

Weatherproof VoIP Telephone

FernTel IP4 / IP160



Powering Business Worldwide

FernTel IP4 / IP160 – User manual

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Note

This user manual must be read carefully before installing the device.
The contents of the package must be checked for completeness.

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FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15 – 19

45478 Mülheim an der Ruhr

Phone +49 (208) 8268-0

Fax +49 (208) 8268-377

<http://www.fhf.de>

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1. VoIP Telephone FernTel IP4 / IP160

Congratulations on your purchase of a FernTel IP4 / IP160VoIP telephone. These instructions should help you get to know the device better and familiarize you with its handling.

1.1 Device description

The FernTel IP4 / IP160 telephone with voice over IP technology is a modern means of communication that was developed for industrial use. Components, connectors and mountings are designed so that they can also withstand tough, industrial environments and function reliably even in difficult working conditions.

Because this is an IP phone, all functions described here depend greatly on the configuration and the support of the gateway used (PBX, PABX).

If you have any questions, please contact the manufacturer, your service partner or your IT department.

1.2 Scope of delivery

Package contents

The scope of delivery of the weatherproof standard IP phone includes:

- 1 phone
- 1 phone cradle
- 1 handset support for desktop design with 2 screws
- 4 washers Ø 18 mm
- 1 LAN plug from Phoenix Contact, consisting of
 • RJ sleeve housing type VS-08-TRJ45/IP67Art. no.: 1688696
 • Male insert RJ45, CAT5, 8-pole type VS-08-ST-RJ45/IP67Art. no.: 1688573
- User manual

Purchase accessories (optional)

- Anti-rolling bracket
- Insect screen
- LAN plug from Phoenix Contact

1.3 CE marking

We hereby declare that this product is in compliance with the fundamental health and safety regulations

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU

The device conforms with Directive 2011/65/EU and the delegated Directives 2017/2102/EU and (EU)2015/863.

Please find the relevant standards, technical regulations and specifications from the (optionally) attached declaration of conformity and the declarations of conformity on our website.

2. Assembly and installation

2.1 Preparatory work

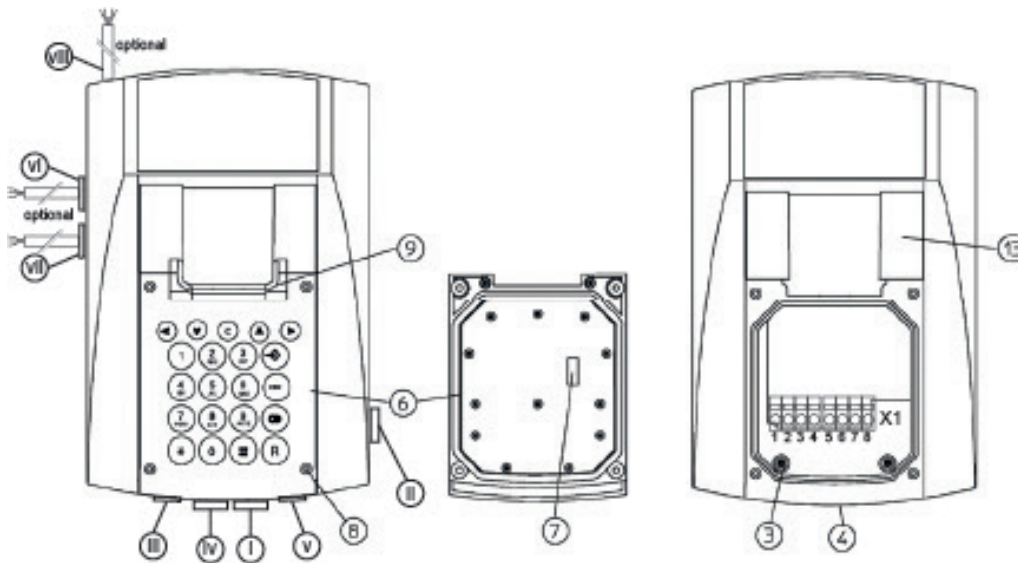


Figure 1 – Housing top view and position of the wire/cable inlets (i) – (viii)

First remove the keyboard (6). To do this, loosen the 4 screws (8), lift the keyboard (6) carefully and separate the connector (7) between keyboard (6) and the circuit board located in the interior of the housing.

If you want to operate a headset or use the relay onboard output contact or operate the phone with an external DC power supply, replace the dummy plugs of the cable/wire inlets (iii), (iv) and/or (v) with suitable wire/cable inlets.

2.2 Wall mounting

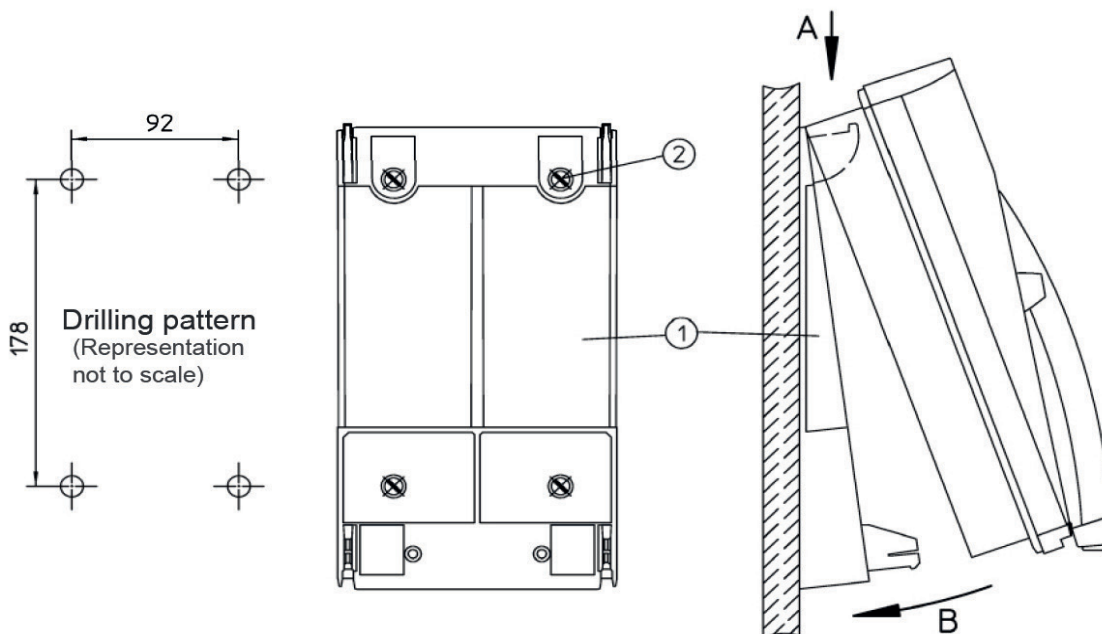


Figure 2 – Wall mounting

Attach the phone cradle (1) with 4 screws (2) to the wall in such a way that the higher part of the phone cradle (1) points downward. In the process, place the washers Ø 18 mm that have been provided under the screw heads.

Hang up the phone in the top locking hooks (A) of the phone cradle (1) and swivel the phone downward until the bottom locking hooks (B) of the phone cradle (1) audibly engage.

Screw in the two pre-installed safety screws (3) in the terminal compartment (see figure 1) as far as they will go to ensure that an IP65 degree of protection is achieved.

2.3 Tabletop operation

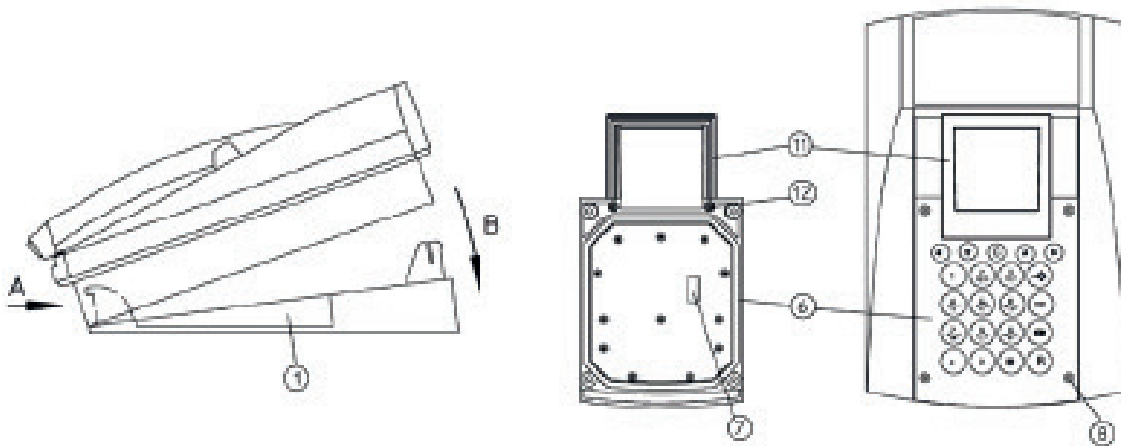


Figure 3 – Tabletop operation

Turn the phone cradle (1) on the table in such a way that the higher part of the phone cradle (1) points to the back.

Hang up the phone in the front locking hooks (A) of the phone cradle (1) and swivel the phone downward until the back locking hooks (B) of the phone cradle (1) audibly engage.

Replace the standard handset support (9) (see figure 1) by the handset support (11) for tabletop operation. To do this, loosen the two screws (12) on the back of the keyboard (6), remove the handset support (9) for the wall operation and attach the handset support (11) with the two enclosed screws (12).

2.4 Connectors

2.4.1 Connector versions

2.4.1.1 RJ45 plug at degree of protection IP67

The LAN1 and LAN2 jacks are IP67-compliant RJ45 jacks from Phoenix Contact, which allow for a plug-in connection to your network lines that is accessible from the outside. The package includes one RJ45 plug from Phoenix Contact consisting of a sleeve housing and male insert, which can be installed on cat5/cat5e network lines without a special tool if the requirements for the network line listed below are met. If you use both interfaces, the required second plug must be ordered separately.



Jack




Plug

Requirements for cat5[e] network line:

- External diameter 5.0 mm...8.0 mm
- Core cross-section 26 AWG...22 AWG
- Core insulation diameter ≤ 1.6 mm

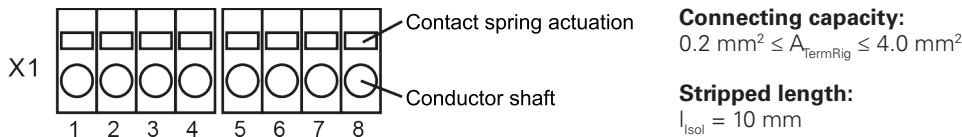
The plug installation kit includes detailed instructions from Phoenix Contact on how to mount the plug and the line. The following table illustrates the assignment of the 8-plug connectors, which essentially vary between one of the standards TIA-568A or TIA-568B. In principle, the specific standard that is used does not matter as long as both ends of the line are wired in the same way.

Pin/core	T568A Pair	T568B Pair	Signal ID	Core	T568A color	T568B color	Pin assignment RJ45 plug
1	3	2	DA+	Ground			1
2	3	2	DA-	Minus			2
3	2	3	DB+	Ground			3
4	1	1	DC+	Minus			4
5	1	1	DC-	Ground			5
6	2	3	DB-	Minus			6
7	4	4	DD+	Ground			7
8	4	4	DD-	Minus			8



2.4.1.2 Terminal strip X1 connectors

Terminal strip X1 is a terminal block in the phone's terminal compartment and is executed with a push-in connection system. Flexible connection wires provided with rigid connection wires or with wire-end ferrules are only to be inserted into the conductor shaft of the terminal. In the process, the contact spring opens automatically and ensures the necessary clamping force against the current bar. For the deinstallation or installation of very small connection wires, use a slotted screwdriver to open the contact springs.



2.4.1.3 Connecting cables

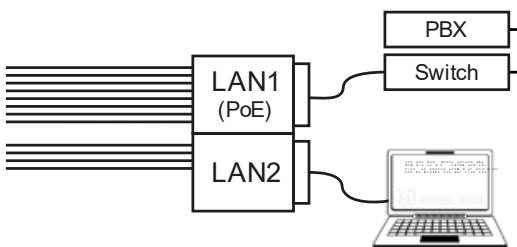
The connectors of the relay outputs relay 1 and relay 2 and the inputs input 1-3 are pre-wired and are led out of the device by the cable inlets (vi), (vii) and (viii) via flexible light plastic-sheathed cables. The black individual cores of the light plastic-sheather cables are labeled with white numbers in accordance with EN 50334. In the following connector descriptions, the light plastic-sheathed cables to be used are identified by their cable inlets; the position of the cable inlet can be found in Figure 1 "Housing top view and position of the wire/cable inlets (i) – (viii)" on page 8.

2.4.2 LAN connectors LAN1 and LAN2

The phone is equipped with two RJ45 jacks LAN1 (v) and LAN2 (vi), which are mounted below and on the right side of the housing and allow for an IP67 fixed plug-in connection to your LAN connecting cables. Connect the network connecting cable with the RJ45 jack LAN1, which in addition to data traffic processes a possible PoE infeed (Power over Ethernet) and uses the latter to supply the phone.

RJ45 jack LAN2 is used for the optional connection of additional devices, such as a notebook computer. With the exception of data packets directed to the phone, all other data packets on the LAN2 port are available; however, PoE is not supported.

If you do not use LAN2, make sure that the pre-installed protective cover terminates the RJ45 jack, because otherwise the IP protection of the device is not ensured.



PoE (Power over Ethernet) according to IEEE 802.3af

$$37.0 V_{\text{DC}} \leq V_{\text{PoE}} \leq 53.0 V_{\text{DC}}$$

$$I_{\text{PoE}} \leq 350 \text{ mA}_{\text{DC}}$$

$$P_{\text{PoE}} \leq 12.95 \text{ W (Class 0)}$$



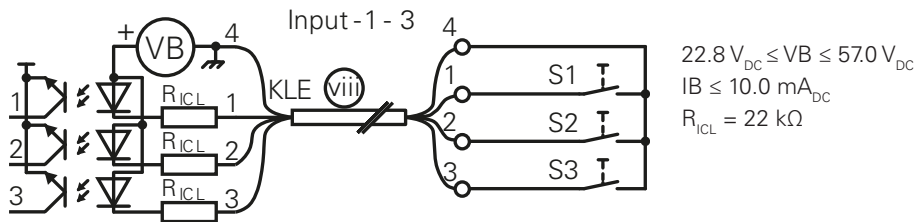
Attention!

- Only ES1 and PS1 classified power supplies in accordance with EN 62368-1 may be used to supply the phone.
- If the phone is supplied via the PoE supply (Power over Ethernet) of your LAN1 connecting cable, the terminals X1.7 and X1.8 must not be used to connect an external power supply.

2.4.3 Inputs input 1-input 3

Up to three buttons are to be connected to the connecting cable leading out of cable inlet (viii), which is connected with the inputs input 1 – input 3 of the phone. As illustrated below, the buttons are to be connected between one of the inputs input 1 [1], input 2 [2] or input 3 [3] and the frame terminal [4]. Here voltage VB drives current limited by R_{ICL} through the actuated button. The series-connected transmitting diode of the opto-isolator then transmits the switching state of the button, galvanically isolated, to the electronics.

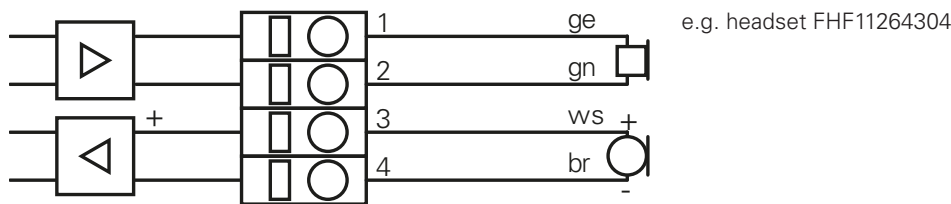
The position of the cable inlets can be found in Figure 1 “- Housing top view and position of the wire/cable inlets (i) – (viii)” on page 8.



2.4.4 Headset connector for headset

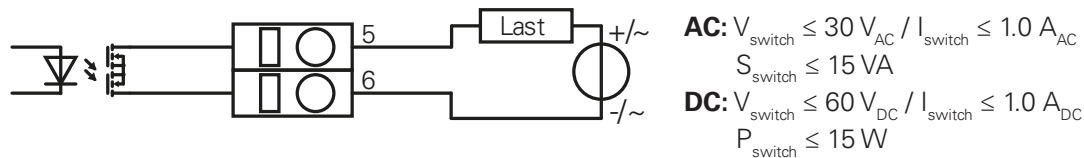
The headset must be connected to terminals 1-4 of the terminal strip X1 located in the terminal compartment. In the process, make sure that the polarity of the microphone is correct. The microphone's positive connector must be connected with terminal 3.

The indicated colors are the core colors of the connecting cable of our headset FHF11264304; the ends of the unused cores (gray and pink) of this connecting cable are to be insulated with a piece of insulating tape or cut off if necessary.



2.4.5 Output contact relay onboard

Equipment to be switched on/off is to be connected to terminals 5 and 6 of terminal strip X1 located in the terminal compartment. The make-contact element of the relay onboard photo relay can switch direct current and alternating current loads in the indicated load range.



Attention!

