

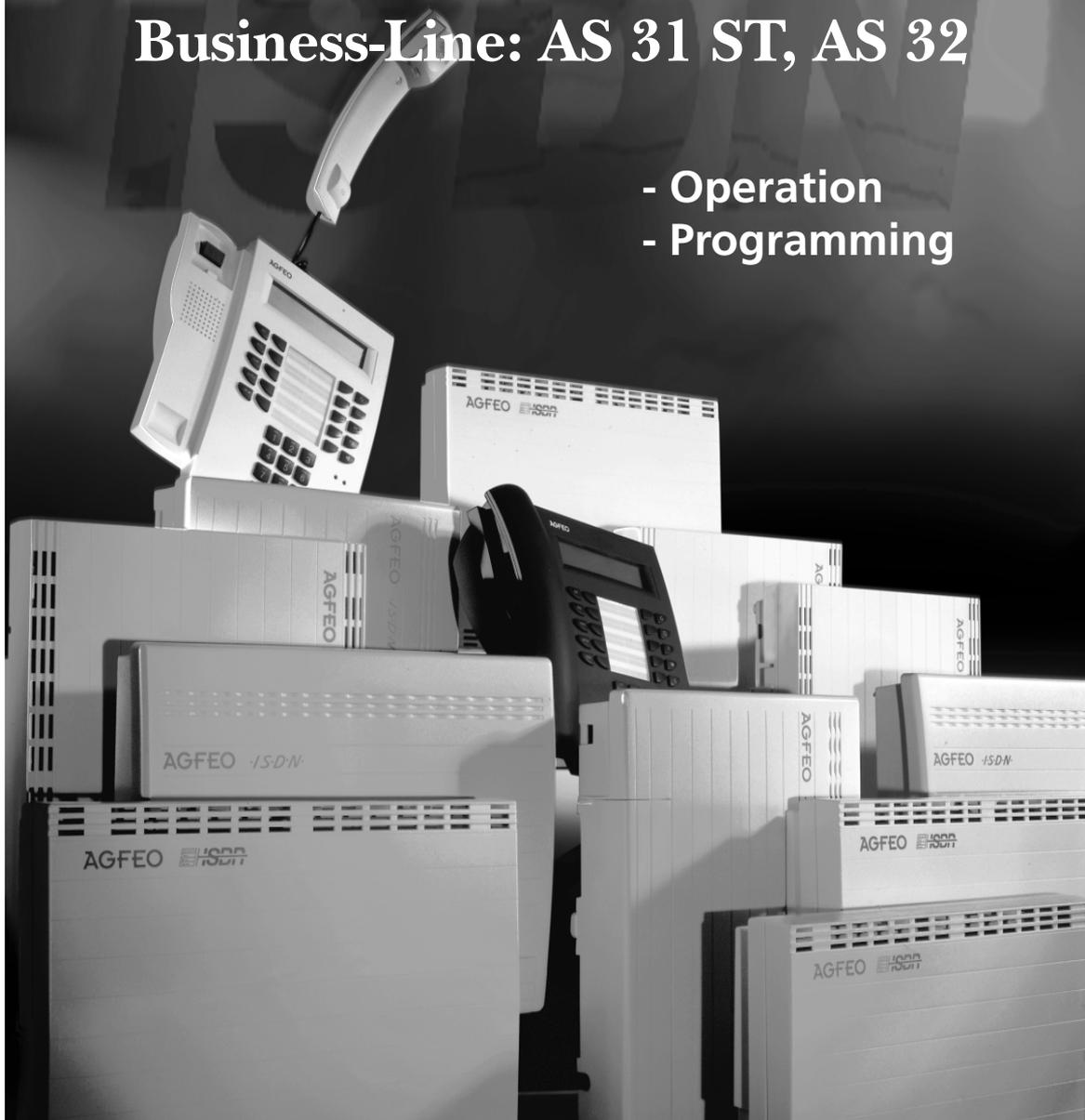
# AGFEO

kommunizieren mit System

**Basic-Line plus: AS 140, AS 141,  
AS 190, AS 191**

**Business-Line: AS 31 ST, AS 32**

- Operation
- Programming



## I Introduction

### Overview of functions

These operating instructions describe how to operate the AS 140, AS 141, AS 190, AS 191, AS 31 ST and AS 32 telephone systems. Please refer to the following list for the differences between them.

|   | AS<br>140 | AS<br>141 | AS<br>190 | AS<br>191 | AS<br>31 ST | AS<br>32 |
|---|-----------|-----------|-----------|-----------|-------------|----------|
| External ISDN basic access  | 1         | 1         | 1         | 1         | 1           | 1        |
| Internal ISDN basic access  | -         | 1         | -         | 1         | -           | 1        |
| Internal ISDN basic access, extendable with plug-in S0-module 110 | x         | -         | x         | -         | -           | -        |
| Vario ports for ST 20 or analog terminals                         | -         | -         | -         | -         | 4           | 4        |
| Ports for analog terminals only                                   | 4         | 4         | 8         | 8         | 4           | 4        |
| total number of analog extensions                                 | 4         | 4         | 8         | 8         | 8           | 8        |
| System telephones digital for internal ISDN basic access          | -         | 2         | -         | 2         | -           | 2        |
| Door hands free unit (FTZ 123 D 12) - TFE                         | -         | -         | 1         | 1         | 1           | 1        |

### Features of the telephone system

|  |  |
|--|--|
| Call waiting announcement / call waiting protection / rejection of call waiting announcement | Internal and external room monitoring  |
| Call list display / printout *   | Relay switching (AS 190, AS 191, AS 32 ST, AS 32 )                                     |
| Don't disturb for internal and external calls  | Reserving a dial-up line   |
| Point-to-point or point-to-multipoint connection   | Inquiry / brokering  |
| Automatic exchange seizure adjustable  | Callback   |
| Automatic dialling - connection without dialling   | Call forwarding, programmable and switchable   |
| Busy on busy   | Discriminator (barred range, local range)  |
| Code call  | Day / night service, programmable and switchable                                       |
| Computer telephony integration (CTI)   | Charge unit factor, charge unit limit  |
| Direct call (baby call)  | TAPI interface   |
| External call access (5-level)   | Telephone directory (abbreviated dialling), central for all users                      |
| Remote support, remote software download   | Telephone lock and access codes  |
| Remote control, e.g. changing diversion  | Door call diversion to external (AS 190/191, AS 31 ST, AS 32)                          |
| Picking up calls from an answering machine   | Diversion from (Follow me)   |
| Fetching external and door calls   | Diversion to internal and external users   |
| Internal / external conference   | Support of multilink-compatible cordless telephones                                    |
| Telephone system configuration by telephone or PC  | Post-sending of connection costs to analog telephones (AS 140, AS 141, AS 190, AS 191) |
| Remote configuration   | Redial simple / extended / automatic *   |
| Least Cost Routing (LCR)   | Internal / external music on hold  |
| Memory for storing phone numbers *   | Internal and external forwarding   |
| Network code -Call by Call *   | Appointment call / Wake up call  |
| Parking external calls   |  |
| Room inquiry / muting  |  |

\* system telephones only

### ISDN features that the telephone systems support

|  |   |
|--|---|
| Call waiting announcement                                | Parking (hot swapping)  |
| Call forwarding (permanent, on busy, if no answer)       | Callback on busy  |
| Three-party conference                                   | Phone number communication / suppression to the caller                    |
| Direct inward dialling                                   | Phone number communication / suppression to the called party              |
| Identifying malicious callers (malicious caller tracing) | Communication of connection charges during and at the end of a connection |
| Placing a connection on hold                             |   |
| Multiple subscriber numbers (MSNs)                       |   |

**Overview of contents**

- Overview of functions
  - Safety notes
  - Table of contents
  - Important notes on using analog and ISDN terminals
  - CTI - computer telephony integration
  - Pictograms and keys
- 
- Basic functions - "telephone calls", "accepting a call" and "forwarding a call"
  - Convenience functions of the telephone system in alphabetical order
- 
- Basic functions - "telephone calls", "accepting a call" and "forwarding a call"
  - Convenience functions of the telephone system in alphabetical order
- 
- Programming from a PC  
The TK-set configuration program is part of the TK-Soft software package. The corresponding 3.5" diskettes are included in delivery.
  - Programming from a system telephone
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**Introduction****I****Operation**

Analog / ISDN terminals

**1****Operation**

System telephones

**2****Programming****3****Annex****4****List of key words****L**

## I Introduction

### Safety notes

The telephone system is intended for connection to an ISDN basic access (DSS 1).

You may connect all analog terminals to the analog user ports of the telephone system that you are also permitted to operate on the analog telecommunications network.

You may connect all DSS 1 ISDN terminals to an internal S0 bus (AS 141, AS 191, AS 32) that you are also allowed to operate directly on the ISDN network. Two digital AGFEO system telephones can be also connected to

every internal S0 bus.

Connected door hands free units must conform to the respective interface definition.

Any other use of the telephone system is not in accordance with its intended purpose and is therefore not permitted.

The telephone system has a general connection permit (Germany: AAE).

### Safety notes



- The telephone system conforms to the prescribed conformity and safety regulations.
- Attention! The telephone system must be electrically earthed. Therefore connect the Euro PE contact plug of the power cable only to an expertly installed socket (PE socket) to prevent danger to persons and material.
- Before connecting the subscriber lines to the subscribers and the ISDN network, pull out the 230 V mains plug to switch off the telephone system. Mortal danger!
- Protective measure! Touch the metal shield of the PC/printer socket of the telephone system briefly with your finger. This will discharge any possible electrostatic charges, thus protecting the telephone system's electrostatically sensitive components.
- You must not connect and disconnect subscriber lines during a thunderstorm.
- Lay subscriber lines in such a way that no-one can step on them or stumble over them.
- Prevent the ingress of liquid into the telephone system as otherwise short-circuits may occur.
- No liability can be assumed for consequential damages such as the cost of an unintentionally continued connection.
- The telephone system is out of operation whenever power failures occur. You cannot make telephone calls in such cases.

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### Chapter 1 - Operation - analog / ISDN

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## Important notes on using analog terminals

You may connect all approved **analog terminals** to the analog parts of your telephone system that you are also permitted to operate on the public telecommunication network. These may be normal telephones (a/b telephones), answering machines, group 2 and 3 fax machines and analog modems, for instance.

The **dialling method** employed by the analog terminals may consist of the pulse dialling method or of the dual tone multifrequency method (DTMF). DTMF is the faster dialling method. The telephone system detects the respective dialling method automatically.

From an analog terminal, you can reach any internal user free of charge by dialling the appropriate internal phone number. You reach an external subscriber after seizing a dial-up line (B channel) by dialling the exchange code **[0]** and the external phone number.

If you set "automatic exchange line seizure" for your telephone, you must press the **[#]** key (hash key) before the internal phone number. Internal dialling is not possible on telephones, particularly telephones using the pulse dialling method, that do not have a **[#]** key or which do not support these functions.

You operate the functions of the telephone system by pressing the **[\*]** key (star key) and by dialling a code digit. On telephones, particularly telephones that use the pulse dialling method that do not have a **[\*]** key or which do not support these functions, you must press the digits **[9][9]** instead of the **[\*]** key.

**Please note: for the "inquiry" function, standard analog telephones using DTMF must have a signal key (inquiry key **[R]**) with the flash function.**

Flash time- AS 140 to AS 191: 70...120 ms  
AS 31 ST, AS 32: 50 ... 150 ms

This instruction manual always specifies the operating steps for standard analog telephones set to DTMF. On standard analog telephones set to pulse dialling, you do not need to press the r key when making an inquiry.

You can also use the functions of a standard analog telephone (e.g. redial, abbreviated dialling) in conjunction with your telephone system. Please refer to the operating instructions for the telephone concerned for details of these functions. Details of how to operate the functions of your telephone system that you are able to use from a standard analog telephone set to DTMF are given in this instruction manual and in the "short-form operating instructions for analog and ISDN terminals".

When operating your telephone system, pay attention to its audible signals. You hear the acknowledgement tone when you have successfully completed a code digit procedure. Otherwise, you will hear the error tone.

**AS 140, AS 141, AS 190, AS 191** - The telephone system communicates the counting pulses to analog terminals featuring a display of connection charges (charge pulses).

For **data transfer** via the analog ports, the telephone system supports the V.34 standard (28800 bps).

For usage of a modem, it is recommended to define the port for "automatic line seizure" by Tk-Set. Otherwise it is imperative to configure the modem to blind dialling because most modems do not detect the dial tone of a telephone system. On modems that operate with the Hayes command set, blind dialling is set by means of the X0..X4 parameters.

## Important notes on using ISDN terminals

The telephone systems AS 141, AS 191, AS 31 ST and AS 32 are already equipped at the factory with an internal S0 access. The telephone systems AS 140 and AS 190 can be upgraded to AS 141 or AS 191 systems later with the S0 module 110 (internal S0 access).

You may connect up to eight ISDN terminals to one internal S0 access of the telephone system.

ISDN terminals:

- AGFEO system telephones digital
- ISDN telephones
- ISDN cards
- ISDN fax machines

Depending on current consumption, you may connect at least four ISDN terminals that do not have a power supply of their own.

Example: 4 ISDN telephones or 2 system telephones digital and 2 ISDN telephones.

All ISDN terminals must be approved ISDN terminals (DSS 1).

The internal S0 access behaves like a point-to-multipoint connection to which you may assign any chosen internal phone numbers of the telephone system. The two-digit internal phone numbers are the multiple subscriber numbers. You enter one or several of these multiple subscriber numbers (internal phone numbers) in your ISDN terminal. In doing so, pay attention to the ISDN terminal's operating instructions. The multiple subscriber number is this ISDN terminal's internal and direct inward dialling number.

From an ISDN terminal, you reach any internal user free of charge by dialling the corresponding internal phone number. After

seizing a dial-up line (B channel), you reach an external subscriber by dialling the exchange code **[0]** and the external phone number.

If you set "automatic exchange line seizure" for your ISDN terminal, when dialling an internal number you must press the **[#]** key (hash key) before dialling the internal number. Internal dialling is not possible on terminals that do not have a **[#]** key or which do not support these functions.

On an ISDN telephone, you operate the functions of the telephone system in the same way as on a standard analog terminal. You execute a function after pressing the **[\*]** key (star key) and dialling a code digit. On ISDN telephones that do not have a **[\*]** key or which do not support these functions, you must enter the digits **[9][9]** instead of pressing **[\*]** key.

For an "inquiry" there must be an inquiry key **[R]** on the ISDN telephone.

When operating your telephone system, pay attention to its audible signals. You hear the acknowledgement tone when you have successfully completed a code procedure. Otherwise, you hear the error tone.

The following are displayed to you on your ISDN telephone:

- Caller's phone number (internal and external)
- Connection charges
- Date and time after the first internal connection

You can only make restricted use of the menu-prompted functions of your telephone system for operating the ISDN features.

## I Introduction

### CTI - computer telephony integration

#### TK-Phone

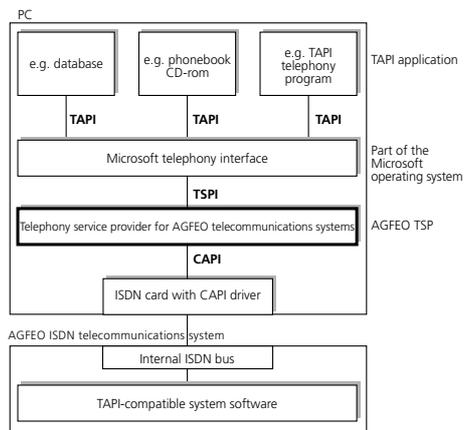
Among other things, the TK-Soft software package contains the TK-Phone CTI application. It offers you the possibility of dialing telephone numbers directly from a PC, of viewing calls on your monitor during your

daily work and of dialing the numbers pertaining to unanswered calls from a call list. Refer to the online help, which you can call up at any time by pressing F1, for details of the entire performance spectrum.

#### TAPI

Contrary to TK-Phone, the TAPI (Telephony Applications Programming Interface) is not an independent CTI application, but an interface between a TAPI-compatible Windows application and the telecommunications system. If programs (applications) support this interface, you can use them to

control the telecommunications system. The scope of control depends on the application you are using. However, in most cases it embraces starting of outgoing calls (dialing out of the application) and displaying incoming calls.



The TAPI is an interface of Microsoft operating systems and the application end of Microsoft's telephony interface. A telephony service provider (TSP) from the manufacturer of the ISDN hardware - in this case from AGFEO - is needed to link this interface to the AGFEO telecommunications system. The TSP is a driver that you must install on your PC. It executes the TAPI functions and controls the necessary exchange of data between the PC and the telecommunications system.

Owing to the constantly growing scope of functions of applications that support TAPI, the TSP is undergoing constant expansion. We provide the TSP free of charge on our Internet home page <http://www.agfeo.de> to ensure that you always have the current TSP for your needs.

The self-extracting file contains all information needed for installation and relating to the supported applications. If you do not have an Internet access, contact your specialist dealer.

## Pictograms and keys

Operation of every function of the telephone system is explained clearly and

lucidly with the aid of pictograms.

### Pictograms

|   |   |   |                              |
|---|---|---|------------------------------|
|  | Audible ringing signal (tone ringing)                         |  | Conduct a call               |
|  | Pick up the receiver  |  | Replace the receiver         |
|  | Enter phone numbers or code numbers                           |  | Conference                   |
|  | Tones you can hear in the receiver, e.g. acknowledgement tone |  | Room monitoring by telephone |

### Keys

|   |  |   |  |
|---|--|---|--|
|  | Inquiry key (signal key) for making an inquiry during a call |  | Star key for initiating specific functions                                     |
|  | Digit keys for entering digits, e.g. "9"                     |  | Hash key for internal dialling when automatic exchange line seizure is active. |

## System telephones

You can use system telephones for easy and comfortable operation of your AGFEO ISDN telephone system.

There is a choice of two different models.

- System telephone ST 20
- Digital ISDN system telephone ST 25

The system telephone ST 20 is connected to a varioport of your AS 31 ST or AS 32.

The digital ISDN system telephone ST 25 can be connected to any internal ISDN bus of an AGFEO.

Up to two ST 25s can be operated on an internal ISDN access of your AS 141, AS 191, AS 32.

The S0 module must be plugged in order to be able to connect an ST 25 to an AS 140 or AS 190.

## **I** Introduction

## Making telephone calls

On your telephone, you can set the **outside line seizure "0" variant** or the **automatic outside line seizure variant** to seize an outside line (to seize a B-channel).

**Outside line seizure "0" variant ("as-delivered" setting):** after picking up the receiver, you hear the internal dial tone. If you wish to call an external subscriber, dial "0" to seize an outside line. When you wish to call an internal user or initiate a procedure, enter the internal phone number or a code.

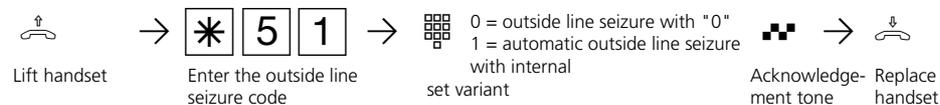
**Automatic outside line seizure variant:** after picking up the receiver, you hear the telephone system's external dial tone. If you wish to call an external subscriber, simply enter the external phone number. The outside line is seized automatically. If you wish

to call an internal user, you must predial **#**.

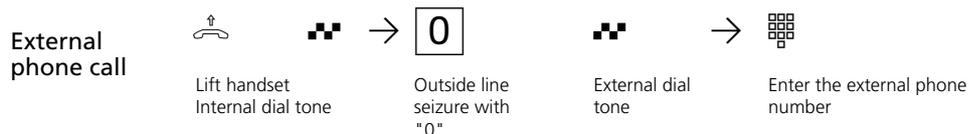
**Direct outside line seizure variant:** this variant can only be set by means of the PC configurator. It is suitable for terminals that only operate external connections, e.g. a fax machine or a modem. When you pick up the receiver, you hear the dial tone of the exchange. The outside line is seized directly. Enter the external phone number. In this variant, you fcall any internal users and you cannot initiate any procedures.

Every internal user of your telephone system can be assigned **two** different two-digit **internal phone numbers** (first and second internal phone numbers) by programming. If necessary, inquire which internal phone numbers have been assigned to which users.

### Setting the outside line seizure variant



### Making telephone calls - outside line seizure variant "0" ("as-delivered" setting)



**Outside line seizure on the combination port** – After the code "**10**" has been dialled on the combination port (instead of "**0**"), the telephone system also seizes an outside line. However, it assigns the fax service to the connection. When an outside line is seized by dialling "**0**", the telephone service is assigned.

**Communicating your phone number** – In the case of outside line seizure with "0" the external phone number of the telephone system assigned to you (system phone

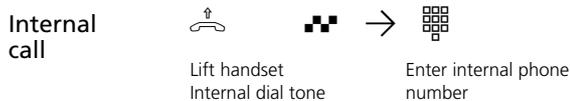
number or multiple subscriber number, MSN is sent to the ISDN exchange. The connection costs are then recorded under this phone number. This phone number is also transferred to a called ISDN subscriber providing that communication of your phone number is released.

How to account the connection costs under another MSN, see under "Outside line seizure with specific MSN".

## 1 Operation - analog / ISDN terminals

When you make telephone calls via a **point-to-point connection**, the system phone number and your extension number are

communicated to a called ISDN subscriber, provided communication of your phone number is enabled.



### Making a telephone call - automatic outside line seizure variant

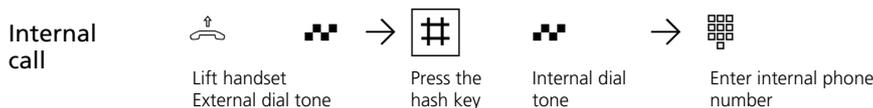


Automatic outside line seizure is only possible directly after picking up the receiver. If you wish to call an external subscriber in an inquiry, you must seize an outside line by pressing "[0]".

standard MSN is always communicated to the called party. Targeted communication of a different MSN is not possible.

When seizing an outside line automatically on a point-to-multipoint connection, the

Combined port: the telephony service is transmitted when "automatic outside line seizure" is set.



### Making a telephone call - direct outside line seizure variant (without internal dialling)



When using the "Direct outside line seizure" variant, only external dialling is possible, but not internal dialling.

to the called party. Targeted communication of a different MSN is not possible.

When using the "Direct outside line seizure" variant on a point-to-multipoint connection, the standard MSN is always communicated

Combined port: the telephony service is transmitted when "direct outside line seizure" is set.

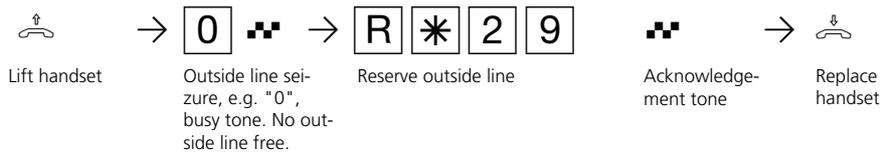
### Seizing an outside line with a defined MSN (outside line seizure variant "0")

When dialling externally, you may define which MSN is transferred, in order to separate the call charges. To seize the outside line, dial the following procedure instead of "0".



### Reserving an outside line

If you hear the busy tone after seizing an outside line (e.g. by dialling "0"), this means that both outside lines are busy. You can reserve an outside line for yourself. As soon as an outside line is free, the telephone system will call you. When you pick up the receiver, you hear the external dial tone and you can enter the external phone number.



### Notes

#### Outside line access (external access)

If, when seizing an outside line, you hear the error tone instead of the external dial tone, this means that your telephone has no external phone number dial access.

**Barred range** - If the telephone system's barred range is programmed for your telephone, this means that you cannot dial the external phone numbers that lie within the barred range. You hear the error tone.

**Internal call** - Internal dialling is not possible on telephones for which automatic outside line seizure is set and which do not have a **#** key (hash key) or which do not support this key.

**DTMF post-dialling** is possible for all existing external connections, even in an inquiry when brokering and during a three-party conference. You can post-dial digits and symbols (**1**...**0**, **\*** and **#**).

You can agree two different **code calls** with internal users of **radio cells** (base stations

with cordless telephones. The connection must be programmed as a "radio cell"). When you dial the radio cell with the first internal phone number, all users of the radio cell are called with the tone ringing sequence of code call 1. When you dial using the second internal phone number, they are called with code call 2. The first user of the radio cell who picks up the receiver is connected to you.

**Reserving an outside line** - The telephone system rings you for 60 seconds when the reserved outside line is free. The reservation is cleared after one minute if no connection comes into being.

If you hear the error tone after reserving, this means that the outside line is already reserved.

On telephones that do not feature or do not support a **\*** key (star key), you must press the digits **99** instead of the **\*** key.

## 1 Operation - analog / ISDN terminals

### Accepting calls

Thanks to different ringing rhythms on your telephone, you can distinguish between internal calls, code calls, door calls and external calls provided your terminal supports the different ringing rhythms. When your telephone rings and you pick up the receiver, you are connected to the caller. You can end the call at any time by replacing the receiver.

a call while you are already making a call. The waiting call is announced. You hear the internal call waiting announcement tone once (internal call) or you hear the external call waiting announcement tone several times (external call). You can accept the call and you can broker between both calls. You can reject an external waiting call. When you reject the waiting caller, the caller hears the busy tone.

**Call waiting announcement** - You receive

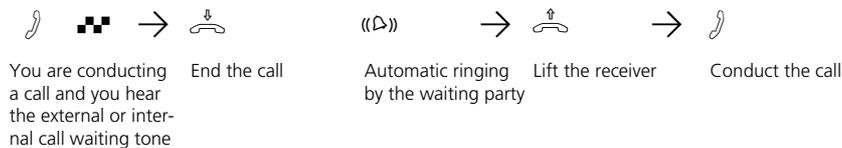
#### You are called

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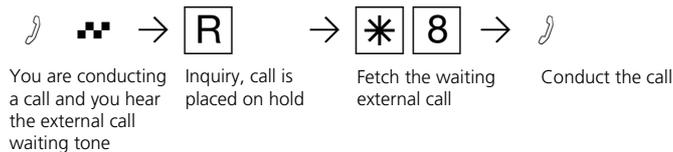
#### Call waiting

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#### External call waiting (free outside line)

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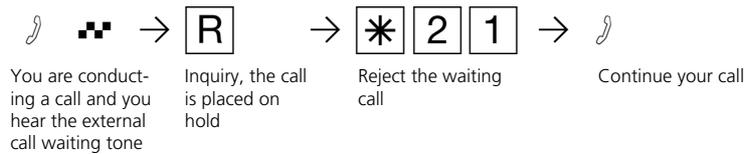
#### Internal call waiting

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### Rejecting an external waiting call

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### Notes

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You hear the error tone while fetching a waiting call,

- if the internal call waiting tone refers to the other call partner.
- if both outside lines of the external waiting caller are busy. To speak with the waiting caller, you must end the first call

(replace the receiver or place the first call on hold by means of the inquiry function).

You can prevent call waiting announcement by activating call waiting announcement prevention.

## 1 Operation - analog / ISDN terminals

### Forwarding a call

You can forward an external call to another internal user or to an external subscriber. Two kinds of internal forwarding are possible.

#### Internal forwarding with announcement

You call the internal user in an inquiry, you announce the external call and you replace the receiver. You have now forwarded the external call.

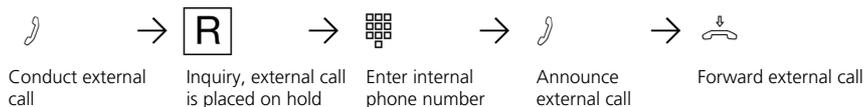
#### Internal forwarding without announcement

You call up the internal user in an inquiry and you replace the receiver without speaking with the internal user. The internal user hears call ringing, and is connected to the external subscriber after lifting the receiver.

**External forwarding** is only possible with an announcement. You call the external subscriber in an inquiry and you announce the other external call. You forward the call by dialling the appropriate call.

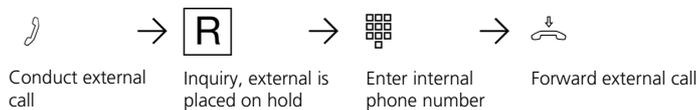
#### Internal forwarding with announcement

---



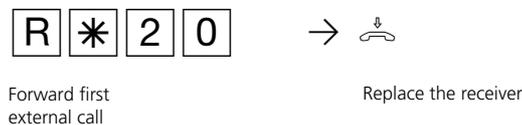
#### Internal forwarding without announcement

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#### External forwarding

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**Notes**

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When **forwarding an external call**, you must always seize the outside line by entering "[0]", even if automatic outside line seizure is set on the telephone.

External forwarding is only possible if a dial-up line (B-channel) is free.

You bear the cost of the externally forwarded call.

A **user on the internal S0 bus** can only forward an external call internally if the second B channel of the internal S0 bus is free. External/external forwarding is not possible.

**Internal forwarding with announcement**

If the internal user does not answer, you are connected back to the external subscriber after dialling [R][0]. If necessary, you can

forward this external subscriber to another internal user.

If the internal user is busy or has activated the do not disturb feature on his telephone, you are connected back to the external subscriber after a short busy tone.

During the inquiry, the external subscriber on hold hears a tune if you have internally activated music on hold (MoH) or if music on hold is fed in from an external source.

After **internal forwarding without announcement**, you receive a **call back** after 45 seconds if the internal user has not accepted the forwarded call within this time. If you accept the call back, you are again connected to the external subscriber. Ringing is aborted after 60 seconds if you do not accept the call back.

**1** Operation - analog / ISDN terminals

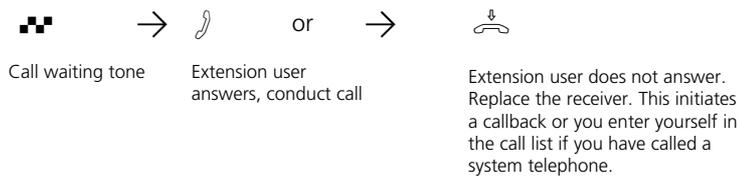
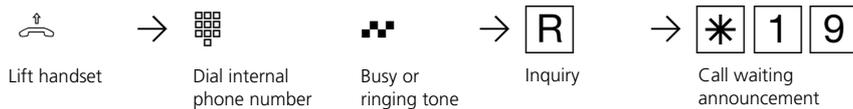
## Call waiting announcement / Callback / Call list

By means of **Call waiting announcement**, you can make yourself noticeable to a busy internal user. You hear the internal call waiting tone. In his call, the other user hears the internal call waiting tone. Your required call partner receives your call immediately after hanging up. If he does not accept your call or if he has activated call waiting protection, you initiate a **callback** when you replace the receiver.

You receive the automatic callback as soon as the other user is free again. Your telephone rings. You only need to pick up the receiver and the other user will be called automatically.

If you call an internal user who has a system telephone that is free but who is not answering, you can enter yourself in the **call list** of this user's system telephone.

### Call waiting announcement / Initiating Callback / Entry in the call list



### Notes

**Call waiting announcement** - You cannot announce yourself as a waiting caller to an internal user

- from whom a callback is already expected.
- whose connection is set to the answering machine, fax, modem or combined unit terminal type.

If you wish to repeatedly announce a waiting call to an internal user without placing a call on hold, you must announce your call again.

**Callback** - You can initiate several callbacks in succession (from every internal user)

You cannot initiate a callback from an internal user

- from whom another user is already expecting a callback,
- who has activated do not disturb on his telephone,
- whose connection is set to the answering machine, fax, modem or combined unit terminal type.

Callback from a user with a standard telephone:

- The callback is cancelled after 60 seconds if you do not pick up the receiver.
- A callback is cleared once the callback has come into being.

Callback in general:

You have activated a callback:

- if you have activated do not disturb on your telephone, this is temporarily cancelled.
- if you have set call diversion on your telephone, the callback is not diverted.
- Power failure: initiated callbacks are cleared.

**Call list** - Callback from a user with a system telephone:

- If you do not pick up the receiver, after 60 seconds your call is entered in the call list of the user's system telephone.
- If you are busy, your call is immediately entered in the call list.
- If the user picks up the receiver during his callback, your call is immediately entered in his call list.

You cannot use the "call waiting announcement/callback/call list" features on a combined unit (phone/fax).

**1** Operation - analog / ISDN terminals

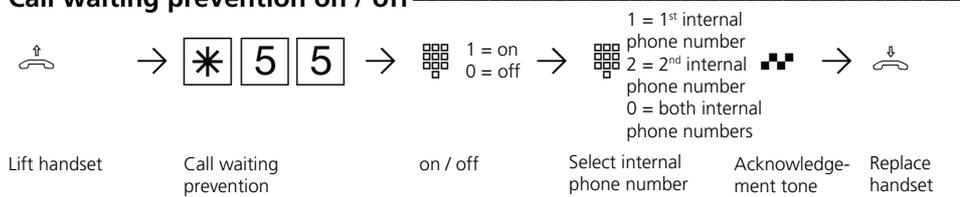
## Call waiting prevention

While you are conducting a telephone call, internal users and external subscribers can announce their waiting calls. You hear the call waiting announcement tone in your call. If you do not want others to announce their waiting calls, activate call waiting prevention on your telephone. You can select whether the call waiting prevention is to apply for your 1<sup>st</sup> internal phone number (primary

internal phone number), your 2<sup>nd</sup> internal phone number (secondary internal phone number) or for both internal phone numbers.

External callers hear the busy tone when your telephone has rung as the only one and no internal call forwarding (call variant 3) has been set.

### Call waiting prevention on / off



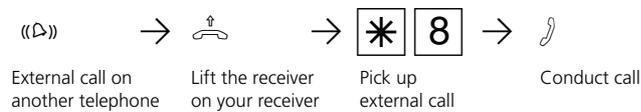
## Picking up calls

Another telephone rings with the internal or door ringing tone. You can pick up the call on your telephone.

If the answering machine has accepted an internal call, you can pick up this external call on your telephone.

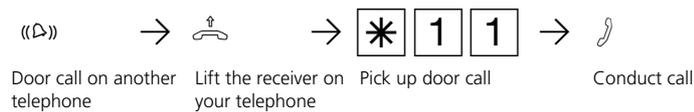
### Picking up an external call

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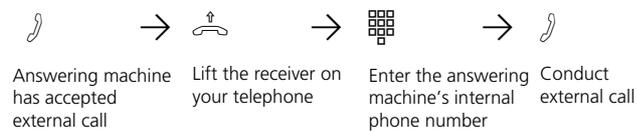
### Picking up a door call

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### Picking up an answering machine call

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### Notes

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To be able to pick up a call from an answering machine, the terminal connection must be programmed as an answering machine.

## 1 Operation - analog / ISDN terminals

### Printing and deleting the call list

The PABX stores external calls not answered by any user in a call list. You can have the call list printed and deleted with a maximum of 32 entries.

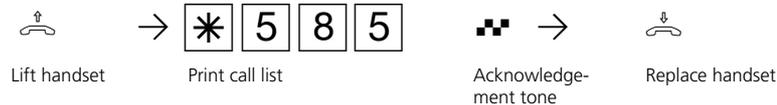
The call list contains the following information:

- date and time of the call

- phone number of the caller (if the phone number is not transmitted, the phone number of the caller is marked "unknown")
- phone number of the called party (DID or multiple subscriber number of the internal user)
- service (telephony, fax, data)

#### Printing the call list

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#### Delete call list

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#### Examples for printing a call list

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Example: Call list when setting 80 characters/line

```
( Call list )
Date      Time      Call from      Call to      Service
-----
05.08.96 11:52:10 0309876543210987 87654321    Tel
05.08.96 12:05:35 unknown        87654322    Tel
06.08.96 07:45:56 05219988776   87654323    Fax
```

Example: Call list when setting 24 characters/line

```
( call list )
-----
05.08.96 11:52
from 0309876543210987 Tel
to   87654321

05.08.96 12:05
from unknown          Tel
to   87654322
```

## Do not disturb - tone ringing off

You do not wish to be disturbed by calls and you activate the do not disturb feature.

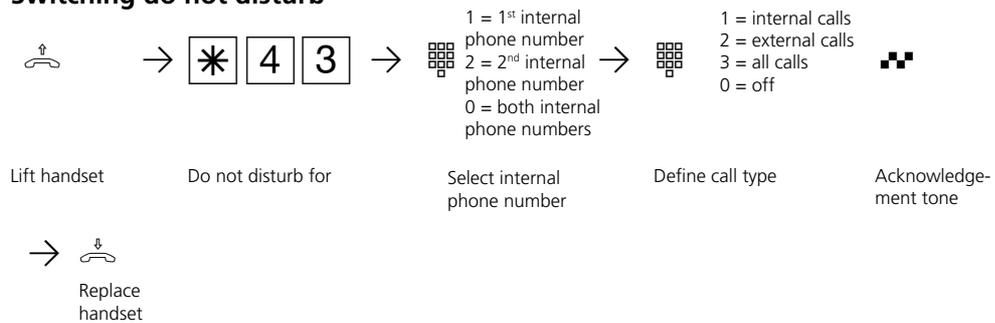
You can select whether the don't disturb feature is to apply for your 1<sup>st</sup> internal phone number (primary internal phone number), your 2<sup>nd</sup> internal phone number (secondary internal phone number) or for both internal phone numbers.

You can also define whether do not disturb

is to apply only to internal calls, to external calls or to all calls and you can deactivate do not disturb again.

If do not disturb is active, ringing on your telephone is off and internal callers hear the busy tone. You can continue conducting telephone calls in the usual manner. When you pick up the receiver, the special dial tone reminds you that the do not disturb feature is on.

### Switching do not disturb



### Notes

You can initiate callbacks despite the fact that the do not disturb feature is active. The callback temporarily cancels do not disturb.

Do not disturb is not active if you are using your telephone as a guarding telephone for room monitoring.

**1** Operation - analog / ISDN terminals

## Switching over the call variant

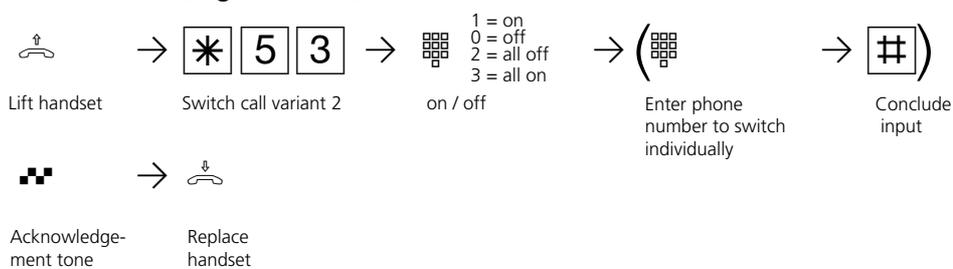
In the event of an external call, a telephone rings or several telephones ring simultaneously. The called internal user who picks up the receiver first is connected to the caller. Which telephones ring is defined by programming in the ringing distribution settings.

By means of two call variants (AVA), different ringing distribution settings are possible for the day time and night time.

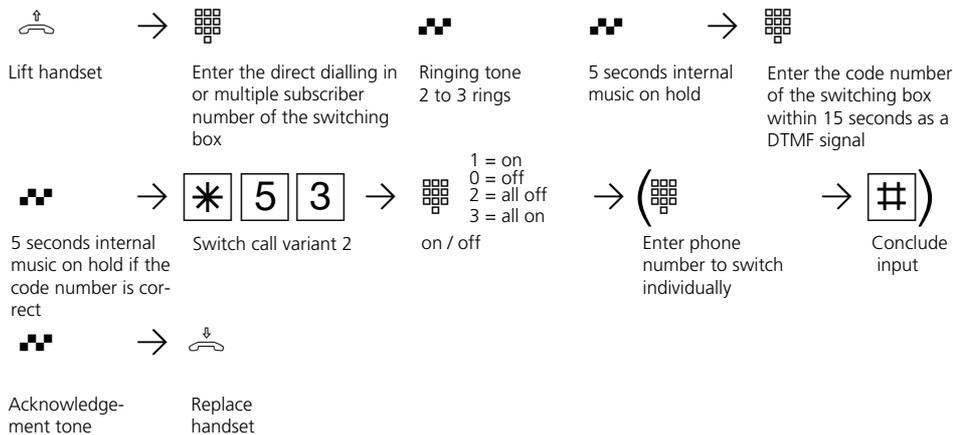
You can activate or deactivate call variant 2 (night service) at any time, from any internal or external telephone, and singly for each phone number in your telephone system. From an external telephone, to do this you must dial up the switching box of your telephone system.

When call variant 2 is deactivated, call variant 1 (day time service) is on.

### Call variant 2 (night service) on / off



### Call variant 2 (night service) from an external source on / off



### Notes

If the selection 'alloff/all on' is set up when call variant 2 is switched on/off, door call

variant 2 is switched on/off at the same time.

## Activating or deactivating call variant 3 (internal call forwarding)

If you activate call variant 3 (internal call forwarding), the telephone system forwards an external call to other internal terminals.

