VOL 5

SOS pillars

NEUMANN®

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SOS


NOTRUF

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START


SOS
NEUMANN
SOS
Info


SOS


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emergency
stop
Info
SOS


SOS

Introduction

This product catalogue “SOS Pillars / Traffic and Safety” is divided into four chapters.

1. Technology

The first part contains the technologies of all emergency call units, such as emergency call phones, also called hands-free units, in their available technologies, which make up the standard programme of Neumann emergency call technology.

All technologies, such as analogue technology or digital DS-22 SIP technology, both with and without PoE supply from the network node, as well as local network or DC supply, and radio technology in the LTE, UMTS and GSM standards with network or solar supply can also be ported in customer-specific emergency call units.

For emergency call/information pillars of the NIS series for indoor and outdoor use, a separate product catalogue is available as a download on the Internet site.

2. Hands-free kits

The second part lists the possible hands-free kits in which the technologies can be built-in.

Depending on the installation space provided, the hands-free units of today can be equipped with frequently requested additional features:

- **Battery-backed emergency power supply in case of mains power failure,**
- **Optional flash, triggered by emergency call button activation or opening of public column areas and for better locating of persons in distress,**
- **Equipment with additional amplifiers for optional public address via wall, ceiling or horn loudspeakers,**
- **Equipment with additional buttons and additional loudspeakers for calling up timetable information from connected passenger information systems (for example DYFA),**
- **Location monitoring, as well as monitoring for operational readiness,**
- **Signalling of readiness to speak,**
- **Monitoring by integrated control electronics and fault management systems,**
- **Adjustable volume reduction for switching between day and night operation,**
- **Potential-free inputs and outputs for control tasks or status queries, inclination monitoring and burglary and theft monitoring,**
- **WEB interface for unit configuration**

  and much more.

3. Emergency call units

The third part contains complete solutions tailored to the customer in the form of installation options, such as housings for wall or pole mounting, or housings for standpipe mounting, into which hands-free units with their corresponding techniques and equipment can be built-in.

The external appearance, consisting of lacquering and foil lettering, or even the key designs, can be adapted according to individual customer requirements. All enclosures can be fitted with the hands-free inserts of the various technologies. To protect the inscriptions from damage and to better remove dirt and graffiti, the enclosures can be coated with an anti-graffiti protective lacquer.

The hands-free inserts can, of course, also be mounted directly in customised installation walls with a corresponding cut-out and installation depth. If there is not sufficient installation depth available, the technology can optionally also be accommodated in a weatherproof housing provided specifically for this purpose.

However, the line lengths of the shielded cables between the front panel with microphone, loudspeaker and buttons should be kept as short as possible and must not exceed 3m in length.

4. Elevators

The fourth part of the product catalogue is dedicated to the elevator emergency call.

These are installation kits for mounting in elevators for passenger transport that meet the requirements of DIN EN 81-70. Almost any requirement can be supplied in consultation with the elevator manufacturer, from the small compact solution with integrated signalling of button activation and call readiness to the extended modular design with communication points on the elevator or in the upper machine room and communication points under the elevator or in the elevator shaft.

For the IP or DS-22 SIP solution, the manufacturer always recommends the use of a 2-wire modem pair for interference-free line transmission via the elevator‘s trailing cable to the car.

For loudspeakers for indoor and outdoor use, a separate loudspeaker product catalogue is available as a download on the Internet site.

Technology

Various technologies are available for built-in customer-specific emergency call units, as well as for converting or retrofitting existing emergency call units for standpipe, pole and wall mounting.

All human interfaces, such as buttons, signalling and lighting, etc., can usually remain in the emergency call units after conversion. This ensures that the external appearance and the operation of the emergency call units, which has often been customary for years, does not change.

As these installation kits are individually assembled according to the customer‘s specific use, delivery numbers for complete packages not yet available in the catalogue are available on request.

IP technology DS-22 SIP

The IP technology DS-22 SIP is individually assembled for the respective location according to customer requirements and consists of an emergency call unit with built-in hands-free insert.

Both in the PCB stack behind the emergency call unit front panel and in the emergency call unit housing, optional additional components such as a power supply unit, an optional range extension in 2-wire technology with a range of up to 3km or a fibre optic modem with a range of up to 15km can be accommodated.

Dynamic microphones and horn loudspeakers with different impedances, which are present in the front panels of many existing emergency call units, are also automatically replaced by replacing the complete hands free insert and do not require any additional planning.

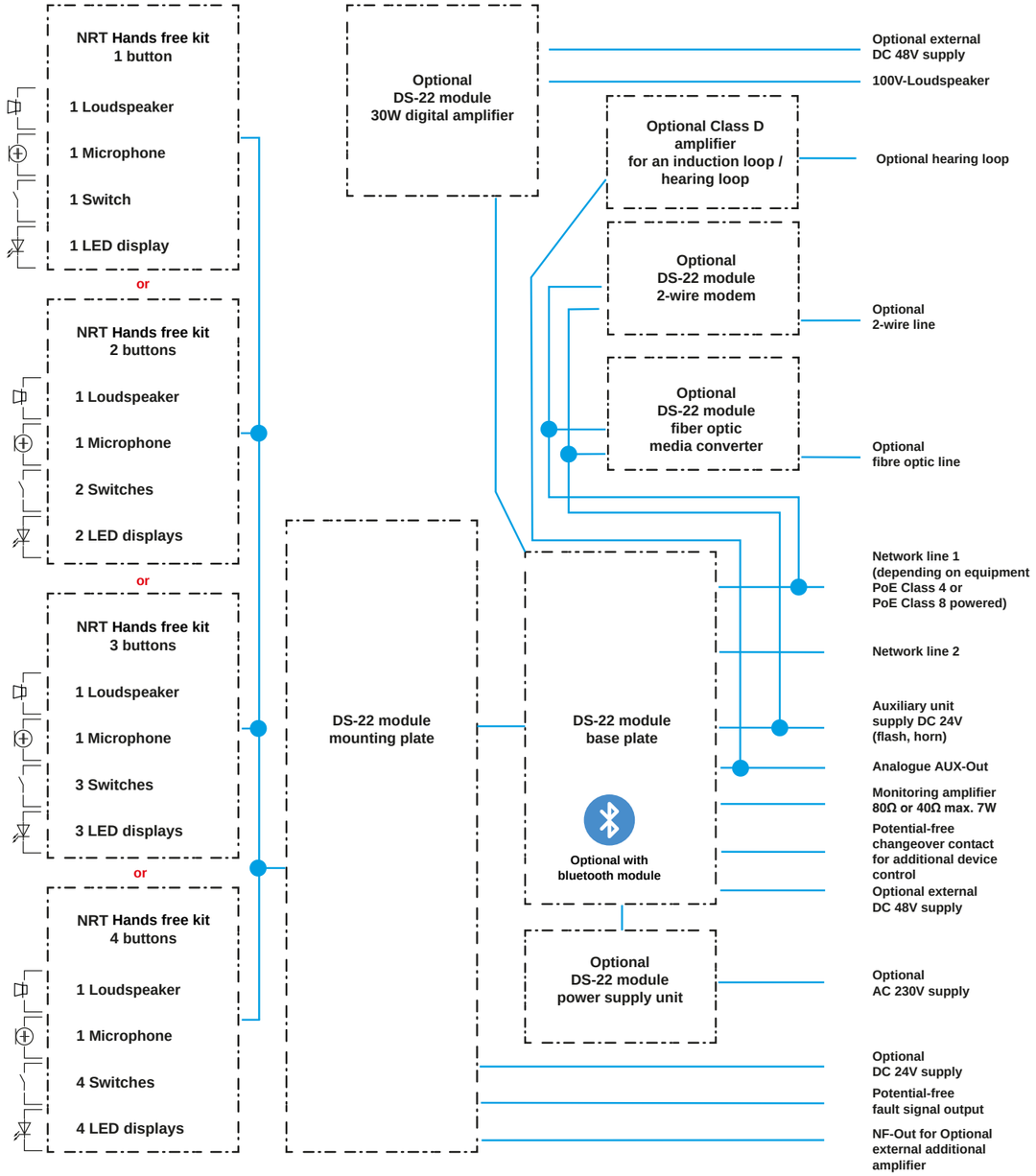
Features of the IP technology DS-22 SIP

- Full compatibility with DS-22 system
- Remotely configurable and remotely monitorable through the DS-22 network
- Half / full duplex compatibility
- Integrated horn loudspeaker for best speech intelligibility
- Integrated 7W amplifier for pass-through operation in standard technology with 4Ω or 8Ω loudspeakers
- Acoustic self-test
- Optional 30W amplifier for talk-through operation over longer loudspeaker lines in 100V technology
- Call station power supply via the first two-pair Ethernet interface with PoE Class 4 without optional additional components and without additional device power supply
- Call station power supply via the first four-pair Ethernet interface with PoE Class 8 when extended with optional additional components and optional additional device power supply
- Two Ethernet interfaces
- Connections for additional devices, e.g. loudspeaker and controlled powered flashing beacon, as standard
- Push buttons can be freely assigned with targets and switch on freely assigned microphones after operation of the push buttons
- Indication of status messages, such as call and busy signals, via the two differently coloured LED rings contained in each illuminated push button
- Adjustment of microphone level and loudspeaker volume
- Potential-free relay contact for connection of a flashing light for visual signalling or horn for acoustic signalling
- Subordinate circuit for information retrieval as standard
- Switchable volume reduction, e.g. for night operation
- Potential-free fault signal contact for fault forwarding parallel to the network
- Tilt and theft monitoring
- Eight potential-free inputs for contact monitoring
- Eight potential-free outputs for control tasks
- Configuration via WEB interface

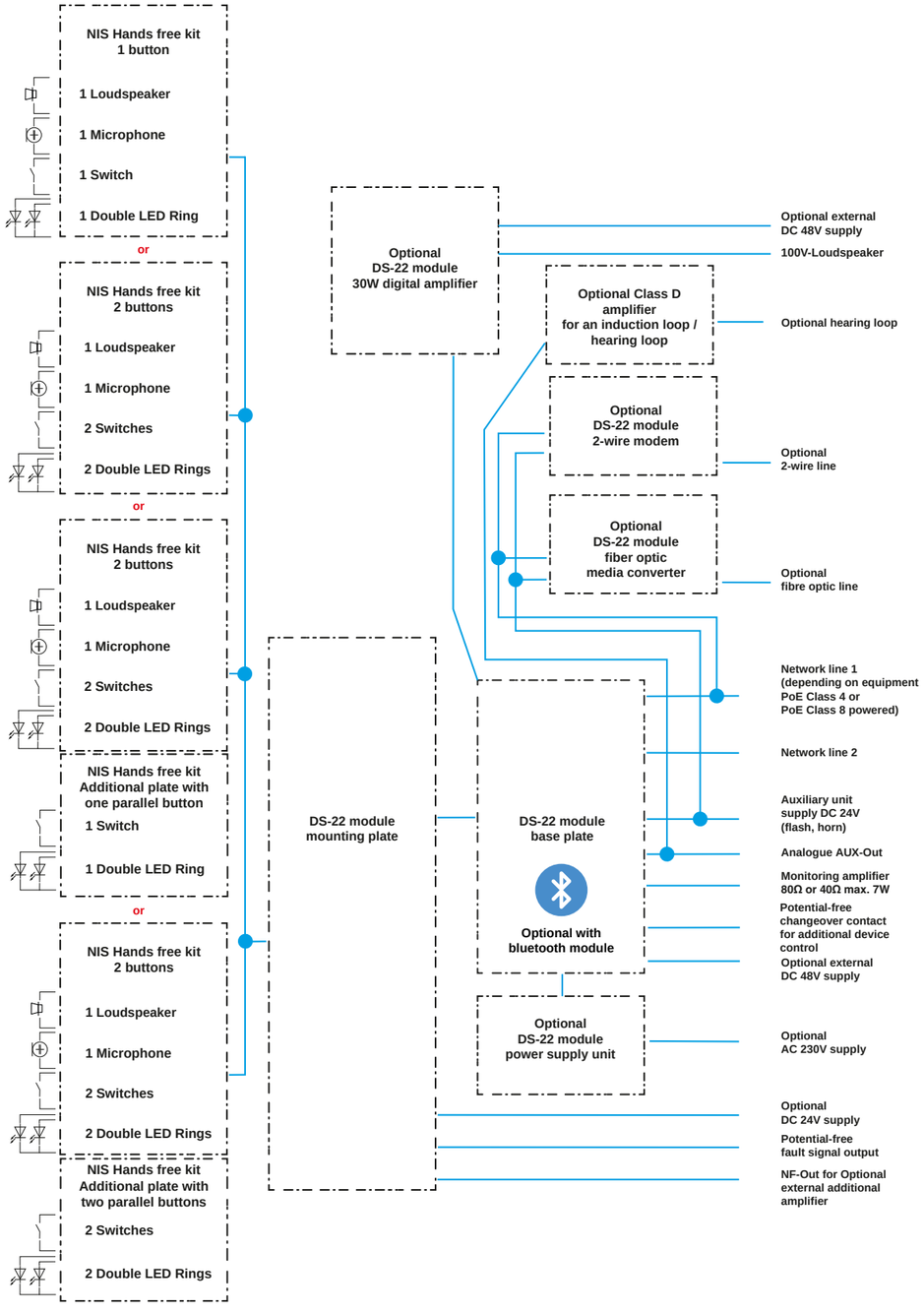
Electrical data	
Rated power in standard operation without additional components	20W
Rated power in extended operation, with additional components	90W
Frequency range	100Hz to 20kHz (depending on codec used)
Amplifier nominal power internal amplifiers	2x 7W at 8Ω
Amplifier nominal power optional amplifier	30W / 330Ω (100V)
Potential-free relay contact	DC 60V, 1A, 60W (Ohmic load)
Maximum power consumption of the DC 24V flash lamp	15W
Impedance of internal loudspeaker	Horn loudspeaker 8Ω
Impedance of external loudspeaker for standard pass-through operation	Horn loudspeaker 8Ω
Impedance of external loudspeaker for 100V pass-through operation	Horn loudspeaker >330Ω
Microphone	Electret
Control inputs	DC 12V to DC 60V / 10mA, AC 12V to AC 60V / 10mA
Control outputs	Max. DC 60V / 0.2A, Max. AC 60V / 0.2A
Permissible line length	• 100m • Optional 2-wire range extension point to point / multipoint up to 1000m with use of existing cable material • Optional 2-wire range extension point to point up to 1000m with use of existing cable material • Optional multi mode fibre optic range extension up to 3000m • Optional single mode fibre optic range extension up to 15000m
Reachable destinations	Up to 4
Connection signalling	LEDs or double LED rings
Ready-to-talk indicator	Optional symbol illumination „Speaking mouth or text illumination „Bitte sprechen, Please speak“ in green colour
Connectivity	
Power supply	• Without additional network components two-pole PoE according to IEEE 802.3bt Class 4 • With additional components Network four-pole PoE according to IEEE 802.3bt Class 8 • Local or mains supply AC 230V • Local or mains node supply DC 48V
Ethernet interfaces	2
Ethernet protocol	IEEE 802.3u
Broadcasting protocol	Neumann DS-22 IP / SIP protocol

Accessories	
Description	Art. no.:
DS-22 30W digital amplifier module	221 6001 666 0
DS-22 2-wire modem module	919 1116 750 0
DS-22 fibre optic single mode module	919 1116 948 9
DS-22 fibre optic multi mode module	919 1116 934 4
DS-22 power supply unit	919 1116 738 6

For incorporating the IP technology DS-22 SIP into the NRT hands-free kits of the emergency call stations the following modules are available:



For incorporating the IP technology DS-22 SIP into the NIS hands-free kits of the emergency call stations the following modules are available:



LTE / UMTS / GSM radio technology

The LTE / UMTS / GSM radio technology is individually assembled for the respective location according to customer requirements and consists of an emergency call unit with built-in hands-free insert.