- The permitted load currents of the output contacts are voltage dependent. Calculate their maximum values as indicated below by generating the quotient of switching capacity P_{switch} and switching voltage V_{switch} . Furthermore, the result must not exceed the indicated maximum value of the switching current I_{switch} .

$$AC: I_{LoadMax} = S_{switch} / V_{switch} = 15 VA / 24 V = 0.626 A$$

$$DC: I_{LoadMax} = P_{switch} / V_{switch} = 15 W / 48 V = 0.312 A$$

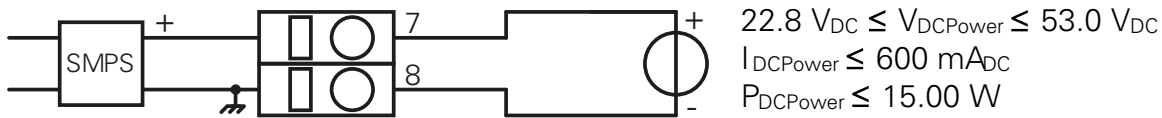
$$I_{LoadMax} \leq I_{switchMax!}$$

$$I_{LoadMax} \leq I_{switchMax!}$$

2.4.6 External power supply DC Power

The external DC power supply is to be connected to terminals 7 and 8 of the terminal strip X located in the terminal compartment.

Make sure that you use sufficient conductor cross-sections so that the minimum required DC voltage is available on the terminals. You can find more information about this in the technical data section of this user manual.



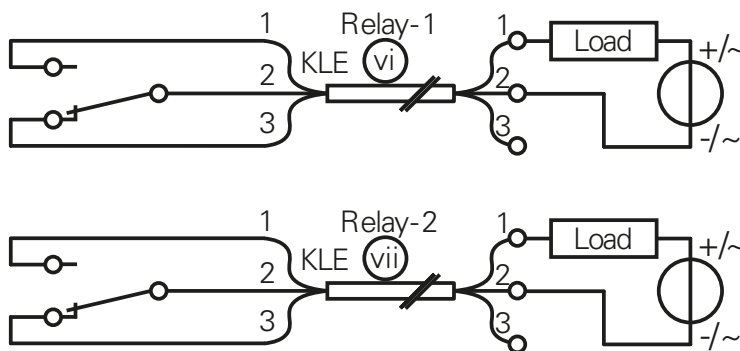
Attention!

- Only ES1 and PS1 classified power supplies in accordance with EN 62368-1 may be used to supply the phone.
- If you supply the phone via connectors X1.7 and X1.8, your LAN1 connecting cable must not conduct any PoE supply (Power over Ethernet).

2.4.7 Output contacts relay 1 and relay 2

Equipment to be switched on/off is to be connected to the connecting cables leading out of cable inlets (vi) and (vii), which are connected with electromechanical relays, relay 1 (vi) and relay 2 (vii). The changeover contact of both relays can switch DC and AC current loads in the indicated load range.

The position of the cable inlets can be found in Figure 1 "- Housing top view" and position of the wire/cable inlets (i) – (viii)" on page 8.



AC: $V_{switch} \leq 250 V_{AC} / I_{switch} \leq 5.0 A_{AC}$
 $S_{switch}(V_{switch} > 35 V_{AC}) \leq 15 VA$
 $S_{switch}(V_{switch} \leq 35 V_{AC}) \leq 100 VA$

DC: $V_{switch} \leq 230 V_{DC} / I_{switch} \leq 5.0 A_{DC}$
 $P_{switch}(V_{switch} > 50 V_{DC}) \leq 15 W$
 $P_{switch}(V_{switch} \leq 50 V_{DC}) \leq 100 W$

AC: $V_{switch} \leq 250 V_{AC} / I_{switch} \leq 5.0 A_{AC}$
 $S_{switch}(V_{switch} > 35 V_{AC}) \leq 15 VA$
 $S_{switch}(V_{switch} \leq 35 V_{AC}) \leq 100 VA$

DC: $V_{switch} \leq 230 V_{DC} / I_{switch} \leq 5.0 A_{DC}$
 $P_{switch}(V_{switch} > 50 V_{DC}) \leq 15 W$
 $P_{switch}(V_{switch} \leq 50 V_{DC}) \leq 100 W$



Attention!

- The permitted load currents of the output contacts are voltage dependent. Calculate their maximum values as indicated below by generating the quotient of switching-voltage-dependent switch rating $P_{switch}(V_{switch})$ and switching voltage V_{switch} . Furthermore, the result must not exceed the indicated maximum value of the switching current I_{switch} .

AC: $I_{LoadMax} = S_{switch}(V_{switch}) / V_{switch} = 15 VA / 48 V = 0.312 A$ $I_{LoadMax} \leq I_{switchMax}!$
 DC: $I_{LoadMax} = P_{switch}(V_{switch}) / V_{switch} = 100 W / 48 V = 2.08 A$ $I_{LoadMax} \leq I_{switchMax}!$

- The electric circuits of the switching contacts of both relays must not be interconnected with different external conductors of an AC network.

2.5 Concluding work

Please perform a final check of the mountings and connections to ensure perfect commissioning and safety.

Connect the keyboard (6) via the plug-in connection (7) with the circuit board located in the interior of the housing. Then secure the used keyboard with the 4 screws (8).

3. Commissioning

The phone includes numerous setting options to adapt the device's mode of operation to various requirements. To this end, the device's main menu and/or the phone's web interface are available to configure the device in such a way that it meets your requirements. In this section of the user manual, we will tell you how to set the phone's configurable functions.

3.1 User interfaces

The user interfaces described here refer to the input options on the device itself. The phone's web server offers a more convenient and comprehensive configuration option. The web interface can be reached via the phone's IP address with a browser. (see 3.1.2) Attention: The computer must be in the same sub-network.

Presettings:

User name: admin
 Password: ip160

3.1.1 Phone display and keyboard

The figure below shows the phone's display contents in idle mode, as well as the keyboard and its functional grouping. The "Key secondary functions" column of the figure lists the notations used in the user manual for the alternative secondary functions of various keys. If $\geq T_L$ appears below the key symbol, the said key must be held down for at least $T_L = 0.5$ s to trigger the secondary function. The key pairs in the list describe shift key sequences that must always be pressed consecutively. Here it should be noted that the effect of the initial shift keystroke is time limited and ends after $T_{SHIFT_TO} = 5.0$ s or by any subsequent keystroke.

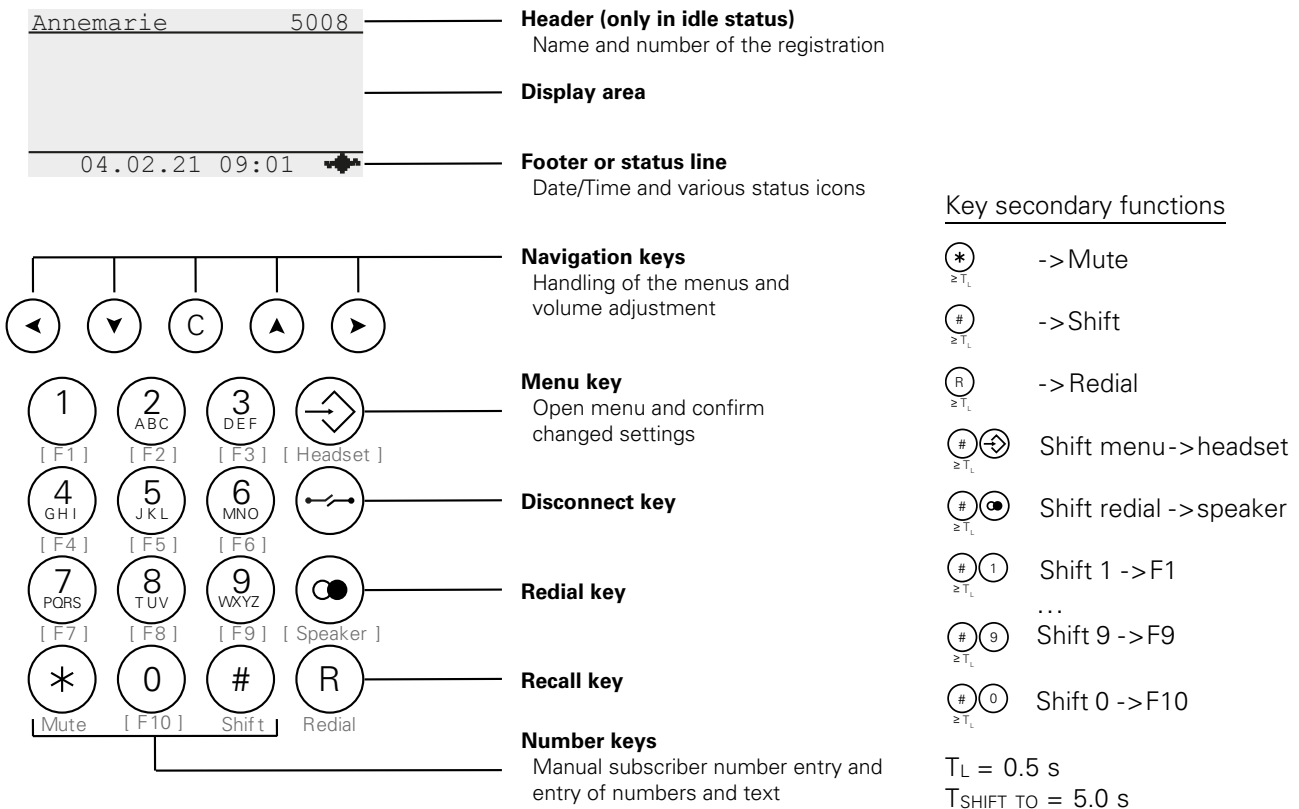


Figure 4 – Display and keyboard

In the sections below, we will explain how to navigate in menus, set configuration parameters and save changed settings. For the sake of clarity, the key descriptions are limited to the respective section. Although it is effective in every section, key \ominus (for example) will only be described in the last section *3.1.1.4 Save or discard changed settings.*

In the setting instructions of this commissioning chapter we refer to the configuration parameters to be set only with the indication of the path `Main menu\Phone settings\Headset` and the `On` or `Off` values to be set. We believe that the specific navigation, setting and saving of the parameters are sufficiently clear.

3.1.1.1 Navigation in menus

Menus allow access to the phone's various configuration parameters and status information. They appear as a list of named elements, in which one element, the selected element, is displayed inversely. In the footer of the display, nesting depth, menu name and continuation symbols are shown. For lists that cannot be completely displayed in the viewing area, the latter indicate whether additional elements continue the list below \blacktriangledown , above \blacktriangle or on both ends $\blacktriangle\blacktriangledown$.

Element names that are followed by a colon indicate configuration parameters; all others are indicated by sub-menus of the same name or action switches. The figure below illustrates the navigation to the headset configuration parameter `Main menu\Phone settings\Headset`: Pressing \odot opens the main menu, in which the selection mark is then moved to the phone settings element by pressing the \blacktriangledown button four times. Pressing \odot finally opens the sub-menu of the same name in which the headset parameter is selected.



- $\blacktriangle\blacktriangledown$ Indicates the connection status to the gatekeeper
- \blacktriangledown Indicates the continuation of the list below the last displayed element.
 - \blacktriangle Continuation above the first element
 - $\blacktriangle\blacktriangledown$ Continuation above the first and below the last element
- \leftarrow Indicates sub-menu nesting depth 1 of the displayed sub-menu
 - \ll Nesting depth 2
 - \lll Nesting depth 3
 - \llll Nesting depth 4

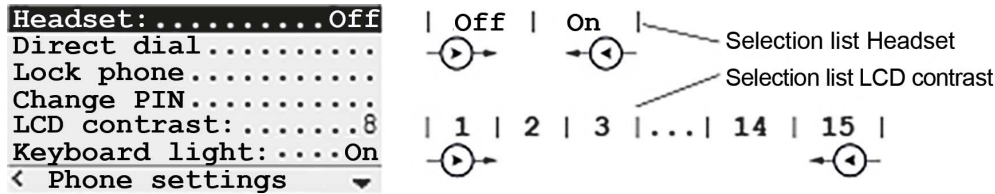
----- Navigate -----

- \leftarrow ¹⁾ Closes the current menu and returns to the higher-level menu level or to idle mode.
- \blacktriangledown ²⁾ Moves the selection mark one position down onto the next element. If the last element is selected, moves the selection mark to the first element.
- \blacktriangle ²⁾ Moves the selection mark one position up onto the previous element. If the first element is selected, moves the selection mark onto the last element.
- \odot ¹⁾ Opens the selected sub-menu or performs the selected action.

¹⁾ The functionality of the horizontal navigation key changes if configuration parameters are selected.
²⁾ Selections of setting parameters are indicated by a blinking insertion point (cursor); the inverse representation disappears.

3.1.1.2 Set selection parameters

Selection elements are configuration parameters for which a 1 out of N selection must be made. After the left-justified parameter name and the comma following it, the currently selected setting value is displayed with right justification. The N setting values identified by name form a list that can be inspected in both directions for the selected configuration parameter using the ◀ and/or ▶ keys to find the desired setting.

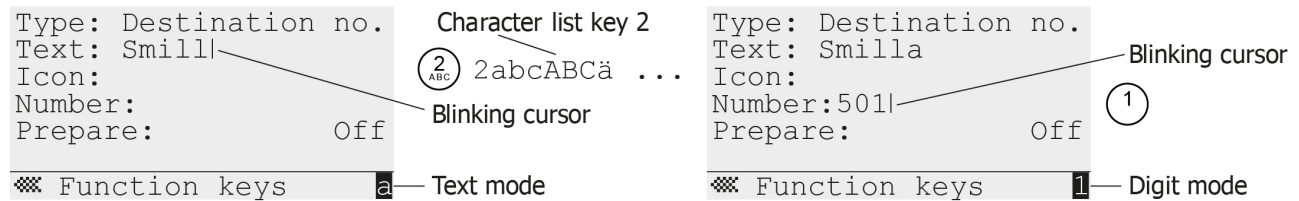


----- Make selection -----

- ▶ Select the next value from the selection list.
- ◀ Select the previous value from the selection list.

3.1.1.3 Set input parameters

Input elements are configuration parameters in which a numerical and textual value is to be entered. After the left-justified parameter name and the colon following it, the input field follows, which is marked by a flashing insertion point (cursor) | when selected. A small, inversely displayed box in the bottom right corner of the display indicates whether the input is in numerical mode **1** or text mode **a** | **A**. In text mode every number key is assigned a list of characters, the individual characters of which are inserted consecutively in the current insertion position if you press the button in rapid succession. Pause until the insertion point (cursor) switches from the left to the right side of the last inserted character "lc" -> "c|" to definitively adopt the character. The mode will switch to numerical mode if your character selection ends with a numerical character or you press one of the * or # keys. To switch to text mode, hold down a number key, e.g. the 2 key until the first character "a" of the assigned list of characters is output.

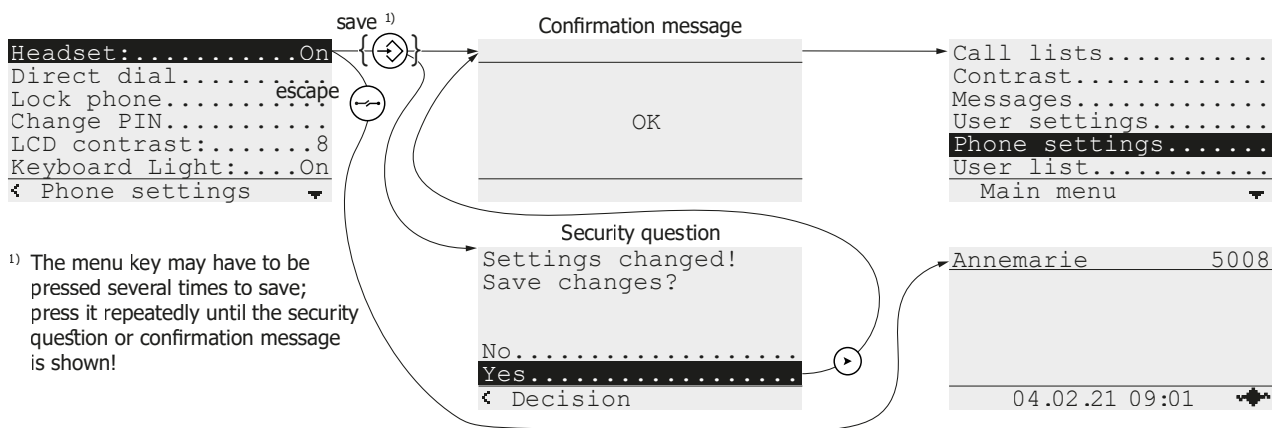


----- Make inputs -----

- 1 2 3
4 5 6
7 8 9
* 0 #
▶ Input of numerical and text characters.
- ▶ Move insertion point (cursor) one character to the left.
- ◀ Move insertion point (cursor) one character to the right.
- C Delete character before insertion point (cursor).

3.1.1.4 Save or discard modified settings

After you have changed the settings, the changes must be saved explicitly. To do this, press the ☰ menu key until the save is confirmed or a confirmation message appears, which you can affirm by pressing ▶ or reject with the key sequence ▲ ◀. If you want to discard your changed settings instead, press the disconnect key ⏏ instead of the menu key.



3.1.2 Web interface

The figure below shows the phone's web interface, which can be called up in all popular web browsers by entering the phone's IP address (e.g. 192.168.101.20) in the browser's address field (e.g. 192.168.101.20). The IP address itself can be found in the phone menu Main menu\Administration\Informations. The open interface then appears as a menu of adjustable tabs, which are optionally divided into different topics. The displayed tab WebIp160\Phone\User-1\General\ waits for identification with user name and password, the preset values of which are shown in the figure.

