devices and VISOCALL-IP system components, consisting of:

- 19" one piece system rack, 42 height units,
- 19" cable inlet panel, 1 height unit
- Toolless shelf floor 19"
- 19" pull out shelf floor
- Keyboard shelf including keyboard
- Mouse shelf
- 7-way power bar with overvoltage protection, 1 height unit

Dimensions: 2031 x 600 x 800mm (H x W x D)

Description:	Type:	Article No.:
19" System rack	Rack-IP	on Demand

2 Software

All the software licenses that can be installed on the server are listed here.

Software - License Control Panel

Software license for the Windows-based application with a graphical user interface for centralised or decentralised system configurations. The control panel can communicate with all the ward terminals connected in the system and can monitor all activities for the ward which it controls or for the system as a whole and react accordingly.

Control panel software:

A graphical representation of the ward which the control panel is in or all interconnected wards offers a rapid overview of the nurse call components integrated in the system. Regardless of call location and call priority, the control panel can react to a call by means of a single mouse click, connect a call and, if necessary, set the relevant reminder. Equally it is possible to select a single room or bed, as per general announcements and those destined for specific people; the latter being applicable for nurses as well as for doctors. The system distinguishes between announcements intended for the ward in which the control panel is located and those intended for the entire system. Up to 255 care groups per system can also be assigned up the freely selectable group care options in the standard software.

Description:	Type:	Article No.:
Software - License Control Panel	SWP-IP/LS	FC010050

Software - License Control Panel extensions

- Software license for control panel extension - adding an additional control panel in an already functioning VISOCALL PLUS system. Using this extension, a fully functional control panel is available for use in the ward in which it is located as well as in multiple wards.

Description:	Type:	Article No.:
Software - License Control Panel extensions	SWP-IP/LSE	FC010052

Software - License ESPA

Software license for the forwarding of events. All VISOCALL-IP events can be forwarded to external systems using the ESPA 4.4.4 data interface (RS232 physical interface). The necessary filters are set in the communications system in order that only relevant data is forwarded to the external system.

Description:	Type:	Article No.:
Software - License ESPA	SWP-IP/ESPA	FC010045

Software- License for event database

Software pack installed on the system server for automatically logging all events in the entire communications system, such as, e.g., calls, presence markings, call acknowledgements, reminders.

Data is displayed or analysed using firefox that has server-side access to the XML data. This access is password-protected. Various filters make it easily to find and display the required information.

Description:	Type:	Article No.:
Software- License for event database	SWP-IP/EDB	FC010056

Software- License for Patient Management

Patient management is used for logging, displaying and printing out patient data via a browser in the network. The implementation of a patient photo for each record is possible. When querying calls, all important patient data is displayed on screen but only in combination with the control panel. Access to the data on the database for all browsers within the LAN is password-protected. An HL7 interface is also included in this software pack. The most important patient data, such as name, address, social security no., date of birth, telephone number are imported from the hospital information system and automatically entered into the system's SQL database. Patient information is required for entries into the event database, for recording and billing of charges in post-paid mode when the (optional) billing system is used, for displaying detailed dementia alarms when using the optionally available accompanying disorientation interface is also used.

Description:	Type:	Article No.:
Software- License for Patient Management	SWP-IP/PV	FC010055

Software - BMZ Integral License

The BMZ Integral license is used for forwarding all detected fire alarms from the BMZ Integral without any reaction to the VISOCALL-IP communications systems. All data is transferred, which allows the staff members to see the precise location of the blaze on all configured system displays. As a further option, a non-ambiguous acoustic indication can be given at the relevant terminals.

The system configuration is used to assign which alarm is forwarded to which ward, and which category of staff has to be informed about the event.

Description:	Type:	Article No.:
Software - BMZ Integral License	SWP-IP/BMZ	FC010059

Software - mobile Telephone End Devices License

This bidirectional speech and data interface to the telephone system is used for:

- the detailed transmission of system events to mobile end devices with information about the type and location of the call
- immediately establishing a speech connection to the location the call is being made from by simply picking up the phone in the case of queryable calls
- Setting reminders for different staff categories by pressing a button during a conversation
- Making external collective and staff announcements from the mobile end device to pre-configured wards (ward selection).

For each ward, it is possible to simultaneously address as many end devices as have been reserved for this function.

Description:	Type:	Article No.:
Software - mobile Telephone End Devices License	SWP-IP/MP	FC010042

Software - Telephone System License

This interface used Voice Over IP technology in accordance with the H.323 standard or SIP and is used for telecommunications between the patient terminals listed below in section 6.1 and the public telephone network as well as to other in-house extensions. As an optional extra, it is possible to ensure using the VISOTAX IP billing system integrated into the system that charges for telephone calls made are charged to the appropriate user. Detailed requirements can be found in the chapter entitled "VISOTAX IP".

Description:	Type:	Article No.:
Software - Telephone System License	SWP-IP/TK	FC010060

Software- Alarm Server License

This unidirectional interface transmits all events occurring in the integrated nursecall system to an external alarm server. This occurs in the form of a data protocol. The server processes the information and organises for it to be forwarded as relevant. Both the type of call and the call location are contained in this data log.

Description:	Type:	Article No.:
Software- Alarm Server License	SWP-IP/AS	FC010057

Software- License for Dementia Protection System

VISOCALL-IP receives all disorientation alarms from the external dementia protection system using this unidirectional interface in the form of a data protocol. In this case the data is forwarded to the locations in the hospital based on the configuration that were pre-agreed with the user. In particular, in this instance, it must be ensured that these alarms can also be forwarded over the internal interfaces to the mobile end devices and to the alarm server.

Description:	Type:	Article No.:
Software- License for Dementia Protection System	SWP-IP/DESO	FC010058

Software - Billing Server License

This interface is used for communication between the IP capable patient terminals, the telecommunications system and the billing server, upon which the user accounts are saved and managed. This interface is used to exchange all relevant details about phone calls made between the aforementioned system modules as well as for programming user privileges in the telecommunications system.

Description:	Type:	Article No.:
Software - Billing Server License	SWP-IP/ACC	FC010061

Software - Internet Server License

This interface is used for data transfer between the multimedia terminals or patient laptops, the system's own application server and the Internet Proxy Server or an Internet gateway to the ISP that are both located on site. For security reasons bandwidth restrictions are imposed for this service by use of the QoS configuration of all switches.

Description:	Type:	Article No.:
Software - Internet Server License	SWP-IP/WEB	FC010062

Software - License System Monitor

The System Monitor is used for indication and location of faults on a PC. It used password-protected access and can manage up to 16 users and 16 VISOCALL IP systems. This software module can be found in the technician's control panel. The technician is also able to make modifications to the system, as well as being able to examine or read out the fault log. Acknowledged faults are time stamped by the logged on user and notes are stored on the server.

Description:	Type:	Article No.:
Software - License System Monitor	SWP-IP/MON	FC010063

Control panel Hardware

The hardware package consists of a computer, the control panel is currently set up for use with the WIN XP/WIN XP PRO (from SP3) operating systems.

Minimum system requirements:

- Intel Pentium 2.8GHz
- RAM: min. 1GB
- HDD 80GB, DVD-ROM,
- LAN Intel 10/100/1000 onboard, RJ45 connection
- VGA graphics card (onboard or PCI)
- Mouse and keyboard

Description:	Type:	Article No.:
Control panel Hardware	LS-HW	FC008053
PC Monitor	Monitor VGA	on Demand



Nr.: FG022046

UPS emergency power supply

To ensure the integrity of a control panel in the event of a short term power failure (for at least 5 min.), with:

- Automatically batterytest each week (Intervall programmable)

Technical details:

Power supply: 230V~/50Hz
Output: 230V~(+6/-10%)/max. 850VA

Noise emission: < 40dbA

Ambient temperature: 0 to 35°C

Time to bridge in minutes with needed power (VA/Watt):

80 min. (85/60), 46 min. (170/120), 26 min. (255/180), 21 min. (340/240),
15 min. (425/300), 12 min. (510/360), 8 min. (595/420), 6 min. (680/480),
5 min. (765/540), 4 min. (850/600).

