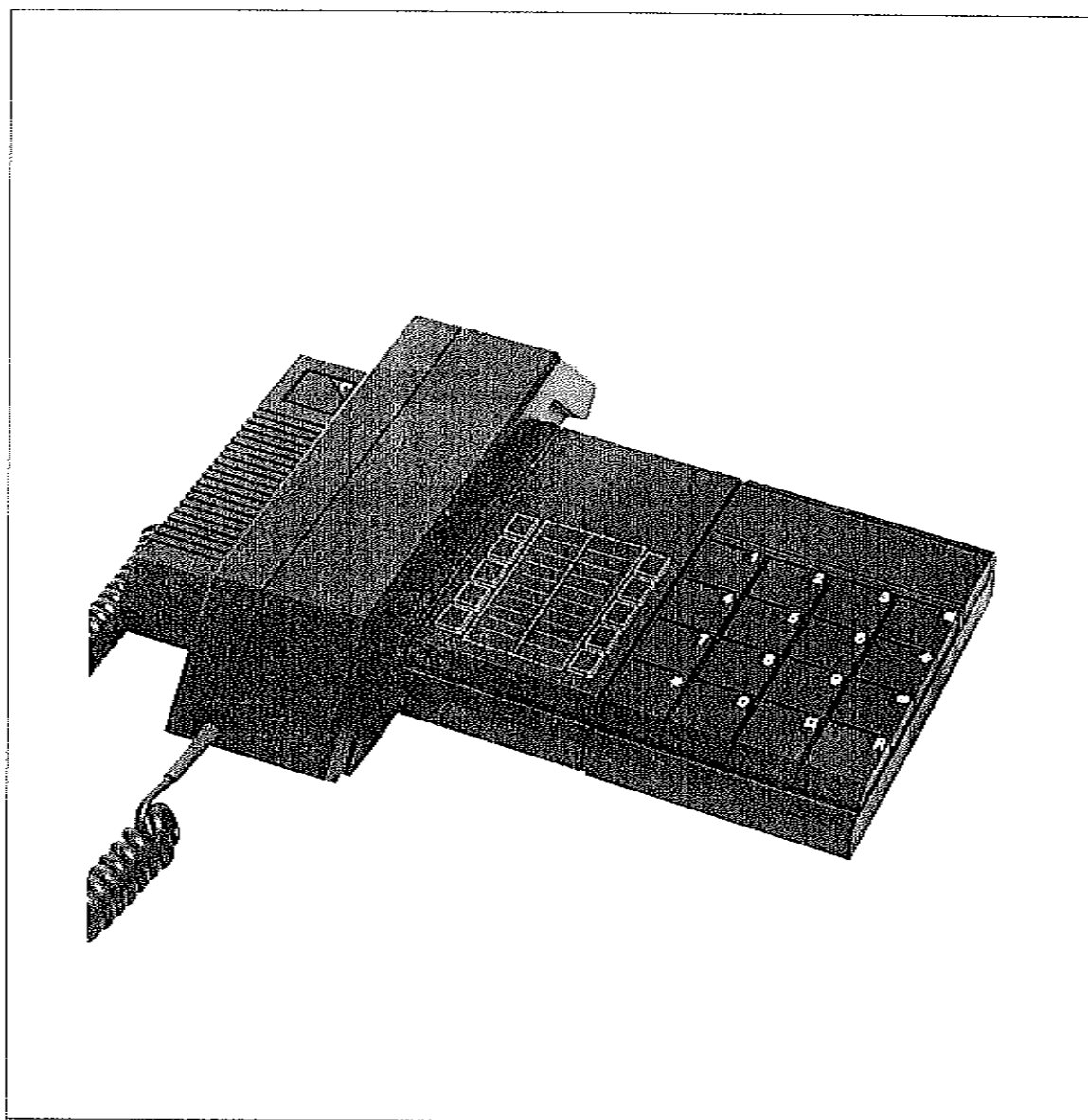


# Desktop telephone

Type 5240



## User manual

Funke+Huster · Fernsig  
Fernsprech- und Signalbau GmbH & Co. KG

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**Note:**

Prior to installing the telephone please read this user manual carefully. Make sure no equipment parts are missing.

