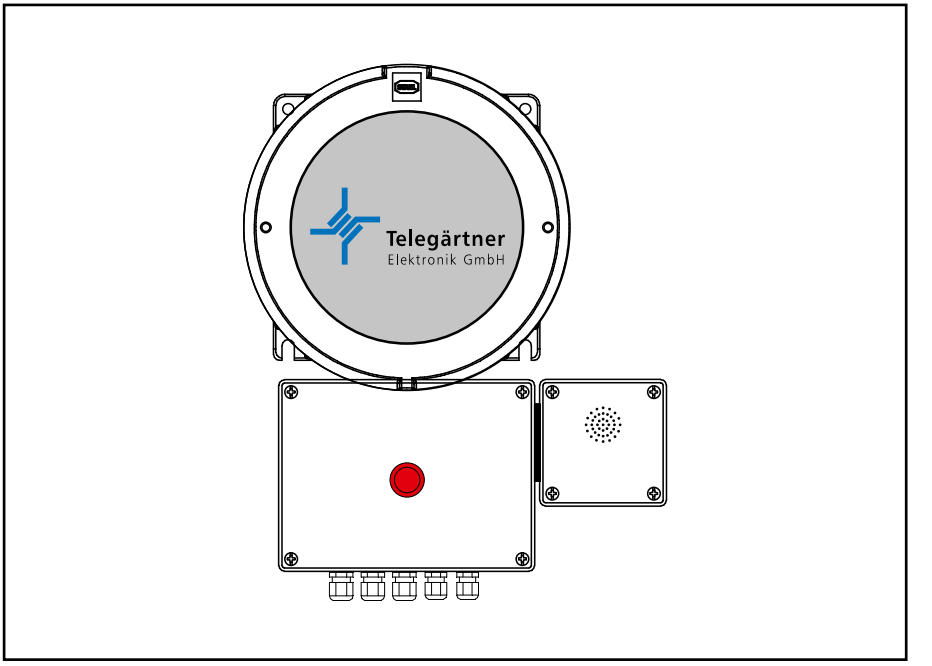
Telegärtner
Elektronik

EN

NRT 1 EX G3



Mounting and installation instructions

IMPORTANT SAFETY INSTRUCTIONS

PLEASE KEEP THIS OPERATING MANUAL WITH THE DEVICE

This manual contains important instructions that must be followed during the installation and configuration of the device.
Please read all instructions carefully before starting work and keep this manual for future reference.
The law requires that we provide important information for your safety and advise you how to avoid damage to the device and other equipment. Telegärtner Elektronik GmbH is not liable for damage resulting from the negligent or intentional disregarding of instructions in this manual.

- Do not allow liquid to enter inside the emergency call device. Electric shocks or short circuits can result.
- Lay the connecting cables in such a way that they do not cause accidents.
- The connecting cables must not be installed or connected during thunderstorms.

TECHNICAL SUPPORT

If you have difficulties with the commissioning or programming of the product, our experienced technical support staff is available to provide assistance.

Monday – Thursday from 7 am – 4.30 pm
Friday from 7 am – 1 pm

E-Mail: service@telegaertner-elektronik.de
Telephone: +49 7951 488 9200

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ESD WARNING

You could be electrostatically charged.
Before opening the housing and working on the wiring, discharge yourself by touching earthed metal parts in order to avoid damage to the device.

Inhaltsverzeichnis

1. Set-up and function

1.1 General information

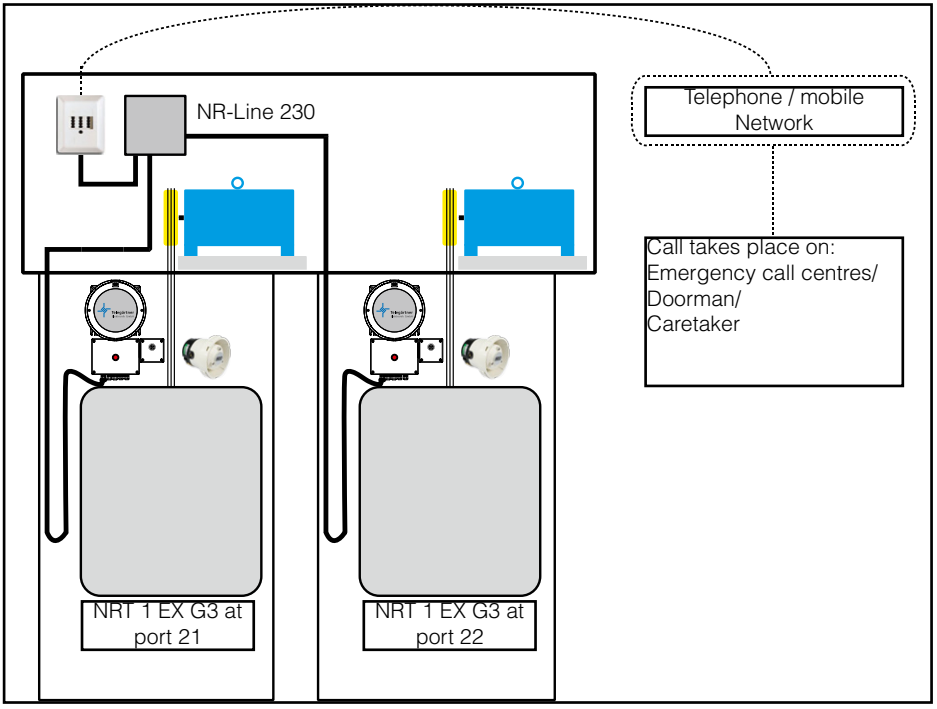
The NRT 1 EX G3 emergency call device is the successor to the NRT 1 NT EX. An uninterruptible power supply of 24V DC is required for operation.

Features

- Potential-free inputs for emergency call buttons
- Automatic testing of microphone and loudspeaker
- Input for Button „End of alarm“
- Outputs for pictogram displays „Please wait“ and „Please speak“
- Integrated microphone and emergency button
- With NR-Line 230, up to six NRT 1 EX G3 on a single phone line

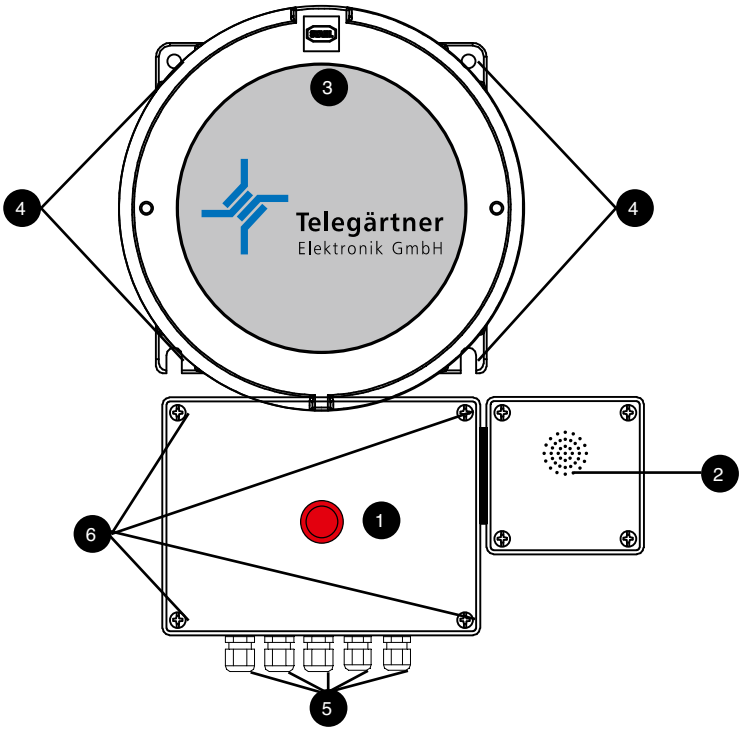
The device can be configured either via a compatible control centre (NRZ) or a telephone with tone dialling capability.

