

System description **MULTISWITCH 4000**



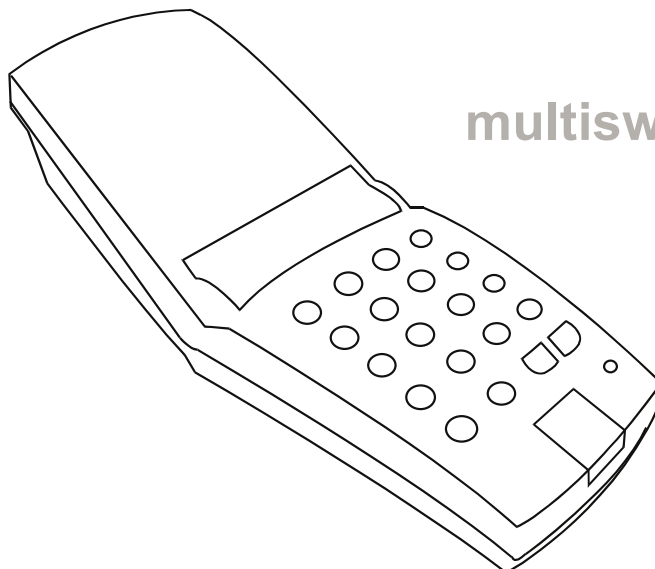
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multiswitch 4000®

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Our terminals and intercoms are in a process of regular further development. The system description is a documentation of their technical status at the time of print. We reserve the right to technical changes.

A. The System

A.1. Use of the system

The primary function of the system consists of the internetworking of the features for

- * Voice communications
- * Monitoring and control
- * Control center technology.

The integration of other technical components into this voice, control and information system, such as

- Data and telecommunication systems
 - Sound systems
 - Radio systems
 - Video surveillance systems, access control
 - Intrusion alert and fire alarm systems
 - Emergency and malfunction notification systems
 - Remote control systems
- etc.

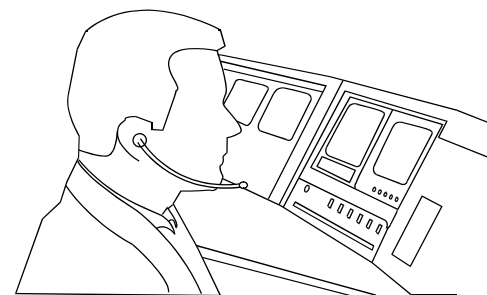
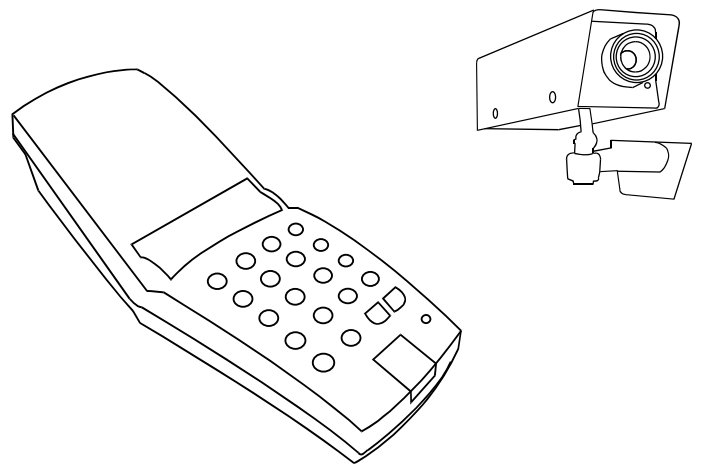
must be effected via uniform, standardized interfaces that meet the requirements for transferring information securely and handling the volume of data.

The networking options of the system offered for the administration of several of the client's locations must be provided via appropriately dimensioned ISDN and Ethernet data networks.

The system must have a uniform and intuitive user interface that allows normally qualified service personal to operate the entire system with all specified features and with all attached devices.

The overall system must be in full compliance with European regulations for electromagnetic compatibility (EMC).

The objective is to set up the overall system so that organizational workflows and processes are supported in order to ensure a high level of effectiveness and the required deliverables.



A.2. Description of the system

A multi-functional communications server with integrated call handling unit forms the core of the system put out for tender. As the central unit the server is modular in design and consists of a 19" rack assembly with distribution back panel in a solderless and pluggable design. In its standard basic setup the central unit has an electronically controlled, overload and short-circuit-proof power supply assembly including connecting cables as well as a processor board including operating system software with all of the software features listed below and a group controller. The central unit can be enhanced by networking to support up to 6,000 subscribers. All central units can be networked via ISDN, Voice over IP gateway via Ethernet and directly to one another. Subscriber instruments can be either connected via UPN ports or via S0 ports. The UPN ports are connected to subscriber instruments via two-wire connections and the S0 ports via four-wire connections. Two types of subscriber cards are provided for connecting subscribers.



Subscriber cards for 8 UPN lines

Subscriber cards for 4 S0 lines.

The system has an IOM bus for each subscriber slot. In addition, 4 PCM highways of 2 Mbit each are provided for controlling peripherals. The implementation of central unit connections via fiber optic cables in single and multi mode is done by using media converters. The central unit must ensure congestion-free operation of all subscribers, i.e. all subscribers must be able to communicate with one another at the same time. No restrictions may be placed on the number of communication routes. Via the integrated measuring devices in the central unit measurements must be able to be carried out on each port for frequency response, distortion and the sound level of microphones/speakers of the connected stations or switched-on external devices such as radio connections, because the client requires these measurements in printed form as a part of the completion certificate.

Frequency response can be directly modified by programming in the central unit using an integrated equalizer function with additional parameters such as microphone and speaker damping to attain optimal operation of the station or external systems such as radio instruments under the given environmental conditions. Furthermore, the system must have an integrated, freely-programmable synthesizer function to enable the creation of call sequences and to provide a test tone with variable frequency and sound level for connected radio and external devices. The control center stations must be able to be directly connected to a subscriber port without requiring additional cabling. All features such as the administration of up to 112 keys per subscriber line, etc. must be possible via the control center station. There may be no limitation placed on the number of subscriber lines in the system for control center stations in the system.

The system must have an event handler, making it possible to analyze each event within this system or within a connected system (which hands off this information!) and allowing any type of control using programmable logic. Event logs must include, among other things:

- + Calls
- + Call start and end times
- + Keyboard control
- + Contact and state changes of all multiswitch 4000 stations and of external systems connected to the system.

The following digital subscriber instruments must be able to be hooked up to the central unit described:

- Stations for different applications, both UPN and S0 variants such as:

Office stations
Integrated stations
Door entry stations
Vandalism-proof stations
Radio communications stations
Weight and explosion-proof industrial stations
Foil terminals for operating rooms at hospitals
Stations for judges in legal courts
Stations for emergency calls in elevators
Control center stations with up to 112 keys
etc.

- System interfaces such as
 - Contact cards with 16 inputs each
 - Relay cards with 16 relays each
 - Combined contact and relay cards 8 inputs/8 outputs
 - Cards with RS232/422/485 ports
 - Low frequency coupling and decoupling
 - 100V output cards
 - Cards for digital and analog radio connections
 - Voice storage
- Standard ISDN terminals
 - commercially available ISDN telephones (DSS1)
 - DECT ISDN terminals (DSS1)
 - ISDN cards in PCs (DSS1)
 - ISDN server for transmitting video images
- Comfortable voice mail and voice storage systems with caller navigation and automatic speech recognition
- Connection of ISDN telecommunication systems and ISDN DECT systems as sub-systems; the configuration of the S0 subscriber line as an ISDN system line and ISDN multi device line must be possible.

Furthermore, there is the option of connecting the central unit to a public or private ISDN network via corresponding S0 exchange connections. These S0 exchange connections can also be used to network several central units with one another or via an ISDN network.

In addition, a VoIP (Voice over IP) gateway is optionally integrated into the system and provides support for VoIP instruments (H323) from a combined data/voice network. The VoIP gateway is provided for easily networking several central units via a data network.

The programming of all central unit features in the network is carried out via a program with a Windows GUI which can also be used for remote maintenance. In addition, there must be a possibility for programming all features via the system console. This must be possible from a PC using Windows or the LINUX operating system, because the client has a heterogeneous network environment.

A.3. Features

features for voice communications

The features for voice communications in subscriber instruments and stations allow direct voice communications with callers, searching for people using all calls and group calls with automatic call back as well as direct exchange of information via either simplex or duplex communications from the room. The display on subscriber instruments supports its operation, allows caller ID and provides additional information. The graphical presentation in the display allows the monitoring and control of rooms and open areas, doors, gates, machines, etc. System interfaces that can be flexibly used allow switching, control and monitoring functions of different kinds via subscriber instruments and the connection of other systems with voice transmission.