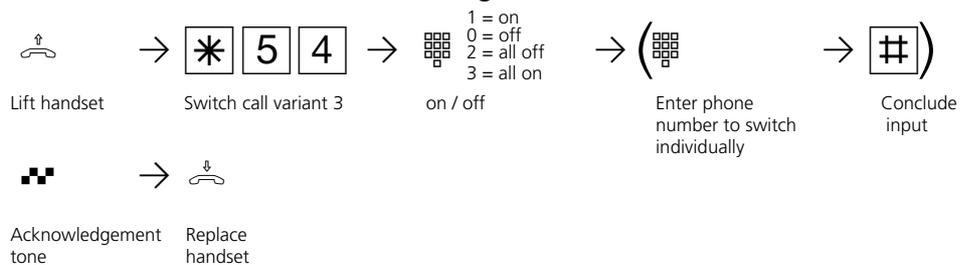
Call forwarding takes place:

- after a defined number of rings if no-one answers,
- immediately if the number is busy and call waiting announcement is not possible.

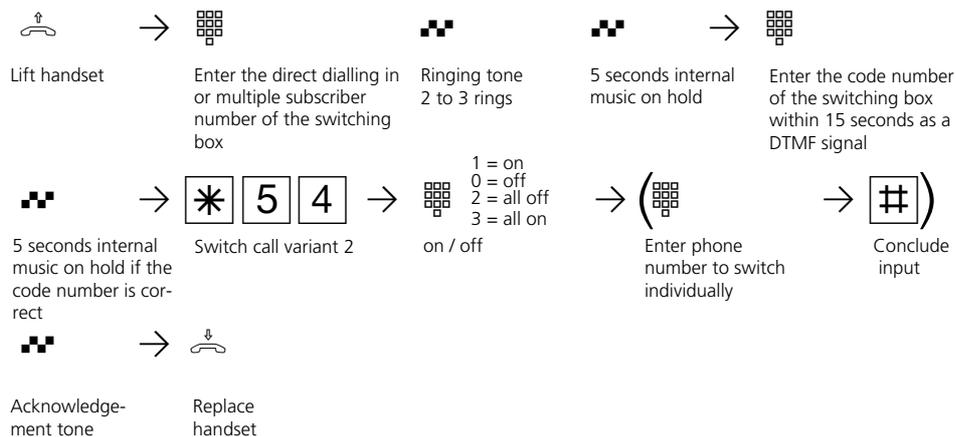
You can activate and deactivate call variant 3 (AVA 3) separately for each phone number in your telephone system, and from every internal or external telephone. From an external telephone, you must dial up the telephone system's switching box to do this.

The call forwarding terminals are defined by programming the ringing distribution settings - call variant 3 - for each phone number in your telephone system.

### Call variant 3 (internal call forwarding) on / off



### Call variant 3 (internal call forwarding) from an external telephone on / off



## 1 Operation - analog / ISDN terminals

### Announcement

You can make an announcement from your telephone via an audio module or a loudspeaker system.

The audio module or the loudspeaker system is connected instead of a door hands free unit (TFE to FTZ 123 D12).

#### Announcement

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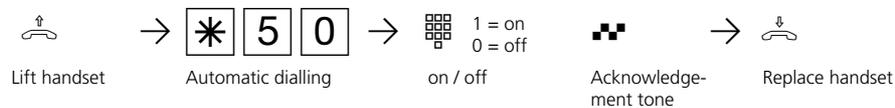
## Autodial - connecting without dialling

You can activate "automatic dialling" on your telephone for an emergency. If you pick up the receiver and then do not press a key, after 10 seconds the telephone

system automatically dials a stored external phone number.

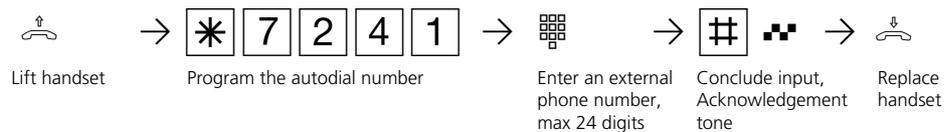
Up to that time, you can dial any phone number in the normal fashion. In this case, automatic dialling does not take place.

### Autodial on / off



### Autodial - Programming a phone number

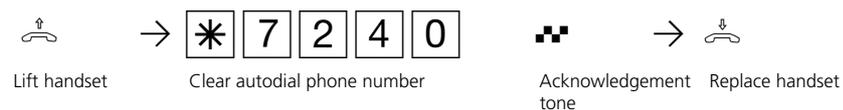
You must start programming mode by entering **\* 7 0 5**



Continue programming or end the programming mode by entering **\* 7 0 0** !

### Clearing the autodial phone number

Programming mode must be started by entering **\* 7 0 5**



Continue programming or end programming mode by entering **\* 7 0 0**

### Notes

Check your autodial setting after programming the external phone number. Activate the autodial mode, lift the receiver, wait until the external phone number is dialled and check that the right connection is established.

If the called party is busy, the telephone system attempts to redial the external phone number every 10 seconds.

It cancels automatic dialling after 12 attempts.

If you hear the error tone when you activate the autodial feature, no telephone number has been programmed.

If the autodial feature is on, you hear the special dial tone when you pick up the receiver.

**1** Operation - analog / ISDN terminals

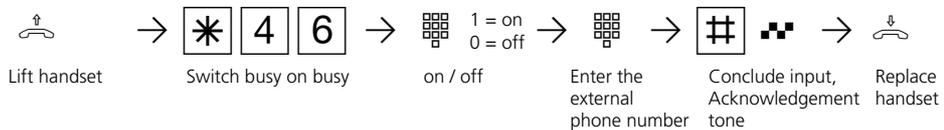
## Busy on busy on / off

An external subscriber calls your phone number, for which ringing distribution to several terminals is programmed. The terminals that are free ring. You are busy and there is no-one there who can accept the call. The caller hears the ringing tone. To

avoid creating an impression that nobody is there, you can activate the "busy on busy" feature for your phone number. A caller hears the busy tone if one user in the ringing distribution configuration is busy.

### Busy on busy on / off

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### Notes

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An ISDN terminal that is connected to the point-to-multipoint connection in parallel with the telephone system and which is assigned an identical phone number to that of the telephone system is always called,

regardless of whether "busy on busy" is on or off in the telephone system for this phone number. The caller hears the ringing tone.

## Announcement / Intercom system function

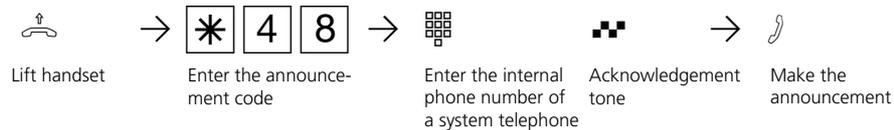
You can use your telephone system like an intercom. That is to say, you can make an announcement to one system telephone or to all system telephones in your telephone system.

The loudspeakers on the system telephones concerned are activated automatically. If automatic microphone activation is set on

an solely called system telephone, it can conduct a hands free call with you. Otherwise, he must use the receiver.

You can also make an announcement out of an external call and you can forward the external call to the party receiving the announcement.

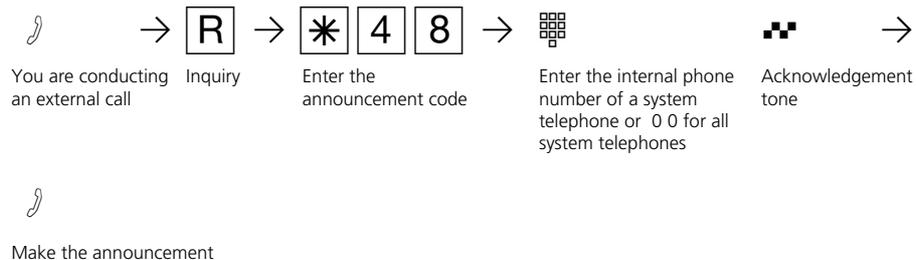
### Announcement on one system telephone



### Announcement to all system telephones



### Announcement out of an external call



### Notes

You can connect back to the external subscriber after entering **R0** if the announcement party does not answer or is busy.

**1** Operation - analog / ISDN terminals

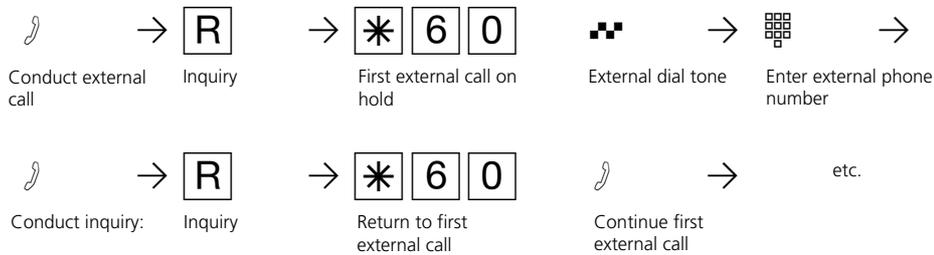
## Placing a connection on hold

**Point-to-multipoint connection only -**  
You can have your external call placed on hold by the ISDN exchange in order to conduct an inquiry conversation with a second external subscriber on the same outside line.  
While you are conducting a telephone call

with an external subscriber, you wish to obtain information from a second external subscriber, for example, although no other outside line is free. You then switch back to the first call.  
You can also switch between both external calls (brokering).

### Placing a call on hold

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### Notes

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You cannot place a call on hold in the exchange if you hear the error tone instead of the external dial tone. You are switched back to the external subscriber after entering **R0**.

If you replace the receiver, you clear the current call and also the call on hold.

Call charges are incurred for the current external call and for the one on hold.

## Identifying malicious callers (Malicious call tracing)

You can only use the "Identifying malicious caller" feature after placing a special order with your network carrier. The ISDN exchange stores the caller's

number, your number, the date and the time of the call. You can trace the caller during a conversation.

### Identifying a caller

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### Notes

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You can continue the call after **R\*14**.

Until you continue or cancel the call with the caller, the caller hears a tune if "music on hold" (MoH) is activated in the telephone system or is fed in from an external source.

You hear the error tone:

- if you have not placed an order for identification of malicious callers with your network carrier.
- if the caller could no longer be identified by the exchange.

**1** Operation - analog / ISDN terminals

## Conference

### Conducting a conference in the telephone system

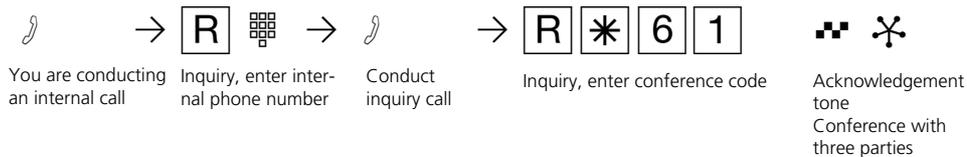
As the conference leader, you can:

- conduct a three-party conference with analog internal subscribers or with internal subscribers connected to the internal S0-bus or
- conduct a three-party conference with one external subscriber and one internal user or
- conduct a three-party conference with two external subscribers using two outside lines.

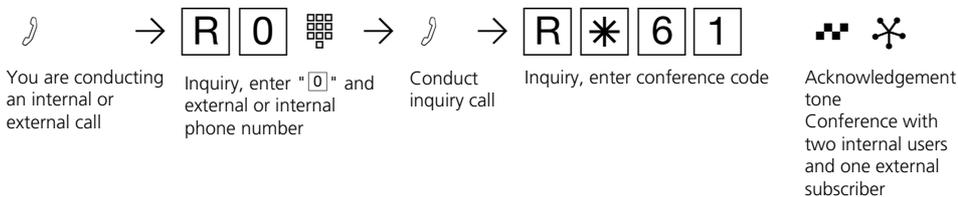
### Conducting a conference in the ISDN exchange (point-to-multipoint connection)

To establish an ISDN three-party conference with two external subscribers, you must first place the first external call on hold in the ISDN exchange in order to conduct an inquiry call with the second external subscriber on the same outside line. You then switch both calls together in a three-party conference.

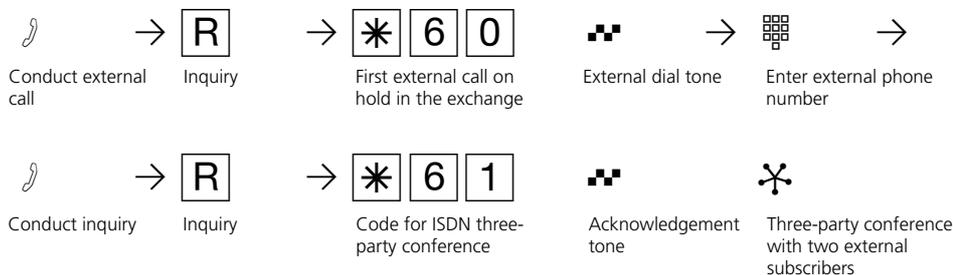
#### Internal three-party conference



#### Internal / External three-party conference



#### ISDN three-party conference



## Notes

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### Conference circuit in the telephone system

An external or door call is signalled to the conference with the external call waiting tone when the called user is in the conference.

The conference leader, who at least have the privilege to accept external calls, can pick up the external call by entering **R\*8**.

The conference leader can pick up a door call by entering **R\*11**.

During the external or door call, the conference leader is no longer in the conference.

He can switch back into the conference by pressing **R** provided he has not replaced the receiver.

If a participant replaces the receiver, he is switched out of the conference. He can only be fetched back into the conference by the conference leader who must enter **R\*61**.

The conference is ended when the conference leader replaces the receiver.

### Conference circuit in the ISDN exchange

If you hear the error tone instead of the external dial tone, it is not possible to place a call on hold in the exchange. After entering **R0**, you are connected back to the external subscriber.

A three-party conference is not possible if you hear the error tone after dialling the three-party conference code.

You end the three-party conference by replacing the receiver.

Connection charges are incurred for external calls participating in the three-party conference.

**1** Operation - analog / ISDN terminals

## Least Cost Routing (LCR) – Cost-optimized telephoning

Since the opening up of the telecommunications market you can choose between various network providers and reduce your telephone costs thanks to the advantages of competition.

The Least Cost Router of the telecommunication system decides which network provider is the cheapest for your external connection on the basis of the local code you dial (tariff zone), the time of day and day of the week.

The network code for the current network

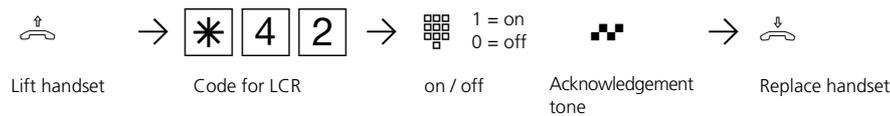
provider is placed automatically in front of your dialed external phone number and dialed. You simply dial in the usual way.

The use profile of the Least Cost Router covers 8 network operators and 8 tariff zones with their own time of day and day of the week profile. You can enter and update the use profile with TK-LCR on the PC.

You can switch the Least Cost Routing on and off on your telephone.

### Switching Least Cost Routing (LCR) on/off

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### Notes

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You can decide which network provider is used for an external connection despite the LCR being switched on:

- Simply dial the network code of the desired network provider in front of the local code, e.g. 01033, Deutsche Telekom.
- You can dial the network provider with a programmed function key "Call by Call" on the system telephone (see "Network code – Call by Call").

The network code for the network operator is stored in the redialing.

Important! Not all ISDN features offered by the Deutsche Telekom AG were available to other network providers at the time these operating instructions went to print (e.g. communicating the phone number to the called party, communicating the connection costs).

## Parking an external call

There are two ways to park an external call:

- Park in the telecommunications system.  
The outside line (B-channel) remains occupied during parking.
- Park (replug on bus) in the ISDN exchange (only at multipoint connection). The outside line (B-channel) is freed when parking in the exchange.

because you

- have to leave your place briefly,
- wish to resume the call on a different telephone in the telephone system, for example.

The outside line (B-channel) remains seized while a call is parked in the telephone system. The external subscriber hears music on hold. You receive a callback if you do not resume (unpark) the parked external call within 4 minutes.

### Parking in the telephone system

You can briefly interrupt an external call, i.e. you can park it in the telephone system,

### Parking an external call

---



### Resuming the external call (unparking)

---



### Notes

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You can resume (unpark) the parked call at any telephone.

Connection charges are incurred for the parked call.

If you hear the error tone when unparking, no external call is parked.

## 1 Operation - analog / ISDN terminals

### Parking (replug on the bus) in the ISDN exchange (only at the multipoint connection)

You can briefly interrupt an external call, parking it in the ISDN exchange, e.g. because

- you have to leave your post for a short time
- you want to continue the conversation on another ISDN telephone at the multipoint connection (bus).
- You want to unplug your ISDN telephone and replug it to another ISDN socket at the multipoint connection (bus),
- You want to continue the conversation at another analog telephone of the telecommunications system.

The outside line (B-channel) is freed when parking in the exchange.

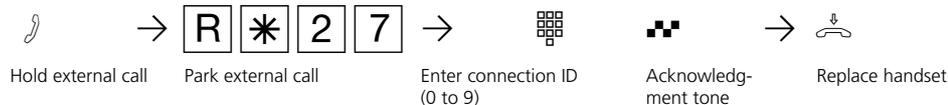
You must continue a parked conversation within 3 minutes.

After 3 minutes the ISDN exchange disconnects the parked call.

Since several calls may be parked at your ISDN connection, you have to identify each call with a "connection ID".

Please see the appropriate operating instructions to find out how to park and continue a call with an ISDN telephone.

### Parking an external call in the ISDN exchange



### Continuing external call (unparking)



### Notes

Parking/unparking in the ISDN exchange is not possible with an ISDN telephone at the internal S0 bus.

On ISDN terminals at the external multipoint connection at which a two-digit connection ID must be entered for parking, enter 00 to 09, e.g. 01.

If you want to continue the call at an analog telephone in the telecommunications system, only enter the 2nd digit, e.g. 1. The telecommunications system first attempts to park with one digit but then adds a "0" to the connection ID, e.g. 01.

If you hear the error tone when parking an external call an external call is already parked under the entered connection ID. After **R0** you are reconnected with the external subscriber.

If you hear the error tone when continuing, no external call is parked under the connection ID.

Connection charges are incurred for the parked call.

## Room monitoring

You can use every analog telephone (system or standard telephone) in the telephone system to acoustically monitor the room in which it is located, for example to monitor a baby.

You ring up the guarding telephone from another internal or external telephone and listen into the room.

From an external location, you dial up the

telephone system's switching box by way of its direct dialling in or multiple subscriber number. After entering a code ("as-delivered" settings: no entry), you can post-dial the internal number of the guarding telephone and listen into the room. You must prepare room monitoring on the telephone that is intended for this purpose.

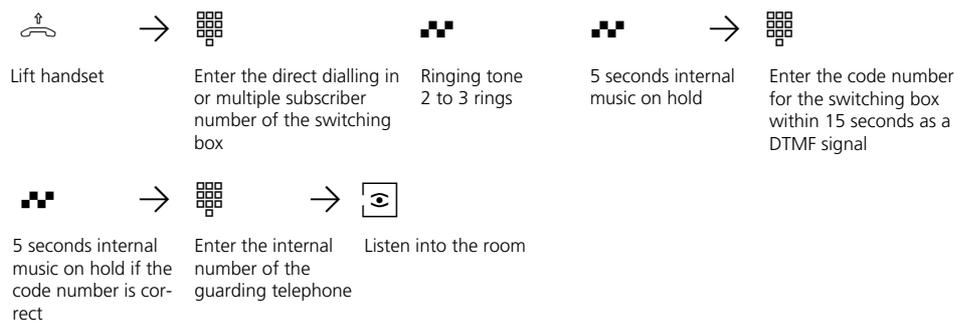
### Preparing room monitoring



### Room monitoring from an internal telephone



### Room monitoring from an external telephone



### Cancelling room monitoring



## **1** Operation - analog / ISDN terminals

### **Notes**

---

You can also use a telephone in the hands free mode as the guarding telephone.

You cannot use an ISDN telephone on the internal S0 bus as a guarding telephone.

The internal phone number of the switching box must be entered as the only internal phone number in the call variants (ringing distribution settings) of one multiple subscriber number.

If you hear the busy tone after dialling up the guarding telephone, the room is already being monitored by another caller.

Within 15 seconds you must enter the right code number as a DTMF signal with a DTMF hand-held transmitter or telephone as otherwise the telephone system will clear the connection.

When monitoring a room, please pay attention to the fact that you can also be heard in the monitored whenever you speak.

## Relay switching

AS 190, AS 191: 2 relays (R1, R2)  
 AS 31 ST, AS 32: 4 relays (R1, R2, R3, R4)  
 You can make diverse use of the potential-free relay contacts instead of the door handsfree unit. For example, you can use them to activate an additional bell or an additional door opener.

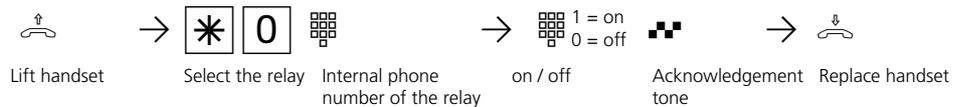
By programming, you define for each relay a internal phone number and whether it is to operate as a pulse relay (3 seconds on) or as an On / Off relay.

You can activate or deactivate the relays from any internal or external telephone.

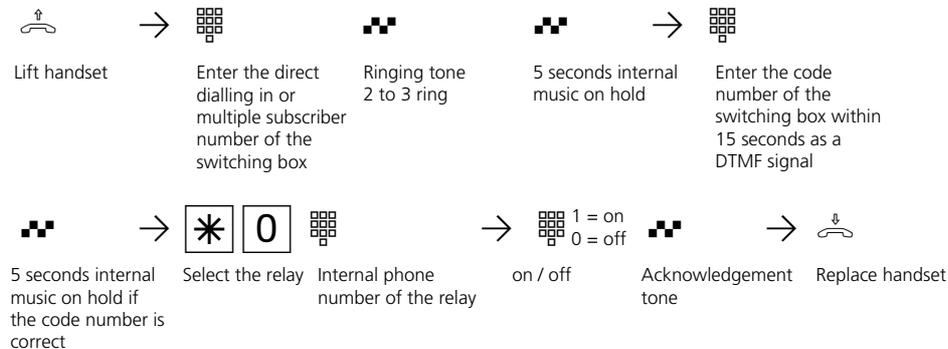
From an external location, to do this you dial up the telephone system's switching box via a direct dialling in or multiple subscriber number. After entry of a code ("as-delivered" settings: no entry), you can switch the relays by entering code digits.

**To be noted when switching the relays:**  
 If a port is programmed to connect an audio module, relay R2 is automatically assigned to the audio module.  
 If a door handsfree unit (FTZ 123 D12) is connected, the relays R1 and R2 (AS 190, AS 191) or relays R3 and R4 (AS 31 ST, AS 32) are used for connecting the door handsfree unit and the door opener.

### Relay on / off



### Relay on / off from an external location



### Notes

The internal phone number of the switching box must be entered as the only internal phone number in the call variants (ringing distribution setting) of one multiple subscriber number.

You must enter the right code number as a DTMF signal with a DTMF hand-held transmitter or telephone within 15 seconds as otherwise the telephone system will clear the connection.

## 1 Operation - analog / ISDN terminals

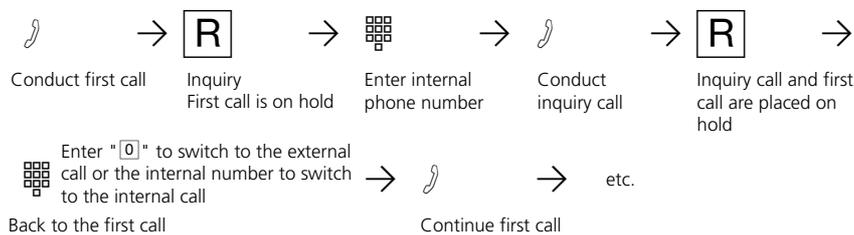
### Inquiry / brokering

You can interrupt your telephone conversation and conduct an inquiry call with a second party in-between times.

The telephone system places your first call on hold. You then switch back to the first telephone call.

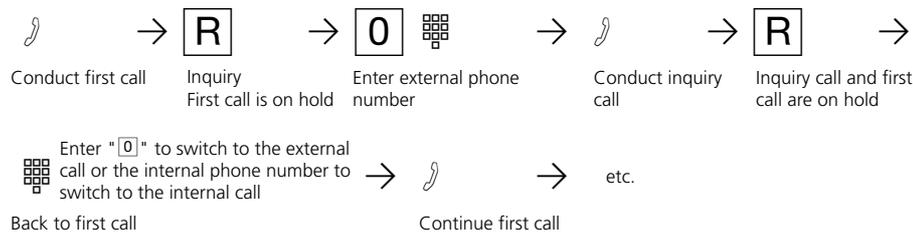
#### Internal inquiry / brokering

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#### External inquiry / brokering

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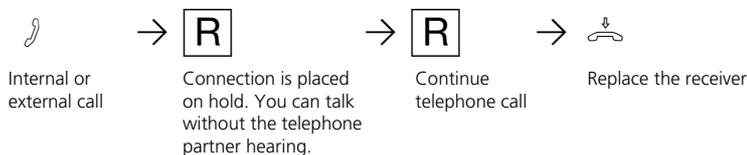


#### Inquiry in the room (muting)

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You can interrupt your telephone call and speak with someone in the room in between times without your telephone partner being able to listen in. An external

subscriber on hold hears a tune if music on hold (MoH) is activated or is fed in from an external source.



## Notes

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When making an external inquiry / brokering you must always seize the outside line by pressing "[0]", even if automatic outside line seizure is set on the telephone.

An external subscriber on hold hears a tune if music on hold (MoH) is on or is fed in from an external source.

If you replace the receiver during an inquiry:

- You clear the current call,
- You receive a callback if a call is still on hold,
- You transfer an external call on hold to the internal user with whom you were in an inquiry.

Connection charges are incurred for the external call, even while the call is on hold.

## 1 Operation - analog / ISDN terminals

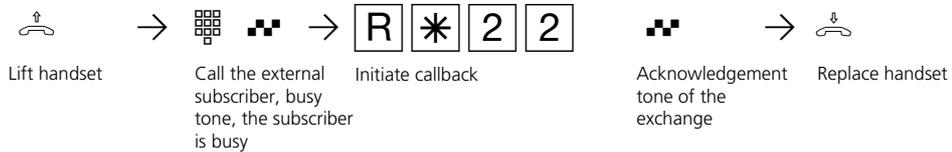
### Callback on busy

If your called external subscriber is busy, you can **initiate** an automatic **callback** from this external subscriber, provided he is an ISDN subscriber or is a subscriber on a digital exchange.

Your telephone rings as soon as your desired call partner replaces the receiver. You receive a callback. The subscriber is called automatically when you pick up the receiver.

#### Initiating a callback

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#### Notes

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No callback from your desired call partner is possible if you hear the error tone:

- The subscriber is not an ISDN subscriber or is not connected to a digital exchange,
- The "callback on busy" feature is not available in the exchange.

If you should not be obtainable after initiating a callback, the callback will be cancelled and cleared after 20 seconds. If necessary, initiate the callback again.

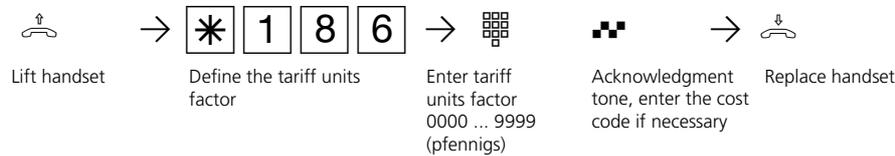
A callback is cleared if the callback does not come into being or if it has not come into being within 45 minutes after initiation.

## Tariff units factor

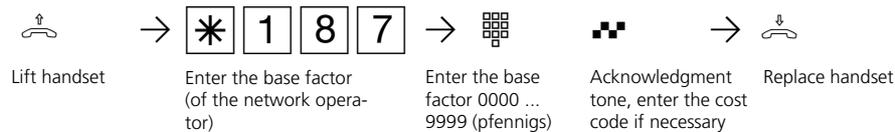
You can enter your own 4-digit tariff units factor (e.g. 0055 pfennigs per unit). In this way you determine how much one tariff unit costs for every subscriber to your telecommunications system.

With the 4-digit base factor you set your telecommunications system to the amount which the network operator charges for one tariff unit.

### Defining your own tariff factor



### Entering the base factor for a tariff unit



### Notes

#### Enter cost code?

If you hear the acknowledgment tone after the inputs, no cost code is programmed in the telecommunications system. It is not necessary to enter the cost code.

If you hear the error tone, the last input is incorrect. Start the entire input again from the beginning.

If you do not hear a tone after the inputs, a

cost code is programmed in the telecommunications system.

Enter the cost code in four digits. If the code is correct you will hear the acknowledgment tone. If the code is incorrect, you will hear the error tone. Replace the handset and start the entire input again from the beginning with the correct cost code.

## 1 Operation - analog / ISDN terminals

### Phonebook - storing and dialling phone numbers

From your telephone or from a PC, you can centrally store up to 200 (AS 140 to AS 191) or 300 (AS 31 ST, AS 32) external phone numbers in the phonebook.

All users can dial the destinations in the phonebook, regardless of their external call privileges.

#### Phonebook - dialling numbers

 →   →    to    AS 140 bis 191  
   AS 31 ST, AS 32 → 

Lift handset      Enter the phonebook code      Enter the phonebook destination 0 0 0 to 2 9 9 ; the stored phone number is dialled.      Conduct the call

#### Notes

You can post-dial further digits after selecting a phonebook destination.

blank phonebook destination.

You can redial the entire phone number with the redial function.

If the telephone system's barred range is programmed for your telephone, you cannot dial the phonebook numbers that are within the barred range. You hear the error tone.

You hear the error tone after dialling a

#### Phonebook - storing a number

Programming mode must be started by entering       

 →     →    to    AS 140 bis 191  
   AS 31 ST, AS 32

Lift handset      Enter the phonebook programming code      Enter a phonebook destination 00 to 299 by which you wish to store a phone number

→  →   → 

Enter an external phone number without "0" (outside line seizure) and without your own local code      Conclude input      Acknowledgement tone      Replace handset

Continue programming or end programming mode by entering       

## Phonebook - clearing a phone number

---

Programming mode must be started by entering  \*705  

 → \*710 → 000 to 

|   |   |   |
|---|---|---|
| 1 | 9 | 9 |
|---|---|---|

 AS 140 bis 191  

|   |   |   |
|---|---|---|
| 2 | 9 | 9 |
|---|---|---|

 AS 31 ST, AS 32

Lift handset

Enter the code for clearing and entry

Enter the phonebook destination 000 to 299 that you wish to clear, Acknowledgement tone

 → 

Acknowledgement tone

Replace handset

Continue programming or end the programming mode by entering  \*700  

## 1 Operation - analog / ISDN terminals

### Telephone lock - direct call (baby call)

You can protect your telephone against unauthorized use by locking it.

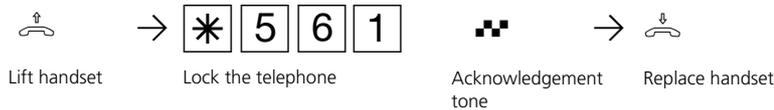
If your telephone is locked, you can:

- Only call internal users by pressing **#** and the internal phone number
- Accept all incoming calls and, if necessary, switch them internally.
- Externally, you can only dial the stored

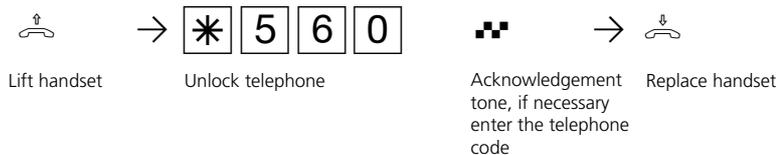
direct phone number (baby number) and the stored autodial number. You must activate the autodial function before locking the telephone.

If you have programmed a telephone code for your telephone, you must enter your 4-digit code number to unlock it.

#### Locking a telephone



#### Unlocking a telephone



#### Notes

##### Enter telephone code?

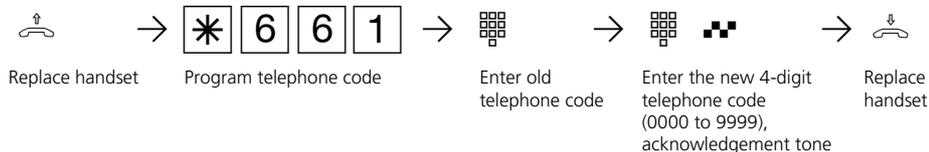
If you hear the acknowledgment tone after entering the code, no telephone code has been programmed for your telephone. There is no need to enter the telephone code. If you hear the error tone, the last input was wrong. Begin the input again.

If you do not hear any tone after making

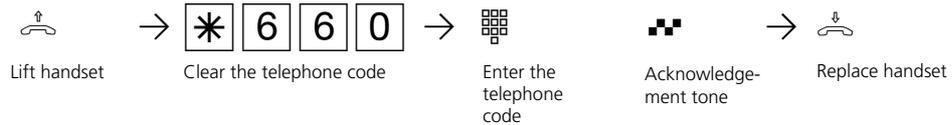
inputs, a telephone code has been programmed for your telephone.

Enter the 4-digit telephone code. If the code is correct, you will hear the acknowledgment tone. If the code is wrong, you will hear the error tone. Replace the receiver and begin the complete input again with the right telephone code.

#### Programming a telephone code



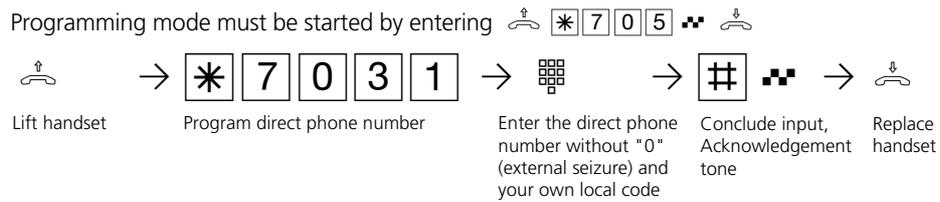
### Clearing a telephone code



### Direct call (Baby call)

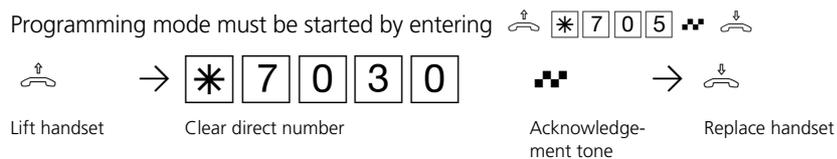
The telephone is connected. After you pick up the receiver and press any key except the \* and # keys, the stored direct phone number is dialed automatically. This is ideal for children who do not yet know how to dial a phone number.

### Programming a direct number



Continue programming or end programming mode by entering [Handset Icon] \* 7 0 0 [Beep Icon] [Handset Icon] !

### Clearing a direct phone number



Continue programming or end programming mode by entering [Handset Icon] \* 7 0 0 [Beep Icon] [Handset Icon] !

## 1 Operation - analog / ISDN terminals

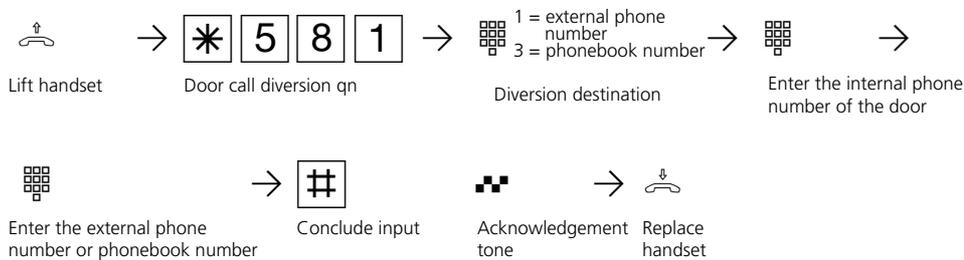
### Diverting a door call to an external subscriber

**AS 190, AS 191, AS 31 ST, AS 32:** If you wish to have a visitor reach you even when you are out of the house, you can divert door calls to an external phone number, e.g. to a radio telephone. Despite door call diversion, the internal telephone still rings. The door call can still be accepted internally.

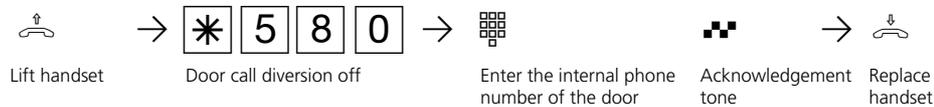
When you divert to an ISDN terminal that is capable of displaying a caller's phone number, you can determine whether or not the call consists of a door call.

From an external location, you switch door call diversion via the telephone system's switching box.

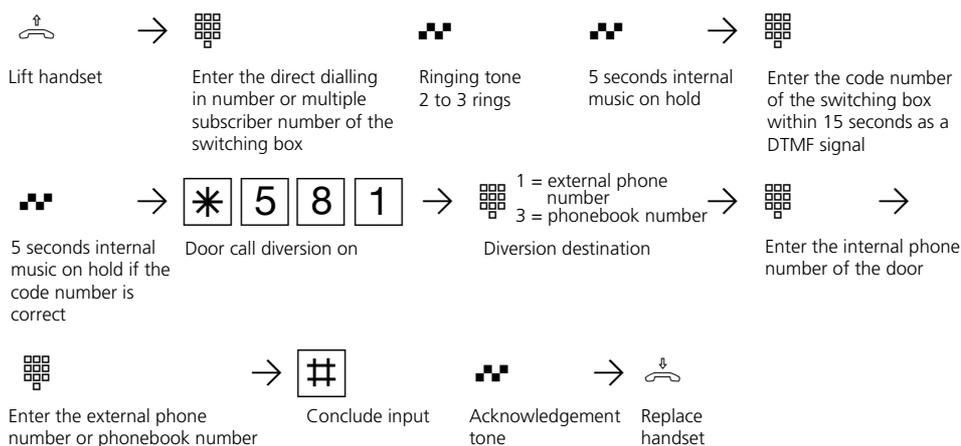
#### Door call diversion on



#### Door call diversion off



#### Door call diversion on / off from an external location



**Notes**

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You hear the error tone if no external phone number is programmed for door call diversion.

Door call diversion is only possible if at least one outside line is free.

Ringing to the external subscriber is cancelled after 30 seconds.

You bear the connection costs of door call diversion.

You cannot actuate the electrical door opener.

## 1 Operation - analog / ISDN terminals

### Switching over the door call variant

In door call variant 1 (day time service) and door call variant 2 (night service), it is determined which internal subscribers are called simultaneously when the bell push is pressed.

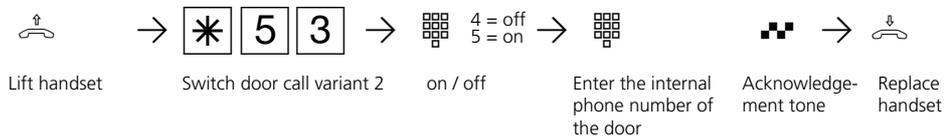
You can activate or deactivate door call vari-

ant 2 (night service) at any time, from any internal or external telephone. From an external telephone, to do this you must dial up the switching box of your telephone system.

When door call variant 2 is deactivated, door call variant 1 (day time service) is on.

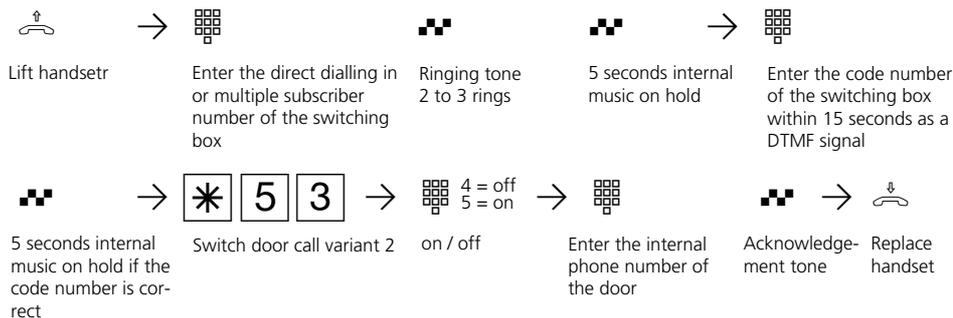
#### Door call variant 2 (night service) on / off

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#### Door call variant 2 (night service) from an external source on / off

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#### Notes

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If the selection "ext. all" is set up when call variant 2 is switched on/off, door call variant 2 is switched on/off at the same time.

## Actuating a door intercom system and a door opener

If you have connected a door hands free unit to your telephone system, you can talk to a visitor standing at your door. Your telephone rings with a door call when the visitor presses the bell button. After the last ring, you still have 30 seconds time to accept the door call by picking up the receiver. During this time, your telephone is

busy for all other calls. If another telephone rings with the door call, you can fetch the door call to your telephone.

In an inquiry or even when not making a call, you can actuate the electrical door opener directly from your telephone.