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## 1. List of contents

### Parts enclosed:

- 1 desktop telephone, type 5240, with attached ready to use cords for handset and telephone connection
- 1 user manual

## 2. Device overview

Product name	Certificate BZT/BVS		Order number
Desktop telephone	D131 781 J	97.D.2065	5240.0.1000
Desktop telephone with wall mounting plate	D131 781 J	97.D.2065	5240.0.1001

The above mentioned telephones may be operated with the following barriers only:

Product name	Certificate BZT/BVS		Order number
Single line barrier	D131 781 J	97.D.2065	5241.0.1000
Rack mountable barrier	D131 781 J	97.D.2065	5241.0.1001
19" Assembly rack for 7 barriers			5241.9.0004

### 3. Mounting and installing

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Before mounting make sure no equipment parts are missing. The following parts should be found:

Telephone housing including handset and attached cords

User manual with

- speed code dialling tags
- emergency call tags

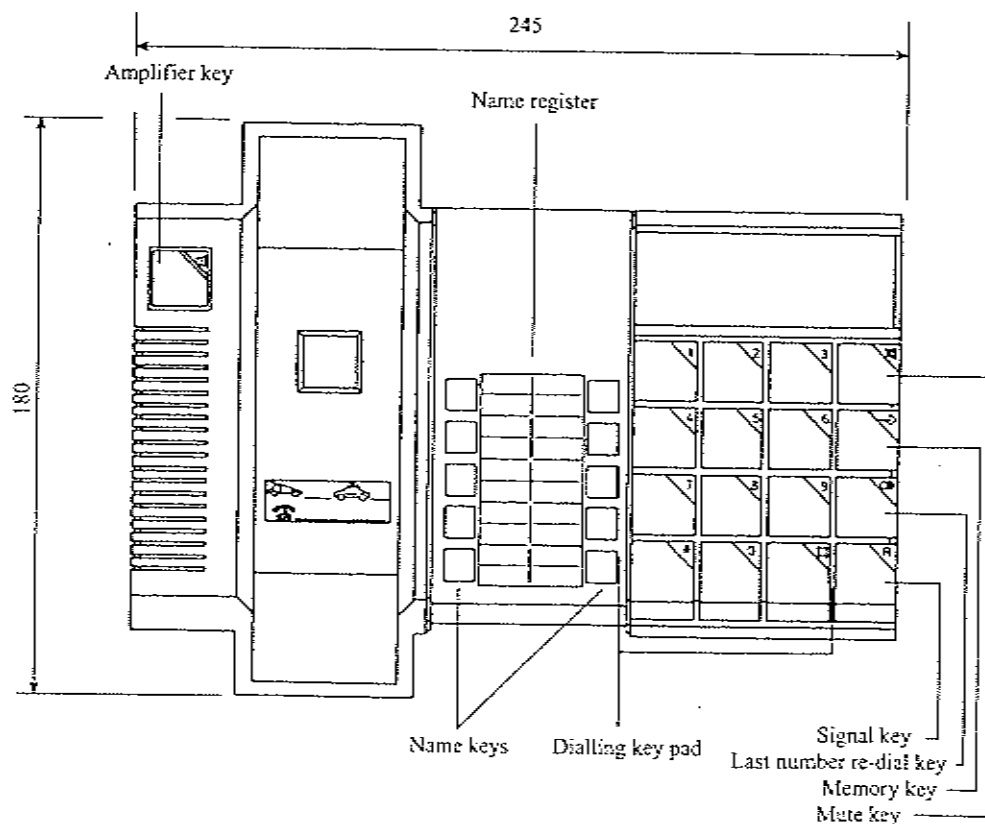
#### 3.1 Installation of the desktop telephone

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The connecting wires of the telephone (handset cord and connecting line) are attached to the telephone upon delivery.