- Simplex - point-to-point
- Duplex - point-to-point
- Switching from simplex and duplex operating modes
- Call waiting for busy subscribers
- Call with priority
- Call-back request and priority call-back request function
- Call-back request list for each subscriber
- Up to 48 all calls and group calls for each central unit
- Automatic call back for all calls/group calls
- Exclusion of subscribers from group call announcements
- Dial-up via:
 - + Number dialing
 - + Selection from central unit subscriber list
 - + Selection from station subscriber list
 - + Target calls from sub-stations
 - + Number re-dialing
- Door entry call functions
 - + Repertory dialer program
 - + Door entry calls with/without priority
 - + Door entry calls as single or group call
 - + Answering door entry calls and door release function from any authorized station
 - + Door call redirection to a group
- Call transfer when free, busy or by time
- Executive - secretary function
- Remote entry of redirected calls (Follow me)
- Callback with alternation option
- up to 48 conference calls with any number of subscribers
- up to 48 music channels as open or closed conferences
- multi-level eavesdropping protection
 - + Call blocking via PIN code entry
 - + Call blocking via switching to private mode
 - + Permanent private mode
 - + Turning off microphone during conversation, mute control
 - + Privacy during conversations (handset)
 - + Ringing signal
- different acoustic signals
 - + Ringing signal
 - + Busy signal
 - + Collective/Group ringing signals
 - + Private signal
 - + Door ringing signal

- + Contact signal
- Alarm or break tone transmission to all stations via external contact operation and external signal source

Functional specifications for the control

- Operation of up to 2,048 relays with change-over contact for each central unit as:
 - + Manual relay
 - + Automatic relay
 - + Impulse relay 0.2s - 210 min.
 - + Interval relay 0.2s - 210 min.
 - + Self-holding relay
- PA connection with line selection
- Radio connection with and without selective call option
- PSA interface connection

Features for monitoring

- Monitoring of up to 32,000 inputs as break or make contacts for each central unit
- Contact modes as
 - + Indicator contacts
 - + Alarm contacts
 - + Door contacts
 - + Memory contacts
 - + Polling contacts
- Contact display and signaling
 - + as text in connection with key control unit
 - + as text on station display
 - + on graphical control board IT2
 - + as contact signal

The software features for the central unit must be available in unrestricted form at all subscriber lines.

A.4 Technical data

- Power supply
 - Input voltage: 230V 50Hz
 - Backup power supply: 230V 50Hz
 - Power consumption for each power supply unit: max. 300 VA
- Ranges
 - Central unit/UPN subscriber: 1,000m/0.6mm
 - Central unit/S0 subscriber: 100m/0.6mm
- General data:
 - Program channel input: 0dB 600 W
 - Ambient temperature: +5C° - +35 C°
 - Humidity: max. 80%
- Technical regulations
 - The system complies with these standards related to safety and radio interference suppression:
 - VDE 0804/05.89
 - VDE Class B regulation 1046/1984
 - VDE 0878 limit value B part 1 12/86

B. Central units

B.1. Central units

Central unit of the voice, control and monitoring system MULTISWITCH 4032

Including all software and hardware features as set out in the previous general system description. The following digital subscriber instruments must be able to be hooked up to the central unit described:

- Stations for different applications, both UPN and S0 variants
such as
 - Office stations
 - Integrated stations
 - Door entry stations
 - Vandalism-proof stations
 - Radio communications stations
 - Weight and explosion-proof industrial stations
 - Foil terminals for operating rooms at hospitals
 - Stations for judges in legal courts
 - Stations for emergency calls in elevators
 - Control center stations with up to 112 keys
 - etc.
- System interfaces such as
 - Contact cards with 16 inputs each
 - Relay cards with 16 relays each
 - Combined contact and relay cards 8 inputs/8 outputs
 - Cards with RS232/422/485 ports
 - Low frequency coupling and decoupling
 - 100V output cards
 - Cards for digital and analog radio connections
 - Voice storage
- Standard ISDN terminals
 - commercially available ISDN telephones (DSS1)
 - DECT ISDN terminals (DSS1)
 - ISDN cards in PCs (DSS1)
 - ISDN server for transmitting video images
- Comfortable voice mail and voice storage systems with caller navigation and automatic speech recognition
- Connection of ISDN telecom systems and ISDN DECT systems as sub-systems; the configuration of the S0 subscriber line as an ISDN system line must be possible.

Furthermore, there is the option of connecting the central unit to a public or private ISDN network via corresponding S0 exchange connections. These S0 exchange connections can also be used to network several central units with one another or via an ISDN network.

In addition, there must be the option to integrate a VoIP gateway into the system, providing support for VoIP instruments (H323) from a combined data/voice network. The VoIP gateway is provided for easily networking several central units via a data network.

The programming of all central units functional requirements in the network is carried out via a program with a Windows GUI which can also be used for remote maintenance. In addition, it is possible to program all features via a console-based application by directly dialing into the central systems in the network from a computer running Windows or the LINUX operating system.

Central unit in 19" frame:

Required setup:

- .. subscribers with UPN interface
- .. subscribers with S0 bus
- .. exchange lines with S0 bus
- .. open or closed conferences
- .. group calls
- .. background music channels
- storage of 32 call-back requests per subscriber
- Clock time module and power supply 230V, 50Hz

Required maximal setup with central unit:

- up to 32 subscribers with UPN interface
- up to 16 subscribers with S0 bus
- up to 2 exchange lines with S0 bus
- up to 48 open or closed conferences
- up to 48 group calls
- up to 48 background/music channels
- Storage of 32 call-back requests per subscriber

Required directory functions:

- call-back request list for each subscriber
- call list for each subscriber
- individual list for each subscriber
- complete subscriber list

System expansion options by network integration via ISDN, VoIP gateway, Ethernet or direct support of up to 6,000 subscribers.

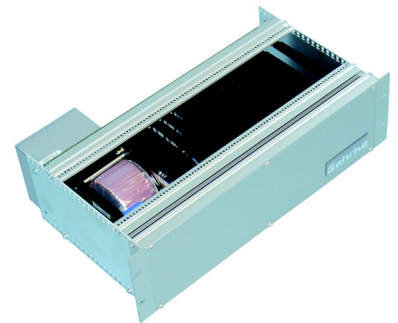
The software features for the central unit (all call, relay functions, etc.) are available in unrestricted form for all subscriber lines.

Central unit of the voice, control and monitoring system MULTISWITCH 4064

Including all software and hardware features as set out in the previous general system description.

The following digital subscriber instruments must be able to be hooked up to the central unit described:

- Stations for different applications, both UPN and S0 variants
 - such as
 - Office stations
 - Integrated stations
 - Door entry stations
 - Vandalism-proof stations
 - Radio communications stations



Weight and explosion-proof industrial stations
Foil terminals for operating rooms at hospitals
Stations for judges in legal courts
Stations for emergency calls in elevators
Control center stations with up to 112 keys
etc.

- System interfaces such as
 - Contact cards with 16 inputs each
 - Relay cards with 16 relays each
 - Combined contact and relay card 8 inputs/8 outputs
 - Cards with RS232/422/485 ports
 - Low frequency coupling and decoupling
 - 100V output cards
 - Cards for digital and analog radio connections
 - Voice storage
- Standard ISDN terminals
 - commercially available ISDN telephones (DSS1)
 - DECT ISDN terminals (DSS1)
 - ISDN cards in PCs (DSS1)
 - ISDN server for transmitting video images
- Comfortable voice mail and voice storage systems with caller navigation and automatic speech recognition
- Connection of ISDN telecom systems and ISDN DECT systems as sub-systems; the configuration of the S0 subscriber line as an ISDN system line must be possible.

Furthermore, there is the option of connecting the central unit to a public or private ISDN network via corresponding S0 exchange connections. These S0 exchange connections can also be used to network several central units with one another or via an ISDN network.

In addition, there must be the option to integrate a VoIP gateway into the system, providing support for VoIP instruments (H323) from a combined data/voice network. The VoIP gateway is provided for easily networking several central units via a data network.

The programming of all central units functional requirements in the network is carried out via a program with a Windows GUI which can also be used for remote maintenance. In addition, it is possible to program all features via a console-based application by directly dialing into the central system in the network from a computer running Windows or the LINUX operating system.

Central unit in 19" frame:

Required setup:

- ... subscribers with UPN interface
- ... subscribers with S0 bus
- ... exchange lines with S0 bus
- ... open or closed conferences
- ... group calls
- ... background music channels
- storage of 32 call-back requests per subscriber

- Clock time module and power supply 230V, 50Hz

Required maximal setup with central unit:

- up to 64 subscribers with UPN interface
- up to 32 subscribers with S0 bus
- up to 6 exchange lines with S0 bus
- up to 48 open or closed conferences
- up to 48 group calls
- up to 48 background/music channels
- Storage of 32 call-back requests per subscriber

Required directory functions:

- call-back request list for each subscriber
- call list for each subscriber
- individual list for each subscriber
- complete subscriber list

System expansion options by network integration via ISDN, VoIP gateway, Ethernet or direct support of up to 6,000 subscribers.