### Accepting a door call



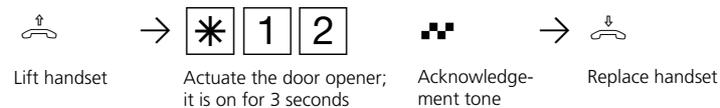
### Calling the door station / picking up a door call



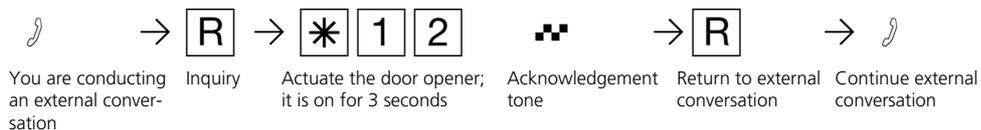
### Actuating the door opener during a door conversation



### Actuating the door opener directly



### Actuating the door opener during an external conversation



**1** Operation - analog / ISDN terminals

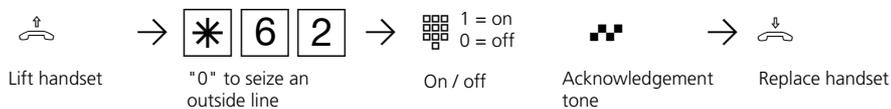
## Communicating a caller's phone number on the internal S0 bus (AS 141, AS 191, AS 32)

When an external ISDN subscriber calls, the telephone system communicates the caller's phone number to the called ISDN terminal (ISDN telephone or PC featuring an ISDN card) on the internal S0 bus. On the ISDN terminal, you can specify that

the telephone system adds a "0" for seizing an outside line before the communicated phone number. If you have stored a phone number in this way, you can dial it automatically from the call list of an ISDN telephone or an ISDN PC.

### Outside line seizure - "0" on / off

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### Notes

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This setting is only recommended if you have set "outside line seizure 0" on the ISDN terminal.

This setting is not necessary if you have set "automatic outside line seizure" or "direct outside line seizure" on the ISDN terminal.

## Communicating your phone number

The telephone communicates your phone number to an external ISDN subscriber before the connection is established ("as-delivered" settings).

In Euro ISDN, two phone number communication variants are at your disposal:

- **Communicating the called party's phone number to the caller.**

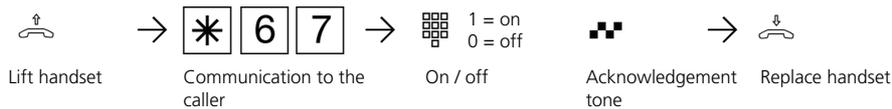
Your phone number is communicated to the external ISDN subscriber who calls you.

- **Communicating the caller's phone number to the called party**

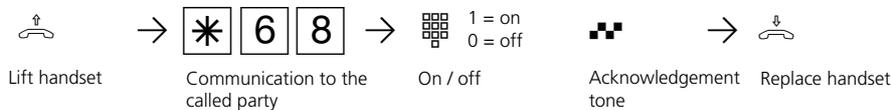
Your phone number is communicated to the external ISDN subscriber that you call.

Enter this feature as an additional feature on the phone with which you apply for your ISDN connection. If you wish to be able to activate / deactivate communication of phone numbers in individual cases, you must order this separately.

### Communicating your phone number to the caller on / off



### Communicating your phone number to the called party on / off



### Notes

Which phone number is communicated to the other end?

On a **point-to-point connection**, your local code, your system phone number and your direct dialling in number are communicated (e.g. 030 987654 12).

On a **point-to-multipoint connection**, your local code and your multiple subscriber number (e.g. 030 87654323) that has been assigned to you by programming are communicated.

When dialling externally, you may define which MSN is transferred, in order to separate the call charges. To seize the outside line, dial the following procedure instead of "0".  
 \*00 - MSN- # - external phone number.

**1** Operation - analog / ISDN terminals

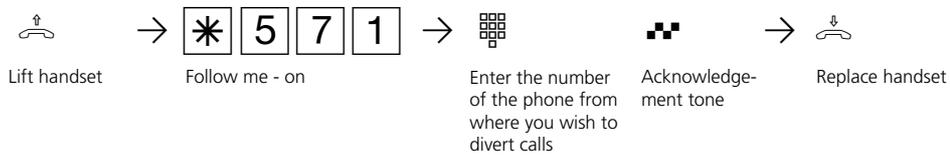
## Follow me - diverting calls from other telephones

You can divert all calls from other telephones which may not be manned individually to your telephone. You can use the diverted telephone for

phoning as usual. When you pick up the receiver on your telephone, the special dial tone reminds you that the follow me feature is on.

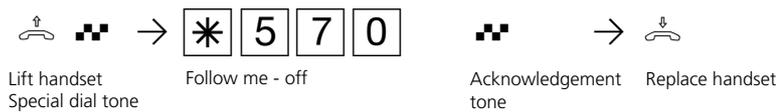
### Follow me - on

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### Follow me - off

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### Notes

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Calls can only be diverted once.

Calls back are not diverted.

"Follow me" from a telephone that is set to do not disturb to your own telephone is not possible. You hear the error tone.

You can no longer divert your extension if a diversion to your telephone has already been set up.

Users of radio cells (base station with cordless telephones) cannot activate diversion.

## Diversion to - diverting calls to another telephone

### Diversions through the telephone system

You can divert all calls for your telephone to another telephone in the telephone system or to an external subscriber. In doing so, you can define whether only calls to the first internal number or calls to the second internal phone number are to be diverted. If calls to both internal phone numbers are to be diverted, you must activate diversion separately for each internal phone number. You can also select the diversion to variant additionally:

**Permanently** – Calls are diverted immediately

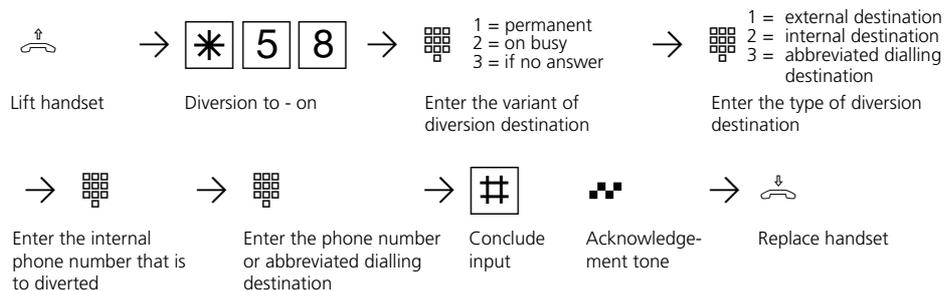
**When busy** – Calls are diverted when the internal phone number is busy.

**When there is no answer** – Calls are diverted after 15 seconds if no-one answers.

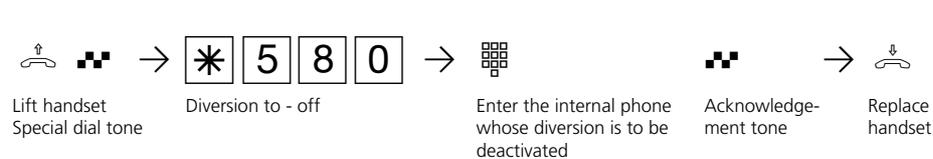
Despite diversion, you can continue to make telephone calls in the usual fashion. When you pick up the receiver, the special dial tone reminds you that diversion is on.

From an external location, you switch diversions by dialling up the telephone system's switching box. After entering the code, you set diversions with the same procedures and the same codes as from an internal location.

### Diversion to - on



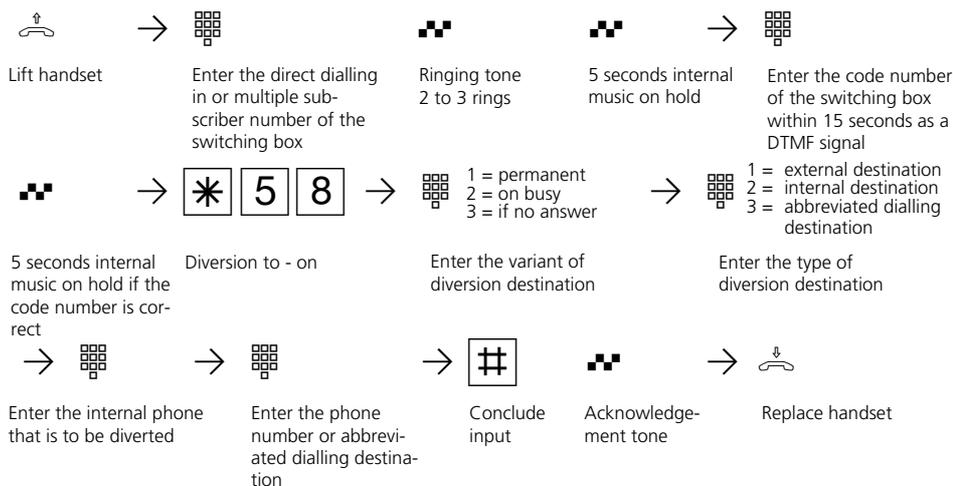
### Diversion to - off



## 1 Operation - analog / ISDN terminals

### Configuring diversion to from an external location (example: diversion to - on)

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### Notes

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You can only configure one diversion to another telephone. When you activate a diversion, you clear any existing diversion and you replace it by the new one.

Your telephone can be the diversion destination of all other internal users.

Diverted external calls can also be accepted at telephones that are otherwise only allowed for internal communications.

Calls can only be diverted once. Calls diverted to you are signalled on your telephone, even if you have activated a diversion on your telephone.

Calls back are not diverted.

Diversions to a telephone that is set to do not disturb are not possible.

When activating a diversion, you hear the error tone if you have selected a blank abbreviated dialling destination.

#### Diversion to an external subscriber

For diversion to an external subscriber,

- an outside line must be free
- the diverting user must be the only one who is rung,
- the diverting user must be privileged to dial the external phone number.

You pay the call charges for a diversion to an external destination.

**Diversions by the ISDN exchange**

You can only use the "call forwarding" feature after specially ordering this feature from your network carrier. The ISDN exchange then forwards all calls to your system or your multiple subscriber number to another destination that you have specified. Calls can be forwarded without restriction to any connection in the world, even to radio telephones.

You can activate or deactivate the call forwarding variants from any telephone in the telephone system:

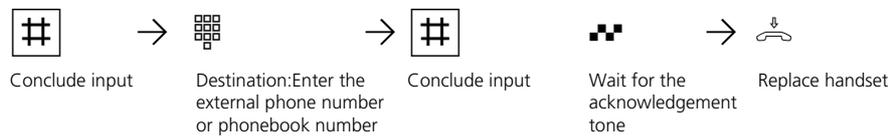
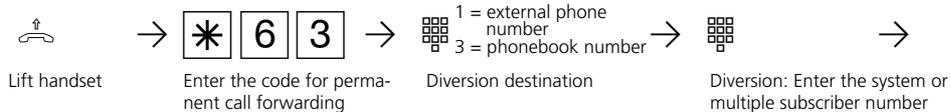
**Permanent call forwarding** - all calls are forwarded immediately.

**Call forwarding on busy** - all calls are forwarded immediately if the system or multiple subscriber number is busy.

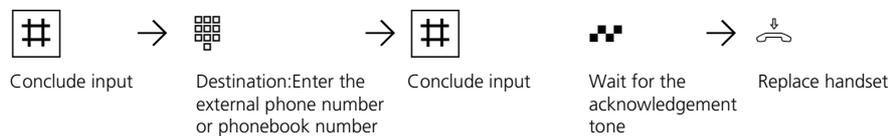
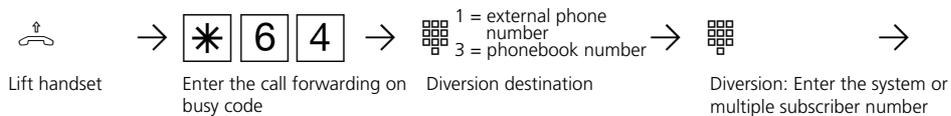
**Call forwarding if no answer** - all calls are forwarded after 15 seconds if nobody answers.

From an external location, you switch the call forwarding settings by dialling up the telephone system's switching box. After entering the appropriate code, you configure call forwarding with the same procedures and the same codes as from an internal location.

**Permanent call forwarding on**



**Call forwarding on busy on**





## Notes

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When call forwarding is on, you hear the special dial tone of the ISDN exchange when you seize the outside line.

When you have configured call forwarding in the exchange, please note that up to a minute may pass between setting up and

the acknowledgement tone. Do not replace the receiver during this time.

**Call forwarding from an external location:** please note that you can conclude inputs by pressing the **R** key instead of the **#** key.

## 1 Operation - analog / ISDN terminals

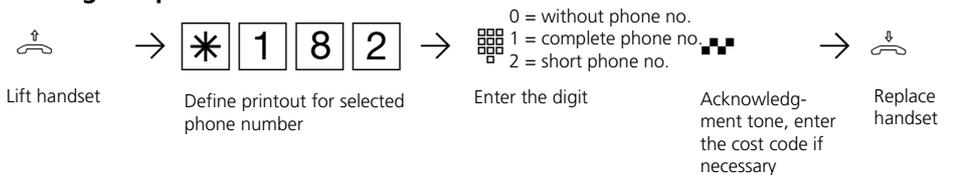
### Connection data set - Setting and printing the printout

You can have the connection data sets for all subscribers or for individual subscribers printed via the connected serial printer. A connection data set is created and printed at the end of every connection. The telecommunications system saves 500 connection data sets, even in the event of a power failure.

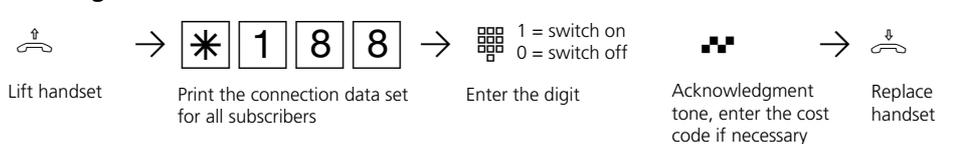
The connection data set contains the following information:

- Subscriber who has set up the connection
- Sent multiple subscriber number (MSN)
- Total costs
- Date and time of the connection
- Duration of the connection
- Dialed phone number (depending on the setting, without phone number, with complete phone number or with short phone number without the last three digits)

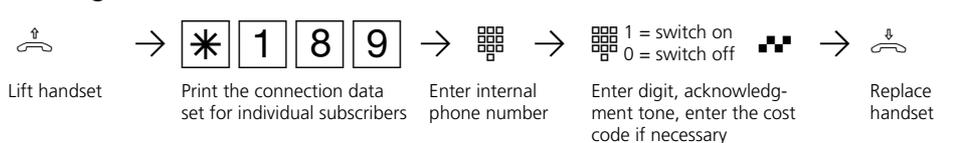
#### Setting the printout of the connection data sets



#### Printing the connection data set for all subscribers



#### Printing the connection data set for individual subscribers



#### Notes

##### Enter cost code?

If you hear the acknowledgment tone after the inputs, no cost code is programmed in the telecommunications system. It is not necessary to enter the cost code.

If you hear the error tone, the last input is incorrect. Start the entire input again from the beginning.

If you do not hear a tone after the inputs, a

cost code is programmed in the telecommunications system.

Enter the cost code in four digits. If the code is correct you will hear the acknowledgment tone. If the code is incorrect, you will hear the error tone. Replace the handset and start the entire input again from the beginning with the correct cost code.

**Example of a printout of the connection data sets (80 characters/line) —**

```
Tln 11|04.09.98,11:52|Ziel      0190570122|Einh.  5|Betrag 0,60 DM
```

**Example of a printout of the connection data sets (24 characters/line) —**

```
Teilnehmer 11      Msn 1
Datum 04.09.98 Uhr 12:52
Ziel              9876543
TE 01      Betrag 00,12 DM
Teilnehmer 12      Msn 2
Datum 04.09.98 Uhr 15:52
Ziel              5678905
TE 03      Betrag 00,36 DM
```

Explanation:

|                |   |
|----------------|---|
| Tln 11         | - Internal subscriber who has set up the external connection                        |
| Msn 1          | - Sent multiple subscriber number / dialed MSN for incoming connection              |
| Datum 04.09.98 |   |
| Uhr 12:52      | - Time the connection starts  |
| TE 03 / Einh.5 | - Tariff units  |
| Betrag 0,60 DM | - Costs for the connection  |
| Ziel 567890    | - Dialed external phone number / phone number of the caller for incoming connection |

## 1 Operation - analog / ISDN terminals

### Displaying connection costs on an analog telephone (AS 140, AS 141, AS 190, AS 191)

On an analog telephone, you can display connection costs if the telephone has a units counter. To display connection costs, you must activate communication of the charge pulses for your telephone on your telephone.

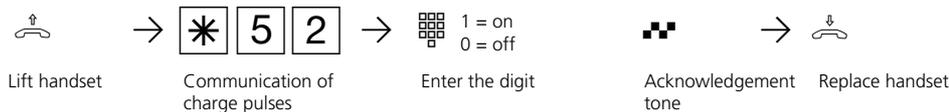
If you have requested the "communication of connection charges during and at the end of the connection" feature from your net-

work carrier, your telephone continuously displays the costs during a connection.

You can display the costs of your last connection that are stored in the telephone system at any time. To do this, it suffices if you have requested the "communication of connection charges at the end of the connection" feature from your network carrier.

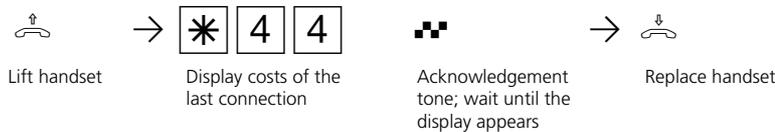
#### Communication of charge pulses on / off

---



#### Displaying the costs of the last connection

---



#### Note

---

If you wish to display the costs of the last connection by entering \*44, please note that your telephone's totalizer may total up the costs of the last connection.

For technical reasons, the data on the network carrier's invoice may deviate from the total connection costs displayed by the telephone system. The charge units counter in the network carrier's exchange is always binding.

## Connection costs - Defining a limit

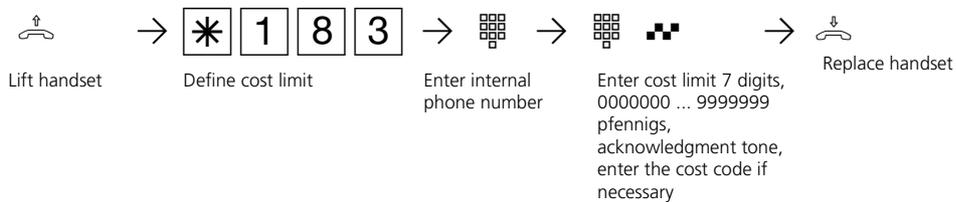
You can enter and define a 7-digit costs limit (pfennigs), to which telephone it is to apply or clear the costs limit.

nection cleared? Another external call is not possible until after the connection costs of this subscriber have been cleared.

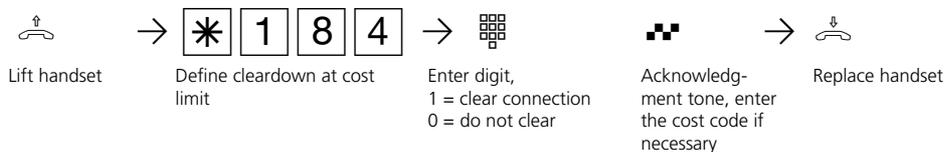
You can also define what is to happen when the cost limit is reached.  
Can the subscriber finish the started conversation but not start a new one or is the con-

Exceptions: The subscriber can dial the direct phone number even after reaching the cost limit.

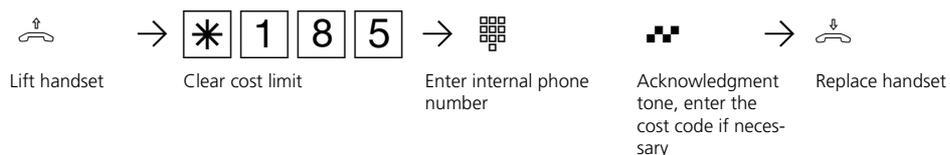
### Entering cost limit



### Cleardown at cost limit



### Clear cost limit



### Notes

#### Enter cost code?

If you hear the acknowledgment after the inputs, no cost code is programmed in the telecommunications system. It is not necessary to enter the cost code.  
If you hear the error tone, the last input is incorrect. Start the entire input again from the beginning.  
If you do not hear a tone after the inputs, a

cost code is programmed in the telecommunications system.

Enter the cost code in four digits. If the code is correct you will hear the acknowledgment tone. If the code is incorrect, you will hear the error tone. Replace the handset and start the entire input again from the beginning with the correct cost code.

## 1 Operation - analog / ISDN terminals

### Connection costs - Print and delete totals

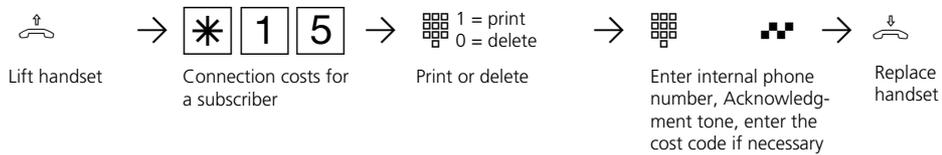
The telecommunications system saves the total connection costs for

- every internal subscriber
- every external phone number (MSN)
- and the whole telecommunications system (SO access)

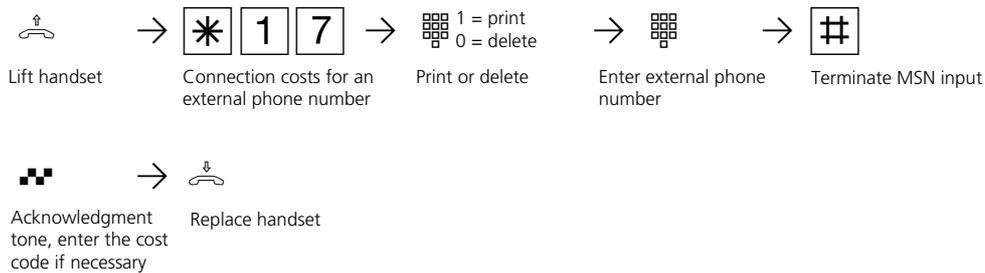
Providing you have registered the billable feature "Transmission of connection charges at the end of the connection" with the network operator.

You can print out the total connection costs and clear them at any time if necessary.

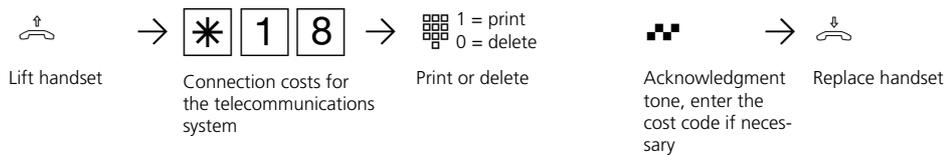
#### Printing and deleting connection costs for a subscriber



#### Printing and deleting connection costs for an external phone number



#### Printing and deleting connection costs for the telecommunications system



#### Notes

The costs for door call diversions from an external source are recorded under the internal call number of the door (T xx).

## Notes

---

### Enter cost code?

If you hear the acknowledgment tone after the inputs, no cost code is programmed in the telecommunications system. It is not necessary to enter the cost code.

If you hear the error tone, the last input is incorrect. Start the entire input again from the beginning.

If you do not hear a tone after the inputs, a cost code is programmed in the telecommunications system.

Enter the cost code in four digits. If the code is correct you will hear the acknowledgment tone. If the code is incorrect, you will hear

the error tone. Replace the handset and start the entire input again from the beginning with the correct cost code.

For technical reasons, the information on the network operator's bill may differ from the total connection costs of the telecommunications system. The tariff units counter in the network operator's exchange is always binding.

The telecommunications system saves the total connection costs even in the event of a power failure.

## Example of a printout of the connection costs

---

```
Tln 11 Einheiten 2345 Betrag 281,40 DM
Tln 12 Einheiten 421 Betrag 50,52 DM
Tln 13 Einheiten 0 Betrag 0,00 DM
IND 1 Einheiten 2357 Betrag 282,84 DM
IND 2 Einheiten 421 Betrag 50,52 DM
S0-1 Einheiten 2778 Betrag 333,36 DM
```

### Legend:

```
Tln 11 - Total connection costs for internal subscriber 11, related
        to own tariff
Einheiten 2345 - Tariff units
Betrag 281,40 DM - Costs for the connection
IND 1 - Total connection costs counted under the sent external
        phone number 1, related to own tariff
S0-1 - Total connection costs for the S0 connection 1 (for the
        whole telecommunications system, related to the network
        operator's tariff
```

**1** Operation - analog / ISDN terminals



## Setting up and cleaning the system telephones, inserting the marking strips

### Location

---

Place the system telephones in a suitable location. Pay attention to the following points:

- Do not install them where they may be splashed by water or chemicals.
- Plastic feet of the telephones:  
Your unit was produced for normal conditions of use. The plastic feet of the telephone may be detrimentally influenced by chemicals that are used to

produce furniture or which are used in the production of care agents. In certain circumstances, the feet of the telephones altered by external influences may leave nasty traces. Understandably, we cannot assume any liability for such damage.

Therefore, use a slip-proof support surface for your telephones, particularly on new furniture or on furniture that has been treated with care agents.

### Cleaning

---

You can clean your telephone easily. Pay attention to the following points:

- Wipe the telephone with a slightly moist cloth or use an anti-static cloth.
- Never use a dry cloth (charges may

produce defects in the electronic circuitries)

- In any case, make sure that moisture does not penetrate into the interior (switches and contacts may be damaged).

### Inserting the marking strips of the function keys

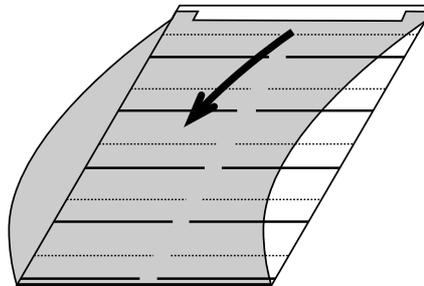
---

Place your finger nail between the window and the telephone housing at the top. Pull down the window so that it bends outwards.

Now you can remove it.

Insert the labelling strip. You can print the appropriate labels on your PC with the configuration program TK-Set.

To insert, place the window in the slit at the bottom. Press down to bend out and insert the other end.



## System telephone display

### Characters and pictograms on the display



|       |  |
|-------|--|
|       | <b>1st Display line</b>  |
| x     | External S0-port. One outside line (one B-channel) is busy. The x flashes as long as an external party is calling.   |
| i     | Internal S0-port (AS 141, AS 191, AS 32). One line (one B-channel) is busy.  |
| ×     | External S0-port. Both outside lines (both B-channels) are busy.   |
| I     | Internal S0-port (AS 141, AS 191, AS 32). Both lines (both B-channels) are busy.   |
| —     | Both B-channels from the S0-port (internal or external) are free.  |
| ☾     | Call variant 2 (night service) on (moon symbol)  |
| #     | Wake up on   |
| Ⓞ     | Appointment on   |
| 11:52 | Time or, when you pick up the receiver, you see a display of your system telephone's internal phone numbers, e.g. "12/20" (12 = 1st internal phone number, 20 = 2nd internal phone number) or "12/_" ( _ = no second internal phone number defined). |
| !     | Important: functions have been activated on your system telephone,   |

e.g. "read out call list", "do not disturb", "diversion", "reminder call". You can display the activated function(s) by pressing the "next" key.

During an external call, after every charge pulse the current call charges for up to 5 seconds are displayed in the first display line, e.g. "0,36 DM". Prerequisite: communication of connection charges during / at the end of the connection" has been ordered from the network carrier and the cost display is on. After an external call, the costs of the last call are displayed for 20 seconds if connection charges are only sent at the end of a connection and the cost display is on. The time is then displayed.

#### 2nd Display line

Date, e.g. "1 March 1997" or, if you have configured the status display (set 29), the internal numbers of the up to five selected users who are busy are displayed, e.g. 13, 15 and 23.

13

---

The internal user selected for the internal status is free.

If you have not selected a subscriber for the internal status, the 2<sup>nd</sup> digits of the internal phone numbers of the subscribers (max. 16) that are busy appear here. Example: 123-5--8---23---  
Subscribers 11, 12, 13, 15, 18, 22 and 23 are busy.

## 2 Operation - System Telephones

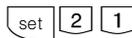
### System telephone settings

You can define the following settings on your system telephone:

- Tone ringing volume and tone
- Open listening / hands free volume
- Display contrast to adapt it optimally to the angle from which you are viewing the telephone
- Hands free microphone (automatic activation). It switches on automatically when you receive a single voice message.
- Headset volume (only on the digital system telephone)
- Telephone code for barring your telephone
- Display of call charges in the first display line.
- Status display (internal user busy / free / not connected) or date in the second display line
- Language of display messages (English / German)
- Set call list
- Set outside line seizure - direct external dialling or external dialling with "0"

The ISDN network sets the date and time.

#### Setting the tone ringing volume



Enter "set 21" to set the tone ringing volume.

```
Tone ringing vol
1 2 3>4<5 6 7
```



Enter the digit for the new setting, e.g. "2"

Meanings:

1 - very low

7 - very high.

You hear a brief sample tone.

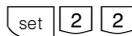
```
Tone ringing vol
1>2<3 4 5 6 7
```



Conclude programming.

In future, your telephone will ring at the newly set volume.

#### Setting the tone ringing tone



Enter "set 22" to set the tone of tone ringing.

The current setting is marked.

```
Tone ring. tone
1 2 3>4<5 6 7
```



Enter the digit for the new setting, e.g. "2"

Meanings:

1 - very slow

7 - very fast.

You hear a brief sample tone.

```
Tone ring. tone
1>2<3 4 5 6 7
```



Conclude programming.

In future, your telephone rings with the newly set tone.

### Setting the display

---

set 2 3

Enter "set 23" to modify the display contrast. The current setting is marked

```
Display contrast
1 2 3>4<5 6 7
```

□□□  
□□□

Enter the digit for the new setting, e.g. "2"  
Meanings:  
1 - more viewed from the front is good  
7 - more viewed from above is good.  
The contrast changes immediately.

```
Display contrast
1>2<3 4 5 6 7
```

set

Conclude programming.

### Hands free microphone automatically on

---

set 2 4

Enter "set 24" to automatically activate the hands free microphone. The current setting is marked.

```
auto. Microphone
on: 1 off: >0<
```

□□□  
□□□

Press the digit 1 to activate automatic activation of the hands free microphone (deactivate by pressing the key "0").

```
auto. Microphone
on: >1< off: 0
```

set

Conclude programming.

### Setting the open listening volume

---

set 2 5

Enter "set 25" to set the open listening volume. The current setting is marked.

```
Open list.vol.
1 2 3 4>5<6 7
```

□□□  
□□□

Enter the digit for the new setting, e.g. "2"  
Meaning: 1 - very low  
7 - very high.

```
Open list.vol.
1>2<3 4 5 6 7
```

set

Conclude programming.

### Setting the headset volume (only on the digital system telephone ST 25) —

set 2 6

Enter "set 26" to set the headset volume. The current setting is marked.

```
Headset volume
1 2 3 4>5<
```

□□□  
□□□

Enter the digit for the new setting, e.g. "2"  
Meaning: 1 - very low  
5 - very high.

```
Headset volume
1>2<3 4 5
```

set

Conclude programming.

## 2 Operation - System Telephones

### Telephone code

---

Every system telephone can be locked with the telephone lock (see "Telephone lock - emergency / direct call"). Then, no external calls are possible except for the stored emergency phone numbers **\***, **#**, the direct phone number (baby call)

and the "auto dial" number. Normally, anyone can unlock the telephone lock. You can prevent unlocking by specifying a code. Then, the telephone can only be unlocked by entering the 4-digit code.

set 2 7

Enter "set 27" to set the telephone code.

```
Telephone code
----
```

clear

If necessary, clear any existing code.

□□□□

Enter the 4-digit telephone code, e.g. 2345

```
Telephone code
2345
```

set

Conclude programming.

### Cost display

---

set 2 8

Enter "set 28" to set "display of call charges". The current setting is marked. The cost display is off. The time is displayed instead of the costs of an ongoing external call.

```
Cost display
on: 1  off: >0<
```

□□□□

"1" cost display on Example: "1" - on  
"0": cost display off

```
Cost display
on: >1<  off: 0
```

Prerequisite: you have requested "communication of connection charges during / at the end of a connection" from the network carrier.

During an external call, after every charge pulse the current call charges are displayed for up to 5 seconds in the first display line. Otherwise, the external phone number is displayed. By pressing the "Units" key, you can display the current call charges for 5 seconds at any time.

At the end of a connection, the costs of the last call are displayed for 20 seconds. The time then appears.

set

Conclude programming.

**Status display / date**

---

set 2 9

Enter "set 29" to set "display of the internal status of internal users or the date". The current setting is marked. The status display is off. In the second display line, the date is displayed instead of the internal status of the internal users (user is free or busy).

```
Status display
on: 1  off: >0
```

⎓⎓⎓⎓

"1": Status display on Example: "1" - on  
"0": Status display off

```
Status display
on: >1< off: 0
```

set

**Status display variant 1**

Press the "set" key. Now, the status is displayed instead of the date in the second display line. The second digits of the busy users internal telephone numbers (up to 16 users) are shown here.  
Example: Internal user 11, 12, 13, 15, 18, 22 and 23 are busy.

```
-- 11:52
-----
```

```
x- 11:52
123-5--8--23---
```

enter

**Status display variant 2**

Press the "enter" key. Define five internal users whose status is important to you.

```
Internal status
-- -- -- -- --
```

⎓⎓⎓⎓

Successively enter the first internal phone numbers (primary internal phone numbers) of the users.

```
Internal status
13 15 16 17 23
```

set

Conclude programming.

**Example of a status display**

Internal user 13 is busy (external connection, one outside line (B channel) busy) and internal users 15, 16, 17 and 23 are free.

```
x- 11:52
13 -- -- -- --
```

When your system telephone is idle, you can temporarily switch between the status display and the date by pressing the "next" key. The programmed display is activated again after you press any key on the system telephone.

**Date / time**

---

You do not need to enter the date and time. The display of the date and time is controlled by the ISDN network. When the telephone system is installed, the date and time are set automatically after the first chargeable external connection and are

then managed by the telephone system. Any necessary corrections and the summer/winter time changeover are controlled by the ISDN exchange whenever you make an external call.

## 2 Operation - System Telephones

### Language changeover\*

set 2 0

Enter "set 20" to set the required language in the display.

```
Language
German
```

next

Select the required language by pressing "next".

```
Language
English
```

set

Conclude programming.

### Call list on / off

If you do not accept an external ISDN subscriber's call, the caller's communicated phone number, the time and the date are automatically entered in your system telephone's call list.

Internal users can enter themselves by means of the "entry in the call list" procedure.

You can dial the phone numbers from the call list or you can clear an entry (see "call list").

Define

- Whether a call list is to be created for all calls, i.e. calls with a phone number and calls with a name (callers whose names are in the telephone system's telephone directory).
- Whether a call list is only to be created for calls with names or
- Whether no call list is to be created for external calls. A call list is always created for internal calls.

set 2 \*

Enter "set 2\*" to set the call list. The current setting is marked

```
List of calls
a: >0<e: 1 nN: 2
```

0 0  
0 0  
0 0

Enter a digit, e.g. "1"

0 = call list off for external calls

1 = call list on. All calls are entered. This includes calls with phone numbers and calls with names (callers whose names are in the telephone system's telephone directory)

2 = only calls with names are entered in the call list

```
List of calls
a: 0 e: >1<nN: 2
```

set

Conclude programming

#### Example of an entry in the call list

- with phone number

```
052198765432
from 11:52 15.5.
```

- with name

```
MAIER
from 13:11 15.5.
```

## Setting outside line seizure

Depending of your area of use, you can choose between two outside line seizure settings (seizure of an outside line / B channel) for your system telephone.

### Automatic outside line seizure variant (direct access)

You hear the external dial tone (continuous tone) when you lift the receiver or when you press the loudspeaker key.

You reach an external subscriber simply by dialling the corresponding phone number.

The telephone system automatically seizes an outside line (B channel).

To reach an internal user of your telephone system, you must first press the internal key and then post-dial the internal phone number.

### "0" outside line seizure variant

("as-delivered" settings)

You hear the internal dial tone (three short tones that are repeated constantly) when you lift the receiver or press the loudspeaker key.

You reach an external subscriber by dialling a code "0" and the corresponding phone number.

To reach an internal user of your telephone system, you only need to dial the internal phone number.

With this variant, the system telephones behave like analog standard and ISDN telephones.

set 2

Enter "set to #" to set outside line seizure. The current setting is marked.

```
Direct access
on: 1 off: >0<
```

0000

Enter a digit, e.g. "1"

1 = direct access (automatic outside line seizure) on

0 = direct access (automatic outside line seizure) off, "0" outside line seizure in then on

```
Direct access
on: >1< off: 0
```

set

Conclude programming

## Notes

The outside line seizure variants can only be set on the digital ISDN system telephones ST 25 of the AS 141 and AS 191 with the

procedures of the analog and ISDN terminals.

## **Function keys - freely programmable functions (overview)**

|                               |  |
|-------------------------------|--|
| <b>Do not disturb</b>         | To turn off tone ringing (do not disturb)<br>Special function keys that can be configured: <ul style="list-style-type: none"><li>- Do not disturb for calls to the first internal phone number</li><li>- Do not disturb for calls to the second internal phone number</li><li>- Do not disturb for calls to the first and second internal phone numbers</li><li>- Do not disturb for internal calls</li><li>- Do not disturb for external calls</li><li>- Do not disturb for internal and external calls</li></ul> |
| <b>Call variant 2</b>         | To turn call variant 2 (night service) on or off<br>Special function keys that can be configured: <ul style="list-style-type: none"><li>- Single switching of call variant 2 for each external phone number of the telephone system</li><li>- Joint switching of call variant 2 for all external phone numbers of the telephone system.</li></ul>  |
| <b>Call variant 3</b>         | Call variant 3 (call forwarding) on or off<br>Special function keys that can be configured: <ul style="list-style-type: none"><li>- Single switching of call variant 3 for each external phone number of the telephone system</li><li>- Joint switching of call variant 3 for all external phone numbers of the telephone system.</li></ul>  |
| <b>Announcement</b>           | Announcement via an audio module or a loudspeaker system   |
| <b>Call by Call</b>           | To select a network provider, take over from the LCR   |
| <b>clr (clear)*</b>           | To clear a setting   |
| <b>Voice message</b>          | Voice message to system telephones<br>Special function key that can be configured: <ul style="list-style-type: none"><li>- Voice message to defined internal users</li></ul>   |
| <b>Units</b>                  | Display of call charges  |
| <b>Malicious call tracing</b> | Identification of malicious callers by the ISDN exchange   |
| <b>Pick up</b>                | To pick up external calls. Special function key that can be configured: <ul style="list-style-type: none"><li>- Picking up internal calls and external calls of defined internal users.</li></ul>  |
| <b>Headset</b>                | For operating a headset (only on the digital system telephone)   |
| <b>Internal key</b>           | To dial internal users. Special function key that can be configured: <ul style="list-style-type: none"><li>- Internal call to a defined internal user</li></ul>  |
| <b>ISDN call forwarding</b>   | To turn ISDN call forwarding on or off   |

|                           |   |
|---------------------------|---|
| <b>ISDN hold</b>          | To place an external call on hold in the exchange (only possible on a point-to-multipoint connection)   |
| <b>Conference</b>         | To initiate a conference with internal users or external subscribers  |
| <b>Brokering</b>          | For brokering between several external connections  |
| <b>MSN / External key</b> | To seize a specific S0 basic access per phone number and, in the case of point-to-multipoint connections, to communicate a specific multiple subscriber number (MSN), e.g. for charge clearing in the event of external dialling. Special function key that can be configured:- MSN / external key with a defined external phone number |
| <b>Reserve</b>            | To reserve an outside line (B channel) when all lines are busy  |
| <b>Relay</b>              | To switch the relays  |
| <b>Inquiry*</b>           | To initiate inquiry, connecting, brokering.   |
| <b>Lock</b>               | To lock the system telephone and to activate emergency / direct call  |
| <b>Phonebook*</b>         | To dial a phone number from the phonebook   |
| <b>Appointment</b>        | To turn an entered appointment on or off  |
| <b>Door</b>               | To establish a connection to the door hands free unit and to actuate the electric door opener   |
| <b>Transfer</b>           | To transfer an external call to an external user  |
| <b>Diversion from</b>     | To divert all calls from another telephone to the current telephone   |
| <b>Diversion to</b>       | To divert all calls to another internal user or external subscriber   |
| <b>Wake up</b>            | To turn the entered wake up time on or off  |
| <b>Destination memory</b> | To dial a stored phone number   |
| - <b>public</b>           | - The phone number is stored in your telephone and in the phone book.   |
| - <b>private</b>          | - The phone number is only stored in your telephone.  |

**Notes** \_\_\_\_\_

If you do not define a special function when configuring a function key, you must make the special inputs (phone numbers and function type etc.) when operating the

function key.  
The functions marked \* are already available as fixed function keys on the system telephone.