The connecting line is equipped with cable lugs and can either be connected directly to the barrier at the terminals La\*; Lb\* or to an intrinsically safe distribution box or to an intrinsically safe terminal box. The intrinsically safe distribution box must be ordered separately. The dimensions, pattern and positioning of the keys with the tags are shown in fig. 1.

Fig. 1 Dimensions

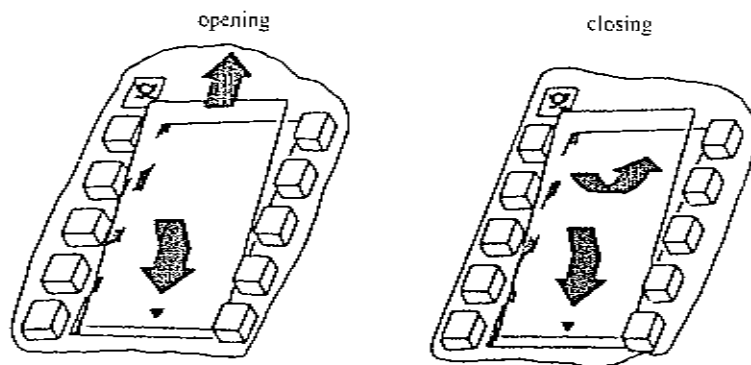


### 3.2 Speed code dialling tag

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Write the desired names on the name tag. Then remove the name tag cover by pushing at the lower part of the cover, pushing it downwards some distance into the telephone housing and then removing it upwards. After having put the tag in place, push the cover some distance into the telephone housing. Push the upper part of the cover towards the tag and then push it upwards, until it locks in position.

**Fig. 2** Inserting the name tag

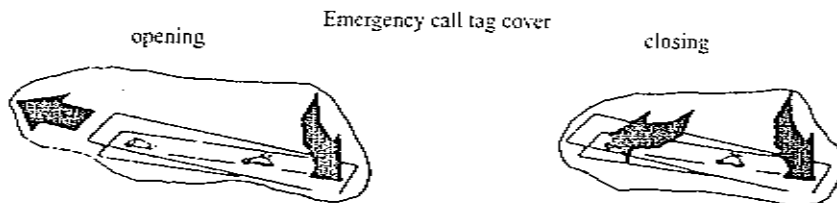


### 3.3 Filling in the emergency call tag

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First fill out the emergency call tag with the emergency call numbers and your own number. Remove the cover by pushing at the right part of the cover and pushing it some distance to the right, into the telephone housing. The cover now may be removed to the left. After having put the tag in place, push the cover some distance to the right, into the telephone housing. Then push down the left part of the cover and push it to the left until it locks in position.

**Fig. 3** Inserting the emergency call tag



### 3.4 Wall mounting

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The desktop telephone may be mounted on the wall with a wall mounting plate. The latter must be ordered separately (P/N 5240.0.1001).

## 4. As-delivered condition of the desktop telephone

The factory adjusts the settings of the desktop telephone. Function is guaranteed only when the technical data of the telephone system correspond to those of the desktop telephone in its as-delivered condition. If the technical data deviate from those of the telephone system, please refer to chapter 5, "Basic settings".



Function	adjustable options	Factory settings
<b>Dialling procedure</b>		
Pulse dialling	PD 2:1	
Pulse dialling	PD 1,5:1	
Dual-tone multifrequency	DTMF	X
<b>Signal key</b>		
timed	80 ms	X
break recall	110 ms	
(flash)	250 ms	
Earth recall	(500/1000) ms	
<b>Dial delay</b>		
Delay 3 s	X	
Delay 6 s		
<b>Amplified listening function</b>		
Amplified listening function (one step)	+6 dB	
Amplified listening function (two steps)	+6 dB / +12dB	X
<b>Ringling melody</b>		
Sound level	1 - 4	4
Melody	0 - 9	1

## 5. Basic settings

### 5.1 Alerting tones

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Alerting tones are intended to play a supporting role during programming and number entry or adjustments in connection with speed dialling, dialling procedure, inquiry key, direct exchange and main exchange code numbers, ringing melody, ringing sound level, amplified listening function, and deleting and resetting memories to factory settings.