Interfaces:

USB or RS232 or Relay contact

Dimensions: 147x418x234mm (HxBxT)
Weight: 10,85kg

Description:	Type:	Article No.:
UPS emergency power supply	USV-SECO LOG	FG022046

3 Call and cancel button combinations

For installation in sanitary units and day rooms, for triggering or cancelling calls. This also includes the telephone call device which also indicates outstanding telephone calls from e.g. the ward's nurses room.



Nr.: FC010400

Call button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with

- 1 call button (red) including a finder light / reassurance light,
- 2 RJ45 sockets for connecting to the data bus
- Including an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 83 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Call button	RT-IO	FC010400



Nr.: FC011400

Call button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with

- 1 call button (red) including a finder light / reassurance light,
- 1 RJ11 socket for connecting to the data connection
- Including an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 83 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Call button basic	RT-B	FC011400



Nr.: FC010410

Pull button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes with

- Integrated finder / reassurance light,
- Microswitch with 2 metre pull cord and grip with a printed nurse symbol
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 55mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Pull button	ZT-IO	FC010410



Nr.: FC010411

Pull button (moisture protected)

As per the already familiar pull button, but also:

- Circuit boards are physically protected against moisture

Description:	Type:	Article No.:
Pull button (moisture protected)	ZTB-IO	FC010411



Nr.: FC011410

Pull button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes with

- Integrated finder / reassurance light,
- Microswitch with 2 metre pull cord and grip with a printed nurse symbol
- 1 RJ11 socket for connecting to the data connection
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 55mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Pull button basic	ZRT-B	FC011410



Nr.: FC010420

Pneumatic button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as:

- a membrane keypad with Integrated finder / reassurance light,
- Microswitch with 2 metre pneumatic hose and pressure ball,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Pneumatic button	PT-IO	FC010420



Nr.: FC011420

Pneumatic button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as:

- a membrane keypad with Integrated finder / reassurance light,
- Microswitch with 2 metre pneumatic hose and pressure ball,
- 1 RJ11 socket for connecting to the data connection
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Pneumatic button basic	PT-IO	FC011420



Nr.: FC010430

Cancel button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with:

- a membrane keypad with 1 cancel button (green) incl. control LED,
- 2 RJ45 sockets for connecting to the data bus

Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Cancel button	AT-IO	FC010430



Nr.: FC011430

Cancel button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with:

- a membrane keypad with 1 cancel button (green) incl. control LED,
- 1 RJ11 socket for connecting to the data connection
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Cancel button basic	AT-B	FC011430



Nr.: FC010440

Call and Cancel button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with:

- 1 call button (red) including a finder light / reassurance light,
- 1 presence button (green) incl. control LED,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 83 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Call and Cancel button	RAT-IO	FC010440



Nr.: FC011440

Call and Cancel button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with:

- 1 call button (red) including a finder light / reassurance light,
- 1 presence button (green) incl. control LED,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 83 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Call and Cancel button basic	RAT-B	FC011440



Nr.: FC010460

Presence button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with:

- a membrane keypad with:
 - 1 presence key (green) incl. control LED,
 - 1 presence key (yellow) incl. control LED,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Presence button	AWT-IO	FC010460



Nr.: FC010470

Doctor Call button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with

- 1 doctor call key (blue) including a finder light / reassurance light,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Doctor Call button	ART-IO	FC010470



Nr.: FC011470

Doctor Call button basic

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with

- 1 doctor call key (blue) including a finder light / reassurance light,
- 1 RJ11 socket for connecting to the data connection
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Doctor Call button basic	ART-B	FC011470



Nr.: FC010480

Call and Service Call button

For fitting in a switchbox, consisting of a mounting rail with circuit board, with electronics for functioning and monitoring purposes as well as a membrane keypad with

- 1 call button (red) incl. a finder light/reassurance light,
- 1 call button (grey) including a control LED,
- 2 RJ45 sockets for connecting to the data bus
- Incl. an installation frame for screw-free attachment to an installation case

Dimensions: Incl. cover 80 x 82 x 36mm (H x W x D)
in colour RAL 9016

Description:	Type:	Article No.:
Call and Service Call button	SRT-IO	FC010480



Nr.: FC010500

I/O Module

This module is a bidirectional and potential-free interface to foreign systems. All events generated in VISOCALL-IP can be passed on in this way to other systems, in the same way that status messages from other systems can be received by the communications system. It is possible for a special message text and the call priority for these events as well as configuring the ward and staff category that should be informed about this event. Furthermore, this module is used for controlling a reading light and room lighting over latching relays as well as for controlling electronically adjustable blinds and similar systems, consisting of:

- Controller circuit board with short circuit isolator for the data bus,
- 2 RJ45 sockets for connection to the data bus,
- 3 potential-free outputs conformant to EN60950, max. 60W/1A
- 3 potential-free inputs conformant to EN60950,
- 12 screw-type terminals for connecting the inputs/outputs,

Suitable for fitting in the media duct or in double installation cases

Dimensions: Incl. plastic case 80 x 42 x 26mm (H x W x D)

Description:	Type:	Article No.:
I/O Module	IO-M	FC010500



Nr.: FC010501

I/O Module non-floating

Like the IO-M, but consisting of:

- 3 non-floating inputs

Suitable for fitting in the media duct or in a double installation cases

Dimensions: Incl. plastic case 85x42x26mm (HxWxD)

Description:	Type:	Article No.:
I/O Module non-floating	IO-M-P	FC010501



Nr.: FC010502

Latching relay

This latching relay is using for directly controlling room lighting, consisting of:

- Controller circuit board with short circuit isolator for the outputs,
- Outputs max. 250V/6A
- 2 RJ45 sockets for connection to the IO data bus (VC-IP),
- 4 Wago cage clamps for connecting to the room bus (VCP),
- 8 screw-type terminals for connecting the input/outputs pursuant to EN 50950
- Electronic pursuant to EN EN60101-1

For fitting in a special switchbox for surface mouting (see component above).

Dimensions: 68x68x22mm (HxWxD)

Necessary components for countersunk mounting::

Description:	Type:	Article No.:
Latching relay	SSR-VCX	FC010502

Necessary components for surface mounting:

Description:	Type:	Article No.:
Latching relay	SSR-VCX	FC010502
IP66 case for loop module	GEH MOD IP66	FG020234
Extension connection joint M 16	MM ANB M16	MM000185
Stepped nipple M 20	MM SN PG16	MM000181
Lock nut M16	MM GM M16	MM000186



Nr.: FG020234



Nr.: FC38100-

Accessories:

Description:	Type:	Article No.:
Sign nursecall bl/wh	S LTR	FC38100-

4 Light module



Nr.: FC010900

Light module

Can be configured as a room call lamp, a direction lamp and as a ward lamp. For optical indication of calls, presences and reminders in the relevant colours conforming to VDE0834 and suitable for fitting on to an installation case, consisting of:

- 5 light chambers with light reflectors for homogenous illumination,
- 1 light chamber equipped with 3 ultra light red LEDs,
- 1 light chamber equipped with 3 ultra light white LEDs,
- 1 light chamber equipped with 3 ultra light green LEDs,
- 1 light chamber equipped with 3 ultra light yellow LEDs,
- 1 light chamber equipped with 3 ultra light blue LEDs,
- Each light chamber conforms to the lighting strength from VDE0834,
- The life expectancy of the LEDs is approx. 100,000 operating hours,
- Plastic base with controller circuit board,
- 2 RJ45 sockets for connection to the data bus