Both in the PCB stack behind the emergency call unit front panel and in the emergency call unit housing, optional additional components such as a power supply unit or, in the case of a solar power supply, a charge controller and a backup accumulator can be accommodated.

Even dynamic microphones and horn loudspeakers with different impedances, which are present in the front panels of many existing emergency call units, are automatically replaced by replacing the complete hands free insert and do not require any additional planning. The same applies to any antennas and solar modules that may be present. Delivery number on request.

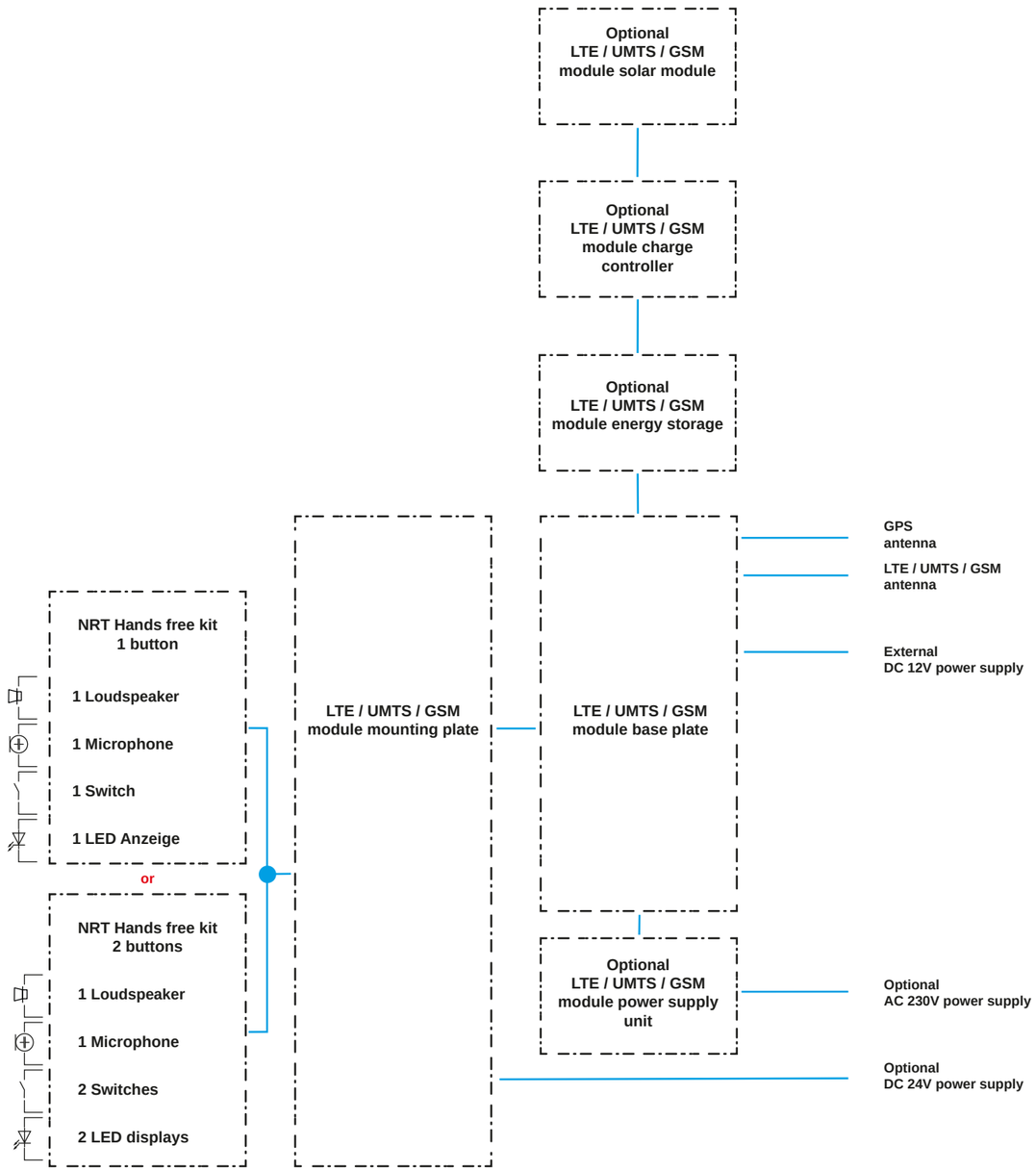
Performance features of the LTE / UMTS / GSM radio technology

- Coverage of different radio networks (4G, 3G, 2G)
- Integration of different radio network providers
- Remotely configurable and remotely monitorable by the corresponding radio network
- Internal operating voltage monitoring
- Acoustic self-test
- Integrated horn loudspeaker for best speech intelligibility
- Electret microphone
- Push buttons can be freely assigned with targets
- Indication of status messages, such as call and busy signals, via the two differently coloured LED rings contained in each illuminated push button
- Location monitoring and theft protection via GPS
- Configuration via WEB interface
- Monitoring of radio network presence by cyclical radio network integration via an optional emergency call management server
- Control of optional external lighting
- Control of an optional external signalling via flashing light
- Call station power supply via solar module or mains operation
- Optional powerful AC230V power supply unit
- Optional location detection as anti-theft device
- Optional tilt monitoring
- Optional emergency call management server connection for device monitoring
- Optional forwarding of fault messages to a control centre or management system

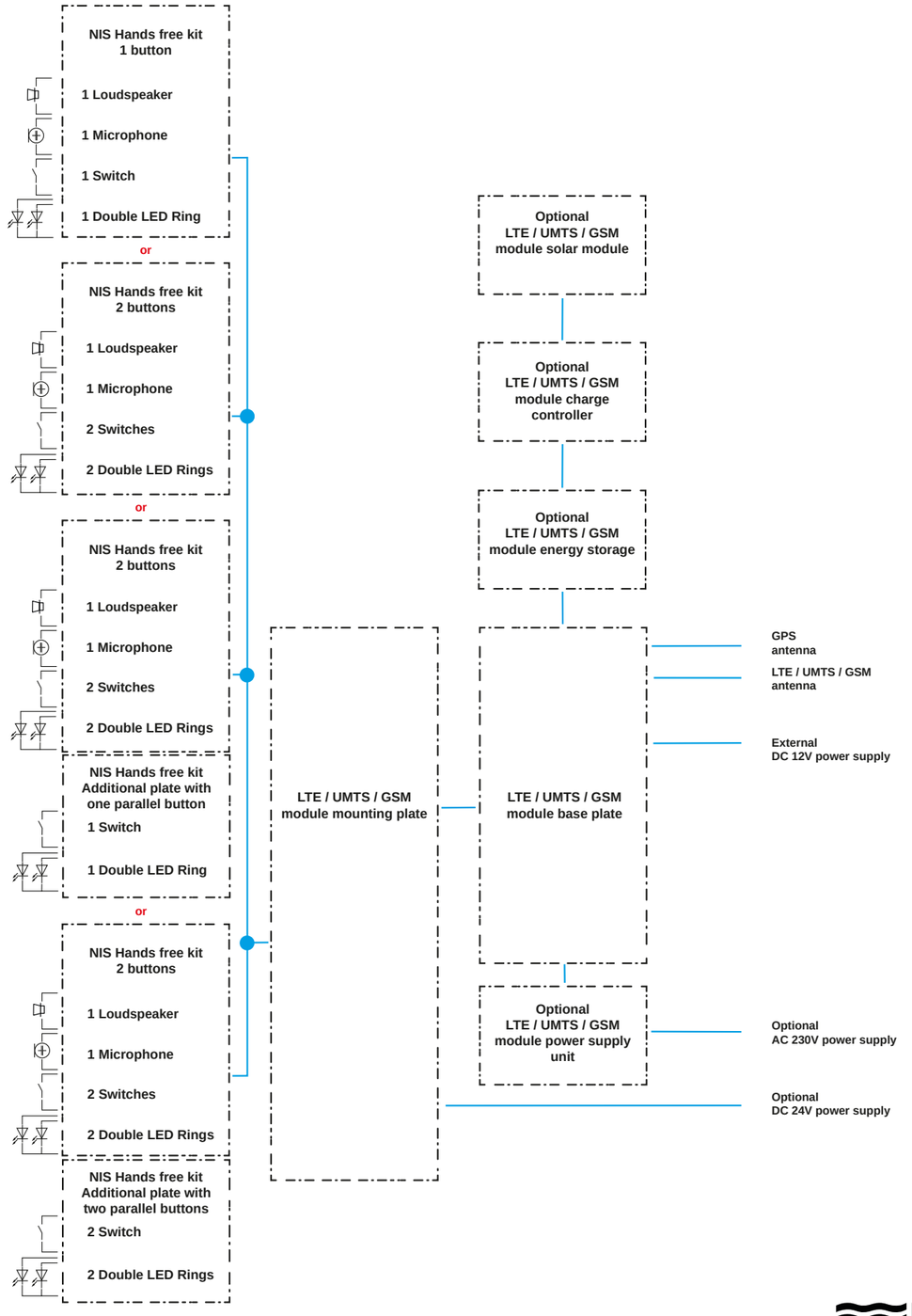
Electrical data	
Nominal power in standard operation	30W
Frequency range	300Hz to 3400Hz
Amplifier nominal power	3.2W at 4Ω, resp. 1.6W at 8Ω
Impedance of internal loudspeaker	Horn loudspeaker 8Ω
Microphone	Electret
Control output	DC 12V / 6A
Reachable destinations	Up to 2
Connection signalling	LEDs or double LED rings
Connectivity	
Power supply	• Solar power supply: DC 12V, with energy storage by backup accumulator 18Ah • Mains supply AC 230V • Local DC 12V
Radio interface	LTE, UMTS and GSM
Frequencies	LTE 700, 800, 900, 1800, 2100, 2600MHz UMTS 900, 1800, 2100MHz GSM 900, 1800MHz

Accessories	
Description	**Art. no.:**
LTE / UMTS / GSM solar module	919 1135 002 1
LTE / UMTS / GSM charge controller module	949 1412 100 1
LTE / UMTS / GSM energy storage module	919 1250 052 4
LTE / UMTS / GSM antenna	919 1150 062 4
LTE / UMTS / GSM GPS antenna	On request
LTE / UMTS / GSM power supply unit	621 0504 343 8

For incorporating the LTE / UMTS / GSM radio technology into the NRT hands-free kits of the emergency call stations the following modules are available:



For incorporating the LTE / UMTS / GSM radio technology into the NIS hands-free kits of the emergency call stations the following modules are available:



Analogue technology

The analogue technology is assembled individually for the respective location according to customer requirements and consists of an emergency call unit with built-in hands-free insert.

Optional additional components, such as a power supply unit, can be accommodated both in the PCB stack behind the emergency call unit front panel and in the emergency call unit housing.

Microphones and horn loudspeakers with different impedances, which are present in the front panels of many existing emergency call units, are also automatically replaced by replacing the complete hands-free insert and do not require any additional planning.

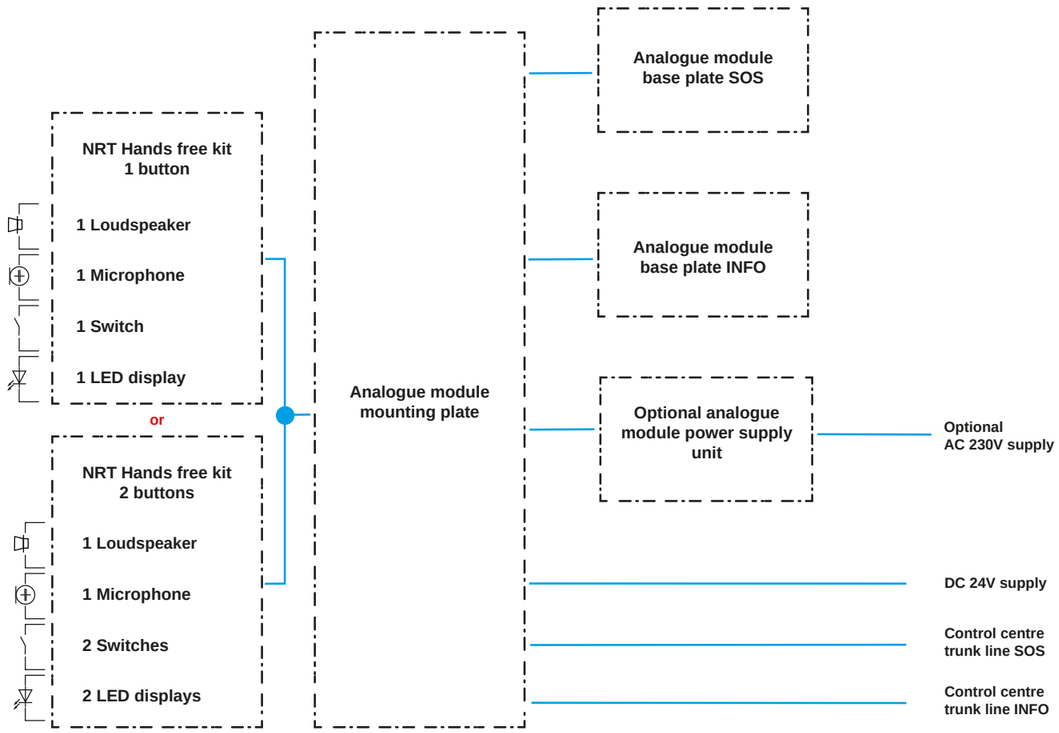
Performance features of the analogue technology

- Integrated horn loudspeaker for best speech intelligibility
- Call station power supply via central power supply or locally via mains operation
- Push buttons can be freely assigned with destinations
- Indication of status messages, such as call and busy signals, via the two differently coloured LED rings contained in each illuminated push button
- No configuration required