Example: Two NRT 1 EX G3 on a single phone line using a NR-Line 230.



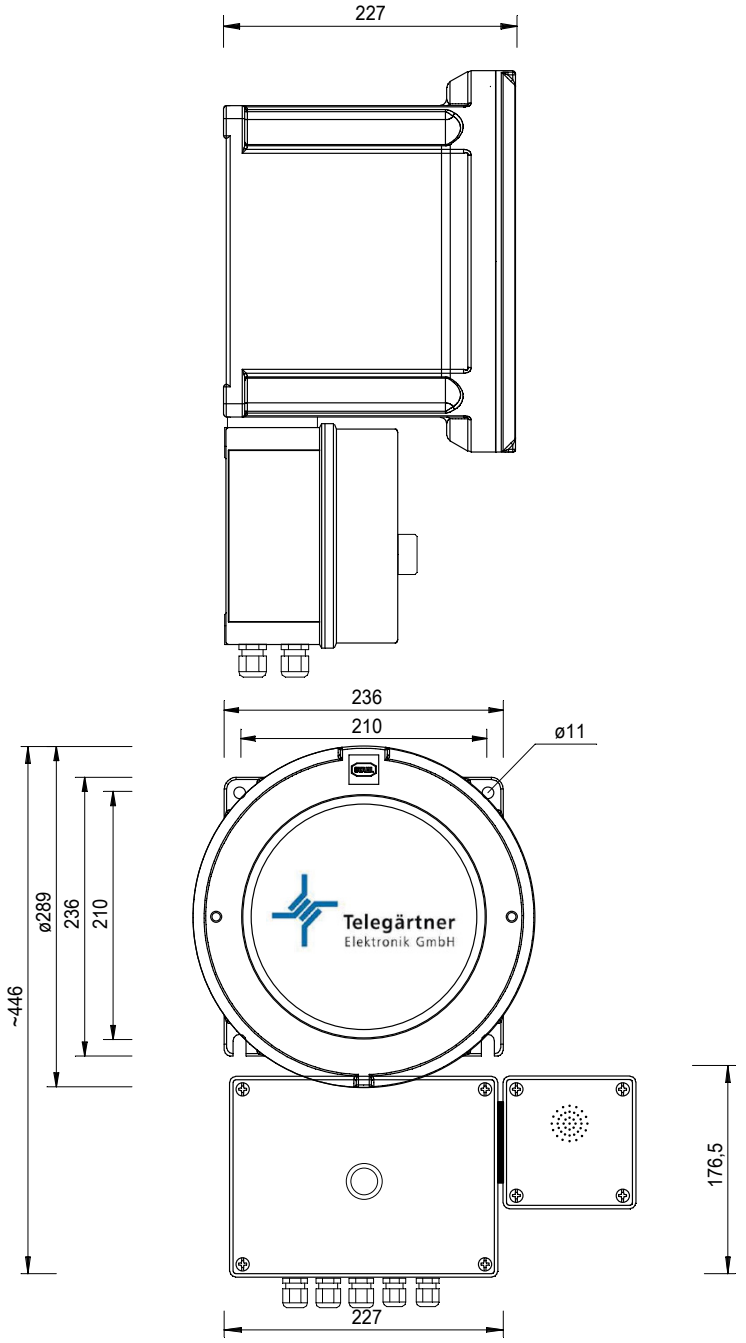
1.2 Description of connections and control elements

1.2.1 Overview

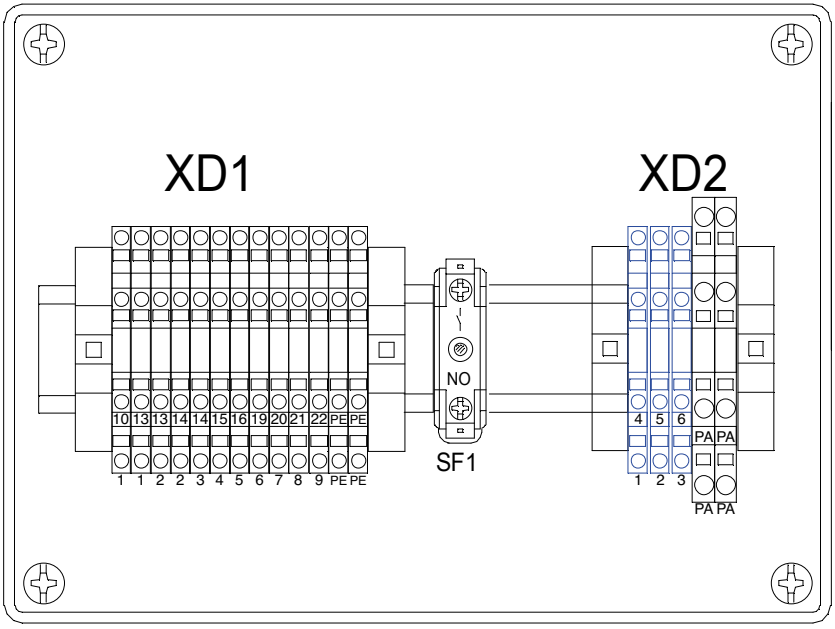


1. Integrated emergency call button.
2. EX-protected microphone. Is activated when an emergency call is triggered by the integrated emergency button.
3. EX-housing for circuit board. Must not be opened!
4. Fixing holes
5. Glands for cables. Unused cable glands must be closed with suitable plugs.
6. Screws for terminal box.

1.2.2 Dimensions / housing drawings



1.2.3 Terminal designations



Terminal block XD1:

No	Description	No	Description
1	Power supply +24 V DC	13/ 14	Input for emergency call button 1, potential-free contact (NO/NC)
2	Power supply GND	15/ 16	Input for emergency call button 2, potential-free contact (NO/NC)
3/4	Configurable input, potential-free contact (NO)	19	Output EX - speaker, +
5	Output pictogram display „Please wait“, +	20	Output EX - speaker, -
6	Output pictogram display „Please wait“, -	21	Phone line, A
7	Output pictogram display „Please speak“, +	22	Phone line , B
8	Output pictogram display „Please speak“, -	PE	Connection for protective earth conductor
9/ 10	Output pictogram display „Please speak“, -		

Terminal block XD 2:

No.	Description	No	Description
1	Microphone 1, + (white wire)	4	Microphone 2, - (brown wire)
2	Microphone 1, - (brown wire)	5	Microphone 3, + (already connected)
3	Microphone 2, + (white wire)	6	Microphone 3, - (already connected)
PA	Connection „Shield microphone cable“	PA	Connection „Shield microphone cable“
PA	Connection „Shield microphone cable“	PA	Connection „Shield microphone cable“

2. Mounting

2.1 Prerequisites

To operate the NRT, at least one analogue telephone connection in one of the following versions is required:

- Analogue telephone main connection
- Analogue extension of a telephone system
- Telegärtner GSM gateway

The transfer point (TAE socket) should be in the machine room or near the clamping point of the suspension cable.