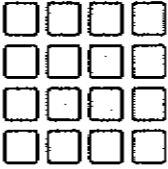


Tone	Tone number and duration	Significance
Acknowledgement tone	a long tone 	Programming has been successfully completed
Error tone	four short tones 	Erroneous programming

Having recognised a case of erroneous programming, the device immediately interrupts the programming sequence. None of the programming entries are accepted. The desktop telephone remains in the state it was in before programming started.



## 5.2 Programming the dialling procedure, inquiry key, and pulse ratios

The desktop telephone may be used with a main exchange or a private branch exchange (P(A)BX), in both cases using pulse dialling (PD) with one of the optional pulse ratios or dual-tone multifrequency dialling (DTMF). The inquiry key may further be used with PD or DTMF as earth key or with DTMF as timed break recall (flash) key with one of the optional flash pulses.

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "1" numeric key.
	Push the re-dial key.
	Enter the parameters of the preferred dialling procedure, pulse ratio, signal key and flash pulse. 033 for PD, 1.5:1, earth 034 for PD, 2:1, earth 036 for DTMF, earth 037 for DTMF, flash pulse 80ms 038 for DTMF, flash pulse 250ms 039 for DTMF, flash pulse 110ms
	Push the memory key
	Hang up receiver.

### 5.3 Using the telephone with a telephone system





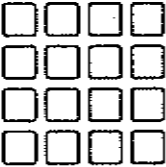


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If the desktop telephone has been connected to a private branch exchange P(A)BX or to a satellite exchange connected to a main exchange, an automatic dial delay must be entered (one time only). This is done by entering the direct exchange code number for a P(A)BX or, for a combination of a satellite exchange and a main exchange, by entering both the main exchange and direct exchange code numbers, causing an automatic dial delay of 3 seconds.

If this is not enough, the dial delay may be set to 6 seconds.





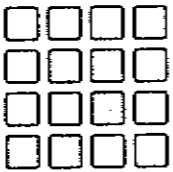


#### 5.3.1 Programming the direct exchange code number

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Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "0" numeric key
	Push the re-dial key
	Enter the direct exchange code number (max. 15 digits)
	Push the memory key
	Hang up receiver

While programming the direct exchange code number, please observe the technical documentation of the corresponding exchange.





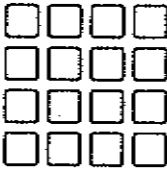

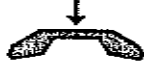
### 5.3.2 Programming the main exchange code number

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "0" numeric key
	Push the re-dial key twice
	Enter the main exchange code number (max. 15 digits)
	Push the memory key
	Hang up receiver

While programming the main exchange code number, please observe the technical documentation of the corresponding exchange.

### 5.3.3 Programming the dial delay

The dial delay is the time required by the P(A)BX to connect to the PSTN. In most cases, a dial delay of 3 sec. is sufficient.

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "1" numeric key
	Push the re-dial key
	Enter the parameter corresponding to the preferred dial delay. 020 3 seconds 021 6 seconds
	Push the memory key
	Hang up receiver

While programming the dial delay, please observe the technical documentation of the corresponding exchange.

## 6. Performance features





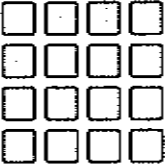


### 6.1 Amplified listening function

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The desktop telephone is equipped with an amplified listening function, which may be programmed to raise the sound pressure to a level 6 or 12 dB above normal. When the receiver is lifted, the amplifier key may be used to raise the receiver sound level in one or two steps. After hanging up, the receiver the sound level returns to its normal setting.