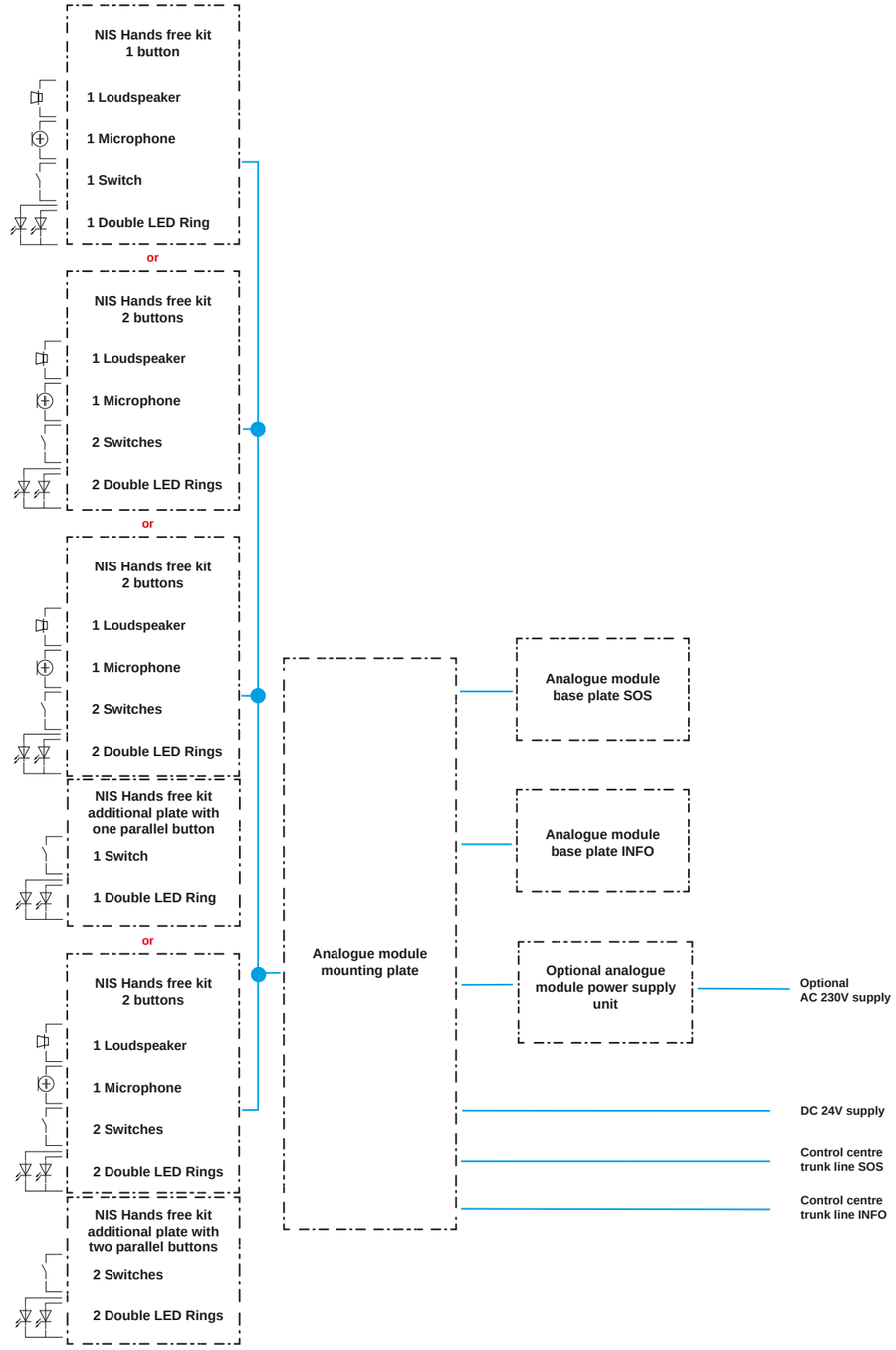
Electrical data	
Rated power in standard operation	3W
Frequency range	300Hz to 3400Hz
Amplifier nominal power	1W
Impedance of internal loudspeaker	Horn loudspeaker 45Ω
Microphone	Dynamic
Control output	DC 60V / 0.5A
Quiescent current consumption	≤0mA
Connection current consumption	25mA
Max. Operating current	55mA
Input impedance (La/Lb)	600Ω
Output impedance	600Ω
Permissible line length	Max. 15km
Reachable destinations	2
ready-to-talk indicator	Optional symbol illumination “Speaking mouth” or text illumination “Bitte sprechen, Please speak” in green colour
Connectivity	
Power supply	• Central power supply DC 35V to DC 68V • Mains supply AC 230V • Local DC 48V
Analogue interface	Direct dialling via PABX

Accessories	
Description	Art. no.:
Analogue power supply module	949 1412 054 9

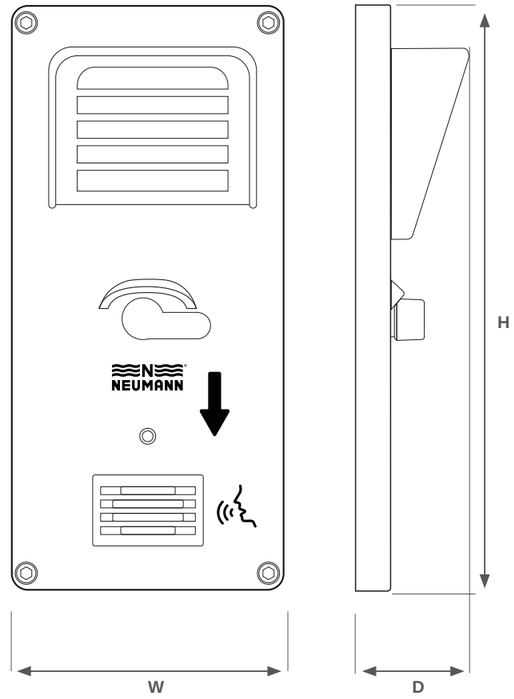
For incorporating the analogue technology into the NRT hands-free kits of the emergency call stations the following modules are available:



For incorporating the analogue technology into the NIS hands-free kits of the emergency call stations the following modules are available:



NRT hands-free kits



Basic features

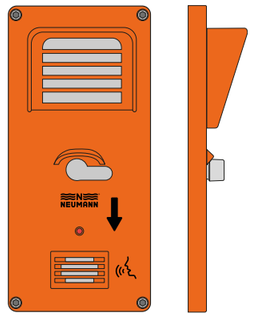
- Toggle button, mushroom button or up to four push button
- Loudspeaker
- Microphone
- Contact protection cover
- Signalling LED
- Complete wiring

Options for upgrading

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice
+ Disability-friendly labelling

Mechanical data	
Weight	Depending on equipment version
Dimensions (HxWxD)	368mm x 168mm x 70mm Standard installation depth 90mm, depending on equipment version up to 210mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Glass fibre reinforced polyester
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Signalling	Status LED, optional external call readiness indicator
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the chapter on technology.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	Front: IP65, Back cover: IP32
Front panel firing behaviour	V0 at 3.6mm (according to UL 94)

NRT hands-free kit with toggle control

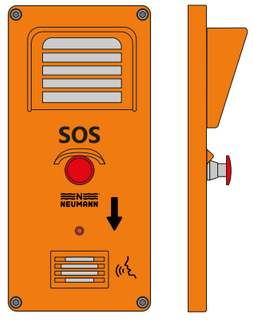


Configuration example:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
8 860 2	Hands-free kit DS-22 SIP
621 0204 3435	Hands-free kit LTE / UMTS / GSM
8 985 0	Hands-free kit analogue
8 175 1	Hands-free kit IP (discontinued model) inclusive AC 230V power supply module
8 176 2	Hands-free kit IP (discontinued model) inclusive DC 48V DC/DC converter module
8 855 6	Hands-free kit S0-DSS1-ISDN-technology (EOL)
643 0104 205 5	Hands-free kit S0-DSS1-ISDN-technology (EOL) with potential-free fault signal contact
8 850 1	Hands-free kit U-DSS1-ISDN-technology (EOL) Optional with additional module with 8 control inputs and 4 control outputs
8 553 1	Hands-free kit GSM (EOL)
8 989 4	Hands-free kit NES92 (discontinued model / redesign pending)
8 996 2	Hands-free kit NES92T (discontinued model / redesign pending)
8 987 2	Hands-free kit NES90 (EOL)

NRT hands-free kit with mushroom button operation

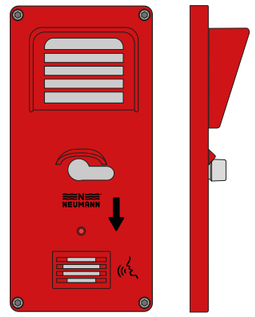


Configuration example:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via mushroom button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
641 0104 350 4	Hands-free kit DS-22 SIP
8 871 4	Hands-free kit LTE / UMTS / GSM
8 955 7	Hands-free kit analogue

NRT hands-free kit with toggle control

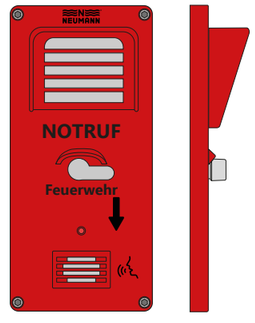


Configuration example:

+ Colour hands-free kit: fire red (RAL 3000)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 001 9	Hands-free kit DS-22 SIP
649 0199 002 0	Hands-free kit LTE / UMTS / GSM
649 0199 003 1	Hands-free kit analogue
649 0104 217 4	Hands-free kit U-DSS1-ISDN-technology (EOL) Optional with additional module with 8 control inputs and 4 control outputs
8 990 6	Hands-free kit NES92 (discontinued model / redesign pending)

NRT hands-free kit with toggle control

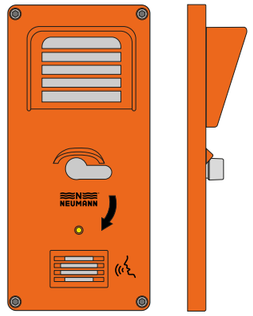


Configuration example Fire brigade Essen:

+ Colour hands-free kit: fire red (RAL 3000)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 004 2	Hands-free kit DS-22 SIP
649 0199 005 3	Hands-free kit LTE / UMTS / GSM
649 0199 006 4	Hands-free kit analogue
641 0104 214 3	Hands-free kit S0-DSS1-ISDN-technology (EOL)

NRT hands-free kit with toggle control

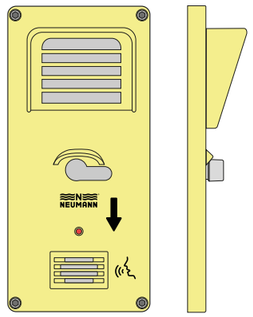


Configuration example Emergency call system in the Swiss tunnels St. Gotthard and Selisberg:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling with green LED
+ Mounting from the front or rear

Art. no.:	
649 0199 007 5	Hands-free kit DS-22 SIP
649 0199 008 6	Hands-free kit LTE / UMTS / GSM
649 0199 009 7	Hands-free kit analogue
8 851 2	Hands-free kit U-DSS1-ISDN-technology (EOL) including additional module with 8 control inputs and 4 control outputs

NRT hands-free kit with toggle control

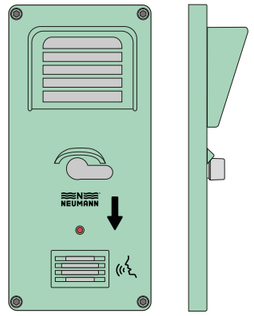


Configuration example “Call a taxi”:

+ Colour hands-free kit: ivory (RAL 1014)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 010 9	Hands-free kit DS-22 SIP
649 0199 011 0	Hands-free kit LTE / UMTS / GSM
649 0199 012 1	Hands-free kit analogue
8 976 0	Hands-free kit analogue (EOL)

NRT hands-free kit with toggle control

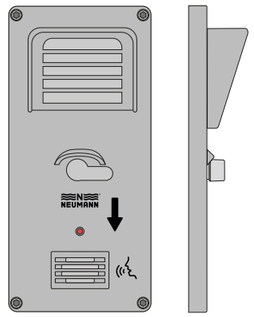


Configuration example GSM Police emergency call:

+ Colour hands-free kit: pale green (RAL 6021)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 013 2	Hands-free kit DS-22 SIP
649 0199 014 3	Hands-free kit LTE / UMTS / GSM
649 0199 015 4	Hands-free kit analogue
221 0308 546 1	Hands-free kit GSM-technology (EOL)

NRT hands-free kit with toggle control

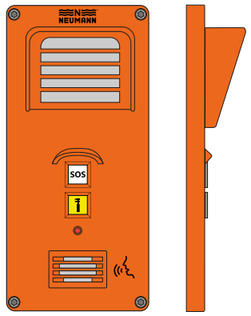


Configuration example GSM emergency call:

+ Colour hands-free kit: light grey (RAL 7035)
+ Release via toggle button
+ One destination achievable
+ Status signalling with green LED
+ Mounting from the front or rear

Art. no.:	
649 0199 016 5	Hands-free kit DS-22 SIP
649 0199 017 6	Hands-free kit LTE / UMTS / GSM
649 0199 018 7	Hands-free kit analogue
221 0108 546 9	Hands-free kit GSM-technology (EOL)

NRT hands-free kit with illuminated push button operation

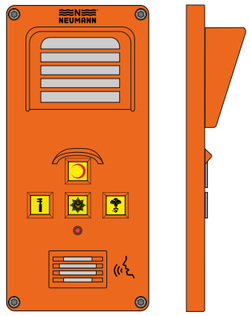


Configuration example
Weser Tunnel between Wesermarsch and Cuxhaven:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Triggering via illuminated push buttons
+ Two destinations reachable
  (for example: emergency call and roadside assistance)
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 019 8	Hands-free kit DS-22 SIP
649 0199 020 0	Hands-free kit LTE / UMTS / GSM
649 0199 021 1	Hands-free kit analogue
641 0104 221 1	Hands-free kit NES92 (discontinued model / redesign pending)

NRT hands-free kit with illuminated push button operation

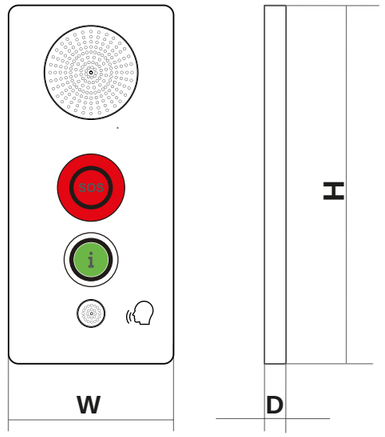


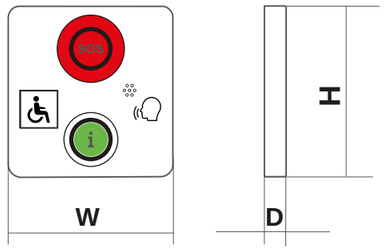
Configuration example on rural roads
and motorways in Turkey:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Triggering via illuminated push buttons
+ Four destinations reachable
  (for example: police, ambulance, fire brigade and roadside assistance)
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
649 0199 022 2	Hands-free kit DS-22 SIP
649 0199 023 3	Hands-free kit LTE / UMTS / GSM
649 0199 024 4	Hands-free kit analogue
641 0104 086 1	Hands-free kit NES92 (discontinued model / redesign pending)