The telephone connection must be reserved exclusively for the NRT, i.e. no other dialling devices (such as modems or fax machines) may be connected to the same connection.

Two free wires in the suspension cable are required for the telephone line. In order to avoid interference, twisted pair and shielded cables must be used.

An uninterruptible power supply of 24V DC must be provided for NRT. Alternatively, an uninterruptible power supply is available from Telegärtner as an additional device (Art. No. 601364).

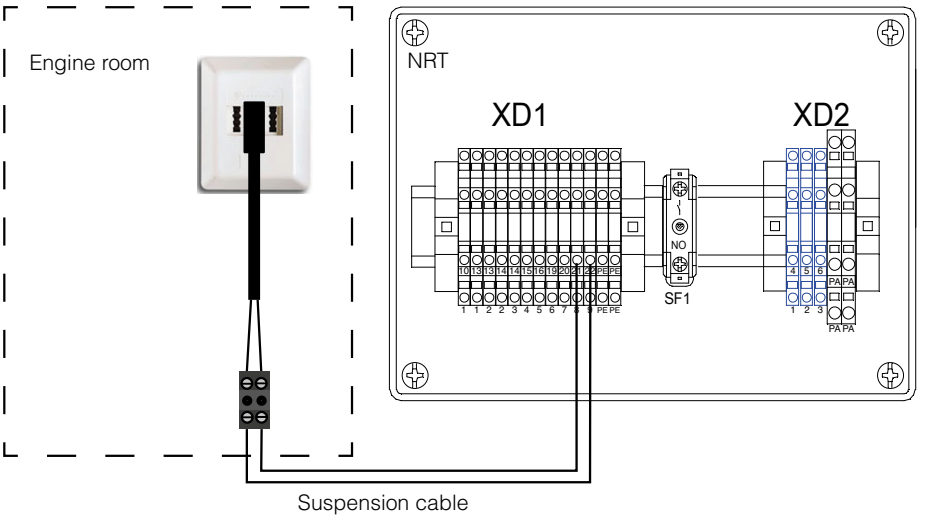
2.2 Mounting location

The emergency call device is intended for mounting on the roof of the lift car.
The loudspeaker is to be placed in such a way that sufficient acoustic sound coverage of the car and the lift shaft is ensured.

2.3 Telephone line

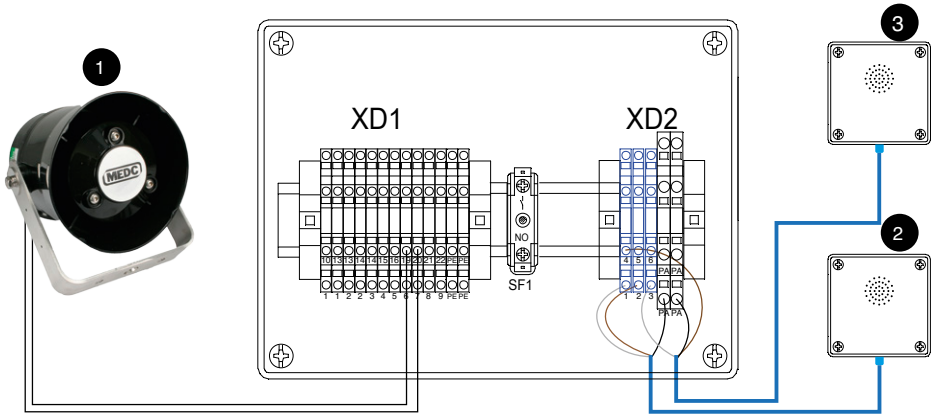
Route the telephone cable from the machine room to the NRT via the suspension cable and connect it to clamp 21 and 22 on terminal block XD1. The polarity does not need to be observed.

We expressly point out that interference on the voice connection may occur if no separate suspension cable or shielded wire pair is used in the suspension cable.



2.4 Loudspeaker / Microphone

Depending on the model, the loudspeaker is mounted either on the cabin roof or as a ceiling loudspeaker for the cabin. The loudspeaker is to be placed in such a way that sufficient sound coverage of the car and the elevator shaft is ensured.



1. EX-Loudspeaker for mounting upon the cabin roof. The loudspeaker is connected to clamps 19 and 20 of terminal block XD1.
2. Microphone in Ex-version for mounting in the cabin. The microphone is connected to clamps 1 and 2 of terminal block XD2.
   Terminal 1 = microphone + (white wire), terminal 2 = microphone - (brown wire).
   The shield of the microphone cable is connected to a free clamp “PA”.

3. Microphone in Ex-version for mounting in the cabin. The microphone is connected to clamps 3 and 4 of terminal block XD2.
   Terminal 3 = microphone + (white wire), terminal 4 = microphone - (brown wire).
   The shield of the microphone cable is connected to a free clamp “PA”.

Connect only one device at a single input for the microphones or output for the loudspeaker.
The microphone used must be “Microphone NRT 1 EX G3”, Art. No. 601361 or! “Microphone NRT 1 EX G3”, Art. No. 601367!

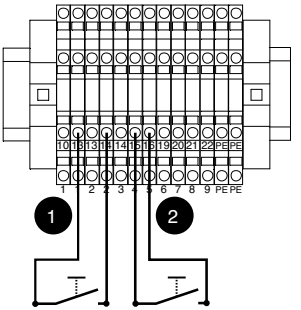
2.5 Emergency call buttons

Up to two potential-free emergency call buttons can be connected directly to the NRT.
An emergency button is already integrated in the device and is used to trigger an emergency call from the roof of the elevator car.
The connected emergency buttons must switch the input potential-free!

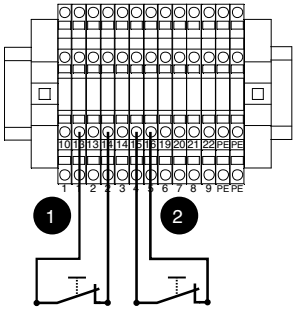
The following table shows which emergency button activates which microphone:

Button	Microphone	Usage
1	1	Car
2	2	Under the car
3 (integrated)	3 (integrated)	Top of the car

A XD1



B XD1



A

1. Emergency call button (Clamp 13 & 14) at COP, normally open (NO)
2. Emergency call button (Clamp 15 & 16) under the car, normally open (NO)

B

1. Emergency call button (Clamp 13 & 14) at COP, normally closed (NC)
2. Emergency call button (Clamp 15 & 16) at under the car, normally closed (NC)

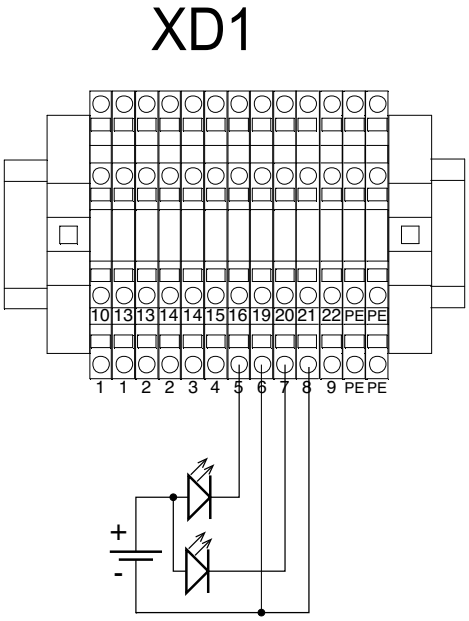
Unused emergency call buttons must always be configured as normally open.
From the emergency call buttons, either the normally closed (NC) contacts or the normally open (NO) contacts can be used.
The type of contact (normally closed or normally open) can be configured. The normally open (NO) contact type is pre-set ex works.