**2** Operation - System Telephones

## Function key assignments

When the telephone system is delivered, the assignments of the freely programmable function keys (F keys) are initially fixed and are identical on all system telephones. You can individually adapt the function key assignments to your specific needs. You yourself can define which function is to apply to which key. You can apply a function to each of the 10

function keys, which you then only need to initiate by pressing the corresponding function key.

Each function key additionally has a second level. You initiate the functions of the second level by pressing the "shift" key and by then pressing the corresponding function key.

### Function key assignments - "as-delivered" settings

| Brokering          | Units              |
|--------------------|--------------------|
| Destination public | Destination public |
| Night              | Do not disturb     |
| Destination public | Destination public |
| Pick up            | Voice Message      |
| Destination public | Destination public |
| Conference         | Appointment        |
| Destination public | Destination public |
| Diversion to       | Internal           |
| Destination public | Destination public |

### Changing function key assignments



"set 31": initiates programming.

```
Press FP key
Key      esc
```



Press the function key whose function you wish to modify (if necessary, press the "shift" key beforehand for the second level)  
The current function is displayed.

```
Diversion to
enter next esc
```



By pressing the "next" key, scroll down until the desired function is displayed, e.g. "destination key"

```
Destination key
enter next esc
```



or  
By pressing the "shift" and the "next" keys, scroll up until the desired function is displayed, e.g. "wake up".

```
Wake up
enter next esc
```



"enter": confirm selection and modify a different function key

```
Press FP key
Key      esc
```



or  
"set": end programming. The function of the function key has been reassigned.

```
--      11:52
-- -- -- -- --
```

### Key assignments with special functions

As described in "Modifying function key assignments", initiate programming by entering " set 31 " and select the function key and the function.

|   |   |   |
|---|---|---|
|   | <b>"Do not disturb" function key</b>  | <code>Don t disturb<br/>enter next esc</code>   |
|    | "enter": confirm selection of the function.   | <code>Don t disturb<br/>for callnumber 0</code> |
|    | Enter the phone number to which do not disturb is to apply:<br>1 = 1. internal phone number (example)<br>2 = 2. internal phone number<br>0 = 1. and 2. internal phone numbers | <code>Don t disturb<br/>for callnumber</code>   |
|  | "enter" confirm   | <code>Don t disturb<br/>for call mode 0</code>  |
|  | Enter the call mode to which do not disturb is to apply:<br>1 = internal calls (example)<br>2 = external calls<br>0 = internal and external calls                             | <code>Don t disturb<br/>for call mode 1</code>  |
|  | "set": end programming.<br>You can turn the do not disturb mode on / off by pressing the "don't disturb" key.   |   |
|   | <b>"Call variant 2" and "call variant 3" function keys (example: call variant 2)</b>  | <code>Call variant 2<br/>enter next esc</code>  |
|  | "enter": confirm selection of the function.   | <code>Call variant 2<br/>ext.23456781</code>    |
|  | "next": select the phone number or name of the S0 access for which the call variant is to be turned on / off  | <code>Call variant 2<br/>ext. AGFEO 2</code>    |
|  | If you wish to turn the call variant on /off for "all" phone numbers  | <code>Call variant 2<br/>ext. all</code>        |
|  | Select "without" if the phone number is only to be selected when switching  | <code>Call variant 2<br/>ext. without</code>    |
|  | "set": end programming  |   |

## 2 Operation - System Telephones

### "Voice Message" function key

```
Voice message
enter next esc
```



"enter": confirm selection.

```
Enter telephone
__ __ __ __ __
```



Enter the internal phone numbers of the system telephones that you wish to reach with a voice announcement. You may enter up to five internal phone numbers. Example: 14, 15  
Refer to "Notes" for details of how to reach more than five internal users.

```
Enter telephone
14 15 __ __ __
```



"set": end programming

### Function key for "pick up" of a call

```
Pick up
enter next esc
```



"enter": confirm the selection

```
Enter telephone
__ __ __ __ __
```



Enter the internal phone numbers of the internal users whose external and internal calls you wish to pick up. You may enter up to five internal phone numbers.  
Example: 14, 15  
Refer to "Notes" for details of how to pick up calls from more than five internal users.

```
Enter telephone
14 15 __ __ __
```



"set" end programming.

## Notes

When using the "voice message" or "pick up" functions, you can reach more than five internal users if you enter the internal phone numbers of a user group.  
The same first or second internal phone number can be assigned to several internal users. You create a user group that is accessible with the same internal phone number.

The "voice message" function key has a general function if you do not define any internal phone numbers. When operating the function key, you must then dial the internal phone numbers.

If you do not define any internal phone numbers for the "pick up" function key, when pressing the key you can only pick up external calls from all internal users.

**"Internal key" function key**

|   |   |  |
|---|---|--|
|   |   | <pre>Internal key enter next esc</pre> |
|  | "enter": confirm selection  | <pre>Internal key telephone ____</pre> |
|  | Enter the internal phone number of the internal user you wish to reach directly by pressing the internal key. Example: 13 | <pre>Internal key telephone 13</pre>   |
|  | "set": end programming.   |  |

Internal user 13 is called when you press the internal key.

**Notes**

If you assign the internal phone number of an answering machine to an internal key, you can pick up a call from the answering machine by pressing that key.

The "internal key" function key has a general function if you do not assign any internal phone numbers. When operating the function key, you must then dial the internal phone number.

**"MSN / external" function key**

|   |   |  |
|---|---|--|
|   |   | <pre>MSN/external key enter next esc</pre> |
|  | "enter": confirm selection  | <pre>MSN/external key ext. 23456781</pre>  |
|  | "next": select the phone number or name of the SO access to which the "MSN" key is to apply | <pre>MSN/external key ext. AGFEO 2</pre>   |
|  | Select "without" if the phone number is not to be selected until the key is pressed         | <pre>MSN/external key ext. without</pre>   |
|  | "set": end programming  |  |

## 2 Operation - System Telephones

### "Relay" function key



"enter": confirm selection

```
Relay
enter next esc
```



Enter the relay that you wish to switch with this key. Example: 12 (relay with the internal phone number 12)

```
Relay
relay number ___
```



"set": end programming

```
Relay
relay number 12
```

## Making telephone calls

**Calling an internal user:** two different 2-digit internal phone numbers can be assigned to each internal user of your telephone system by programming. If necessary, inquire with the programmer of your telephone system to find out which internal phone numbers have been assigned to which users.

You can agree on **two** different code calls with internal users of **radio cells** (base station with cordless telephones). For example, you can agree on who is meant or what is to be done when a code call rings. If you dial the radio cell by way of the first internal phone number, all users of the radio cell are called with the tone ringing sequence of code call 1. If you dial the second internal phone number, they are rung with code call 2. The first user of the radio cell who picks up the receiver is connected to you.

**Calling an external subscriber:** dial the external phone number directly if your system telephone is set to the **automatic outside line seizure variant**. The telephone automatically seizes a free outside line (free B channel).

When the **"0" line seizure variant** is set, you must first seize an outside line by dialling the code "0". You then dial the external phone number.

The external phone number (your phone number and your direct dialling in number or your multiple subscriber number, MSN) assigned to you is sent to the ISDN exchange when you seize the outside line. Connection costs are then managed under this external phone number. This external phone number is also communicated to the party you call, provided communication of your phone number is active.

If you wish to manage connection costs via a different MSN, press the corresponding MSN / external key to seize the outside line. You can configure an MSN / external key on the system telephone for every MSN.

ISDN call forwarding is active if you hear the special dial tone of the ISDN exchange after seizing the outside line.

### Making telephone calls - automatic outside line seizure variant



Lift the receiver. Your internal phone number is displayed.

```
-- 11/--
Please dial
```



#### Calling an internal user

Press the **"internal"** key and dial the internal phone number, e.g. 13, to call telephone 13. If applicable, the name of user 13 is displayed.

```
Calling 13
ANTON
```



#### Calling an external subscriber

Dial the external phone number directly. The telephone system automatically seizes an outside line (B channel).

If the called subscriber's phone number differs from the dialled number, it appears above the dialled number (for example, the subscriber has diverted the connection).

```
Calling
98765432
```

```
03098765123
98765432
```

## 2 Operation - System Telephones

### Making telephone calls - "0" outside seizure variant



Lift the receiver. Your internal phone number is displayed.

```
-- 11/---  
Please dial
```



#### Calling an internal user

Dial the internal phone number, e.g. 13 to call telephone 13.

```
Calling 13
```



#### Calling an external subscriber

Press the 0 key to seize any outside line (B channel). On a point-to-point connection, your system phone number or on a point-to-multipoint connection, the multiple subscriber number assigned to you is displayed.

```
ext. 3456780  
Please dial
```

```
ext. 23456781  
Please dial
```

If applicable, a name is displayed instead of the multiple subscriber number. However, the phone number is sent.

```
ext. AGFEO 2  
Please dial
```



You hear the external dial tone and you can then dial the phone number.

```
Calling  
98765432
```

### External seizure with the MSN / external key



Press the MSN /external key

```
MSN/external key  
23456781
```



Press "next" to select the phone number or name of the S0 access that you wish to seize. The cost of the connection is charged to that phone number.

```
MSN/external key  
ext. SALES
```



Press "enter" to confirm selection of the phone number. Example: 23456782

```
ext. 23456782  
_
```



Enter the phone number of the required subscriber

```
ext. 23456782  
98765432
```



Lift the receiver. The phone number is dialled.

```
Calling  
98765432
```

### External seizure with special MSN / external key

|   |   |                              |
|---|---|------------------------------|
|  | Lift the receiver. Your internal phone number is displayed.   | -- 11/___<br>Please dial     |
|  | Press the <b>MSN / external key</b> to seize an outside line. The costs of the connection are charged to this phone number. Example: 23456782<br>If applicable, a name is displayed instead of the phone number. However, the phone number is sent. | ext. 23456782<br>Dial number |
|  | You hear the external dial tone and you can then dial the phone number.   | ext. Sales<br>Dial number    |
|  | You hear the external dial tone and you can then dial the phone number.   | Calling<br>98765432          |

### Reserving an outside line

All outside lines are busy if you hear the busy tone after external seizure. Reserve an outside line. As soon as an outside line is free, the telephone system will ring you.

After picking up the receiver, you hear the external dial tone and you can enter the internal phone number.

|   |   |                              |
|---|---|------------------------------|
|  | You hear the busy tone when dialling an external phone number. The display shows this message. No outside line (B channel) is free. | B-channel busy<br>reserve ?  |
|  | Press the <b>"enter"</b> key to reserve an outside line.  | Reservation<br>confirmed     |
|  | Replace the receiver  | Xi 11:52<br>13 15 16 17 23   |
|  | Reservation call of the telephone system.   | Your line                    |
|  | Lift the receiver. You hear the external dial tone.   | ext. 23456781<br>Please dial |
|  | Dial the external phone number  | Calling<br>98765432          |

## 2 Operation - System Telephones

### Notes

---

**Barred range** - If the telephone system's barred range is programmed for your telephone, you cannot dial the external phone numbers that lie within the barred range. You hear the error tone.

**DTMF post-dialling** - Is possible for all existing external connections, even in an inquiry, when brokering and during a three-party conference. You can post-dial digits and characters (☐...☐,☒ and ☐)

**Preparing dialling** - The receiver is on the hook. Enter the phone number. The entered phone number is displayed. Your system telephone begins dialling automatically when you pick up the receiver or when you press the "loudspeaker" key.

**Dialling with the receiver on the hook** - Press the "loudspeaker" key and dial the phone number. Lift the receiver when the other party answers.

**Hand free** - Instead of lifting the receiver, you can also press the "loudspeaker" key in all cases. You are then telephoning in the hands free mode. Hands free mode is turned off if you lift the receiver during the call. You can conduct the call through the receiver. To switch to the hands free mode, press the "loudspeaker" key until you have replaced the receiver. To end the call, press the "loudspeaker" key.

**Open listening** - Via the built-in loudspeaker other persons in the room may listen to the call you are conducting through the receiver. To do this, press the "loudspeaker" key.

**Reserving an outside line** - The system telephone emits a short signal and Your line appears in the display for 4 minutes if the reserved outside line is free.

## Accepting calls

### You are called

---

Thanks to different ringing rhythms, you can distinguish between internal calls, external calls, and door calls. Before you lift the receiver, you can also see on your system telephone's display where the call is coming from.

|   |   |  |
|---|---|--|
|    | <p><b>Internal call:</b> in the display, you see where the call is coming from. You can enter the name on any system telephone.</p>   | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             from KELLER<br/>for HAUPT           </div>   |
|  | <p>Lift the receiver. The name or, for example, telephone 13 is displayed</p> <p><b>External call:</b> the first line of the display shows the caller's phone number, e.g. 03098765432, or the entry in the telephone system's phonebook if there is an entry for the phone number, e.g. MAIER. In the second line of the display, you can see an N = new call, the phone number of the point-to-point connection with the dialled DDI number or the MSN that has been called or the name instead of the MSN.</p> | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             KELLER           </div> <div style="border: 1px solid gray; padding: 2px; width: fit-content; margin-top: 5px;">             03098765432<br/>N: 23456781           </div> <div style="border: 1px solid gray; padding: 2px; width: fit-content; margin-top: 5px;">             MAIER<br/>N: 23456781           </div> <div style="border: 1px solid gray; padding: 2px; width: fit-content; margin-top: 5px;">             MAIER<br/>N: AGFEO           </div> |
|  | <p>The first user to lift the receiver is connected to the caller. The phone number or the name of the caller is shown in the display.</p>  | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             MAIER<br/>-- -- -- -- --           </div>  |

### A waiting call is announced to you

---

While you are making a telephone call, a second call arrives. In the receiver, you hear the internal knocking tone (internal call) once or the external knocking tones (external call) several times. You can accept the second call or you can reject the knocking call.

|   |   |   |
|---|---|---|
|  | <p>You are making an internal or an external telephone call. Example: external. You hear the external knocking tones in the receiver. The second line of the display shows the phone number of the name of second caller.</p> | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             MAIER<br/>03087654321           </div>          |
|  | <p><b>Accepting the second call</b><br/><b>1st possibility</b> - replace the receiver to end the current call. Your telephone rings. You are connected to the new call.</p>   | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             03087654321<br/>N: 23456781           </div>    |
|  | <p>Lift the receiver. You are connected to the caller.</p>  | <div style="border: 1px solid gray; padding: 2px; width: fit-content;">             03087654321<br/>-- -- -- -- --           </div> |

## 2 Operation - System Telephones



**2nd possibility** - press the "brokering" key. The first call (MAIER) is placed on hold. You are connected to the second caller and you can broker between both calls or you can forward the call.

```
03087654321  
MAIER
```

### Rejecting the waiting (knocking) call



Press the "esc" key. The caller now hears the busy tone instead of the ringing tone if you have been called as the only party. The caller continues to hear the ringing tone if several users are called according to a ringing distribution configuration. The first call is again displayed.

```
MAIER  
-- -- -- --
```



Continue the call

```
MAIER  
-- -- -- --
```

## Forwarding a call

You can forward an external call to an internal user or to another external subscriber. When forwarding internally, after dialling you can first announce the external call or you can replace the receiver immediately.

- If the internal user picks up the receiver, he is connected immediately to the caller.
- If he does not pick up, his telephone rings again after 45 seconds: callback
- If he is busy, you are connected to the external subscriber again after a brief busy tone.

### Internal forwarding with and without announcement



You are conducting an external telephone conversation and you wish to forward the call to an internal user.

```
MAIER
_ _ _ _ _
```



Dial the internal user

#### Automatic outside line seizure variant

Press the **internal key** and dial the internal phone number, e.g. 13.

```
Calling 13
```



#### "0" Outside line seizure variant

Press the "inquiry" key and dial the internal phone number, e.g. 13

```
Calling 13
```

If the internal user does not answer, you switch back to the external subscriber by pressing the "brokering" or the "esc" key.



#### Forwarding with announcement

Announce the external call when the internal user answers.

```
Telephone 13
MAIER
```



Replace the receiver. Internal user 13 and the external subscriber are connected to one another.

```
x- 11:52
13 _ _ _ _
```

#### Forwarding without announcement

Replace the receiver before the internal user answers. The called user's display shows the phone number dialled by the external subscriber, the external subscriber's phone number and, if applicable, the person's name. If the internal user picks up the receiver, he is then connected to the external subscriber.

## 2 Operation - System Telephones

### External forwarding

---



You are conducting an external telephone conversation and you wish to forward the call to an external subscriber.

```
x-      11:52
--      --
```



Dial up the external subscriber to whom you wish to connect.

Press the "**brokering**" key and dial the external phone number. External subscriber 1 waits and, if applicable, he hears music on hold.

```
Calling
87654321
```

If the called party does not answer, you switch back to the waiting external subscriber 1 by pressing the "esc" key.



You conduct a conversation with the new external subscriber. The waiting subscriber cannot listen in.

```
87654321
MAIER
```



Press the "**transfer**" key (this must be programmed) to transfer the call.

```
x-      11:52
Please dial
```



Replace the receiver

```
x-      11:52
--      --
```

### Notes

---

Once you have announced the external call, the internal user can also accept the call by pressing the inquiry key [R].

Ringling is cancelled after 60 seconds if you do not accept a call back.

External / external forwarding is only possible if at least one external call is an incoming call. Both outside lines (both B channels) are seized.

Connection charges are charged to your subscriber connection for the external connection you have established.

## Forwarding an outside line

You can forward an outside line to an internal user. An internal user who is otherwise not allowed to make external calls

(user with external call privilege 5 - accept incoming calls only) can now dial an external phone number with your external call privilege.

### Forwarding an outside line

---



You were called by an internal subscriber. Your call partner, who is otherwise not allowed to make external telephone calls, would like to have an outside line switched.

```
Telephone 16
-- -- -- --
```



Press the "**brokering**" key. You hear the external dial tone of the free outside line.

```
ext. 23456781
Please dial
```



Press the "transfer" key. You have transferred the free outside line. The internal user can dial an external phone number.

```
Call delivered
please hang up
```



Replace the receiver.

```
x-      11:52
-- -- -- --
```

## Call waiting announcement (knocking)/callback

By means of **call waiting announcement (knocking)**, you can make yourself noticeable to a busy internal user. You hear the internal knocking tone. In his conversation, the other party hears the internal knocking tone. Your call is switched through immediately to the required party if he hangs up. If he does not accept your call or if he has

activated do not disturb on his telephone, you initiate a **callback** when you replace the receiver.

You receive the automatic callback as soon as the other party is free again. Your telephone rings. You only need to lift the receiver, and the other party is then called automatically.

### Initiating call waiting announcement (knocking)/callback



You have called user 13, for example, who is busy, though

```
Telephone 13
is busy
```

You want to announce your waiting call to the busy internal user and you may wish to initiate a callback.



Press the "enter" key. Your waiting call is announced to the busy user. You hear the internal knocking tone.

```
Call waiting
```



Replace the receiver. You initiate a callback if your call has not been accepted.

```
x-      11:52
13 -- -- -- --
```

### Callback



As soon as the other user is free again, your telephone rings and your display shows the "callback".

```
Callback from 13
For telephone 11
```



Lift the receiver. Telephone 13 is automatically called again.

```
Calling 13
```

The other user answers:  
You conduct the telephone conversation in the usual way.

```
Telephone 13
13 -- -- -- --
```

The other user does not answer:  
When you replace the receiver, you enter yourself in the call list.



Replace the receiver.

```
--      11:52
-- -- -- -- --
```

**Notes**

---

Pay attention to the messages on your system telephone's display. The respective function - knocking, callback, call list - is displayed.

**Knocking** - you cannot announce your waiting call to an internal user

- From whom a callback is already expected,
- Whose connection is set to the answering machine, fax, modem or combined unit terminal type

**Callback** - you can initiate several callbacks in succession (from every internal user). You cannot initiate a callback from an internal user

- From whom another user is expecting a callback,
- Who has activated do not disturb,
- Whose connection is set to the answering machine, fax, modem or combined unit terminal type.

Callback from a user with a standard telephone:

- If you do not pick up the receiver, the

callback is cancelled after 60 seconds.

- A callback is cleared if the callback call has not come into being.

Callback in general: you have activated a callback:

- If do not disturb is activated on your telephone, this is temporarily cancelled.
- If call diversion is configured on your telephone, the callback will not be diverted.

Callback from a user with a system telephone:

- If you do not pick up the receiver, your call will be entered in the other user's call list after 60 seconds.
- If you are busy, your call will be entered immediately in the other user's call list.
- If the other user picks up the receiver during the callback, your call is immediately entered in the other user's call list.

**Power failure:** initiated calls back and call lists are cleared.

## 2 Operation - System Telephones

### Call waiting prevention

While you are conducting a telephone conversation, internal users and external subscribers can announce their waiting calls. You hear the knocking tone in your conversation. If you do not want anyone to announce their waiting calls to you, activate

call waiting prevention on your telephone. External callers hear the busy tone if your telephone has been rung as the only one and no internal call forwarding (call variant 3) is set.

#### Call waiting prevention on/off

---

set 1 4

Enter "set 14" to set up call waiting prevention. This display message appears when a 1<sup>st</sup> and 2<sup>nd</sup> internal phone number (primary and secondary) are defined for your telephone.

```
Call wait. prev.  
prim: 1 sec: 0
```

⏏  
⏏  
⏏

"1": call waiting prevention for 1<sup>st</sup> internal phone number and/or  
"2": call waiting prevention for 2<sup>nd</sup> internal phone number  
Example: "1" and "2"

```
Call wait. prev.  
prim: >1< sec: >0<
```

enter

With "enter" to switch the call waiting prevention on/off. The current setting is marked.

```
Call waiting  
on: 1 off: >0<
```

⏏  
⏏  
⏏

"1": Call waiting prevention on  
"0": Call waiting prevention off  
Example: "1"

```
Call waiting  
on: >1< off: 0
```

set

Conclude programming

## Picking up calls

Another telephone rings with an external or an internal ringing tone. You can pick up the call on your telephone.

If the answering machine has accepted an external call, you can pick up this external call on your telephone.

### Picking up an external call

«D»

Another telephone rings. The x in the display flashes. You wish to pick up the external call.

```
x-      11:52
13  --  --  --  --
```



Lift the receiver. Press the "enter" key. You are now connected to the caller and can conduct the telephone conversation in the usual fashion.

```
0309876543
--  --  --  --  --
```

### Picking up an external/internal call

«D»

You hear that telephone 13, for example, is called.

```
--      11:52
13  --15  --  --
```



Lift the receiver and press the "pick up" key. You are now connected to the caller (telephone 15) and can conduct a telephone conversation in the usual fashion.

```
Telephone 15
```

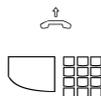
### Picking up a call from an answering machine



An external call has activated the answering machine (e.g. internal phone number 23).

```
x-      11:52
--  --  --  --  23
```

#### Automatic outside line seizure variant



Lift the receiver, press the **internal key** and the internal phone number 23, for example, to accept the call. You are connected to the caller and can conduct a telephone conversation in the usual manner.

```
0309876543
--  --  --  --  --
```

#### "0" outside line seizure variant



Lift the receiver and dial the internal phone number 23, for example, if you wish to pick up the call. You are connected to the caller and you can conduct a telephone conversation in the usual fashion.

```
0309876543
--  --  --  --  --
```

## **2** Operation - System Telephones

### **Notes**

---

With a general "pick up" function key (see "Function key assignments"), you can only pick up external calls from all internal users.

With a special "pick up" function key (with selected internal users), you can pick up external and internal calls from the defined

users. You can program the user group by pressing "set" and "pick up key".

You cannot pick up calls back and recalls.

You can only pick up a call from an answering machine if the connection is set to the "answering machine" terminal type.

## Call list

If you do not accept a call by an external subscriber, the caller's transmitted phone number, the time and the date are entered in your call list. The transmitted phone number is also compared against the entries in the phonebook. If they agree, the name is displayed instead of the phone number.

further call arrives, the oldest entry is cleared. Otherwise, the entry is stored until you dial or clear the phone number concerned. Every phone number appears only once in the call list. If someone calls whose phone number is already in the list, the time information is updated.

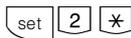
If you call an internal user on a system telephone that is free and if the user does not answer, you can enter yourself in this user's telephone's call list.

You can display the phone numbers in your call list and you can dial them simply by lifting the receiver.

The call list contains up to 10 entries. If a

If you deactivate the call list, only internal calls will be entered, but no external calls.

### Call list on/off



Enter "set 2 \*" to configure the call list. The current setting is marked

```
List of calls
a: >0<e: 1 nN: 2
```



"0": Call list off for external calls  
 "1": Call list on. All calls are entered, i.e. calls with a phone number and calls with names (callers whose names are in the telephone system's phonebook).  
 "2": Only calls with names are entered in the call list, example: "1"

```
List of calls
a: 0 e: >1<nN: 2
```



"Set": conclude programming.

### Entering yourself in a call list



You have called internal user 13, for example, who does not answer, though.

```
Call in 13
```

You wish to enter yourself in the call list of this user's system telephone.



Press the "enter" key.

```
List of calls
```

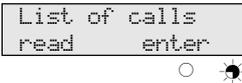
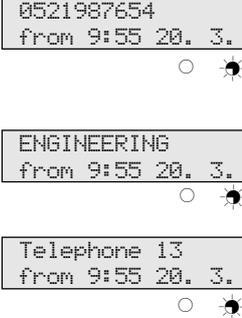
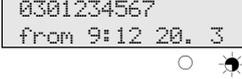


Replace the receiver. You have entered yourself in the call list.

```
-- 11:52
-- -- -- --
```

## 2 Operation - System Telephones

### Displaying a call list

|  |  |   |
|--|--|---|
|               | The receiver is on the hook. On the display, you see the "!" symbol indicating that a message is available. The red LED also flashes.  |    |
|               | There is at least one entry in the call list.  |    |
|               | To see the first entry:<br>Press the "enter" key. On the display, you see an external phone number and the date/time of the last call<br>or<br>the entry in the phonebook (name) and the date/time of the last call<br>or<br>a reminder to call an internal user and the date/time of the last call. |   |
| Scrolling:  | Scroll with the "next" key to see further entries. The LED flashes until you call or clear the entry.  |  |
| Dialling:   | Lift the receiver. The displayed phone number is dialled automatically.<br>If the other user answers, the entry is cleared from the call list.<br>If the other user does not answer, the entry remains.  |  |
| Clearing:   | Press the "clear" key. You clear the displayed entry.  |  |

### Notes

By pressing "esc", you cancel the display of the call list.

As the phone number is entered in the call list with the prefix, it may happen that you cannot dial the phone number directly out of the call list if you only have the "local

network" privilege. In this case, the "local range/privilege 3" should be enabled for you and your own local area code should be entered.

The call list is not stored in the event of a power failure.

## Do not disturb - turning off tone ringing

You can turn off tone ringing (do not disturb) for the first internal phone number and/or the second internal phone number by which your telephone is obtainable. Then, internal calls will only be indicated to you by the display and the flashing red LED. External calls are not displayed.

You can activate do not disturb for internal calls, external calls or for all calls. If an internal user calls you from a system telephone, a corresponding message appears on this user's display. External subscribers hear the busy tone.

### Do not disturb on



The receiver is on the hook. Press the **"do not disturb" key**. This turns on do not disturb. As a check, the red LED lights up and your display shows for 20 seconds the "Do not disturb on" message.

```
Do not disturb
on
```

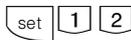
### Do not disturb off



The receiver is on the hook. Press the **"do not disturb" key**. This turns off do not disturb if it was on. The red LED is off. Your display shows for 20 seconds the "Do not disturb switched off".

```
Do not disturb
switched off
```

### Programming and switching do not disturb



You initiate the function by entering "set 12". This display message appears if a first and second internal phone number (primary and secondary) have been defined for your telephone.

```
Do not disturb
prim: 1 sec: 2
```



"1": Do not disturb for first internal number and/or  
"2": Do not disturb for second internal number. Example: "1" and "2"

```
Do not disturb
prim: >1< sec: >2<
```



Press "enter" to confirm. Define whether do not disturb is to apply to internal and/or external calls.

```
Dont dist. 11/21
int: >1< ext.: >2<
```



"1" : Do not disturb for internal calls and/or  
"2": Do not disturb for external calls  
Example: "1" do not disturb for internal calls only

```
Dont dist. 11/21
int: >1< ext.: 2
```



You activate the setting by pressing "set". With the "do not disturb" key, you can later simply turn the do not disturb set in this way on or off.

```
-- 11:52
-- -- -- --
```

## **2** Operation - System Telephones

### **Notes**

---

If you have activated do not disturb:

- Corresponding calls are only shown in the display and indicated by flashing of the red LED. Your telephone does not ring. However, you can accept the calls in the usual fashion.
- You can still make calls. When you pick up the receiver, the special dial tone reminds you that do not disturb is on.
- Your telephone nevertheless rings in the event of a callback, a wake up call and an appointment call.

You can program several special "do not disturb" function keys. You can program a "do not disturb" function key for your first internal phone number, for your second internal phone number, for both your internal phone numbers, for internal calls, for external calls and for all calls (see "Function key assignments").

## Switching over the call variant

When an external call arrives, one telephone or several telephones ring(s) simultaneously. The called internal user who lifts the receiver first is connected to the caller. Which telephones are to ring is defined by programming in the ringing distribution configuration.

Different ringing distribution settings are possible for the daytime and night-time thanks to call variants (call variants 1 and 2).

You can activate/deactivate call variant 2 (night service) separately for each external phone number in your telephone system, and from every internal or external telephone. Please refer to the operating instructions for analog terminals - "Switching over the call variant" - for details of how to switch over the call variant from an external telephone.

When call variant 2 is deactivated, call variant 1 (daytime service) is on.

### Call variant 2 on/off



Enter "set" and press the "call variant 2" (night) key or enter "set 11" to activate call variant 2 (night service).

```
Call variant 2
next/Externalno.
```



Press "next" to select the external phone number in your telephone system or

```
ext. 23456781
on: 1   off: >0<
```



Select the name of the external phone number or

```
ext. AGFED
on: 1   off: >0<
```



"All" if you wish to activate/deactivate the call variant for "all" external phone numbers

```
ext. all
on: 1   off: >0<
```

In the example, the external phone number 23456781 is selected.

```
ext. 23456781
on: 1   off: >0<
```



"1": Call variant 2 on  
"0": Call variant 2 off  
Example: "1" - on

```
ext. 23456781
on: >1<  off: 0
```

"Next", select and switch further call variant 2 or door call variant 2 or



"set" : end programming

```
--      € 11:52
--      --      --
```

## 2 Operation - System Telephones

### Call variant 2 on/off with special function key

If you have permanently assigned a phone number when configuring the "call variant 2" function key, you can activate/deactivate

call variant 2 for this external phone number simply by pressing the "AVA 2" (night) key.

|  |   |   |
|--|---|---|
|         | The receiver is on the hook.  |    |
| AVA 2   | Press the "AVA 2" (night) key. Call variant 2 is now <b>on</b> .  |    |
|         | Return to the standard display. As a check, you see the moon symbol in the display and the "!" symbol.                            |    |
| AVA 2  | Press the "AVA 2" (night) key. The call variant 2 is now <b>off</b> if it was on beforehand.                                      |   |
|       | Return to the standard display. The moon symbol and the "!" symbol in the display is off. Call variant 1 (daytime service) is on. |  |

### Notes

The "!" symbol may stand for several settings in your telephone system. If necessary, you can display the settings by pressing  several times.

Press  to indicate the external phone number to which the setting applies.

You can deactivate (switch off) the displayed setting  with clear.

If the selection "ext. all" is set up when call variant 2 is switched on/off, door call variant 2 is switched on/off at the same time.

## Activating or deactivating call variant 3 (internal call forwarding)

If you activate call variant 3 (internal call forwarding), the telephone system forwards an external call to other internal terminals.

Call forwarding takes place:

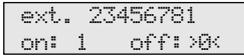
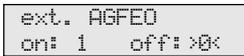
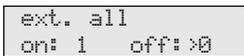
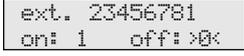
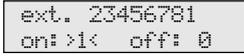
- After a defined number of rings if nobody answers
- Immediately if the telephone is busy and call waiting announcement is not possible.

You can activate/deactivate call variant 3 separately at any time for any external

phone number in your telephone system, and from any internal or external telephone. Please refer to the operating instructions for analog terminals - "Activating/deactivating call variant 3" - for details of how to activate/deactivate the call variant from an external telephone.

The call forwarding terminals are defined for each external phone number in your telephone system by programming the ringing distribution settings - call variant 3.

### Call variant 3 on/off

|   |   |   |
|---|---|---|
|   | Enter "set" and press the "call variant 3" key or "set 19" to activate call forwarding          |   |
|  | Select the external phone number by pressing "next"   |  |
|  | or<br>Select the name of the external phone number  |  |
|  | or<br>"all" if you wish to activate/deactivate call forwarding for "all" external phone numbers |  |
| In the example, the external phone number 23456781 is selected.                     |   |  |
|  | "1": Call forwarding on<br>"0": Call forwarding off<br>Example: "1" - on                        |  |
|  | "Next": select and switch a further call variant 3 or<br>"Set": conclude programming            |  |

## 2 Operation - System Telephones

### Call variant 3 on/off with a special function key

---

If you have permanently assigned an external phone number of your telephone system when configuring the "call variant 3"

function key, you can simply activate/deactivate call variant 3 (internal call forwarding) by pressing the "AVA 3" key.

|  |   |   |
|--|---|---|
|         | The receiver is on the hook.  |    |
| AVA 3   | Press the "AVA 3" (call forwarding key). Call variant 3 is now on.                          |    |
|         | Return to the standard display. As a check, you see the "!" symbol in the display.          |    |
| AVA 3  | Press the "AVA 3" (call forwarding) key. Call variant 3 is now off if it was on beforehand. |   |
|       | Return to the standard display. The "!" symbol in the display is off.                       |  |

### Notes

---

The "!" symbol may stand for several settings in your telephone system. If necessary, you can display the settings by pressing  several times. Press  to

indicate the external phone number to which the setting applies. You can deactivate (switch off) the displayed setting  with clear.

## Announcement

From your telephone, you can make an announcement via an audio module or a loudspeaker system.

The audio module or the loudspeaker system is connected instead of a hands free unit (TFE to FTZ 123 D12).

### Announcement

---



The receiver is on the hook. Press the **"announcement" key**. The acknowledgement tone sounds. You can make your announcement in the hands free mode or you can use the receiver.

Announcement  
Speak now



After the announcement: Press the "loudspeaker" key or replace the receiver.

--- 11:52  
--- --- --- --- ---



## 2 Operation - System Telephones

### Autodial - connecting without dialling

You can activate "autodial" on your telephone for an emergency. When you pick up the receiver, and if you then do not press any keys, after 10 seconds the telephone system will automatically dial a stored

external phone number. Up to that time, you can dial any other phone number in the normal fashion. In this case, autodial is then suppressed.

#### Autodial - Programming a phone number

---

set 5 6

Initiate input

```
Enter number
_
```

⎓⎓⎓  
⎓⎓⎓

Enter the external phone number, e.g.  
987654

```
Enter number
987654_
```

set

"Set": conclude programming

#### Notes

---

Check automatic dialling after programming the external phone number. Activate automatic dialling, lift the receiver, wait until the

external phone number is dialled and check that you have the right connection.

#### Autodial on/off

---

set 1 \*

Initiate the function

```
Autodial
on: 1 off: >0<
```

⎓⎓⎓  
⎓⎓⎓

"1": On  
"0": Off. Example: "1"

```
Autodial
on: >1< off: 0
```

set

"Set": conclude programming  
Automatic dialling is now prepared.  
You hear the special dial tone when you lift the receiver.

#### Notes

---

If the called party is busy, the telephone system attempts to redial the external phone number every 10 seconds. It cancels automatic dialling after 12 attempts. If you hear the error tone when activating "automatic dialling", then no external phone number has been programmed.

The automatic dialling number can only be entered and activated on the digital ISDN system telephones ST 25 of the AS 141 and AS 191 with the procedures of the analog and ISDN terminals.

## Activating/deactivating busy on busy

An external subscriber calls your phone number, for which ringing distribution to several terminals has been programmed. The terminals that are free ring. You are busy and there is no-one there who can accept the call. The caller hears the ringing

tone. To avoid a situation in which the caller has the impression that there is nobody there, you can activate the "busy on busy" feature for your phone number. A caller will hear the busy tone as soon as one user in the ringing distribution settings is busy.

### Busy on busy on/off

|   |   |   |
|---|---|---|
|    | Initiate the function by entering "set 1#".   | <pre>                 Busy on Busy                 next/Externalno.             </pre>        |
|    | Select the external phone number with "next"  | <pre>                 ext. 23456781                 on: 1   off: &gt;0&lt;             </pre> |
|   | or<br>Select the name of the external phone number  | <pre>                 ext. AGFEO                 on: 1   off: &gt;0&lt;             </pre>    |
|   | In the example, the external phone number 23456781 is selected.                                   | <pre>                 ext. 23456781                 on: 1   off: &gt;0&lt;             </pre> |
|    | "1": Busy on busy on<br>"0": Busy on busy off<br>Example: "1" - on                                | <pre>                 ext. 23456781                 on: &gt;1&lt;  off: 0             </pre>  |
|    | "Next", select external phone numbers and set busy tone on busy or<br>"Set": conclude programming | <pre>                 --           11:52                 -- -- -- -- --             </pre>    |

### Notes

An ISDN terminal that is connected in parallel with the telephone system on the point-to-multipoint connection and to which the same phone number as that of the telephone system is assigned is always called regardless of whether "busy on busy" has been activated or deactivated for this phone number in the telephone system. The caller hears the ringing tone.

The busy on busy feature can only be activated on the digital ISDN system telephones ST 25 of the AS 141 and AS 191 with the procedures of the analog and ISDN terminals.

## 2 Operation - System Telephones

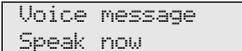
### Voice message/intercom system function

You can use your telephone system like an intercom system, i.e. you can make voice message announcements to other system telephones in your system in the form of an

- Announcement to one or several selected system telephones
- Announcement to a defined group of system telephones (see "Group formation").

In doing so, the loudspeakers of the system telephones concerned are switched on automatically (unless the telephones are currently busy). You can also make each voice message announcement out of an external call. A voice message is only possible if you have programmed the function on a "voice message" function key (see "Function key assignments").

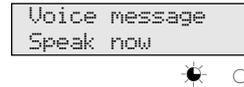
#### Voice message to system telephones

|  |  |   |
|--|--|---|
|   | The receiver is on the hook. Press the <b>"voice message" key</b> . You can now choose who is to hear your voice message.  |    |
|   | Enter the phone numbers of the telephone systems that you wish to reach (up to 5 system telephones).   |  |
|   | Press the "enter" key for a voice message in the hands free mode   |  |
|   | or<br>use the receiver.<br>If at least one of the selected system telephones is free, you and the announcement participant hear the acknowledgement tone. You can announce your voice message. |  |
|  | When a called user lifts the receiver, only this user is connected to you in an internal connection. The voice message is ended. You can talk with this user in the usual fashion.             |  |
|  or  | After the voice message: press the "loudspeaker" key or replace the receiver. This ends the operation.   |  |

**Group voice message**



The receiver is on the hook. Press the **"voice message" key**. If at least one of the system telephones belonging to the defined group is free, you and the voice message participants hear the acknowledgement tone.



or



You can make your voice message announcement in the hands free mode or you can use the receiver.

When a called user lifts the receiver, only this user is connected to you in an internal connection. The voice message is ended. You can talk with this user in the usual fashion.



After the voice message: press the **"loud-speaker" key** or replace the receiver. This ends the operation.



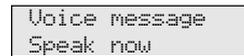
**Voice message out of an external call**



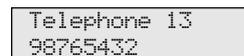
You are conducting an external telephone conversation and you wish to announce the call to an internal user, but you do not know what telephone this user is currently at.



Press the **"voice message" key**. If at least one of the system telephones belonging to the defined group is free, you and the voice message participants hear the acknowledgement tone. You can make your voice message announcement.



If the internal user you are looking for has heard the voice message and lifts the receiver, only this user is connected to you in an internal connection. The voice message is ended. You can talk with this user in the usual fashion.



To transfer the call to the internal user, replace the receiver. The two other parties are connected to one another. If you replace the receiver before the internal user has lifted the receiver, you have also transferred the call. The call can be picked up from any telephone within 4 minutes. After 4 minutes, you receive a callback if the call has not been accepted.



## 2 Operation - System Telephones

### When you hear a telephone voice message

---

You hear the acknowledgement tone and then a voice message.

Voice message 13  
for telephone 11



or

**If you wish to speak to the person announcing the message:**

Press the "loudspeaker" key or lift the receiver. Only you are then connected with this person in an internal connection.