The software features for the central unit (all call, relay functions, etc.) are available in unrestricted form for all subscriber lines.

B.2. Accessories for central units

Compact housing with 7 dimension units

Completely closed housing in light-weight construction for the mounting of 19"-frame with six dimension units

Measurements (height x width x depth):
345 x 520 x 320 mm

Accessories:
Swivel frame 34-SR

34-KG 7



Swivel frame

Wallmount for compact housing, swivelling to both sides

Scope of supply:
Wall bracket including swivel arm with mounting material and cable pull relief

Measurements (height x width x depth):
230 x 560 x 370 mm

Weight:
14 kg

34-SR

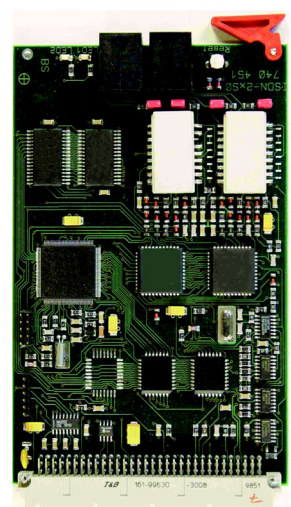
Exchange card with 2 S0 base connections

AK4000-2S0

For the expansion of multiswitch central units by 2x S0 ISDN exchange lines for operation at a point-to-point connection as private branch exchange connection or at a point-to-multipoint connection as multiple connection to operate several terminals in a private or public ISDN network, for a VoIP gateway or to network multiswitch central units.

- Short-circuit proof, surge-protected
- Easy servicing, plug-in component for central office housing in EuroStyle format.

The software features related to unrestricted networking are available for all exchange lines.



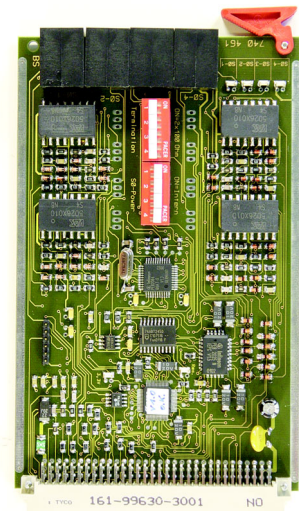
Subscriber card with 4 S0 subscriber lines

TA4000-4S0

For the expansion of multiswitch central units by 4x S0 subscriber lines each providing the operation modes point-to-point connection (private branch exchange connection) or point-to-multipoint connection (multiple connection) to connect terminals, private branch exchanges or to centrally network multiswitch central units with one another. Each line can be individually configured.

- Short-circuit proof, surge-protected
- Four-wire cable to terminals at a distance of max. 1000 meters as point to point connection.
- For connecting several terminals in point-to-multipoint mode holding 4-wire bus cabling of max. 100 meters in length, 2 MSNs programmable for each S0 bus.
- Easy servicing, plug-in component for central unit housing in EuroStyle format.

The software features for the system are available in unrestricted form for all subscriber lines.



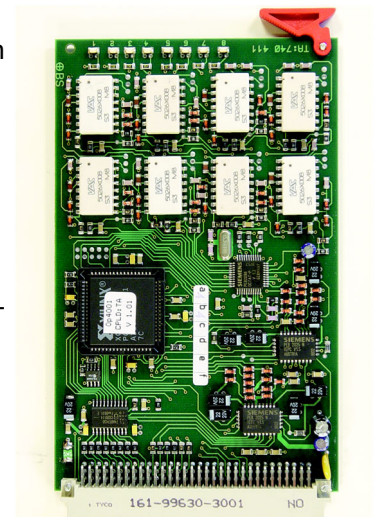
Subscriber card with 8 UPN subscriber lines

TA4000-8UPN

For the expansion of multiswitch central units by 8x UPN subscriber lines each in the operation mode point-to-point connection for connecting UPN equipment. Each line can be individually configured.

- Short-circuit proof, surge-protected
- Two-wire cable to terminals at a distance of max. 1,000 meters
- Easy servicing, plug-in component for central unit housing in EuroStyle format.

The software features for the system are available in unrestricted form for all subscriber lines.



C. UPS and Auxiliary Power Supply

C.1. General information

Modern terminals with processor-control react quite sensitively to short drops of the mains voltage. A monitoring circuit prompts the processor to carry out an automatic reset cycle if a certain voltage level is not reached. In that period - until the system is booted up there is a virtual system standstill.

For fields such as medical engineering, security and safety technology, at the police or at similar institutions where an intercom takes over tasks related to safety or control technology, a power failure or even only a short mains interruption must, by no means, lead to a system standstill. Therefore the use of a UPS / interrupt-free power supply or emergency power supply is indispensable in this case.

Note:

An emergency power supply supplies exclusively the master station itself, and all terminals for a certain time.

If terminals such as contact cards, relay cards, door openers, master control PCs, bus controllers, additional amplifiers, etc. are used that have a mains connection of their own, a USV supply is required additionally.

C.2. UPS 230 V AC

General features:

- voltage transformer with sinusoidal output voltage
- automatic charger
- operation display
- mains and transformer fuse
- overload protection
- deep discharging protection
- gas-tight maintenance-free lead gel accumulators
- output voltage: 230 V 50 Hz +/- 5 %

UPS (without picture)

34-USV 250/15 KG

- **Rated power:** 250 VA 15 minutes
- **Bridging times:**
 - exchange 2632-Z: 45 min
 - exchange 3432-Z: 45 min
 - exchange 3464-Z: 25 min
- **Measurements (height x width x depth):**
 - 308 x 500 x 360 mm
- **Weight:** approx. 25 kg

UPS (without picture)

34-USV 250/30 19"

as model 34-USV 250/15 KG, but in 19" frame with 6 height level units

UPS (without picture)

34-USV 250/30 KG

- **Rated power:** 250 VA 30 minutes
- **Bridging times:**
 - exchange 2632-Z: 90 min
 - exchange 3432-Z: 90 min
 - exchange 3464-Z: 50 min
- **Measurements (height x width x depth):**
 - 308 x 500 x 360 mm
- **Weight:** approx. 35 kg

UPS (without picture)

34-USV 600/7 19"

as model 34-USV 600/7 KG, but in 19" frame with 6 height level units

UPS (without picture)

34-USV 600/7 KG

- **Rated power:** 600 VA 7 minutes
- **Bridging times:**
 - exchange 2632-Z: 50 min
 - exchange 3432-Z: 50 min
 - exchange 3464-Z: 30 min
 - exchange 34120-Z: 15 min
- **Measurements (height x width x depth):**
 - 308 x 500 x 360 mm

- **Weight:** approx. 30 kg

UPS (without picture) **34-USV 600/15 19"**

as model 34-USV 600/15 KG, but in 19" frame with 6 height level units

UPS (without picture) **34-USV 600/15 KG**

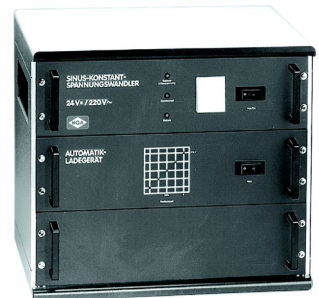
- **Rated power:** 600 VA 15 minutes
- **Bridging times:**
 - exchange 2632-Z: 100 min
 - exchange 3432-Z: 100 min
 - exchange 3464-Z: 60 min
 - exchange 34120-Z: 30 min
- **Measurements (height x width x depth):**
- 308 x 500 x 360 mm
- **Weight:** approx. 40 kg

UPS (without picture) **34-USV 1300/10 19"**

as modell 34-USV 1300/10 KG, but in 19" frame with 9 height level units

UPS **34-USV 1300/10 KG**

- **Rated power:** 1300 VA 10 minutes
- **Bridging times:**
 - exchange 2632-Z: 160 min
 - exchange 3432-Z: 160 min
 - exchange 3464-Z: 90 min
 - exchange 34120-Z: 45 min
- **Measurements (height x width x depth):**
- 442 x 500 x 360 mm
- **Weight:** approx. 55 kg



C.3. Emergency power supply ± 12 V DC

Standard features - general information:

- Automatic charging set
- Deep discharging protection
- Display for mains/emergency power operation
- Separate fault detector contact
- Gas-proof, maintenance-free lead gel batteries
- Output voltage: +12V / 0V / -12V 6.3A

Emergency power supply

34-NS 10 19"

- **Nominal capacity:** 10 AH
- **Bridging times:**
 - 16 subscribers: 240 minutes
 - 32 subscribers: 150 minutes
 - 64 subscribers: 90 minutes
- **Measurements (height x width x depth):**
 - 3 dimension units x 19" x 300 mm
- **Weight:** 15 kg
- in 19" plug-in unit



Emergency power supply (without picture)

34-NS 10 KG

like Model 34-NS 10 19" in compact housing

- **Measurements (height x width x depth):**
 - 175 x 500 x 360 mm

Emergency power supply (without picture)

34-NS 24 19"

- **Nominal capacity:** 24 AH
- **Bridging times:**
 - 32 subscribers: 360 minutes
 - 64 subscribers: 240 minutes
 - 120 subscribers: 120 minutes
- **Measurements (height x width x depth):**
 - 3 dimension units x 19" x 300 mm
- **Weight:** 25 kg
- in 19" plug-in unit

Emergency power supply (without picture)

34-NS 24 KG

like Model 34-NS 24 19" in compact housing

- **Measurements (height x width x depth):**
 - 175 x 500 x 360 mm

D. Terminals

D.1. Key master control

Application:

as operator's desks in control rooms of any kind in connection with flush-mount unit
The master control is plugged into the central unit like a normal station, that means that there is needed only a single participant port.