2.6 Pictograms

Illuminated fields with pictograms according to EN 81-28:2018 can be connected to terminal block XD1.

The terminal designations are:

Clamp 5	+ for pictogram „Please wait“
Clamp 6	- for pictogram „Please wait“
Clamp 7	+ for pictogram „Please speak“
Clamp 8	- for pictogram „Please speak“



2.7 Configurable input

To adapt the behaviour to certain situations, the NRT has a configurable input at clamps 3 & 4 on terminal block XD1.

The input can be used in the following operating modes:

1. Off

   Input is deactivated.

2. Filter

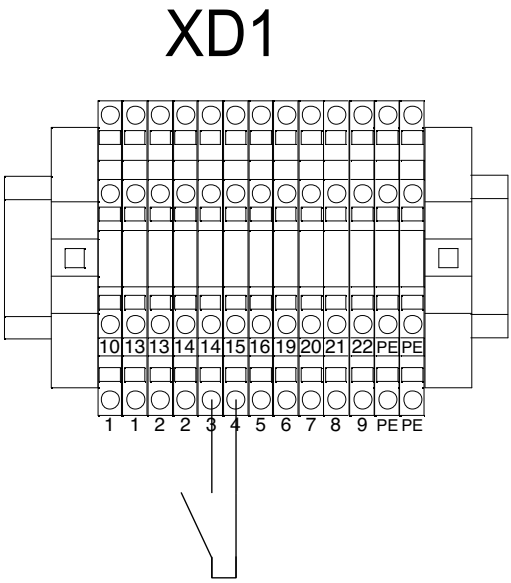
   When the contact is bridged, the emergency call is filtered (misuse suppression) in accordance with EN 81-28:2018.

Emergency call test (LMS)

If the input is configured as LMS and is bridged, pressing an emergency call button does not initiate an emergency call, but only an emergency call test as follows:

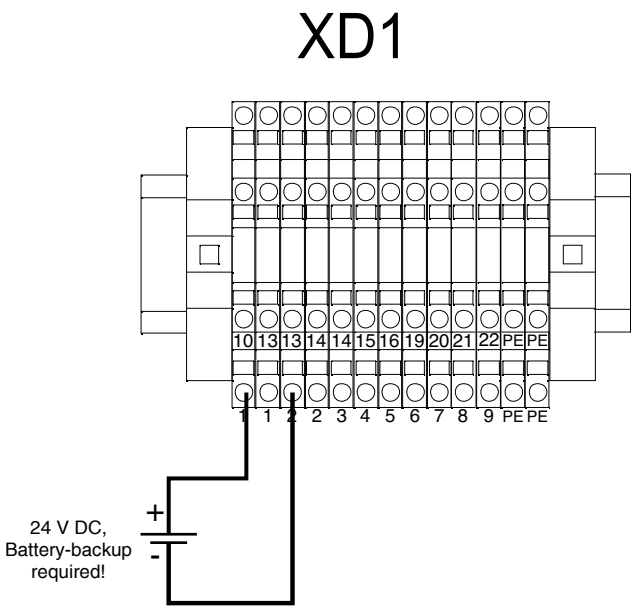
1. The panel displays (pictograms) both light up (function has to be checked by LMS).
2. The audio test is carried out for all microphone / loudspeaker combinations for which this has been activated.
3. The panel displays (pictograms) are switched off.

Connection example:



2.8 Supply voltage

The NRT requires an uninterruptible supply voltage of 24 V DC, which is connected to the terminal block XD1, clamp 1 + 2. Please pay attention to correct polarity (1= + / 2= -)!

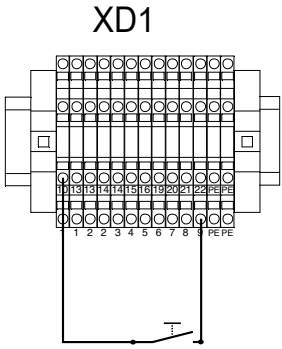


Important note:
The supply voltage may only be connected during commissioning.

2.9 Button “End of alarm”

A button for initiating the end of alarm can be connected to clamps 9 & 10 of the XD1 terminal block.
After a successful rescue of persons, the button can be pressed by the rescue staff.
The end of alarm message is automatically sent to the emergency call centre and the active emergency call is deleted.

Alternatively, the end of the emergency call can also be triggered by the NRZ alarm receiver.



3. Commissioning

The commissioning can be carried out after establishing all the necessary electrical connections.

3.1 Connecting the supply voltage

The installation is complete when the operating voltage is connected with the correct polarity.
The NRT carries out a short self-test.

3.2 Checking the installation

Emergency call buttons

It is essential to check the correct function of all connected emergency call buttons. If a button is pressed for > 3 seconds, a dial tone can be heard from the loudspeaker. In addition, a tone sequence (20x beep) sounds in unprogrammed devices.

If the “INPUT” terminal is wired and configured as an emergency call filter, it must be temporarily removed. Otherwise the triggering is suppressed via the emergency call button.

Alternatively, the filter can also be bypassed. To do this, the emergency call button must be pressed for a configurable time.

The time is set to 30 seconds ex works and can be changed. Please take a look at page 27.

Important note:

Emergency call buttons must remain functional even if the main lift power supply fails.

Voice connection

In order to check the quality of the voice connection, a connection to the emergency call device must be established by means of a telephone call (or a machine room telephone):

1. Call the telephone number of the connection from a mobile phone, extension or other telephone. For single device operation, please continue with point 3.
2. If an emergency call device responds with the post-dial request, dial the suffix digit (21-26) for the required emergency call device.
3. The emergency call device answers with a beep. By entering the security code 0000 and then #*06, a voice connection (4-tone sequence) is established.

There are various setting options that can be used to adjust the device by entering the following keys on the telephone:

Key	Function
1	Switch to external call station SM#1
2	Reduce the microphone sensitivity
3	Increase the microphone sensitivity
4	Switch to external call station SM#2
5	Reduce the loudspeaker gain
6	Increase the loudspeaker gain
7	Switch to internal call station 3
8	Accept the active connection
9	Disconnect the connection
0	Delete the emergency call and hang up

Each button press is confirmed by 1x beep from the emergency call device. If the microphone sensitivity or loudspeaker gain is at the maximum or minimum value, this is acknowledged with two beeps.

Important information:

- Configure the line impedance of the NRT to the corresponding value (fixed network or GSM).
- Check the voice connection to each connected call station (change with keys 1, 4 and 7).
- Depending on the installation location, the distance between microphone and loudspeaker, etc., acoustic feedback may occur. Please be very careful, therefore, when changing the parameters. Under certain circumstances, it may not be possible to recognise tone dialling signals during acoustic feedback. In this case, please remove the microphone and reduce the microphone sensitivity or loudspeaker gain.