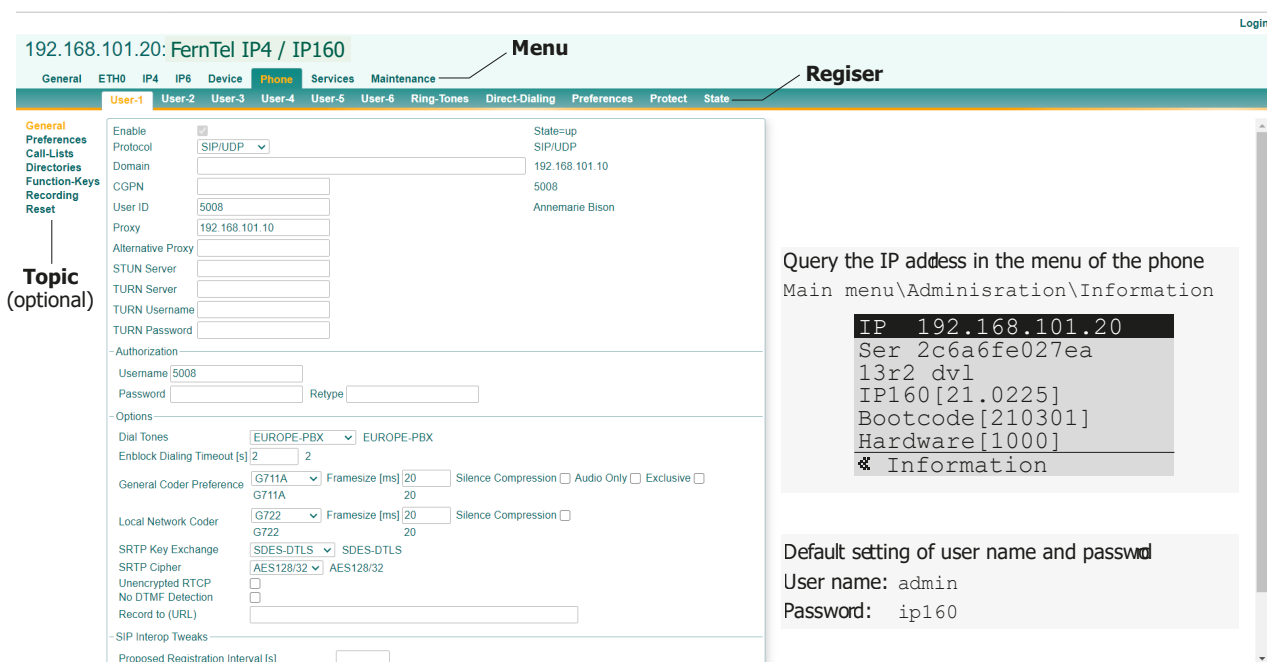



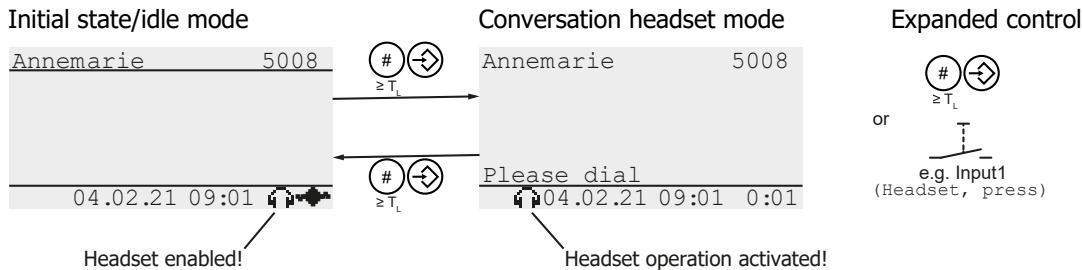
Figure 5 – FernTel IP4 / IP160 web interface

3.2 Set menu language

The menu language English is set at the factory and can be switched to your preferred language via the selection element Main menu\User list\n User name\Preferences\Language: . Navigate in the menu to the indicated selection element and use the horizontal arrow keys (◀) | (▶) to select the language to be used, e.g. Deutsch. Then press the menu key as many times as necessary until the confirmation message Save changes? appears, which you can affirm by pressing (▶) or reject with the key sequence (▲) (▶).

3.3 Headset control

The connected headset is controlled by default via the shift menu key sequence, with which the headset's conversation operating mode is activated or disabled, as illustrated by the figure below. However, the precondition for this is that the headset mode is switched on or enabled in the main menu, which is indicated by the superimposition of the  icon in the bottom display line, to the right of the date/time display.





The enable check of the headset mode occurs via the selection element `Main menu\Phone settings\Headset:` in the main menu, which can be switched on or off there and must be set to "On" to enable the headset mode.

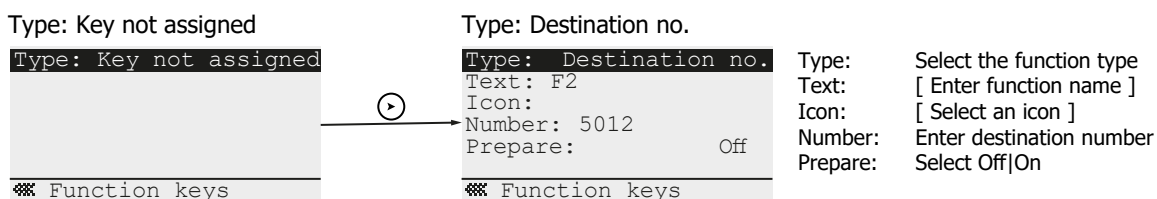
In addition to the shift menu key sequence, one of the inputs input1 – input3 can be used to expand the headset control so that the pressed button that is connected at the selected input causes the activation/deactivation of the headset mode. To do this, in the web interface `WebIp160\Device\Keypad` select one of the drop-down lists input1 – input3 and select the mode of operation "Headset, press" to use the input for expanded headset control.

3.4 Headset audio properties

Tab `WebIp160\Device\Audio\` of the web interface includes the Headset Type drop-down list and two check boxes `Headset Ringing` and `Headset Ringing only`, which can be used to set the audio properties of the headset mode. In the drop-down list, the type of the connected headset can be selected, which is set to `Imtradex/Ecom Instruments` by default. Via the two check boxes, which are switched off by default, the ring melody signal (ringing) can be linked to the headset. For employees working in a noisy environment who use the headset as hearing protection, this ensures that incoming calls will always be heard. Check the `Headset Ringing` check box if the ring melody signal (ringing) should be played back via headset and speaker; use the `Headset Ringing only`, if it should be played back through the headset alone.

3.5 Function keys Shift 0-Shift 9

The  -  keys from the numeric keypad can be used in connection with the shift key to trigger configurable functions, such as dialling a destination number. In the default setting the assigned function keys 1 – 10 are preset to "Key not assigned" and therefore have no effect. Via the main menu `Main menu\User list\n Username\Function key\FctKeyNo\` open the `Function key` dialog shown below, in the various fields of which the desired behavior of the function key is to be set.



The table below shows the current status of a configuration in which all 10 numerical keys are to be assigned the dialling of a destination number. Keys 0 and 1 have already been configured; that of the remaining numerical keys remains to be done.

Phy key	f-FctKey No.	Type:	Text:	Icon:	Number:	Prepare:
	10	Destination no.	F0	-	5010	Off
	1	Destination no.	F1	-	5011	Off
	2	Key not assigned	-	-	-	-
...						
	9	Key not assigned	-	-	-	-

3.6 Relay onboard, relay 1 and relay 2 outputs

The trigger of the outputs relay onboard, relay 1 and relay 2 can be configured to signal selected phone statuses via connected external equipment, such as the ringing of the phone via an optical signal device. In the default setting all three outputs are preset to "Alert on" and are therefore switched on when the phone signals an incoming call (rings). In the web interface `WebIp160\Device\Relays\Relay-xyz` select the tab to the relay and select the `Working Mode` drop-down list there to define the desired triggering for the relay in question. Depending of the selected triggering, the exact mode of operation can be specified further using additional dialog elements.

3.7 Inputs input1-input3

Via inputs input1 – input3, configurable functions can be triggered, such as the dialling of a destination number or the control of the headset conversation operating mode. In the default setting all three inputs are set to "disabled" and therefore have no effect. In the web interface `WebIp160\Device\Keypad` select the drop-down lists `Input1 – Input3` to define the desired mode of operation of the input in question. Select "Headset, press" to use the input to control the headset conversation operating mode or one of the "Function key, xxx" modes to emulate function keys with the input. In the latter case, in the main menu `Main menu\User list\n Username\Function key\f FctKeyNo\` the function key dialogs still need to be edited to set the desired behavior of the function keys that you selected for the input in the web interface (see also 3.5 Function keys Shift 0-Shift 9 Page 17).

The table below shows the results of a configuration in which all three inputs trigger the dialling of a destination number when pressing a connected key.

Input	f-FctKey No.	Type:	Text:	Icon:	Number:	Prepare:
Input1	11	Destination no.	F11	-	5111	Off
	12	Key not assigned	-	-	-	-
Input2	13	Destination no.	F13	-	5113	Off
	14	Key not assigned	-	-	-	-
Input3	15	Destination no.	F15	-	5115	Off
	16	Key not assigned	-	-	-	-

3.8 Test selection procedure "Immediate dial"

In the operation of the phone, two manual dialling methods are used, immediate dialling and indirect dialling, with the former not supported by all PBXs. If your PBX does not support the immediate dial dialling method, in which every input number is transmitted to PBX immediately, this can be remedied in the web interface. First test if there is a need for action. To do this, lift the receiver and enter a multi-digit phone number. If the dialling fails after entering the first number with the error message "unknown number," the configuration parameter `Enbloc Dialling Timeout [s]` of the tab `WebIp160\Phone\User-1\General\` must be changed from the default value 0 to 2, for example. The set timeout of 2 s causes the phone to wait 2 s after each number is entered to determine if more numbers will follow. The collected numbers are not sent to the PBX until 2 s after the last input number.

4. Operation

4.1 Operation, conversation modes

Below are the conversation modes that are available to you for making your phone calls. To set and change the selected operating mode, the receiver and keys must be operated as shown in Figure 6. The arrows symbolize the respective change between the operating modes represented as ellipses, which the phone executes when you perform the action indicated in the arrow. Below the operating mode designation, the left lower section of the display is shown, in which the phone indicates the set operating mode as specified.

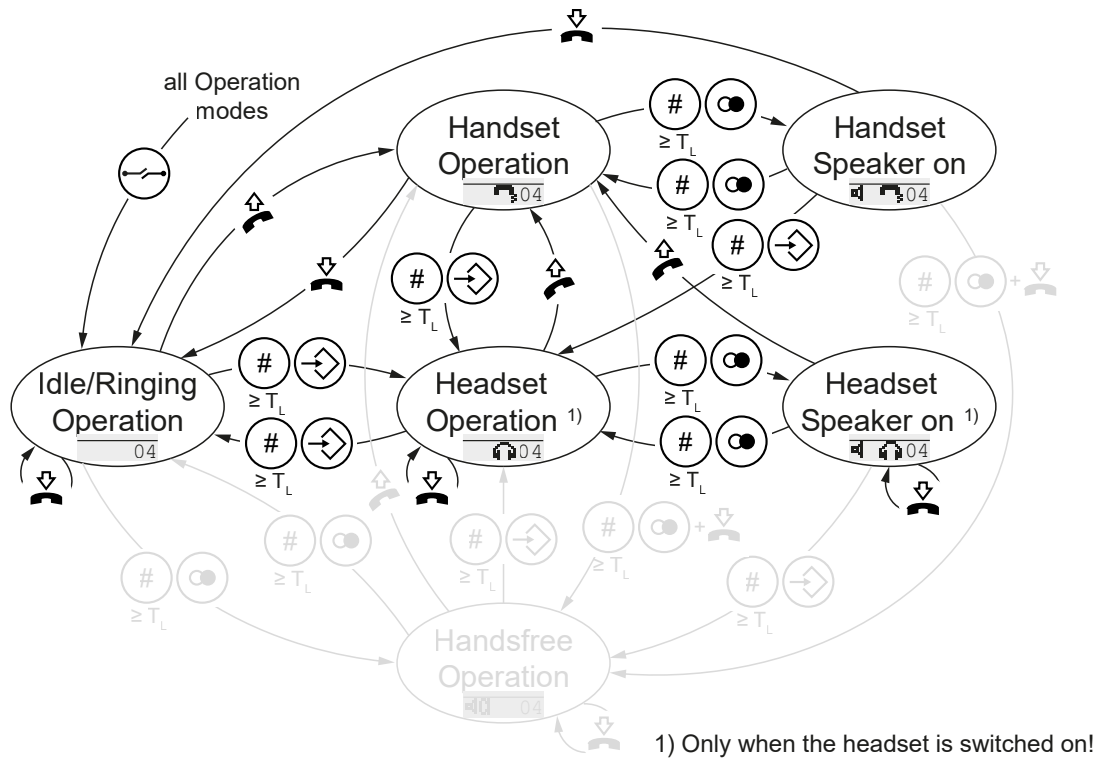








Figure 6 – Conversation modes

Action symbols:

-  Lift receiver
-  Hang up receiver
-  Headset control key sequence to switch the headset operating modes on and off. Hold down the hash key (#) for at least T_L , then release it, and then press the menu key (☰).
-  Speaker control key sequence to switch the open listening operating modes on and off. Hold down the hash key (#) for at least T_L , then release it and then press the redial key (⊙).
-  Action sequence to switch on the hands-free operating mode. Hold down the hash key (#) for at least T_L , then release. Then press the redial key (⊙), hang up the receiver with the key pressed down and finally release the key.
-  Disconnect key to force a switch to idle mode.

4.1.1 Receiver conversation operating mode

The conversation is to be conducted via microphone and earphone capsule of the lifted receiver; the speaker is switched off.

4.1.2 Receiver open listening conversation operating mode

The conversation is to be conducted via microphone and earphone capsule of the lifted receiver. People present can listen to the conversation via the switched-on speaker.

4.1.3 Headset conversation operating mode

The conversation is to be conducted via the headset's microphone and earphone capsule; the speaker is switched off.

4.1.4 Headset open listening conversation operating mode

The conversation is to be conducted via the headset's microphone and earphone capsule. People present can listen to the conversation via the switched-on speaker.

4.1.5 Operating mode change, textual description

4.1.5.1 Receiver mode -> receiver mode with open listening

To switch to receiver mode with open listening during receiver mode, press the hash key (#) for at least 0.5 s during a conversation, then release the hash key and press the redial key (*).

4.1.5.2 Receiver mode with open listening -> receiver mode

To switch to receiver mode during receiver mode with open listening, press the hash key (#) for at least 0.5 s during a conversation, then release the hash key and press the redial key (*).

4.1.5.3 Receiver mode (with/without open listening) -> headset mode

To switch to headset mode during receiver mode (with or without open listening), press the hash key (#) for at least 0.5 s during a conversation, then release the hash key and press the menu key (M). After that the receiver can be hung up.

4.1.5.4 Headset mode -> headset mode with open listening

To switch to headset mode with open listening during headset mode, press the hash key (#) for at least 0.5 s during a conversation, then release the hash key and press the redial key (*).

4.1.5.5 Headset mode with open listening -> headset mode

To switch to headset mode during headset mode with open listening, press the hash key (#) for at least 0.5 s during a conversation, then release the hash key and press the redial key (*).

4.1.5.6 Headset mode (with/without open listening) -> receiver mode

To switch to receiver mode during headset mode (with or without open listening), lift the receiver.

4.2 Operation, adjust volumes

During the ring melody (ringing) and during the conversation in one of the conversation modes, you can decrease the respective volume of the mode by pressing the (←) key, or increase it by pressing the (→) key. A "Vol" slide control will be shown in the display, which represents the set volume level. The superimposition of the slide control ends automatically a few seconds after the last actuation of one of the two keys.

The set volume level is permanently saved and used again for the next ring melody/conversation.

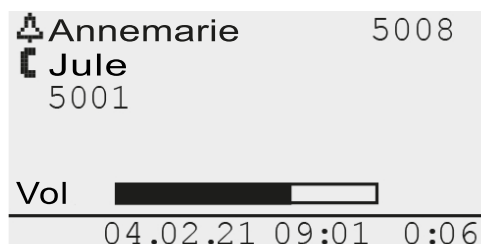
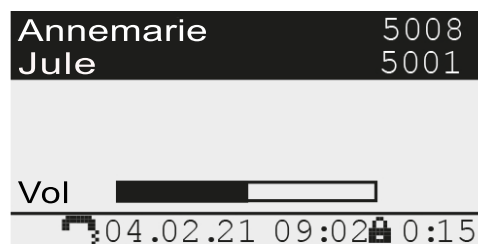



Figure 7 – Change ring melody volume

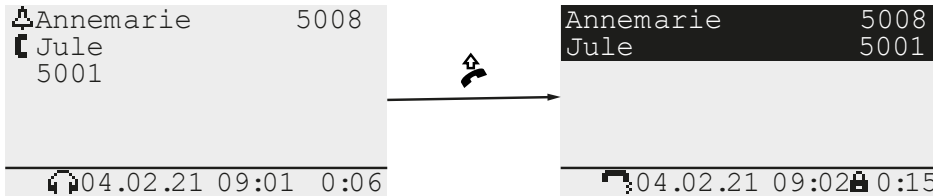


Change receiver volume





4.3 Operation, telephoning

4.3.1 Accept or reject call
















The phone signals a call. Lift the receiver to accept the call in receiver mode or press the disconnect key  to reject the call.



----- Ring melody (ringing) -----

-  Lower ring melody volume
-  Increase ring melody volume
-  Reject call; the phone switches back to idle mode and the caller receives a busy signal.
-  Accept call; the phone connects you with the caller and switches to receiver conversation operating mode.