NIS hands-free kits





Basic features

- Up to 2 push buttons and
  2 push buttons in the additional panel
- Loudspeaker
- Microphone and a microphone in the additional field
- Contact protection cover
- Complete wiring

Options for upgrading

+ Hands-free kit DS-22 SIP,
  with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice
+ Disability-friendly labelling
+ Optional call readiness indicator

Mechanical data	
Weight	Depending on equipment version
Dimensions (HxWxD)	368mm x 168mm x 20mm Standard installation depth 90mm, Depending on equipment version up to 210mm Optional additional plate 168mm x 168mm x 20mm for wheelchair operation
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Polycarbonate PC GF10 or aluminium
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Signalling	• Two different coloured LED rings in the buttons • Optional internal or external call readiness indicator
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the chapter on technology.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	Front: IP65, Back cover: IP32

**NIS hands-free kit with one push button.
Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Release via toggle button
+ One destination achievable
+ Status signalling with green LED
+ Front and rear mounting

Art. no.:	
8 862 4	Hands-free kit DS-22 SIP
8 872 5	Hands-free kit LTE / UMTS / GSM
649 0199 025 5	Hands-free kit analogue

**NIS hands-free kit with one push button and
ready-to-talk indicator. Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optional ready-to-talk indicator “talking mouth”
+ Mounting from behind

Art. no.:	
649 0199 026 6	Hands-free kit DS-22 SIP
649 0199 027 7	Hands-free kit analogue

**NIS hands-free kit with one push button and
ready-to-talk indicator. Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optional ready-to-talk indicator “Bitte sprechen, Please speak”
+ Mounting from behind

Art. no.:	
649 0199 028 8	Hands-free kit DS-22 SIP
649 0199 029 9	Hands-free kit analogue

**NIS hands-free kit with one push button.
Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Mounting from behind

Art. no.:	
649 0199 030 1	Hands-free kit DS-22 SIP
649 0199 031 2	Hands-free kit LTE / UMTS / GSM
8 952 4	Hands-free kit analogue

**NIS hands-free kit with one push button and
ready-to-talk indicator. Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optional ready-to-talk indicator „talking mouth“
+ Mounting from behind

Art. no.:	
649 0199 032 3	Hands-free kit DS-22 SIP
649 0199 033 4	Hands-free kit analogue

**NIS hands-free kit with one push button and
ready-to-talk indicator. Configuration example:**

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optional ready-to-talk indicator „Bitte sprechen, Please speak“
+ Mounting from behind

Art. no.:	
649 0199 034 5	Hands-free kit DS-22 SIP
649 0199 035 6	Hands-free kit analogue

NIS hands-free kit with one push button.
DB Configuration example:

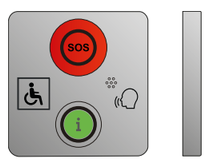
+ Colour hands-free kit: according midnight blue (RAL 5022)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Mounting from behind

Art. no.:	
649 0199 036 7	Hands-free kit DS-22 SIP
649 0199 037 8	Hands-free kit LTE / UMTS / GSM
649 0199 038 9	Hands-free kit analogue
8 551 9	Hands-free kit GSM (EOF) including power supply unit and 5W amplifier
8 552 0	Hands-free kit GSM (EOF) Including power supply unit

NIS hands-free kit with two push buttons.
Configuration example Hannoversche Verkehrsbetriebe üstra:

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via two push buttons
+ Two destinations achievable
+ Status signalling via differently coloured double LED rings
+ Mounting from behind

Art. no.:	
8 863 5	Hands-free kit DS-22 SIP
8 873 6	Hands-free kit LTE / UMTS / GSM
649 0199 039 0	Hands-free kit analogue
8 986 1	Hands-free kit S0-DSS1-ISDN-technology (EOL)



NIS Additional panel with two push buttons.
Configuration example Hannoversche Verkehrsbetriebe üstra:

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via two push buttons
+ Status signalling via differently coloured double LED rings

Art. no.:	
8 993 9	Additional panel S0-DSS1-ISDN-technology (EOL)

NIS hands-free kit with two push buttons.
Configuration example:

+ Colour hands-free kit: White aluminium (RAL 9006)
+ Triggering via two push buttons
+ Two destinations achievable
+ Status signalling via differently coloured double LED rings
+ Mounting from behind

Art. no.:	
649 0199 040 2	Hands-free kit DS-22 SIP
649 0199 041 3	Hands-free kit LTE / UMTS / GSM
8 953 5	Hands-free kit analogue

NIS hands-free kit with two push buttons.
DB Configuration example:

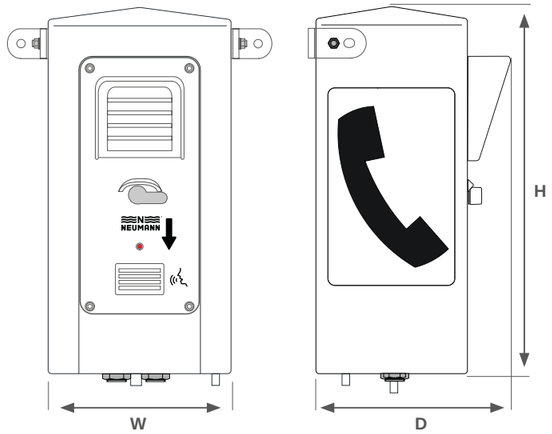
+ Colour hands-free kit: according midnight blue (RAL 5022)
+ Triggering via two push buttons
+ Two destinations achievable
+ Status signalling via different coloured double LED ring
+ Mounting from behind

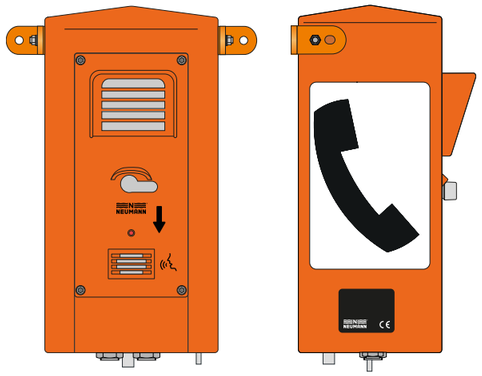
Art. no.:	
649 0199 042 4	Hands-free kit DS-22 SIP
649 0199 043 5	Hands-free kit LTE / UMTS / GSM
649 0199 044 6	Hands-free kit analogue
8 555 3	Hands-free kit GSM (EOF) including power supply unit and 5W amplifier
8 554 2	Hands-free kit GSM (EOF) including power supply unit

Emergency call units

For the sake of simplicity, the neutral illustrations always show a hands-free kit with any front panel in the emergency call units. However, the hands-free kit can be mounted at all emergency call units.

Housing VA-2, wall mounting





Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status LED
- Bracket for wall mounting
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP,
  with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice
+ Disability-friendly labelling

Configuration example
Art. no.: 8 052 4:

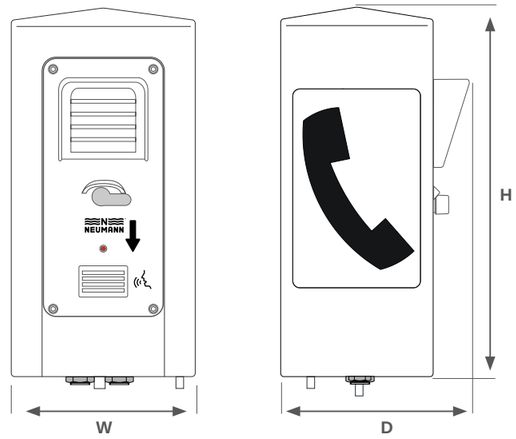
+ Colour wall housing: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling via LED
+ Including reflective lettering
+ Hands-free kit
  with NRT front panel with NES92-T technology

Optional bracket and mounting kit for wall mounting in tunnel tubes to adapt to tunnel radius, Art. no.: 8 022 2:

- 90°
- 86° for tunnel radius 5,80m
- 82,5° for tunnel radii 5,90m + 6,25m

Mechanical data	
Weight	Approx. 15kg
Dimensions (HxWxD)	530mm x 260mm x 168mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Glass fibre reinforced polyester
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Wall mounting with mounting brackets to be attached externally included in the scope of delivery
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the chapter on technology.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

Housing VA-3, wall mounting



Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status LED
- Internal holes for wall mounting
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP,
  with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice
+ Disability-friendly labelling

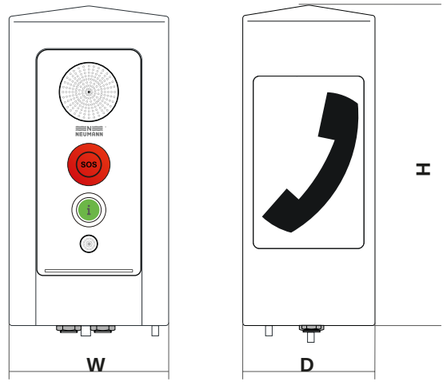
Configuration example
Art. no.: 641 0104 342 5:

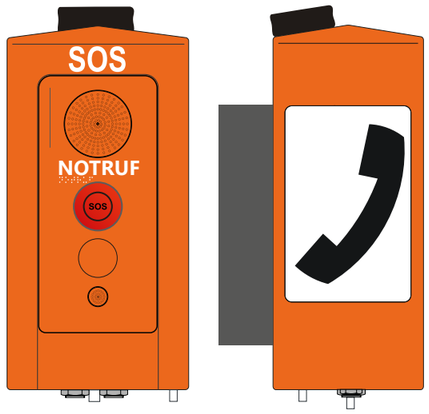
+ Colour wall housing: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling via LED
+ Including reflective lettering
+ Hands-free kit with NRT front panel with IP technology

Mechanical data	
Weight	Approx. 15kg
Dimensions (HxWxD)	568mm x 300mm x 195mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Stainless steel VA 1.4301
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Wall mounting with mounting holes inside the housing
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the chapter on technology.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

SOS LTE Solar

Housing VA-4, pole mounting





Basic features:

- Push button with LED ring
- Loudspeaker
- Microphone
- Pole mount
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice
+ Disability-friendly labelling

Configuration example Central bus station, Velbert Art. no.: 641 0104 312 2:

+ Colour wall housing: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Including reflective lettering
+ Triggering via an emergency call push button
+ One destination achievable
+ Status signalling with double LED ring
+ Hands-free kit in GSM Technology
+ PUK Antenna
+ Integrated power supply unit
+ Braille inscription on the emergency call button for visually impaired or blind people

Mechanical data	
Weight	Approx. 15kg
Dimensions (HxWxD)	550mm x 260mm x 195mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Stainless steel VA 1.4301
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Pole mounting
Electrical data	
All electrical data and connectivity data are technology-dependent and can be found in the chapter on the technologies.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

NRT housing with and without lock, pole mounting

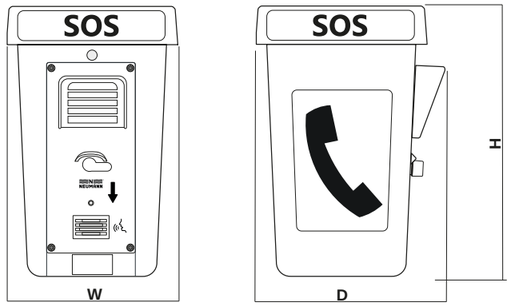


Figure neutral attachment to poles with mounting flange

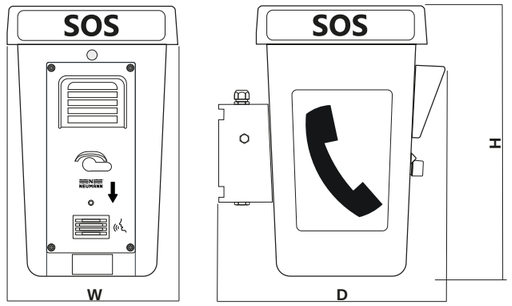


Figure neutral Mounting on poles without mounting flange or for wall mounting with universal bracket

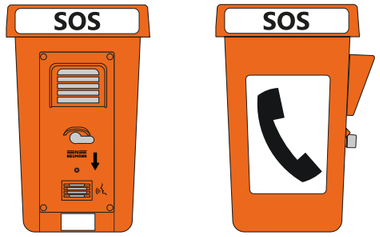
Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status-LED
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice and disability-friendly labelling
+ Optional lock interlock

Mechanical data	
Weight	Depending on equipment version. Universal pole mount approx. 5kg
Dimensions (HxWxD)	595mm x 330mm x 410mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Column head glass fibre reinforced polyester Pole mount steel ST37-2 hot-dip galvanised
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Pole mounting
Electrical data	
All electrical data and connectivity data are technology-dependent and can be found in the chapter on the technologies.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

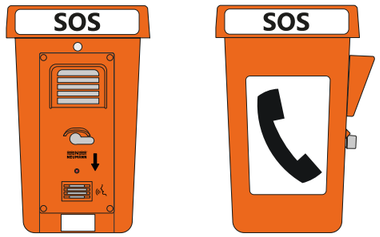


NRT housing with and without lock, pole mounting, for poles with mounting flange Configuration example:

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Hands-free kit not included in the scope of delivery!
+ Including reflective lettering

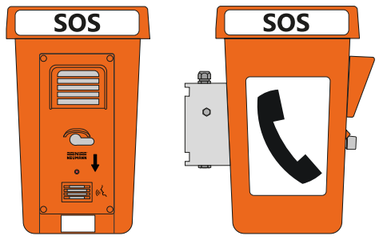
In the past equipped with hands-free kits of the following technologies:

- 2-wire technology NRT80-2
- Analogue technology
- 4-wire technology NES90
- 4/6 wire technology NES92
- ISDN technology S0-DSS1
- ISDN technology U-DSS1
- GSM technology



NRT housing with and without lock, Pole mounting, for poles without mounting flange Configuration example:

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Hands-free kit not included in the scope of delivery!
+ Including reflective lettering
+ Including universal pole mount Art. no.: 4 999 1
  (The universal pole mount can also be used for wall mounting)