3.3 Carrying out the configuration

If all previous items have been completed successfully, the NRT must be configured.
Please refer to chapter 4 of this manual.

When connected to a Telegärtner NRZ alarm receiver, it can carry out all configuration tasks.

3.4 Carrying out the emergency call test

After all changes to the installation or configuration are complete, a final emergency call test must be performed.

Important note: If emergency call filtering is activated, this must be taken into account. The following points at least must be checked during an emergency call test:

- The emergency call must be received quickly at the desired emergency call centre, i.e. without redialling if possible.
- The emergency call personnel must be able to clearly assign the lift.
- The voice connection must be interference-free and comprehensible in both directions.
- In addition, further points can be checked where applicable:
    - Callback to the lift car should be possible
    - Emergency call filtering with open door
    - The function of the pictogram displays “Please wait” and “Please speak” and the correct assignment

4. Configuration of NRT 1 EX G3

4.1 General information

The NRT can be programmed in two different ways:

1. Configuration via a touch-tone telephone
2. Configuration via the control centre

Before the configuration of the emergency call device, make sure that all steps described in the Assembly chapter have been carried out.

4.2 Function

Connection

The NRT 1 EX G3 can be connected to control centres that support the Telegärtner (NRZ) or P100 data protocol.

It is also possible to connect to touch-tone telephones (porter, janitor, etc.). For each of the four possible call numbers that the emergency call device can call in the event of an emergency call, the destination of the connection is freely selectable; i.e. emergency phone number 1 could be connected to a telephone at a gate, emergency phone number 2 to the mobile phone of a caretaker, emergency phone number 3 to a control centre with Telegärtner data protocol and emergency phone number 4 to a control centre with P100 data protocol.

There are six different options (identifiers) for connection to telephones:

Identifier	Description
Telephone	Emergency call destination is a telephone. Acknowledgement is not required. The voice connection is established immediately after dialling the telephone number. Redials are only performed by the NRT if the destination is busy. **Attention:** This identifier must not be used if the call can also be answered by an answering machine or a mobile box.
Telephone + acknowledgement	The emergency call destination is a touch-tone telephone. Acknowledgement by pressing a number key on the called telephone is mandatory for establishing a voice connection. Redials are carried out by the NRT until they are acknowledged.
Telephone + optional acknowledgement	The emergency call destination is a touch-tone telephone. Acknowledgement by pressing a number key on the called telephone is possible, but not necessary. The emergency call device also automatically detects if the called telephone is off-hook and if a voice connection is available. The voice connection is automatically established. **Attention:** This identifier must not be used if the call can also be answered by an answering machine or a mobile box.

Telephone + voice announcement	The emergency call destination is a touch-tone telephone. The called telephone first receives a voice announcement to inform the called party of the reason for the call, the location of the lift and to carry out the acknowledgement. This voice announcement is freely definable and can be recorded via a telephone command (see page 32). The announcement is played cyclically until an acknowledgement is made via a number button on the telephone or the device dials the next emergency number.
P100 alarm receiver	The emergency call destination is a control centre that can process the P100 protocol. When the emergency call centre has been reached, the emergency call device exchanges a short data protocol so that the emergency call can be identified and assigned. In case of errors, which cannot be corrected during transmission of data, the dialling attempts are continued.
NRZ alarm receiver	The emergency call destination is a control centre that can process the NRZ protocol from Telegärtner. When the connetion between NRT and NRZ is established, the emergency call device exchanges a short data protocol so that the emergency call can be identified and assigned. In case of errors, which cannot be corrected during transmission of data, the dialling attempts are continued.

Emergency call filtering

Emergency call filtering is used to filter out fake emergency calls or to delay an emergency call. If this function has been configured accordingly and the input (Terminal XD1, clamps 3&4) at the NRT has been wired accordingly, the emergency call for the respective call station is not triggered.

Emergency call filtering is not activated while a stored emergency call is present. See also “Emergency call end/Acknowledge emergency call”.

The filter can be bypassed for test purposes (Filter bypass). To do this, the emergency call button must be pressed for a configurable time. The time is pre-set to 30 seconds ex works.

Dialing

If the emergency call has been accepted as a “real” emergency call (see “Emergency call filtering”), the pictogram display for “Please wait” is activated. The NRT dials the first configured emergency number. Dialling and audible tones of the telephone line can be heard from the loudspeaker for checking purposes.
If an additional acoustic signal is required while an emergency button is pressed, the emergency horn can be activated. If the emergency horn is activated, the loudspeaker plays a signal tone until the first emergency number is dialled.
If the reception centre does not answer immediately (busy, wrong number, ...), the NRT hangs up and dials the next programmed number after approx. ten seconds. The number of dialling attempts can be set (ex works 12 dialling attempts are preconfigured).
The yellow “Please wait” display is active during the entire call set-up.

Reassuring text

To reassure the trapped person, a voice announcement can be played into the lift car after the emergency call button has been pressed. This announcement is played before each dial attempt. Activating announcements is only possible via configuration using a touch-tone telephone (see “#* 73 – Reassuring text” on page 31).

Announcement text for identification (only when connected to a telephone)

If the NRT is configured to call a telephone (caretaker, 24-h manned gate,...), a voice announcement can be recorded, which the NRT plays back to the emergency call recipient before the voice connection with the person trapped is established.

If the emergency call is acknowledged from the telephone, the NRT automatically activates the voice connection to the lift car.

Recording, checking and activating announcements is only possible via configuration using a touch-tone telephone (see „#*77 - Record “Identification” announcement“ at page 32).

Voice connection

If the emergency call has been successfully made, the voice connection to the lift car is activated. The call station that triggered the emergency call is automatically activated.

The pictogram display for “Please speak” is activated at the “PICTO” output to indicate that the call station is ready to speak. At the same time, a 4-tone sequence sounds on the loudspeaker for acoustic signalling.

Ending the voice connection

The emergency call device automatically recognises when the voice connection of the called telephone/control centre has been disconnected by a busy tone from the telephone network.

Otherwise, the voice connection is automatically disconnected after the programmed communication time has elapsed. It is also possible to hang up the phone if the called party presses the “9” key on the telephone.

Emergency call end/Acknowledge emergency call

The device offers two different operating modes for the emergency call end.

Automatic emergency call end:

An emergency call is automatically terminated after a voice connection. This operating mode is pre-set ex works.

Manually according to EN81-28:2018:

An emergency call remains stored until the emergency call device has been informed of the emergency call end.
There are several ways to initiate the emergency call end:

1. After the rescue and functional check of the lift, the rescue service presses the emergency call button and informs the emergency call centre about the successful freeing. The call is then ended by the emergency call centre by pressing the 0 key on the telephone.
2. The rescue service presses the “End of alarm” button connected to the NRT.
   The NRT then reports the emergency call end to the emergency call centre.
3. The emergency call centre triggers the emergency call end via the reception software.

Important note:
As long as an emergency call is stored, the yellow pictogram display in the lift car lights, the emergency call filtering is disabled and the emergency call device can be called at any time despite activated call protection. This operating mode complies with the upcoming standard DIN EN 81-28:2018 and can be activated if required.

Calling

The control centre or the rescuer may call the emergency call device to inform the trapped person about the status of the rescue. The number of the emergency call device is dialled and a voice connection to the call station at which an emergency call was last triggered is automatically established.