#### 6.1.1 Programming the amplified listening function (one or two steps)

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Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "1" numeric key
	Push the re-dial key
	Enter the parameter of the preferred amplifier key function. 906 6 dB/12 dB two steps 907 6 dB one step
	Push the memory key
	Hang up receiver

## 6.1.2 Adjusting the receiver sound level during a call






Entries	Explanations
	Call active (normal receiver sound level)
	Push amplifier key
	Call active (receiver sound level raised by 6 dB)
	Push amplifier key*
	Call active (receiver sound level raised by 12 dB)*
	Push amplifier key
	Call active (normal receiver sound level)

\* Two-step sound adjustment only

## 6.2 Mute key

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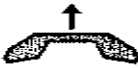


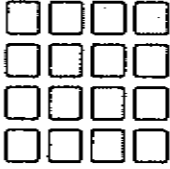

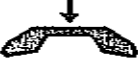
In case of consultations with others in the room, which the other participant is not supposed to hear, the mute key must be pressed. None of the participants hear anything. The line is held. Pressing the mute key again cancels the mute mode.

Entries	Explanations
	Call active
	Push the mute key (None of the participants hear anything)
	Consultations with others in the room
	Push the mute key
	Call active

### 6.3 Programming the ringing melody

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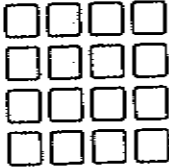


10 different ringing melodies may be set using the keys 0 - 9. The newly chosen melody is audible during programming.

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "6" numeric key
	Set the preferred ringing melody by pushing the keys 0 - 9
	Push the memory key
	Hang up receiver



## 6.4 Programming the ringing sound level





The ringing sound level can be adjusted using the keys 1 - 4. In as-delivered condition, the ringing sound level is adjusted at its loudest level "4".

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "5" numeric key
	Set the preferred ringing sound level by pushing the keys 1 - 4
	Push the memory key
	Hang up receiver

## 6.5 Last number re-dial

---

- The last entered number may be re-dialled by pushing the re-dial key. The number will be kept in the re-dial memory and not be deleted until a new number is dialled.

Entries	Explanations
	Lift the receiver
	Push the re-dial key
	Call active
	Hang up the receiver





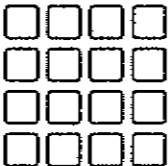



## 6.6 Deleting memories, return to factory settings

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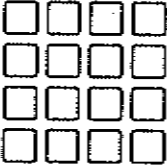

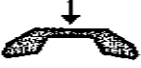
The following table shows the programming steps necessary to delete the speed dialling memories, as well as the direct exchange and main exchange code numbers. In addition these programming steps will reset the desktop telephone to factory settings.

### 6.6.1 Deleting memories

---

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "1" numeric key
	Push the re-dial key
	Enter the parameters corresponding to the memory you want to delete. 252 Deletes the speed dialling memories 253 Deletes the direct exchange and main exchange code numbers
	Push the re-dial key
	Push the memory key
	Hang up receiver

## 6.6.2 Return to factory settings

Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the "1" numeric key
	Push the re-dial key
	Set the preferred factory setting to reset to. 250 Deletes memories and resets to factory setting
	Push the memory key
	Hang up receiver

## 6.7 Programming the speed dialling memory with the numbers or parameters for call forwarding, call-back, or call-wait signalling

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By pressing the speed dialling key a number is automatically dialled which has already been entered into the corresponding memory.

Up to 10 frequently used numbers may be stored under the 10 speed dialling keys. The names corresponding to the stored numbers can be written on the tags situated beside the speed dialling keys.



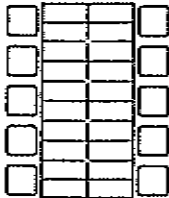
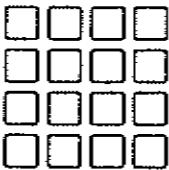


Such key may be reserved for the number of an important user, but may for instance alternatively be used as an emergency key to alarm the police, fire brigade or emergency doctor. It is further possible to use this key to make public announcements directly over a loudspeaker or signalling system connected to the desktop telephone.

Depending on the technical details of the telephone system, speed dialling keys also may be used to forward incoming calls to other users or to request an automatic call-back from a busy number the moment the user hangs up.

The speed dialling keys further allow signalling to a busy participant that a call is waiting. This function is known as call-wait signalling.

If the telephone system in question provides functions like call forwarding, call-back and call-wait signalling, please refer to the corresponding technical documentation for details on the necessary feature parameters of the private branch exchange.