Standard features:

- Five master control module cascable
- 28 keys freely programmable with system-dependent or system-independent functions, can be labelled in a customer-specific way
- many display LEDs for a wide range of conditions per pushbutton assigned in accordance with the key's functions
- Parallel display and redirection of information to several master control unit
- Plug-in power supply unit 12 V 1.2 A DC
- Colour: aluminium-anodised (ae), customised colours on request

Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Accessories:

(In preparation)

(In preparation)

(In preparation)

(In preparation)

D.2. Desktop and wall-mount Terminals

Desktop main station with DSP and display

403-UPN

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station, in attractive design with housing made of impact-resistant plastic for UPN subscriber line
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Standard handset function
- Function and line monitoring of all units with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Desktop main station with DSP and display

403-PF-UPN

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station, in attractive design with housing made of impact-resistant plastic for UPN subscriber line
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Standard handset function
- Function and line monitoring of all units with swan-neck microphone 200 mm and speaker
- Measurable and adjustable microphone sensitivity, volume frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Desktop main station with DSP and display

403-SO

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station, in attractive design with housing made of impact-resistant plastic for S0 subscriber line
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Standard handset function
- Function and line monitoring of all units with microphone and speaker
- Adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Guard main station with DSP and Display

403-PF-SO

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station, in attractive design with housing made of impact-resistant plastic for S0 subscriber line
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Standard handset function
- Function and line monitoring of all units with swan-neck microphone 200 mm and speaker
- Adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Desktop main station with foil keyboard, DSP and display

413-A-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled main station in impact-resistant plastic housing with disinfectant-resistant foil user interface, applicable for UPN subscriber line

- As a desktop or wall-mounted unit
- Display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Desktop main station with foil keyboard, DSP and display

413-A-S0

(DSP - Digital Signal Processing)

Microprocessor-controlled main station in impact-resistant plastic housing with disinfectant-resistant foil keyboard, applicable for S0 subscriber line

- As a desktop or wall-mounted unit
- Display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



Sub-station with foil keyboard, DSP and display

418-1A-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station in impact-resistant plastic housing with disinfectant-resistant foil user interface, 1 call key, applicable for UPN subscriber line

- As a desktop or wall-mounted unit
- Display
- 1 call key
- 4 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Volume down
 - + Volume up
- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- 2.5 m connecting cable with RJ45 plug



D.3. Industrial Terminals

Explosion-proof industrial main station without display

405-EX-UPN

Main station in design complying with EN 50014, in diecast aluminum housing painted gray for wall-mounting for UPN subscriber line

- PTB (Physikalisch-Technische Bundesanstalt) number: Ex 84/1153
- Explosion protection class: EEx de (ia) II B T 6
- Optical and acoustic conversation and call display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, without speaker
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- All keys can be programmed for special functions
- Serial port
- Possible to attach directly to terminal clip



Explosion-proof industrial main station with display

406-EX-UPN

Main station in design complying with EN 50014, in diecast aluminum housing painted gray for wall-mounting for UPN subscriber line

- PTB (Physikalisch-Technische Bundesanstalt) number: Ex 84/1153
- Explosion protection class: EEx de (ia) II B T 6
- Display
- Optical and acoustic conversation and call display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, without speaker
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- All keys can be programmed for special functions
- Serial port
- Possible to attach directly to terminal clip



Industry sub-station with DSP

409-1-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled station in robust diecast aluminum housing for wall mounting with 1 call key for UPN subscriber line

- As a wall-mounted unit
- 1 call key as a mushroom key with large surface area
- Programmable call function with priorities A-H and corresponding ring tones
- Short-range microphone as an optional accessory
- Function and line monitoring of all units with integrated microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Housing with high-strength screw thread, protection class IP 54
- Serial port
- Possible to attach directly to terminal clip



Industry main station with DSP and display

416-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled main station in impact-resistant plastic housing for wall mounting for UPN subscriber line

- As a wall-mounted unit
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Short-range microphone as an optional accessory
- Without speaker
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Housing: protection class IP 65
- Serial port
- Possible to attach directly to terminal clip



Industry sub-station with DSP and Display

419-1-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station in impact-resistant plastic housing for wall mounting with 1 call key for UPN subscriber line

- As a wall-mounted unit
- Display
- 1 call key
- 4 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Volume down
 - + Volume up
- Short-range microphone as an optional accessory
- Without speaker
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Housing: protection class IP 65
- Serial port
- Possible to attach directly to terminal clip



D.4. Flush-mount Terminals

Built-in main station with DSP and display

403-E-UPN

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station as:
unit built into desks,
with a separate flush-mounted box as a unit built into the wall
or
with separate console housing as wall-mounted unit for UPN subscriber line
- Anodized aluminum front plate
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Function and line monitoring of all units with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Built-in main station with DSP and display

403-E-S0

(DSP - Digital Signal Processing)

- Microprocessor-controlled main station as:
unit built into desks,
with a separate flush-mounted box as a unit built into the wall
or
with separate console housing as wall-mounted unit for S0 subscriber line
- Anodized aluminum front plate
- With display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys



- Electret microphone, 2 watt speaker
- Function and line monitoring of all units with microphone and speaker
- Adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip

Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Built-in radio control center with DSP

404-E-FLS4-UPN

(DSP - Digital Signal Processing)

4-channel radio control center station as a built-in variant for desktops or desktop console housing to 2 UPN subscriber lines for selective or joint eavesdropping on or speaking over radio circuits, with goose-neck microphone, speaker and 4 watt audio frequency line repeater sine wave.

The radio control center allows the realization of an individual radio conference consisting of 4 or selectively 2x4 radio channels for each radio control center. The volume of each radio channel can be adjusted individually from the radio control center. The selection of the single radio channels assignments can be controlled individually via the keyboard.

It is possible to hook up handsets for joint or selective listening and speaking.

The handset selection key is used to switch the handset selectively for only one channel.

All non-selected channels continue to be jointly played back from the integrated speaker on the radio control center, but at a lower volume (6 dB). This is how the handling of speaking via handsets is prioritized. If no handset selection key is activated and the handset is picked up, all previously selected radio circuits on the handset are taken over at the same time.

The number of radio control centers attached to the central multiswitch 4000 system is determined by the number of subscriber lines in the central system only.

Each radio control center is equipped with a management interface. With this interface and an optional administration software it is possible, e. g. during operational deployments, to dynamically select and modify the features for radio conversations for all radio control centers connected to the system. No additional equipment or cables at the radio control center itself are required for this.

- Anodized aluminum front plate
- For all 4 channels the following function keys are provided for each channel:
 - * 2 dialing keys for assigning up to 48 radio conferences (freely programmable), with LED display
 - * 1 END key to deactivate the respective radio circuit
 - * 1 sound signal 1 function key
 - * 1 sound signal 2 function keys
 - * 1 talk key for sender keying
 - * 1 handset key for selection for selective conversation via handset
 - * LED status display of the radio device with reception and transmission criteria
 - * Volume control for reception volume.