If call protection has been activated, a stored emergency call must be present for the device to establish the voice connection or the corresponding call protection code must be entered on the device.

When the device is called, the following direct commands can be entered on the telephone keypad:

Key	Function
4	Automatic change of voice direction (default setting)
7	Listening
*	Speaking

Messages

If the emergency call device is connected to a control centre with Telegärtner or P100 data protocol, the NRT can send fault or clear messages for the following events:

Audio test faulty :
The automatic audio test was not successful, i.e. the loudspeaker or microphone does not work.

Emergency button test faulty:
Passive test:
The passive test of the emergency call button constantly checks if it is activated all the time or if the supply line is interrupted when a normally closed contact is used.
A corresponding message is transmitted if one of the two cases occurs.

The audio test is linked by the test intervals to the time of the routine call, i.e. these tests are carried out after the routine call and the corresponding messages are sent.

Timer function

The NRT has a routine call for function and line monitoring. Routine calls can be programmed daily, weekly, monthly or, for example, at a fixed time at 3-day intervals. The destination number of the routine call can be either a control centre with NRZ or P100 data protocol. Activation of the routine call on a telephone is also possible. A recorded Morse tone sequence T E S T distinguishes the routine call from a normal emergency call.

Important note:
With the upcoming EN81-28:2018 standard, it is necessary that an unsuccessful routine call is signalled by alternating flashing pictogram displays in the lift car. This mode can be activated in the emergency call device. For details, see page 28.

Signals

To display different operating and error conditions, different tone sequences are used by the emergency call device:

Tone sequence	**Meaning**
1 x beep	Device expects an input
2 x beep	Device confirms an input
40 x beep	Incorrect entry of parameters
Slow, alternating tone sequence	Incorrect security code input or unknown command
2 x quickly alternating tone sequence	Post-dial request

4.3 Programming via telephone

General Information

Access to the most important device parameters is possible via the telephone configuration. In addition, the voice announcements for an emergency call can only be recorded by telephone programming.

Dial-in and security code

To enter the telephone configuration mode, please proceed as follows:

1. Call the NRT from a touch-tone telephone.
2. After dialling in via the telephone number, the NRT responds with a beep.
3. After the beep, a maximum of four seconds is available to enter the valid security code using the number keys on your telephone (factory setting: 0000). A correct security code is confirmed with a beep.
4. You are now in telephone configuration mode and you can enter the required configuration commands in any order. The connection is automatically disconnected if a new command is not entered within 30 seconds.

Changing from a voice connection back to programming mode is possible at any time via the following key combination:

NRT reaction	Inputs on the phone
	##
Beep	
	Security code (ex-works: 0000)
2xBeep	
	Input of programming commands

Telephone commands

#*00 - Input of the emergency numbers

This command defines the telephone numbers dialled after the emergency call button is pressed.

Dialling always begins with the first telephone number and continues until the emergency call has been successfully acknowledged. The number of dialling attempts can be set.

The “#” sign while entering a telephone number causes a pause of one second,
the entry of a “*” waits for a dial tone.

NRT reaction	Inputs on the phone
	#*00
Beep	
	1st telephone number, max. 25 characters
If no input for 4 seconds, beep	
	2nd telephone number, max. 25 characters
If no input for 4 seconds, beep	
	3rd telephone number, max. 25 characters
If no input for 4 seconds, beep	
	4th telephone number, max. 25 characters
2 x Beep	

#*01 - Dialling mode

The NRT supports the DTMF (tone dialling) and DP (pulse dialling) method. There is the additional “Dedicated-line” option. In this mode there is no dialling after pressing the emergency call button. The call must be transferred from a telephone system or the exchange.

NRT reaction	Inputs on the phone
	#*01
Beep	
	0 = pulse dialling 1 = tone dialling (factory setting) 2 = Dedicated line
2 x Beep	

#*02 - Dialling attempts

For safety reasons, the number of dial-up attempts for each event (emergency call, routine call, messages) is limited ex works to a maximum of 12 attempts. This value can be reduced if necessary or set to unlimited at your own risk.

Telegärtner Elektronik GmbH is not liable for any connection costs that may arise when using the “unlimited” setting.

NRT reaction	Inputs on the phone
	#*02
Beep	
	Dial attempts, maximum: 1 - 12, or * = unbegrenzt
2 x Beep	

#*03 - Communication time

The communication time is limited for safety reasons. After the communication time has elapsed, the voice connection is terminated, and the NRT hangs up.
The communication time is limited to 6 minutes ex works.

NRT reaction	Inputs on the phone
	#*03
Beep	
	Communication time: 1 – 9 (1 to 9 minutes) or 0 = 30 minutes
2 x beep	

#*04 - Configurable input

The configurable input reacts when the clamps 3 & 4 on terminal block XD1 are closed potential-free.

NRT reaction	Inputs on the phone
	#*04
Beep	
	0 = inactive 1 = no emergency call in case of misuse, emergency call filtering according to EN81-28 (factory setting) 2 = emergency call test for electronic lift attendant systems (LMS)
2 x Beep	

Note: Ex works, the emergency call filter only works for emergency call buttons 1 and 2. The emergency call buttons integrated in the NRT are not filtered.

#*05 - Alarm options

The alarm options are used to make the following settings for each emergency call button:

Example:

Input #*05	→ Input 1	→ Input 1	→ Input 1	→ Input 0	→ Input 3
	Selection of the emergency call button In the example, button 1 can be configured.	Should the selected key be used? Key 1 is used in the example.	Selection whether the emergency call button to be configured is a normally open contact (NO) or a normally closed contact (NC). In the example, a normally closed contact (NC) is connected.	Activate or Deactivate the emergency call filter for the selected button.	Enter the time how long the button must be pressed to trigger the emergency call.

NRT reaction	Inputs on the phone
	#*05
Beep	
	Selection of the emergency call button: 1 - 3 Emergency call button connected? 0 = not connected 1 = connected Type of contact: 0 = normally open contact 1 = normally closed contact Emergency call filtering for key active? 0 = no 1 = yes Alarm latency: 1..9 seconds
2 x Beep	

#*06 - Voice connection

This command toggles from programming mode to voice connection. The communication is established to the last active call station.

NRT reaction	Inputs on the phone
	#*06
4-tone-sequence	

Note: After switching to voice connection, it is possible to adjust the loudspeaker volume and microphone sensitivity during voice operation.

Please refer to the information on voice connection on “Voice Connection” on page 19.

#*07 - Installation voice connection

Use the #*07 command to exit the programming mode and go directly to voice mode with the last active call station. In addition to the previous #*06 command, the communication time for the subsequent connection is set to 30 minutes.

NRT reaction	Inputs on the phone
	#*07
4-tone-sequence	

#*08 - Incoming Call protection

Incoming call protection prevents unauthorised persons from receiving a voice connection to the NRT by dialling the telephone number of the emergency call device selectively or accidentally. If incoming call protection is activated, the telephone connection is automatically disconnected after a few seconds, if no valid security code or the voice connection code (see command #*60) has been used.

NRT reaction	Inputs on the phone
	#*08
Beep	
	Call protection: 0 = Off (factory setting) 1 = On
2 x Beep	

Note: If a stored emergency call exists, call protection is deactivated until the emergency call is acknowledged.

#*09 - Factory setting

The emergency call device can be remotely reset to its factory default setting using this command.