----- Conversation -----

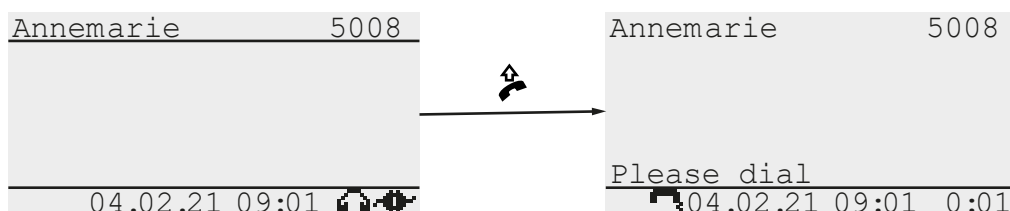
-  Lower conversation volume
-  Increase conversation volume
-  Switch microphone muting on/off. The activated muting is indicated in the bottom left of the display by the flashing microphone symbol .
-  Perform callback. Keep the connection with your current conversational partner A and call conversational partner B to speak with them without conversational partner A being able to listen in. With the introduction of the callback , conversational partner A is on hold; the phone asks you to enter the subscriber number for conversational partner B and establishes the connection to them after the input has been completed.
☞ 4.3.3.1 Callback/Toggle/Conference Page 23
-  Perform transfer. Connect your current conversational partner A with a conversational partner B, and you end the call yourself. With the introduction of the transfer , you ask the phone to enter the subscriber number for conversational partner B and establish the connection with them, after which you confirm the input by pressing the redial key .
-  During your call with conversational partner A, another caller reaches you. Signaled acoustically as a call-waiting tone and indicated in the display as a waiting call, you have the following options for dealing with the waiting caller.
 -   You reject the caller, who then hears the busy signal.
 -    You switch to the caller and put conversational partner A on hold, who therefore cannot listen in on your call with the caller (conversational partner B). The further procedure corresponds to the callback, with the dialling being omitted.

☞ 4.3.3.1 Callback/Toggle/Conference Page 23

4.3.2 Call someone

4.3.2.1 Call with lifted receiver

Pick up the receiver and dial the number of the subscriber to be called.



----- Dial -----



Enter the subscriber number with the numeric keypad keys manually. The dialling occurs step-by-step with your inputs.



Alternatively, perform callback. The list of received calls opens, from which you select the caller whom you want to call or call back using the and keys. Finally, press the redial key to start the dialling process.



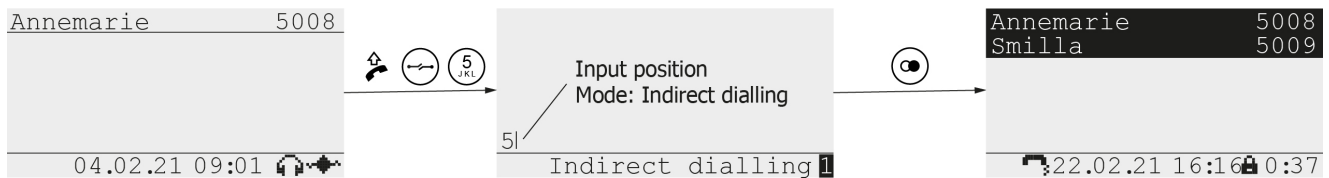
Alternatively, perform redial. The list of outgoing calls opens, from which you can select the caller whom you want to call again using the and keys. Finally, press the redial key to start the dialling process.

----- Conversation -----

☞ 4.3.2.2 Call with receiver on hook (indirect dialling) Page 22

4.3.2.2 Call with receiver on hook (indirect dialling)

For this call variant, the phone is technically in idle mode in terms of switching. Because the receiver largely covers the keyboard with this phone, the receiver should be picked up and the return to idle mode forced by pressing the disconnect key .



- Indicates that headset mode is switched on in the menu
- Indicates the connection status to the gatekeeper
- Indicates the numerical mode for manual input (indirect dialling)
- Indicates receiver mode

----- Dial -----



Manual dialling. Enter the subscriber number with the numeric keypad keys. In this operating mode, you can enter numbers and text and correct the entry if necessary. Finally, press the redial key to start the dialling process.

- ☞ 4.3.4.1.2 Manual input in indirect dialling mode Page 24
- ☞ 4.3.4.2 Use contacts (phone book) Page 25
- ☞ 4.3.4.3 Use indirect dialling context menu Page 26



Alternatively, perform callback. The list of received calls opens, from which you select the caller whom you want to call or call back using the and keys. Finally, press the redial key to start the dialling process.



Alternatively, perform redial. The list of outgoing calls opens, from which you can select the caller whom you want to call again using the and keys. Finally, press the redial key to start the dialling process.

----- Conversation -----



Lower conversation volume



Increase conversation volume







Switch microphone muting on/off. The activated muting is indicated in the bottom left of the display by the flashing microphone symbol .







Perform callback. Keep the connection with your current conversational partner A and call conversational partner B to speak with them without conversational partner A being able to listen in. With the introduction of the callback , conversational partner A is on hold; the phone asks you to enter the subscriber number for conversational partner B and establishes the connection to them after the input has been completed.

- ☞ 4.3.3.1 Callback/Toggle/Conference Page 23

 Perform transfer. Connect your current conversational partner A with a conversational partner B, and you end the call yourself. With the introduction of the transfer  you ask the phone to enter the subscriber number for conversational partner B and establish the connection with them, after which you confirm the input by pressing the redial key .


 **Xyz** During your call with conversational partner A, another caller reaches you. Signaled acoustically as a call-waiting tone and indicated in the display as a waiting call, you have the following options for dealing with the waiting call.

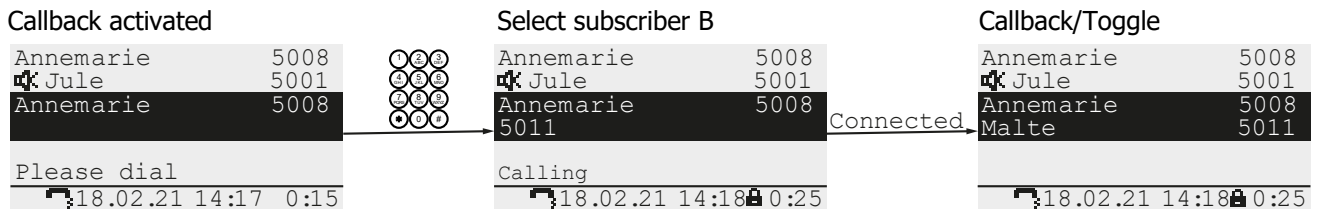
  You reject the caller, who then hears the busy signal.




  You switch to the caller and put conversational partner A on hold, who therefore cannot listen in on your call with the caller (conversational partner B). The further procedure corresponds to the callback, with the dialing being omitted.

4.3.3 Operate multiple connections


4.3.3.1 Callback/Toggle/Conference





With the introduction of the callback by pressing the  key, conversational partner A is put on hold and the phone asks you if you want to input the subscriber number for your conversational partner B. After successful input, the phone establishes the connection to conversational partner B.







-  Highlights the connection on hold
-  Indicates receiver mode
-  Indicates an encrypted audio transmission


----- Dial -----



 Enter the subscriber number with the numeric keypad keys manually.



 **Alternatively**, perform callback. The list of received calls opens, from which you select the caller whom you want to call or call back using the  and  keys. Finally, press the redial key  to start the dialing process.



 **Alternatively**, perform redial. The list of outgoing calls opens, from which you can select the caller whom you want to call again using the  and  keys. Finally, press the redial key  to start the dialing process.

----- Callback/Toggle -----


 You end the active connection with conversational partner B (A) and return to the on-hold connection with conversational partner A (B). Call conversation



  You change (toggle) the conversational partner; the connection with active conversational partner B (A) is put on hold and the previously on-hold connection with conversational partner A (B) becomes active.



  You and your two conversational partners A and B are interconnected in a conference in which you can all speak to each other. Conference



  You connect your two conversational partners A and B with each other and you end the call yourself.

----- Conference -----



 You end the conference, disconnect the last active connection with conversational partner B (A) and return to the on-hold connection with conversational partner A (B). Call conversation

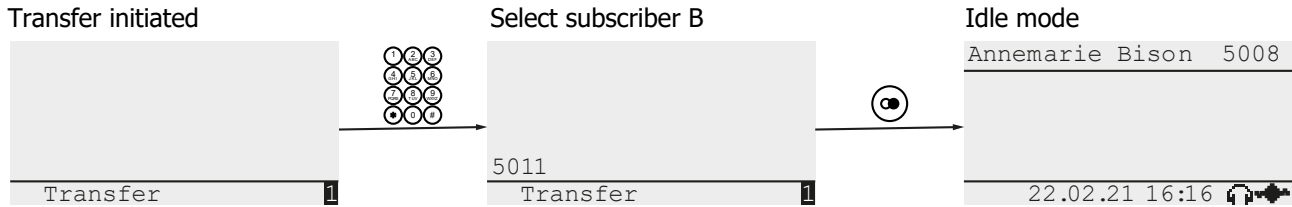
  You end the conference and return to both connections with active/on-hold assignment. Conversational partner B (A) is put on hold and the connection with conversational partner A (B) remains active. Callback/Toggle




  You end the conference and return to the two original connections. The connection to conversational partner B (A) remains active and the hold status of the connection with conversational partner A (B) is restored. Callback/Toggle

  You connect your two conversational partners A and B with each other and you end the call yourself.

4.3.3.2 Transfer


With the initiation of the transfer by pressing the  key, you initially remain connected with your conversational partner A, and the phone asks you to input the subscriber number for subscriber B, whom you want to connect with your conversational partner A. After successful input and final pressing of the  key, the transfer process begins. Here your original conversational partner A calls the subscriber B you have selected; you yourself have ended the call and can hang up the receiver.






-  Indicates the numerical mode for manual input (indirect dialling)
-  Indicates that headset mode is switched on in the menu
-  Indicates the connection status to the gatekeeper

----- Dial -----






Manual dialling. Enter the subscriber number with the numeric keypad keys. In this operating mode, you can enter numbers and text and correct the entry if necessary. Finally, press the redial key  to start the dialling process.



Alternatively, perform callback. The list of received calls opens, from which you select the caller you want to connect with your conversational partner A using the  and  keys. Finally, press the redial key  to start the dialling process.



Alternatively, perform redial. The list of outgoing calls opens, from which you select the caller you want to connect with your conversational partner A using the  and  keys. Finally, press the redial key  to start the dialling process.

4.3.4 Miscellaneous











4.3.4.1 Subscriber numbers

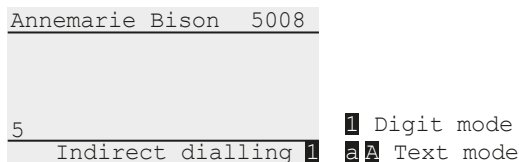
Your phone can not only dial normal subscriber numbers, but also H.323 names and IP addresses. If a subscriber number includes characters other than the numerical characters 0-9 | * | #, it will be interpreted as an H.323 name. A preceding @ symbol in an H.323 name will be automatically removed before dialling.


4.3.4.1.1 Manual input in immediate dial mode

This mode supports only the input of the characters 0-9 | * | # from the numeric keypad and dials the characters step-by-step with the input.

4.3.4.1.2 Manual input in indirect dialling mode

This mode supports the input of numerical and text characters, allows for the correction of input errors and dials the input character sequence as a single block if you identify the input as complete by pressing . This mode is indicated by a small, inversely displayed box in the lower right corner of the display. The box here indicates whether the input is currently in numerical mode  or in text mode  | . Switch to text mode  >  for example by holding down the  key until the first text character of the text list that is associated with the key appears in the display. Press the key in rapid succession to replace the current character "a" by the next character "b" from the list. Pause until the insertion point (cursor) switches from the left to the right side of the last selected character "b" to definitely adopt the character. Return to numerical mode  >  occurs if your character selection ends with a number or you press the  button.



-  Indicates the numerical mode for manual input (indirect dialling)



¹⁾ Input of numerical and text characters.



Move insertion point (cursor) one character to the left.



²⁾ Move insertion point (cursor) one character to the right.



Delete character before insertion point (cursor).



Ends the input and starts the dialling process for input.



Ends the input and opens the indirect dialling context menu in which various options for dialling the input phone number can be selected.

¹⁾ During input, the phone searches your contact data (phone book) for entries that agree with the current state of your input and then shows these in the viewing area if applicable. If you do not intend to perform a phone book search, ignore these outputs and simply continue your input.

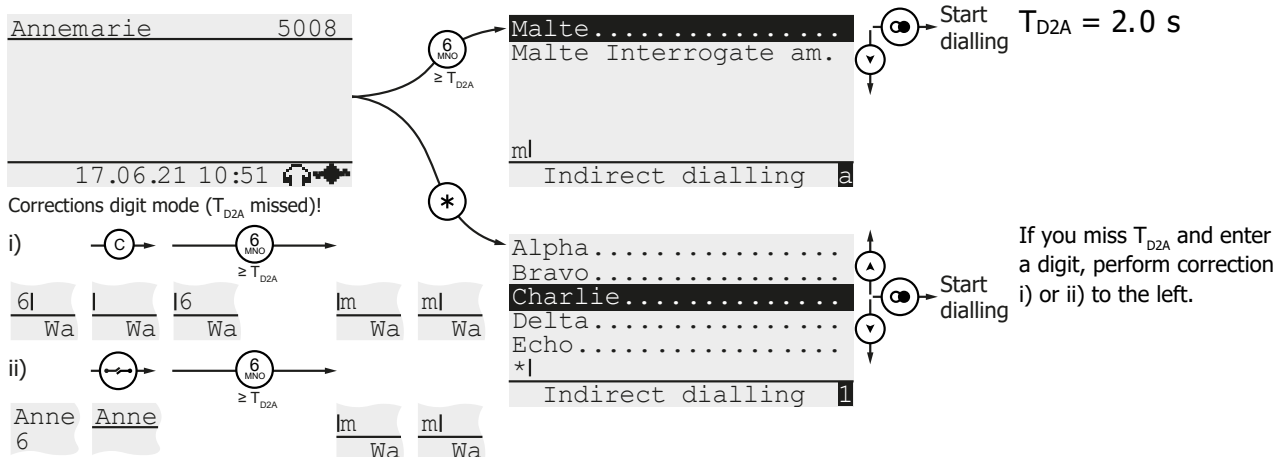
²⁾ If the insertion point is behind the last character of the input, the keystroke ends the character input and starts the dialling process for input or opens the *Directory* input dialog for the selected contact.

Key1865	Character list for key
1	1 + ( ) , - & @ # ` * ! \$ % . / : ; < = > ? ' [ ] \ ^ _ ` { | } ~ £ \$ ¢ ÷
2	2 a b c A B C ä à á â ã ä æ ç Ä À Ã Ä Å Æ Ç
3	3 d e f D E F è é ê ë Ë É Ê Ë
4	4 g h i G H I ï í î ï Ì Í Î Ï
5	5 j k l J K L
6	6 m n o M N O ö ñ ò ó ô õ ø Ñ Ò Ó Ô Õ
7	7 p q r s P Q R S ß
8	8 t u v T U V ü ú û Ü Û Ú Û
9	9 w x y z W X Y Z ý ý ý
0	0 + ( ) , - & @ # ` * ! \$ % . / : ; < = > ? ' [ ] \ ^ _ ` { | } ~ £ \$ ¢ ÷
*	*
#	(Space)

Table 1 Input of text and special characters

4.3.4.2 Use contacts (phone book)

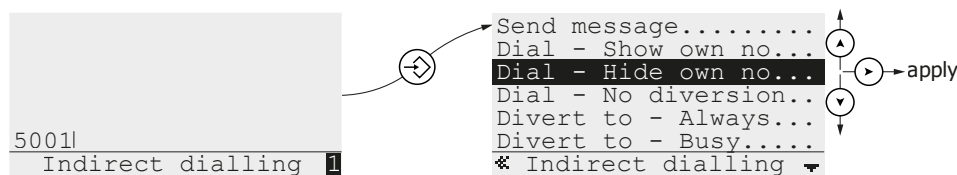
As an alternative to the manual input of phone numbers, you can also use your contacts (phone book). To do this, press the character key that corresponds with the first letter of the subscriber to be called and hold down the key for at least $T_{D2A} = 2.0$ s. When the key is released, the device switches to the text mode of indirect dialling and lists in the viewing area all subscribers whose names begin with the selected initial letters. Press the key again to switch to the next initial letter, or enter a second letter to further narrow the result list. If the remaining search result still includes multiple contacts, select the subscriber to be called. To do this, use the vertical arrow keys (↓, ↑) to move the highlighting (inverse display) of the current selection onto the subscriber you were searching for.



If you are unsure of the name of the person you want to call, press the **⊕** key for a short time to display all subscribers in your contacts (phone book). However, this method only functions when initiated from the device's idle mode. If the device is in immediate dial mode, indicated by the "Please dial" prompt, press any numerical key for at least TD2A = 2.0 s, delete the letters using the **⊖** key and then press the **⊕** key. Finally, press the **⊗** key, to start dialling.

4.3.4.3 Use indirect dialling context menu

The Indirect dialling context menu includes various options for dealing with a previously input subscriber number. Options include sending a text message, checking the phone number transmission or establishing call diversion. Press the menu key **⊕** to open the context menu, which shows you all the options available for selection. Select the desired option with the vertical arrow keys **⬇**, **⬆** and then press the **⬆** key to apply these to the subscriber number.



The available options are described below

- Send message..... Opens the Message dialog, inserts the input subscriber number in the input field "For:" of the dialog and waits for you to input the text message that will be sent to the subscriber when you finally press the **⊕** key.
- Dial - Show own no..... Dials the input subscriber number and in the process transfers your phone number to the subscriber, who can see your phone number immediately.
- Dial - Hide own no..... Dials the input subscriber number and in the process suppresses the transmission of your phone number to the subscriber, who cannot see your phone number immediately.
- Dial - No diversion..... Dials the prepared subscriber number without performing possible call diversions. (If the PBX supports this feature)
- Call as user ¹⁾..... Opens the Call as user selection menu, which displays all registered co-users of the device. Use the vertical arrow keys **⬇**, **⬆** to select the user who is to be presented to the subscriber as the caller, and finally press the **⬆** key to start the call.
- Divert to - Always ²⁾... Opens the Call diversion dialog, sets the selection parameter Always there to On and enters the input subscriber number as the diversion destination under Always. Finally, press the **⊕** key to activate call diversion.
- Divert to - Busy ²⁾.... Opens the Call diversion dialog, sets the selection parameter Busy there to on and enters the input subscriber number as the diversion destination in the nameless input parameter under Busy. Finally, press the **⊕** key to activate call diversion.
- Divert to - No reply²⁾ Opens the Call diversion dialog, sets the selection parameter No reply there to On and enters the input subscriber number as the diversion destination in the nameless input parameter under No reply. Finally, press the **⊕** key to activate call diversion.