Dimensions: 80 x 83 x 42 mm (H x W x D)
With an opal coloured transparent lamp cap

Description:	Type:	Article No.:
Light module	LM-IO	FC010900



Nr.: FC011900

Light module basic

Can be configured as a room call lamp, a direction lamp and as a ward lamp. For optical indication of calls, presences and reminders in the relevant colours conforming to VDE0834 and suitable for fitting on to an installation case, consisting of:

- 5 light chambers with light reflectors for homogenous illumination,
- 1 light chamber equipped with 3 ultra light red LEDs,
- 1 light chamber equipped with 3 ultra light white LEDs,
- 1 light chamber equipped with 3 ultra light green LEDs,
- 1 light chamber equipped with 3 ultra light yellow LEDs,
- 1 light chamber equipped with 3 ultra light blue LEDs,
- Each light chamber conforms to the lighting strength from VDE0834,
- The life expectancy of the LEDs is approx. 100,000 operating hours,
- Plastic base with controller circuit board,
- 1 x RJ11 socket for connection to the data connection
- 4 screw-type terminals for connecting the power supply circuit

Dimensions: 80 x 83 x 42 mm (H x W x D)
With an opal coloured transparent lamp cap

Description:	Type:	Article No.:
Light module basic	LM-B	FC011900

5 Communications terminal

For fitting in patient rooms and other important rooms, as a communications centre for the nursing staff.



Nr.: FC010110



Nr.: FC010191



Nr.: FC010190

Communications terminal

For installation in all important rooms in the ward in which the possibility to communicate is required or desired, with integrated functional components and operating membrane keypad with coloured fields and symbols; consisting of:

- Plastic mounting frame
- A fully-graphical display with a resolution of 128 x 64 pixels
- 1 microphone and 1 loudspeaker
- Controller circuit board with integrated display and a 100BaseTX switch, as well as
- 2 x RJ45 sockets each for 1 x 100Mb IP Port (IEEE802.3 100BaseTX),
- Integrated audio reception from the streamed LF data packets from the Sound Interface,
- Antimicrobial membrane keypad for operation, comprising of:
 - Call button (red) with integrated finder and reassurance light
 - Doctor call button (blue) with integrated reassurance light,
 - Query button (white) with control LED,
 - Presence button (green) with control LED,
 - Presence button (yellow) with control LED,
 - Presence button (blue) with control LED,
- 3 interactive function keys:
 - For display scrolling in the event that there are several calls outstanding at once, and
 - for turning on and off, for selecting the program and the volume of the integrated radio receiver for up to 24 programs,

For screw-free attachment of the terminal to a double installation case

Dimensions: 203 x 86 x 36mm (H x W x D)
Plastic case in colour RAL9016

CAUTION: A double installation case is also required

Necessary components for countersunk mounting:

Description:	Type:	Article No.:
Communications terminal	KMT	FC010110
Plastic mounting frame for KMT	DR-KMT	FC010191

Necessary components for surface mounting:

Description:	Type:	Article No.:
Communications terminal	KMT	FC010110
Surface mounting frame for KMT	AP-KMT	FC010190



Nr.: FC010150

Intercom Terminal

For installation in entrance areas, for use as a door phone, also suitable for outdoor installation, consisting of:

- Electronic module coated with protective paint,
- 1 microphone,
- 1 loudspeaker
- Control circuit board with integrated DSP
- 1 x RJ45 socket for a 100Mb IP Port (IEEE802.3 100BaseTX),
- Stainless steel panel, consisting of:
 - Call button (stainless button) with integr. finder and reassurance light,
- Four screws for mounting to an installation case

Dimensions: 120x120x25mm (HxWxD)
Stainless steel panel



Nr.: FC88019-

CAUTION: The required installation case should be ensured

Necessary components for countersunk mounting:

Description:	Type:	Article No.:
Intercom Terminal	ICT-IP	FC010150
Countersunk switchbox for ICT	U-ICT-IP	FC88019-



Nr.: FC88018-

Notwendige Komponenten für Aufputzmontage:

Description:	Type:	Article No.:
Intercom Terminal	ICT-IP	FC010150
Cavity wall switchbox for ICT	H-ICT-IP	FC88018-



Nr.: FC011120



Nr.: FC010191



Nr.: FC010190

Room terminal with display

For installation in all important rooms in the ward in which staff members receive all calls made in the ward, with integrated functional components and operating membrane keypad with coloured fields and symbols, consisting of:

- A fully-graphical display with a resolution of 128 x 64 pixels
- Electronic buzzer for acoustic call forwarding
- Controller circuit board with FlashProm,
- 2 RJ45 sockets for connection to the data bus,
- 5 RJ11 sockets (6 pole) for connecting external devices,
- Membrane keypad for operation, comprising of:
 - Call button (red) with integrated finder and reassurance light
 - Doctor call button (blue) with integrated reassurance light,
 - Presence button (green) with control LED,
 - Presence button (blue) with control LED,
 - 3 function keys for setting the display brightness, contrast and call tone volume

For screw-free attachment of the terminal to a double installation case.

Dimensions: 203 x 86 x 17mm (H x W x D)
plastic casing in colour RAL9016

CAUTION: The required double installation case should be ensured

Necessary components for countersunk mounting:

Description:	Type:	Article No.:
Room terminal with display	ZTD-B	FC011120
Plastic mouting frame for KMT	DR-KMT	FC010191

Necessary components for surface mounting:

Description:	Type:	Article No.:
Room terminal with display	ZTD-B	FC011120
Surface mounting frame for KMT	AP-KMT	FC010190



Nr.: FC011130



Nr.: FC010191



Nr.: FC010190

Room terminal without display

For installation in all important rooms in the ward in which staff members receive all calls made in the ward, with integrated functional components and operating membrane keypad with coloured fields and symbols, consisting of:

- Electronic buzzer for acoustic call forwarding
- Controller circuit board with FlashProm,
- 2 RJ45 sockets for connection to the data bus,
- 5 RJ11 sockets (6 pole) for connecting external devices,
- Membrane keypad for operation, comprising of:
 - Call button (red) with integrated finder and reassurance light
 - Doctor call button (blue) with integrated reassurance light,
 - Presence button (green) with control LED,
 - Presence button (blue) with control LED,
 - 3 function keys for setting the display brightness, contrast and call tone volume

For screw-free attachment of the terminal to a double installation case.

Dimensions: 203 x 86 x 17mm (H x W x D)
plastic casing in colour RAL9016

CAUTION: The required double installation case should be ensured

Necessary components for countersunk mounting:

Description:	Type:	Article No.:
Room terminal without display	ZT-B	FC011130
Plastic mouting frame for KMT	DR-KMT	FC010191

Notwendige Komponenten für Aufputzmontage:

Description:	Type:	Article No.:
Room terminal with displayout	ZT-B	FC011130
Surface mounting frame for KMT	AP-KMT	FC010190



Nr.: FC011110

Electronics for rooms

Controller electronics for installation in electronic distribution cases, cavity ceiling etc. with integrated controller circuit board for extension functions in individual rooms, consisting of:

- Controller circuit board with FlashProm,
- 2 RJ45 sockets for connection to the data bus,
- 5 RJ11 sockets (6 pole) for connecting external devices,



Nr.: FC88115--



Nr.: FC38100-

Description:	Type:	Article No.:
Electronics for rooms	ZE-B	FC011110

Accessories:

Description:	Type:	Article No.:
Case for electronics for rooms	GH-ZE-B	FC88115--

Accessories:

Description:	Type:	Article No.:
Sign nursecall bl/ws	S LTR	FC38100-

6 Patient terminal



Nr.: FC010200

Patient terminal

For operation by patients from their beds to carry out the functions listed below, with the following characteristics:

- nurse call with possibility for communications,
- Service call with possibility for communications,
- For tuning on and off, selecting the program and the volume level of the integrated radio receiver,
- For tuning on and off, selecting the program and the volume level of system TV devices,
- Integrated IP telephone end device (H.323 or SIP protocol stack)
- Integrated contact-free smart card reader and mechanism for inserting a smart card,
- Controlling 2 independent lighting circuits,
- Controlling electronically driven shutters or other environmental applications,
- Prepared for receiving IR control signals from environmental control devices, (especially for severely disabled people).
- Automatic volume switching when using the PAT in the cradle,
- Plastic case and membrane keypad in anti-microbial material,
- Menu-driven operation,
- Splash resistant case, consisting of:
 - Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit
 - Loudspeaker, microphone, headphones socket,
 - A fully-graphical display with a resolution of 128 x 64 pixels,
 - 2.80m connection cable with a RJ45 plug which is protected against disconnection
 - Board with integrated display and a 100Base TX switch, (IEEE802.3 100BaseTX),
 - Membrane keypad with integrated LEDs, consisting of:
 - » 3 function keys for TV, Radio and Telephone,
 - » 4 different coloured cursor keys for user operation,
 - » Menu key, OK key, 12 key numeric keypad,
 - » Service call key, Special function key,
 - » Teletext key, 2 lighting keys

Dimensions: 205 x 64 x 23mm (H x W x D)
Plastic case in colour RAL9016



Nr.: FC010240

Description:	Type:	Article No.:
Patient terminal	PAT	FC010200

Accessories:

Description:	Type:	Article No.:
Cradle	K-PAT	FC010240



Nr.: FC010604

Patient terminal TVT

As per PAT, but with:

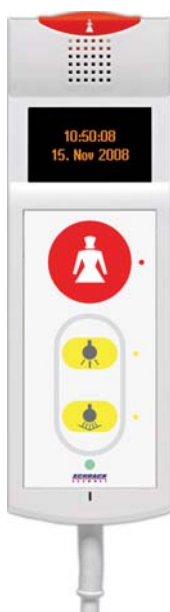
- a coiled connection cable and a 15 pole SUB-D plug to TVT

Dimensions: 205 x 64 x 23mm (H x W x D)
Plastic case in colour RAL9016

Description:	Type:	Article No.:
Patient terminal TVT	PAT-TVTV	FC010604

Zubehör:

Description:	Type:	Article No.:
Cradle	K-PAT	FC010240



Nr.: FC010220

Patient terminal light

For operation by patients from their beds to carry out the functions listed below, with the following characteristics:

- nurse call with possibility for communications,
- Controlling 2 independent lighting circuits,
- Prepared for receiving IR control signals from environmental control devices, (especially for severely disabled people).
- Plastic case and membrane keypad in anti-microbial material,
- Splash resistant case, consisting of:
 - Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit
 - Loudspeaker, microphone, headphones socket,
 - A fully-graphical display with a resolution of 128 x 64 pixels,
 - 2.80m connection cable with a RJ45 plug which is protected against disconnection
 - Controller circuit board with integrated display and a 100Base TX switch, (IEEE802.3 100BaseTX),
 - Membrane keypad with integrated LEDs, consisting of:
- Call button with nurse symbol with integrated finder and reassurance light
- 2 lighting buttons with integrated finder lights

Dimensions: 205 x 64 x 23mm (H x W x D)
Plastic case in colour RAL9016

Description:	Type:	Article No.:
Patient terminal light	PAT-L	FC010220

Accessories:

Description:	Type:	Article No.:
Cradle	K-PAT	FC010240



Nr.: FC010240



Nr.: FC011200

Push button

For operation by patients from their patient bed, consisting of:

- Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit,
- Membrane keyboard with integrated LEDs, consisting of:
 - 1 call button (red),
 - 2 lighting keys
- 2.8m connection cable with a RJ45 plug which is protected against disconnection,

Dimensions: 96x64x23mm (HxBxT)
plastic case in colour RAL9016

Description:	Type:	Article No.:
Push button	BT-B	FC011200

Accessories:

Description:	Type:	Article No.:
Cradle	K-PAT	FC010240



Nr.: FC010240

Cradle

This cradle is used to hold the patient terminal including the volume control, and is made of plastic and is in colour RAL9016.

Description:	Type:	Article No.:
Cradle	K-PAT	FC010240



Nr.: FC010240

Headphones

- For listening to radio programs in comfort and
- for connection to the patient terminal
- Incl. 2.0m connection cable and a 3 pole 3.5 mm jack connection plug



Nr.: FC005205

Description:	Type:	Article No.:
Headphone	KH	FC005205

7 Connection module



Nr.: FC010300



Nr.: FC88012-



Nr.: FC88013-



Nr.: FC011300



Nr.: FC88012-



Nr.: FC88013-

Connection module

For fitting in a double switchbox or in a media duct for connecting patient terminals (PAT) or patient terminals light (PAT-L), optional diagnostic devices, radio receiver or contact matt and laptops, but also for connecting the DZT, comprising of:

- Circuit board with one RJ45 socket for quick uplinking the system switch,
- 1 x RJ45 socket marked in colour and with measures to ensure that the PAT/PAT-L or DZT is correctly connected, incl. the auto disconnect mechanism,
- 1 x RJ 45 socket for connecting a laptop belonging to the patient
- 1 x 5 pin DIN socket for connection of a diagnostic device or a radio receiver, noise monitor etc. The connection module automatically triggers the relevant call in the event of an alarm.
- Fastening bracket made of plastic to attachment the plug module without using screws

Dimensions: 158 x 81 x 13mm (H x W x D) in colour RAL 9016.

Description:	Type:	Article No.:
Connection module	SM	FC010300

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-

Connection module light

For fitting in a double switchbox or in a media duct for connecting a push button and a diagnostic device, comprising of:

- Mounting rail with board, 2 x RJ45 sockets for connecting the data bus
- 1 x RJ45 socket marked in colour and with measures to ensure that the push button is correctly connected, including the auto disconnect mechanism,
- 1 x 5 pole DIN socket for connecting a diagnostic device with disconnection call if required. The connection module automatically triggers the relevant call in the event of an alarm occurring.
- 4 x RJ11 sockets (6 pole) for connecting external devices
- 1 membrane keypad with:
 - 1 call button (red) including a finder light / reassurance light,
 - 1 presence key (green) including control LED,
- Fastening bracket made of plastic to attachment the plug module without using screws

Dimensions: 158x81x13mm (HxBxT), in colour RAL 9016.

Description:	Type:	Article No.:
Connection module light	SM-B	FC011300

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC011310



Nr.: FC88012-



Nr.: FC88013-



Nr.: FC011320



Nr.: FC88012-



Nr.: FC88013-

Connection module (1 bed)

For fitting in a double switchbox or in a media duct for connecting a push button and a diagnostic device, comprising of:

- Mounting rail with board, 2 x RJ11 sockets (6 pole) for connecting the data circuits,
- 1 x RJ45 socket for connecting the push button in the correct position, incl. the mechanical parts required for the auto disconnect mechanism,
- 1 x 5 pole DIN socket for connecting a diagnostic device with disconnection call if required. The connection module automatically detects the external device connected using this sockets and automatically triggers the relevant call in the event of an alarm occurring.
- Fastening bracket made of plastic to attachment the plug module without using screws

Dimensions: 158x81x13mm (HxBxT) in colour RAL 9016.