## 6.7.1 Programming telephone numbers in the speed code dialling memory


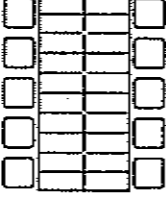


Entries	Explanations
	Lift the receiver
	Push the memory key
	Push the speed dialling key where the number is to be stored (or enter the parameter of the private branch exchange for call forwarding or call-back or call-wait signalling, see clause 6.7)
	Enter telephone number (max. 23 digits)
	Push the memory key
	Hang up receiver

If several different telephone numbers are to be stored, do not leave programming mode by pushing the memory key after having entered the first number, but push another speed dialling key to continue programming. You may now enter the second telephone number. After having entered the last number you want to store in memory you may push the memory key and hang up the receiver to end the programming session.

## 6.7.2 Using speed dialling

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A telephone number must have been programmed in order to use speed dialling (see clause 6.7.1)


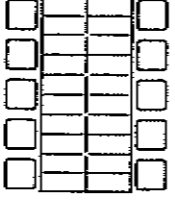
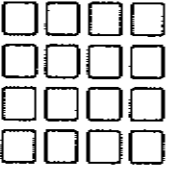

Entries	Explanations
	Lift the receiver
	Push the desired speed dialling key
	Call active
	Hang up receiver

You may store only parts of a number, for instance a company's switchboard or a prefix, in speed dialling memory. The necessary missing digits can be manually entered using the keypad. These digits as well as the prefixes stored in speed dialling memory will not be stored in the last number re-dial memory.


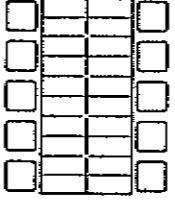
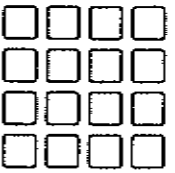

Numbers which have been dialled using speed dialling will not be stored in the last number re-dial memory.

### 6.7.3 Call forwarding

Call forwarding presupposes the programming of the parameter of the private branch exchange for call forwarding using a speed dialling key (see clause 6.7).

Entries	Explanations
	Lift the receiver
	Push the speed dialling key under which the call forwarding parameter of the private branch exchange is stored
	Enter the target number
	Hang up receiver


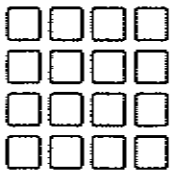

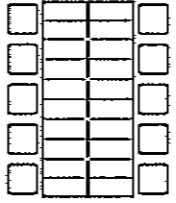
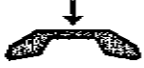
### 6.7.4 Deleting call forwarding number

Entries	Explanations
	Lift the receiver
	Push the speed dialling key under which the call forwarding parameter of the private branch exchange is stored
	Enter your own telephone number
	Hang up receiver




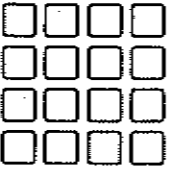

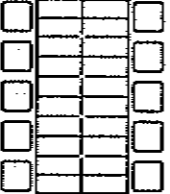




### 6.7.5 Automatic call-back

Automatic call-back presupposes the programming of the parameter of the private branch exchange for automatic call-back using a speed dialling key (see clause 6.7).

Entries	Explanations
	Lift the receiver
	Enter target telephone number
	Busy signal
	Push the speed dialling key under which the automatic call-back parameter of the private branch exchange is stored
	Hang up receiver

## 6.7.6 Automatic call-wait signalling

Automatic call-wait signalling presupposes the programming of the parameter of the private branch exchange for call-wait signalling using a speed dialling key (see clause 6.7.).

Entries	Explanations
	Lift the receiver
	Enter telephone number
	Busy tone
	Push the speed dialling key under which the call-wait signalling parameter of the private branch exchange is stored
	Busy signal - until the person you tried to reach hangs up
	Free line - a call is automatically being made to the user in question
	Call active
	Hang up receiver

## 7. Care and maintenance

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- The desktop telephone is maintenance free. In case of strong pollution, however, the telephone should be cleaned from time to time.  
Use a damp cloth to clean the receiver and the device.