Telephone 13



If you are the only voice message participant and if you have activated automatic activation of your hands free microphone, you can immediately talk with the person making the voice message announcement in a hands free connection.



or

Press the "loudspeaker" key or replace the receiver. The call is ended.

11:52



### Notes

---

A voice message announcement to telephones is only possible to system telephones. At least one of the selected system telephones must be free.

person making the announcement. He is automatically in hands free mode with that person and two-way communication is possible.

If an user has activated automatic activation of the hands free microphone on his system telephone (see "System telephone settings"), when a single voice message announcement is made he no longer needs to pick up the receiver to speak to the

You can vary the voice message volume by entering "set 25 1...7 set".

You can directly enter the participants of a group voice message by means of the "set" and "voice message" keys.

## Placing a connection on hold

**On a point-to-multipoint connection only** - you can have your external call placed on hold by the ISDN exchange in order to conduct an inquiry call with a second external subscriber on the same outside line.  
While you are conducting a telephone

conversation with an external subscriber, you wish to obtain information from a second external subscriber, for example, although no further outside line is free. You then switch back to the first call. You can also switch between both external calls (brokering).

### Placing a connection on hold

|   |  |                              |
|---|--|------------------------------|
|    | You are conducting an external telephone conversation (point-to-multipoint connection)   | 98765432<br>- - - - -        |
|    | Press the "ISDN hold" key. You hear the external dial tone.  | ext. 23456781<br>Please dial |
|   | Dial the phone number of the external subscriber with whom you wish to conduct an inquiry.   | Calling<br>0234567899        |
|  | The waiting subscriber cannot listen in. By showing the phone number, the display indicates that you are conducting a conversation with subscriber 2.<br>If the called subscriber does not answer, you can switch back to the waiting party by pressing the "esc". | 0234567899<br>- - - - -      |
|  | By pressing the "ISDN hold" key, you can switch between both external calls (brokering).   | 98765432<br>- - - - -        |
|  | By pressing "esc", you clear the current external call and you can speak immediately with the waiting external subscriber.   | 0234567899<br>- - - - -      |

### Notes

The call cannot be placed on hold in the exchange if you hear the error tone instead of the external dial tone. You are connected back to the external subscriber when you press the "esc" key.

When you replace the receiver, you clear both the current call and the one that is on hold.

Call charges are incurred for the current external call and for the one on hold.

## Identifying malicious callers (malicious call tracing)

You can only use the "identifying malicious callers" feature after specially ordering this feature from your network carrier. The ISDN exchange stores the caller's phone

number, your phone number, the date and the time of the call. You can trace the caller during a call.

### Tracing a caller

---



You are being molested by a caller and you wish to have this caller identified by the exchange.

External



Press the "call tracing" key. You hear the exchange acknowledgement tone.

Call tracing



Replace the receiver

-- 11:52  
-- -- -- -- --

### Notes

---

Press the "esc" key if you wish to continue the call after identifying the caller.

Up to the time when you continue or cancel the call with the caller, the caller hears a tune if "music on hold" (MoH) is activated in the telephone system or is fed in from an external source.

You hear the error tone:

- If you have not requested identification of malicious callers.
- If the caller can no longer be identified by the exchange.

## Conference

### Conducting a conference in the telephone system.

As the conference leader, you can:

- conduct a three-party conference with analog internal subscribers or with internal subscribers connected to the internal SO-bus or
- Conduct a three-party conference with one external subscriber and one internal user or
- Conduct a three-party conference with two external subscribers. In doing so, two outside lines are seized.

### Conducting a conference in the ISDN exchange (point-to-multipoint only)

To establish an ISDN three-party conference with two external subscribers, you must first place the first external call on hold in the ISDN exchange in order to conduct an inquiry conversation with a second external subscriber on the same outside line. You then switch both parties together in a three-party conference.

### Internal three-party conference



You are conducting an internal call

Telephone 13  
13 - - - - -

Call the internal user who you wish to fetch into the conference e.g. 17.



#### Automatic outside line seizure variant

Press the **internal key** and dial the internal phone number, e.g. 17

Calling 17



#### "0" outside line seizure variant

Press the **"inquiry" function key** and dial the internal phone number, e.g. 17

Calling 17



User 17 has picked up

Telephone 17  
Telephone 13



When you press the **"conference" key**, the participants in the conference hear the acknowledgement tone.

Telephone 17  
Telephone 13

### Internal/external three-party conference



You are conducting an external call

03098765432  
- - - - -

Call further external subscribers or internal users that you wish to fetch into the conference.

Example: three-party conference - one internal user and two external subscribers.

## 2 Operation - System Telephones

|   |   |                           |
|---|---|---------------------------|
|  | Press the <b>"brokering"</b> key and dial the external phone number.  | Calling<br>0301234654     |
|  | The external subscriber has picked up.  | 0301234654<br>03098765432 |
|  | When you press the <b>"conference"</b> key, the participants in the conference hear the acknowledgement tone. | 0301234654<br>Conference  |

### ISDN three-party conference

|   |   |                           |
|---|---|---------------------------|
|    | You are conducting an external telephone conversation (point-to-multipoint connection) and simultaneously wish to speak with a further external subscriber.   | 98765432<br>-- -- -- --   |
|  | Press the <b>"ISDN hold"</b> key. You hear the external dial tone.  | Please dial               |
|  | Dial the phone number of the external subscriber with whom you wish to inquiry.   | Calling<br>0234567899     |
|  | You can announce the three-party conference if the called party answers. The waiting party cannot listen in. If the called party does not answer, you can switch back to the waiting party by pressing the "esc" key. | 0234567899<br>-- -- -- -- |
|  | If the other party answers, you can talk with both external subscribers after pressing the <b>"conference"</b> key.   | Conference                |
|  | You end the three-party conference if you replace the receiver.   | -- 11:52<br>-- -- -- --   |

**Notes**

---

**Conference circuit in the telephone system**

An external or door call is signalled to the conference with the call waiting announcement (knocking) tone if the called party is in the conference.

Only the conference leader can pick up a call by pressing the "brokering" key and selecting the call with the "next" key. The other conference members are on hold, but the conference is terminated. After the conference leader finished the inquiry call by "esc", he can add the members on hold by "brokering" and "conference" key.

A party is switched out of the conference if he replaces the receiver. He can only be fetched back into the conference by the conference leader.

The conference is ended when the conference leader replaces the receiver.

**Conference circuit in the ISDN exchange**

Call charges are incurred for every external call that participates in the three-party conference.

It is not possible to place a call on hold in the exchange if you hear the error tone instead of the external dial tone. You are connected back to the external subscriber after pressing the "esc" key.

The three-party conference is not possible if you hear the error tone after pressing the "conference" key. You are connected back to the second external subscriber after pressing the "esc" key.

Press the "conference" key if you wish to clear an existing ISDN three-party conference. You are connected to the party that you last dialled into the conference. The first party is placed on hold.

## 2 Operation - System Telephones

### Least Cost Routing (LCR) – Cost-optimized telephoning

Since the opening up of the telecommunications market you can choose between various network providers and reduce your telephone costs thanks to the advantages of competition.

The Least Cost Router of the telecommunication system decides which network provider is the cheapest for your external connection on the basis of the local code you dial (tariff zone), the time of day and day of the week.

The network code for the current network

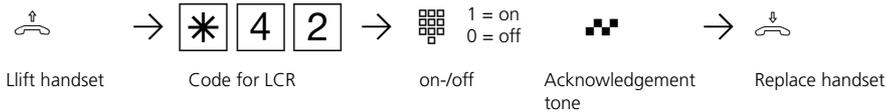
provider is placed automatically in front of your dialed external phone number and dialed. You simply dial in the usual way.

The use profile of the Least Cost Router covers 8 network operators and 8 tariff zones with their own time of day and day of the week profile. You can enter and update the use profile with TK-LCR on the PC.

You can switch the Least Cost Routing on and off on your telephone.

#### Switching Least Cost Routing on/off

---



#### Notes

---

You can decide which network provider is used for an external connection despite the LCR being switched on:

- Simply dial the network code of the desired network provider in front of the local code, e.g. 01033, Deutsche Telekom.
- You can dial the network provider with a programmed function key „Call by Call“ on the system telephone (see „Network code – Call by Call“).

The network code for the network operator is stored in the repeat dialing.

Important! Not all ISDN features offered by the Deutsche Telekom AG were available to other network providers at the time these operating instructions went to print (e.g. transferring the phone number to the called party, transferring the connection costs).

## Brokering - switching between several conversations

Brokering signifies switching between several conversations. Only ever one conversation is active. The telephone system places the others on hold. Waiting external subscribers may hear music on hold.

### Brokering



You are conducting a conversation and one or several call(s) is/are on hold.  
 First display line: telephone number or the name pertaining to the active conversation  
 Second display line: telephone number or the name pertaining to the next conversation on hold  
 "External -" if no telephone number is presented.

```
03012345678
Telephon 13
```

```
External 1
Telephon 13
```



#### Switching to the next conversation

Press the "**brokering**" key  
 If necessary, press the "brokering" key several times to selectively switch to a conversation

```
Telephon 13
03012345678
```

or  
**displaying the conversations on hold during the active conversation:** (not possible in all national variants)



Press "next" to scroll  
 First display line: telephone number, name of the party or "External -"  
 Second display line: telephone number or name of the connection (of the line)

```
MAIER
H: 23456789
```



H: conversation on hold  
 N: newly arriving ringing  
 V: connected (active) conversation

```
Extern 2
N: AGFEO 1
```

The active conversation is automatically displayed again after around 10 seconds.

```
03012345678
U: AGFEO 2
```



**Switching to the displayed conversation:** press the "**brokering**" key. The displayed conversation is now active. The conversation that was previously active is on hold.

```
MAIER
03012345678
```

### Notes

Call charges are incurred for the current external call and for the one on hold.

To finally end a current call, press the "esc" key. You are automatically connected to the next party who is still waiting.

If you replace the receiver:

- you clear all internal connections,
- you clear the current external connection,
- you receive a callback if an external connection is still on hold.

## Memory - storing a phone number

The phone number and, if applicable, the name of the party in the last incoming or outgoing external connection is stored automatically in the memory. You can store every external phone number and every name in the memory that is shown on the display when the receiver is on the hook.

Later, you can display the entry and you can automatically dial the phone number by picking up the receiver.

When editing phone numbers, e.g. in the phone book, when diverting calls or when configuring destination keys, you can simply use the phone number and the name from the memory.

### Storing a memory phone number/name



The receiver is on the hook. You wish to store the displayed phone number/name.

```
MAIER
03098765432
```



Press the "set" key. The phone number/name is stored in the memory.

```
Function menu
No.-> Memory
```



"set": return to the standard display

### Displaying and dialling a memory phone number



Press the "shift" key and the "redial" key. The stored external phone number, if applicable with the name, is displayed.

```
MAIER
03098765432
```



Lift the receiver. The phone number is dialled automatically.

```
Calling
03098765432
```



Conduct the call

```
MAIER
_ _ _ _ _
```

### Using a memory phone number/name (example - programming destination dialling)



Press "set" and destination key private.

```
Enter number
_
```



Press the "shift" key and "redial" key. The stored phone number is accepted. Any existing destination phone number is overwritten.

```
Enter number
03098765432
```



Press "enter" to confirm. Enter the name or, if applicable, press the "shift" key and "redial" key. The name is accepted.

```
Enter name
MAIER
```



"set": End programming

## Network code - Call by Call

With a function key "Call by Call" you could select the desired network provider for a long distance call by pressing a key (e.g. Mobilcom 01019). Then you dial the code number and the subscriber number. You can use destination dialing or redial last number for post dialing. In the dialing preparation you can also use the "Call by Call" key in connection with a

phone number from the phone book, the memory or the call list.

First you have to set up a "Call by Call" function key on your telephone (see 'Function key assignment', set 31) Take the network provider that you want to dial with the "Call by Call" key from the Least Cost Router (LCR) and store it under the "Call by Call" key.

### Storing the network provider for the 'Call by Call' key

|   |  |   |
|---|--|---|
|    | Activate the function with 'set'. Press the desired key "Call by Call". (For the second level: first the 'Shift' key then the function key). |    |
|  | An entered network provider is displayed.  |  |
|  | With 'next' you can select another network provider from the LCR.  |  |
|  | 'set': confirm selection and end entry.  |   |

### Dialing with the "Call by Call" key

|   |   |   |
|---|---|---|
|  | Lift the handset and press the "Call by Call" key. The stored network code is displayed and dialed.   |  |
|  | Post dial the code and phone number of the subscriber or post dial with the redial last number function or a destination key. The outside line is seized automatically. Telephone as usual when the subscriber answers. |  |

### Notes

The network code (e.g. 01019) dialed with the "Call by Call" key is stored in the redial last number memory.

## 2 Operation - System Telephones

### Parking an external call

You can briefly interrupt an external call and park it in the telephone system because, for example,

- you have to leave your place briefly,
- you wish to resume the call at a different telephone in the telephone system.

The outside line (B channel) remains seized while a call is parked in the telephone

system. The external subscriber hears the music on hold.

Every internal user may fetch back (unpark) the parked external call.

You receive a callback if the parked external call is not resumed within four minutes.

#### Parking an external call

---



You are conducting an external telephone conversation. You wish to park this call.

```
98765432
-- -- -- --
```



Press the "enter" key to park the call.

```
98765432
Call parked
```



Replace the receiver. The call is parked. An x flashes in the display.

```
x-      11:52
-- -- -- --
```

#### Resuming the external call (unparking)

---



Lift the receiver.

```
x-      13/___
Please dial
```



Press the "enter" key to resume the call e.g. on telephone 13

```
98765432
-- -- -- --
```



You can conduct the telephone conversation in the usual fashion.

#### Notes

---

You can resume (unpark) the parked call at any telephone. On an a/b telephone, dial the code **[x][2][2]** to unpark the call.

If several calls are parked in the telephone system, priority is assigned to unparking the first call.

Connection charges are incurred for the parked call.

Parking (replug on the bus) in the ISDN exchange (only at the multipoint connection) is possible by the system phone using key sequences (see operation - analog / ISDN terminals „Parking an external call“).

## Room monitoring

You can use any analog telephone (system or standard telephone) in the telephone system to acoustically monitor the room in which it is located, for example to monitor a baby.

You call the guarding telephone from another internal or external telephone and you listen into the room. On a system telephone, the microphone switches on automatically.

You must prepare room monitoring on the telephone intended for this purpose. You can choose whether or not a tone is to sound when room monitoring is activated.

Please refer to the operating instructions for analog terminals entitled "Room monitoring" for details of room monitoring from an external telephone.

### Preparing room monitoring



1 0

Enter "set 10" to set up room monitoring. The current setting is marked.

```
Room monitoring
on: 1   off: >0<
```



"1": Room monitoring on (prepared)  
"0": Room monitoring off  
Example: "1" - room monitoring prepared

```
Room monitoring
on: >1<  off: 0
```



Press "enter" to confirm. Select whether or not a tone is to sound before room monitoring.

```
Audible warning
on: >1<  off: 0
```



"1": Audible warning on  
"0": Audible warning off  
Example: "0" - Audible warning off

```
Audible warning
on: 1   off: >0<
```

The green LED flashes when room monitoring is active.



Conclude programming.

### Room monitoring by an internal user



Lift receiver

```
-- 11/--
Please dial
```



Call up the guarding telephone, e.g. telephone 13  
Press the **internal key** (automatic seizure variant) and dial the internal phone number.

```
Telephone 13
13 -- -- --
```



Listen into the room.  
When monitoring, pay attention to the fact that you can also be heard in the monitored room.

## 2 Operation - System Telephones

### Relay switching

**AS 190, AS 191:** 2 relays (R1, R2)  
**AS 31 ST, AS 32:** 4 relays (R1, R2, R3, R4)  
You can make diverse use of the potential-free relay contacts instead of the door hands free unit. For example, you can use them to activate an additional bell or an additional door opener.

By programming, you define for each relay a internal phone number and whether it is to operate as a pulse relay (3 seconds on) or as an On / Off relay.

You can activate or deactivate the relays from any internal or external telephone. From an external location, to do this you dial

up the telephone system's switching box via a direct dialling in or multiple subscriber number. After entry of a code ("as-delivered" settings: no entry), you can switch the relays by entering code digits.

**To be noted when switching the relays:**  
If a port is programmed to connect an audio module, relay R2 is automatically assigned to the audio module.  
If a door handsfree unit (FTZ 123 D12) is connected, the relays R1 and R2 (AS 190, AS 191) or relays R3 and R4 (AS 31 ST, AS 32) are used for connecting the door handsfree unit and the door opener.

#### Relay on/off



Press the **"relay"** key to turn a relay on off.

```
Relay 25  
on: 1   off: >0<
```



Select a relay with "next"

```
Relay 26  
on: 1   off: >0
```



"1": Selected relay on  
"0": Selected relay off  
Example: Relay 26, "1" on

```
Relay R2  
on: >1<  off: 0
```



Return to the standard display by pressing the "esc".

```
--          11:52  
--  --  --  --  --
```

#### Relay on/off with a special function key



Turn the relay on or off with the **"relay"** key.  
Ist das Relais ein Impulsrelais, so bleibt die zweite Zeile unverändert.

```
Relay 25  
on
```

The displayed message appears on its own after some time  
or  
return to the standard display by pressing "esc".



```
--          11:52  
--  --  --  --  --
```

## Inquiry

While you are conducting a telephone conversation, you can interrupt your conversation and you can talk to somebody else in the meantime. The first conversation is placed on hold by the telecommunications

system. The waiting person cannot listen in. An external subscriber may hear music on hold. You can use all functions of your telephone, e.g. phonebook, speed dialing or voice message, in an inquiry.

### Telephone inquiry



You are conducting an external or internal telephone conversation.  
Example: External

```
0301234567
- - - - -
```



**Internal inquiry**  
Press the **internal key** and dial the internal telephone number, e.g. 13.

```
Calling 13
```



**External inquiry**  
Press the **"brokering" key** and dial an external telephone number.

```
Calling
9876543
```



You are conducting a telephone conversation with the internal user. The waiting party cannot listen in.

```
9876543
03012345678
```



**To return to the waiting party:**  
If you press "esc", the inquiry call is cleared or

```
03012345678
- - - - -
```



if you press the **"brokering" key**, the inquiry call is placed on hold.

```
03012345678
9876543
```

### Inquiry in the room (muting)

You can interrupt your telephone conversation and you can talk to someone else in

the room in the meantime without the other party being able to listen in.



You are conducting an external or internal telephone conversation. Example: External

```
0301234567
- - - - -
```



Press the **"inquiry key"** or the **"internal key"**. The connection is placed on hold. You can talk without the other party being able to listen in.

```
Inquiry
Please dial
```



Press "esc" or the **"inquiry key"** to continue the telephone conversation.

```
0301234567
- - - - -
```

## 2 Operation - System Telephones

### Callback on busy

If an external subscriber is busy, you can **initiate** an automatic **callback** from this subscriber. This must be an ISDN subscriber or a subscriber on a digital exchange.

Your telephone rings as soon as your desired call partner picks up the receiver. You receive the callback. Pick up the receiver to automatically call the other party.

#### Initiating a callback



Call the external subscriber, busy tone, the other party is busy.

```
User busy
CCBS?
```



Press the "enter" key to initiate the callback

```
CCBS
On
```



Replace the receiver

```
--          11:52
--  -  -  -  -  -  -
```

#### Callback



Your telephone rings as soon as the other party is free again. The display shows the callback.

```
052198765432
CCBS
```



Lift the receiver. The other party is automatically rung again.

```
Calling
CCBS
```



The other party answers. You conduct the telephone conversation in the usual fashion. If the external subscriber does not answer, if applicable, you enter yourself in the external subscriber's call list by replacing the receiver.

```
052198765432
--  -  -  -  -  -
```



Replace the receiver.

```
--          11:52
--  -  -  -  -  -
```

#### Notes

A callback is not possible from your required call partner if you hear the error tone:

- the other party is not an ISDN subscriber or is not connected to a digital exchange,
- the "callback on busy" feature is not available in the exchange.

If you should not be obtainable after initiating a callback, the callback is cancelled after 20 seconds and is cleared. If necessary, initiate the callback again.

A callback is cleared if it has not come into being or if it has not come into being within 45 minutes of its initiation.

## Successively viewing status messages

It may happen that several functions are active simultaneously. These are indicated by flashing of the red LED or by a message on your display, e.g. the call list and an appoint-

ment call. You can display these messages successively. The order is fixed.

### Scrolling through display messages

|   |   |  |
|---|---|--|
|    | The receiver is on the hook. On the display, you see the ! symbol, indicating that a message is available. The red LED flashes.                   | <pre> --          11!52 --  - - - - -                 ○ ●             </pre>   |
|    | The date is displayed.  | <pre> --          11!52 5.  July  1998                 ○ ●             </pre>  |
|    | There is at least one entry in the call list.   | <pre> List of calls read          enter                 ○ ●             </pre> |
|   | To see whether there are any further messages, press the "next" key. You see the next message, if available.                                      | <pre> Appointment call                 ○ ●             </pre>                  |
|  | Continue scrolling by pressing "next".<br>Example: Diversion  | <pre> Diversion read          enter             </pre>                         |
|  | Continue scrolling by pressing "next".<br>Example: ISDN call forwarding   | <pre> 11 permanent to 0123456789             </pre>                            |
|  | Read out with "enter". Internal phone number 11 is diverted permanently to external phone number 0123456789                                       | <pre> ISDN call forw. read          enter             </pre>                   |
|  | Read out with "enter". ISDN call forwarding on (active) for the external phone number with the name "AGFEO 1" to external phone number 0234567890 | <pre> on AGFEO 1 0234567890             </pre>                                 |
|  | Back to standard display:<br>Automatically – after approx. 20 seconds<br>Immediately – with "esc"   |  |

### Notes

By pressing , you can successively view available displays. If applicable, you can press  to read out the phone number to which the setting applies.

If you are called in the process, the caller is displayed and you can conduct the telephone conversation in the usual fashion.

## 2 Operation - System Telephones

### Entering user names

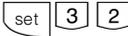
You can enter a name for your telephone. Your name then appears in the display of your system telephone when you receive an internal call, e.g.:  
from MILLER  
for SMITH

or, vice versa, your name appears in the display of the internal user that you call,

e.g. from SMITH  
for MILLER

You can enter names on the system telephone in upper case letters. On a PC, you can names in upper case and lower case letters.

### Entering user names

|   |   |  |
|---|---|--|
|    | Initiate the function                                   |   |
|    | Enter the name with the digit keys, e.g. AD (see notes) |   |
|   | Confirm the name by pressing "enter"                    |  |
|  | "set": end programming.                                 |  |

### Notes

#### Enter a name on the digital keypad:

|   |  |   |
|---|--|---|
|  | If necessary, press several times<br>Example:<br>1 = A<br>11 = B<br>111 = C<br>1111 = 1  |  |
|  | To the next input field  |  |
|  | To the previous input field; character can be overwritten                                |  |
|  | Clear the character on the left of the flashing input field and all of them on the right |  |
|  | Clear the entire entry   |   |

## Storing phonebook numbers

You can centrally store up important external phone numbers and affiliated names in the telephone system.

**AS 141, AS 191:** 200 external phone numbers (000 to 199)

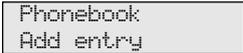
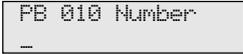
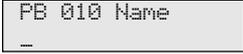
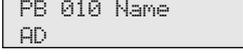
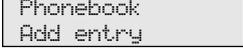
**AS 31 ST, AS 32:** 300 external phone numbers (000 to 299).

These telephone numbers can then be selected from every system telephone by pressing the "phonebook" key, either via a numeric or an alphabetical register. You can switch over the registers by pressing the "shift" key .

The destinations "\* " and "# " are reserved for emergency phone numbers. However, they are entered in the same way as the other phone numbers in the phonebook.

If an external caller's phone number is communicated to you, it is compared against the entries in the phonebook and, if they agree, the caller's name is displayed instead of the phone number.

### Programming a phonebook number

|   |   |   |
|---|---|---|
|   | Press the "set" and "phonebook" keys to initiate the function or go directly to input by entering "set 51". |   |
|  | Confirm; the first free memory is displayed.  |  |
|  | Enter the external phone number that you wish to store.   |  |
|  | Confirm   |  |
|  | Enter the name, e.g. AD<br>(1 = A, next, 2 = D; see notes under "Entering user names")                      |  |
|  | Confirm   |  |
|  | "enter": store a further phone number or<br>"set": end programming  |   |

### Notes

Enter an external phone number with "0" for seizure of an outside line. The outside line is seized automatically during dialling.

When dialling from the phonebook, you can post-dial numbers within 20 seconds.

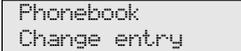
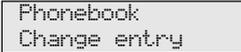
All users can dial the phone numbers from the phonebook, regardless of their outside line privileges.

A user can dial the emergency phone numbers and the direct number (baby phone number) even after reaching the defined units limit.

## 2 Operation - System Telephones

### Phonebook - changing a number

---

|   |  |   |
|---|--|---|
|    | Press "set" and the "phonebook" key to initiate the function or go direct to input by entering "set 52".                           |    |
|    | Select the program item by pressing "next"   |    |
|    | Confirm the selection  |    |
|    | Enter the three digits for which the phone number is stored as an abbreviated dialling number (between 000 and 199, 299), e.g. 005 |    |
|  | Confirm  |  |
|  | Clear individual digits of the phone number by pressing "clear" or clear all of it by pressing the "shift key" and "clear".        |  |
|  | Change the number  |  |
|  | Confirm  |  |
|  | Confirm or clear and modify the displayed name   |  |
|  | "enter": Change a further destination in the phonebook or<br>"set": End programming  |   |

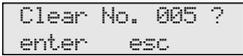
### Notes

---

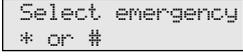
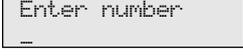
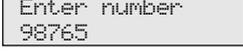
If "no entry" is displayed after entry of an abbreviated dialling number, you can scroll back in the phonebook from the abbreviated dialling number 199 (or 299) by

pressing the  key. By pressing the  key, you can scroll down ("next"), beginning with the abbreviated dialling number 000.

### Phonebook - clearing a number

|   |   |   |
|---|---|---|
|     | Press "set" and the "phonebook" key to initiate the function or go directly to input by entering "set 53".    |    |
|     | Select the program item with "next"   |    |
|    | Confirm the selection   |    |
|    | Enter the three-digit abbreviated dialling number that you wish to clear (between 000 and 199, 299), e.g. 005 |    |
|   | Confirm the entered abbreviated dialling number.  |   |
|    | Confirm clearing by pressing "enter" or cancel the operation by pressing "esc".                               |  |
|    | "enter": Clear a further abbreviated dialling destination or "set": End clearing                              |   |

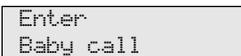
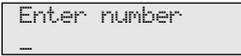
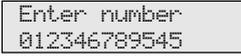
### Entering an emergency number

|   |   |   |
|---|---|---|
|     | Press "set" and the "phonebook" key to initiate the function or go directly to input with "set 54"  |  |
|    | Select the program item by pressing "next"  |  |
|    | Confirm the selection   |  |
|    | Select the emergency call, e.g. [*]   |  |
|    | Enter the emergency phone number  |  |
|    | "enter": Enter the emergency phone number  or "set": End input |   |

## 2 Operation - System Telephones

### Entering a direct number

---

|  |   |   |
|--|---|---|
|        | Press "set" and the "phonebook" key to initiate the function or go directly to input by entering "set 55" |  |
|   .... | Select the program item by pressing "next"  |  |
|   | Confirm the selection   |  |
|   | Enter the direct phone number you wish to store   |  |
|   | "set": End input  |   |

### Notes

---

To clear an input, clear individual characters by pressing  or clear everything by pressing .

You activate the emergency and/or direct phone number (baby call number) with the "lock" key or "set 13".

The emergency phone numbers and the direct numbers can only be entered on the digital ISDN system telephones ST 25 of the AS 141 and AS 191 with the procedures of the analog and ISDN terminals.

## Phonebook - dialling numbers

The alphabetically or numerically sorted registers of the phonebook are at your disposal for selecting phone numbers.

You can switch from one register to the other by pressing the "shift" key .

### Phonebook (numeric)

---



The receiver is on the hook.



Initiate abbreviated dialling by pressing the "phonebook" key. You are in the numeric register.

```
Enter short No.
000 ... 299 # *
```



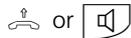
Enter the abbreviate dialling number. The phone number is displayed

```
ANTON
052123456
```



or  
with the  key, you can scroll through the stored entries in sequence from 000 to 199, 299 until you have found the required name (scroll back with the  key).

```
BERTA
022135745
```



Lift the receiver or press the "loudspeaker" key. An outside line is seized automatically and the displayed phone number is dialled automatically.

```
BERTA
022135745
```

### Phonebook (alphabetical)

---



The receiver is on the hook.



Initiate abbreviated dialling by pressing the "phonebook" key. You are in the numeric register.

```
Enter short No.
000 ... 299 # *
```



You switch over the alphabetic register by pressing the "shift" key.

```
Select letter
A ... Z
```



Enter the required initial letter, A = 1. The first entry with the selected initial letter is displayed.

```
ABBA
012345678
```



Press the "next" key to move to input of the second letter. The input cursor flashes.

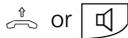
```
Select letter
A_
```

## 2 Operation - System Telephones



Enter the second letter, e.g. N = 55. You can scroll down by pressing and you can scroll up by pressing .

```
ANTON
052123456
```



Lift the receiver or press the "loudspeaker" key. An outside line is seized automatically and the displayed phone number is dialled automatically.

```
ANTON
052123456
```

### Redialling a phonebook entry

---



The receiver is on the hook.



Initiate abbreviated dialling by pressing the "phonebook" key. You are in the register that you used last (numeric or alphabetical).

```
Enter short No.
000 ... 299 # *
```



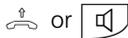
If necessary, press the "shift" key to switch to the other register.

```
Select letter
A ... Z
```



Press the "redial" key. The entry that was last only displayed or also dialled in this register is displayed again.

```
ANTON
052123456
```



Lift the receiver or press the "loudspeaker" key. An outside line is seized automatically and the displayed phone number is dialled automatically.

```
ANTON
052123456
```

### Notes

---

All users can dial the phone numbers from the phonebook regardless of their defined outside line privileges.

If the telephone system's barred range is programmed for your telephone, you cannot dial the phonebook numbers that are within the barred range. You hear the error tone.

The phonebook entries always appear in the sort order that was active last (numeric or alphabetical). If a phone number has been entered in the phonebook without a

name, you can only retrieve the phone number via the numerically sorted register.

You can also select abbreviated dialling numbers after having already lifted the receiver, e.g. during an inquiry. In this case, you must additionally confirm selection of the required phone number by pressing the "enter" key.

You can add incomplete numbers: select the abbreviate dialling number, lift the receiver or press the "loudspeaker" key and then dial the additional digits.

## Telephone lock - emergency/direct (baby call)

You can protect your telephone against unauthorised use by locking it.

If your telephone is locked, you can:

- now only call internal users
- accept all incoming calls and, if necessary, forward them internally
- externally only dial the stored direct phone number (baby number), the

emergency call numbers and the stored automatic dialling number. You must activate automatic dialling before locking the telephone.

If you have programmed a telephone code for your telephone, you must enter your four-digit code number to unlock it.

### Locking your telephone



The receiver is on the hook. Press the "lock" key. The telephone is locked. The display shows "telephone lock". If somebody attempts to dial an outside number, that person hears an error tone.

```
Telephone lock
```

### Unlocking your telephone



The receiver is on the hook. Press the "lock" key. The telephone is unlocked. You can now use your telephone again in the manner to which you are accustomed.

```
--- 11:52
--- -- -- -- --
```



If the telephone code is prompted in the display: enter the code.

### Locking your telephone without a function key



Initiate the function by entering "set 13". The current setting is marked in the display

```
Lock telephone
on: 1 off: >8<
```



"1": Lock the telephone

```
Lock telephone
on: >1< off: 0
```



Press the "set" key. This ends the operation. Your telephone is locked.

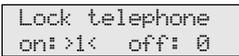
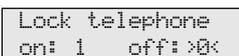
```
Telephone lock
```

The display shows "telephone lock" or, if an emergency/baby phone number has been stored, it shows "emergency/baby". If anyone attempts to make an outside call, that person hears an error tone.

## 2 Operation - System Telephones

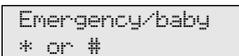
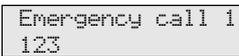
### Unlocking your telephone without a function key

---

|   |   |   |
|---|---|---|
|    | Initiate the function by entering the "set 13". The current setting is marked in the display.   |  |
|    | "0": Unlock the telephone   |  |
|    | If the telephone code is prompted in the display: enter the code.   |   |
|    | Press the "set" key (not applicable if you have entered the code). This ends the operation. You can now use your telephone in the manner to which you are accustomed. |  |

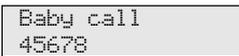
### Emergency call

---

|   |   |   |
|---|---|---|
|  | The telephone is locked and the receiver is on the hook.  |  |
|  | Emergency call memory * or #. Example: "*". The phone number is displayed.  |  |
|  | Lift the receiver. The phone number is dialed automatically   |  |
|  | or<br>press the "loudspeaker" key. You are in the hands-free mode and a phone number is dialed automatically.<br>You can now speak. |   |

### Direct call (baby call)

---

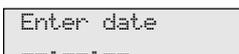
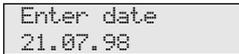
|   |   |   |
|---|---|---|
|  | The telephone is locked. Lift the receiver.   |  |
|  | When any key is pressed, the phone number stored as the direct number is dialed. You can now speak. |  |

## Appointment call - non-recurring appointment

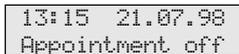
You can have your telephone remind you of an appointment. When it is time for the defined appointment (date, time), an appointment call rings on your telephone.

You can turn this function on or off at any time. You are even reminded of an active appointment when you have activated "do not disturb".

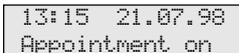
### Storing an appointment call

|   |   |   |
|---|---|---|
|    | Press the "set" key and the "appointment" key or, when not using a function key, press "set 15" to initiate appointment input.                                |    |
|    | Enter the time with four digits, e.g. 1315, and press the "enter" key. Clear any previous entry if necessary by pressing "clear".                             |    |
|   | Enter the date with six digits. Example: 210798   |   |
|  | Press the "set" key to store the entered data and to automatically activate the appointment call. To enable a check, the clock symbol appears in the display. |  |

### Appointment call off

|   |  |   |
|---|--|---|
|  | Press the "appointment" key. The stored appointment appears in the top line of the display. The appointment call is off. |  |
|  | Press the "esc" key to show the standard display. The clock symbol has disappeared from the display.                     |  |

### Appointment call on

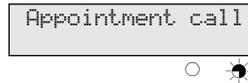
|   |   |   |
|---|---|---|
|  | Press the "appointment" key. The stored appointment appears in the top line of the display. The appointment call is on. |  |
|  | Press the "esc" key to show the standard display. To enable a check, the display shows the clock symbol.                |  |

## 2 Operation - System Telephones

### Appointment call display off

---

The appointment call rings at the defined time. Your display shows the "appointment call" message. The clock symbol in the display is off. The red LED flashes.



To turn off the display message and flashing of the LED: press the "esc" key.



### Notes

---

You are only reminded of an appointment if you have activated one. If you temporarily do not wish to receive an appointment call, for example, simply turn off the appointment.

If you are currently conducting a telephone conversation at the time of the appointment call, you will not receive the appointment call and the display message until you have replaced the receiver.

You can only alternately turn a stored appointment on or off with the "appointment" function key.

The appointment call is only signalled on your telephone, even if you have set "diversion to".

## Switching over the door call variant

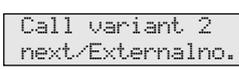
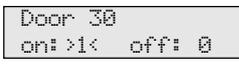
When an door call arrives, one telephone or several telephones ring(s) simultaneously. The called internal user who lifts the receiver first is connected to the caller. Which telephones are to ring is defined by programming in the ringing distribution configuration.

Different ringing distribution settings are possible for the daytime and night-time thanks to door call variants (door call variants 1 and 2).

You can activate/deactivate door call variant 2 (night service) separately for each external phone number in your telephone system, and from every internal or external telephone. Please refer to the operating instructions for analog terminals - "Switching over the door call variant" - for details of how to switch over the door call variant from an external telephone.

When door call variant 2 is deactivated, door call variant 1 (daytime service) is on.

### Door call variant 2 on/off

|   |   |   |
|---|---|---|
|    | Enter "set" and press the "call variant 2" (night) key or enter "set 11" to activate door call variant 2 (night service). |   |
|  | Press "next" to select the door phone number, e.g. 30   |  |
|  | "1": Call variant 2 on<br>"0": Call variant 2 off<br>Example: "1" - on  |  |
|  | "set" : end programming<br>The door call variant 2 is on.<br>The display shows the "!" symbol.                            |  |

### Notes

The "!" symbol may stand for several settings in your telephone system. If necessary, you can display the settings by pressing  several times.

Press  to indicate the external phone number to which the setting applies.

You can deactivate (switch off) the displayed setting with clear.

If the selection 'ext. all' is set up when call variant 2 is switched on/off, door call variant 2 is switched on/off at the same time.

## Diverting a door call to an external subscriber

If you wish a visitor to reach you even when you are out of the house, you can divert a door call to an external phone number, e.g. a radio telephone. Despite door call diversion, the internal user also hears the ringing. The door call can still be accepted internally.

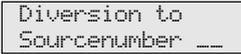
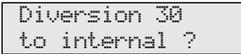
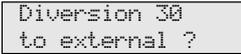
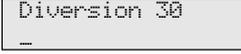
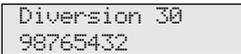
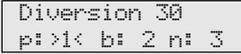
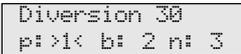
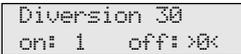
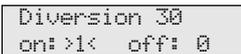
If you divert to an ISDN terminal that is capable of displaying a caller's phone number, you can see that the call is a diverted door call and you can answer

accordingly.

You can activate one diversion for each bell button.

You can also activate or deactivate a programmed door call diversion from any external telephone. Refer to the section of the operating instructions for analog terminals entitled "Diverting a door call to an external subscriber" for details of how to do this.

### Programming and switching door call diversion

|   |   |   |
|---|---|---|
|    | Initiate the function by pressing "set" and the "diversion to" key or "set 17".                                       |    |
|   | Enter phone number of the door (source number) from which you want to divert calls to an external subscriber, e.g. 20 |   |
|  | Press "enter" to confirm  |  |
|  | Enter phone number of the door (source number) from which you want to divert calls to an external subscriber, e.g. 20 |  |
|  | With 'next' to selection – diversion to external subscriber   |  |
|  | Press "enter" to confirm. Define the diversion mode   |  |
|  | "1": Permanent diversion (Türruf kann nur ständig umgeleitet werden)  |  |
|  | Press "enter" to confirm  |  |
|  | "1": Diversion on<br>"0": Diversion off. Example "1"  |  |
|  | "set": end input  |  |

### Notes

The external subscriber is called for 30 seconds, after which ringing is cancelled.

The electric door opener cannot be actuated out of the diverted door call.

## Actuating an intercom system and door opener

If you have connected a door hands-free unit (TFE) to your telephone system, you can speak to a visitor who is standing at your door.

Your telephone rings with the door call when the visitor presses the bell button. After the last ring, you have 30 seconds time (for as long as the red LED is flashing) to accept the door call by lifting the receiver.

During this time, your telephone is busy for all other calls. If another telephone rings with the door call, you can pick up the door call on your telephone.

During a door conversation, you can actuate the electrical door opener from your telephone.

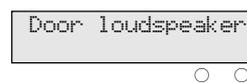
### Actuating the door intercom and door opener



The receiver is on the hook. You hear the door ringing tone on your telephone. The red LED flashes.



Lift the receiver. You are connected to the door intercom and you can talk to the visitor.



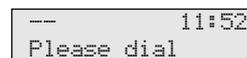
To open the door: press the "door" key. The door opener is activated for three seconds. To enable a check, this is displayed and you hear the acknowledgement tone.



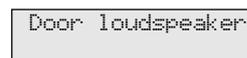
### Calling the door station/picking up a door call



Lift the receiver



Press the "door" key. The acknowledgement tone sounds. You are connected to the door intercom and you can speak with the visitor.



Replace the receiver. This ends the operation.



### Notes

You cannot call the door station if you have not configured a "door" function key on your system telephone.

You can only pick up a door call on your system telephone by pressing the "door" function key.

You must have configured a "door" function key to open the door. If necessary, repeat opening the door by pressing the "door" key again.

To prematurely cancel door opening: press the "esc" key.

## 2 Operation - System Telephones

### Communication your phone number

The telephone system communicates your phone number to an external ISDN subscriber even before the call is connected ("as-delivered" settings).

In ISDN, two variants of communication are at your disposal:

- **Communication of the caller's phone number to the called party**  
Your phone number is communicated to the external ISDN subscriber that you call.

- **Communication of the called party's to the caller**

Your phone number is communicated to the external ISDN subscriber who calls you.