Note: Recorded voice announcements are retained.

NRT reaction	Inputs on the phone
	#*09
Alternating tone sequence	
2 x Beep	

#*10 - Audio reset

Resets all volume settings to the factory defaults. This command is particularly useful if acoustic feedback is present due to incorrect audio settings and the emergency call device no longer responds to key inputs.

NRT reaction	Inputs on the phone
	#*10
2 x Beep	

#*12 - Automatic exchange detection

Automatic exchange detection is only relevant for operation in private branch exchanges.

Off: The automatic exchange detection has no function, all telephone numbers are dialled as entered.

Permanent: In addition to the stored telephone numbers, the number entered in programming step #*14 “Outside line access code” is always prefixed.

Automatic: The emergency call device uses the dial tone to check whether the telephone connection is an extension or a main line. If the emergency call device detects a pbx-system, all stored telephone numbers are automatically prefixed by the number entered in programming step #*14 “Outside line access code”.

NRT reaction	Inputs on the phone
	#*12
Beep	
	0 = Off 1 = Automatic 2 = Permanent
2 x Beep	

#*14 - Outside line access code

Setting of the outside line access code that is used in programming step #*12.

NRT reaction	Inputs on the phone
	#*14
Beep	
	0 = factory setting, 1 .. 9
2 x Beep	

#*18 Filter bypass

It must be possible to bypass the emergency call filter in order to allow manual checking of the emergency call system. To bypass the emergency call filter, the emergency button can be pressed continuously for a configurable period of no longer than 30 seconds. The duration can be set as follows:

NRT reaction	Inputs on the phone
	#*18
Beep	
	10 .. 30 (value in seconds) Factory setting = 30 seconds
2 x Beep	

#*20 - Time, date

The internal real-time clock is set to the correct Central European Time (CET) ex works. An automatic change-over between summer and winter time is not foreseen and normally not necessary. The values for time (hhmm) and date (ddmmyyyy) are entered on the telephone keypad.

NRT reaction	Inputs on the phone
	#*20
Beep	
	Time: hhmm
1 x Beep	
	Date: ddmmyyyy
2 x Beep	

#*21 - Time for routine call, routine call interval

In order to activate the test connections between the emergency call device and the emergency call centre required in EN81-28:2018, a routine time must be set, and the routine call must be activated at the required interval.
According to DIN EN81-28:2018, routine calls must be made at least every 3 days.

NRT reaction	Inputs on the phone
	#*21
Beep	
	Time: hhmm
1 x Beep	
	Routine-interval: 0 = off 1 = daily 2 = weekly 3 = monthly 4 = interval
1 x Beep	
	Interval in days: nn
2 x Beep	

#*22 - Service Telephone number, routine call destination

A telephone number (=service telephone number) and a routine call destination (identifier) must be specified for routine call activation.

NRT reaction	Inputs on the phone
	#*22
Beep	
	Entry of the service telephone number, max. 25 characters
1 x Beep	
	Identifier: 3 = telephone with announcement text 4 = NRZ with Telegärtner protocol 5 = Control station with P100 protocol
2 x Beep	

#*23 - “Routine call fault” indication

With the upcoming EN81-28:2018 standard, it is also necessary that an unsuccessful routine call is signalled by alternating flashing pictogram displays in the lift car.

NRT reaction	Inputs on the phone
	#*23
Beep	
	0 = no fault indication (factory setting) 1 = fault indication according to EN81-28:2018
2 x Beep	

#*29 - Device number

To connect an emergency call device to a control centre using the Telegärtner data protocol, the device number is used to identify the emergency call. Normally, this device number is assigned and also programmed by the control centre. If the control centre has no possibility of programming the device number, this can also be programmed manually via a telephone with touch-tone capability.

NRT reaction	Inputs on the phone
	#*29
Beep	
	Input device number, max. 9 digits
2 x Beep	

#*30 - P100 ID code

This command is used to enter the ID code for connection to alarm receivers that support the P100 protocol. The input must always have 8 digits, i.e. leading zeros must be used for shorter ID codes.

NRT reaction	Inputs on the phone
	#*30
Beep	
	Input P100 ID code, 8-digit
2 x Beep	

#*55 - Emergency call test

An emergency call can also be triggered remotely for function tests. After entering the command, the NRT hangs up and triggers an emergency call, taking into account the emergency call filtering.

NRT reaction	Inputs on the phone
	#*55
Alternating tone sequence, NRT hangs up	

#*57 - Emergency call end/acknowledgement

Sets the behaviour after the emergency call voice communication is ended. For details, see also page 19.

NRT reaction	Inputs on the phone
	#*57
1 x Beep	
	0=automatic emergency call end/ acknowledgement deactivated 1=automatic emergency call end/ acknowledgement active (factory setting)
2 x Beep	

#*58 Emergency horn

Use this command to activate the emergency horn or adjust the sound of the horn. When the emergency horn is activated, the loudspeaker of the NRT plays the selected sound into the lift car while the emergency call button is pressed. As soon as the NRT dials, the emergency horn is switched off.

NRT reaction	Inputs on the phone
	#*58
1 x Beep	
	0=emergency horn off 1=emergency horn sound „alternating“ 2=emergency horn sound „Siren“ 3=emergency horn sound „Interval“
2 x Beep	

#*60 - Voice connection code

To enter a voice connection when call protection is activated, key sequence #6 is set in the factory setting. With programming command #*60, the digit/number sequence can be changed as required where up to 4 digits are permitted. The hash “#” does not have to be programmed but is always necessary during input.

NRT reaction	Inputs on the phone
	#*60
1 x Beep	
	Enter the voice connection code that is to be used to establish the voice connection when call protection is activated. Max. 4 digits (factory setting 6)
If no input or max. of 4 digits reached for 4 seconds, 1x Beep	
	Repeat the input
If no input or max. of 4 digits reached for 4 seconds, 2x Beep	

#*72 - Emergency call destination

This command determines the behaviour of the emergency call device when dialling the four possible emergency call numbers. A detailed description of the possible operating modes can be found on page 17.

Parameter	Identifier
0	Telephone
1	Telephone + acknowledgement
2	Telephone + optional acknowledgement
3	Telephone + voice announcement
4	NRZ alarm receiver
5	P100 alarm receiver

NRT reaction	Inputs on the phone
	#*72
1 x Beep	
	Enter the emergency call destination for 1st telephone number: 0 .. 5
1 x Beep	
	Enter the emergency call destination for 2nd telephone number: 0 .. 5
1 x Beep	
	Enter the emergency call destination for 3rd telephone number: 0 .. 5
1 x Beep	
	Enter the emergency call destination for 4th telephone number: 0 .. 5
2 x Beep	

#* 73 - Reassuring text

The command is used to activate the reassuring text that is played into the lift car after the emergency call button has been pressed.

NRT reaction	Inputs on the phone
	#*73
1 x Beep	
	0 = reassuring text deactivated 1 = reassuring text activated
2 x Beep	

#*77 - Record “Identification” announcement

This key sequence starts the recording of the announcement that is necessary for identification and assignment of the emergency call when it is connected to a telephone. The maximum recording time is 20 seconds. In the event of an emergency call, this announcement is played back to the called party until the latter has acknowledged the call.