**Warning!** Never use sharp objects for cleaning purposes.

## 8. Keeping the telephone operational

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To maintain operational reliability and safety the telephone should be visually inspected and checked for external damage from time to time.  
Replace damaged parts by original spare parts only.

## 9. Technical data

<b>Connection data</b>	
<ul style="list-style-type: none"> <li>- Dual-tone multifrequency (DTMF)</li> <li>- make-to-brake ratio (PD)</li> <li>- make-to-brake time (PD)</li> <li>- Dialling frequency (PD)</li> <li>- Intermediate dialling time (PD)</li> <li>- Flash time</li> <li>- Ringing frequency</li> </ul>	<p>1.5:1 or 2:1          60 ms / 40 ms or 66.7 ms / 33.3 ms          10 Hz          800 ms ± 40 ms          80 ms or 110 ms or 250 ms          15 Hz to 63 Hz</p>
<b>Certification regulations of the German federal department of post and telecommunications (BAPT)</b>	
<ul style="list-style-type: none"> <li>- Switching specification</li> <li>- Transmission specification</li> </ul>	<p>BAPT 223 ZV 5          Typical ringing impedances:  <math> Z  = 18,2 \text{ k } \Omega</math> at 25 Hz  <math> Z  = 13,5 \text{ k } \Omega</math> at 50 Hz          BAPT 223 ZV 24</p>
<b>Housing</b>	
<ul style="list-style-type: none"> <li>- Height</li> <li>- Width</li> <li>- Depth</li> <li>- Weight</li> <li>- Material</li> </ul>	<p>Approx. 50 mm          Approx. 240 mm          Approx. 210 mm          Approx. 0.9 kg          Black, electrostatically conductive plastic</p>
<b>Handset</b>	
<ul style="list-style-type: none"> <li>- Material</li> <li>- Handset cord</li> <li>- Transmitter capsule</li> <li>- Receiver capsule</li> </ul>	<p>Electrostatically conductive plastic. Colour: black          The ready-to-use coiled handset cord is part of the apparatus. <u>It may be replaced by a handset cord from the same manufacturer only.</u> It is equipped with "Western" type modular plugs at both ends. The end with the blue marking should be plugged into the receiver. Insert the other end into the contact on the underside of the telephone marked with a receiver symbol.          Electret-foil microphone          Dynamic receiver capsule</p>
<b>Protection modes</b>	
<ul style="list-style-type: none"> <li>- Protection mode</li> <li>- Protection class</li> <li>- Ingress protection</li> </ul>	<p>EEx ia II C T6          II according to VDE 0106 T1 / 0100 T410          IP30</p>
<b>Ambient conditions</b>	
<ul style="list-style-type: none"> <li>- Operating position</li> <li>- Ambient operating temperature</li> <li>- Transport and storage temperature</li> </ul>	<p>- May be operated as desktop or wall mounted equipment, see clause 3.4          - 20°C ... + 40°C          - 25°C ... + 70°C</p>