You request communication of these numbers when ordering your ISDN connection. If you wish to be able to turn phone number communication on/off in individual cases, you must additionally order this.

#### Communication of your phone number to the called party on/off



Enter "set 82" to set up communication of your phone number to the called party. The current setting is marked.

```
No. -> Called
on: >1<  off: 0
```



"1": The phone number is communicated  
"0": The phone number is not communicated.  
Example: "0"

```
No. -> Called
on: 1  off: >0<
```



Conclude programming.

#### Communication of your phone number to callers on/off



Enter "set 83" to set up communication of your phone number to the caller. The current setting is marked.

```
No. -> Caller
on: >1<  off: 0
```



"1": The phone number is communicated  
"0": The phone number is not communicated  
Example: "0".

```
No. -> Caller
on: 1  off: >0<
```



Conclude programming.

#### Notes

On a **point-to-point connection**, your local code, your system number and your direct dialling in number are communicated (e.g. 030 987654 12).

On a **point-to-multipoint connection**, your local code and your multiple subscriber number (MSN) (e.g. 030 87654323) that has been assigned to you by programming are communicated.

To separate charges, you can specifically send a different MSN when dialling an external number. To seize an outside line, press the corresponding MSN/External key.

Communication of the phone number to the caller can only be programmed on the digital ISDN system telephones ST 25 of the AS 141 and AS 191 with the procedures of the analog and the ISDN terminals.

## Diversion from - diverting calls of other telephones

You can divert all calls from other telephones which may not be manned individually to your own telephone. The transferred telephone doesn't ring after that!

an transferred telephone. When you lift the receiver on your telephone, the special dial tone reminds you that diversion from (follow me) is on. A "!" is displayed additionally on both, yours and the transferred the system phone.

You may make telephone calls as usual on

Status request with `next next ...enter.`

### Diversion from – programming and switching

|   |   |                                    |
|---|---|------------------------------------|
|    | Activate the function with "set" and "Diversion from" key or "set 18".                    | Diversion from<br>Sourcenumber ___ |
|    | Enter phone number (source number) whose calls are to be diverted to your phone, e.g. 13. | Diversion 13/___<br>on! 1 off! >0< |
|   | "1": Diversion on<br>"0": Diversion off. Example "1"                                      | Diversion 13/___<br>on! >1< off! 0 |
|  | "set": end input.<br>Every call for telephone 13 now rings on your phone.                 | --- 11!52<br>--- -- -- -- --       |

### Notes

You can switch a "Diversion from" which has already been programmed on and off on your system telephone with the "Diversion from" key and "enter". The display shows:

```

13 permanent to
Telephone 11
enter
13 deactivated t
Telephone 11
    
```

You cannot divert calls back, wake up and appointment calls.

Calls can only be diverted once. Calls diverted to your are signaled on your

telephone even if you have switched on a 'Diversion to' on your telephone. A "Diversion from" a protected telephone to your telephone is possible.

Status messages:

The "!" symbol may stand for several settings in your telephone system. If necessary, you can display the settings by pressing `next` several times. After enter you can display all diversions concerning your internal phone number one after another with next. You can deactivate (switch off) the respective displayed diversion with clear.

## Diversion to - diverting calls to another telephone

### Diversions through the telephone system

You can divert all calls for any telephone whatever (source) to another internal user or via the second B channel to an external subscriber.

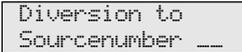
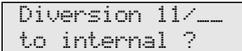
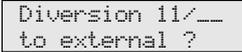
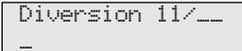
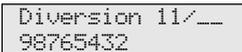
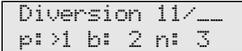
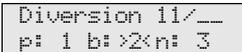
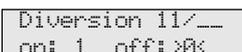
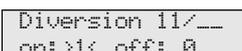
When diverting you can choose whether

- calls are to be diverted permanently to the external subscriber,
- a call is only to be diverted if your telephone is busy,
- a call is only to be diverted if it is not accepted (within 15 seconds).

You can also set up diversion to an external subscriber from an external telephone connection. Refer to the section of the operating instructions for analog telephones entitled "Diversion to another telephone" for details of how to do this.

Despite diversion, you can still make telephone calls from your telephone. When you lift the receiver on your telephone, the special dial tone reminds you that diversion from (follow me) is on. An "!" is displayed additionally on the diverted system telephone. Status request with   ... .

### Programming and switching diversion to

|   |   |   |
|---|---|---|
|   | Initiate the function by pressing "set" and the "diversion to" key or "set 17".   |   |
|  | Enter the phone number of the telephone (source number) whose calls you want to divert to another internal or external subscriber, e.g. 11. |  |
|  | With 'next' possibly to selection – diversion to external subscriber  |  |
|  | Confirm selection with 'enter'<br>Example: Diverting to an external subscriber  |  |
|  | Enter the external phone number to which you wish to divert calls.  |  |
|  | Press "enter" to confirm. Define the diversion mode   |  |
|  | "1": Permanent diversion Example: 2<br>"2": Diversion on <b>busy</b><br>"3": Diversion if <b>no</b> answer (after 15 seconds)               |  |
|  | Press "enter" to confirm  |  |
|  | "1": Diversion on<br>"0": Diversion off. Example "1"  |  |
|  | "set": end input. The ! symbol stands for active call diversion.  |  |

**Diversion to – switching with function key**

---

|   |   |                               |
|---|---|-------------------------------|
|  | Activate function with the "Diversion to" key. The current diversion status is displayed.           | 11 busy to<br>98765432        |
|  | Deactivate or activate the diversion as you wish with 'enter'.                                      | 11 deactivated t<br>98765432  |
|  | With "next" possibly activate or deactivate diversion of the 2 <sup>nd</sup> internal phone number. | 12 permanent to<br>Telefon 21 |
|  | Return to initial menu with "esc".  | -- 11:52<br>-- -- -- -- --    |

**Notes**

---

You cannot activate "diversion to an internal user"

- if you have previously set up "diversion from" on your telephone,
- if calls for your required diversion destination are already being diverted.

Diversions to a telephone that is set to do not disturb are not possible.

You cannot divert calls back, wake up and appointment calls.

For diversion to an external destination, an outside line must be free, the diverting user

must be the only one who is called and this user must be entitled to dial the external phone number.

Status messages:

The "!" symbol may stand for several settings in your telephone system. If necessary, you can display the settings by pressing  several times.

After pressing enter, you can display all diversions concerning your internal phone number one after the other with next. You can deactivate (switch off) the respective displayed diversion with clear.

## 2 Operation - System Telephones

**Diversions through the ISDN exchange:** you can only use the "call forwarding" feature after specially requesting it from your telephone company.

When you forward the calls of a point-to-point connection, you always forward the entire connection.

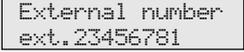
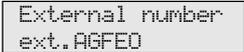
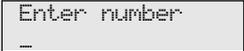
When using a point-to-multipoint connection, you can divert each single multiple subscriber number (MSN) to another destination. Using a "call forwarding" key, you can activate call forwarding to one single external phone number or you can successively activate call forwarding for several external phone numbers. You decide what to define when programming the call forwarding destinations.

You can also set ISDN call forwarding from an external telephone connection. Refer to the section of the operating instructions for analog terminals entitled "Diverting to..." for details of how to do this. You must have programmed a destination before activating call forwarding.

There are the following call forwarding variants:

- Permanent call forwarding - All calls are forwarded immediately.
- Call forwarding on busy - All calls are forwarded immediately if your connection is busy.
- Call forwarding if no answer - All calls are forwarded after 15 seconds if nobody answers.

### Programming a call forwarding destination

|   |  |  |
|---|--|--|
|  | By pressing "set" and the "ISDN call forwarding" key or "set 81", initiate programming of the call forwarding destination.                 |  <pre>ISDN call forw. next/position</pre>   |
|  | By pressing "next", select a position that has no entry for programming ISDN call forwarding.  |  <pre>No entry next/position 1</pre>        |
|  | Press "enter" to confirm. The first external phone number of your telephone or the name assigned to an external phone number is displayed. |  <pre>External number ext.23456781</pre>    |
|  | Press "next" to select an external phone number/name for which you wish to program ISDN call forwarding.                                   |  <pre>External number ext.AGFEO</pre>       |
|  | Press "enter" to confirm the selection   |  <pre>Enter number _</pre>                  |
|  | Enter the phone number of the diversion destination without "0" for outside line seizure   |  <pre>Enter number 98765432</pre>           |
|  | Press "enter" to confirm   |  <pre>ext.AGFEO p: &gt;1&lt;b: 2 n: 3</pre> |



Select the call forwarding variant, **permanent** = 1, on **busy** = 2, if **no answer** = 3 (after 15 seconds) e.g. "2".

```
ext. AGFEO
p: 1 b: >2<n: 3
```



"enter": program further call forwarding settings or  
"set": end programming. You can activate call forwarding with the "ISDN call forwarding".

```
--- 11:52
--- -- -- -- --
```

### Call forwarding on/off



Press the "ISDN call forwarding" key. The display shows which external phone number of your telephone system has been assigned activated (on) or deactivated (off) call forwarding to which phone number.

```
on 23456781
87654321
```



By pressing "next", the next programmed ISDN call forwarding setting, if applicable, is displayed.  
In the example, the external phone number with the name AGFEO is not forwarded (off). You can activate forwarding.

```
off AGFEO
98765432
```



By pressing "enter", you activate the displayed call forwarding.

```
Activation
Sent
```

You deactivate any activated call forwarding in the same way. Wait for the corresponding display (acknowledgement from the ISDN exchange). It appears after a delay of up to 60 seconds.

```
Deactivation
Sent
```



Return to the standard display by pressing "esc". The display shows the "!" symbol if ISDN call forwarding is activated.

```
--- 11:52
--- -- -- -- --
```

### Notes

You can only activate and deactivate call forwarding with an "ISDN call forwarding" function key.

already forwarded. If applicable, deactivate call forwarding.

You can only program a call forwarding destination if the affected connection is not

You can make outgoing external calls despite call forwarding. You hear the special dial tone of the ISDN exchange.

## 2 Operation - System Telephones

### Displaying and deleting connection costs

You can display the total counters and delete for the connection costs individually and delete them singly. When you delete a

total counter, you also delete the single counter of the user. The single counter registers the costs for the last call.

#### Resetting connection costs to zero (delete)

---



Note the display: If the costs code is requested after pressing 72, you must enter the code in 4 digits.

```
Costs of U11
      12.12DM
```



Enter the internal phone number directly, e.g. 23, or

```
Costs of U23
      9.72DM
```



Scroll to the display of the connection costs of the desired user with "next"

```
Costs of U23
      9.72DM
```



Delete the displayed connection costs

```
Costs of U23
deleted
```



Scroll with "next" if necessary to clear other connection costs, e.g. costs which were recorded under one of your external phone numbers

```
ext. 23456782
      7.20DM
```

costs of the S0 port (connection costs of your whole telephone system)

```
Costs of S0
      223.00DM
```

or  
all costs (all data sets)  
or

```
All data sets
      223.00DM
```



Exit function with "set"

#### Notes

---

The costs for the door call diversions externally are recorded under the internal phone number of the door (Txx).

## Printing connection costs

You can print the total connection costs of every user, every MSN, the door call diversions externally and your telephone system singly. Printing is done on the connected serial printer. Depending on the setting printing is with 24 characters per line or 80 characters per line.

The printout of the connection costs contains:

- date, time
- user number, door, MSN or S0 port
- total connection costs in units and amount (if you have entered a tariff units factor).

### Printing all totals of the connection costs

---

set 7 3

Note the display. If the cost code is requested after pressing 73, you must enter the code in four digits.

```
Print costs
User MSN S0 next
```

enter

Confirm with "enter" if you want a printout of all total connection costs (of all users, external phone numbers and S0 port).

```
Print costs
printed
```

set

"set": exit programming

### Printing certain total connection costs

---

set 7 3

Note the display: If the costs code is requested after pressing 73, you must set the code in 4 digits.

```
Print costs
User MSN S0 next
```

next

Scroll to the display of a certain user or the S0 port with "next".  
Order: all data sets, user, external phone number, total S0 port  
or

```
Print costs
Print? enter
```

□□□  
□□□

Enter internal phone number, e.g. 13

```
Print costs of
U13 ? enter
```

enter

Confirm with "enter", print total connection costs

```
Costs of U13
are printed
```

"enter": enter another user  
or

set

"set": exit programming

### Notes

---

The printout of the connection costs is only possible on the digital ISDN system telephones ST 25 of the AS 141 and AS 191

with the procedures of the analog and ISDN terminals.

## 2 Operation - System Telephones

### Connection costs - displaying your own costs

On your system telephone, you can query your connection costs if you have ordered the "communication of connection charges during and at the end of a connection" feature from the network carrier.

You can display:

- costs of the existing connection,
- the still available amount if a cost limit is entered
- costs of the last connection
- your total connection costs

#### Displaying connection costs during a connection



You are conducting an external telephone conversation.

```
0309876543
- - - - -
```

#### Cost display on your system telephone is on (set 281), without a cost limit

During an external call, the current costs of the call are displayed for up to 5 seconds in the first display line after every counting pulse. Otherwise, the external phone number is displayed. You can display the current costs of a call for up to 5 seconds at any time by pressing the "units" key. At the end of the connection, the costs of the last call are displayed for 20 seconds. The time then appears.

```
0.36DM
- - - - -
```



If no call costs are communicated, the duration of the call is displayed.

```
Cost of call
0.48DM
```

```
Cost of call
0:00:35 h
```

#### Cost display on your system telephone is on (set 281) with cost limit

During an external conversation, the current cost limit is displayed for up to 5 seconds in the first display line after every counting pulse. Otherwise, the external phone number is displayed. You can display the current cost limit for up to 5 seconds at any time by pressing the "units" key.

```
Limit DM 011,84
- - - - -
```



At the end of the connection, the remaining amount is displayed for 20 seconds. The time then appears.

```
Cost of call
Limit 011,72DM
```

**Connection costs - displaying the last connection/total**

---



The receiver is on the hook. Press the "units" key or "set 71". The costs of the last connection are displayed.

```
Last connection
      0,12DM
```



Press the "next" key.  
**The cost limit has been entered**, the remaining amount is displayed.

```
Cost of T11
Limit 011,72DM
```

**Without cost limit** - the total current connection costs (DM) are displayed.

```
Cost of T11
      123,28DM
```



"esc" or "set": End the display

**Notes**

---

No connection costs (DM) are displayed if no tariff units factor is programmed.

from the total of the telephone system's connection costs. The tariff units counter in the network carrier's exchange is always binding.

For technical reasons, the information on the network carrier's invoice may deviate

## Connection costs - Starting and stopping recording for certain users

You can start and also stop the recording of connection costs for certain users specifically. When starting you reset the total connection costs for this user. When stopping the total connection costs are printed on the connected printer and the

external call authorization of this user is set to "incoming calls only".

The number of billable connections is added to the printout.

### Starting costs recording

---

set 7 4

Note the display: If the cost code is requested after pressing 74, you must enter the code in 4 digits.

```
Start recording
User No. ? next
```

13

Enter the phone number of the desired user, e.g. 13 or select the next user with "next".

```
Record ext13
start ? enter
```

enter

Confirm with "enter", this user can then telephone with full external call authorization. Enter the next user or

```
Record ext13
started
```

set

"set": exit programming

### Stopping cost recording

---

set 7 5

Note the display: If the cost code is requested after pressing 75, the code must be entered in 4 digits.

```
Stop recording
User no ? next
```

13

Enter the phone number of the desired user, e.g. 13 or select the next user with "next".

```
Record ext13
stop ? enter
```

enter

Confirm with "enter", the total connection costs are printed. The external call authorization of the user is set to "incoming calls only". The full external call authorization is only released when the cost recording for the user has been started.

```
Record ext13
stopped
```

Enter the next user

or

set

"set": exit programming

### Notes

---

Starting and stopping the recording of connection costs can only be programmed on the digital ISDN system telephones ST 25

of the AS 141 and AS 191 with the procedures of the analog and the ISDN terminals.

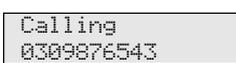
## Redial - dialling a phone number again

In the **extended redial memory**, the telephone system stores the last five external phone numbers that you have dialled. You can select one of these external phone numbers and you can dial by simply lifting the receiver.

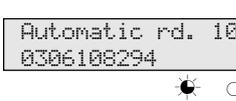
With the **automatic redial** feature, your system telephone makes 10 attempts to establish a connection to an external subscriber who is busy or who does not answer. If the external subscriber does not answer, the telephone is rung for 30 seconds. The system telephone then cancels

the connection attempt. After every attempt, the system telephone inserts a break of 90 seconds. If the other party answers, you must lift the receiver or press the loudspeaker key as otherwise the connection will be cleared after 10 seconds. You can dial any external phone number by means of the automatic redial function that is displayed when the receiver is on the hook. This is the case after dialling preparation, after pressing the "redial" key or after the "destination" key or "phonebook".

### Extended redial

|   |  |   |
|---|--|---|
|   | The receiver is on the hook. Press the "redial" key. The phone number dialled last is displayed. |   |
|    | By pressing the "redial" key, select one of the last 5 external phone numbers dialled.           |  |
|    | Lift the receiver. The displayed external phone number is dialled.                               |  |

### Automatic redial

|  |  |   |
|--|--|---|
|  e.g.  | While the receiver is on the hook, you press the "redial" key, for example. The phone number dialled last is displayed.  |  |
|   | Automatic redial begins when you press the "enter" key. The green LED flashes. On the display, you see how many times the system will still attempt to reach the other party. The loudspeaker is switched on if a connection is established. |  |
|  or    | If the other party answers: Lift the receiver or press the loudspeaker key as otherwise the connection will be cleared after 10 seconds.   |  |

### Notes

An external phone number that you have dialled by means of the "destination dialling" or "phonebook" function is not

stored in the redial memory. You can cancel automatic redial by pressing any key on your system telephone.

## 2 Operation - System Telephones

### Wake up call - recurring appointment

You can get your telephone to remind you of a regularly recurring appointment. Every day at the define time, the wake up tone sounds for a maximum of one minute with rising volume.

You can turn this function on or off at any time. The wake up call functions even if you have activated "do not disturb".

#### Storing a wake up call

---



Press the "set" key and the "wake up" key or "set 16" to initiate input of the wake up time.

```
Wake up time ?
_:_:__
```



Enter the time with 4 digits, e.g. 1315, and press the "enter" key. Clear any previous entry by pressing the shift key and "clear".

```
Wake up      13:15
on: 1      off: >0x
```



Press "1" and "set" to store the entered wake up time and to automatically switch on the wake up call. To enable a check, you see a bell in the display.

```
--          # 11:52
--  --  --  --  --
```

or



Press "0" and "set" if you do not want to activate the wake up time until later by pressing the "wake up" key. The entered wake up time is stored.

```
--          11:52
--  --  --  --  --
```

#### Wake up call on

---



Press the "wake up" key. The stored wake up time appears in the top display line. The wake up call is on.

```
13:15
Wake up on
```



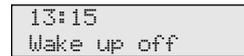
Press the "esc" key to show the standard display. To enable a check, you see a bell in the display.

```
--          # 11:52
--  --  --  --  --
```

**Wake up call off** \_\_\_\_\_



Press the "wake up" key. The stored wake up time appears in the top display line. The wake up call is off.



Press the "esc" key to show the standard display. The bell on the display is off.



**Wake up call display off** \_\_\_\_\_

The wake up tone sounds at the defined time. Your display shows the "wake up call" message.



To turn the display and the wake up call off: Press the "esc" key. The next wake up call takes place at the same time on the next day.



**Notes** \_\_\_\_\_

The wake up call only functions if you have activated it. If you temporarily do not wish to have a wake up call, for example, simply turn it off by pressing the "wake up" key.

If you are making a telephone call at the time as the wake up call, the wake up tone and the display will not appear until you have replaced the receiver.

When on, a wake up call will wake you up every day at the same time.

The wake up call will be signalled on your telephone even if you have set up "diversion to".

## Destination dialing - Storing and dialing phone numbers

Your system telephone can have up to 20 destination keys. You can press a destination key to dial a stored phone number (destination dialing)

Under a **destination key public** you store a phone number from the telephone system's phone book which you want to use particularly frequently and quickly.

Under a **Destination key private** you store a private, individual phone number. With every phone number you can store an additional text, e.g. a name. (For how to enter a name, see Notes.)

It may have been defined in the programming which function keys of your system telephone are destination keys. These may be function keys of the first or second level (see "Changing function key assignment2).

### Storing a phone number for destination key public



Activate the function with "set". Press the desired **destination key public**. (For the second level: first the 'Shift' key, then the destination key).

```
Select letter  
A ... Z
```



Select the desired phone number from the phone book (see "Phone book - Dialing phone numbers"). Depending on the set register, enter the initial letter or the short dialing number.

```
ANTON  
052123456
```



Confirm selection with "enter".

```
Destination  
dialing program
```



"set": end input

### Storing a phone number for destination key private



Activate the function with "set". Press the desired **destination key private**. (For the second level: first the "shift" key, then the destination key).

```
Enter phone no.  
-
```

An already stored number will be displayed.



Enter the phone number you wish to store under this destination key. If there is already a number here: delete with the "clear" key or overwrite the phone number.

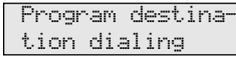
```
Enter phone no.  
056432165
```



Confirm with "enter".

```
Enter name  
-
```

**Storing a name**

|   |  |   |
|---|--|---|
|  | <p>Enter the name. Example: AD (1 = A, "next", 2 =D). If necessary, clear any existing name by pressing the "clear" key.</p>     |  |
|  | <p>Then press the "enter" key to confirm.</p>  |  |
|  | <p>To program further destination keys: Press "enter" key. Enter further phone numbers.</p>                                      |  |
|  | <p>Press "set" to terminate the operation. The entered phone number is stored specifically for the required destination key.</p> |  |

**Dialling a phone number with a destination key**

|   |   |   |
|---|---|---|
|  | <p>Lift the receiver and press the destination key. The stored telephone number is displayed and dialled. The outside line is seized automatically. When the other party answers, conduct the telephone conversation in the usual manner.</p> |  |
|---|---|---|

**Notes**

Enter the external telephone number with the "0" to seize an outside line. The outside line is seized automatically when you dial.

If a telephone number has already been entered when storing, you can clear the old number by pressing the "clear" key.

To keep the old number, press the "esc" key and select a different destination key.

To add to incomplete telephone numbers when dialling: Press the destination dialling key and then post-dial the additional digits.

## 2 Operation - System Telephones

### Entering a name on the digital keypad



Press digits 1...0, if necessary several times.

Example: 1 =A  
11 =B  
111 =C  
1111 =1



To switch to the next input field



To switch to the previous input field:  
character can be overwritten



To clear the character on the left of the  
flashing input field and all of them following  
on the right



To clear the entire entry.

## Programming from a PC

After installation, your telephone system is prepared to enable you to immediately conduct telephone calls in the usual fashion and to directly benefit from further advantages of the system.

However, the system allows diverse programming possibilities so you can configure it to suit your very own personal leads.

Without needing to have any knowledge of a programming language, you can program the telephone system from a PC connected via the RS 232 C interface or from a PC with an ISDN card connected via the internal S0 bus. Easily understandable menus guide you through the configuration program. The configuration software is on the included 3.5" diskettes.

### Minimum requirements for the PC

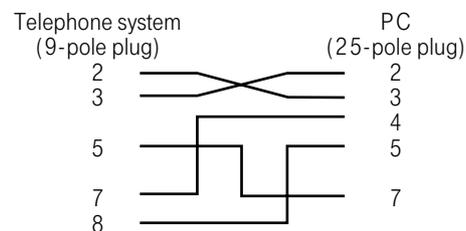
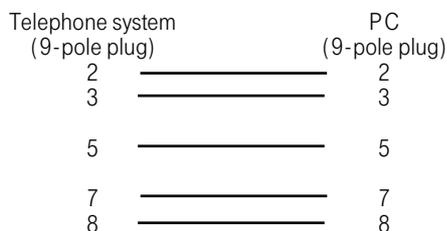
- IBM or compatible PC with a CPU 80386 or higher (recommended, Pentium)
- 3.5" diskette drive
- Hard disk
- VGA card
- Monochrome monitor
- Windows 98, Windows NT
- Windows 3.1, Windows 95

### Installing the configuration program

- Insert the 3.5" diskette 1 in drive A. The diskette contains the installation program, a text file with the name READ.ME containing additional information and the telephone system configuration program.
- Start Microsoft Windows.
- Select the "Run" command from the "Program Manager File Menu".
- Enter a:\setup and press the Enter key.
- When prompted to do so, enter the path and confirm it. All files required are now automatically copied from the diskette to your hard disk.

### Connecting a PC to configure the telephone system via the RS 232 interface

- Connect the telephone system's RS 232 interface (D-SUB-9 socket) to the PC's COM port. Use a 1:1 V.24 plug - socket extension lead for connection. It must not be longer than 3 m.
- Start the configuration program.
- Configure the telephone system. Your inputs are accepted interactively by menu prompting.
- After completing configuration, remove the cable from the telephone system



### 3 Programming

## Programming from the system telephone or a/b telephone

The programming instructions of the system telephone are described first for every programming step. These are followed by the programming instructions for the a/b telephone.

Programming of an a/b telephone always involves the steps:

Start programming mode, entry and exit programming mode.

First the programming instructions with the set procedure which you can only execute on the system telephone are described for every programming item. These are followed by the programming instructions with the \* -procedure which you can execute on the system telephone and on the a/b telephone.

### Notes on programming with set procedures on the system telephone —

Not all set procedures are possible on the digital ISDN system telephones ST 25 of the AS 141 and AS 191. There programming on the system telephones is done with the \* -procedures.

**Initiating programming:** the individual programming functions can be initiated in two ways:

- by pressing **set** and by entering a program number or
- initiate programming by pressing **set**, scroll down by pressing **next** or scroll up by pressing **next** and select by pressing **enter** (see programming tree).

Pay attention to the display. If the **setup code** is prompted, enter the 4-digit code (see "Protecting functions of the telephone system against unauthorised use").

The display may show what you are able to enter.

Defined vales are embraced in arrows, e.g.: 1 2>3 <4 5 6 7 (to set the tone ringing volume).

A flashing **cursor** marks an input location.

To move the cursor to the right: **next**

To move the cursor to the left: **next**

Any existing input can be overwritten or can be cleared by pressing **clear**.

**Confirming inputs:** **enter** (input is stored)  
**Accepting a displayed value without change:** **next**

**Clearing inputs:** **clear** (clear flashing input)  
**next clear** Clear specific input  
**next clear** Shift key clear (clear complete input)

**If you ever hear a beep (error tone),** you have pressed a key that is not allowed for the current operating step. Have a look at the display to find out which input is required and try again.

**Cancelling programming:** press **enter** several times (anything you have not confirmed by pressing **enter** will not be stored).

- Time out: The programming is aborted automatically if you do not press a key for 60 seconds (everything which you have not yet confirmed with **enter** is not saved).

**Ending programming:** **set** (all inputs are stored)

**If a call arrives while you are programming:**

Lift the receiver. Programming is cancelled.

- Everything you have already confirmed by pressing **enter** is stored.
- Everything you have not yet confirmed by pressing **enter** is not stored.

### Notes on programming with \* - procedures

Programming with the \*-procedure always covers the steps:  
Start programming mode, input and exit programming mode.

When programming, pay attention to the dial tones or dial pulses in the handset. Wait after entering every digit until the digit has been dialed. Only then will you hear the

acknowledge tone if your entry is valid or the error tone if your entry is invalid.  
Recommendation: Use a DTMF telephone (touch-tone dialing) for faster programming.

You can press the loudspeaker button instead of "Lift handset" or "Replace handset" when programming on the system telephone.

### Starting the programming mode

To be able to change settings you must first start the programming mode.



Enter setup code?

If you hear the acknowledge tone after \*705, no setup code is programmed in the telephone system. It is not necessary to enter the setup code.

If you hear the error tone, the last input is wrong. Start the input again from the beginning.

If you do not hear any tone after

\*705, a setup code is programmed in the telephone system. Enter the setup code in 4 digits. If the code is correct, you will hear the acknowledge tone. If the code is wrong, you will hear the error tone. replace the handset and start the whole input again from the beginning with the correct setup code.

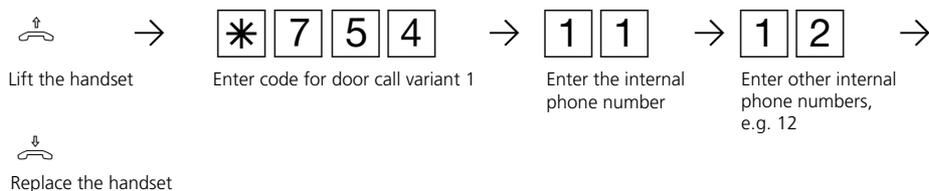
### Input example - Call distribution (door call variant 1)

After lifting the handset first enter a program code which always starts with the code \*7. Then enter one or more phone numbers (e.g. in a call distribution). All entries under a code number must be terminated by replacing the handset. If you have made a **mistake typing the entry**, replace the handset and start the

input again from the beginning.

You hear the error tone if you have entered an invalid code number or an invalid phone number.

If you want to **delete an entry**, simply enter the program code and replace the handset.



### 3 Programming

**Acknowledge tone or error tone** - If an input is invalid, you hear the error tone immediately. Replace the handset and start the entry again from the beginning. You will hear the acknowledge tone if all inputs have been clearly terminated after a programming code number and are valid.

If the length of an entry is variable, e.g. the length of an external phone number or number of users of a call distribution, you will not hear any tone. As a check you can terminate the entry with the **[R]** key and will then hear the acknowledge tone.

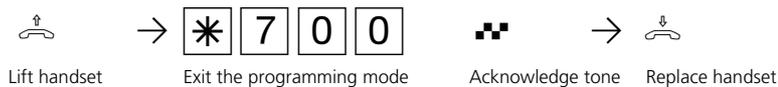
The message "done" appears in the system telephone display.

#### Exiting the programming mode

---

After you have made all the settings, you exit the programming mode.

At the same time you save the new settings. These are retained even in the event of a power failure.



#### Reinstating the as-delivered state

---

In the case of an unclear programming, you can reinstate the as-delivered state (delete memory).

Delete memory - Attention! All existing connections are cleared. All data are deleted.  
Waiting time approx. 2 minutes!

The programming mode must be started with **\*705!**



Continue programming or exit programming mode with **\*700!**

**As-delivered state (AS 140, AS 141, AS 190, AS 191)** \_\_\_\_\_

The followings settings are active in the **as-delivered state**:

- Line seizure: line seizure "0"
- Analog ports - internal phone numbers (decade 1 set) and terminal types
  - AS 190:** 11 to 18, telephone
  - AS 191:** 11 to 20, telephone
  - AS 140:** 11 to 14, telephone
  - AS 141:** 11 to 16, telephone
- External access: unlimited for all users
- Call variant 1 (day): on, no internal phone numbers entered, subscribers 11, 12 and 13 are called in the case of call
- Call variant 2 (night): off, no internal phone number entered
- Call forwarding internal: off
- Number of calls: 5
- Don't disturb: off for all terminals
- Knocking protection: off for terminals
- Transfer of phone numbers to the called party and the caller: on
- Music on Hold (MoH): internal on
- Door call variant 1 (day): on, no internal phone number entered, subscribers 11, 12 and 13 are called in the case of door call
- Door call variant 2 (night): off, Printout of dialed phone number: without
- Automatic dialing: off
- Printout of connection data set: off for all users
- no internal phone number entered: ohne
- Cost limit: no entry
- Own tariff units factor: 0,12 DM
- Base factor (network operator factor): 0, 12 DM
- Cleardown at cost limit: off
- Setup code: off
- Cost code: no entry
- Switch box code: no entry
- Least Cost Router (LCR): off, for all subscribers
- Busy on busy: off
- **AS 141, AS 191:** Transfer of "0" to dial from call list at internal S0 port: off

**AS 141, AS 191 with system telephone ST 25**

- Status display: off
- Cost display: off
- Display: German
- Call list: off

## **3** Programming

### **As -delivered state (AS 31 ST, AS 32)**

---

The followings settings are active in the **as-delivered state**:

- The telephone system is set for connection to a system port. You only have to enter the system phone number.
- The switches S400 and S401 (termination for the external S0 port) are closed, the 100 ohm termination resistors switched on.
- Analog ports - internal phone numbers (decade 1 set) and terminal types
  - AS 31 ST:** 11 to 18, telephones
  - AS 32:** 11 to 20, telephones
- External access: unlimited for all users
- Line seizure: line seizure "0"
- Call variant 1 (day): on, no internal phone number entered, subscribers 11, 12 and 13 are called in the case of a call
- Call variant 2 (night): off, no internal phone number entered
- Call forwarding internal: off, no internal phone number entered
- Number of calls: 5
- Don't disturb: off for all terminals
- Knocking protection: off for terminals
- Transfer of phone numbers to the called party and the caller: on
- Music on Hold (MoH): internal on
- Door call variant 1 (day): on, no internal phone number entered, subscribers 11, 12 and 13 are called in the case of a door call
- Door call variant 2 (night): off, no internal phone number entered
- Automatic dialing: off
- Printout of connection data set: off for all users
- Printout of dialed phone number: without
- Cost limit: no entry
- Own tariff units factor: 0,12 DM
- Base factor (network operator factor): 0, 12 DM
- Cleardown at cost limit: off
- Setup code: off
- Cost code: no entry
- Switch box code: no entry
- Least Cost Router (LCR): off, for all subscribers
- Busy on busy: off
- **AS 32:** Transfer of "0" to dial from call list at internal S0 port: off

#### **System telephones ST 20 and ST 25 (AS 32)**

- Status display: off
- Cost display: off
- Display: German
- Call list: off

## Determining what you want to program

The following tables aim to make it easier for you to make plans. The better you plan the definitions for your system, the greater the benefit for you and other users. The

filled in tables help you also to reinstate the desired programming in the event of a fault. It is best to fill in the tables with a pencil or to use copies.

### Determining the system features and phone numbers

#### System features

|  |          |              |   |              |   |
|--|----------|--------------|---|--------------|---|
| Own local code                             |          |              |   |              |   |
| First decade of the internal phone numbers | 1        | 2            | 3 | 4            | 5 |
| Music on Hold                              | none = 0 | internal = 1 |   | external = 2 |   |

#### External phone numbers – System phone numbers or multiple subscriber numbers (MSN) of the telephone system

| Extension | Connection type |     |         | External phone number<br>(without dialing code, max. 11 digits) | Name<br>(max. 11 digits) |
|-----------|-----------------|-----|---------|---|--------------------------|
|           | PTMP            | PTP | PTP-DDI |   |                          |
| 00        |                 |     |         |   |                          |
| 01        |                 |     |         |   |                          |
| 02        |                 |     |         |   |                          |
| 03        |                 |     |         |   |                          |
| 04        |                 |     |         |   |                          |
| 05        |                 |     |         |   |                          |
| 06        |                 |     |         |   |                          |
| 07        |                 |     |         |   |                          |
| 08        |                 |     |         |   |                          |
| 09        |                 |     |         |   |                          |
| 10        |                 |     |         |   |                          |
| 11        |                 |     |         |   |                          |
| 12        |                 |     |         |   |                          |
| 13        |                 |     |         |   |                          |
| 14        |                 |     |         |   |                          |
| 15        |                 |     |         |   |                          |

### Definitions for analog terminals

| Setting of the analog ports                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Switch box |
|---|---|---|---|---|---|---|---|---|------------|
| 1 <sup>st</sup> internal phone number (primary)   |   |   |   |   |   |   |   |   |            |
| 2 <sup>nd</sup> internal phone number (secondary) |   |   |   |   |   |   |   |   |            |
| Telephone name                                    |   |   |   |   |   |   |   |   |            |
| Telephone   |   |   |   |   |   |   |   |   |            |
| Answering machine                                 |   |   |   |   |   |   |   |   |            |
| Fax   |   |   |   |   |   |   |   |   |            |
| Modem   |   |   |   |   |   |   |   |   |            |
| Combiport   |   |   |   |   |   |   |   |   |            |
| Radio cell  |   |   |   |   |   |   |   |   |            |
| Audio module                                      |   |   |   |   |   |   |   |   |            |

### 3 Programming

#### Definitions for the internal S0 port (AS 141, AS 191, AS 32) \_\_\_\_\_

| Internal phone numbers at the internal S0 port | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--|---|---|---|---|---|---|---|---|
| Internal phone number                          |   |   |   |   |   |   |   |   |
| ISDN telephone                                 |   |   |   |   |   |   |   |   |
| ISDN answering machine                         |   |   |   |   |   |   |   |   |
| ISDN fax                                       |   |   |   |   |   |   |   |   |

#### Definition of the call variants (day, night, call forwarding) \_\_\_\_\_

##### Call variant 1 (day time service)

| Extension | External phone number/name | Internal phone number |  |  |  |  |  |
|-----------|----------------------------|-----------------------|--|--|--|--|--|
| 00        |                            |                       |  |  |  |  |  |
| 01        |                            |                       |  |  |  |  |  |
| 02        |                            |                       |  |  |  |  |  |
| 03        |                            |                       |  |  |  |  |  |
| 04        |                            |                       |  |  |  |  |  |
| 05        |                            |                       |  |  |  |  |  |
| 06        |                            |                       |  |  |  |  |  |
| 07        |                            |                       |  |  |  |  |  |
| 08        |                            |                       |  |  |  |  |  |
| 09        |                            |                       |  |  |  |  |  |
| 10        |                            |                       |  |  |  |  |  |
| 11        |                            |                       |  |  |  |  |  |
| 12        |                            |                       |  |  |  |  |  |
| 13        |                            |                       |  |  |  |  |  |
| 14        |                            |                       |  |  |  |  |  |
| 15        |                            |                       |  |  |  |  |  |

##### Call variant 2 (night service)

| Extension | External phone number/name | Internal phone number |  |  |  |  |  |
|-----------|----------------------------|-----------------------|--|--|--|--|--|
| 00        |                            |                       |  |  |  |  |  |
| 01        |                            |                       |  |  |  |  |  |
| 02        |                            |                       |  |  |  |  |  |
| 03        |                            |                       |  |  |  |  |  |
| 04        |                            |                       |  |  |  |  |  |
| 05        |                            |                       |  |  |  |  |  |
| 06        |                            |                       |  |  |  |  |  |
| 07        |                            |                       |  |  |  |  |  |
| 08        |                            |                       |  |  |  |  |  |
| 09        |                            |                       |  |  |  |  |  |
| 10        |                            |                       |  |  |  |  |  |
| 11        |                            |                       |  |  |  |  |  |
| 12        |                            |                       |  |  |  |  |  |
| 13        |                            |                       |  |  |  |  |  |
| 14        |                            |                       |  |  |  |  |  |
| 15        |                            |                       |  |  |  |  |  |

**Call variant 3 (call forwarding internal)**

| Extension | External phone number / name | Call forw. after n calls<br>n = 2 to 8 | Internal phone number |  |  |  |
|-----------|------------------------------|--|-----------------------|--|--|--|
|           |                              |  |                       |  |  |  |
| 00        |                              |  |                       |  |  |  |
| 01        |                              |  |                       |  |  |  |
| 02        |                              |  |                       |  |  |  |
| 03        |                              |  |                       |  |  |  |
| 04        |                              |  |                       |  |  |  |
| 05        |                              |  |                       |  |  |  |
| 06        |                              |  |                       |  |  |  |
| 07        |                              |  |                       |  |  |  |
| 08        |                              |  |                       |  |  |  |
| 09        |                              |  |                       |  |  |  |
| 10        |                              |  |                       |  |  |  |
| 11        |                              |  |                       |  |  |  |
| 12        |                              |  |                       |  |  |  |
| 13        |                              |  |                       |  |  |  |
| 14        |                              |  |                       |  |  |  |
| 15        |                              |  |                       |  |  |  |

**Definition of the door call variants (day, night circuit)**

**Door hands free unit**

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| Internal phone number (door phone number)                            |  |  |  |  |  |
| Door call variant 1 (day time service) - internal phone number rings |  |  |  |  |  |
| Door call variant 2 (night service) - internal phone number rings    |  |  |  |  |  |

**Determining the relay functions**

| Switching contacts (relays)         | R1 |  | R2 |  | R3 |  | R4 |  |
|-------------------------------------|----|--|----|--|----|--|----|--|
| Internal phone number of the relays |    |  |    |  |    |  |    |  |
| Function on/off                     |    |  |    |  |    |  |    |  |
| Function pulse 3s                   |    |  |    |  |    |  |    |  |

**Notes**

N. B.:If a port is programmed to connect an audio module, the relay R2 is automatically assigned to the audio module.  
If a door hands free unit (FTZ 123 D12) is

connected, the relays R1 and R2 (AS 190, AS 191), R3 and R4 (AS 31 ST, AS 32) are used to connect the door hands free unit and the door opener.