Built-in sub-station with DSP and 1 call key

408-1-E-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station with anodized aluminum front plate as:

- unit built into desks,
- with a separate flush-mounted box as a unit built into the wall or
- with a separate console housing as a wall-mounted unit

for UPN subscriber line

- With 1 call key
- Programmable call function with priorities A-H and corresponding ring tones
- Possible to redirect to group call
- Optical and acoustic call signal when call triggered
- Function and line monitoring of all components

- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

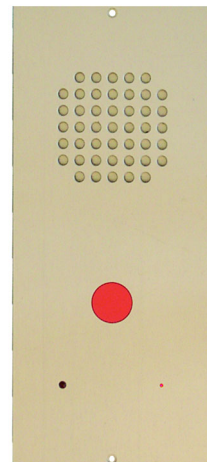
Cell station with DSP

408-EV-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station in a vandalism-proof design (flush-mounted) with 5 mm thick anodized aluminum front plate for wall installation together with separate flush-mounted box UPK 31 for UPN subscriber line

- Speaker, microphone and display elements protected from mechanical damage
- Piezo button element with multiple functions (call and call acceptance button to deactivate call blocking)
- Programmable call function with priorities A-H and corresponding ring tones
- Sabotage contacts
- Optical and acoustic call signal when call triggered
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Built-in main station with foil keyboard, DSP and display

413-E-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled main station with disinfectant-resistant foil keyboard in anodized aluminum front plate with circumferential beveled edge, applicable for UPN subscriber line, as

- unit built into desks (single unit) or
- with a separate flush-mounted box as a unit built into the wall
- Anodized aluminum front plate with circumferential beveled edge
- Foil keyboard
- Display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys
- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Built-in main station with foil keyboard, DSP and display

413-E-S0

(DSP - Digital Signal Processing)

Microprocessor-controlled main station with disinfectant-resistant foil keyboard in anodized aluminum front plate with circumferential beveled edge, applicable for S0 subscriber line, as

- unit built into desks (single unit)
- with a separate flush-mounted box as a unit built into the wall
- Anodized aluminum front plate with circumferential beveled edge
- Foil keyboard
- Display
- Electronic central unit or individual directory for each station for user-specific, programmable functions or subscribers
- 10 number and 7 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Call-back request key
 - + Re-dial key
 - + Volume down
 - + Volume up
 - + Private mode key
- 3 freely programmable function keys



- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip

Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm

Built-in sub-station with foil keyboard, DSP and display

418-1E-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station with disinfectant-resistant foil keyboard in anodized aluminum front plate with circumferential beveled edge, applicable for UPN subscriber line, as

- Unit built into desks (single unit) or with a separate flush-mounted box as a unit built into the wall
- Anodized aluminum front plate with circumferential beveled edge
- Foil keyboard
- Display
- 1 call key
- 4 integrated function keys
 - + Press to talk button
 - + Call termination key
 - + Volume down
 - + Volume up
- Electret microphone, 2 watt speaker
- Function and line monitoring of all components with microphone and speaker
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip

Measurements (length x width x depth):

Aluminium front panel:	280 x 120 x 2.5 mm
Mounting measurements:	245 x 100 x 50 mm
Distance between m.h.:	260 mm



D.5. Rear-mount Terminals

Rear mounted sub-station with DSP

408-0-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled sub-station for installation behind customer's existing panels or front plates such as rack columns, pay stations, letter box systems, doorbell buttons or elevator cars for UPN subscriber line

- Possible to connect up to 4 call keys
- Programmable call function with priorities A-H and corresponding ring tones
- Possible to redirect to group call
- Optical and acoustic call signal when call triggered
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Door entry station module with DSP

417-M4-UPN

(DSP - Digital Signal Processing)

Microprocessor-controlled station for UPN subscriber line made of weather and UV-resistant material in graphite brown metallic, white, titanium or silver colors with the possibility of connecting up to 4 call keys provided by the customer

- Programmable call function for each call key with priorities A-H and corresponding ring tone
- Possible to redirect to group call
- Function and line monitoring of all components
- Measurable and adjustable microphone sensitivity, volume and frequency response
- Serial port
- Possible to attach directly to terminal clip



Door station

417-1

Application:

as surface-mounted (AP) or flush-mount (UP) stations fitting to Siedle Vario Programme

Standard features:

- Weather-resistant outdoor station
- Loudspeaker 0.5 W
- Microphone, microphone sensitivity can be set
- One call pushbutton
- Name label
- Volume control in station
- Range of available colours: white (ws), titanium metallic (tm), silver metallic (sm), graphite-brown metallic (gm)

Measurements (height x width x depth):

Flush box: 200 x 100 x 50 mm
Surface-mounted housing: 231 x 131 x 36.3 mm



Door station

417-2

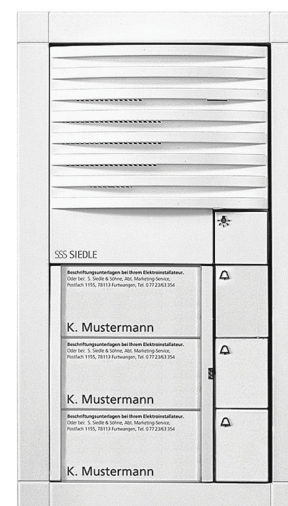
like door station 417-1, but with two ringing keys and two name labels



Door station

417-3

like door station 417-1, but with three ringing keys and three name labels



Door station

417-4

Application:

as surface-mounted (AP) or flush-mount (UP) stations fitting to Siedle Vario Programme

Standard features:

- Weather-resistant outdoor station
- Loudspeaker 0.5 W
- Microphone, microphone sensitivity can be set
- Four call pushbuttons
- Four name labels
- Volume control in station
- Range of available colours: white (ws), titanium metallic (tm), silver metallic (sm), graphite-brown metallic (gm)

Measurements (height x width x depth):

Flush box: 200 x 100 x 50 mm
Surface-mounted housing: 231 x 131 x 36.3 mm



E. Loudspeakers

E.1. Loudspeakers

Flush-mount ceiling loudspeaker

DEL-4W-100V

Flush-mount ceiling loudspeakers for rooms where the loudspeakers should be as „invisible“ as possible.

- Design:
 - loudspeaker screen with metal grille
 - colour white (ws)
- Features:
 - excellent sound quality
 - mounting -friendly, delivery includes mounting material
- Loudspeakers (technical specifications):
 - nominal/music load ability: 1/2/3/4 Watt 100 V
 - transmission range: 50 - 18000 Hz
 - diameter: 260 mm
 - cut out diameter: 229 mm
 - depth: 72 mm
 - weight: 1,7 kg



Flush-mount loudspeaker

UPM 200-T6

Standard-flush-mount loudspeaker for use rooms with high ceilings with medium noise levels.

- Design:
 - flush-mount loudspeaker for surface housing
 - exceptionally shallow construction of only 5 mm
 - colour: white(ws)
- Features:
 - full-range chassis with subcone
 - can be installed in a ceiling very quickly
 - earthing screw and draw release
 - the AG 200 surface housing is available as an option
- Loudspeakers (technical specifications):
 - nominal/music load ability: 1/2/3/4 W 100V
 - transformer: T6: 6/3/1.5 W
 - SPL: 1 W/1 m: 90 dB
 - frequency range:
 - (-3 dB): 100 - 20000 Hz
 - (-10 dB): 60 - 23000 Hz
 - transmission angle: 1/4/8 kHz: 180Grad / 90 Grad / 40 Grad
 - loudspeaker per 100 square meters (H = 4 m): 4
 - component set: 1 x PM 135-4
- Dimensions (without surface housing AG 200):
 - diameter: 198 mm
 - cut out diameter: 167 - 188 mm (opt.= 168 mm)
 - dept: 66 mm
 - wall strength: 1 - 32 mm
 - net weight: 1.1 kg
- Dimensions (with surface housing AG 200):
 - diameter: 300 mm
 - height: 70 mm
 - connection: 4-pole press connector
 - accessories: AG 200: surface housing



Ceiling speaker

UP 22-T6

Large high-efficiency ceiling speaker

- Design:
 - the unit is distinguished visually by the thin front ring
 - colour: white (ws)
- Features:
 - is distinguished in the bass range
 - distinguished in reproduction because of its subcone
 - focussed radiating characteristics (should be used in high-ceilinged rooms (max. 6 m) with medium noise levels)
 - the unit can be installed without the use of tools
- Loudspeakers (technical specifications):
 - load rating / music power: 1/2/3/4 W 100V
 - transformer: T6: 6/3/1.5 W
 - SPL: 1 W/1 m: 91 dB
 - frequency range:
 - (-3 dB): 50 - 18000 Hz
 - (-10 dB): 40 - 20000 Hz
 - transmission angle: 1/4/8 kHz: 180 Grad / 80 Grad / 40 Grad
 - loudspeaker per 100 square meters (H = 4 m): 5
 - component set: 1 x PM 210 BB-4
 - material: front and mounting ring: plastic
grille: metall
 - diameter:
 - cut out diameter:
 - dept:
 - net weight: 1.7 kg
 - connection: 4-pole press connector



Horn-type loudspeaker

DL-4W-100V

Horn-type loudspeakers have a particularly high efficiency and good directivity in their sound emission. Over the whole sound spectrum they provide an almost linear frequency response and guarantee a clear firstclass voice transmission. The in-built driver systems and the robust housings are weatherproof and therefore make it possible to use them in the open air. The mounting stand allows an adjustment in all directions.