<b>Connection</b>															
- Connecting line	The 6 m long connecting line is part of the apparatus. <u>It may be replaced by a connecting line from the same manufacturer only.</u> It can be inserted into the telephone contact. The other end of the connecting line is equipped with cable lugs. Here the connecting line to the barrier (see clause "cables" below) may be connected via an intrinsically safe terminal box.														
<b>Ringling melodies</b>															
- Melodies - Sound settings - Sound pressure	10 melodies (2-tone and 3-tone ringing); procedure setting 4 steps; procedure setting Typical values (melody dependent) Setting 1: approx. 40 dB (A) at 1 m distance Setting 2: approx. 51 dB (A) at 1 m distance Setting 3: approx. 62 dB (A) at 1 m distance Setting 4: approx. 70 dB (A) at 1 m distance														
<b>Cables</b>															
Cable specifications of the intrinsically safe connection between barrier and telephone	<p>According to DIN VDE 0165 "Building electrical systems in hazardous areas", paragraph 6.1.3.23, the following requirements must be met: "Cables and wires of intrinsically safe circuits must be marked. If sheathing or isolation is marked by colour, the colour light blue is to be chosen."</p> <p>The cable in use must meet EN50039 requirements and be of type A, having a conductive shielding if there is more than one intrinsically safe circuit in the cable in use, or be of type B</p> <p>The following absolute limit values may not be surpassed by the cable length:</p> <table> <tr> <td>maximum allowed loop resistance:</td> <td>38 Ω</td> </tr> <tr> <td>maximum allowed operational capacity:</td> <td>68 nF</td> </tr> <tr> <td>maximum allowed inductivity:</td> <td>950 μH</td> </tr> </table> <p><u>Calculation example</u> Typical subscriber-telephone cable</p> <table> <tr> <td>Diameter:</td> <td>0,8 mm (0,5 mm<sup>2</sup>)</td> </tr> <tr> <td>Resistance per distance unit:</td> <td>73,2 Ω/km</td> </tr> <tr> <td>Capacity per distance unit:</td> <td>55 nF/km</td> </tr> <tr> <td>Inductivity per distance unit:</td> <td>0,82 mH/km</td> </tr> </table>	maximum allowed loop resistance:	38 Ω	maximum allowed operational capacity:	68 nF	maximum allowed inductivity:	950 μH	Diameter:	0,8 mm (0,5 mm <sup>2</sup> )	Resistance per distance unit:	73,2 Ω/km	Capacity per distance unit:	55 nF/km	Inductivity per distance unit:	0,82 mH/km
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$$\text{Line length } l_{\max} = \frac{\text{max. allowed loop resistance } 38 \Omega}{\text{Resistance per distance unit } 73,2 \text{ W/km}} = 0,52 \text{ km}$$

or

$$\text{Line length } l_{\max} = \frac{\text{max. allowed operational capacitance } 68 \text{ nF}}{\text{Capacity per distance unit } 55 \text{ nF/km}} = 1,24 \text{ km}$$

or

$$\text{Line length } l_{\max} = \frac{\text{max. allowed inductivity } 950 \mu\text{H}}{\text{Inductivity per distance unit } 820 \text{ mH/km}} = 1,16 \text{ km}$$

#### Result

The limiting factor in the above calculation example is the loop resistance. Accordingly, operation will be allowed up to 0,52 km.

## 10. Warning and safety notes

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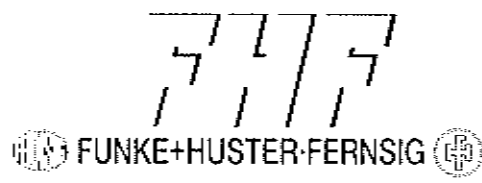
Although the desktop telephone has been explicitly constructed for use in hazardous atmospheres in the industrial areas, the following warning and safety notes must be observed:

The desktop telephone may be connected to and operated with the voltage for which it has been constructed only.

1. The desktop telephone has been constructed according to protection class II.
2. The desktop telephone may be operated under the environmental conditions laid down in "Technical Data" only. Operation in hostile environmental conditions, for instance too high or too low ambient temperatures, is not allowed.
3. Ensure that the desktop telephone and the intrinsically safe connecting lines are undamaged. If the desktop telephone has been damaged it may not be operated.
4. Only trained and skilled personnel is allowed to connect the desktop telephone and set it up for operation.
5. During operation of the desktop telephone legal and professional regulations, regulations to prevent accidents, and electrical regulations must be observed.
6. If the telephone has to be repaired, the repair must be done professionally, using original spare parts only. Spare parts from other sources may cause damage.
7. Prior to maintenance or replacement of a desktop telephone the electrical power must be disconnected. Maintenance or repair works which have to be performed while electrical power is connected may be carried out by trained and skilled personnel only.
8. The desktop telephone may be electrically connected to and operated with the barrier mentioned in the Conformity Certificate.
9. It is prohibited to connect the telephone directly and without barrier to the public telephone network or a private branch exchange.
10. The manufacturer of this product reserves the right to technical alterations without further notice.

We reserve the right to alter  
technical specifications 5 99

Ident.-Nr. 5240.6.0011



**Funke+Huster · Fernsig**

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