**Definition of the external accesses**

| External accesses          | 1 <sup>st</sup> internal phone number (primary) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| unrestricted               |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| national                   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| regional                   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| local                      |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| incoming (semi-restricted) |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| assigned to barred numbers |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**3** Programming

**Definition of the external access** \_\_\_\_\_

**Subscriber has access for external phone numbers**

| Extension | External phone number / name | 1 <sup>st</sup> Internal phone number (primary) |  |  |  |  |  |  |  |  |  |  |  |
|-----------|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| 00        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 01        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 02        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 03        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 04        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 05        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 06        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 07        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 08        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 09        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 10        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 11        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 12        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 13        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 14        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 15        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
|           | All external phone numbers   |   |  |  |  |  |  |  |  |  |  |  |  |

**Subscriber prefers the external phone numbers**

| Extension | External phone number / name | 1 <sup>st</sup> Internal phone number (primary) |  |  |  |  |  |  |  |  |  |  |  |
|-----------|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| 00        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 01        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 02        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 03        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 04        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 05        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 06        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 07        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 08        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 09        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 10        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 11        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 12        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 13        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 14        |                              |   |  |  |  |  |  |  |  |  |  |  |  |
| 15        |                              |   |  |  |  |  |  |  |  |  |  |  |  |

## Definition of the regional and barred numbers

### Barring device

|                                   |  |
|-----------------------------------|--|
| Regional number 1 (max. 6 digits) |  |
| Regional number 2 (max. 6 digits) |  |
| Regional number 3 (max. 6 digits) |  |
| Regional number 4 (max. 6 digits) |  |
| Regional number 5 (max. 6 digits) |  |
| Regional number 6 (max. 6 digits) |  |
| Regional number 7 (max. 6 digits) |  |
| Regional number 8 (max. 6 digits) |  |
| Regional number 9 (max. 6 digits) |  |
| Regional number 0 (max. 6 digits) |  |

|                                 |  |
|---------------------------------|--|
| Barred number 1 (max. 6 digits) |  |
| Barred number 2 (max. 6 digits) |  |
| Barred number 3 (max. 6 digits) |  |
| Barred number 4 (max. 6 digits) |  |
| Barred number 5 (max. 6 digits) |  |
| Barred number 6 (max. 6 digits) |  |
| Barred number 7 (max. 6 digits) |  |
| Barred number 8 (max. 6 digits) |  |
| Barred number 9 (max. 6 digits) |  |
| Barred number 0 (max. 6 digits) |  |

## Entering a name on the digital keypad

**1** .... **0**

Press digits 1...0, if necessary several times.

Example: 1 =A  
 11 =B  
 111 =C  
 1111 =1



To switch to the next input field



To switch to the previous input field: character can be overwritten



To clear the character on the left of the flashing input field and all of them following on the right



To clear the entire entry.

### 3 Programming

## Connection type/External phone numbers/Call variants

Program for the telephone system's basic access:

### 1. Connection type (S0 type)

- PTMP (Point To Multipoint)
- PTP (Point To Point)
- PTP-DDI (Point To Point - Direct Dialing In)
  - special, direct dialing of a point to point

### 2. External phone numbers

- external phone number
- name

### 3. Call variants (AVA)

- call variant 1 (day time service)
- call variant 2 (night service)
- call variant 3 (call forwarding internal)

### Connection type

The telephone system automatically recognises whether you are connected to a PTP or MSN. The connection type need only be entered if you want to set up a special direct dialing for the PTP (PTP-DDI) at an ISDN basic access.

### External phone numbers

Under a position (P00 to P15) enter:

- for PTMP a multiple subscriber number (MSN) without dialing code (prefix)
- for PTP a system trunk number without code and without direct dialing number "0"
- for PTP-DDI the system trunk number and a chosen extension number of according PTP access.

You can enter a name (text) for every external phone number which appears for a call in the system telephone display instead of the dialed external phone number.

### Call variants (AVA):

### Call variant/programming

You can define three call variants (call distributions) for every entered external phone number.

- Call variant 1/call variant 2
- If an external subscriber dials an external phone number of the telephone system, its call is signaled according to the presently activated call variant 1 or 2. One or more subscribers are called simultaneously which are defined in this call variant.

The call variants 1 and 2 can be switched at any time from every internal or external telephone (see "Switching call variant").

The telephone system calls for a call variant when dialing:

- a multiple subscriber number (MSN)
- the station phone number plus extension number "0" (Global Call)
- the system phone number plus special direct dialing (PTP-DDI)

In the as-delivered state the Global Call is the direct dialing number "0". The Global Call (max. 3 digits) can be set in the programming on the PC.

### - Call variant 3 (call forwarding internal)

- You can determine to which internal subscriber the call is forwarded when a call is not answered.
- For this case define after how many rings calls are to be forwarded. Calls are forwarded immediately if the subscriber or subscribers of an external phone number are busy.

Call variant 3 is only active if it is switched on. You can switch the AVA 3 on/off on the system telephone with    and on the a/b telephone with     /

Execution of functions is described overleaf.

**Entering the connection type: Enter connection type\***

|  |  |   |
|--|--|---|
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block; margin-right: 5px;">set</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block; margin-right: 5px;">9</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">1</div> | <p>Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.<br/>Display: No external phone number defined</p> | <pre>P00 no entry enter next esc</pre>                                    |
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">enter</div>   | <p>Display: An external phone number is already defined at position P00.</p> <p>With "enter" to selection of the connection type</p>                         | <pre>ext. 987654321 enter next esc</pre> <pre>connection type enter</pre> |
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">enter</div>   | <p>With "enter" to the display<br/>– PTMP (point-to-multipoint connection)</p>   | <pre>ext. 987654321 PTMP next</pre>                                       |
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">next</div>  | <p>With "next" possibly select connection type<br/>– PTP (point-to-point connection)</p>   | <pre>ext. 987654321 PTP next</pre>  |
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">next</div>  | <p>With "next"<br/>– PTP-DDI (special direct dialing in the point-to-point connection)</p>   | <pre>ext. 987654321 PTP-DDI next</pre>                                    |
| <div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block;">enter</div>   | <p>Confirm selection of the connection type with "enter".</p>  | <pre>ext. 987654321 enter next esc</pre>                                  |

"next": select next position  
or  
after "enter" with "next": to enter connection type, external phone number, call variants  
or  
"set": exit programming

\* Use -procedure on the ST 25 of AS 141, AS 191

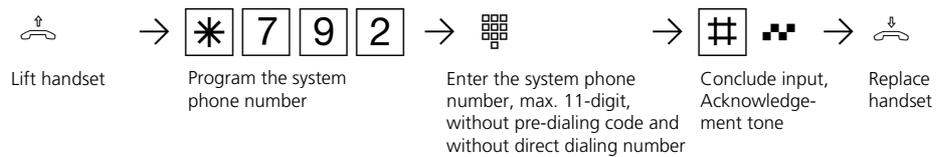
### 3 Programming

#### Entering external phone numbers\*

|   |  |  |
|---|--|--|
|    | <p>Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.<br/>         Display: No external phone number defined</p>  | <pre>P00 no entry enter next esc</pre>   |
|    | <p>Display: An external phone number is already defined at position P00.</p>   | <pre>ext. 987654321 enter next esc</pre> |
|    | <p>Select a free position (P00 to P15) with "next".</p>  | <pre>P01 no entry enter next esc</pre>   |
|   | <p>Confirm position selection with "enter" and to entry of connection type</p>   | <pre>Connection type enter next</pre>    |
|    | <p>Confirm with "enter" and select the connection type with "next"</p>   | <pre>P01 no entry PTP next</pre>         |
|    | <p>Confirm selected connection type with "enter"</p>   | <pre>Connection type enter next</pre>    |
|     | <p>With "next" and "enter" to entry of external phone number</p>   | <pre>External number enter next</pre>    |
|    | <p>Entry of external phone number, max. 11 digits<br/>         - multiple subscriber number (MSN) or system phone number without code, without direct dialing.<br/>         - Enter system phone number plus extension number (max. 3 digits) for connection type PTP-DDI.</p> | <pre>Enter number _</pre>                |
|    |  | <pre>Enter number 987654322_</pre>       |
|    | <p>With "enter" to enter the name, max. 11 characters</p>  | <pre>Enter name _</pre>                  |
|    | <p>Enter name for phone number (see "Entering subscriber name"). If someone calls you under the phone number, the name is displayed on your system telephone instead of the phone number.</p>  | <pre>Enter name AGFEO 1</pre>            |
|    | <p>Confirm with "enter"<br/>         "next": select next position or after "enter"<br/>         with "next": to enter connection type,<br/>         external phone number, call variants or<br/>         "set": exit programming.</p>  | <pre>P01 987654322 enter next esc</pre>  |

### System port - Entering the system phone number

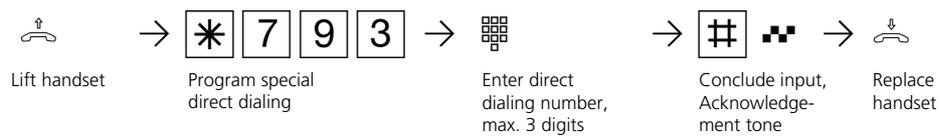
You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### System port - Entering special direct dialing (PTP-DDI)

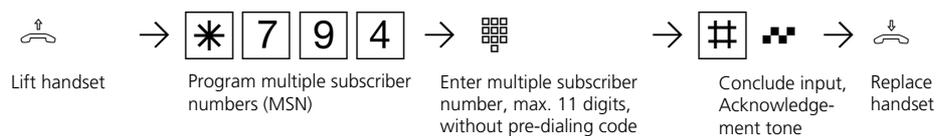
You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### Multiport - Entering the multiple subscriber number

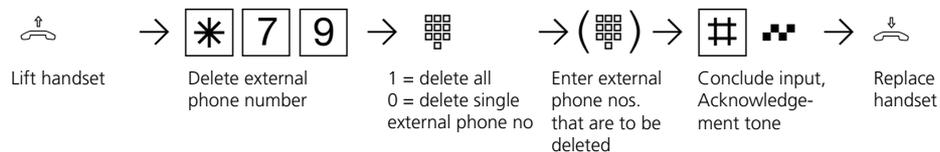
You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### Deleting external phone number (system phone number or multiple subscriber number)

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### 3 Programming

#### Entering call variants\*

|   |  |   |
|---|--|---|
|    | <p>Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.</p> | <pre>ext.987654321 enter next esc</pre>   |
|    | <p>Select external phone number with "next" to define the call variants for it</p>                             | <pre>ext. 987654322 enter next esc</pre>  |
|    | <p>Confirm selected external phone number with "enter"</p>   | <pre>Connection type input next</pre>     |
|    | <p>With "next" to call variants</p>  | <pre>Call variant input next</pre>        |
|    | <p>With "enter" to selection of call variants – call variant 1 (day time service)</p>                          | <pre>Call variant 1 Day service</pre>     |
|    | <p>With "next" – call variant 2 (night service)</p>  | <pre>Call variant 2 Night service</pre>   |
|    | <p>With "next" – call variant 3 (call forwarding)</p>  | <pre>Call variant 3 Call forwarding</pre> |
|    | <p>Confirm call variant selection with "enter"</p>   | <pre>CVA1 987654322 -- -- -- --</pre>     |
|    | <p>Enter internal phone numbers which are to be called under the external phone number</p>                     | <pre>CVA1 987654322 11 12 -- --</pre>     |
|    | <p>Confirm with "enter"</p>  | <pre>ext. 987654322 enter next</pre>      |

"next": select next position  
or  
after "enter" with "next" to entry of  
connection type, external phone number, call  
variants  
or  
"set": exit programming

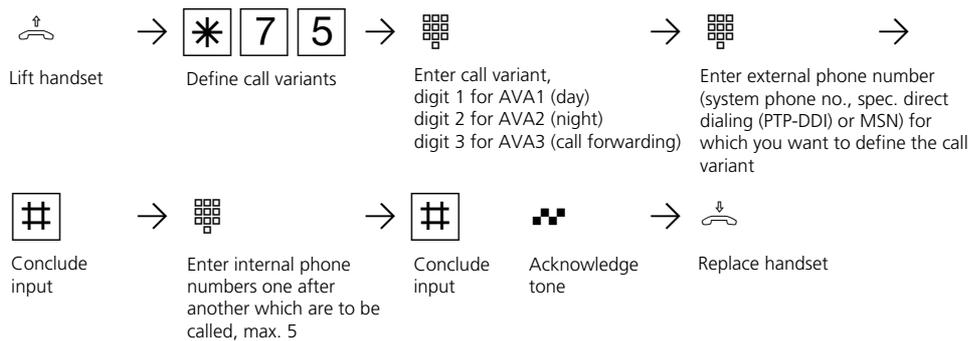
**Example: Call variant 3 (Call forwarding)**

|  |   |  |
|--|---|--|
|  |   |  |
|  | Confirm call variant selection with "enter"                                   |  |
|  | Enter number of rings after which call is to be forwarded, e.g. 3             |  |
|  | Confirm with "enter"  |  |
|  | Enter internal phone number to which the call is to be forwarded, e.g. 13, 14 |  |
|  | Confirm with "enter"  |  |

"next"; select next index  
 or  
 after "enter" with "next": to entry of connection type, external phone number, call variants  
 or  
 "set": exit programming

**Defining call variants**

You must start programming mode by entering \*705

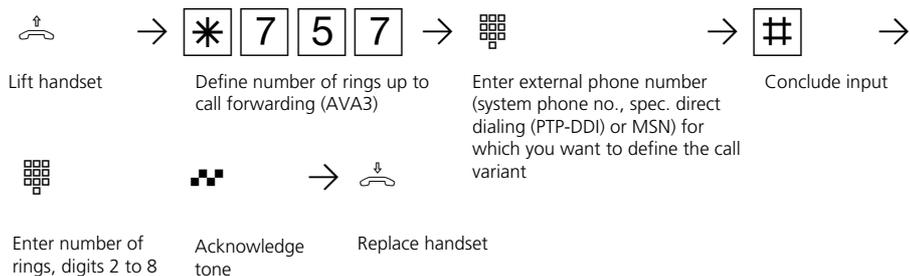


Continue programming or end programming mode by entering \*700

### 3 Programming

#### Defining of the number of rings before call forwarding

You must start programming mode by entering  \* 7 0 5  



Continue programming or end programming mode by entering  \* 7 0 0  

#### Notes

When programming the call variants, you can enter up to 5 internal phone numbers. If more than 5 internal subscribers are to be called, several internal subscribers must be grouped under the same internal phone number in a **subscriber group** (see "Programming the internal phone numbers..."). Enter the common internal phone number in the call variant.

If you want to use the telephone system's **switch box**, you have to enter the internal phone number of the switch box: Switch box/phone number as the only internal phone number in the call variant of an external phone number (MSN or PTP-DDI).

You can also enter the internal phone numbers of the relays (R1 to R4) in the call variants.

If an **audio module** is connected to the telephone system, relay R2 is occupied and a call variant may not be entered.

The **call variant 3** is only active if it is switched on. You can switch the AVA 3 on/off on the system telephone with  1 9 and on the a/b telephone or ISDN telephone with \* 5 4 1 / \* 5 4 0 .

## Door intercom – Door phone number/Door call variants (AS 190, AS 191, AS 31 ST, AS 32)

If a door intercom (door hands free unit ) is connected to the telephone system, you must define a door phone number from the internal phone number block. The door call number must be entered when you want to set up a door call diversion.

In door call variant 1 (day time service) and door call variant 2 (night service) you define which subscribers are called simultaneously when the bell push is pressed. The door call variant can be switched at any time from every internal or external telephone (see "Switching call variant").

### Defining door phone number and door call variants\*

|   |   |  |
|---|---|--|
|    | <p>Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.</p>  | <pre>Door phone number define</pre>            |
|   | <p>With "enter" to Enter the door call number</p>   | <pre>Door phone number enter</pre>             |
|    | <p>Enter door call number<br/>Under "set 972 – phone number offset" the internal phone number block is already defined by entering the 1<sup>st</sup> decade. You can freely select an internal phone number for the door.<br/>Example: Decade 1 is defaulted. You can select a door call number between 11 and 59, e.g. 19</p> | <pre>Door phone number enter 19</pre>          |
|    | <p>Confirm with "enter"</p>   | <pre>Door phone number define</pre>            |
|    | <p>With "next" to Enter door call variant 1 (day time service)</p>  | <pre>Door call variant1 day time service</pre> |
|    | <p>or<br/>Door call variant 2 (night service)</p>   | <pre>Door call variant2 night service</pre>    |
|    | <p>Confirm selection of the door call variant with "enter", e.g. door call variant 1</p>  | <pre>Door call variant1</pre>                  |
|    | <p>Enter internal phone number of the telephones which are to ring when the bell push is pressed, e.g. 11, 12.</p>  | <pre>Door call variant1 11 12</pre>            |
|    | <p>"set": exit programming</p>  |  |

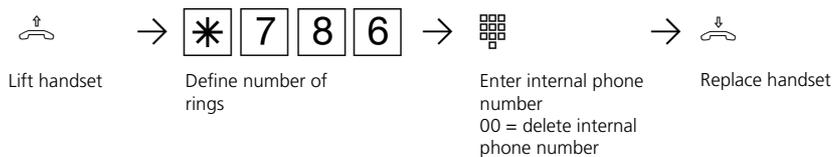
\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

#### Defining a door call number

---

You must start programming mode by entering  \* 7 0 5 

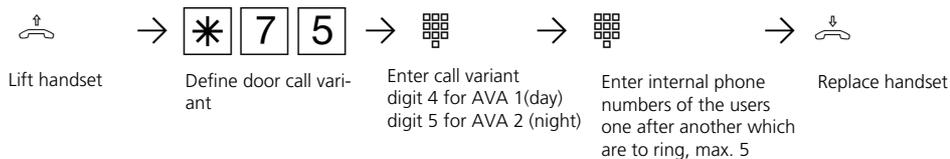


Continue programming or end programming mode by entering  \* 7 0 0 

#### Defining door call variants

---

You must start programming mode by entering  \* 7 0 5 



Continue programming or end programming mode by entering  \* 7 0 0 

#### Notes

---

The internal phone number block is already defined under \* 7 0 2 by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the port.  
Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

When programming the door call variants, you can enter up to 5 internal phone numbers. If more than 5 internal subscribers are to be called, several internal subscribers must be grouped under the same internal phone number in a subscriber group (see "Internal phone numbers for analog ports"). Enter the common internal phone number in the door call variant.

## Internal phone numbers for analog ports

You can assign two **internal phone numbers** (1st and 2nd internal phone number, primary and secondary internal phone number) from the phone number list (max. 49 internal phone numbers) to every port for analog terminals. You can form several user groups by assigning several users the same 1st or 2nd internal phone number.

Example: All positions at an order center are to be reachable under a direct dialing number but every single position should be also reachable under its individual phone number.

If you have assigned a 1st and 2nd internal phone number to an analog port, the settings which you have made under the 1st internal phone number are valid for this port.

### Defining internal phone numbers for analog ports\*

set 9 3

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
Internal numbers
Analog port _
```

⏏

Enter port number (1 to 8), e.g. 1, the display changes.

```
Analog port 1
_ _
```

⏏

Enter the 1st internal phone number and the 2nd internal phone number if necessary. Under "set 972 – phone number offset" the internal phone number block is already defined by entering the 1<sup>st</sup> decade. You can freely select an internal phone number for the port.

```
Analog port 1
11 21
```

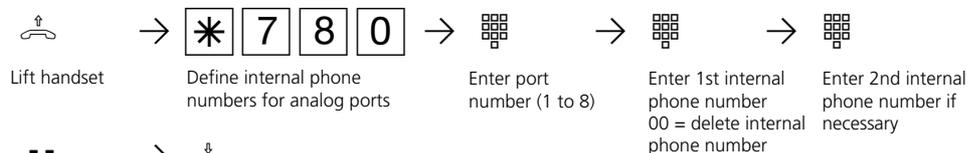
Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59, e.g. 11 and 21.

set

"set": exit programming

### Defining internal phone numbers for analog ports

You must start programming mode by entering  \*705 



Continue programming or end programming mode by entering  \*700 

\* Use -procedure on the ST 25 of AS 141, AS 191

### **3** Programming

#### **Notes**

---

The internal phone number block is already defined under **\*702** by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the port.

Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

If you do not want to define a 2nd internal phone number, you replace the handset already after entering the 1st internal phone number without acknowledge tone.

Delete internal phone number - Enter **00** instead of the internal phone number.

#### **Internal phone numbers**

---

| Decade | Phone number list | Number |
|--------|-------------------|--------|
| 1      | 11 to 59          | 49     |
| 2      | 21 to 69          | 49     |
| 3      | 31 to 79          | 49     |
| 4      | 41 to 89          | 49     |
| 5      | 51 to 99          | 49     |

## Terminal types for analog ports

You must program the terminal ports according to the connected **terminal type**. Certain features are possible or restricted depending on this programming.

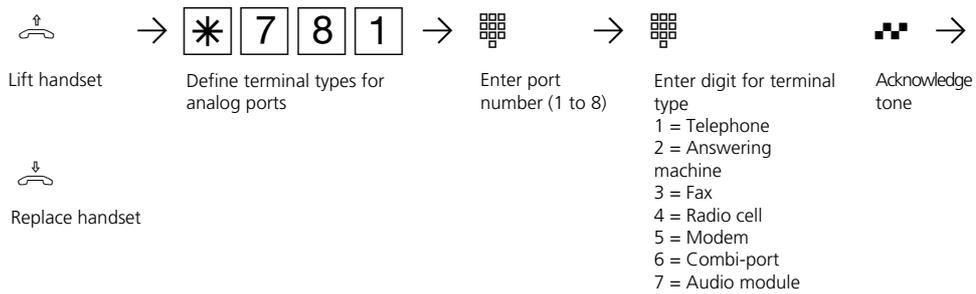
- **Telephone:** All functions are possible. You can switch on the knocking protection individually. A call with the service ID " Fax " is not signaled, independently of a call distribution.
  - **Answering machine:** The definition as an answering machine allows anyone to take over a call from this port. The knocking protection is also switched on for this port.
  - **Telefax:** This definition means that a call to this port does not generate a knocking tone if it is presently busy. The call cannot be picked up. In addition the appropriate service "Fax" is transmitted. Calls with the "Fax" service ID are signaled at this port, independently of a call distribution.
  - **Modem:** This definition means that a call to this port does not generate a knocking tone if the telephone is presently busy. The call cannot be picked up.
  - **Combi-device:** A combi-device is a telephone with integrated fax and answering machine. At the combi-port, a call is generally placed where it is to be signaled after the set call distribution, independently of the sent service ID.
- When seizing the line with "0" you use the "Telephony" service. In line seizure with "10" you use the "Telefax" service. The definition "Combi-device" means that a call to this port does not generate a knocking tone if the telephone is presently busy.
- **Radio cell:** A port defined as a radio cell is designed for connecting multi-environment and multilink-capable cordless phones. You can agree two different code calls with the users of a radio cell.. If the radio cell is called with the 1st internal phone number, all users of the radio cell hear the code call 1. Code call 2 is used under the 2nd internal phone number. Call back and call, diversion cannot be used in radio cells.
  - **Audio module:** A port defined as an audio module is designed for connecting an audio module or a loudspeaker system to the telephone system. You can make an announcement through the audio module or the loudspeaker system. With the definition "Audio module" relay 2 is automatically assigned to the audio module. The audio module or the loudspeaker system is switched through relay 2 when an announcement is made. The definition "Audio module" means that a call to this port does not generate a knocking tone.

### 3 Programming

#### Defining terminal types for analog ports

---

You must start programming mode by entering  \* 7 0 5  



Continue programming or end programming mode by entering  \* 7 0 0  

#### Notes

---

You can only define one port as the audio module!

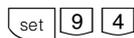
## Programming the internal phone numbers and terminal types for the internal S0 port (AS 141, AS 191, AS 32)

To enable the ISDN terminals to be reached specifically at the S0 port, you have to assign the internal S0 port internal phone numbers from the phone number list. The max. 8 internal phone numbers for the internal S0 port are so to speak the multiple subscriber numbers under which the ISDN terminals can be reached at the internal S0 port.

You must enter the internal phone numbers (MSN) at the ISDN terminals.

At the internal S0 port, only two internal phone numbers can be called simultaneously. If several ISDN terminals are to be called, you must assign these ISDN terminals the same internal phone numbers (group formation).

### Defining internal phone numbers for the internal S0 port \*



Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.



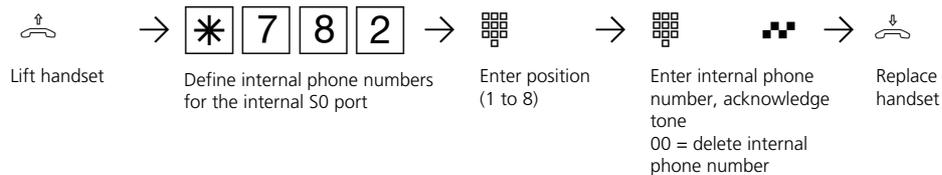
Enter the internal phone number. Decade 1 of your internal phone number block is already defined under "set972". You can now dial internal phone numbers in this and the following decade. Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.



Exit programming

### Defining internal phone numbers for the internal S0 port

You must start programming mode by entering \*705



Continue programming or end programming mode by entering \*700

### Notes

The internal phone number block is already defined under \*702 by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the position.

Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

Delete internal phone number - Enter 00 instead of the internal phone number.

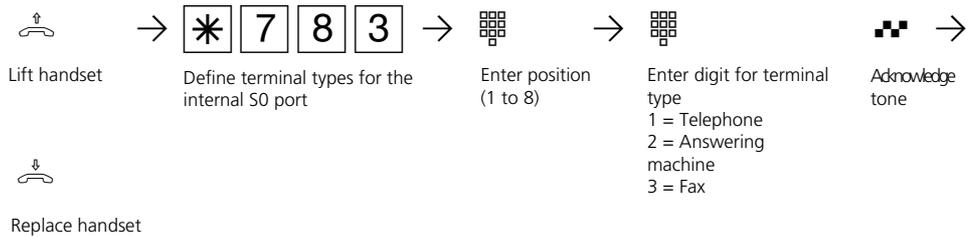
\* Use \* procedure on the ST 25 of AS 141, AS 191

### 3 Programming

#### Defining terminal types for the internal S0 port

---

You must start programming mode by entering  \* 7 0 5  



Continue programming or end programming mode by entering  \* 7 0 0  

#### Notes

---

A call of an ISDN answering machine can be taken by any telephone.

An ISDN PC fax card is called independently of the entry in a call variant. if an incoming

fax has a fax ID.

You can also use a PC with ISDN card for the services answering machine/fax and enter the phone numbers set up in the PC software.

## Relays (AS 190, AS 191, AS 31 ST, AS 32)

AS 190, AS 191: 2 relays (R1, R2)

AS 31 ST, AS 32: 4 relays (R1, R2, R3, R4)

You can make diverse use of the potential-free relay contacts. Examples:

- activating a door bell (e.g. door gong),
- central bell (signaling an external call)
- second bell (signaling a call for an internal user),
- switching contact,
- pulse contact (e.g. for an additional door opener).

By programming you determine for each relay whether it is to operate as a pulse relay (3 seconds on) or as an on/off relay.

You can assign two internal phone numbers from the phone number list like any terminal.

You can control the internal phone numbers from any telephone. Externally you dial the switch box of the telephone system to do this. After entering a code you can switch the relays with code numbers.

### N. B. :

If a port is programmed for connecting an audio module, the relay R2 is assigned to the audio module.

If a door handsfree unit (FTZ 123 D12) is connected, the relays R1 and R2 (AS 190, AS 191) or relays R3 and R4 (AS 31 ST, AS 32) are used for connecting the door handsfree unit and the door opener.

Do not determine internal phone numbers for this relay.

### Determining the function of the relay\*

set 9 5

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
Relay _
program
```

□□  
□□

Enter relay that you want to program, e.g. relay 2. You must make certain settings for every relay function (see table).

```
Relay 2
-- --
```

□□  
□□

Determine internal phone numbers, e.g. 28

```
Relay 2
28 --
```

enter

Confirm with "enter". The display changes

```
Relay 2 28/--
e/a: 1 3s: >0<
```

□□  
□□

Selection: Example "1"  
- 1: switching relay **e/a** (on/off) or  
- 0: pulse relay **3 s** (3 seconds on)

```
Relay 2 28/--
e/a: >1< 3s: 0
```

enter

Confirm the programming with "enter"

```
Switching relays
define
```

"enter": Enter other relay to determine its function  
or

set

"set": exit programming

\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

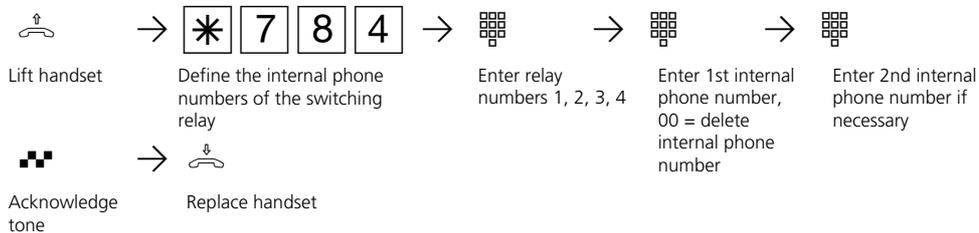
#### Notes

| Function                | Internal phone number           | on/off        | Pulse relay               |
|-------------------------|---------------------------------|---------------|---------------------------|
| Door bell               | any, entry in door call variant | 3 s door call | 1 s door call (door gong) |
| Central bell            | any, entry in call variant      | o             | o                         |
| Second bell             | like internal user              | o             | o                         |
| Switching contact       | none                            | x             | -                         |
| Pulse relay             | none                            | -             | x                         |
| Audio module (relay R2) | none                            | x             | -                         |

o = any  
x = setting

#### Defining internal phone numbers of the switching relays

You must start programming mode by entering  \*705 



Continue programming or end programming mode by entering  \*700 

#### Notes

The internal phone number block is already defined under \*702 by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the position.

Example: decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

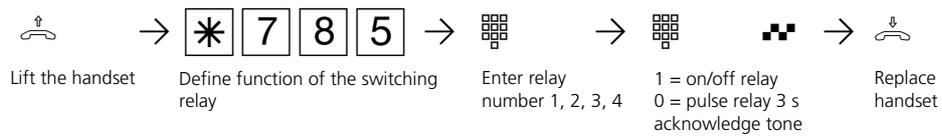
If you do not want to define a 2nd internal phone number, replace the handset after entering the 1st internal phone number without waiting for the acknowledge tone.

**Delete the internal phone number -**  
Enter 00 instead of the internal phone number.

### Defining function of the switching relay

---

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### Notes

---

An external power supply is necessary for activating a door, central or second bell and an additional door opener.

Note the load capacity of the relay contacts:  
30 VDC/1 A, 125 VAC/500 mA

### 3 Programming

## External access / Barred numbers

Normally every user can telephone all over the world.

However, you can define for every telephone how far it can be used for telephoning:

- 1 unlimited (non-restricted)
- 2 national
- 3 regional (the regional numbers must be entered additionally)

- 4 local calls
- 5 answer incoming calls only (semi-restricted)

Irrespective of the external access 1 to 4 you can additionally define for every subscriber whether or not he can dial barred numbers (defined under "Barred numbers").

### Defining external access/Assigning barred numbers\*

set 9 6 1

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
External access  
for ext _ _
```

ⓂⓂⓂⓂ

Enter user for which you want to define the external access, e.g. user 12. The current authorization of the user is displayed.

```
access 12  
1>2<3 4 5
```

ⓂⓂⓂⓂ

Enter the external authorization for this telephone (1 to 5, see table above), e.g. 1 (unrestricted)

```
access 12  
>1<2 3 4 5
```

enter

With "enter" to Assignment of barred numbers

```
Barred number  
on: 1 off: >0<
```

ⓂⓂⓂⓂ

"1": on – the subscriber cannot dial the barred numbers. Example: "1"  
"0": off – the subscriber can dial the barred numbers.

```
Barred number  
on: >1< off: 0
```

enter

Enter other telephone to determine its external call authorization  
or

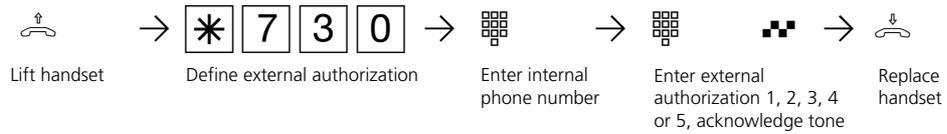
```
External access  
define
```

set

"set": exit programming (the entered authorization is effective)

### Programming external access

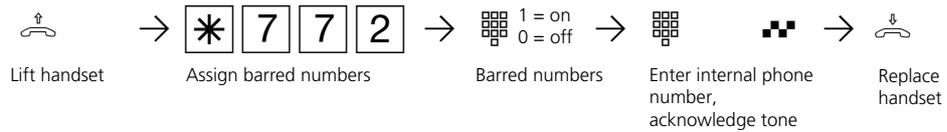
You must start programming mode by entering  \*705 



Continue programming or end programming mode by entering  \*700 

### Assigning barred numbers

You must start programming mode by entering  \*705 



Continue programming or end programming mode by entering  \*700 

### Notes

As-delivered state: Authorization 1 (unrestricted) for all users. The phone numbers from the phone book can be dialed by all users irrespectively of the defined authorization.

Phone numbers from the phone book which are also defined as barred numbers cannot be dialed by subscribers with the "Barred numbers on" feature.

### 3 Programming

## External access

You define for every subscriber with which external phone number(s) of the telephone system he can set up an outgoing external connection. The costs are registered under this external phone number which is communicated to the called party.

You define the access for one or more external phone numbers of the telephone system for every subscriber:

**preferred** – this external phone number is communicated automatically on seizing the outside line or preferred with "0"

**non-restricted** – this external phone number can be selected for outside line seizure by the subscriber. On the system telephone by pressing the "MSN/External key" or on the analog telephone by entering \*00 and the external phone number.

If the subscriber has access to several external phone numbers, the first assigned external phone number is communicated at outside line seizure or with "0".

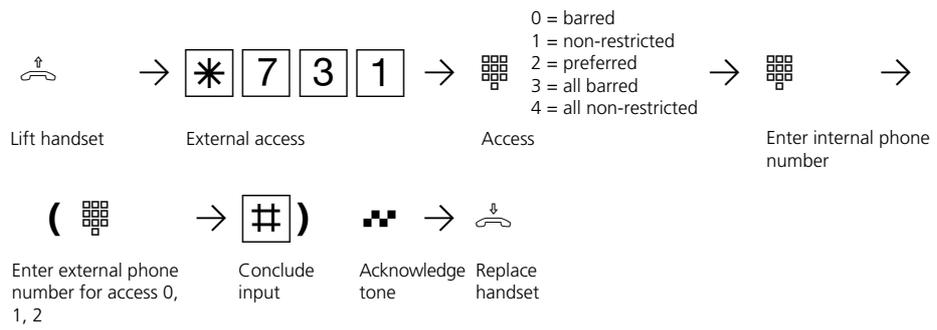
**barred** – this external phone number is barred for the subscriber.

### Defining access for external phone number(s) outgoing\*

|   |  |                              |
|---|--|------------------------------|
| set 9 6 2   | Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.  | External access for ext __   |
|  | Enter the user for which you want to define the external access, e.g. user 12. The current assignment of the user to an external phone number is displayed (with name if necessary). | 12 assigned to ext. AGFEO    |
| next  | With "next" possibly Select other external phone number  | 12 assigned to ext. AGFEO 1  |
|  | Confirm with "enter" and to selection of the access  | 12: 987654322 preferred      |
| next  | With "next" possibly Select other access   | 12: 987654322 non-restricted |
| next  | "next"   | 12: 987654322 barred         |
| enter   | Confirm selection with "enter", define the access for another external phone number for subscriber 12  | 12 assigned to ext. AGFEO 1  |
| set   | or<br>"set": exit programming  |                              |

### Defining access for outgoing external phone number/s

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### 3 Programming

## Local network code

Enter your local network code. It is then no longer necessary to enter the local network code when you store short dialing

destinations in your local network. When the phone number is transferred the local network code is added automatically.

### Enter the local network code\*



Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.



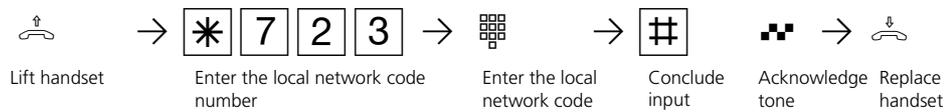
Enter the local network code, e.g. 030



"set": exit programming

### Enter the local network code

You must start programming mode by entering \*705



Continue programming or end programming mode by entering \*700

## Internal phone number offset

A maximum of 49 internal phone numbers are available in the telephone system. You define the 1<sup>st</sup> decade with which the internal phone numbers begin.

Define the decade (1 to 5) with which the internal phone number must begin.

Examples: Phone number block according to network operator - 10 to 29.

Determine decade 1. You can assign the internal phone numbers 11 to 59 freely to every terminal, the relay, the switch box and the door hands free unit (door).

Phone number block 80 to 99. Determine decade 5. Internal phone numbers 81 to 99.

N. B.! At the **system port** of the telephone system, your internal phone numbers (direct dialing phone numbers) must be in the phone number block which the network operator has assigned for your system port.

### 1. Defining the 1<sup>st</sup> decade of the internal phone numbers\*



Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
Number offset
decade 1
```



Enter decade (1 to 5), e.g. 2.

```
Number offset
decade 2
```

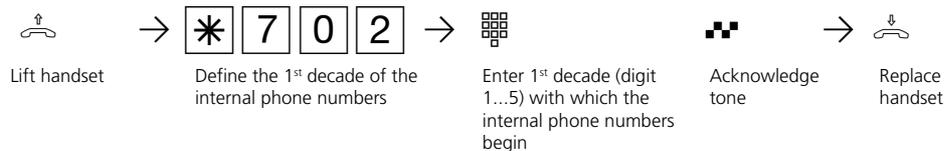


"set": exit programming

You can assign the internal phone numbers 21 to 69 freely to every terminal. Internal phone numbers, e.g. 11 to 59, already assigned to the terminals are automatically set to 21 to 69 in all entries.

### 1. Defining the 1<sup>st</sup> decade of the internal phone numbers

You must start programming mode by entering \*705



Continue programming or end programming mode by entering \*700

### Internal phone numbers

| Decade | Phone number list | Number |
|--------|-------------------|--------|
| 1      | 11 to 59          | 49     |
| 2      | 21 to 69          | 49     |
| 3      | 31 to 79          | 49     |
| 4      | 41 to 89          | 49     |
| 5      | 51 to 99          | 49     |

\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

## Music on Hold (MoH)

Determine whether the held user is to hear music during refer back and handover.

music or information can be played by a audio unit (CD player or cassette player) connected to the telephone system.

If you select the internal music on hold, you will hear a sequence of 8 melodies.  
If you select the external music on hold

N. B.! The played melodies must not violate the rights of third parties (GEMA-free).

### Determine music on hold (MoH)\*

set 9 7 3

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
Music on hold
n: >0< I: 1 E: 2
```



Determine:  
- 0 = no play  
- 1 = Internal music on hold, 8 melodies are played on after another  
- 2 = External music on hold, example: 1

```
Music on hold
n: 0 I: >1< E: 2
```

set

"set": exit programming

You must start programming mode by entering \* 7 0 5

### Determine music on hold (MoH)

You must start programming mode by entering \* 7 0 5



\* 7 2



Lift handset

Determine music on hold

Enter digit  
0 = no MoH  
1 = internal MoH  
2 = external MoH

Acknowledge tone

Replace handset

Continue programming or end programming mode by entering \* 7 0 0

### Notes

Set the volume of the external music on hold on the audio unit. For setting or checking set up an external connection to an internal user of the telephone system. The external connection is held if the internal user

presses the refer back key "R" or the "Brokering" key. You hear the music on hold and can set the volume accordingly. You cannot adjust the volume of the internal music on hold.

## Switch box – Internal phone number

You can dial the switch box of the telephone system from an external source and control the following functions of the telephone system:

- switch call variant on/off
- set up and switch on/off ISDN call forwarding
- perform room supervision
- switch relays on/off
- set up and switch diversions through the telephone system on/off

you must assign an internal phone number to it. At the PTP this internal phone number is the DDI of the switch box. At the PTMP you have to enter the switch box call number as a single internal call number in the call distribution (call variant) of an external phone number (MSN).

Please see the appropriate functions in chapter 1 (Operation – analog / ISDN terminals) for operation of the switch box.

In order to be able to use the switch box

### Defining internal phone numbers of the switch box\*

set 9 7 4

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.