Description:	Type:	Article No.:
Connection module (1 bed)	SM1-B	FC011310

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-

Connection module (2 beds)

For fitting in a double switchbox or in a media duct for connecting two push buttons, comprising of:

- Mounting rail with board, 2 x RJ11 sockets (6 pole) for connecting the data circuits,
- 2 x RJ45 socket for connecting the push button in the correct position, incl. the mechanical parts required for the auto disconnect mechanism,
- Fastening bracket made of plastic to attachment the plug module without using screws

Dimensions: 158x81x13mm (HxBxT) in colour RAL 9016.

Bezeichnung:	Typ:	Artikelnummer:
Steckmodul (Bett 1)	SM2-B	FC011320

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC010301

Connection module (Multimedia)

For fitting a double switchbox or in a media duct, both for connection of patient terminals or patient terminal light, or as required diagnostic devices, radio call receivers or contact mats; consisting of:

- Mounting rail with board, 2x RJ45 sockets for the uplink from the System switch and for connecting an external multimedia terminal,
- 1 x RJ45 socket for connecting the patient terminal in the correct position, incl. the mechanical parts required for the auto disconnect mechanism,
- 1 x 5 pole DIN socket for connecting a diagnostic device with disconnection call if required, or a radio receiver or noise monitor etc. The connection module automatically detects the external device connected using this sockets and automatically triggers the relevant call in the event of an alarm occurring.
- Fastening bracket made of plastic to attachment the plug module without using screws

Dimensions: 158x81x13mm (HxBxT) in colour RAL 9016.

Description:	Type:	Article No.:
Connection module (Multimedia)	SM-MMC	FC010301

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC88012-



Nr.: FC88013-



Nr.: FC010310

Diagnostic module

For extending the diagnostic connection in a patient bed. Up to 4 additional foreign devices can be connected to the diagnostic extension. It comprises of:

- Mounting rail with board, 2 x RJ45 sockets for connecting the data bus,
- 4 x 5pin DIN sockets for connecting the diagnostic devices,
- Fastening bracket made of plastic to attachment the diagnostic module without using screws,
- Galvanically isolated diagnostic sockets

Dimensions: 158x81x13mm (HxBxT) in colour RAL 9016.

Description:	Type:	Article No.:
Diagnostic module	DM-IO	FC010310

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC88012-



Nr.: FC88013-

8 Text terminals

Display in corridor for recapitulating displaying of emergency calls, calls, reminders, time and date



Nr.: FC008810



Nr.: FC008811



Nr.: FC008812



Nr.: FC008813



Nr.: FC008814

Text terminal

12 character LED display with terminal amplified loudspeaker for wall mounting for recapitulating display of emergency calls, calls and reminders by group. Displays the call that is most important according to the priority scheme, with a changing display, if there are several calls.

By using the integrated RS485 and RS232 interface, texts from the PC from other sources can be displayed on the text terminal. The PC uses software to load the text from the foreign system in to the text terminal. The current time is displayed in standby mode, and the unit is made up of a series of modules, consisting of an independent microcomputer system for independent data processing, evaluation and controlling of 12 LED matrix displays, character height 80mm, mounted in an aluminium casing. An integrated loudspeaker is used on the one hand for acoustic call forwarding and on the other hand for ward announcements within the communications system. It is possible to release/block these features.

Additional functions:

These text terminals are also suitable for use for calling patients in waiting areas for general patient and visitor information, and are equipped with interfaces to PCs, from where individual texts can be entered. When these texts are changed, an acoustic information tone is emitted.

This terminal comprises of:

- An aluminium profile with end caps on both ends,
- Electronic circuit board with microcontroller and flash PROM,
- 12 matrix LED modules (10x8 for improved readability) with a character height of 8 cm each,
- DIL switch for configuration and addressing,
- One interface each of type RS232 and RS485 for a fixed connection of one or more PCs,
 - 1 loudspeaker
 - 1 connection circuit board with connection field and fuse

Textterminal TXT-W

Functions identical to those on TXT, with wall mounting bracket, adjustable.

Textterminal TXT-D

Functions identical to those on TXT, with ceiling mounting bracket, adjustable. The text terminal can be suspended at variable heights between 820 and ca. 1,000mm from the ceiling using the flange.

Textterminal TXT-2W (double display)

Functions identical to those on TXT-W, but with double display.

Textterminal TXT-2D (double display)

Functions identical to those on TXT-D, but with double display.

Dimensions: 978 x 110 x 40mm (L x W x D)

Description:	Type:	Article No.:
Textterminal	TXT	FC008810
Textterminal	TXT-W	FC008811
Textterminal	TXT-D	FC008812
Textterminal	TXT-2W	FC008813
Textterminal	TXT-2D	FC008814



Nr.: FC010815

Connection splitter to the Text Terminal

For fitting in a double switchbox comprising of a mounting rail with connection circuit board consisting of:

- Connection for a RJ46 connector plug for connecting to the data bus
- 3 screw-type terminals in each section for supply voltage (+12V and GND)
- Connection clips for external audio feeds (announcements)
- Connection clips for RS232 and RS485 (PC-based control)
- Connector zone for connection of up to 2 text terminal connection cables
- Fuses for the supply voltage for the text terminals.

Dimensions: incl. cover 160 x 82 x 36mm (L x W x D)
Plastic case in colour RAL 9016

Description:	Type:	Article No.:
Connection splitter to the Text Terminal	VTXT-IP	FC010815

Text terminal Software

For entering individual texts from a PC to be supplied locally with a free RS232 interface and equipped for Windows 2000 operating system or later, The user interface is simple to operate and offers the following features:

- Multitasking in accordance with the operating system used
- Selection of displays
(32 displays must be able to be supplied with different texts),
- Entering of texts,
- If the length of the text exceeds the 12 characters visible on the text terminal, then the text is to be displayed in scrolling text.

After confirming the text that has been entered, the text is sent to the text terminal.

Description:	Type:	Article No.:
Text terminal Software	TXT-SW	On Demand

9 Ward Terminal

For area-related and general signalling, speech connections, announcements etc. Each query location automatically recognises its corresponding area.



Nr.: FC010100

Ward Terminal

For use as a communications and information centre within a ward and for use in the relevant staff room.

Range of functions:

- Displaying the date and time
- the number of currently outstanding calls, reminders and also possible faults are permanently displayed
- Indication of all set presences, depending on the staff cat. in the relevant colour according to VDE 0834 and with a non-ambiguous symbol,
- Indication of all set reminders, depending on the staff cat. in the relevant colour according to VDE 0834 and with a non-ambiguous symbol,
- Indication of all calls in accordance with VDE0834 (in the relevant colour and with non-ambiguous symbols dependent of the type of call)
- Indication of events, which have been forwarded from foreign systems in to the system,
- All call indications follow the priority for indication set up in the system, starting the highest priority, and the following content is displayed in this instance:
 - the exact type of call with information about the number of the bed or WC call, doctor call etc.
 - the exact call location with information about the individual room and ward description and the care group that may have been assigned,
 - Emergency calls
 - staff category
 - the staff category
- the exact location of the reminder that has been triggered (as described above)
- If there are no calls outstanding, all reminders that have been set are displayed, and the following information is displayed for reminders:
- Indication of faults or failures, in this case the room that is affected by the fault is also recognisable
- Call query according to priority,
- direct dialling of communications terminals and patient terminals,
- triggering of reminders for all 3 staff categories
- staff announcements, separately for all 3 staff categories
- Collective announcements
- activation of group interconnections,
- programming and activation of group-based nursing care,
- programming and activation of centralised operation,
- assigning call upgrades on a bed-by-bed basis,

This terminal comprises of:

- A 5.7" (diagonal screen size) TFT colour graphic display for displaying all details described,
- a smash proof glass panel placed in front of the display (to protect the sensitive display from unnecessary contact during cleaning and other processes)
- 12 interactive function keys for operating the system,
- Querying receiver for speaking discretely,
- Microphone and loudspeaker for hands-free speech (incl. volume control),
- automatic changeover between hands-free and discrete speaking,
- Electronic circuit board with controller and FlashProm,
- 100BaseTX interface to the system switch,
- 2.8m connection cable with an RJ45 connection plug, which is protected from disconnection, for connecting to a connection module (see point 7)



Nr.: FC010300



Nr.: FC88012



Nr.: FC88013

Dimensions: 310 x 232 x 35mm (L x W x D)
plastic case in colour RAL9016

Description:	Type:	Article No.:
Ward terminal	DZT-IP	FC010100
Connection module	SM	FC010300

Accessories:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC008010

Ward Terminal IP-PLUS

Like DZT, is acting like an interface terminal, consisting of:

- added plugger for AE-DZT (compatible to VISOCALL PLUS)
- Systeminterfaces to connect to a VISOCALL PLUS, MP2 or MP1 ward into a existing IP system.