- Loudspeakers (technical specifications):
 - load rating / music power: 1/2/3/4 W 100V
 - frequency range: 400-5000 Hz
 - impedance: 20 ohms including decoupling capacitor
 - SPL: 100 dB
 - dimensions (diameter * depth): 213 * 230 mm
 - weight: 1,4 kg



Loudspeakers for industrial unit

IHL-4W

Features:

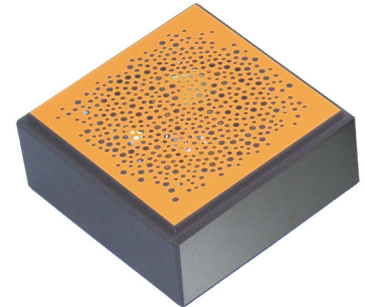
- Impedance: 4W/8Ohm

Wall mounting

In same design Design like industrial master unit 416
and industrial substation 419-1

Accessories:

- cable screws M12
- mounting material for annex extension to industrial unit 416

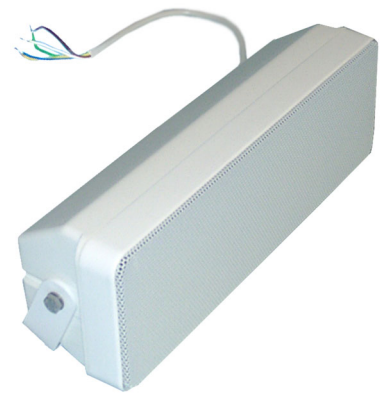


Sound column

AL 10/1-T12

Compact, high-efficiency sound column

- Design:
 - consists of weatherproof polyamide
 - colour: white (ws)
- Features:
 - the two 87 mm full-range chassis create an easier vertical focussing
 - can be used in-side or outside with medium interference levels
 - the loudspeaker can be tilted
- Loudspeakers (technical specifications):
 - load rating / music power: 1/2/3/4 W 100V
 - transformer: T12: 12/6/3/1.5 W
 - SPL: 1 W/1 m: 94 dB
 - frequency range:
 - (-3 dB) 220 - 16000 Hz
 - (-10 dB) 170 - 18000 Hz
 - transmission angle:
 - horizontal: 1/4/8 kHz: 220 Grad / 60 Grad / 60 Grad
 - vertical (3 m): 1/4/8 kHz: 140 Grad / 100 Grad / 30 Grad
 - component set: 2 x PM 87-8
 - material: housing: plastic, grille: metall
 - net weight: 2.0 kg
 - connection: 5-core cable (750 mm)
 - accessories: incl. u-type bracket
MB 1/2: mast attachment



Wall loudspeaker, surface-mounted housing

WLA-4W-100V

Wall loudspeakers for the acoustic irradiation of schoolclassrooms, lecture halls, waiting-rooms, etc.

- Design:
 - colour: white (ws)
- Features:
 - excellent sound quality
 - mounting-friendly due to removable front screen, scope of delivery includes mounting material
- Loudspeakers (technical specifications):
 - nominal/music load ability: 1/2/3/4 Watt 100V
 - transmission range: 100 - 21000Hz
 - meas. (W x H x D): 260 x 175 x 83 mm
 - weight: 1,3 kg



Wall loudspeakers, surface-mounted housing

WLAR-4W-100V

Wall loudspeakers in surface-mounted housing, description like Model WLA-4W-100V, but with volume control

WLA-



Wall loudspeaker, flush-mount housing

WLU-4W-100V

Wall loudspeakers in flush-mount design, description like modell WLA-4W-100V

- Baffle size (W x H): 250 x 165 mm
- Flush frame (W x H x D): 245 x 160 x 64 mm
- colour: white (ws)
- weight: 1,6 kg



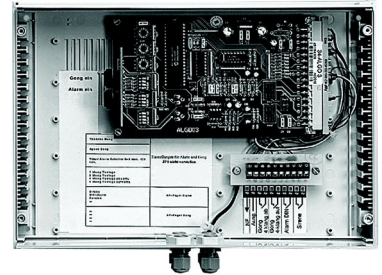
F. System Interfaces

F.1. System Interfaces

Alarm and gong generator

34-ALGO3-KG

- Alarm tone acc. to DIN 33404
- Four-sound gong
- Control inputs for:
 - alarm start
 - gong start
- Output impedance:
 - 1 kohm asymmetrical
- Output level alarm/gong
 - max. 800 mV (adjustable)
- Housing measures (height x width x depth):
 - 295 x 200 x 65 mm
- Available in housing only

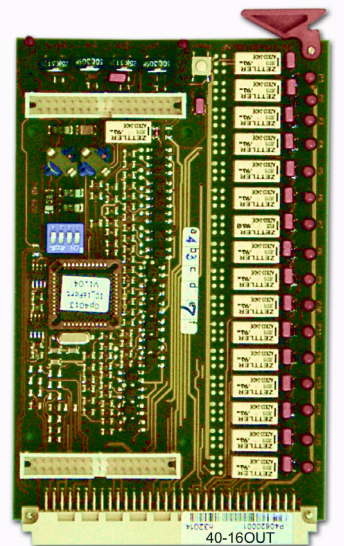


Interface with 16 inputs

40-16IN

with slot for the following components which are necessary for operation, either:

- + digital voice interface without voice storage 40-TE-UPN resp.with voice storage 40-TE/SP-UPN for connecting to central unit via UPN subscriber port or
- + bus interface 40-RS485 for connection via the bus of the basic I/O mO4000-GM with freely programmable logic via event handler with reporting of all events such as calls, call start and end times, keyboard control, contact and state changes for all stations attached to the multiswitch 4000 or connected external systems.
- 16 inputs for monitoring potential-free contacts with programmable delay time
- 1 interference output for self-checking
- 1 adjustable audio frequency input
- 1 adjustable audio frequency output



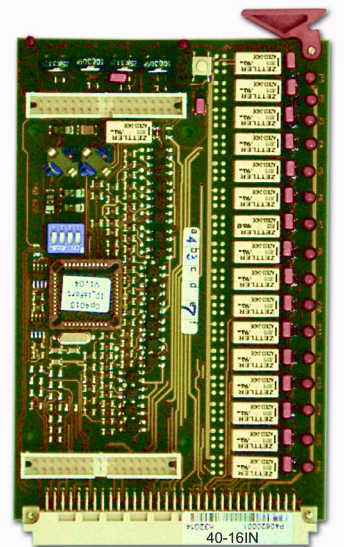
The interface can be mounted in an optional 40-KG compact housing for wall mounting. This additionally requires the 40-NT-KG power supply. Also, it is possible to integrate the interface in an optional 19" interface frame type 40-SSR6.

Interface with 16 outputs

40-16OUT

with slot for the following components which are necessary for operation, either:

- + digital voice interface without voice storage 40-TE-UPN resp.with voice storage 40-TE/SP-UPN for connecting to central unit via UPN subscriber port or
- + bus interface 40-RS485 for connection via the bus of the basic I/O module I/O4000-GM with freely programmable logic via event handler with reporting of all events such as calls, call start and end times, keyboard control, contact and state changes for all stations attached to the multiswitch 4000 or connected external systems.
- 16 outputs configurable as break or make contacts, in combination also change-over function possible max. load of 24V/2A



with the parameterizable features

- + activate relay
- + deactivate relay
- + impulse relay with adjustable duration
- + flashing light relay with adjustable duration for active and inactive phases.

Outputs coupled to audio frequency output also configurable as input line matrix for PA systems

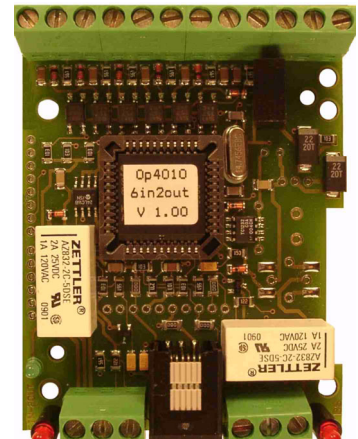
- 1 interference output for self-checking
- 1 adjustable audio frequency input
- 1 adjustable audio frequency output

The interface can be mounted in an optional 40-KG compact housing for wall mounting. This additionally requires the 40-NT-KG power supply. Also, it is possible to integrate the interface in an optional 19" interface type 40-SSR6.

Interface with 6 inputs and 2 outputs

40-6IN2OUT

- 6 outputs for monitoring potential-free contacts with programmable delay time
- 2 outputs as change-over contact
- max. load of 24V/2A with the parameterizable features
- + activate relay
- + deactivate relay
- + impulse relay with adjustable duration
- + flashing light relay with adjustable duration for active and inactive phases
- serial port
- can be connected to each station without extra power supply
- for grid mounting on standard support rails as set out in DIN EN 50 022
- dimensions (H x W x D) 86 x 70 x 60 mm



Interface with 8 inputs and 8 outputs

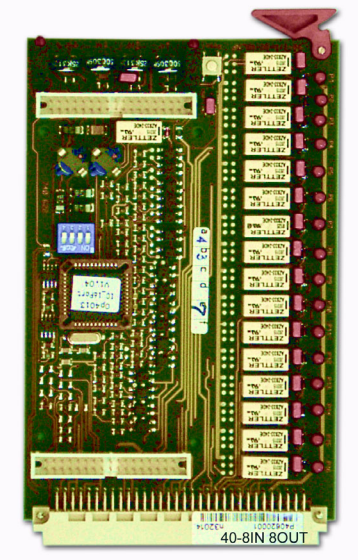
40-8IN8OUT

with slot for the following components which are necessary for operation, either:

- + digital voice interface without voice storage 40-TE-UPN resp with voice storage 40-TE/SP-UPN for connecting to central unit via UPN subscriber port
- or
- + bus interface 40-RS485 for connection via the bus of the basic I/O module I/O4000-GM
- with freely programmable logic via event handler with reporting of all events such as calls, call start and end times, keyboard control, contact and state changes for all stations attached to the multiswitch 4000 or connected external systems.