¹⁾ Option only appears if multiple users are registered.

²⁾ Option only appears if the H.323 protocol or the Local Call Forward protocol option are configured.

4.3.4.4 Switch do not disturb on/off

With do not disturb, you can switch off the ringing of the phone temporarily, for example so you can work without interruption. The switched on do not disturb is indicated in the display's viewing area by the **⊗** icon. To switch do not disturb on or off, the **⊕** key must be pressed in the phone's idle mode until the display of the **⊗** icon changes.

4.3.4.5 Call lists

The phone keeps chronologically ordered lists of inbound and outbound calls and messages, the information from which can be used to initiate callbacks or recalls.

4.3.4.5.1 Incoming calls

In the initial state, press the callback key **R** or navigate in the main menu to `Main menu\Call lists\Calls (inbound)` to open the call list of inbound calls. If the call list is not empty, it appears as a consecutively numbered list of two-line entries. The last-added, most recent entry always has the number 01, and is the selected entry after opening the view, which is inversely displayed. Every entry includes the date and time of the call, an icon that represents the connection status, and in the second line the name and/or phone number of the external subscriber.

	Date	Time	
Continuous numerating	01 21.05.21	11:20	Connection status
	Julie 5001		No connection (missed)
	02 19.05.21	20:16	Voice connection
	Malte 5011		Voice connection, diverted
	03 19.05.21	19:30	Voice connection, transferred
Name of the external subscriber	Smilla 5009		Text message
	← Calls (inbound)		Number of the external subscriber

Naming the call list

Using the **↓** and **↑** keys, select the caller you want to call or call back and then press the redial key **R** to start the dialling process.

No matter whether you actually performed a callback or only looked at the call list, a missed call count **3** that was previously displayed in the initial state will be hidden after you have opened the call list of inbound calls.

4.3.4.5.2 Outbound calls

In the initial state, press the redial key **R** or navigate in the main menu to `Main menu\Call lists\Calls (outbound)` to open the call list of outgoing calls. If the call list is not empty, it appears as a consecutively numbered list of two-line entries. The last-added, most recent entry always has the number 01, and is the selected entry after opening the view, which is inversely displayed. Every entry includes the date and time of the call, an icon that represents the connection status, and in the second line the name and/or phone number of the external subscriber.

	Date	Time	
Continuous numerating	01 21.05.21	11:20	Connection status
	Julie 5001		No connection (missed)
	02 19.05.21	20:16	Voice connection
	Malte 5011		Voice connection, diverted
	03 19.05.21	19:30	Voice connection, transferred
Name of the external subscriber	Smilla 5009		Text message
	← Calls (inbound)		Number of the external subscriber

Naming the call list

Using the **↓** and **↑** keys, select the caller you want to call or call back and then press the redial key **R** to start the dialling process.

4.4 Operation, messages/notifications in display

4.4.1 Icon **X** (do not disturb activated)

This icon in the display's viewing area indicates the activation of do not disturb. In the standard do not disturb setting, incoming calls are not signaled acoustically; the device does not ring. To deactivate do not disturb, press the ***** key when the phone is in idle mode until the icon is hidden.

4.4.2 Icon **3** (missed calls)

This icon in the display's viewing area shows the number of calls that you missed during your absence. Inspect the call list of calls (inbound) to hide the display of missed calls. To do this, press the **R** key or navigate to the `Main menu\Call lists\Calls (inbound)`.

4.4.3 Icon (call diversion activated)

This icon in the left area of the footer identifies the activation of a call diversion that diverts the incoming calls always, if the line is busy, or if there is no reply. Inspect the set call diversions in `Main menu\User settings\Call diversion` and deactivate this if necessary.

4.4.4 Icon (phone number transmission disabled)

This icon in the left area of the footer indicates the disabling of display phone no. for outbound calls, which means that your calls are carried out “anonymously.” Your conversational partner cannot see your phone number. Inspect the disabled display phone no. `Main menu\User settings\Display phone no..` and activate this if necessary.

4.4.5 Icon (phone lock activated)

This icon in the left area of the footer indicates the activation of the phone lock.

☞ 4.4.7 Text overlay “Attention, no emergency calls possible!”

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4.4.6 Text overlay “Keyboard locked”



This text overlay in the display’s viewing area indicates that undelayed direct dial is activated. Direct dial causes a configured destination number to be called as soon as you set one of the conversation modes. To eliminate this lock, you can deactivate direct dial or set a delay time of > 0 . To do this, navigate to `Main menu\Phone settings\Direct dial` and set the `Direct dial: selection` parameter to `Off` or set the `Delay (s): setting` parameter to a value > 0 .

☞ 5.1.5.2 Direct dial

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4.4.7 Text overlay “Attention, no emergency calls possible!”

This text overlay in the display’s viewing area indicates that the phone lock is activated. The locked phone cannot be used for outbound calls, and inbound calls are not signaled.

To remove the phone lock, first press the menu key , then input your PIN in the open authentication query and conclude your input by pressing the menu key  again. If the input PIN was correct, the phone lock is removed and the device can be used again.

5. Menu

5.1 Main menu – Overview

- - Call lists.....
 - | □ - Calls (combined).....
 - | □ - Calls (inbound)...
 - | □ - Calls (outbound)...
 - | □ - Active callbacks.....
- -Contacts.....
 - | □ - Directory input.....
 - | □ - Search (local).....
 - | □ - Search (external).....
 - | □ - Search (PBX).....
 - | □ - Search (combined)...
- -Messages.....
 - | □ - New message.....
 - | □ - Messages (incoming)...
 - | □ - Messages (outgoing)...
- -User settings..
 - | □ - Call diversion.....
 - | □ - Presence.....
 - | □ - Do not disturb.....
 - || □ - Do not disturb: Off
 - || □ - Action: Ringing off
 - || □ - For: All calls
 - || □ - Call waiting: On def.
 - || □ - Display phone no.: On
- -Phone settings.
 - | □ - Headset: Off
 - | □ - Direct dial.....
 - || □ - Direct dial: Off
 - || □ - Number:
 - || □ - Delay (s):0
 - || □ - Lock phone.....
 - | □ - Change PIN.....
 - | □ - LCD contrast
 - | □ - Keyboard light: On
- -User list.....
 - | □ - 1 Alpha.....5555 +*
 - | □ - 2
 -
 - | □ - 6
- -Administration.....
 - -Information.....
 - | □ - IP 192.168.101.20 // IPv4 Internet address
 - | □ - Ser 009033280000
 - | □ - 13r2 dvl
 - | □ - IP160[21.0225]
 - | □ - Bootcode[210301]
 - | □ - Hardware[1000]
 - -IP settings.....
 - -Registration.....
 - -STUN.....
 - -Reset configuration.




5.1.1 Main menu – Call lists

The phone keeps chronologically ordered lists of inbound and outbound calls and messages, the information from which can be transferred to the contact list (phone book) or used to initiate callbacks or recalls. The call lists menu branches into various list views in which the entries from the original lists are compiled to create an orderly list.






- Calls (combined)..... Opens a combined list of inbound and outbound calls.
- Calls (inbound)..... Opens the list of inbound calls.
- Calls (outbound)..... Opens the list of outbound calls.
- Active callbacks..... Opens the list of active callbacks.

5.1.1.1 View call lists






If the selected list is not empty, the call list appears as a consecutively number list of two-line entries. The last-added, most recent entry always has the number 01, and is the selected entry after opening the view, which is inversely displayed. Every entry includes the date and time of the call, an icon that represents the connection status, and in the second line the name and/or phone number of the external subscriber. The designation of the selected call list is shown in the display footer.

	Date	Time	
Continuous numerating	<01	21.05.21 11:20	
< (incoming)	Jul 5001		
> (outgoing)	>02	19.05.21 20:16	
	Malte 5011		
	<03	19.05.21 19:30	
Name of the external subscriber	Smilla 5009		
	Number of the external subscriber		
	← Calls (combined) ▼		
	Naming the call list		

Connection status (icons)

-  No connection (missed)
-  Voice connection
-  Voice connection, diverted
-  Voice connection, transferred
-  Text message

----- Key actions -----

-  Closes the current call lists view and returns to the higher-level menu.
-  Selects the following entry in the call list.
-  Selects the previous entry in the call list.
-  Opens the "Edit call list" sub-menu to edit the selected entry.
-  Starts dialling the subscriber number of the selected entry.

5.1.1.2 Edit call list, process call list

Information..... Opens an info box for entry in the call list, in which the following information for connection is displayed.

Info box: Call list (inbound)

For: Local user
 From: External subscriber
 Via: External broker ¹⁾
 Duration: h:mm:ss

Info box: Call list (outbound)

From: Local user
 For: External subscriber
 Via: External broker ¹⁾
 Duration: h:mm:ss

¹⁾ Display appears only for diverted, mediated or transferred connections:

Local user	Name/phone number of the local phone user
External subscriber	Name/phone number of the external subscriber
External broker	Name/phone number of the external broker who diverted, mediated or transferred the connection.
h:mm:ss	Call duration in hours, minutes and seconds or -:-:-, if no connection was made.

Save no. in director... Opens the directory input in the contact list (phone book) and adopts the connection data from the call list entry in the corresponding input fields of the directory input. Complete or change the data and save the contact by pressing the menu key (⊞).

Indirect dialling..... Opens the indirect dialling input and adopts the connection data from the call list entry in the indirect dialling input field.

Delete entry..... Deletes the selected entry from the call list.

Delete list..... Beginning with the selected entry, deletes all subsequent entries from the call list.

5.1.2 Main menu – Contacts

The phone includes a configurable contact list (phone book) in which the names and phone numbers of your conversational partners can be saved in alphabetical order. For each entry in the list, individual settings can be made to define the ring melody behavior (ringing) specifically for the conversational partner. In addition to the local list, the administrator can set up connections to contact lists that are maintained on an external LDAP server and/or centrally in your phone system. The contacts menu branches into the directory input sub-menu, with which a new, local contact can be created, or into the search sub-menu, which allows for the search of a subscriber in one of the contact lists.

- Directory input..... Open dialog to input a new contact
- Search (local)..... Search subscribers in the phone's contact list
- Search (external)..... Search subscribers in the contact list of an external LDAP server
- Search (PBX)..... Search subscribers in the phone system's contact list
- Search (combined)..... Search subscribers in all contact lists

5.1.2.1 Directory input

The directory input dialog is used to create a new contact or to edit an existing contact.

- Subscriber:..... Input parameter to specify the subscriber's name, under which the entry will be included in the alphabetically ordered contact list. The input field is located in the line below the designation Subscriber.
- Number: ¹⁾..... Input parameter to specify the subscriber number and the optional DTMF characters, which are transferred to the destination phone after successful connection. The optional DTMF characters are to be placed after the subscriber number, separated by a comma.
4711 // Subscriber number
4711,*101# // Subscriber number with following DTMF characters transmission
- Name: ¹⁾..... Input parameter to specify the subscriber's name, which manages the dialling information instead of the number (e.g. subscriber designation within the PBX used).
- Settings..... Opens the settings dialog in which the ring melody behavior for the subscriber's calls can be set.
- Delete ²⁾..... Deletes the current entry from the contact list.


¹⁾ To specify the dialling information, either the input parameter Number or the input parameter Name must be used.

²⁾ The Delete command is only available if directory input was used to edit an existing contact.

After you have made your specifications, press the menu key  as many times as necessary until the text message Entry saved appears.


5.1.2.1.1 Settings

Dialog settings to set the ring melody signaling (ringing) that is to be used when the subscriber indicated in the contact's Subscriber input parameter calls.

- Ringling:..... Selection parameter for switching ringing on/off.
 - On The acoustic ring melody signaling (ringing) is switched on.
 - Off The acoustic ring melody signaling (ringing) is switched off.
- Ring melody:..... Opens the ring melody dialog, in which the melody, volume and speed of the ring melody signaling (ringing) can be set.
 5.1.2.1.1.1 Set ring melody for contact Page 32
- Registration:..... Opens the registration dialog, in which nothing can be set.

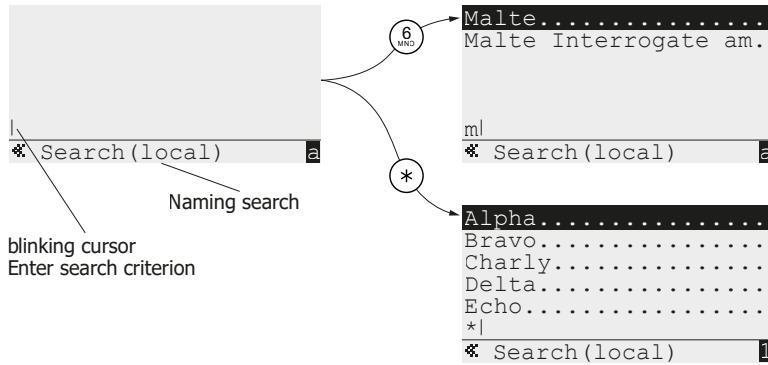
5.1.2.1.1.1 Set ring melody for contact

Dialog settings to set the ring melody signaling (ringing) that is to be used when the subscriber indicated in the contact's Subscriber input parameter calls.

- Start | Stop..... Setting variable for starting and stopping the ring melody generator. Press the  key to start playback of the set ring melody and press it again to stop playback.
- Melody:..... Selection parameter to specify the ring melody.
 - Default Default melody
 - 3tone 1 - 3tone 3 Triad tones 1-3
 - 2tone 1 - 3tone 5 Two tones 1-5
 - tone 1 - tone 2 Single tones 1-2
 - ringer Ringer
- Vol:..... Selection parameter to set the volume.
 - Def Default volume
 - 1 - 11 Volume levels 1-11
 - Max Maximum volume
- Speed:..... Selection parameter to set the playback speed
 - Def Default playback speed
 - 1 - 5 Playback speed 1-5
 - Max Maximum playback speed

5.1.2.2 Search subscribers

The selected subscriber search appears with a cleared viewing area, on the bottom line of which the flashing insertion point (cursor) awaits the input of the search criterion. The display footer shows the designation of the selected search and the current text/numerical input mode. As soon as a character has been input, the viewing area shows the contacts whose subscriber designation begins with the input character, or all contacts if the * symbol was input. The first line of the displayed search result highlights the selected contact and is inversely displayed.



----- Key actions -----

- Input of the initial letters of the subscriber being searched for or input of the * symbol if all subscribers in the list are to be shown
- Move insertion point (cursor) one character to the left.
- Move selection to the next contact within the search results
- Delete character before insertion point (cursor).
- Move selection to the previous contact within the search results.
- Move insertion point (cursor) one character to the right or open the directory input dialog to edit the selected contact.
- Call selected contact.

5.1.3 Main menu – Messages

5.1.4 Main menu – User settings

Main menu\ **User settings**

The phone provides a set of configuration parameters for each registered user, in which the user can make individual settings to divert calls, allow or exclude call waiting during active calls, etc. The user settings menu includes setting elements to configure the parameter set of the activated user. If multiple users are registered, it must be ensured that the user whose configuration is to be inspected and/or changed is also the activated user.

The active user is set in [5.1.6 Main menu – User list](#) Page 38;
 additional user-specific settings for menu language, signal tones, function keys, etc. are found there.

Below are the menu elements that are described in detail in the following sub-chapters.

- Call diversion ¹⁾..... Open dialog to establish call diversions.
- Presence..... Open dialog to set presence.
- Do not disturb..... Open dialog to set a do not disturb.
- Call waiting:..... Selection parameter to set the call waiting behavior.
- Display phone no.:..... Selection parameter for switching display phone no. on/off.


¹⁾ optional

5.1.4.1 Call diversion, optional

Main menu\User settings\Call diversion

The call diversion dialog is optional and is only visible if the requirements described below are met. If visible, the dialog can be used to establish diversions that direct inbound calls to other subscriber numbers. For example, divert all calls to your mobile phone during your absence so that you can be reached at all times. Below are the response conditions for the three call diversions that you can switch on and off independently of each other.

- Always Diverts every call to the set diversion destination immediately.
- Busy Diverts calls that encounter your connection in the "Busy" state, i.e. precisely when you are telephoning, to the set diversion destination.
 If you have also activated the call waiting feature, diversion will not happen until you reject the caller with the key sequence $\text{\textcircled{R}}\text{\textcircled{0}}$.
- No reply Diverts calls that cannot be accepted within a delay period to the set diversion destination.

In the device's idle mode, the activation of any call diversion is indicated by the  icon, which appears on the left of the display footer. If the "Always" call diversion is activated, the inverse text overlay "Diverted to diversion destination" also appears in the display's viewing area.


Below is a description of the dialog parameters, which include a response condition selection parameter for each of the three call diversions and a nameless input parameter in the next line. To change the settings, first press the $\text{\textcircled{>}}$ key to open the dialog of the same name. Set your desired configuration for the dialog elements described below and, if you have changed settings, press the menu key $\text{\textcircled{M}}$ as many times as necessary until the saving of the changes is confirmed by the text overlay OK

- Always: Selection parameter for switching the "Always" call diversion on and off.
 - Off The call diversion is switched off or disabled
 - On The call diversion is switched on or activated.
 - Nameless input parameter for input of the "Always" diversion destination.
- Busy: ¹⁾ Selection parameter for switching the "Busy" call diversion on and off.
 - Off The call diversion is switched off or disabled.
 - On The call diversion is switched on or activated.
 - Nameless input parameter for input of the "Busy" diversion destination.
- No reply: ¹⁾ Selection parameter for switching the "No reply" call diversion on and off.
 - Off The call diversion is switched off or disabled.
 - On The call diversion is switched on or activated.
 - Nameless input parameter for input of the "No reply" diversion destination.