Nr.: FC010300

Dimensions: 310x232x35mm (LxBxT)
plastic case in colour RAL9016

Description:	Type:	Article No.:
Ward terminal IP-PLUS	DZT-IP-PLUS	FC008010
Connection module	SM	FC010300



Nr.: FC88012-



Nr.: FC88013-

Necessary components for surface mounting or countersunk mounting for connection module SM:

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-
Cavity wall double switchbox	H2	FC88013-



Nr.: FC008003



Nr.: FC81441-

Necessary components for countersunk mounting and connection to VISOCALL PLUS:

Description:	Type:	Article No.:
Cover for Distribution board DZT	A-VDZT	FC008003
Distribution board DZT	V-DZT	FC81441-
Plastic mouting frame	DR-ST	FC008101



Nr.: FC008101



Nr.: FC008990

Necessary components for surface mounting and connection to VISOCALL PLUS:

Description:	Type:	Article No.:
Cover for Distribution board DZT	A-VDZT	FC008003
Distribution board DZT	V-DZT	FC81441-
Surface mounting frame	APA-ST	FC008990



Nr.: FC88009-



Nr.: FC88008-

10 TV devices and accessories

For the room-by-room extension of the nursecall system, in order to offer patients the chance to take advantage either of a room TV set or a patient TV terminal.



Nr.: FC007030

A20 TV set

Flat panel TV for watching television in the room; it can be mounted on the opposite wand to the patient using the wall console. The loudspeaker is deactivated, and the TV set can be controlled using the VISOCALL-IP nursecall system. A pre-requisite for this to be possible is a connection from the TV set to the RSIG interface of the SWI9. This connection is used to transmit the IR control signals and the audio signal.

Electrical details:

Mains connection: 230V/50Hz
 Power consumption: in operating mode, max. 52W
 (including additional hospital interface power supply)
 Standby 2.9W
 Ambient temperature: < 40°C

Tuner VHF/UHF/cable

(Hyperband): 8MHz band including special channels
 Program memories: 100
 TV Standards: PAL B/G, D/K, I, L, M,
 SECAM B/G, D/K, L

Mechanical details:

Tube: 20", 51cm active matrix LCD display
 Format: 4:3
 Resolution: 640 x 480 pixels
 Contrast ratio: 500:1
 Brightness: 450cd/m²
 Dimensions: 507 x 530 x 75mm (H x W x D)
 Weight: 8 kg

Connections:

IEC socket: 75 Ohm, aerial / cable
 Hospital interface: Interface for VISOCALL PLUS (RSIG)
 IR and sound (Scart II)

Power cable and plug integrated into the set.

TV set in grey colour

Description:	Type:	Article No.:
A20 TV set	XELOS A20	FC007030

Fixed wall mounting bracket

Fixed wall mounting bracket for XELOS A20 can not be moved.

Description:	Type:	Article No.:
Fixed wall mounting bracket	WM34	FC007033

Moveable wall mounting bracket

Moveable wall mounting bracket for XELOS A20, can be moved 10° down.

Description:	Type:	Article No.:
Moveable wall mounting bracket	WM35	FC007034

Programmer

PC software pack consisting of:

- CD Rom incl. installation instructions
- Programming module
- 2 connection cables

Description:	Type:	Article No.:
Programmer	PM-A20	FC007031

Cable Remote Control

For simple programming of the XELOS A20.

Description:	Type:	Article No.:
Cable Remote Control	CRC-A20	FC007035



Nr.: FC010600

TV Terminal

TV Terminal for watching television and listening to the radio for each bed.

The unit is mounted on a wall-mounted arm or an arm attached to the bedside cabinet and can easily and comfortably be moved into any desired position by using the hand grip; The screen can either be delivered in 12" screen size (see article no.).

Games console / DVD:

Y/C and CVBS inputs can be found on the underside of the unit for connecting a games console or a DVD player respectively.

Reading light:

LEDs on the underside of the unit provide adequate light. The neighbouring patient will not be disturbed by this lighting source.

Electrical details:

Power supply on console: 230V-/50Hz 50W (see 13.12/13.17)

Power consumption: in operation 12V/40W
(including reading light)
standby mode typically

Ambient temperature: +5°C to +40°C

Tuner VHF/UHF/cable
(Hyperband):

TV: 48.25MHz – 855.25MHz

Radio: 87.5MHz – 108MHz

recommended signal strength: >65dBμV for TV reception
>30dBμV for stereo radio reception

TV program memories: 99

Radio program memories: 99

TV Standards: PAL, SECAM, PAL I, PAL D/K,
SECAM L/L', SECAM D/K

Mechanical details:

Monitor: TFT LCD

Format: 12", 800x600 pixels (SVGA)

Dimensions: 270 x 370 x 55mm (H x W x D)

Weight: 3 kg

Connections:

IEC socket: 75 Ohm, aerial / cable

Y/C, Hosiden DIN socket: SVHS input

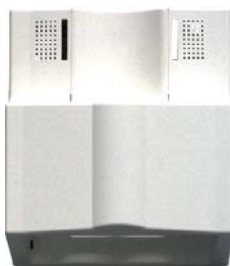
CVBS, Cinch socket: Cinch input - video

Audio left/right, Cinch WH/RD: Cinch input – audio

3.5mm jack plug: Output for stereo sound

CAUTION: When using a TVT unit, the patient terminal
PAT-TVT must be ordered separately.

Description:	Type:	Article No.:
TV-Terminal	TVT-IP	FC010600



Nr.: FC010620

Wall console

Wall console for wall-mounting of the patient TV terminal.

- 230V~ AC power supply connection
- Aerial connector case for connecting aerial wires
- Metal panel for mounting the console on the wall
- Plastic covering in colour RAL9016

Dimensions: Metal base plate: 249 x 241 x 14mm (H x W x D)
Cover: 290 x 245 x 12.5mm (H x W x D)

Weight: 8 kg

Description:	Type:	Article No.:
Wall console	WK-TVT-IP	FC010620



Nr.: FC010630

Wall-mounted arm

Wall mounted arm for attaching the patient TV terminal to the wall console

- 3 jointed swivelling arm, moveable through all three axes.
- Bottom joint of the arm can be tilted up to 50°
- Pre-installed internally fitted cable
- Metal case in pure white colour

Dimensions:

Extended: 220 x 1710 x 70mm (H x W x D)
Upper arm: 105 x 750 x 70mm (H x W x D)
measurement points to the centre of the joints
Lower arm: 80 x 800 x 70mm (H x W x D)
measurement points to the centre of the joints

Weight: 10 kg

Description:	Type:	Article No.:
Wall-mounted arm	WA-TVT-IP	FC010630



Nr.: FC009607

Grip for TVT/MMT

Metal grip for the correct positioning of the Patient TV terminal (TVT) or multimedia terminal (MMT).