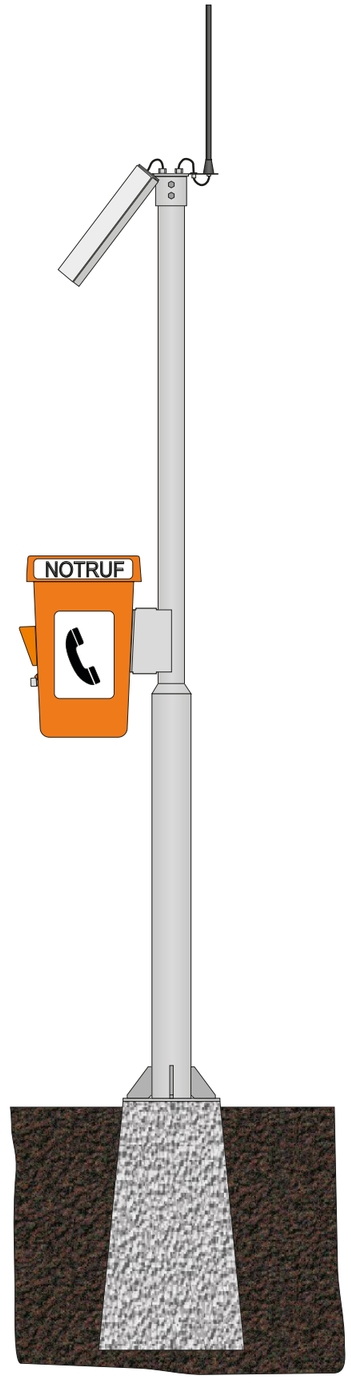


In the past equipped with hands-free kits of the following technologies:

- 2-wire Technology NRT80-2 (EOL)
- Analogue technology
- 4-wire technology NES90 (EOL)
- 4/6 wire technology NES92 (Redesign)
- ISDN technology S0-DSS1 (EOL)
- ISDN technology U-DSS1 (EOL)
- GSM technology (EOL)

Accessories / Poles	
Art. no.:	Description: (pole steel, hot-dip galvanised, diameter 76mm, base 114mm)
4 960 9	Pole for concrete base mounting with mounting flange, pole height 3m
4 961 0	Pole for concrete base mounting with mounting flange, pole height 4m
4 962 1	Pole for concrete base mounting with mounting flange, pole height 5m
4 965 4	Pole for ground mounting with mounting flange, pole height above ground 3m
4 966 5	Pole for ground mounting with mounting flange, pole height above ground 4m
4 967 6	Pole for ground mounting with mounting flange, pole height above ground 3m

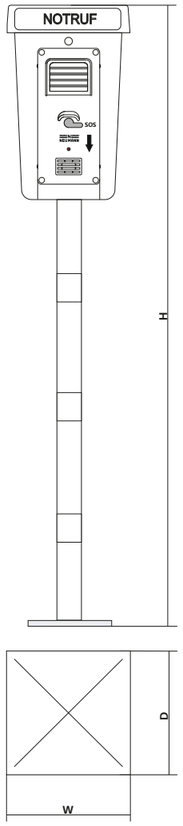
Accessories / only for LTE / UMTS / GSM	
621 0304 343 6	Solar panel and antenna including pole top attachment
649 0199 045 7	Antenna including pole top attachment
649 0199 046 8	Loudspeaker and antenna including pole top attachment



NRT housing with lock, pole-mounted, for poles with mounting flange. In use at the tunnel portals of the Leonberg tunnel. Art. no.: 641 0104 343 6

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Hands-free kit LTE / UMTS / GSM
+ Triggering via 1 toggle button
+ One destination achievable
+ Status signalling via LED
+ Coverage of different radio networks
+ Including reflective lettering
+ Including pole for concrete base mounting with mounting flange, pole height 4m
+ Including solar module and antenna module with pole top mounting
+ Including solar charge controller
+ Including support accumulator 18Ah
+ At least five days bridging time

NRT pedestal with and without lock, standpipe mounting



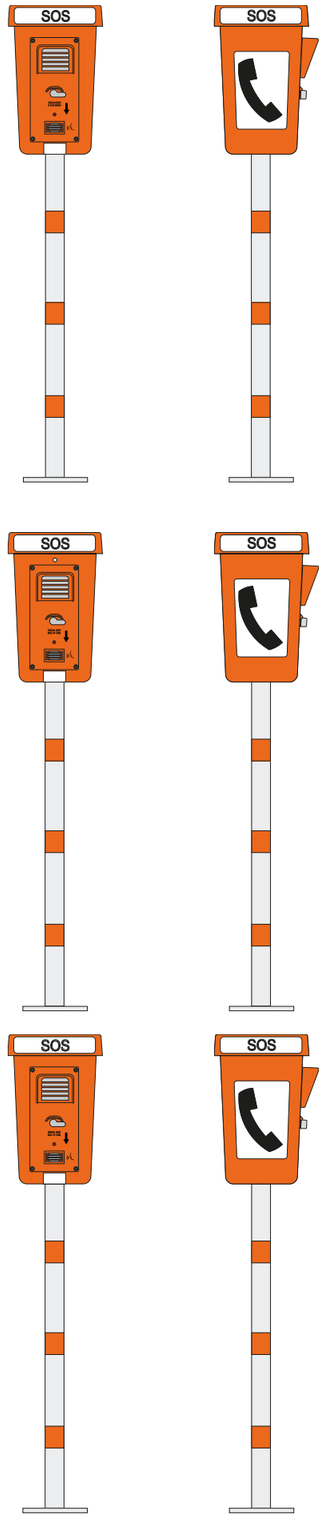
Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status-LED
- Standpipe with signal stripes
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice and disability-friendly labelling
+ Optional lock interlock

Mechanical data	
Weight	Approx. 18kg without hands-free kit
Dimensions (HxWxD)	1720mm x 260mm x 260mm Column head 595mm x 260mm x 260mm Standpipe Ø101.6mm x 1115mm, base flange Ø260mm with four holes Ø15mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Column head glass fibre reinforced polyester Standpipe stainless steel VA 1.4571 or white aluminium (RAL 9006)
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Standpipe mounting
Electrical data	
All electrical data and connectivity data are technology-dependent and can be found in the chapter on the technologies.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65



NRT pedestal, standpipe mounting
Configuration example: Emergency call units on rural roads
Art. no.: 8 0457

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Including reflective lettering
+ Standpipe stainless steel VA 1.4571
+ Hands-free kit not included in the scope of delivery!

In the past equipped with hands-free kits of the following technologies:

- 2-wire technology NRT80-2 (EOL)
- Analogue technology
- 4-wire technology NES90 (EOL)
- 4/6 wire Technology NES92 (Redesign)
- ISDN technology S0-DSS1 (EOL)
- ISDN technology U-DSS1 (EOL)
- GSM technology (EOL)

NRT pedestal, standpipe mounting
Configuration example: Emergency call units on rural roads
Art. no.: 8 051 4

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Including reflective lettering
+ Hands-free kit in NES92 technology
+ Lock

NRT pedestal, standpipe mounting
Configuration example: Emergency call units on rural roads
Art. no.: 8 142 5

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Including reflective lettering
+ Hands-free kit in LTE / UMTS / GSM technology
+ Integrated power supply unit
+ Standpipe white aluminium (RAL 9006)

Aluminium housing, wall mounting

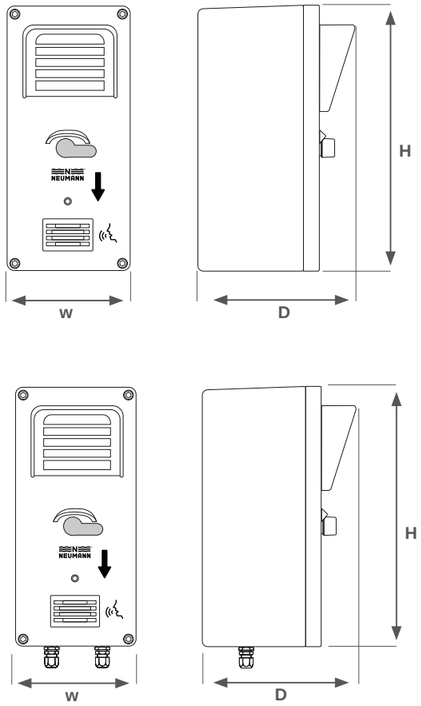


Illustration neutral with 2 cable glands on the underside

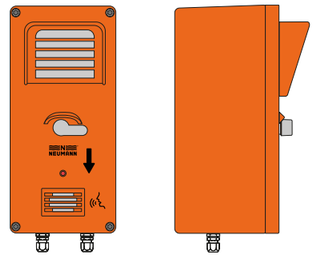
Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status-LED
- Complete wiring
- Optional 2 cable glands on the underside

Options for upgrading:

+ Hands-free kit DS-22 SIP,
  with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice and
  disability-friendly labelling

Mechanical data	
Weight	Depending on equipment version
Dimensions (HxWxD)	380mm x 178mm x 224mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Aluminium die cast
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Wall mounting
Electrical data	
All electrical data and connectivity data are technology-dependent and can be found in the chapter on the technologies.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

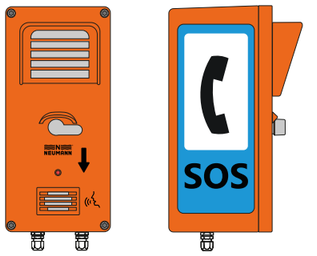


Aluminium housing, wall mounting, Configuration example: Art. no.: 8 046 8

+ Colour wall housing: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Hands-free kit not included in the scope of delivery!
+ Including reflective lettering
+ 2 cable glands on the underside

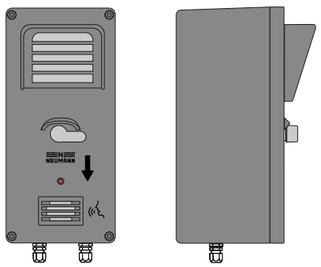
In the past equipped with hands-free kits of the following technologies:

- 2-wire technology NRT80-2 (EOL)
- Analogue technology
- 4-wire technology NES90 (EOL)
- 4/6 wire technology NES92 (Redesign)
- ISDN technology S0-DSS1 (EOL)
- ISDN technology U-DSS1 (EOL)



Aluminium housing, wall mounting, Configuration example: Art. no.: 649 0104 079 0

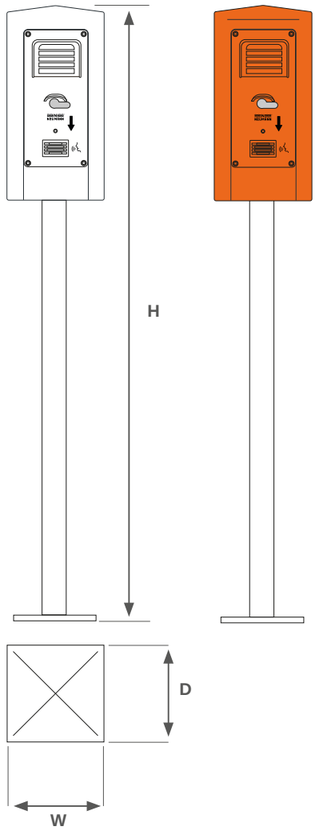
+ Colour wall housing: fire red (RAL 3000)
+ Colour hands-free kit: fire red (RAL 3000)
+ Hands-free kit not included in the scope of delivery!
+ 2 cable glands on the underside



Aluminium housing, wall mounting, Configuration example: Art. no.: 649 0104 053 2

+ Colour wall housing: pebble grey (RAL 7032)
+ Colour hands-free kit: pebble grey (RAL 7032)
+ Hands-free kit not included in the scope of delivery!
+ 2 cable glands on the underside

Housing VA-1, standpipe mounting



Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status-LED
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Custom colour choice and disability-friendly labelling

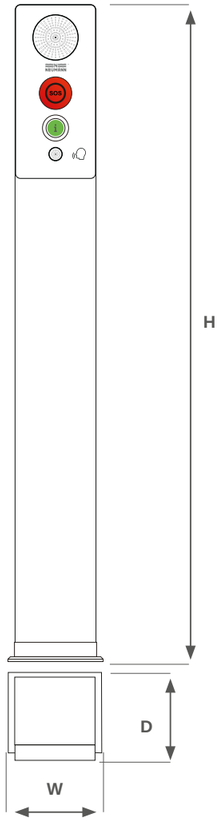
VA-1 Housing, standpipe mounting Configuration example: Taiwanese high-speed rail line Art. no.: 8 051 4

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling via LED
+ Hands-free kit in NES92-T technology

Standpipe for this purpose white aluminium (RAL 9006) Art. no.: 229 1008 044 0

Mechanical data	
Weight	Depending on equipment version
Dimensions (HxWxD)	1638mm x 260mm x 260mm Column head 523mm x 260mm x 260mm Stand tube Ø101.6mm x 1115mm, Base flange Ø260mm with four holes Ø15mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Material	Column head Glass fibre reinforced polyester Standpipe Stainless steel VA 1.4571 or white aluminium (RAL 9006)
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Standpipe mounting
Electrical data	
All electrical data and connectivity data are technology-dependent and can be found in the chapter on the technologies.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65

NIS 02 / Design 1, floor standing column



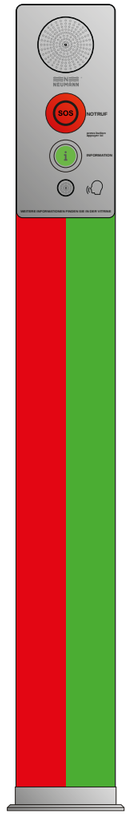
Basic features:

- Emergency call and info button
- Loudspeaker
- Microphone
- Complete wiring

Options for upgrading:

+ Hands-free kit DS-22 SIP,
  with or without additional amplifier
+ Hands-free kit Analogue
+ Custom colour choice and
  disability-friendly labelling

Mechanical data	
Weight	Approx. 30kg
Dimensions (HxWxD)	1380mm x 168mm x 140mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Material	Aluminium
Release	2 Illuminated push button
Reachable destinations	2
Connection Signalling	Light ring signalling
Ready-to-talk signalling	Optional
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Standpipe assembly
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology section.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65



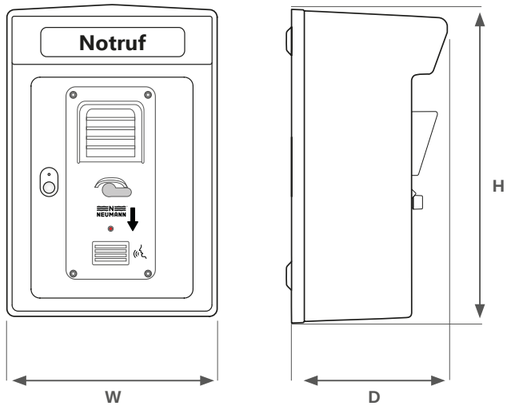
NIS 02 Configuration example:
üstra Hannoversche Verkehrsbetriebe AG
Art. no.: 8 090 7

+ Colour stand column: traffic red (RAL 3020) / opel green (OP 308)
+ Colour hands-free kit: white aluminium (RA9006)
+ Release via two push buttons
+ Two reachable destinations
+ Status signalling via double LED rings
+ Includes 10W amplifier and wiring
+ Hands-free kit not included in the scope of delivery!