¹⁾ These call diversions are only effective if the "Always" call diversion is switched off.

Default setting:

- Always:Off // "Always" call diversion off, "Always" diversion destination empty
- Busy:Off // "Busy" call diversion off, "Busy" diversion destination empty
- No reply:Off // "No reply" call diversion off, "No reply" diversion destination empty



Requirements

- Call diversion requires the configuration of the H.323 protocol and works according to the H.450 standard if the gatekeeper supports this protocol. Alternatively, there is the option of setting the Local Call Forward protocol option, which shifts the implementation of the call diversions from the PBX to the device.

5.1.4.2 Presence

Main menu\User settings**Presence**

The effects of the menu item shown here depend on the PBX used. The presence dialog allows its availability to be set easily and to connect the automatic output of a message that is sent to a potential caller to inform them why the recipient cannot be reached right now. Setting is done with the `Activity` selection parameter, which is to be set to the value that gives a reason for the unavailability or to the nameless (empty) value that is to be set when the recipient can be reached again and no message should be sent. A message can be individually expanded in the `Note` input parameter.

`Activity:` Selection parameter to set the availability/unavailability.
1) Available, do not send a text message to a caller.
`Away` Not available due to absence.
`Busy` Not available due to other activity.
`Lunch` Not available because having lunch.
`Vacation` Not available due to vacation-related absence
`Do not disturb` Not available due to need to work without interruption.
`Note` Input parameter for individual expansion of the message text.


1) empty, no name.



Presettings:

`Activity:.....` // Available
`Note.....` // Empty

5.1.4.3 Do not disturb

Main menu\User settings**Do not disturb**

The dialog makes it possible to limit the signaling of inbound calls, for example in order to work without interruption. The activated do not disturb is indicated by the  icon in the display's viewing area when the phone is in idle mode.

To change the do not disturb settings, first press the  key to open the dialog of the same name. Set your desired configuration for the dialog elements described below and, if you have changed settings, press the menu key  as many times as necessary until the saving of the changes is confirmed by the text overlay `OK`.

`Do not disturb.....` Selection parameter for switching do not disturb on and off.
`Off` Do not disturb is switched off or disabled.
`On` Do not disturb is switched on or activated.
`Action:.....` Selection parameter to define the action that is to be applied with do not disturb activated and inbound calls.
`Ringing off` The acoustic ring melody signaling (ringing) is switched off.
`Away` The acoustic ring melody signaling (ringing) is switched off and the caller is sent a text message which can be specified in the Out of office note input parameter.
`Ring once` The acoustic ring melody signaling (ringing) is limited to the output of a single ring signal.
`Silence` The acoustic ring melody signaling (ringing) and the optical signaling of the call in the display are switched off.
`Busy` As with the silence setting, the phone behaves toward the caller as if it were busy.
`For:.....` Selection parameter to specify the calls for which the activated do not disturb is to be applied.
`All calls` Do not disturb is to be applied for all calls.
`External calls` Do not disturb is to be applied for external calls.
`Internal calls` Do not disturb is to be applied for internal calls.
`Out of office note.....` Input parameter for inputting a text message to the caller.

Presettings:

`Do not disturb:`Off // Do not disturb disabled
`Action:`Ringing off // Acoustic ring melody signaling switched off
`For:`All calls // Do not disturb applies for all calls
`Out of office note` // Out of office note is empty

5.1.4.4 Call waiting: **On def.** | **On once** | **On mute** | **Off**

Main menu\User settings\Call waiting

The call waiting selection parameter specifies how the device should proceed with a call that occurs during an active phone conversation. If call waiting is switched off, the device enters the caller in the call list of inbound calls, and the caller immediately receives the "Busy" signal tone. If call waiting is switched on, the call is first signaled optically and, if applicable, acoustically on the device, and the recipient decides how to proceed. The recipient can reject the caller with the $\text{Ⓜ}\text{Ⓜ}$ key sequence or establish a connection with them with the key sequence $\text{Ⓜ}\text{Ⓜ}$. During the signaling, the caller receives the "Call waiting" signal tone, "Busy" in case of rejection, or otherwise the desired voice connection.

To change the setting, set the selection parameter described below to your desired value and, if you have changed the setting, press the menu key Ⓜ as often as necessary until the saving of the change is confirmed with the text overlay OK.

Call waiting:..... Selection parameter to define the procedure for calls that come in during an active phone conversation.

On def.	Call waiting is switched on, the call is signaled optically and acoustically. - Optically: Message 1 call is waiting, subscriber XXXX in the viewing area. - Acoustically: Short, call-periodically issued beep
On once	Call waiting is switched on, the call is signaled optically and acoustically. - Optically: Message 1 call is waiting, subscriber XXXX in the viewing area. - Acoustically: Longer beep, issued once
On mute	Call waiting is switched on, the call is only signaled optically. - Optically: Message 1 call is waiting, subscriber XXXX in the viewing area. - Acoustically: mute
Off	Call waiting is switched off, the call is not signaled.

Presettings:

Call waiting:..On def// Call waiting switched on with optical and acoustic signaling

5.1.4.5 Display phone no.: **On** | **Off**

Main menu\User settings\Display phone no.

The display phone no. selection parameter specifies whether the caller's phone number is transmitted to the call recipient in outbound calls. When the device is in idle mode, the switched off display phone no. is indicated by the ☒ icon, which appears on the left of the display footer.

To change the setting, set the selection parameter described below to your desired value and, if you have changed the setting, press the menu key Ⓜ as often as necessary until the saving of the change is confirmed with the text overlay OK.

Display phone no.:..... Selection parameter for switching display phone no. on and off

Off	Display phone no. to the call recipient is switched off
On	Display phone no. to the call recipient is switched on

Presettings:

Display phone no.:..On// Display phone no. to the call recipient is switched on

5.1.5 Main menu – Phone settings

5.1.5.1 Headset: **On** | **Off**

Main menu\Phone settings\Headset

The headset parameter specifies whether the headset conversation modes are enabled and are activated or disabled with corresponding key actuations. The enabling of the headset is indicated when the phone is in idle mode in the right of the display footer by the ☒ icon.

To change the setting, set the selection parameter described below to your desired value and, if you have changed the setting, press the menu key Ⓜ as often as necessary until the saving of the change is confirmed with the text overlay OK.

Headset:..... Selection parameter for switching the headset enabling on and off

Off	Headset operating modes are locked
On	Headset operating modes are enabled



Presettings:

Headset:.....Off// Headset operating modes are locked

5.1.5.2 Direct dial


Main menu\Phone settings**Direct dial**

In the direct dial dialog, a destination number can be specified that the phone will call after an adjustable delay when the user switches from idle mode into one of the conversation modes or, for example, receiver mode. Within the running delay time the user has the option of averting the pending direct dial by manually dialling another destination number.

To change the direct dial settings, first press the  key to open the dialog of the same name. Set your desired configuration for the dialog elements described below and, if you have changed settings, press the menu key  as many times as necessary until the saving of the changes is confirmed by the text overlay OK.

```
Direct dial:..... Selection parameter for switching direct dial on and off
  Off                Direct dial is switched off
  On                 Direct dial is switched on
Number:..... Input parameter to specify the destination number and the optional DTMF characters, which are
                transferred to the destination phone after successful connection. The optional DTMF characters are to
                be placed after the destination number, separated by a comma.
                4711 // Destination no.
                4711,*101# // Destination no. with following DTMF characters transmission
Delay (seconds):..... Input parameter to specify the delay duration T in seconds.
                0 s ≤ T ≤ 65535 s
```

Notes:

- With the exception of the menu key , when the delay is set to 0 s the text message the phone will superimpose the text message `Keyboard locked!` if you press a button with direct dial switched on.




Presettings:

```
Direct dial:.....Off // Direct dial disabled
Number: // Empty
Delay (seconds): 0 // Delay 0 s
```

5.1.5.3 Lock phone

Main menu\Phone settings**Lock phone**





The lock phone action switch activates the phone lock. The phone cannot be used for outbound calls when the lock is activated, and inbound calls are also not signaled.

To engage the lock, first press the  key. Then you will be asked to input the device's PIN in the open `Authentication` query. Confirm your input of the PIN by pressing the menu key . If the PIN was correct, the text overlay "Attention, no emergency calls possible!" will appear and the locked phone will switch to idle mode, in which the activated lock is indicated by the switched on  icon on the left in the display footer.

5.1.5.4 Change PIN

Main menu\Phone settings**Change PIN**

In the "PIN change" dialog the PIN can be changed, which should prevent access by unauthorized users.

To change the PIN, first press the  button to open the dialog with its input parameters `Cur PIN`, `New PIN` & `New PIN`. Then, using the numerical keys, enter the current PIN and the new PIN. The latter must be entered twice to ensure that both inputs are identical. Switch the insertion point (cursor) from line to line using the  or  keys. Finally, press the menu key  to save the input new PIN as the current PIN. If the inputs were correct, the short text overlay `Changes activated` will appear. In case of a recognized error, incorrect PIN or lack of agreement between the two newly input PINs, the text overlay `invalid PIN` will appear briefly and, with deleted input parameters, the dialog is ready for a new change attempt.

Presettings:

```
PIN..... // Empty, PIN protection not active!
```

5.1.5.5 LCD contrast: 1|2|...|15

Main menu\Phone settings**LCD contrast:**

The LCD contrast parameter specifies the contrast of the OLED display (the parameter is traditionally called LCD and has not been renamed for the OLED display used by the FernTel IP4 / IP160).

To change the setting, set the selection parameter described below to your desired value and, if you have changed the setting, press the menu key \odot as often as necessary until the saving of the change is confirmed with the text overlay OK.

```
LCD contrast: ..... Selection parameter to specify the OLED contrast.
  1 - 14           Setting range 1-14
  15              Maximum contrast
```

Presettings:

```
LCD contrast:.....8 // Medium contrast setting
```

5.1.5.6 Keyboard light: On | Off

Main menu\Phone settings**Keyboard light:**

The keyboard light parameter specifies whether the keyboard light is to be turned on or off.

To change the setting, set the selection parameter described below to your desired value and, if you have changed the setting, press the menu key \odot as often as necessary until the saving of the change is confirmed with the text overlay OK.

```
Keyboard light:..... Selection parameter for switching the keyboard light on and off
  Off           Keyboard light is switched off
  On            Keyboard light is switched on
```

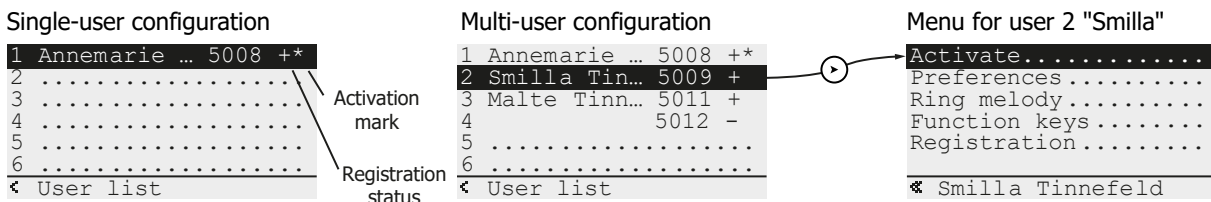
Presettings:

```
Keyboard light: On // Keyboard light is switched on
```

5.1.6 Main menu – User list

Main menu**User list**

The phone supports the registration of up to 6 users; one activated user and 5 co-users. Outbound calls are always made with the identity (subscriber number) of the activated user, while all inbound calls are signaled to one of the registered and logged-in users on the phone (ringing). The active user of the phone and which of the registered co-users are registered or deregistered is easy to change during operation. The figure below shows two differently configured users lists and the call-up of the user menus as an example



Activation status

* Activated user

Registration status

- + Registered user (incoming calls are signaled)
- Deregistered user (incoming calls are not signaled)

The user list menu contains one numbered element for each potential user, which displays name, subscriber number, registration status and activation status of registered users after the user number.

5.1.6.1 Activate users 1-6

Main menu\User list\n UserName\Activate

Navigate to the activate action switch in the user menu of the user whom you want to make the activated user of the phone. Then press the **⏩** key to perform the activation. To confirm the action, the text messages OK is then briefly superimposed in the display and the phone returns to the open User list menu.

5.1.6.2 Register or deregister users 2-6 (co-users)

Main menu\User list\n UserName\Registration\register/deregister

Navigate to the Register or Deregister action switch in the Registration menu of the co-user n, whom you want to register or deregister. Press the **⏩** key to perform the re-registration. To confirm the action, the text messages OK is then briefly superimposed in the display and the phone returns to the open User list menu.

5.1.6.3 Register users 2-6 (co-users)

Main menu\User list\n UserName\Registration\Settings

Navigate to the Settings element in the Registration menu of co-user n, whom you want to register or whose registration you want to change. Then press the **⏩** key to open the Registration dialog, which is described below.

Protocol:..... Selection parameter for selection of the protocol to be used

H323	Protocol H323
TH323	Protocol TH323
SH323	Protocol SH323
SIP	Protocol SIP
TSIP	Protocol TSIP
SIPS	Protocol SIPS

Name: Input parameter for optional specification of the user name.
Number: Input parameter for optional specification of the user number.
Passw.: Input parameter for optional specification of a user password.
VoIP Gatekeeper: Open dialog of the same name to specify the gatekeeper.
☞ 5.1.6.3.1 Setting of the VoIP Gatekeeper Page 39
Options: Open the dialog of the same name to specify options.
☞ 5.1.6.3.2 Options tones Page 40

5.1.6.3.1 Setting of the VoIP Gatekeeper

5.1.6.3.1.1 VoIP Gatekeeper H323, TH323 and SH323

Gatekeeper ID..... Designation of the following input parameter line.
..... Input parameter to specify the Gatekeeper ID.
Primary Gatekeeper Designation of the following input parameter line.
1) Input parameter to specify the primary Gatekeeper IP address.
Secondary Gatekeeper Designation of the following input parameter line.
1) Input parameter to specify the optional secondary Gatekeeper IP address.

1) The IP addresses are input in text mode. The periods "." to separate the various address segments must also be input. Preferably this is achieved with key 1, which must be pressed for at least 2.0 s to switch the input to text mode, and then selecting the "." symbol by pressing it multiple times.

5.1.6.3.1.2 VoIP Gatekeeper SIP, TSIP & SIPS

Name:..... Input parameter for optional specification of the domain name.
Proxy..... Designation of the following input parameter line.
1) Input parameter to specify the proxy.
Proxy 2..... Designation of the following input parameter line.
1) Input parameter for optional specification of an alternative proxy 2.
STUN:..... Open dialog to specify the STUN/TURN server settings.

1) The proxy is input in text mode. If you input IP addresses, the periods "." to separate the various address segments must also be input. Preferably this is achieved with key 1, which must be pressed for at least 2.0 s to switch the input to text mode, and then selecting the "." symbol by pressing it multiple times.

5.1.6.3.2 Options tones


Here you set the signal tones to be used by the phone, with which the device's switching status is represented acoustically.

Tones:..... Selection parameter to select the tones to be used

europe-pbx	Europa, private switching systems
europe-public	Europa, public switching systems
us	United States
uk	United Kingdom
italy-pbx	Italy, private switching systems
italy-public	Italy, public switching systems
czech-pbx	Czech Republic, private switching systems
czech-public	Czech Republic, public switching systems
sweden	Sweden
france	France
swiss	Switzerland
belgium	Belgium
netherlands	Netherlands
norway	Norway
denmark	Denmark
germany	Germany
spain	Spain
finland	Finland
austria	Austria
ireland	Ireland
australia	Australia
newzealand	New Zealand
malaysia	Malaysia
turkey	Turkey
russia	Russia
south africa	South Africa

5.1.6.4 Specify menu language and time format for users 1-6

Main menu\User list\n UserName**Personal**

Navigate to the **Personal** element in the user menu of user n, whose menu language and/or date format you want to specify. Then press the  key to open the **Personal** dialog, which is described below.

Language:..... Selection parameter to select the menu language to be used

Deutsch	Menu language German
English	Menu language English
Francais	Menu language French
Nederlands	Menu language Dutch
Italiano	Menu language Italian
Espanol	Menu language Spanish
Svenska	Menu language Swedish
Dansk	Menu language Danish
Norsk	Menu language Norwegian
Suomi	Menu language Finnish
Cestina	Menu language Czech
Eesti	Menu language Estonian
Portugues	Menu language Portuguese
Latviesu	Menu language Latvian
Hrvatski	Menu language Croatian
Polski	Menu language Polish
Russian	Menu language Russian
Slovenija	Menu language Slovenian
Magyar	Menu language Hungarian
Thai	Menu language Thai

Time:..... Selection parameter for selection of the time format to be used

Default	Date and time display in standard format	dd.mm.yy hh:mm
24H	Date and time display in 24 h format	dd.mm.yy hh:mm
AM/PM	Date and time display in 12 h format	mm/dd hh:mm xm

After you have made the settings, press the menu key (⏏) as often as necessary until the confirmation message Save changes? appears, which you can affirm by pressing (⏏) or reject with the key sequence (⏏) (⏏).

5.1.6.5 Set ring melody for users 1-6

Main menu\User list\n UserName\Ring melody

Navigate to the Ring melody element of the user menu of user n, whose ring melody settings you want to specify. Then press the (⏏) key to open the Ring melody dialog, which is described below.

Ringtone xxx..... Setting variable to select the call variant xxx, for which the Melody, Vol and Speed settings should be made. Press the (⏏) key whenever you want to switch to one of the call variants below.