- 8 outputs for monitoring potential-free contacts with programmable delay time
- 8 outputs configurable as break or make contacts, in combination also change-over function possible. max. load of 24V/2A with the parameterizable features:

- + activate relay
- + deactivate relay
- + impulse relay with adjustable duration
- + flashing light relay with adjustable duration for active and inactive phases.



Outputs coupled to audio frequency output also configurable as input line matrix for PA systems

- 1 interference output for self-checking
- 1 adjustable audio frequency input
- 1 adjustable audio frequency output

The interface can be mounted in an optional 40-KG compact housing for wall mounting. This additionally requires the 40-NT-KG power supply. Also, it is possible to integrate the interface in an optional 19" interface frame type 40-SSR6.

Interface for radio connection

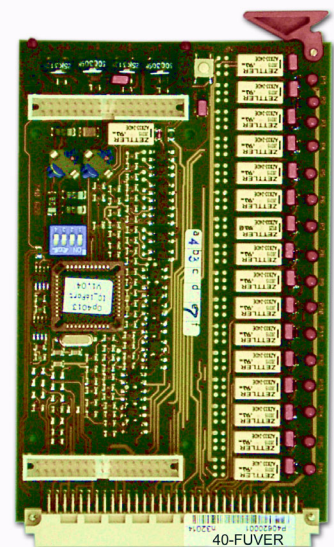
40-FUVER

with slot for the following component which is necessary for operation:

- + digital voice interface without voice storage 40-TE-UPN resp. with voice storage 40-TE/SP-UPN for connecting to central unit via UPN subscriber port with freely programmable logic via event handler with reporting of all events such as calls, call start and end times, keyboard control, contact and state changes for all stations attached to the multiswitch 4000 or connected external systems. Radio conferencing allows any number of subscribers to break into a busy radio channel for a priority call, to monitor the call, and, if required, to also key the sender. Possibility of programmable authorization for taking part in radio traffic in up to 48 possible conferences in different hierarchy levels with these features:

- + listening and speaking
- + only listening
- + attendance blocked
- 1 adjustable, course/fine tunable AF input with integrated option for directly measuring and adjusting the level via central unit for incoming AF path of the attached radio device utilizing the DSP.
- 1 adjustable, course/fine tunable AF output with integrated option for directly measuring and adjusting the level via central unit for outgoing AF path of the attached radio device utilizing the DSP.
- Mixing the audio frequency crosspoints in both directions send and receive for radio devices in simplex mode in RS1 mode.
- Integrated sound signal generators for sound signal 1 and sound signal 2 with freely programmable frequency for each sound signal to tune any radio device with sound signal control.
- 1 serial data port
- 2 inputs for detection of noise and broadcast criteria individually or linked, in order to indicate the active state of the radio device at the radio control center.
- 2 inputs for freely programmable special functions
- Remote control outputs to radio device consisting of sender keying, sound signal 1, sound signal 2
- 1 extra output for control of a special connection (5 sound signal generator)
- 1 interference output for self-checking
- Additional integrated special functions for radio devices that do not carry out sender keying for the sound signal on their own. Sender keying is linked to the sound signal outputs.

The interface can be mounted in an optional 40-KG compact housing for wall mounting. This additionally requires the 40-NT-KG power supply. Also, it is possible to integrate the interface in an optional 19" interface frame type 40-SSR6.



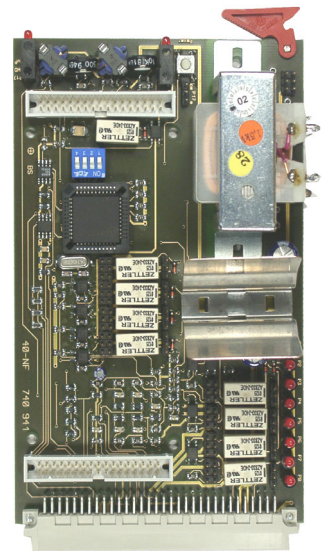
Interface for audio frequency coupling and decoupling with integrated 100V/4 watts output stage

40-NF

with slot for the following component which is necessary for operation:

- + digital voice interface without voice storage 40-TE-UPN resp with voice storage 40-TE/SP-UPN for connecting to central unit via UPN subscriber port with freely programmable logic via event handler with reporting of all events such as calls, call start and end times, keyboard control, contact and state changes for all stations attached to the multiswitch 4000 or connected external systems.
- 8 microphone inputs via mixer panel with summing amplifier and control for 2-wire microphone boxes 34-MIKBOX, remote up to a distance of 1000 m via telecommunication cable (at least IY category).
- 1 adjustable low impedance audio frequency output 8 ohm/4 watt
- 1 adjustable high impedance audio frequency output 50/70/100V adjustable at 4 watt
- 4 inputs for monitoring potential-free contacts with programmable delay time
- 4 outputs configurable as break or make contacts, in combination also change-over function possible max. load of 24V/2A with the parameterizable features
- + activate relay
- + deactivate relay
- + impulse relay with adjustable duration
- + flashing light relay with adjustable duration for active and inactive phases.
- 1 interference output for self-checking

The interface can be mounted in an optional 40-KG compact housing for wall mounting. This additionally requires the 40-NT-KG power supply. Also, it is possible to integrate the interface in an optional 19" interface frame type 40-SSR6.

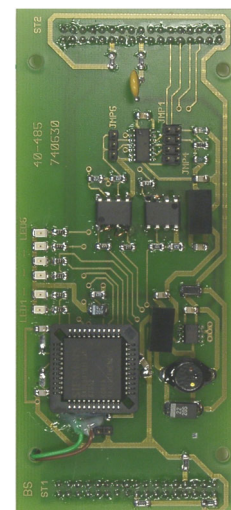


Digital bus interface

40-RS485

for slot on interface components 40-16IN, 40-16OUT and 40-8IN8OUT to connect the interfaces to the bus of the basic I/O module I/O-4000GM

- with integrated control electronics for interface components



Digital voice interface for interface components with DSP

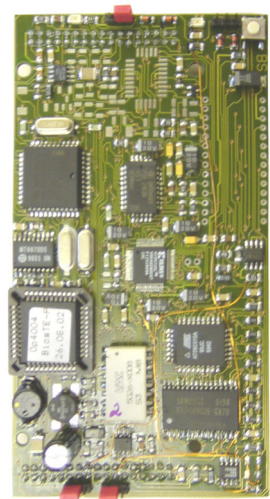
40-TE-UPN

(DSP - Digital Signal Processing)

For slot on interface components 40-16IN, 40-16OUT, 40-8IN8OUT, 40-FUVER and 40-NF to connect the interfaces to UPN subscriber line on central multiswitch 4000 unit

- with function and line monitoring
- measurable and adjustable microphone sensitivity, volume and frequency response
- with integrated control electronics for interface components
- serial port
- Voice storage with a maximum recording capacity of 120 seconds

Note: The interfaces is also available in a version with integrated voice storage (type: 40-TE/SP-UPN).



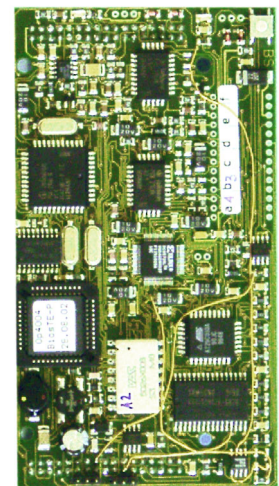
Digital voice interface for interface components with DSP and voice memory

40-TE/SP-UPN

(DSP - Digital Signal Processing)

For slot on interface components 40-16IN, 40-16OUT, 40-8IN8OUT, 40-FUVER and 40-NF to connect the interfaces to UPN subscriber line on central multiswitch 4000 unit

- With function and line monitoring
- Measurable and adjustable microphone sensitivity, volume and frequency response
- with integrated control electronics for interface components
- serial port

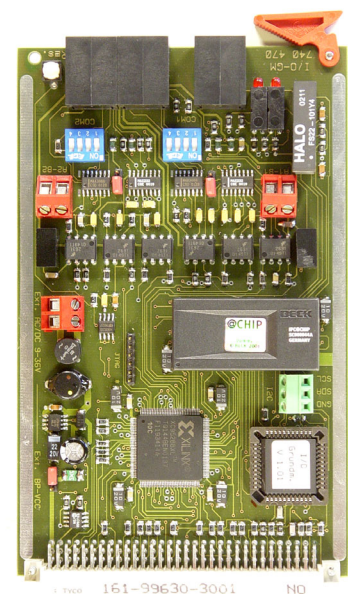


Digital basic module

I/O4000-GM

Interface component with 2 serial ports and 1 Ethernet port.