- Comfortable to use modern design hand grip, silver

Description:	Type:	Article No.:
Grip for TVT/MMT	WA-G	FC009607



Nr.: FC010610

Network box LAN

Network box for bedside cabinet-mounted arm, consisting of:

- Connection box for aerial connection (coaxial cable)
- Connection clips 230V~ Alternating current
- 12V DC power supply
- Mounting holder for TVI and SVB/SVB-T

Dimensions: 130x300x130mm (HxBxT)

Weight: 5 kg

Metal case in colour RAL 9010

Description:	Type:	Article No.:
Network box LAN	D-TVK-IP	FC010610



Nr.: FC009612

Bedside cabinet-mounted arm

For mounting the patient TV terminal on a bedside cabinet, consisting of:

- Shaped metal tube in colour RAL9010
- Internal pre-prepared cable for various connections

Dimensions: 850x500x35mm (HxBxDiameter)

Weight: 6 kg

Description:	Type:	Article No.:
Bedside cabinet-mounted arm	NA-TVT	FC009612



Nr.: FC009613

Mounting bracket

Metal bracket for holding the bedside cabinet-mounted arm, consisting of:

- Aluminium cast part in colour RAL 9010
- Aluminium base plate for fixing to the bedside cabinet or item of furniture

Dimensions: 150x60x70mm (HxBxT)

Description:	Type:	Article No.:
Mounting bracket	NA-H	FC009613

11 Power supplies

For power supply within each type of system throughout the ward.



Nr.: FC008702

Ward Power supply (In accordance with hospital standards)

For supplying the VISOCALL-IP system with power on a ward-by-ward basis and for fitting in the control cabinet to be snapped onto the TS35 rail in accordance with EN50022. Suitable for parallel operation without required additional measures, with overvoltage protection and overtemperature protection and double supply network fuses, network connection indicator and function indicator. Assembled in accordance with VDE0804/ protection class II; The following directives and standards must be observed:

- Structure conformant to EN60601
- Discharge current and isolation voltage conformant to EN60601-1 medical regulations (4kV),
- EMC in accordance with 89/336/EEC,
- Low voltage regulations EN60950,
- Interference emission compliant with EN50081-1,
- Interference compliant with EN50082-1,
- passive PFC switching compliant with EN61000-3-2,

Technical details:

Mains connection:	230V/50Hz
Primary power consumption:	6 A with full load
Output:	24 V=
Output current / from cold start:	maximum 28A
Average continuous current:	20 A short circuit resistant
Peak current:	30 A
Residual ripple:	50mV with full load
Isolation voltage:	3KV between input and output (parts checked)
Operating temperature:	max. -25°C to +60°C, natural cooling
Load variation:	0-60°C < 1% (typically 0.4%)
Air humidity:	100%, coated circuit boards
Parallel operation:	activated

Dimensions: 241 x 130 x 88mm (W x H x D)

Weight: 2.5 kg

Leakage current and circuit insulation voltage in accordance with EN60601-1 (DIN 750, part 1). Transformer in accordance with VDE 0551. Device fused, with power switch and control lamp. In accordance with VDE0384 the power supply must be connected to its own electric current The primary electrical circuit earthing must be done using a 16A circuit-breaker with B type tripping characteristics.

Description:	Type:	Article No.:
Ward Power supply (In accord. with hospital standards)	D-TOP500/1-MED	FC008702



Nr.: FC38100-

Accessories:

Description:	Type:	Article No.:
Sign nurse call bl/ws	S LTR	FC38100-

Power supply cable for D-TOP500/1-MED

Power supply cable for connection to 230V~

Length: approx. 2.5m

Description:	Type:	Article No.:
Power supply cable for D-TOP500/1-MED	ZUB NG KAB	FG020231

UPS Module

UPS module for D-TOP500ME power supply unit in the event of a power failure, so that the D-TOP500/1-MED power supply unit can continue to supply the VISOCALL-IP system with enough power, consisting of two parts:

- UPS module as a device for building into the distributor case, can be snap-fitted on to standard profile duct TS35 in accordance with EN50022
- Battery module as a device for building into the distributor case, attached using 4 M5x8 screws (not supplied)
- Protection class III in accordance with EN60950
- Safety: SELV classified in accordance with EN60950
- Class of protection IP20 in accordance with DIN VDE 0470, 11.92

Cooling: Air convection
 Operating temperature: Battery: +5°C – +40°C
 UPS: 0°C – +60°C

Current limiting:

Mains operation: using DC supply (e.g. D-TOP500ME: 20A)
 Battery operation: UPS module through power switch approx. 120A dependent on temperature
 Battery module: protected by a 25A flat fuse
 Discharge time: 30 mins with full load, rechargeable battery for 7Ah (up to 20.8V; with a fully loaded buffer battery; IL=20A)

Dimensions:

UPS Module: 200 x 125 x 80mm (W x H x D)
 Battery module 7Ah: 175.4 x 170 x 139.8mm (WxHxD)
 Battery module 14Ah: 305.4 x 185 x 124.5mm (WxHxD)

Battery module contains maintenance-free lead rechargeable cells, either with 7 Ah strength (DBAT-24-7Ah) or 14 Ah strength (DBAT-24-14Ah). The choice of the correct battery module is dependent on the calculated current requirement.

Description:	Type:	Article No.:
UPS Module	D-TOP BAT550	FC008710
Akku 7Ah	DBAT-24-7Ah	FC008711
Akku 14Ah	DBAT-24-14Ah	FC008714



Nr.: FC008722

Power supply

Power supply for use in care homes and old people's home, where the current hospital standards for power supplies are not applicable:

Mains connection:	230V/47-63Hz +15%, -20%
Output:	24-28V (adjustable using the covered potentiometer)
Output current:	20 A
Input surge current:	33 A from 264V AC
Fuse:	10 A
Input rated current:	5 A
Residual ripple:	< 100mV
Ambient temperature:	0°C to +70°C
Load variation:	1A per °C at ambient temperature max. 40°C at 15 A
Overvoltage protection:	+/- 10% at 32V
Parallel operation:	yes, up to 10 devices

Dimensions:	220 x 124 x 102mm (W x H x D)
Weight:	1.8 kg

Recommended cooling clearance: above/below 70mm each, right/left 25mm each. All connection terminals can be easily reached from the front side of the device, furthermore PVC cable can be used for all the connections terminals, because they are on the bottom side of the cool area.

Description:	Type:	Article No.:
Power supply	SL20.101	FC008722



Nr.: FC38100-

Accessories:

Description:	Type:	Article No.:
Sign nurse call bl/ws	S LTR	FC38100-



Nr.: FC010731

UPS Cabinet

Complete UPS Case (conforming to VDE0834) consisting of:

- Steel case with lockable doors
- D-TOP 500/1-MED power supply unit or SL20.101 (see below)
- Electronic module for controlling the UPS
- Battery module for maintaining the supply voltage in the event of the mains power supply going down
- Mini room terminal for indicating the power failure in the system

Messages:

Both faults (temperature sensor fault or battery fault) and the failure of the mains supply voltage are communicated to the rest of the system by means of the integrated mini room terminal. If a fault occurs, then it is forwarded to all DZT's in the system and indicated at these components. If there is a mains supply voltage failure, then the system also receives a failure message from the mini room terminal.

Mains connection:	230V/50Hz
Primary power consumption:	6 A with full load
Output:	24 V=
Output current / from cold start:	maximum 28A
Average continuous current:	20 A short circuit resistant
Peak current:	30 A
Residual ripple:	50mV with full load
Isolation voltage:	3KV between input and output (parts checked)
Operating temperature:	max. -25°C to +60°C, natural cooling
Load variation:	0-60°C < 1% (typically 0.4%)
Air humidity:	100%, coated circuit boards
Discharge time:	min. 1 hour at 14 A
Ambient temperature:	35°C

Dimensions:	445 x 600 x 225mm (W x H x D)
Weight:	approx. 20 kg

CAUTION: There is also the possible option of building in an additional battery module in to the UPS case. This add-on increases the battery capacity to 28Ah.