<int>	Ring melody for calls from internal subscribers
<ext>	Ring melody for calls from external subscribers
<ret>	Ring melody for recalls
<msg>	Ring melody for inbound messages

Start | Stop..... Setting variable for starting and stopping the ring melody generator. Press the (⏏) key, to star the playback of the set ring melody, and press it again to stop the playback.

Melody:..... Selection parameter to specify the ring melody.

Default	Default melody
3tone 1 - 3tone 3	Triad tones 1-3
2tone 1 - 3tone 5	Two tones 1-5
tone 1 - tone 2	Single tones 1-2
ringer	Ringer

Vol: Selection parameter to set the volume.

Def	Default volume
1 - 11	Volume levels 1-11
Max	Maximum volume

Speed:..... Selection parameter to set the playback speed.

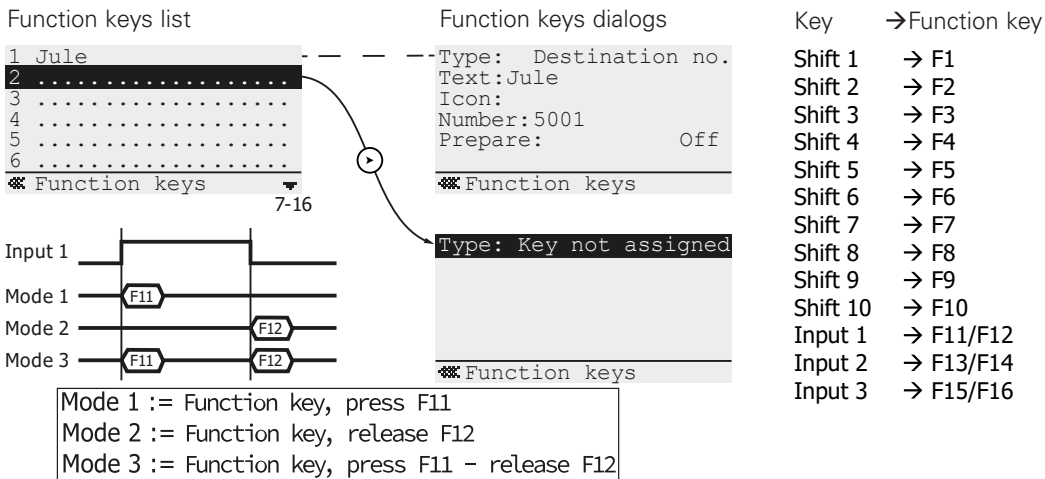
Def	Default playback speed
1 - 5	Playback speed 1-5
Max	Maximum playback speed

After you have made the settings, press the menu key (⏏) as often as necessary until the confirmation message Save changes? appears, which you can affirm by pressing (⏏) or reject with the key sequence (⏏) (⏏).

5.1.6.6 Specify function keys for users 1-6

Main menu\User list\n UserName\Function keys

Navigate to the Function keys element of the user menu of user n, whose function keys you want to specify. Then press the (⏏) key to open the Function keys menu of the same name, which you can assign a selectable function to each of the 16 functions keys, which is executed when the respective key on the phone is pressed. The figure below shows the opened list of function keys and the differently configured dialogs for the function keys 1 (F1) and 2 (F2), which are to be opened from the list by pressing the (⏏) key.



To the right of the figure, you can see the assignment of the phone's keys to the function keys in the list. Two function keys F_N/F_{N+1} each are assigned to the three "keys" input 1 – input 3, which are triggered when the activation of the inputs is changed, as illustrated mode-dependently in the time flow chart of the figure above for input 1. The necessary mode configuration of the inputs is to be done exclusively in the drop down lists Input 1 – Input 3 of the web interface WebIp160\Device\Keypad. The mode names Mode 1-Mode 3 used in the figure are referred to there as "Function key, press F11," "Function key, release F12" and "Function key, press F11 – release F12."

Notes:

- Entries in the function key list preceded by an asterisk (1 * Ju1e) are locked for phone users in the web interface WebIp160\Phone\User-n\Function-Keys. Attempts to open the respective dialogs will be ignored!

5.1.6.6.1 General dialog function keys

Below is the *annotated* description of a fictional function key dialog, in which the dialog elements are listed that are the same as those of specific dialogs. The elements Text, Icon and LED are designed for phone models with soft keys that can be labeled, and can be left in their default settings for the FernTel IP4 / IP160, which does not have this feature. The exception to this is the Text element, with which you can specify the label of the function key f in the function key list, which otherwise is labeled with the specified function type.

Type: Xyz Selection parameter set to function type xyz.
Specifies the function type of the selected function key f and causes the superimposition of the type specific dialog elements in the dialog.

State:..... Selection element for setting the function state.
Appears only for function types where the function is differentiated by various states. The setting causes the superimposition of the state-dependent dialog elements in the dialog. The general description is then followed by the listing with a description of the various states that the respective function has. During operation, each actuation of the function key f will cause the function state to change. In the example the characteristic is continuously switched on and off by consecutive actuations.

1 Characteristic is switched off. *Function description for state 1*
 2 Characteristic is switched on. *Function description for state 2*

Text:^{[1][2]}..... Input parameter for optional specification of caption texts.
No effect in the FernTel IP4 / IP160, with the exception of Text^[1], which replaces the standard labeling of the f key in the function key list.

Icon:^{[1][2]}..... Selection parameter for the optional specification of icons.
No effect in the FernTel IP4 / IP160.

LED:^[2]..... Selection parameter to specify the LED operating mode in state 2
No effect in the FernTel IP4 / IP160.

5.1.6.6.2 "Destination no." function for selected key f

The f function key causes the subscriber number specified in the dialog below to be called.

Type: Destination no. Selection parameter set to function type Destination no.

Text:..... Input parameter for optional specification of caption text.

Icon:..... Selection parameter for specifying an icon.

Number:..... Input parameter to specify the destination number and the optional DTMF characters, which are transferred to the destination phone after successful connection. The optional DTMF characters are to be placed after the destination number, separated by a comma.
 4711 // Destination no.
 4711,*101# // Destination no. with following DTMF characters transmission

Prepare:..... Selection parameter to specify the function sequence that should be performed when pressing the button.
 Off Destination number is dialed immediately.
 On Destination number is copied into the indirect dialling and can be changed/expanded manually; the dialling itself must also be triggered manually.

5.1.6.6.3 "Partner" function for selected key f

The function monitors the status of the partner phone specified here and performs a direct call if the f function key is pressed in the idle mode of the partner phone, performs a call pickup in call mode and also a direct call (call waiting) in conversation mode.

Type: Partner Selection parameter set to function type Partner.

Text:..... Input parameter for optional specification of caption text.

Icon:..... Selection parameter for specifying an icon.

Number:..... Input parameter to specify the phone number of the partner phone.

Display number..... Open the dialog below to set the partner statuses that are to be shown in this phone's display.

calling:..... Selection parameter to display the partner status "calling."

Off Partner status "calling" is not displayed.

On Partner status "calling" is displayed.

connected:..... Selection parameter to display the partner status "connected."


Off Partner status "connected" is not displayed.

On Partner status "connected" is displayed.

Presence:..... Selection parameter for display of partner presence.

Off Partner presence is not indicated.

On Partner presence is indicated.

	Requirements
-The PBX used must support the partner function feature, both phones must belong to the same group, and the partner function must be enabled.	

5.1.6.6.4 "Park" function for selected key f

The f function key causes a connection to be parked in the position specified in the dialog. Pressing the key causes your conversational partner to be parked. You end the connection, for example, by hanging up the receiver, and then resume the conversation on the device specified in the dialog.

Type: Park Selection parameter set to function type Park.

Text:..... Input parameter for optional specification of caption text.

Icon:..... Selection parameter for specifying an icon.

Number:..... Input parameter to specify the phone number of the object on which the conversation is to be parked.

Position:..... Input parameter to specify an additional park position, typically 0.

Display number..... Open the dialog below to specify display options.

calling:..... Selection parameter to specify the "calling" display option.

Off Display phone number of the parked subscriber.

On Suppress phone number of the parked subscriber.

5.1.6.6.5 "Pickup" function for selected key f

Function monitors the states of the phones of the own call group and signals calls to these phones in the display. Function key f causes these optically signaled calls to be accepted. The calls from phones in the call group are indicated in the form CGPN→CDPN (caller→call recipient) in the bottom right in the display's viewing area. If multiple calls occur simultaneously, a list of CGPN→CDPN entries is shown, from which the call can be selected, which should be accepted by pressing the function key f.

Type: Pickup Selection parameter set to function type Pickup.

State:..... Selection element for setting the function state

1 Phones in the call group are in idle mode or busy; pressing function key f has no effect.

2 At least one phone in the call group is called; pressing function key f causes this call to be accepted.

Text:^[1]^[2]..... Input parameter for optional specification of caption text.

Icon:^[1]^[2]..... Selection parameter for specifying an icon.


LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.

Display number..... Open next dialog to specify the call signaling.

calling:..... Selection parameter to specify the call signaling.

Off Call signaling is done in the form →CDPN.

On Call signaling is done in the form CGPN→CDPN.


	Requirements
The PBX used must support the partner function feature, both phones must belong to the same group, and the partner function must be enabled.	

5.1.6.6.6 “MWI” function for selected key f

Function key f controls the connection with the message center specified in the dialog in order to listen to messages saved there.

Type:	MWI	Selection parameter set to function type MWI.
State:.....		Selection element for setting the function state.
1		No new messages available.
2		New messages available.
Text: ^{[1][2]}		Input parameter for optional specification of caption texts.
Icon: ^{[1][2]}		Selection parameter for the optional specification of icons.
LED: ^[2]		Selection parameter to specify the LED operating mode in state 2.
Number:.....		Input parameter to specify the phone number of the message center.
Add own no.:.....		Selection parameter to specify the option “Attach own phone number.”
Off		Only use the number of the message center.
On		Attach own phone number to the message center’s number.
Global:.....		Selection parameter to specify the “Global” option.
Off		Limit MWI to this registration.
On		Extend MWI to all registrations.

5.1.6.6.7 “Call diversion” function for selected key f

Function key f reroutes the call diversions specified here, with which inbound calls can be diverted to different subscribers. Four different call diversions 1–4 can be set. In State 0 of the function the call diversion is inactive; calls are not signaled on the device. States 1-4 are available to specify different call diversions to mobile phone, colleagues, etc. In the device’s idle mode, the activation of any call diversion is indicated by the  icon, which appears on the left of the display footer. If the “Always” call diversion is activated, the inverse text overlay “Diverted to diversion destination” also appears in the display’s viewing area.

Type:	Call diversion	Selection parameter set to function type Call diversion.
State: ¹⁾		Selection element for setting the function state.
0		Call diversion is inactive.
1-4		Call diversion 1 – 4 is active.
Text: ^{[0]-[4]}		Input parameter for optional specification of caption texts.
Icon: ^{[0]-[4]}		Selection parameter for the optional specification of icons.
LED: ^{[1]-[4]}		Selection parameter to specify the LED operating mode in states 1-4.
Call diversion ^{[1]-[4]}		Open dialog to specify the call diversions 1-4.

 5.1.4.1 Call diversion, optional

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¹⁾ States whose call diversions are all switched off are omitted for the key sequence f. If only the call diversion is active ^[1], the state sequence is 1, 0, 1, 0, etc.; in contrast, if two call diversions are activated, the state sequence is 1, 2, 0, 1, 2, 0 and so on.

5.1.6.6.8 “Call group” function for selected key f

Function key f controls the registration/deregistration of the registered user in a PBX call group. In the following dialog, the name of the call group is indicated,

Type:	Call group	Selection parameter set to function type Call group.
State:.....		Selection element for setting the function state.
1		User n is deregistered in the call group.
2		User n is registered in the call group.
Text: ^{[1][2]}		Input parameter for optional specification of caption texts.
Icon: ^{[1]-[2]}		Selection parameter for the optional specification of icons.
LED: ^[2]		Selection parameter to specify the LED operating mode in state 2.
Name:.....		Input parameter to specify the name of the call group.

5.1.6.6.9 “Contacts” function for selected key f

Function key f activates the search for a subscriber number in the contacts (phone book).

Type: Contacts Selection parameter set to function type Contacts.
Text:..... Input parameter for optional specification of caption text.
Icon:..... Selection parameter for specifying an icon.
Search:..... Selection parameter to set the sources to be searched.
 combined Search subscribers in all contact lists.
 local Search subscribers in the phone’s contact list.
 PBX directory Search subscribers in the phone system’s contact list.
 <ext> Search subscribers in the contact list of an external LDAP server.

5.1.6.6.10 “Register” function for selected key f

Function key f controls the registration/deregistration of a registered co-user. After successful switching, the text message registered or deregistered is superimposed briefly.


Type: Register Selection parameter set to function type Register.
State:..... Selection element for setting the function state.
 1 Co-user n is deregistered; calls to them are not signaled.
 2 Co-user n is registered; calls to them are signaled.
Text: ^[1] ^[2]..... Input parameter for optional specification of caption texts.
Icon: ^[1] ^[2]..... Selection parameter for the optional specification of icons.
LED: ^[2]..... Selection parameter to specify the LED operating mode in state 2.
Reg.ID:..... Input parameter to specify co-user number $2 \leq n \leq 6$.
Activate reg.:..... Selection element to specify the additional activation option.
 Off Option is switched off, activation state remains unchanged.
 On Option is switched on, co-user n also becomes an active user of the device with registration.

5.1.6.6.11 “Activate” function for selected key f

Function key f causes the activation of a registered user. In addition to the visible change in the display header, in which the name/number of the newly activated user replace the previously activated user, the remaining user-specific settings of the new user also become effective. Depending on the selected Act.next reg. activation method, the user indicated in Reg.ID or the next user registered in the list is activated.

Type: Activation Selection parameter set to function type Activation.
Text: Input parameter for optional specification of caption texts.
Icon: Selection parameter for the optional specification of icons.
Reg.ID: Input parameter for optional specification of the user number $0 \leq n \leq 5$. In this function the user numbers are numbered beginning with 0; therefore enter 0 for user 1 and 1 for user 2, etc.
Disable act.reg.:..... Selection element to specify the additional disable option.
 Off Option is switched off, previously active user remains registered.
 On Option is switched on, previously active user is deregistered.
Act.next reg.: Selection element to specify the activation method.
 Off Function activates the user specified in Reg.ID.
 On Function activates the next registered user in the user list; the Reg.ID setting has no meaning.

5.1.6.6.12 “Ringing off” function for selected key f

Function key f controls the switching on/off of the do not disturb. The switched-on do not disturb is symbolized by the  icon, which is displayed in the display’s viewing area when the device is in idle mode.

Type: Ringing off Selection parameter set to function type Ringing off.

State:..... Selection element for setting the function state.

1 Do not disturb is switched off.

2 Do not disturb is switched on.

Text:^{[1][2]}..... Input parameter for optional specification of caption texts.

Icon:^{[1][2]}..... Selection parameter for the optional specification of icons.

LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.

Do not disturb..... Open next dialog to set the do not disturb.

Action:..... Selection parameter to define the action that is to be applied with do not disturb activated and inbound calls.

 Ringing off The acoustic ring melody signaling (ringing) is switched off.

 Silence The acoustic ring melody signaling (ringing) and the optical signaling of the call in the display are switched off.

 Busy As with the silence setting, the phone behaves toward the caller as it were busy.

For:..... Selection parameter to specify the calls for which the activated do not disturb is to be applied.

 All calls Do not disturb is to be applied for all calls.

 External calls Do not disturb is to be applied for external calls.

 Internal calls Do not disturb is to be applied for internal calls.

5.1.6.6.13 “Call waiting” function for selected key f

Function key f controls the switching on/off of the call waiting function, with which incoming calls are signaled optically and acoustically if there is an existing connection.

Type: Call waiting Selection parameter set to function type Call waiting.

State:..... Selection element for setting the function state.

1 Call waiting is switched off, the call is not signaled.


2 Call waiting is switched on, the call is signaled optically and acoustically.

Text:^{[1][2]}..... Input parameter for optional specification of caption texts.

Icon:^{[1][2]}..... Selection parameter for the optional specification of icons.

LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.14 “Display phone no.” for selected key f

Function key f controls the switching on/off of the lock for the transfers of the user’s own phone number for outgoing calls. The switched-on lock is symbolized by the  icon, which is shown on the left in the display footer when the device is in idle mode.

Type: Display phone no. Selection parameter set to function type Display phone no.

State:..... Selection element for setting the function state.

1 Lock is switched off, phone number is transmitted to call recipient.


2 Lock is switched on, phone number is not transmitted.

Text:^{[1][2]}..... Input parameter for optional specification of caption texts.

Icon:^{[1][2]}..... Selection parameter for the optional specification of icons.

LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.15 “Transfer” function for selected key f

Function key f causes the transfer of an inbound call to destination to be input manually, without interim connection to the user. Press the function key f when there is an inbound call. The device will then ask you to input the destination number and will transfer the call to the destination when you confirm the input by pressing the  key.

Type: Transfer Selection parameter set to function type transfer.

Text:..... Input parameter for optional specification of a caption text.


Icon:..... Selection parameter for the optional specification of an icon.

5.1.6.6.16 “Redirect” function for selected key f

Function key f causes inbound calls to be diverted to the destination configured in the dialog without an interim connection to the caller. For inbound calls, press function key f. The device then diverts the pending or waiting call to the configured destination.

Type: Redirect Selection parameter set to function type Redirect.
Text:..... Input parameter for optional specification of a caption text.
Icon:..... Selection parameter for the optional specification of an icon.
Number:..... Input parameter to specify the destination number.

5.1.6.6.17 “Phone lock” function for selected key f

Function key f controls the switching on/off of the phone lock. Before the switching of the lock introduced by pressing function key f becomes effective, the device asks the user to input the PIN number, which must then be concluded by pressing the ☎ key. The switched-on lock is symbolized by the  icon, which is shown on the left in the display footer when the device is in idle mode.