The basic module serves for programming the multiswitch 4000 via an Ethernet network with TCP/IP protocol, or for connecting a maximum of 128 interfaces 40-16IN with 16 inputs, 40-16OUT with 16 outputs and 40-8IN8OUT with 8 inputs and 8 outputs via the bus component 40-RS485 which must be used per each interface. The digital basic module provides one bus allowing a maximum length of 1,200 m to connect the bus component 40-RS485. Within the multiswitch 4000 central unit, a maximum of 1 basic module in the universal port can be operated. In addition, up to 15 further basic modules, which are networked via an Ethernet network with TCP/IP protocol, can be operated remotely.



F.2. Accessories for System Interfaces

Compact housing for holding an interface component

40-KG

of type 40-16IN, 40-16OUT, 40-8IN8OUT, 40-FUVER and 40-NF with integrated general-purpose connection board

- 2-part housing consisting of base with general-purpose connection board and top cover.
- Compact housing attachable via supplied connectors
- protection class IP 20
- Dimensions (L x W x H) 265 x 145 x 80 mm



Power supply for connecting 3 interface components

40-NT-KG

Power supply for interface components 40-16IN, 40-16OUT, 40-8IN8OUT, 40-FUVER and 40-NF in a compact housing

- Primary 230V, 50 Hz
- Secondary +24VDC 0V 1A
- protection class IP 20
- Dimensions (L x W x H) 265 x 145 x 80 mm



Power supply for 19" interface frame for powering max. 6 interface components

40-NT-SSR6

Power supply for interface components 40-16IN, 40-16OUT, 40-8IN8OUT, 40-FUVER and 40-NF

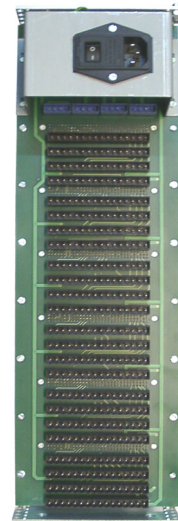
- Primary 230V, 50 Hz
- Secondary 24V AC/DC 2A
12V AC/DC 2A
8V AC/DC 2A

19" interface frame

40-SSR6

For holding 6 interface components in EuroStyle format with backplane in 19" format

- Installation on backplane with pluggable screw type terminal connections
- **Basic configuration:**
 - Housing with backplane, without components
- **Optional expansion:**
 - 1 power supply unit 40-NT-SSR6
 - 6 interface components



G. Accessories

G.1. Accessries

Connecting cabel with 25-pin male

SUB/D-connector

cable 25-pin, length 2,5 m, colour: grey

34-AK-SUB/D 25



Connecting cabel with TAE-connector

four pins for desk unit 303, 313-A und 318-1A
length 2,5 m, colour: grey

34-AK-TAE/F-4



Connecting cale for terminals

cablel 4-pin with RJ45-connector,length 2.5 m,

40 AK-RJ45-4



**Handset with press-to-talk button for 403-E-UPN, 403-E-SO,
404-E-FLS4-UPN**

40-HH

Application:

In connection with flush-mount unit 403-E-UPN or 403-E-SO or 404-E-FLS4-UPN (handset interface required).

For privacy during radio conversations using radio desks, during conversations in rooms that are open to the public or in loud rooms.

Standard features:

- Handset with press-to-talk button, with troughs for receiver and cradle switch, in flush-mount design; colour grey
- Front plate: Aluminium-anodised
- Automatic switchover function between handset and unit operation
- Special protection against eavesdropping (tap-proof)

Measurements (height x width x depth):

Mounting measurements: 250 x 100 x 55 mm
Front panel: 280 x 120 x 2.5 mm
Distance between m.h.: 260 mm



Switch-off button for cell light call

ABTA

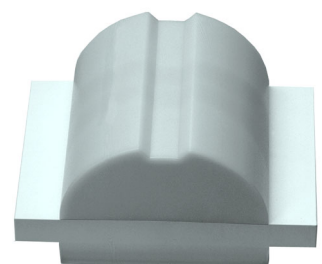
- Flush-mount, fitting into 55 mm ISO wall box
- Single contact
- Colour: white



Indicating lamp for cell light call

AZL-3 ML

- Design:
 - three lamp chambers (incl. festoon lamp LA-K1, ws, rt, gn)
- Measurements (width x depth x height):
 - 158 x 87 x 110 mm
- Colour: plastic holder and lighting bowl white



Microphone box

34-MIKBOX KG

Active microphone box with:

- Operating display (LED)
- Read-out potentiometer for microphone sensitivity
- Connection option to:
 - Substation 309-LRM8
- Measurements (height x width x depth):
 - 90 x 90 x 50 mm (height incl. PG screw joint)



Close-talking microphone Noise cancelling

- With special microphone characteristics, suited for rooms with extremely high environmental noise level
- Usable for industrial units, these must be particularly prepared for it

NM



Emergency button for house alarm

- Built-in mushroom button for flush-mounting socket
Diameter 60 mm (scope of delivery)
- Colour: red
- Design:
 - double contact catching (active closed)

NOTA-2



Desk-top housing

- Usable for:
 - 303-E ae
 - 304-FLS
 - 304-FLSD
 - 304-TLS 28
 - 308-1E ae
 - 308-3E
 - 308-3E/SLS
 - 34-PKE
- Material:
 - plastic
- Colours:
 - anthracite
- Measurements (height x width x depth):
 - housing: 325 x 128 x 80 mm
 - distance between m.h.: 260 mm

PG 11/1



Desk-top housing

as PG 11/1, but double

- Measurements (height x width x depth):
 - housing: 325 x 248 x 80 mm
 - distance between m.h.: 260 mm

PG 11/2

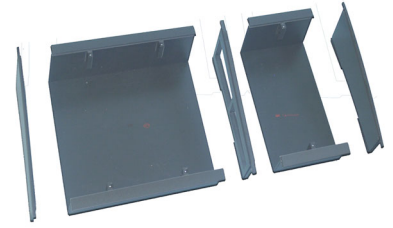


Desk-top housing (single parts)

PG 11/3

as PG 11/1, but threefold

- Measurements (height x width x depth):
 - housing: 325 x 368 x 80 mm
 - distance between m.h.: 260 mm



Desk-top housing (without picture)

PG 11/4

as PG 11/1, but fourfold

- Measurements (height x width x depth):
 - housing: 325 x 493 x 80 mm
 - distance between m.h.: 260 mm

Desk-top housing (without picture)

PG 11/5

as PG 11/1, but fivefold

- Measurements (height x width x depth):
 - housing:: 325 x 613 x 80 mm
 - distance between m.h.: 260 mm

Special screwdriver

SD-2L/M3

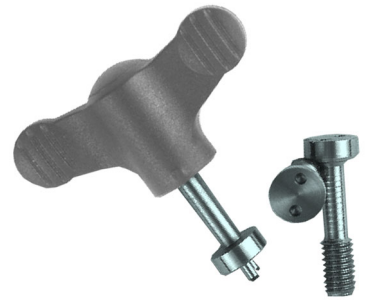
for 2-slot safety screws M3



Special screwdriver

for 2-slot safety screws M6

SD-2L/M6



Flush-mount box

- Usable for:
 - 303-E
 - 308-1E
 - 308-3E
 - 308-3E/SLS
 - 313-E/UP
 - 318-1E/UP
- Special features: mountable in cavity walls
- Material: sheet steel
- Measurements (height x width x depth):
 - housing: 270 x 100 x 45 mm
 - distance between m.h.: 260 mm

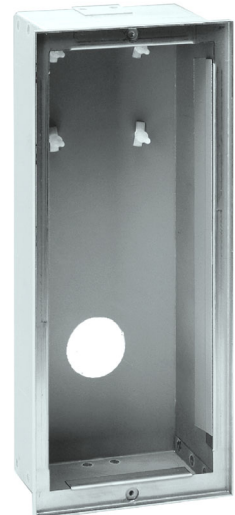
UPK 10



Flush-mount box

- suitable for all installation points of HGA call system:
 - 308-EV
- Particular features:
 - Stainless steel frame for flush-mount installations
- Material:
 - steel sheet
- Measurements (height x width x depth):
 - housing: 285 x 125 x 72 mm
 - distance between m.h.: 270 mm

UPK 31



Conversion kit for front panel attachment screws

US-2L/M3

- Screw set consisting of two examples of not commercially available 2-slot safety screws M3
- Suitable for the substation for prison cells type 308-EV



Conversion kit for front panel attachment screws

US-2L/M6

- Screw set consisting of four examples of not commercially available 2-slot safety screws M6
- Suitable for industrial substation type 309-1



Wall bracket

WH-403 az

Wall bracket directly to fit at flush-mount box or useable for normal installation at the wall.