```
Switching box
phone number_
```

⏏

Enter the switch box phone number. Under "set 972 – phone number offset" the internal phone number block is already defined by entering the 1st decade. You can freely select an internal phone number from the internal phone number block for the switch box.  
Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59, e.g. 29.

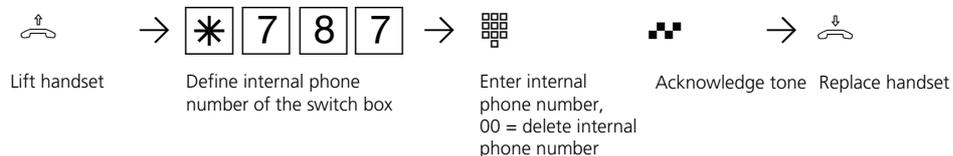
```
Switching box
phone number 29
```

set

"set": exit programming

### Defining internal phone number of the switch box

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

## Regional numbers (free range)

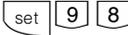
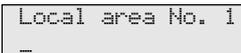
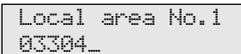
In the external access authorization you can define how far a user may telephone. If you have programmed "Regional" there, you must define up to 10 pre-dialing codes (max. 6 digits) here which belong to your regional area.

If for example you enter 022, the user with regional access authorization 3 may only dial the pre-dialing codes which begin with 022.

- He may dial , e.g.: 0221, 0228, 02241, 02228.

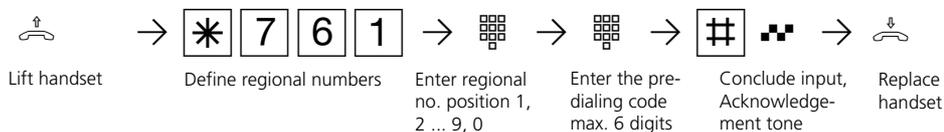
- He may not dial, e.g. 0211, 0231, 0288.

### Entering regional numbers\*

|   |   |   |
|---|---|---|
|    | Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.   |    |
|    | Confirm with "enter"  |   |
|  | With "next" to the next regional area or enter position 1, 2, ... 9, 0 directly   |  |
|  | Enter the pre-dialing code with a max. 6 digits (it applies for all users with access 3), delete the presetting with "clear" or overwrite if necessary. |  |
|  | Confirm with "enter".<br>Enter the next regional number<br>You can enter up to 10 regional numbers<br>or  |  |
|  | Exit the programming.<br>The regional numbers are saved.  |   |

### Entering regional numbers

You must start programming mode by entering  \* 7 0 5  

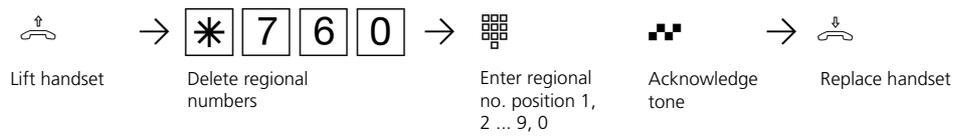


Continue programming or end programming mode by entering  \* 7 0 0  

### Deleting regional numbers

---

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

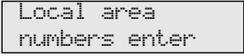
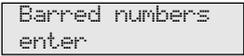
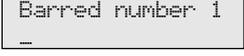
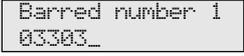
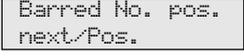
### 3 Programming

## Barred numbers

You can bar 10 phone number ranges. Phone numbers which begin with these numbers may not be dialed. The restriction

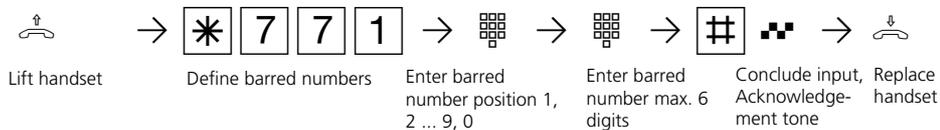
applies for all users of the telephone system, independently of the external call authorization.

### Entering barred numbers\*

|   |   |   |
|---|---|---|
|    | Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits. |    |
|    | With "next" key to enter the barred numbers   |    |
|    | Confirm with "enter"  |    |
|   | With "next" to the next barred number position or enter position 1, 2, ..., 9, 0 directly               |   |
|    | Enter barred numbers max. 6 digits, delete presetting with "clear" if necessary or overwrite.           |  |
|    | Confirm with "enter"<br>Enter next barred number<br>You can enter up to 10 barred numbers or            |  |
|    | Exit programming  |   |

### Entering barred numbers

You must start programming mode by entering  \*705 

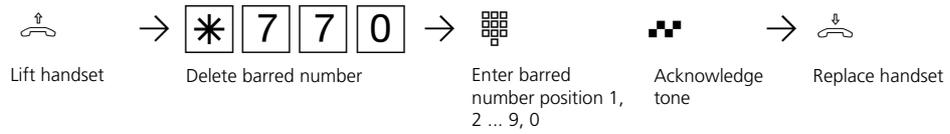


Continue programming or end programming mode by entering  \*700 

### Deleting barred numbers

---

You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### 3 Programming

## Protecting telephone system functions against unauthorized use (code number)

You can protect some of the functions of your telephone system against unauthorized use by codes.

**Setup code** - Normally every user can program.

You can bar all functions which are reached by   or   so that these functions can only be used after a 4 digit code has been entered.

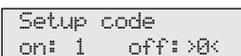
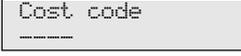
You can switch the setup code on or off and change it. In the as-delivered state the code is always 2850, these are the middle keys from top to bottom. The setup code is switched off.

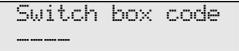
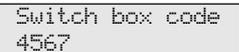
If you forget the code you have entered you cannot make a setup. In this case you have to consult your dealer. Only he can reset the code.

**Cost code** - Normally everyone can have the total connection costs of all users displayed or deleted. You can protect this function with a code: the call costs can only be deleted when you enter the 4 digit code. No cost code is defined in the as-delivered state.

**Switch box code** - You can dial the switch box of your telephone system externally, e.g. switch the relays or perform a room monitoring. You can protect the switch box against unauthorized access with the 4-digit switch box code. No switch box code is defined in the as-delivered state.

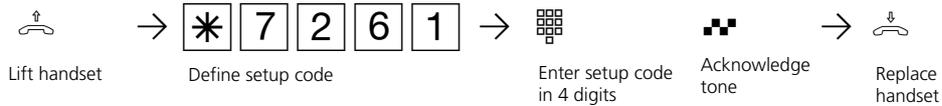
### Entering codes\*

|   |   |   |
|---|---|---|
|    | Start function. Note the display. If the setup code is requested after pressing 9, you must enter the code in 4 digits. |  |
|    | Confirm with "enter"  |  |
|     | Switch on: "1" Switch off: "0", confirm with "enter"  |  |
|    | "enter", the current <b>setup code</b> is displayed, delete with "clear" if necessary                                   |  |
|    | Enter the 4-digit setup code, e.g. 1234   |  |
|     | Confirm with "enter", scroll with "next"  |  |
|    | Confirm with "enter", the current code is displayed   |  |
|    | Enter the 4-digit <b>cost code</b> , e.g. 5678 or "clear" to delete the code.   |  |

|   |   |   |
|---|---|---|
|  | Confirm with "enter"  |  |
|  | Scroll with "next" to define the <b>switch box code</b>           |  |
|  | Confirm the selection with "enter", the current code is displayed |  |
|  | Enter 4-digit code, e.g. 4567 or e "clear" to delete the code     |  |
|  | "set": exit programming   |   |

### Defining the setup code

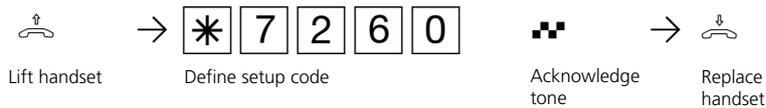
You must start programming mode by entering  \*705  



Continue programming or end programming mode by entering  \*700  

### Deleting the setup code

You must start programming mode by entering  \*705  



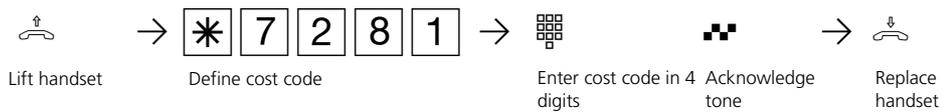
Continue programming or end programming mode by entering  \*700  

### 3 Programming

#### Defining the cost code

---

You must start programming mode by entering  \* 7 0 5  

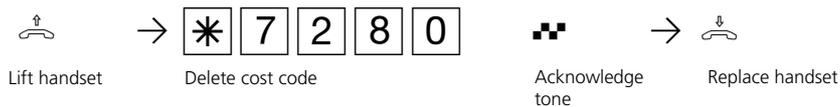


Continue programming or end programming mode by entering  \* 7 0 0  

#### Deleting the cost code

---

You must start programming mode by entering  \* 7 0 5  

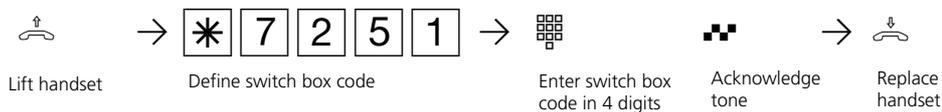


Continue programming or end programming mode by entering  \* 7 0 0  

#### Defining the switch box code

---

You must start programming mode by entering  \* 7 0 5  

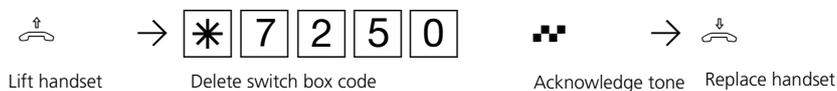


Continue programming or end programming mode by entering  \* 7 0 0  

#### Deleting the switch box code

---

You must start programming mode by entering  \* 7 0 5  



Continue programming or end programming mode by entering  \* 7 0 0  

### Start configuration with switched on setup code

Representation in these instructions:

set 9 6

Note the display: If the setup code is requested after pressing 9, you must enter the code in 4 digits.  
The procedure is shown in detail below.

```
External access
define
```

Detailed description of the same procedure:

set 9

Start function

```
Setup code
Digit: ____
```

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Enter the 4-digit setup code; it is set to 2580 in the as-delivered state  
(The number does not appear in the display)  
- If you make a typing error the following message appears:  
"Input error, enter set\_esc"  
"enter" to enter the code again.

```
System features
define
```

6

Enter the next program number to go to the desired program position  
e.g. 6 "external access"

```
External access
define
```

### 3 Programming

## Maintenance/testing

These functions must only be executed by a service technician.

- Display of the system type and of the software version number
- Setting the countrycode
- Service number define
- System restart (all user data is loaded anew into the RAM).

In this way, in certain circumstances an error can be remedied. All data stored by

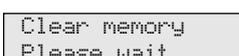
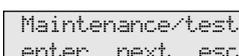
the user is left unchanged!

- Clearing the memory (**caution: all data is cleared**. Each system has the "as-delivered" settings.)

A system restart and clearing of the memories result in waiting times of around 2 minutes. The display also goes off briefly and programming is ended.

### Running the maintenance and test program\*

|   |   |                              |
|---|---|------------------------------|
|    | Initiate the function. Pay attention to the display: You must enter the 4-digit setup code if it is prompted after you enter the number 9.  | Version<br>display           |
|    | The software version number and the system type are displayed.  | AS40 V 2.0<br>esc            |
|    | Initiate the function.  | Version<br>display           |
|    | Scroll further. The countrycode can be modified by a service technician ("as-delivered" settings: Germany).   | Country<br>show              |
|    | Scroll further. Service number, which is able to remote control, configure or download new software after your permission (   . | Service number<br>define     |
|    | An already defined service number if necessary delete or change.  | Service number<br>define     |
|    | Enter the service number  | Service number<br>0987654321 |
|    | Confirm with "enter"  | Service number<br>define     |
|    | Scroll further to the "restart" menu  | Restart<br>enter next esc    |

|   |  |   |
|---|--|---|
|    | <p>"enter": system restart (reset)<br/>(All user data is loaded anew into the RAM and programming is ended automatically)<br/>or</p> |    |
|    | <p>"next": scroll further to the "clear memory" menu</p>   |    |
|    | <p>"enter": Initiate clearing of the memory (re-setting the system to the "as-delivered" state. A safety prompt follows.</p>         |    |
|    | <p>"enter": confirm clearing of the memories if you really wish to clear.</p>  |    |
|   | <p>The memories are cleared (approximately 2 minutes). (All data is cleared and programming is ended automatically.)</p>             |   |
|  | <p>or "esc": return to the start of the program</p>  |  |
|  | <p>"enter": return to the maintenance and test program<br/>"set": end programming</p>  |   |

**Resetting the telephone system (analog terminals / ISDN terminals)** —————

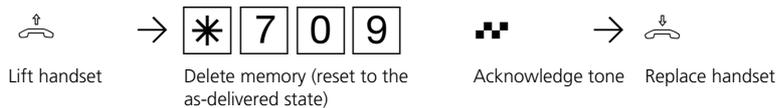
You must start programming mode by entering  \*705 



The reset is performed.

**Deleting the memory (analog terminals / ISDN terminals)** —————

You must start programming mode by entering  \*709 



The memory is deleted.

### 3 Programming

## Registering the system telephone ST 25 digital

Two digital system telephones can be connected to every internal ISDN bus (internal S0 bus) of an AGFEO ISDN telecommunications system.

the number repertoire of the telecommunications system is assigned to each digital telephone, just like any other terminal.

During configuration of the telecommunications system, a primary internal telephone number, and possibly a secondary internal telephone number, from

You must register the digital system telephone when you connect it to the telecommunications system for the first time.

### Registering internal phone numbers of the digital system telephone

This message appears briefly when you connect the digital system telephone ST 25 for the first time.

```
ST 25 digital
Registering
```

The assigned primary internal telephone numbers of the two digital system telephones, e.g. 13 and 14, are then displayed.

```
ST 25 digital
Slot 1 >13<14
```

next

Press "next" to select the next internal telephone number, e.g. >14<

```
ST 25 digital
Slot 1 13>14<
```

enter

Press "enter" to register the digital telephone under the marked internal telephone number. The display goes off briefly and then this message briefly appears.

```
ST 25 digital
Registering
```

The standard display is then shown. The digital system telephone is registered and is ready for operation.

```
-- 11:52
19.March 1998
```

### Notes

If it should be necessary to change the internal telephone number allocations, you can initiate the above registration function by entering `set 9 13 14`.

connect it to the same internal S0 bus (slot) later on again, you do not need to register it again.

If you unplug a registered digital system telephone from the internal S0 bus and

You must register the digital telephone again if you connect it to a different internal S0 bus.

## Remote setting - remote configuration

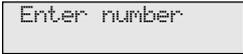
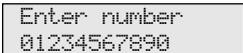
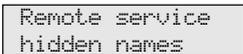
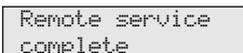
By means of "remote setting - remote configuration", your specialist dealer can program your telephone system according to your wishes, without having to travel to your house, and simply through your S0 basic access. In doing so, data protection is always guaranteed.

To allow remote maintenance, you should enter into the telephone system the "remote service number" your dealer uses or the "service number" your service center (under   ) uses to maintenance. Remote service is only possible if the en-

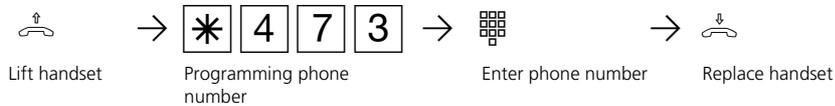
tered number agrees with the communicated phone number.

You also decide when and what is allowed to be programmed. For example, you decide whether the phone numbers in the phonebook can be read and written. If you have allowed remote service, your specialist dealer can read out, modify and write back your telephone system's programming. Remote service remains allowed for 8 hours, after which it is again automatically disabled. For remote service, you may have to end your programming.

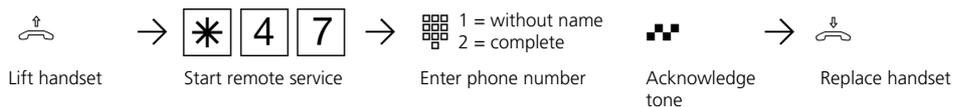
### Remote setting - remote configuration\*

|   |  |   |
|---|--|---|
|  | Initiate the function.   |  |
|  | Enter the remote service number (programming phone number)   |  |
|  | Press "enter" to confirm. Decide whether remote service is to be allowed without access to the central abbreviated dialling data |  |
|  | or<br>by pressing "next", whether remote service is to be allowed completely.  |  |
|  | Conclude selection by pressing "set". Remote service is allowed for 8 hours.   |   |

### Entering the programming phone number



### Allowing remote service



\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

## Downloading new software

The AGFEO ISDN telecommunications system can be updated to the latest software version without tampering with the telecommunications system hardware. You can download the new software into the telecommunications system via a PC connected to the telecommunications system's serial RS 232 C interface. If your telecom-

munications systems has an internal S0 bus, you can also download software via a PC featuring an ISDN card connected to the internal S0 bus.

Your specialist dealer can also remotely download the new software by ISDN into your telecommunications system.

### Minimum PC requirements

- IBM or compatible PC with a CPU 80386 or higher (recommended, Pentium)
- 3.5" diskette drive
- VGA card
- Monochrome monitor
- Windows 3.1, Windows 95, Windows 98,

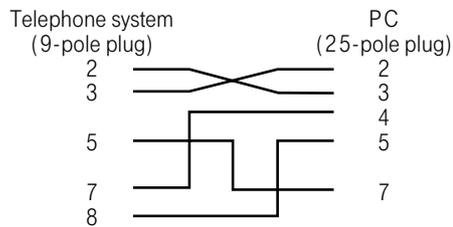
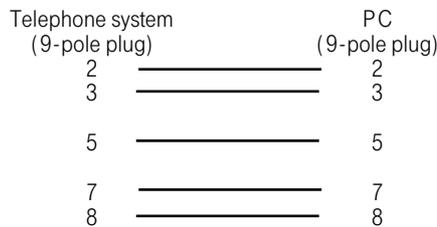
Windows NT

- the complete "TK-SOFT" software package from AGFEO must be installed on your PC (operating instructions - programming from a PC)

### Connecting a PC via the RS 232 C interface

- Connect the telecommunications system's RS 232 interface (D-SUB-9 socket) to the PC's COM port.  
For connection, use the PC cable belonging to the telecommunications system or

a one-to-one V.24 extension cable featuring a male and a female connector (mouse or joystick extension cable). It must not be more than 3 m long.



### Backing up the telecommunications system data

- Start the "TK-Set" configuration program on your PC
- Read all data out of the telecommunications system (F8).
- Save the data on the hard disk or on a diskette.
- Transfer, if necessary, the call data using the program "TK-Bill".

### Downloading new software

- Insert the included "Software Upgrade" diskette in drive A.
- Copy the ASxxx.exe file from the diskette into a directory (e.g. AGFEO) on your PC's hard disk. This file unpacks itself auto-

matically when you run it (by double clicking it). After unpacking, the directory (e.g. AGFEO) contains the files:

- ASxxx.abf
- ASxxx.bin

- Copy the unpacked files into the "Updates" subdirectory of the TK-Soft directory on your hard disk (by default: under "C:\TKSoft").
- Start the "TK-Flash" update program (by default: in the "C:\TKSoft" directory). Refer to the online help for details of how to operate "TK-Flash". The new software is now loaded into the telecommunications system. You cannot make any telephone calls during the load operation (approximately 5 minutes). You can observe the load process on the PC's monitor.
- End "TK-Flash".
- Clear the telecommunications system's memory from the system telephone or from an a/b telephone.

### Clearing the memory from a system telephone\*

|   |  |   |
|---|--|---|
|    | <p>Initiate the function. Pay attention to the display: if the setup code is prompted after you press the key 9, you must enter the code as four digits.</p> | <pre style="border: 1px solid black; padding: 2px;">Versionsnummer<br/>ansetzen</pre>         |
|     | <p>"next": moves you to the "clear memory" menu.</p>   | <pre style="border: 1px solid black; padding: 2px;">Speicher löschen<br/>enter next esc</pre> |
|    | <p>"enter": initiates clearing of the memory (the system is reset to the "as-delivered" settings); this is followed by a safety prompt.</p>                  | <pre style="border: 1px solid black; padding: 2px;">bestätigen<br/>enter esc</pre>            |
|    | <p>"enter": confirms clearing of the memory if you really wish to clear it.</p>  | <pre style="border: 1px solid black; padding: 2px;">Speicher löschen<br/>Bitte warten</pre>   |
| <p>The memories are cleared (approximately 2 minutes). (All data is deleted and programming is ended automatically.)</p>  |  | <pre style="border: 1px solid black; padding: 2px;">-- 00:00<br/>1. Januar 1998</pre>         |

### Deleting the memory (analog terminals / ISDN terminals)

The programming mode must be started with  \*705 

|   |   |   |   |   |  |
|---|---|---|---|---|--|
|  | → |     |  | → |  |
| Lift handset  |   | Delete memory (reset to the as-delivered state)   | Acknowledge tone  |   | Replace handset  |

The memory is deleted.

### Loading the telecommunications system's system data

Copy the stored system data back from the PC into the telecommunications system. The telecommunications system now operates with the new software

\* Use -procedure on the ST 25 of AS 141, AS 191

### 3 Programming

## Programming for advanced users

You can reach each program directly by pressing  and by entering the program number. You do not need to remember the program numbers. If you are experienced with programming trees, you can also navi-

gate in the programming tree by pressing the  and  keys.

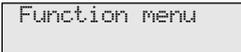
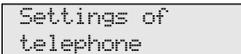
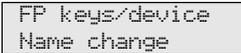
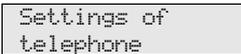
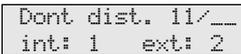
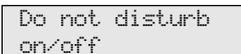
The programming tree is illustrated on the next pages.

### Rules for working with the programming tree

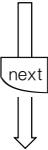
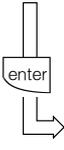
You initiate programming by pressing the  key. If necessary by pressing the  key several times, you can then reach the program point you are looking for.

this number, you can move directly to every program point, e.g. "do not disturb" has the number 12 (1 from the first level and 2 from the second) and you can move directly to "do not disturb" by pressing "set 12".

Every program has a program number. With

|   |  |   |
|---|--|---|
|   | Initiate programming                                       |   |
|    | Scroll to the next program point                           |  |
|    | Scroll to the next program point                           |  |
|    | Move back by one program point                             |  |
| or  |  |   |
|    | enter the required program number, e.g. 12, do not disturb |  |
|    | Move back by one level                                     |  |
|    | Cancel programming: Press "esc" several times              |  |
| or  |  |   |
|    | end programming "set"                                      |  |

## Programming tree

|   |   |   |
|---|---|---|
|   | <span style="border: 1px solid black; padding: 2px;">set</span>   |   |
| <b>1 Function</b>                       |   | 1 Call variant 2/door call variant 2 (night service, on/off)<br>2 Do not disturb ..... (internal/external on/off)<br>3 Telephone lock ..... (lock telephone, on/off)<br>4 Call waiting prevention ..... (on/off)<br>5 Appointment ..... (time/date and activate)<br>6 Wake up ..... (time, on/off)<br>7 Diversion to (to internal user/external subscriber, on/off)<br>8 Diversion from ..... (from internal user, on/off)<br>9 Call forwarding ..... (Call forwarding, call variant 3, on/off)<br>0 Room monitoring ..... (on/off)<br>★Autodial ..... (on/off)<br># Busy on busy ..... (MSN, on/off) |
|   |   |   |
| <b>2 System telephone settings</b>      |   | 1 Tone ringing volume ..... (set)<br>2 Tone ringing tone ..... (set)<br>3 Display contrast ..... (set)<br>4 Automatic microphone activ. . (on/off)<br>6 Headset volume ..... (set) - ST 25 only<br>5 Listening volume ..... (set)<br>7 Telephone code ..... (enter)<br>8 Cost display ..... (display of call charges/time)<br>9 Status display ..... (display of status/date)<br>0 Language changeover ..... (german/english)<br>★Call list ..... (on/off/with names only)<br># Direct access (automatic/ "0" outside line seizure) ..... (on/off)  |
| <b>3 Keys/name</b>                      |   | 1 Modify function key assignments .....<br>2 Modify user names .....  |
| <b>4 Destination dialling</b>           |   | Destination key ..... (phone number/name)   |
| <b>5 Abbreviated dialling/phonebook</b> |   | 1 Add phonebook entry ..... (phone number/name)<br>2 Modify phonebook entry ..... (phone number/name)<br>3 Clear phonebook entry .....<br>4 Enter emergency numbers...<br>5 Enter direct number .....<br>6 Enter autodial ..... (phone number)  |
| <b>7 Costs</b>                          |   | 1 Display own call costs<br>2 Display/delete call costs ..... (costs of user)<br>3 Print call costs ..... (print costs of user/MSN/S0)<br>4 Cost recording Start ..... (user)<br>5 Costs recording Stop ..... (user)  |
| <b>8 ISDN functions</b>                 |   | 1 ISDN call forwarding ..... ( permanently/on busy/if no answer)<br>2 Phone number communication to the called party ..... (on/off)<br>3 Phone number communication to the caller ..... (on/off)  |

### 3 Programming

#### 9 Set up telecommunications system

|   |   |
|---|---|
| 1 System features .....                                 | Connection type (PTMP, PTP, PTP-DDI)<br>External phone number, call variant 1 (day), call variant 2 (night)   |
| 2 Door .....  | 1 internal phone number<br>2 Door call variant 1 (day)<br>3 Door call variant 2 (night)   |
| 3 Internal phone numbers analoge ports .....            | (internal phone numbers, terminal type)   |
| 4 Internal phone numbers internal S0 ports (AS 32) .... | (internal phone numbers)  |
| 5 Switching contacts (relays) ..                        | (internal phone no./pulse, on/off)  |
| 6 External access .....                                 | 1 external call authorization<br>2 user/outgoing sent external phone number   |
| 7 Further functions .....                               | 1 Enter local network code<br>2 Phone no. offset (internal phone no. - enter decade for system port<br>3 Music on Hold (none/internal external)<br>4 Switching box phone number           |
| 8 Locking device .....                                  | 1 Regional numbers<br>2 Barred numbers  |
| * Code .....  | 1 Setup code (on/off, modify)<br>2 Cost code<br>3 Switching box code  |
| # Maintenance/test .....                                | 1 Software version number<br>2 National variant<br>3 Service number<br>4 System restart<br>5 Clear memories (restore "as-delivered" settings)<br>6 ST 25 digital registering (ST 25 only) |

#### \* Remote service

|                     |  |
|---------------------|--|
| Remote service..... | (remote service number/without names/complete) |
|---------------------|--|

#### # Version

|               |                       |
|---------------|-----------------------|
| Version ..... | (system type/version) |
|---------------|-----------------------|

#### Only AS 31 ST and AS 32

Use [\*]-procedure on the ST 25 of AS 141, AS 191

## Glossary

### Seizure

Seizure of an outside line (B channel) to call an external subscriber.

### Call variant

The internal phone numbers of the terminal that are rung in the event of an external call are defined in a call variant.

Different call variants can be defined for the day or the night service.

Call variant 1 (day time service) and call variant 2 (night service) can be switched over at any time from any telephone.

### Services

In ISDN, a service identifier (e.g. telephony, fax) is transmitted whenever an ISDN subscriber calls. A connection is then established to the caller if the called terminal has the same service identifier. This prevents incorrect connections between two different terminals (e.g. telephone/fax).

### Terminals

These are devices which you as an internal user may connect to the telephone system.

Analog devices - telephones, system telephones, answering machines, fax machines, combined units (telephone, fax and possibly answering machine in one unit), modem.

ISDN terminals - ISDN telephones and ISDN cards in a PC.

### External

Telephone calls in a telecommunications system are distinguished as external and internal calls. External calls are local, long-distance or international calls for which you must pay charges to your telephone company. Connections between terminals of your telephone system and terminals on your external point-to-multipoint connection are also external connections, which incur local charges.

### Radio cell

You can connect any approved cordless telephone to the analog ports of your telephone system. If you operate several hand-held units on the base station, it is possible to agree on two different code calls with the users of this radio cell. If the radio cell is called via the first internal phone number, all users of the radio cell hear the code call 1 ringing sequence. If it is called via the second internal phone, they hear the code call 2 sequence. The user with whom you have agreed a code call accepts the call.

### Outgoing external connection

This is a connection to an external subscriber that is established from a terminal of the telephone system by seizing an outside line, (e.g. by dialling "0") and by dialling an external phone number.

### Pulse dialling

Every dialled digit is assigned a defined number of interruptions. You hear these interruptions in the receiver when dialling.

### Internal

With regard to telephone calls in a telephone system, a distinction is made between internal and external calls. Internal calls are the calls that you make free of charge within the telephone system (with other users of the telephone system).

### ISDN (Integrated Services Digital Network)

All services (voice and data) can now be transmitted in one network.

### Incoming external connection

Connection to a terminal of the telephone system that is established by an external subscriber via the telephone system's phone number.

## **4** Annex

### **Configuring**

Setting (programming) the telephone system's functions from a PC using a configuration program.

### **Dual tone multifrequency dialling (DTMF)**

Every dialled digit is assigned a specific tone. Telephones that operate on the basis of this dialling method require a signal key (inquiry key R)/flash function on the telephone system.

### **MoH (music on hold)**

A waiting external subscriber hears music on hold while the connection is placed on hold, e.g. a call is being forwarded.

### **MSN (Multiple Subscriber Number)**

A multiple subscriber number is an ISDN phone number for a point-to-multipoint connection. In Germany, for example, Deutsche Telekom provides three multiple subscriber numbers free of charge for your telephone system.

### **NTBA (Network Termination for ISDN Basic Access)**

The telephone company lays its copper cables up to this access point (S0 basic access). Here, you connect the telephone system via a point-to-point or a point-to-multipoint connection.

### **Ringing distribution**

In the ringing distribution settings, you define which terminals of the telephone system are to ring in the event of a call. Is only one terminal to ring or are several terminals to ring at the same time?

Ringing distribution settings for calls from the outside are:

Call variant 1 (day time service), call variant 2 (night service) and call variant 3 (call forwarding).

Ringing distributions for calls from the door (door hands free unit TFE): door call variant 1 (day) und door call variant 2 (night).

### **Call forwarding**

A call from an external location that has not been accepted within a specific time is forwarded. The terminals of the telephone system that are defined in the call forwarding settings then ring. The time up to call forwarding can be set.

### **Switching box**

You can call up your telephone system's switching box from an external location and, by post-dialling a code, you can switch the relays of your telephone, you can switch the call variants, you can set up a diversion or you can monitor a room, for example. From an external location, you reach the switching box on a point-to-point connection by means of a direct dialling in number or, on a point-to-multipoint connection, by dialling a separately assigned multiple subscriber number (MSN). With the switching box code, you can protect the switching box against unauthorised access.

### **Signal key R (inquiry)**

This is a key on the telephone that you must press if you wish to inquire with another user during a conversation. The signal key must have a flash function, i.e. it must produce a brief interruption  
(AS 140 to AS 191: 70 ... 120 ms,  
AS 31 ST, AS 32: 50 ... 150 ms)

### **Door hands free unit**

This is a door station with a bell button and a door opener that you can connect to the telephone system. From the telephone, you can speak with a visitor at the door and you can open the door.

### **Outside line (B channel/S0 basic access)**

You can connect an external S0 basic access to your ISDN telephone system. Every external S0 basic access behaves like two conventional analog outside lines.

Therefore, you have two outside lines (B channels) on which you can make external calls (local, long-distance or international calls).

## If something should ever not function

### Checks

---

- In the event of malfunctions on the telephone system, please check your operating actions by referring to the instruction manual.
- Check whether the connectors of terminals and of the telephone system are inserted correctly.
- If you cannot remedy a malfunction, your dealer will be please to help you.

### Deactivating the special dial tone

---

When you lift the receiver on your standard telephone, you hear the special dial tone. You hear the special dial tone when do not disturb, automatic dialling or a diversion is active.

You can deactivate all functions that result in a special dial tone by entering a code.



### Power failure

---

- If the power should fail, you can make neither external nor internal telephone calls.

When the power returns:

- The telephone system functions again according to the previously set program. All settings made via the programming mode or the PC program remain stored provided the programming mode was ended appropriately.

- Initiated return calls are cleared.
- Connections parked in the telephone system are cleared.
- The redial entries are cleared.
- The total connection charges and the connection records are stored.

## 4 Annex

### What to do in the event of malfunctions

| <u>Malfunction</u>                                    | <u>Possible causes</u>   | <u>Remedy</u>  |
|---|--|--|
| Telephone system programming unclear                  |  | Reset the telephone system<br><br>Reset the telephone system to the "as-delivered" settings and reprogram it |
| No dial tone after lifting the receiver               | Power failure  | Check mains connection/fuses   |
|   | Terminal defective   | Check terminal on another connection   |
|   | Incorrect installation   | Check connections at the connection socket and on the telephone system                                       |
| No internal calls arrive                              | Do not disturb (special dial tone)   | Turn off do not disturb  |
|   | Diversion to another telephone (internal/external) (special dial tone)                     | Turn off diversion to  |
| No external calls arrive                              | Do not disturb (special dial tone)   | Turn off do not disturb  |
|   | Diversion to another telephone (internal/external) (special dial tone)                     | Turn off diversion to  |
|   | ISDN call forwarding is active   | Deactivate ISDN call forwarding  |
|   | Point-to-point connection: System phone number missing                                     | Enter the system phone number  |
|   | Point-to-multipoint connection:<br>- MSN missing<br>- MSN-internal user assignment missing | Enter the MSN<br>Assign the internal user to the MSN (ringing distribution)                                  |
| Forwarding an external call (inquiry) is not possible | The inquiry key <b>[R]</b> on the telephone is set as an earth key                         | Set the telephone to DTMF and set the inquiry key to flash   |
|   | Wrong flash time   | Set the flash time on the telephone.<br>(AS 140 to AS 191: 70 ... 120 ms,<br>AS 31 ST, AS 32: 50 ... 150 ms) |

| <u>Malfunction</u>          | <u>Possible causes</u>                           | <u>Remedy</u>                |
|-----------------------------|--|------------------------------|
| Distorted speech connection | S0 bus incorrectly installed<br>Connection error | Connect wire pairs correctly |

### Resetting the telephone system

---

By resetting, you can restore the telephone system's programming to a defined state. This may be necessary if you wish to reset unclear settings or if you wish to reprogram the telephone system.

After a reset, the telephone system again operates according to the previously set program. All settings made in the programming mode or by means of the PC program are retained provided the programming mode has been ended properly.

**Important:** the following are cleared when you reset the telephone system.

- All existing internal and external connections
- Remote support
- Internal return calls
- ISDN callback on busy
- Outside line reservations

**Hardware reset** - unplug the 230 V power mains plug and then plug it in again.

**Software reset** - carry out the following procedure:

### Software reset (analog terminals / ISDN terminals)

---

Programming mode must be started by entering  \*705 



The reset is performed.

### Software reset (system telephones)

---

 9  next next next enter

**4** Annex

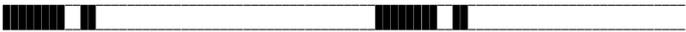
## Rings

**External call**  ...  
An external subscriber calls

**Internal call**  ...  
An internal user calls

**Door ringing**  ...  
A visitor rings at the door

### Code call rings to radio cells

- Code call 1  ...  
Call via the first internal phone number

- Code call 2  ...  
Call via the second internal phone number

Outside line reservation / Appointment call (system telephone)



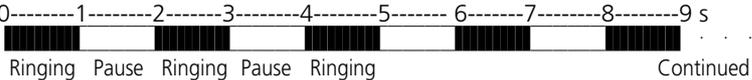
Wake up call (system telephone)  ...  
1 minutes rising volume

**Explanation:**  ...  
0-----1-----2-----3-----4-----5-----6-----7-----8-----9 s  
Ringing Pause Ringing Pause Ringing Continued

### Note

Ringling may differ depending on the terminal used.

## Tones

|                                     |  |  |
|-------------------------------------|--|--|
| <b>Dial tone</b>                    |  |  |
| - Internal                          |    | Signals that you may dial after lifting the receiver   |
| - External                          |    | Continuous tone that you hear when you have seized an outside line after dialling "0" or after pressing an MSN key |
| <b>Ringing tone</b>                 |  |  |
| - Internal                          |    | Internal user is rung  |
| - External                          |    | External user is rung  |
| <b>Busy tone</b>                    |    | The dialled internal user or external subscriber is busy   |
| <b>Special dial tone</b>            |  | Signals that you may dial after lifting the receiver, but that do not disturb, autodial or diversion is on         |
| <b>Call waiting (knocking) tone</b> |  |  |
| - Internal/door                     |   | During a call, this tone signals an internal call or a door call   |
| - External                          |  | During a call, this tone signals an external call      After 10 seconds  |
| <b>Acknowledgement tone</b>         |   | Input accepted   |
| <b>Error tone</b>                   |  |  |
| - a/b telephone                     |  | Operating error/input rejected   |
| - System telephone                  |   | Operating error/input rejected   |
| <b>Explanation:</b>                 |  |  |

**4** Annex

**List of key words****A**

|   |                              |
|---|------------------------------|
| Accepting calls                         | 1 - 4, 2 -21                 |
| Acknowledgement tone                    | 4 -7                         |
| Activating /deactivating call variant 3 | 1 - 15, 2 -37                |
| Actuating a door opener                 | 1 - 41, 2 -73                |
| Advice of Change. See Connection costs  |                              |
| Allocation of names                     |                              |
| ...external phone numbers               | 3 - 14                       |
| ...to users                             | 2 -60                        |
| Analog terminals                        | 1 -8, 3 - 7                  |
| Announcement                            | 1 - 16, 2 -39                |
| Answering machine                       | 3 - 24, 3 - 26               |
| ...picking up a call                    | 1 - 11, 2 -29                |
| Appointment call                        | 2 -69                        |
| As-delivered state                      | 3 - 5, 3 - 6                 |
| ...reinstating                          | 3 - 4, 3 - 47, 3 - 51        |
| Audio module                            | 1 - 16, 2 -39, 3 - 9, 3 - 23 |
| Autodial                                | 1 - 17, 2 -40                |
| Automatic outside line seizure          | 1 - 2, 2 -9                  |
| Automatic redial                        | 2 -85                        |

**B**

|                             |               |
|-----------------------------|---------------|
| B channel. See Outside line |               |
| Baby call. See Direct call  |               |
| Barred numbers              | 3 - 11        |
| ...assigning                | 3 - 30        |
| ...entering                 | 3 - 40        |
| Barred range                | 1 - 3, 2 -20  |
| Base station                | 1 - 3, 2 -17  |
| Brokering                   | 1 - 30, 2 -51 |
| Busy on busy                | 1 - 18, 2 -41 |
| Busy tone                   | 4 -7          |

**C**

|                                       |                             |
|---------------------------------------|-----------------------------|
| Call by Call                          | 1 - 24, 2 -10, 2 -53        |
| Call charges                          | 1 - 3                       |
| Call diversion. See Diversion from/to |                             |
| Call external subscriber              | 1 - 1, 2 -17                |
| Call forwarding                       | 1 - 48, 2 -78, 3 - 18, 4 -2 |
| See Diversion to                      |                             |
| Call Hold (HOLD). See Hold (ISDN)     |                             |
| Call internal user                    | 1 - 2, 2 -17                |
| Call list                             | 1 - 12                      |
| ...display                            | 2 -32                       |
| ...enter in                           | 2 -31                       |
| ...entry in                           | 1 - 8                       |
| ...on/off                             | 2 -8, 2 -31                 |
| ...printing and deleting              | 1 - 12                      |

|  |   |
|--|---|
| Call variant   | 3 - 3, 3 - 5, 3 - 6, 3 - 8, 3 - 9, 3 - 17, 4 -1 |
| ...programming   | 3 - 12  |
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## **L** List of key words

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regular basis. Despite all checks, it is not possible to rule out the fact that technical inaccuracies and typographical errors may have been overlooked. All errors known to us are rectified in new editions. We are always grateful for information about errors in this documentation.

This documentation was elaborated with great care and attention and is revised on a

You can only use the numerous ISDN features of your AGFEO-ISDN telephone system if your network operator has provided you with these features.

## Service

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If you have any questions regarding operation of your telephone system which these operating instructions cannot answer, please contact your dealer.

Before calling your dealer you should have a few data on hand for quicker service:

- What telephone system do you have?
  - E.g. AGFEO AS 140, AS 191, AS 32 (on the type plate of the system)
  - What connection type (PTP and/or PTMP) and which phone numbers do you have? (is on the registration or confirmation of the network operator)
  - What software version do the AGFEO installation diskettes have? (printed on the diskettes)
  - What software version does your telephone system have? (can be read out on the PC or system telephone).
- What terminals have you connected to your telephone system? (analog terminals with and without DTMF dialing, ISDN telephones, fax machines etc.)
  - Keep the operating instructions of the connected terminals and this manual at the ready.

Start your PC and read out the configuration with TK-Set. Print out the configuration of your telephone system if possible.



This unit fulfills the requirements of the EU guidelines:  
91/263/EWG Telecommunications  
equipment  
73/23/EWG Low-voltage devices  
89/336/EWG Electromagnetic  
compatibility  
This is why your telephone system bears the CE mark.

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