Type: Phone lock Selection parameter set to function type Phone lock.
State:..... Selection element for setting the function state.
 1 Phone lock is switched off, phone can be used.
 2 Phone lock is switched on, phone cannot be used.
Text: ^{[1] [2]}..... Input parameter for optional specification of caption texts.
Icon: ^{[1] [2]}..... Selection parameter for the optional specification of icons.
LED: ^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.18 “Headset” function for selected key f

Function key f controls the enabling/locking or switching on/off of the headset mode.

Type: Headset Selection parameter set to function type Headset.
State:..... Selection element for setting the function state.
 1 Headset locked or switched off.
 2 Headset enabled or switched on.
Text: ^{[1] [2]}..... Input parameter for optional specification of caption texts.
Icon: ^{[1] [2]}..... Selection parameter for the optional specification of icons.
LED: ^[2]..... Selection parameter to specify the LED operating mode in state 2.
Mode:..... Selection parameter to specify the function’s mode of operation.
 Enable Function controls the enabling and locking of the headset mode.
 Control Function controls the switching on and off of the headset conversation mode if the headset mode is enabled.

5.1.6.6.19 “Hotdesk” function for selected key f

Function allows for the flexible change from user 1 to a callable co-user. For this purpose, function key f must be pressed, whereupon the Register dialog opens, in which the co-user is defined who is to be registered and activated. Pressing the menu key ☎ is followed by the registration of the selected user, whose name/phone number replaces that of the previously active user in the display header. The next actuation of the function key f causes the user change in the opposite direction; the registration of the co-user is deleted and user 1 becomes the phone’s active user again.

Type: Hotdesk Selection parameter set to function type Hotdesk.
State:..... Selection element for setting the function state.
 1 User 1 activated.
 2 Selected co-user activated.
Text: ^{[1] [2]}..... Input parameter for optional specification of caption texts.
Icon: ^{[1] [2]}..... Selection parameter for the optional specification of icons.
LED: ^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.20 “Create reg.” function for selected key f

Function key f causes the registration of the user specified in the dialog and activates this user if you set the selection parameter `Activate` to `On`.

Type:	<code>Create reg.</code>	Selection parameter set to function type <code>Create reg.</code>
Text:	.....	Input parameter for optional specification of caption texts.
Icon:	.....	Selection parameter for the optional specification of icons.
Registration:	.....	Open next dialog to specify the user registration.
Protocol:	.....	Selection parameter to specify the protocol to be used.
H323...		Protocol H323, see also 5.1.6.3 on Page 39
Name:	.....	Input parameter for optional specification of the user name.
Number:	.....	Input parameter for optional specification of the user number.
VoIP Gatekeeper:	....	Open dialog of the same name for optional specification of the gatekeeper. ☞ 5.1.6.3.1 Setting of the VoIP Gatekeeper Page 39
Activate:	.....	Selection element to specify the additional activation option.
Off		Previously active user remains active.
On		Newly registered user becomes active user.

5.1.6.6.21 “Delete reg.” function for selected key f

Function key f causes the current co-user registration to be deleted and the subsequent activation of user 1, whose name/number replaces that of the deleted co-user in the display header and whose user-specific setting becomes active.

Type:	<code>Delete reg.</code>	Selection parameter set to function type <code>Delete reg.</code>
Text:	.....	Input parameter for optional specification of caption text.
Icon:	.....	Selection parameter for the optional specification of an icon.

5.1.6.6.22 “Switch user” function for selected key f

Function key f causes the phone to switch to the user specified in the dialog. In addition to the visible change in the display header, in which the name/number of the new user replace that of the previous user, the remaining user-specific settings of the new user also become effective.

Type:	<code>Switch user</code>	Selection parameter set to function type <code>Switch user</code> .
Text:	.....	Input parameter for optional specification of caption text.
Icon:	.....	Selection parameter for the optional specification of an icon.
Registration:	.....	Open next dialog to specify the user registration.
Protocol:	.....	Selection parameter to specify the protocol to be used.
H323...		Protocol H323, see also 5.1.6.3 on Page 39
Name:	.....	Input parameter for optional specification of the user name.
Number:	.....	Input parameter for optional specification of the user number.
VoIP Gatekeeper:	....	Open dialog of the same name for optional specification of the gatekeeper. ☞ 5.1.6.3.1 Setting of the VoIP Gatekeeper Page 39
Disable act.reg.:	....	Selection element to specify the additional disable option.
Off		Previously active user remains registered.
On		Previously active user is deregistered.

5.1.6.6.23 “Recording” function for selected key f

Function key f activates or deactivates the recording of the language data. All specifications for this function's mode of operation can only be made in the web interface `WebIp160\Phone\User-n\Function-Keys!`

Type:	<code>Recording</code>	Selection parameter set to function type <code>Recording</code> .
State:	.....	Selection element for setting the function state.
1		Recording is disabled.
2		Recording is activated.
Text:	^[1] ^[2]	Input parameter for optional specification of caption text.
Icon:	^[1] ^[2]	Selection parameter for specifying an icon.
LED:	^[2]	Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.24 “Boolean obj.” for selected key f

Function key f monitors the state of the Boolean object specified in the dialog. This function is designed for device versions with soft keys that can be labeled, and cannot be meaningfully implemented in the FernTel IP4 / IP160, which does not have this feature, as the respective setting is not visible to the operator.

Type: Bool obj.. Selection parameter set to function type Bool obj.
State:..... Selection element for setting the function state.
1 The “Automatic off state” rules for the object are active.
2 The “Automatic on state” rules for the object are active.
3 The “Manual override off state” rules for the object are active.
4 The “Manual override on state” rules for the object are active.
Text:^{[1]-[4]}..... Input parameter for optional specification of caption text.
Icon:^{[1]-[4]}..... Selection parameter for specifying an icon.
LED:^{[1]-[4]}..... Selection parameter to specify the LED operating mode in states 1-4.
Number:..... Input parameter to specify the phone number of the Boolean object.
Toggle:..... Selection parameter to specify the function’s mode of operation.
Off Pressing f causes a connection to be established with the Boolean object.
On Pressing f causes the state to be switched to the next or first value.

5.1.6.6.25 “Presence” function for selected key f

Function key f causes the presence (see 5.1.4.2) to be set to one of the adjustable values Present, Away, Busy, Lunch, Vacation and Do not disturb. Slow, consecutive actuations of the key switch the presence between the settings present and the last set non-presence Lunch. In contrast, actuations in rapid succession proceeding from the current set value set the six values sequentially as a new presence, in order, for example, to switch the non-presence Busy to Vacation.

This function is designed for device versions with soft keys that can be labeled, and cannot be meaningfully implemented in the FernTel IP4 / IP160, which does not have this feature, as the respective setting is not visible to the operator.

Type: Presence Selection parameter set to function type Presence.
State:..... Selection element for setting the function state.
1 Idle mode of the function.
2 Active state of the function.
Text:^{[1]-[2]}..... Input parameter for optional specification of caption text.
Icon:^{[1]-[2]}..... Selection parameter for specifying an icon.
LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.26 “Prep. override” function for selected key f

This function allows for the initiation of calls or announcements that, by pressing the function key f, can be carried out immediately or via the indirect dialling menu to change/supplement the call destination. Optionally, Caller Override | Diversion Override can be set to override the user's default number or set call diversions of the call recipient.

All specifications for this function’s mode of operation can only be made in the web interface `WebIp160\Phone\User-n\Function-Keys!`

Type: Prep. override. Selection parameter set to function type Hotdesk.
State:..... Selection element for setting the function state.
1 Idle mode of the function.
2 Active state of the function.
Text:^{[1][2]}..... Input parameter for optional specification of caption text.
Icon:^{[1][2]}..... Selection parameter for specifying an icon.
LED:^[2]..... Selection parameter to specify the LED operating mode in state 2.


5.1.6.6.27 “Toggle” function for selected key f

In case of an existing speech connection, function key f causes the output of two DTMF sequences that are associated with states 1 and 2 of the function. Here a configurable selection parameter specifies whether the output of the DTMF sequences 1 and 2 changes when function key f is actuated or whether sequence 1 is output when function key f is pressed and sequence 2 is output when function key f is released. The purpose of the function is, for example, to establish a push-to-talk function for the connected device, whose behavior can be controlled by DTMF sequences.

The specifications of the DTMF sequences and the selection of the mode of operation can only be performed in Web Interface `WebIp160\Phone\User-n\Function Keys!`

Type: Toggle. Selection parameter set to function type Toggle.
 State:..... Selection element for setting the function state.
 1 Output of DTMF sequence 1 with actuation or pressing of function key f.
 2 Output of DTMF sequence 2 with actuation or releasing of function key f.
 Text: ^{[1] [2]}..... Input parameter for optional specification of caption text.
 Icon: ^{[1] [2]}..... Selection parameter for specifying an icon.
 LED: ^[2]..... Selection parameter to specify the LED operating mode in state 2.

5.1.6.6.28 “Message” function for selected key f

The function key f causes the text message or text message template specified here to be transferred into the output control so that manual changes/supplements can be performed on the address field `For` and the nameless message itself. The message is sent to the recipient by pressing the menu key 

Type: <msg> Selection parameter set to function type Destination no.
 Text:..... Input parameter for optional specification of caption text.
 Icon:..... Selection parameter for specifying an icon.
 Message..... Open the dialog below to specify the text message or text message template.
 For:..... Input parameter for optional input of the phone number of the subscriber to whom to message should be sent.
 Nameless input parameter for optional input of the message text.

5.1.6.6.29 “Reserve” function for selected key f

Reserved for future expansions.

5.1.7 Main menu – Administration

This menu contains the administrative information for the network and for registration of the IP phone.

5.1.7.1 Information

In this menu you can find the serial number, the firmware version number and the bootcode version number.

5.1.7.2 IP settings

This menu contains information for integration in the IP network. This is only of interest to the administrator and may not be changed by the operator. Select “IP settings” in the administration menu.

There is the option of setting the following IP properties via this menu:

Menu item	Setting options
DHCP mode	Client Server off
IP addresses	Interface IP address IP address mask Standard IP gateway
VLAN	VLAN header off VLAN header on · VLAN Priority · VLAN Identifier

5.1.7.3 Registration

The registration menu includes information for registration with the gatekeeper.

This is only of interest to the administrator and may not be changed by the operator. Select "Registration" in the administration menu.

The following information is available:

Menu item	Setting options
Protocol	H323, SIP, TSIP, SIPS
Name	User name
Number	Their phone number
Password	set immediately
VOIP gatekeeper	Gatekeeper name, gatekeeper IP address
Options	Regional PBX tones

5.1.7.4 STUN

Default settings for STUN and TURN servers can be configured in the STUN menu. This is only of interest to the administrator and may not be changed by the operator.

User-specific settings must be entered under 5.1.6.3.

5.1.7.5 Reset configuration

There is the option of restoring the device to its factory settings.

In the process, all settings made on the device are lost. Select "Reset configuration" in the administration menu.

The confirmation message appears, asking whether the device should be reset to the factory settings. You can restore the factory settings ("yes"), in which case all changes will be lost. You can also leave the menu again instead ("no").

If you have restored the factory settings, the device restarts and all data and settings are lost.... ..

6. Technical data

		Min	Part no.	Max	Unit
Ethernet connections (v) and (vi)					
LAN1	VoIP	(v)	RJ45 Port 1000 BASE-T with PoE		
LAN2	PC	(vi)	RJ45 Port 1000 BASE-T		
¹⁾ LAN1 (v) connection, PoE (Power over Ethernet) according to IEEE 802.3af					
V _{PoE}	Supply voltage	37.0		57.0	V _{DC}
I _{PoE}	Supply current			350	mA _{DC}
P _{PoE}	Supply output	Class 0		12.95	W
Terminals X1					
A _{termR}	Terminal capacity, rigid conduction cross-section	0.2		4.0	mm ²
A _{termF}	Terminal capacity, flexible conduction cross-section	0.2		2.5	mm ²
I _{Insul}	Stripped length		10		mm
X1.5 – X1.6 Relay onboard					
V _{switch}	Switching voltage	AC		30	V _{AC}
		DC		60	V _{DC}
³⁾ I _{switch}	Switching current	AC		1.0	A _{AC}
		DC		1.0	A _{DC}
S _{switch}	Apparent switching power	AC		15	VA
P _{switch}	Switch rating	DC		15	W
¹⁾²⁾ X1.7 – X1.8 External power supply DCPower					
V _{DCPower}	Supply voltage	22.8		53.0	V _{DC}
I _{DCPower}	Supply current			650	mA _{DC}
P _{DCPower}	Supply output			15.00	W
Connecting cables (vi), (vii) and (viii)					
Structure	(vi) and (vii)	Halogen-free light plastic-sheathed cable 3 x 1.5			
	(viii)	Halogen-free light plastic-sheathed cable 4 x 0.5			
Core labeling		White numbers according to EN 50334			
A _{termF}	Conduction cross-section	(vi) and (vii)	1.5		mm ²
		(viii)	0.5		mm ²
I	Length		1		m
⁴⁾ Relay 1 (vi) and relay 2 (vii)					
V _{switch}	Switching voltage	AC		250	V _{AC}
		DC		230	V _{DC}
³⁾ I _{switch}	Switching current	AC		5.0	A _{AC}
		DC		5.0	A _{DC}
S _{switch}	Apparent switching power	AC@ V _{switch} > 35 V _{AC}		15	VA
		AC@ V _{switch} ≤ 35 V _{AC}		100	VA
P _{switch}	Switch rating	DC@ V _{switch} > 50 V _{DC}		15	W
		DC@ V _{switch} ≤ 50 V _{DC}		100	W
⁵⁾ Inputs input-1 – input-3 (viii)					
V _{ImpOpen}	Open circuit voltage	22.8		57.0	V _{DC}
I _{ImpShort}	Short-circuit current			10.0	mA _{DC}
Enclosure					
Material		Polycarbonate			
I _{HxWxD}	Dimension	Height	293		mm
		Width	191		mm
		Depth	128		mm
m	Weight		2.3		kg
h	Operating altitude			2000	m
Operating position		Table or wall installation			
Degree of protection		IP 65 in accordance with IEC 60529			
Ambient conditions					
T _A	Operating temperature	-20		60	°C
Menu					
T _L	Minimum actuation duration for secondary key function	0.5			s
T _{SHIFT_TO}	Time limit for secondary key function shift			5.0	s
T _{D2A}	Minimum actuation duration for Digit2Alpha mode change	2.0			s

- 1) Only ES1 and PS1 classified power supplies in accordance with EN 62368-1 may be used to supply the phone. Additionally, only one current supply may supply the phone. Use either LAN1 or the connections X1.7-X1.8.
- 2) The DC power supply must be ground potential free.
- 3) The permitted load currents of the output contacts are voltage dependent. Calculate their maximum values as indicated below by generating the quotient of switching-voltage-dependent switch rating $P_{\text{switch}}(V_{\text{switch}})$ and switching voltage V_{switch} . Furthermore, the result must not exceed the indicated maximum value of the switching current I_{switch} .
AC: $I_{\text{LoadMax}} = S_{\text{switch}}(V_{\text{switch}}) / V_{\text{switch}} = 15 \text{ VA} / 48 \text{ V} = 0.312 \text{ A}$ $I_{\text{LoadMax}} \leq I_{\text{switchMax}}$!
DC: $I_{\text{LoadMax}} = P_{\text{switch}}(V_{\text{switch}}) / V_{\text{switch}} = 100 \text{ W} / 48 \text{ V} = 2.08 \text{ A}$ $I_{\text{LoadMax}} \leq I_{\text{switchMax}}$!
- 4) The electric circuits of the switching contacts of both relays must not be interconnected with different external conductors of an AC network.
- 5) The three inputs are active and may only be switched with potential-free contacts.

7. Warning and safety instructions

This equipment is a voice-over-IP phone with a weather-proof design, specifically for operation in a harsh industrial environment.

The following warning and safety instructions must be observed:

- The phone is constructed in protection class II and may only be connected and operated at the stipulated voltages.
- The device must be connected and installed by trained personnel as described in the specified installation requirements.
- It must be ensured that it is connected correctly. The connection cables must be placed so there is no risk of stumbling.
- It must be ensured that the phone, the connection cable, etc. are not damaged. Operating the phone in a damaged state is not permitted.
- If no cable is plugged into the side connection socket, the cover cap required for the leak tightness of the housing must be inserted into the side connection socket.
- The phone may only be operated under the specified ambient conditions (see Chapter 6 Technical Data on page 52). Adverse ambient conditions, such as ambient temperatures that are too high or too low, are not permitted, as this promotes the failure of electronic components.
- The phone may only be operated under the specified electrical conditions (see Chapter 6 Technical Data on page 52). In particular, it is mandatory that the warnings there be followed. Non-compliance with the electrical conditions and warnings can lead to property damage and personal injuries!
- Compliance with the statutory and commercial regulations, accident prevention regulations and electrical regulations must be ensured when operating the phone.
- For repairs only original spare parts are permitted, which must be changed professionally. Other replacement parts can cause damage and void the warranty.
- Before repairing or replacing the phone, it must be disconnected from all voltage sources. If maintenance or repair under voltage is unavoidable, this may only be done by trained personnel.
- No dust may enter the phone when the device is open.
- Repair work may only be carried out by the manufacturer or by a person commissioned by the manufacturer for conducting a repeat inspection of the component. This also applies for the replacement – depending of the type and design of the phone – of the manufacturer-installed, lead-through cable ends.
- Use only genuine spare parts for repair work. Other replacement parts may result in property damage.
- The operation of this device or equipment can cause radio interference in residential areas.
- Changes to the product in the interest of technical progress are also possible without prior notice.