NIS 02 Configuration example:
GYSEV Raaberbahn
Art. no.: 641 0104 314 4

+ Colour stand column: mint green (RAL 6029)
+ Colour hands-free kit: traffic yellow (RAL 1023)
+ Release via a push button
+ An achievable destination
+ Status signalling via double LED rings
+ Incl. S0-DSS1 hands-free kit (EOL)

PRST housing, wall mounting



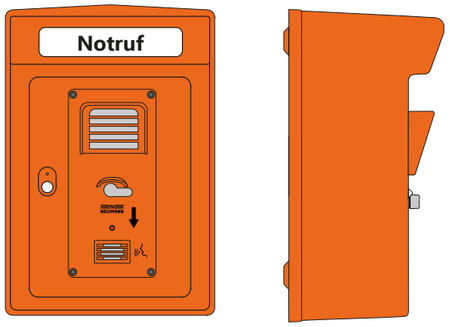
Basic features:

- Emergency call toggle button
- Loudspeaker
- Microphone
- Status-LED
- Lock for service door
- Complete wiring

Options for upgrading:

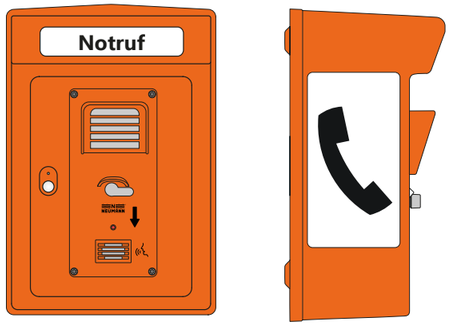
+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice and disability-friendly labelling
+ Optional illumination of the emergency call lettering
+ Optional reflective labelling foils

Mechanical data	
Weight	Depending on equipment version
Dimensions (HxWxD)	614mm x 414mm x 305mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Material	Glass fibre reinforced polyester
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Wall mounting
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology chapter.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	IP65



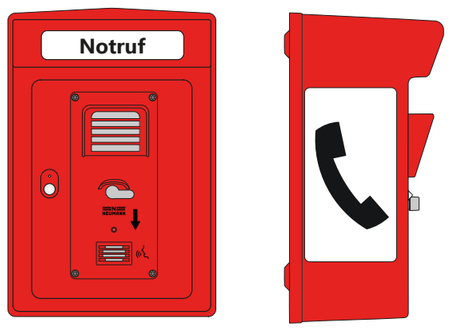
PRST housing, wall mounting, Configuration example: Art. no.: 8 015 4

+ Colour stand column: pure orange (RAL 2004)
+ Colour hands-free kit: pure orange (RAL 2004)
+ Hands-free kit not included in the scope of delivery!
+ Including reflective lettering
+ Optional illuminated labelling field with customised text inserts
+ Optional reflective labelling foils



In the past equipped with hands-free kits of the following technologies:

- 2-wire technology NRT80-2 (EOL)
- Analogue technology
- 4-wire technology NES90 (EOL)
- 4/6 wire technology NES92 (Redesign)
- ISDN technology S0-DSS1 (EOL)
- ISDN technology U-DSS1 (EOL)

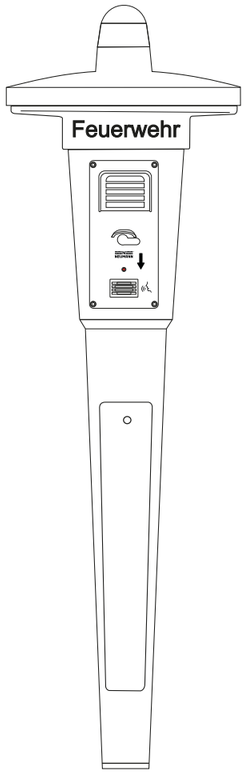


PRST housing, wall mounting, Configuration example: Art. no.: 8 014 3

+ Colour stand column: fire red (RAL 3000)
+ Colour hands-free kit: fire red (RAL 3000)
+ Hands-free kit not included in the scope of delivery!
+ Including reflective lettering
+ Optional illuminated labelling field with customised text inserts
+ Optional reflective labelling foils

PRS column stand-mounted with large roof

The PRS column with large roof is a stand column with a retro look and is used to hold the hands-free kits in IP, LTE / UMTS / GSM or analogue technology.



Basic features:

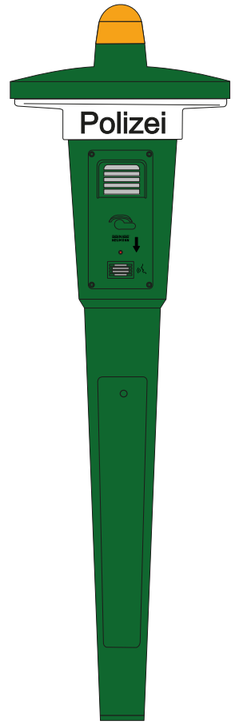
- Weatherproof glass fibre reinforced polyester housing, IP65
- Colour: selectable e.g. pure orange (RAL 2004)
- Incl. solar charge controller and 12V back-up battery[1] (15 Ah), (only at LTE / UMTS / GSM technology)
- Incl. monitoring contacts for anti-theft protection (lock and adjustment of the tilt angle)
- Incl. “EMERGENCY CALL” sticker on all sides of the housing[1]
- Additional labelling area on the side
- (H x W): approx. 470mm x 200mm

Options for upgrading:

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Individual colour selection and labelling
+ Solar modules for pole mounting, (only at LTE / UMTS / GSM technology)
+ Antenna mounting inside, (only at LTE / UMTS / GSM technology)

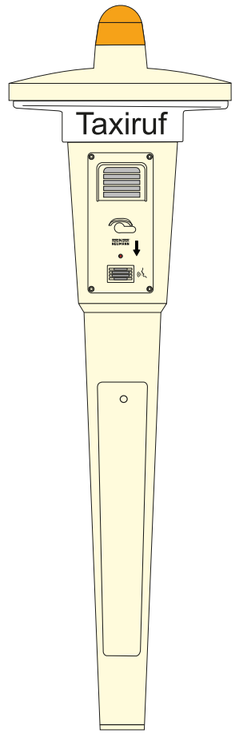
1) Depending on customer requirements

Mechanical data	
Weight	Approx. 60kg
Dimensions (HxWxD)	2385mm x 810mm x 810mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Material	Glass fibre reinforced polyester
Ready-to-talk indication	Optional
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Stand mounting
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology chapter.	
Environmental data	
Ambient temperature range	-20°C to +70°C
Protection class according to DIN EN 60529	IP65



PRS Configuration example:
Police emergency call pillar
Art. no.: 8 020 0

+ Colour: green
+ Hands-free kit not included in the scope of delivery!



PRS Configuration example:
Taxi call pillar

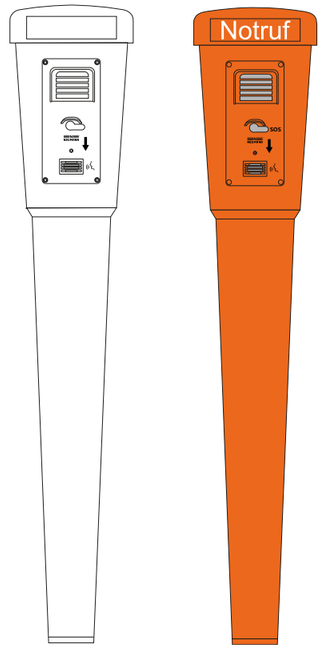
+ Colour: ivory
+ Hands-free kit not included in the scope of delivery!

Iron Policeman

The icon from the house of Neumann.

neumann-elektronik.com/eiserner-polizist

PRS column stand-mounted with small roof



Basic features

- Weatherproof glass fibre reinforced polyester housing, IP65
- Colour: selectable, e.g. pure orange (RAL 2004)
- Dimensions (HxWxD): 1912mm x 440mm x 440mm
- Mounting holes for kit (H x W): M6, 346mm x 146mm
- Incl. solar charge controller and 12V back-up battery[1] (18Ah), (only at LTE / UMTS / GSM technology)
- Incl. monitoring contacts for theft protection (lock locking and adjustment of the tilt angle)
- Incl. “EMERGENCY CALL” sticker on all sides of the housing[1]
- Additional labelling area on the side (H x W): approx. 470mm x 200mm

Options for upgrading

+ Hands-free kit DS-22 SIP, with or without additional amplifier
+ Hands-free kit analogue
+ Hands-free kit LTE / UMTS / GSM
+ Custom colour choice and labelling
+ Solar modules for pole mounting, (only at LTE / UMTS / GSM technology)
+ Antenna mounting inside, (only at LTE / UMTS / GSM technology)

1) Depending on customer requirements

PRS Configuration example: Emergency call column with small roof

+ Colour: orange
+ Hands-free kit not included in the scope of delivery!

Mechanical data	
Weight	Approx. 60kg
Dimensions (HxWxD)	1912mm x 440mm x 440mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Glass fibre reinforced polyester
Release	1 Toggle button
Reachable destinations	1
Connection signalling	LED-Signalling
Ready-to-talk signalling	Optional
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Assembly	Stand mounting
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology chapter.	
Environmental data	
Ambient temperature range	-20°C to +70°C
Protection class according to DIN EN 60529	IP65

Elevators

Elevator emergency call, compact

The compact elevator emergency call can be used if there is sufficient installation space behind the elevator mounting plate and the elevator manufacturer or operator has not yet implemented any design specifications for the emergency call.

The compact devices can display the signals required according to the elevator standard DIN EN 81.70, from emergency call initiation to end of call and call readiness, in part directly on the front panels or have the corresponding connections for external lights.

The compact elevator emergency call is available in a DS-22 SIP and an analogue version with different front panels and triggering elements. Both technologies enable hands-free operation according to emergency call triggering, which means that microphone and loudspeaker are active at the same time. This is a direct intercom connection, i.e. all participants can speak at the same time.

For the DS-22 SIP solution, the manufacturer always recommends the use of a 2-wire modem pair for interference-free line transmission via the elevator's trailing cable to the car.

Since existing lines of the electrical wiring of the elevator control system, for example trailing cable lines, must almost always be used, the assembly of a compact elevator emergency call must always be carried out in consultation with the elevator manufacturer.

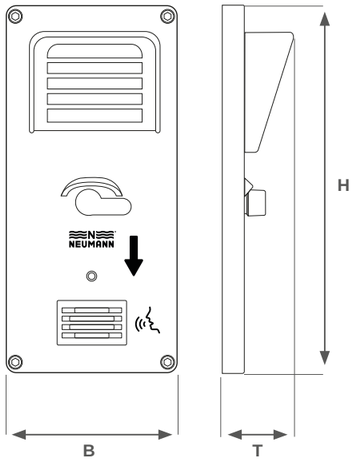
The elevator emergency call units shown here are only illustrative. The housing colour and labelling can be adapted to the customer's requirements. The complete electronics are located on the back cover of the front of the device and are protected against contact by a cover.

Application examples

Technology used:
Compact analogue elevator emergency call

Technology used:
Compact analogue elevator emergency call with integrated ready-to-talk indicator

NRT elevators hands-free kits



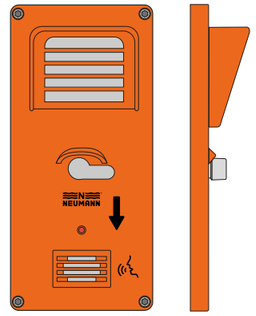
Basic features

- Toggle switch, mushroom button or up to four push buttons
- Loudspeaker
- Microphone
- Contact protection cover
- Signalling LED
- Complete wiring

Options for upgrading

- Toggle switch, mushroom button or up to four push buttons
- Loudspeaker
- Microphone
- Contact protection cover
- Signalling LED
- Complete wiring

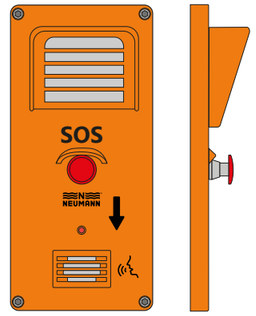
Mechanical data	
Weight	Approx. 3.5kg
Dimensions (HxWxD)	368mm x 168mm x 70mm Standard installation depth 90mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Glass fibre reinforced polyester
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Signalling	Status-LED Optional external ready-to-talk indicator
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology chapter.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	Front: IP65, Back cover: IP32
Front panel firing behaviour	V0 at 3.6mm (according to UL 94)



NRT elevator hands-free kit with toggle operation.
Configuration example:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via toggle button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
8 880 4	Elevator hands-free kit DS-22 SIP
8 885 9	Elevator hands-free kit analogue
8 989 4	Elevator hands-free kit NES92 (discontinued model / revision in preparation)
8 987 2	Elevator hands-free kit NES90 (EOL)



NRT elevator hands-free kit with Mushroom button operation.
Configuration example:

+ Colour hands-free kit: pure orange (RAL 2004)
+ Release via mushroom button
+ One destination achievable
+ Status signalling with red LED
+ Mounting from the front or rear

Art. no.:	
8 881 5	Elevator hands-free kit DS-22 SIP
8 886 0	Elevator hands-free kit analogue

NIS elevator hands-free kits

Basic features

- 1 Push button
- Loudspeaker
- Microphone
- Contact protection cover
- Complete wiring
- Ready-to-talk indicator

Options for upgrading

+ Hands-free kit DS-22 SIP
+ Hands-free kit analogue
+ Custom colour choice and disability-friendly labelling

Mechanical data	
Weight	Approx. 3.5kg
Dimensions (HxWxD)	368mm x 168mm x 20mm Standard installation depth 90mm
Colour	• As shown in the configuration examples • Optionally customer-specific
Housing material	Polycarbonate PC GF10 or aluminium
Labeling	• As shown in the configuration examples • Optionally customer-specific • Available with Braille or pyramid lettering
Signalling	Two different coloured LED rings in the buttons Optional internal or external ready-to-talk indicator
Electrical data	
All electrical and connectivity data are technology-dependent and can be found in the technology chapter.	
Environmental data	
Ambient temperature range	-20°C to +55°C
Protection class according to DIN EN 60529	Front: IP65, Back cover: IP32

NIS elevator hands-free kit
with one push button and ready-to-talk indicator
Configuration example:

+ Colour hands-free kit: white aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optionale ready-to-talk indicator „talking mouth“
+ Mounting from behind

Art. no.:	
649 0199 047 9	Hands-free kit DS-22 SIP
649 0199 048 0	Hands-free kit analogue

NIS elevator hands-free kit
with one push button and ready-to-talk indicator
Configuration example:

+ Colour hands-free kit: white aluminium (RAL 9006)
+ Triggering via a push button
+ One destination achievable
+ Status signalling via different coloured double LED ring
+ Optional ready-to-talk indicator “Bitte sprechen, Please speak”.
+ Mounting from behind

Art. no.:	
649 0199 049 1	Hands-free kit DS-22 SIP
649 0199 050 3	Hands-free kit analogue


SOS
SOS
SOS
NEUMANN

Elevator emergency call, compact

Compact elevator emergency call units in DS-22 SIP technology are designed for connection to an Ethernet network node with a range of 100m.

The connection of a compact elevator emergency call unit in analogue technology is intended for connection and operation to PABXs in direct dialling mode. The dialling process must be carried out automatically by the PABX.