Description:	Type:	Article No.:
UPS Cabinet VCIP/1 (for D-TOP 50071-MED)	VCIP/1-USV	FC010731
UPS Cabinet VCIP/2 (for D-TOP 50071-MED)	VCIP/2-USV	FC010732
UPS Cabinet VCIP/3 (for SL20.101)	VCIP/3-USV	FC010741
UPS Cabinet VCIP/4 (for SL20.101)	VCIP/4-USV	FC010742

12 Installation accessories

All materials which are used during the installation of a system which can be delivered in advance or separately for installation and stock reasons are listed here. These parts are also purchased and billed separately.



Nr.: FC88010-

Countersunk switchbox

For countersunk installation; made of plastic, flame retardant in accordance with DIN/VDE 0606 Part 1 /11.84; main body conforms to DIN 49030; suitable for parts in accordance with DIN 49200.

Plastic part does not contain halogens.

Dim.: 60 mm diameter, H=40mm, distance between device screws 60 mm

Description:	Type:	Article No.:
Countersunk switchbox	U1	FC88010-



Nr.: FC88012-

Countersunk double switchbox

For countersunk installation; made of plastic, flame retardant in accordance with DIN/VDE 0606 Part 1 /11.84; main body conforms to DIN 49030; suitable for 2 units or 1 double unit in accordance with DIN 49200. Plastic part does not contain halogens.

Dimmension: W=60 mm, D=40mm, H=142mm
Distance between device screws 60 mm;
2x at a distance of 71 mm

Description:	Type:	Article No.:
Countersunk double switchbox	U2	FC88012-



Nr.: FC88011-

Cavity wall switchbox

For cavity wall installation with mounting screws and device screws; made of plastic, flame retardant in accordance with DIN/VDE 0606 Part 1 /11.84; main body conforms to DIN 49073; suitable for parts in accordance with DIN 49200. The switchbox is available on request and upon special demand in a halogen-free version.

Dimmensions: 60 mm diameter, H=45mm,
distance between device screws 60 mm

Description:	Type:	Article No.:
Cavity wall switchbox	H1	FC88011-



Nr.: FC88013-

Cavity wall double switchbox

For cavity wall installation with mounting screws and device screws; made of plastic, flame retardant in accordance with DIN/VDE 0606 Part 1 /11.84; main body conforms to DIN 49073; suitable for parts in accordance with DIN 49200. The switchbox is available on request and upon special demand in a halogen-free version.

Dimensions: W=68 mm, D=45mm, H=142 mm
Distance between device screws 60 mm
2x at a distance of 71 mm

Description:	Type:	Article No.:
Cavity wall double switchbox	H2	FC88013-



Nr.: FC88019-

Countersunk switchbox for ICT

For countersunk installation of the Intercom Terminal, made of plastic, fire resistant up to 650°C pursuant to DIN/VDE 0606. The switchbox is also available in a halogen-free version if required and upon special request.

Dimensions: 107x107x57mm (WxHxD)

Description:	Type:	Article No.:
Countersunk switchbox for ICT	U-ICT-IP	FC88019-



Nr.: FC88018-

Cavity wall switchbox for ICT

For cavity wall installation of the Intercom Terminal, with fixing screws and device screws; made of plastic, fire resistant up to 850°C pursuant to DIN/VDE 0606. The switchbox is also available in a halogen-free version if required and upon special request.

Dimensions: 107x107x45mm (WxHxD)

Description:	Type:	Article No.:
Cavity wall switchbox for ICT	H-ICT-IP	FC88018-



Nr.: MM001124

VISOCALL IP CAT5e data cable

For the structured cabling of the VISOCALL IP network, types as follows:

- F-UTP 4 x 2 x 0.5 AWG24, solid conductor with foil shield and drain wire (max. data transfer rate 1Gb)

Description:	Type:	Article No.:
VISOCALL IP CAT5e data cable	CAT5e	MM001124



Nr.: ZZH001125

IO-Bus CAT5e data cable

For loop cabling of the IO bus of the VISOCALL IP, types as listed below:

- EYN857A-PB-1000, solid conductor without shield
- UTP 4 x 2 x 0.5 AWG24, solid conductor
- Including plastic cable stranding, with cable grip
- The cable is contains in a "Black Box", length 305m
- 350MHz, CAT5e

Colour: grey

Description:	Type:	Article No.:
IO-Bus CAT5e data cable	CAT5e-UTP	ZZH001125



Nr.: MM010008

RJ45 Connector Plug

Shielded connector plug, to be crimped on to the VISOCALL IP CAT5e data cable, consisting of:

- Connector piece with metallic mains lead cleat
- Insert pieces for the individual cores

Description:	Type:	Article No.:
RJ45 Connector Plug	RJ45-IP	MM010008



Nr.: MM010001

Crimping pliers for RJ45

Pliers, for crimping the RJ-45 connector plug onto the VISOCALL IP CAT5e data cable.

Description:	Type:	Article No.:
Crimping pliers for RJ45	CRIMP-IP	MM010001



Nr.: MM001126

Data cable VISOCALL IP basic

Telephone flatcable for cabling the basic-components:

- 6 x AWG28/7 (flexible)
- Halogen free (optional)

Description:	Type:	Article No.:
Data cable VISOCALL IP basic	AWG28/7	MM001126
Data cable VISOCALL IP basic (halogen-free)	AWG28/7-H	MM001128



Nr.: MM011008

RJ11 Connector Plug

Unshielded connector plug, to be crimped on to the VISOCALL IP basic data telephone flatcable, consisting of:

- 6 pole plastic plug
- Single wire diameter up to AWG24

Description:	Type:	Article No.:
RJ11 Connector Plug	RJ11-IP-B	MM011008



Nr.: MM011001

Crimping pliers for RJ11

Crimping pliers, for crimping the RJ11 connector plug to the data cable VISOCALL IP basic flatcable.

Description:	Type:	Article No.:
Crimping pliers for RJ11	CRIMP-IP-B	MM011001



Nr.: FC010191

Plastic mouting frame for KMT

This plastic mouting frame is for mounting the KMT to a Cavity wall double switchbox, consisting of:

- A plastic case for screw-free fitting of the communications terminal,

Dimensions: 203 x 86 x 9mm (H x W x D)
Plastic case in colour RAL9016

Description:	Type:	Article No.:
Plastic mouting frame for KMT	AP-KMT	FC010191



Nr.: FC010190

Surface mounting frame for KMT

This surface mounting frame is used for surface mounting the KMT or the STD-B, and consists of:

- A plastic case for screw-free fitting of the communications terminal,

Dimensions: 203 x 86 x 9mm (H x W x D)
Plastic case in colour RAL9016

Description:	Type:	Article No.:
Surface mounting frame for KMT	AP-KMT	FC010190



Nr.: FC008991

Single surface mount. case (for RT-IO, ZT-IO, AT-IO, etc.)

For surface mounting, made of plastic (ABS, colour: RAL 9016) with 2 prepared cable inlets (10 and 16mm) and 2 screws for attaching the carrying ring.

Dimensions: 86 x 83 x 40mm (H x W x D)

Description:	Type:	Article No.:
Single surface mounting case	APA-1	FC008991



Nr.: FC008992

Double surface mounting case (for SM)

For surface mounting, made of plastic (ABS, colour: RAL 9016) with 6 prepared cable inlets (10 and 16mm) and 4 screws for attaching the carrying ring.

Dimensions: 160 x 83 x 40mm (H x W x D)

Description:	Type:	Article No.:
Double surface mounting case	APA-2	FC008992

Subject to technical changes.

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