NRT reaction	Inputs on the phone
	#*77
1 x Beep	
	Record text, end with digit 8
1 x Beep	
Recorded text is played back for checking purposes.	
2 x Beep	

#*78 - Playback of “Identification” announcement

After entering this command, the recorded “Identification” announcement is played.

NRT reaction	Inputs on the phone
	#*78
1 x Beep	
„Identification“ announcement is played	
2 x Beep	

#*81 - “Fault” announcement

If a fault leads to the emergency call not being forwarded, it is possible to record a voice announcement in the lift car.

NRT reaction	Inputs on the phone
	#*81
1 x Beep	
	0 = „Fault“ announcement deactivated (factory setting) 1 = „Fault“ announcement activated
2 x Beep	

#*82 - Record “Fault” announcement

This telephone code can be used to record the announcement that is played in the event of a fault (no emergency call possible). The maximum recording time is 5 seconds.

NRT reaction	Inputs on the phone
	#*82
1 x Beep	
	Record announcement, end with digit 8
1 x Beep	
Recorded announcement is played back for checking purposes.	
2 x Beep	

#*83 - Playback of “Fault” announcement

After entering this command, the recorded announcement is played.

NRT reaction	Inputs on the phone
	#*83
1 x Beep	
Announcement is played	
2 x Beep	

#*88 - Changing the security code

The security code can be changed to prevent unauthorised remote access to the configuration.

NRT reaction	Inputs on the phone
	#*88
1 x Beep	
	Enter the required security code: 4-digit number sequence
1 x Beep	
	Repeat the security code: 4-digit number sequence
2 x Beep	

#*91 - Alarm latency

To avoid unwanted false alarms, an emergency call button must be pressed for at least a certain time (latency) before an emergency call is made. A valid emergency call is stored until it is deleted again. While an emergency call is stored, neither an emergency call delay (latency) nor emergency call filtering takes place when the emergency call button is pressed again. This setting applies to all emergency call buttons.

NRT reaction	Inputs on the phone
	#*91
1 x Beep	
	Enter the required minimum actuation duration of the emergency call buttons: 1 .. 9 seconds (factory setting: 3 seconds)
2 x Beep	

#*97 - Eavesdropping protection/Attention tone

When eavesdropping protection is activated, an acoustic signal is periodically played in the lift car to notify an active voice connection.

Note: An optical display for an active voice connection can also be obtained via the pictogram displays to be mounted in the control panel.

NRT reaction	Inputs on the phone
	#*97
1 x Beep	
	Eavesdropping protection beep: 0 = off (factory setting) 1 .. 6 = every 10 .. 60 seconds
2 x Beep	

#*98 - Line impedance

The line impedance has a significant influence on the quality of the data transmission and the quality of the voice connection to the emergency call centre.

NRT reaction	Inputs on the phone
	#*98
1 x Beep	
	Line impedance: 0 = 600 Ω for short lines (at GSM gateway) 1 = 1000 Ω for long lines (main connection) (factory setting)
2 x Beep	

#*99 - Automatic line balancing

Automatic line balancing can be used to let the emergency call device automatically find the optimum settings for the hands-free function.

NRT reaction	Inputs on the phone
	#*99
A measuring tone is played, and the automatic adjustment is carried out. The process can take up to 20 seconds.	
2 x Beep	

5. Operation and maintenance

5.1 Routine call

An automatic test call/test alarm is required at least every three days for standard-compliant operation in accordance with EN 81-28:2018.

If irregularities should occur, the problem can be localised using the internal event memory.

5.2 Troubleshooting

The following table shows the most frequent causes of faults during commissioning and maintenance.

Fault	Possible cause	Action
NRT cannot be called.	No outside line connected	A telephone line must be connected to the clamps 9 + 10 at terminal block XD1.
	Incorrect telephone number	Connect a telephone to the telephone socket instead of the NRT. If the telephone number used is correct, the telephone must ring.
	Connection always busy	Remove the telephone line, to check if the line is free.
None of the connected emergency call buttons work.	Emergency call filter is active.	Emergency call filtering is activated for one or more emergency call button(s) and the emergency call device receives the corresponding signal from the lift controller. The emergency call device will then not make an emergency call. The input of the emergency call filter can be briefly disabled to test the emergency call.
NRT dials and dials, but there is no connection.	When connected to a telephone: 1. The emergency call destination was configured incorrectly. 2. The called party does not acknowledge the call.	1. The correct emergency call destination must be configured via the telephone command #*72. 2. The called party must press a digit on their touch-tone telephone..
Pictogram display flashes alternately.	A routine call of the NRT could not be successfully sent.	1. Check the power supply of the emergency call device. 12 – 24 V DC is required. 2. Check the telephone number for the destination of the routine call. 3. Check the telephone line is present at the time of the routine call.
Yellow pictogram display constantly lit	A stored emergency call is present in the NRT.	Initiate an emergency call end/ acknowledge emergency call (see „Emergency call end/Acknowledge emergency call“ on page 19).

5.3 Resetting to the factory settings

The emergency call device can be reset to its factory settings (settings on delivery) at any time, e.g. to delete old or incorrect settings.

1. Call the telephone number of the connection from a mobile phone, extension or other telephone.
2. The emergency call device answers with a beep. By entering the security code “0000” and then #*09, a tone sequence can be heard. The device is then set to the factory settings.

6. Technical data

Communication interface:	
Type	analogue interface / CTR-21 compatible
Voltage analogue interface	24-64 V DC
Loop current	20-50 mA
Dialling mode	Pulse / DTMF
Inputs:	
Programmable Input	potenial-free contact
Emergency call button 1 / 2	NO / NC, potenial-free contact
End of Alarm	NO, potential-free contact
Microphone 1 / 2	Only for EX-microphone, Art. No. 601361 or Art. No. 601367
Outputs:	
Loudspeaker:	4 - 8Ω / 10 W
Pictogram	2 x optically isolated, open collector, max. 24 V, 100 mA DC
Voice announcements:	
Announcement text for identification	max. 20 seconds
Fault announcement	max. 5 seconds
Power supply:	
Supply voltage	24 V DC
Current consumption	max. 1000 mA
General data	
Art. No. R. Stahl AG	8265/54
IP code	IP66 / IP30
Operating temperature	-20 - 40 °C
Dimensions	474 x 348 x 227 mm
Weight	19 kg
Specification	IEC / EN 60079-0/-1/-7/-11/-31

Atex gas explosion protection	Ⓔx II 2 G Ex db eb [ib Gb] IIC T4 Gb
Atex dust explosion protection	Ⓔx II 2 D Ex tb IIIC T130°C Db
Additional explosion protection	Ex db eb [ib Gb] IIC T4 Gb
Atex dust/gas certificate	PTB 06 ATEX 1077
Additional certificate	IECEx PTB 07.0029

General data microphone EX G3 Art. No. 601361:	
Art. No. R. Stahl AG	8146/5031
IP code	IP30
Operating temperature	-20 - 40°C
Dimensions	112,5 x 112,5 x 91 mm
Specification	IEC / EN 60079-0/ -11/ -31
Atex gas explosion protection	Ⓔx II 2 G Ex ib IIC T4 Gb
Atex dust explosion protection	Ⓔx II 2 D Ex tb IIIC T130°C Db IP30
Additional explosion protection	Ex ib IIC T4 Gb
Atex dust/gas certificate	PTB 01 ATEX 1024
Additional certificate	IECEx PTB 06.0090

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