Technology	DS-22 SIP	Analogue
Electrical data		
Nominal power	20W	
Quiescent current consumption	≤55mA	≤0mA
Max. Operating current	≤150mA	55mA
Frequency range	100Hz … 20kHz	300Hz … 3400Hz
Loudspeaker impedance	Horn loudspeaker 8Ω	Horn loudspeaker 45Ω
Microphone	Electret	Dynamic
Control inputs	DC 12V to DC 60V / 10mA, AC 12V to AC 60V / 10mA	
Control outputs	Max. DC 60V / 0.2A, Max. AC 60V / 0.2A	
Permissible line length	• 100m • Optional 2-wire range extension point-to-point/multipoint up to 1000m using existing cable material • Optional 2-wire range extension point to point up to 1000m with use of existing cable material • Optional multi-mode fibre optic range extension up to 3000m • Optional single-mode fibre optic range extension up to 15000m	
Connection signalling	LED or double LED rings	
Ready-to-talk indicator	Optional symbol illumination “talking mouth”, text illumination “Bitte sprechen, Please talk” in green colour or control of external light signals in yellow and green colour	
Connectivity		
Power supply	• PoE+ • Optional local power supply AC 230V • Optional mains node supply DC 48V	• Line supply DC 60V • Central supply DC 24V • Optional local supply AC 230V
Interfaces	2x Ethernet	1x direct connection to PABX
Ethernet protocol	IEEE 802.3u	
Broadcasting protocol	Neumann DS-22 IP / SIP protocol	

Accessories		
Technology	Description	Art. no.:
DS-22 SIP	Power supply unit module AC 230V / DC 48V for assembly in the PCB stack	919 1116 738 6
DS-22 SIP	Two-wire range extension point-to-point/multipoint up to 1000m using existing cable stock and for assembly in the PCB stack	919 1116 801 7
DS-22 SIP	Two-wire range extension point-to-point up to 1000m using existing cable and for external assembly	229 1008 863 7
DS-22 SIP	Fibre optic multi-mode range extension up to 3000m for assembly in PCB stacks	919 1116 934 4
DS-22 SIP	Fibre optic single-mode range extension up to 15000m for assembly in PCB stacks	919 1116 948 9
Analogue	Power supply unit module AC 230V / DC 48V for assembly in the PCB stack	919 1116 7386
	Ready-to-talk indicator with “talking mouth” symbol	213 1111 002 2
	Ready-to-talk indicator with text “Bitte sprechen, Please speak”.	213 1111 003 3
	Horn loudspeaker 4Ω	4 891 2
	Horn loudspeaker 45Ω	213 1120 010 1

Elevator emergency call, modular

The modular elevator emergency call is used in elevator cabins where only a small installation depth is available behind the operating elements.

The standard loudspeaker is an 8Ω loudspeaker with approx. 2000mm connection cable without pressure chamber technology, which reduces the installation depth from approx. 90mm to 35mm. Optionally, if sufficient installation space is available, a horn loudspeaker can be used.

An electret microphone in DS-22 SIP technology or a dynamic microphone in analogue technology with approx. 2000mm connection cable serve as microphones.

An emergency call button as a triggering element of an elevator emergency call with approx. 2000mm connection cable, as well as the display elements for signalling the emergency call triggering and the call readiness with approx. 2000mm connection cable do not belong to the scope of delivery as standard, since these are already provided by many elevator manufacturers in the car design. The modular elevator emergency call has an input for detecting the button triggering, as well as two outputs for controlling the signalling elements.

Furthermore, the modular elevator emergency call includes a housing with the electronics of the connection technology, as well as a power supply housing, which also offers installation space for optional range extensions in 2-wire technology at the DS-22 SIP Technology. These two housings can be mounted on the car roof or under the car.

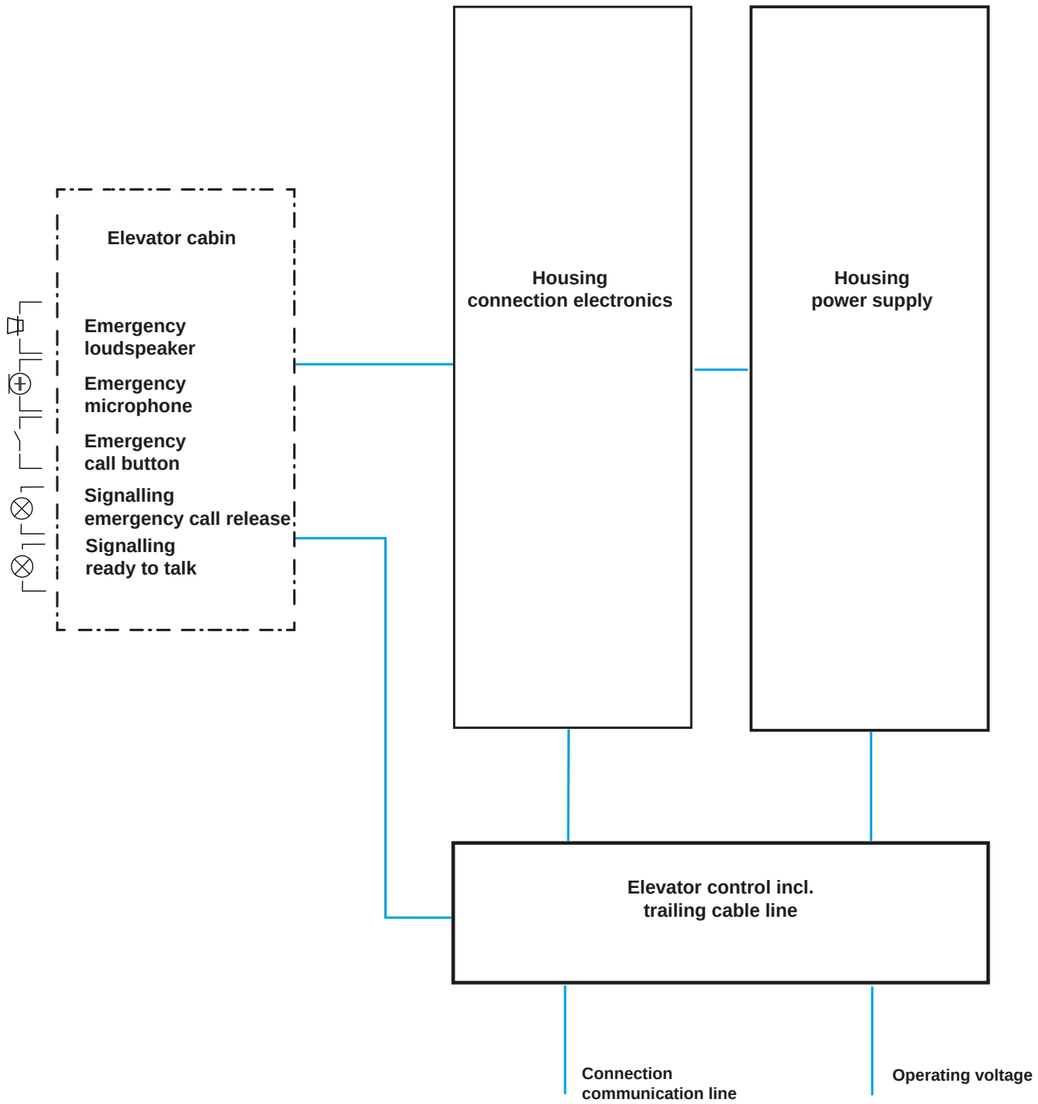
The modular elevator emergency call is available in a DS-22 SIP and an analogue version with different front panels and release elements. Both technologies enable hands-free operation according to emergency call triggering, which means that microphone and loudspeaker are active at the same time. It is a direct intercom connection, meaning that all participants can speak at the same time.

For the DS-22 SIP solution, the manufacturer always recommends the use of a 2-wire modem pair for interference-free line transmission via the elevator's trailing cable to the cabin.

Since, from a wiring point of view, existing lines of the electrical wiring of the elevator control system, e.g. trailing cable lines, almost always have to be used, the assembly of a modular elevator emergency call must always be carried out in consultation with the elevator manufacturer.

Modular elevator emergency call units in DS-22 SIP technology are designed for connection to an Ethernet network node with a range of 100m. The connection of a modular elevator emergency call unit in analogue technology is intended for connection and operation to PABXs in direct dialling mode. The dialling process must be carried out automatically by the PABX.

Technology	DS-22 SIP	Analogue
Art. no.:	8 890 5	8 891 6
Mechanical data		
Release	1 Illuminated push button	
Reachable destinations	1	
Front panel	Not applicable, as direct installation in cabin wall	
Front panel labelling	Not applicable	
Colour front panels	Not applicable	
Dimensions Housing electronics for assembly on or under the elevator cabin	280mm x 180mm x 101mm	
Dimensions power supply housing for assembly on or under the elevator cabin	385mm x 190mm x 180mm	
Installation depths[1] Loudspeaker, microphone, emergency call button if necessary, call readiness indicator	35mm	
Electrical data		
Nominal power	20W	
Quiescent current consumption	≤55mA	≤0mA
Max. Current consumption	≤150mA	55mA
AF-Frequency range	100Hz … 20kHz	300Hz … 3400Hz
Loudspeaker impedance	8Ω	45Ω
Microphone	Electret	Dynamic
Control inputs	DC 12V to DC 60V / 10mA, AC 12V to AC 60V / 10mA	
Control outputs	Max. DC 60V / 0.2A, Max. AC 60V / 0.2A	
Permissible line length	• 100m • Optional 2-wire range extension point-to-point/multipoint up to 1000m using existing cable material • Optional 2-wire range extension point to point up to 1000m with use of existing cable material • Optional multi-mode fibre optic range extension up to 3000m • Optional single-mode fibre optic range extension up to 15000m	
Connection signalling	LED or double LED rings	
Ready-to-talk indicator	Optional symbol illumination "talking mouth", text illumination "Bitte sprechen, Please talk" in green colour or control of external light signals in yellow and green colour	
Connectivity		
Power supply	• PoE+ • Optional local power supply AC 230V • Optional mains node supply DC 48V	• Line supply DC 60V • Central supply DC 24V • Optional local supply AC 230V
Interfaces	2x Ethernet	1x direct connection to PABX
Ethernet protocol	IEEE 802.3u	
Broadcasting protocol	Neumann DS-22 IP / SIP protocol	
Environmental data		
Ambient temperature range	-20°C … +55°C	
Protection class according to DIN EN 60529	Depending on the installation situation of the components	



Accessories		
Technology	Description	Art. no.:
DS-22 SIP	Two-wire range extension point-to-point up to 1000m with use of cores within the trailing cable line	919 1116 918 6
	Horn loudspeaker 4Ω	4 891 2
	Horn loudspeaker 45Ω	213 1120 010 1
	Emergency call button with LED ring signalling	212 1218 107 4
	Ready-to-talk indicator with “talking mouth” symbol	213 1111 002 2
	Ready-to-talk indicator with text “Bitte sprechen, Please speak”.	213 1111 003 3

Elevator emergency call, modular with additional communication modules

The modular elevator emergency call with additional communication modules is used in elevator cabins where only a small installation depth is available behind the operating elements.

The standard loudspeaker is an 8Ω loudspeaker with approx. 2000mm connection cable without pressure chamber technology, which reduces the installation depth from approx. 90mm to 35mm. If sufficient space is available, a horn loudspeaker can be used as an option.

An electret microphone in DS-22 SIP technology or a dynamic microphone in analogue technology with approx. 2000mm connection cable serve as microphones.

An emergency call button as a triggering element of an elevator emergency call with approx. 2000mm connection cable, as well as the display elements for signalling the emergency call triggering and the call readiness with approx. 2000mm connection cable do not belong to the scope of delivery as standard, since these are already provided by many elevator manufacturers in the car design.

The modular elevator emergency call has an input for detecting the button triggering, as well as two outputs for controlling the signalling elements. Furthermore, the modular elevator emergency call includes a housing with the electronics of the connection technology, as well as a power supply housing, which also offers installation space for optional range extensions in 2-wire technology at the DS-22 SIP Technology. These two housings can be mounted on the cabin roof or under the cabin.

For service purposes, this modular elevator emergency call also contains two additional communication modules, for assembly on the elevator cabin, or in the machine room, and for assembly under the elevator cabin, or at the bottom of the elevator shaft. Both communication points serve only as emergency call units for service personnel, for example during elevator maintenance, and each have an illuminated emergency call button, a microphone and a loudspeaker and are only functional in combination with the electronics housing of the modular elevator emergency call.

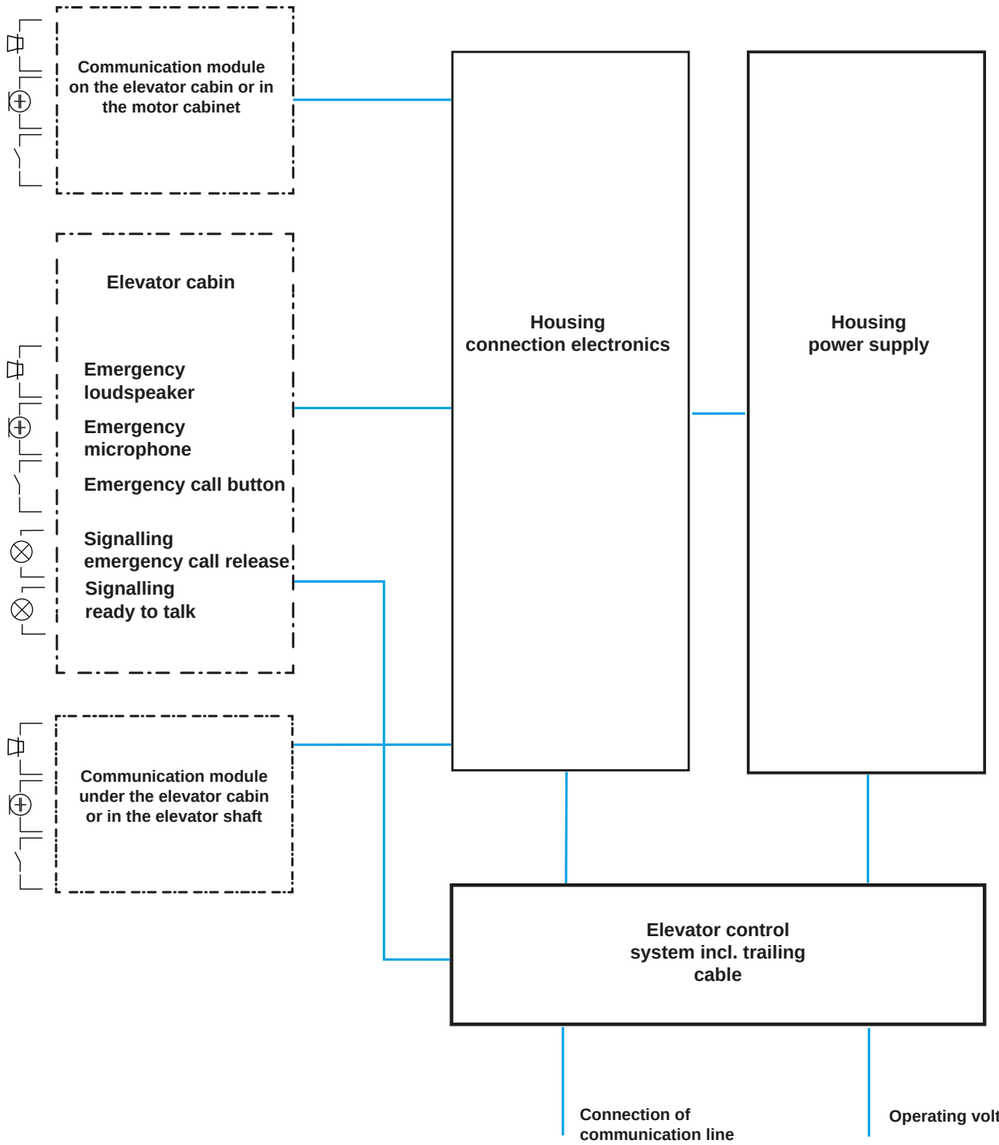
There is still only one connection to the network node or the PBX. There is no communication between the communication modules or between the communication modules and the elevator cabin. The modular elevator emergency call is available in a DS-22 SIP and an analogue version with different front panels and triggering elements. According to emergency call triggering, the technology allows for hands-free operation, i.e. microphone and loudspeaker are active at the same time. It is a direct intercom connection, meaning that all participants can speak at the same time.

For the DS-22 SIP solution, the manufacturer always recommends the use of a 2-wire modem pair for interference-free line transmission via the elevator's trailing cable to the car.

Since, from a wiring point of view, existing lines of the electrical wiring of the elevator control system, e.g. trailing cable lines, must almost always be used, the assembly of a modular elevator emergency call must always be carried out in consultation with the elevator manufacturer.

Modular elevator emergency call units in DS-22 SIP technology are designed for connection to an Ethernet network node with a range of 100m. The connection of a modular elevator emergency call unit in analogue technology is intended for connection and operation to PABXs in direct dialling mode. The dialling process must be carried out automatically by the PABX.

Technology	DS-22 SIP	Analogue
Art. no.:	8 895 0	8 896 1
Mechanical data		
Release	1 Illuminated push button	
Reachable destinations	1	
Front panel	Not applicable, as direct installation in cabin wall	
Front panel labelling	Not applicable	
Colour front panels	Not applicable	
Dimensions Housing electronics for assembly on or under the elevator cabin	280mm x 180mm x 101mm	
Dimensions power supply housing for assembly on or under the elevator cabin	385mm x 190mm x 180mm	
Dimensions communication modules	110mm x 190mm x 111mm	
Installation depths[1)] Loudspeaker, microphone, emergency call button if necessary, call readiness indicator	35mm	
Electrical data		
Nominal power	20W	
Quiescent current consumption	≤55mA	≤0mA
Max. Current consumption	≤150mA	55mA
AF-Frequency range	100Hz … 20kHz	300Hz … 3400Hz
Loudspeaker impedance	8Ω	45Ω
Microphone	Electret	Dynamic
Control inputs	DC 12V to DC 60V / 10mA, AC 12V to AC 60V / 10mA	
Control outputs	Max. DC 60V / 0,2A, max. AC 60V / 0,2A	
Permissible line length	• 100m • Optional 2-wire range extension point-to-point/multipoint up to 1000m using existing cable material • Optional 2-wire range extension point to point up to 1000m with use of existing cable material • Optional multi-mode fibre optic range extension up to 3000m • Optional single-mode fibre optic range extension up to 15000m	
Connection signalling	LED or double LED rings	
ready-to-talk indicator	Optional symbol illumination "talking mouth", text illumination "Bitte sprechen, Please talk" in green colour or control of external light signals in yellow and green colour	
Connectivity		
Power supply	• PoE+ • Optional local power supply AC 230V • Optional mains node supply DC 48V	• Line supply DC 60V • Central supply DC 24V • Optional local supply AC 230V
Interfaces	2x Ethernet	1x direct connection to PABX
Ethernet protocol	IEEE 802.3u	
Broadcasting protocol	Neumann DS-22 IP /SIP protocol	
Environmental data		
Ambient temperature range	-20°C … +55°C	
Protection class according to DIN EN 60529	Depending on the installation situation of the components	



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Technologies at a glance

DS-22 SIP technology			
Connection	Network Connection		
Feeding	Two-pair PoE according to IEEE 802.3bt Class 4, also called PoE+	Standard operation without optional additional components and flow-through operation with “on board” 7W amplifier	
	4-pair PoE according to IEEE 802.3bt Class 8, also called PoE++	Standard operation with optional additional components and flow-through operation with 100V technology	
	Local Supply	DC 48V	
	Node Supply	DC 48V	
	Optional mains supply	AC 230V	
Reach	Up to the next network node		Up to 100m
	Optional 2-wire reach extension point to point		Up to 1000m
	Optional 2-wire reach extension point to multipoint		Up to 1000m
	Optional fibre optic multi-mode reach extension		Up to 3000m
	Optional fibre optic single-mode reach extension		Up to 15000m
LTE / UMTS / GSM radio technology			
Connection	Radio networks		
	LTE networks	700MHz, 800MHz, 900MHz, 1800MHz, 2100MHz,2600MHz	
	UMTS networks	900MHz, 1800MHz, 2100MHz	
	GSM networks	900MHz, 1800MHz	
Feeding	Solar supply	DC 12V	
	Mains supply	AC 230V	
	Local supply	DC 12V	
Solar module	DC12V / 30W		
Energy storage	18Ah		
Analogue technology PBXs			
Connection	2-wire 2-wire with power supply Double 2-wire with power supply		
Feeding	Line supply from the PBX		
	Mains supply	AC 230V	
	Local supply	DC 24V	
Reach			
6-wire technology (NES92) (phase-out / redesign)			
Connection	At the MDK		
Feeding	Via the Connection line 3DA 0,8mm²		
Reach	Via the Connection line	16000m	
	Point-to-multipoint connection (party line, 20 users evenly distributed)	16000m	
4-wire technology (NES90) (EOL)			
Connection	At the MDK		
Feeding	Via the Connection line 3DA 0,8mm²		
Reach	Via the Connection line	16000m	
	Point-to-multipoint connection (party line, 20 users evenly distributed)	16000m	
S0-DSS1 / ISDN technology (EOL)			
Connection	S0-DSS1 at the MDK		
Feeding	Via S0 line		
	Central supply		
	Local supply	AC 230V	
Reach	Point-to-point connection	Up to 1000m	
	Point-to-multipoint connection	Up to 100m	
Replacement	Analogue technology with use of existing cables. IP technology with 2-wire modem for use of the existing cable. LTE / UMTS / GSM radio technology, if necessary with solar supply.		

IP II technology			
Connection	Network connection		
Feeding	Mains supply	AC 230V	
	Node supply	DC 24V	
Reach	Until next network node		Up to 100m
	Optional 2-wire reach extension point to point		Up to 1000m
	Optional 2-wire reach extension point to multipoint		Up to 1000m
	Optional fibre optic multi-mode reach extension		Up to 3000m
	Optional fibre optic single-mode reach extension		Up to 15000m
Replacement	DS-22 SIP Technology optional with 2-wire modem to use the existing cable, but only up to 1000m line length, or optional fibre optic modem with existing fibre optic line laying up to 3000m. LTE / UMTS / GSM radio technology, if necessary with solar supply.		
IP technology			
Connection	Network connection		
Feeding	Mains supply	AC 230V	
	Node supply	DC 48V	
Reach	Until next network node		Up to 100m
	Optional 2-wire reach extension point to point		Up to 1000m
	Optional 2-wire reach extension point to multipoint		Up to 1000m
	Optional fibre optic multi-mode reach extension		Up to 3000m
	Optional fibre optic single-mode reach extension		Up to 15000m
Replacement	DS-22 SIP Technology optional with 2-wire modem to use the existing cable, but only up to 1000m line length, or optional fibre optic modem with existing fibre optic line laying up to 3000m. LTE / UMTS / GSM radio technology, if necessary with solar supply.		
U-DSS1-technology (EOL)			
Connection	U-DSS1 at MDK		
Feeding	Via the U line		
	Central supply		
	Local supply	AC 230V	
Reach	Up to 7000m		
Replacement	Analogue technology with use of existing cables. DS-22 SIP technology with 2-wire modem to use the existing cable, but only up to 1000m line length. LTE / UMTS / GSM radio technology, if necessary with solar supply.		
GSM (EOL)			
Connection	GSM radio network		
Feeding	Solar supply	DC 24V	
	Mains supply	AC 230V	
	Local supply	DC 24V	
Solar module	DC 12V / 28W		
Energy storage	DC 12V / 15Ah		
Replacement	LTE / UMTS / GSM radio technology, possibly with solar supply.		
GSM-R (EOL)			
Connection	GSM-R radio network		
Feeding	AC 230V		
Analogue technology 2-wire (public telephone network)			
Versions	NRT80 FeAp86		
Connection	Public telephone network		
Feeding	Via the telephone line		
Reach			
Replacement	Analogue technology with use of existing cablesDS-22 SIP technology with 2-wire modem for use of existing cables, but only up to 1000m line length, or optional fibre optic modem with existing fibre optic cable laying up to 3000m line length. LTE / UMTS / GSM radio technology, if necessary with solar supply.		

The technology in detail

IP protection classes

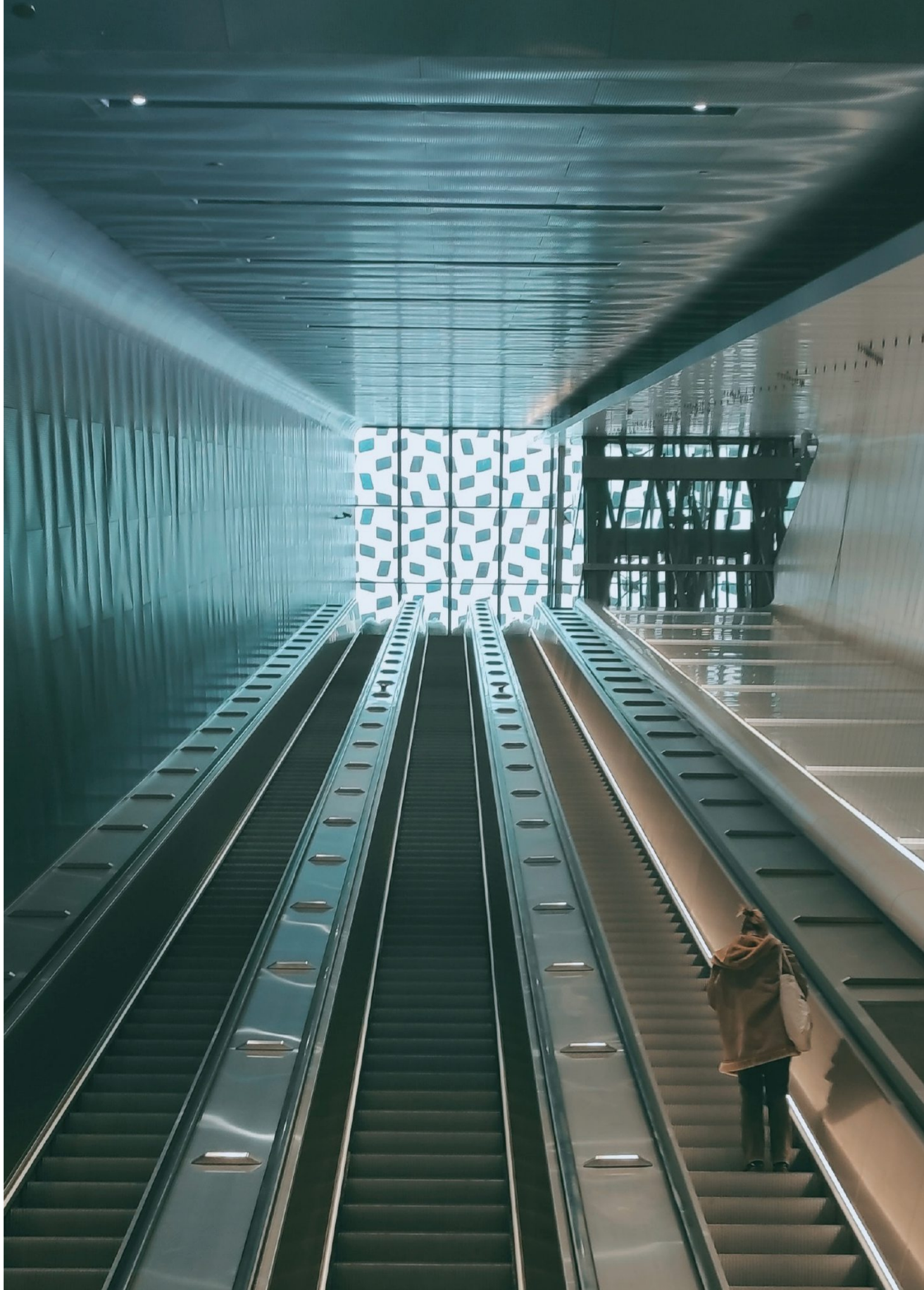
According to DIN 40 050 / IEC / VDE 0470 / EN 60529.

The degrees of protection are identified by internationally valid abbreviations: a two-digit IP code number (International Protection) indicates the degree of protection of the enclosure against the ingress of foreign bodies, dust and water.

Example of a code number: IP65[1)].

First IP code number	Protection levels for contact and foreign body protection	Second IP code number	Degrees of protection for water protection
0	Unprotected	0	Unprotected
1	Protected against the penetration of large foreign bodies with a diameter greater than 50mm.	1	Protected against the penetration of vertically falling dripping water
2	Protected against the penetration of medium-sized foreign bodies with a diameter greater than 12mm	2	Protected against dripping water falling at an angle of up to 15° from the vertical.
3	Protected against the penetration of small foreign bodies with a diameter greater than 2.5mm.	3	Protected against water spray falling at any angle up to 60° from vertical
4	Protected against the penetration of tools, wires (granular foreign bodies) with a diameter greater than 1.0mm.	4	Protected against water splashing against the equipment from all directions.
5	Complete protection against contact with live or internal moving parts. Protection against harmful dust deposits. The ingress of dust is not completely prevented, but the dust must not penetrate in such quantities that the function is impaired.	5	Protected against water jets from a nozzle directed against the equipment from all directions.
6	Complete protection against contact with live or internal moving parts. Protection against ingress of dust.	6	Protected against strong jets of water or temporary flooding
		7	Protected against temporary immersion in water, under the specified pressure/time conditions of 0.15-m
		8	Protected against permanent immersion in water
		9K	Protected against water directed against the enclosure from any direction under high pressure/ steam jet cleaning

1) If no IP degree of protection is specified, the letter X replaces the respective digit, e.g. IPX4.



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