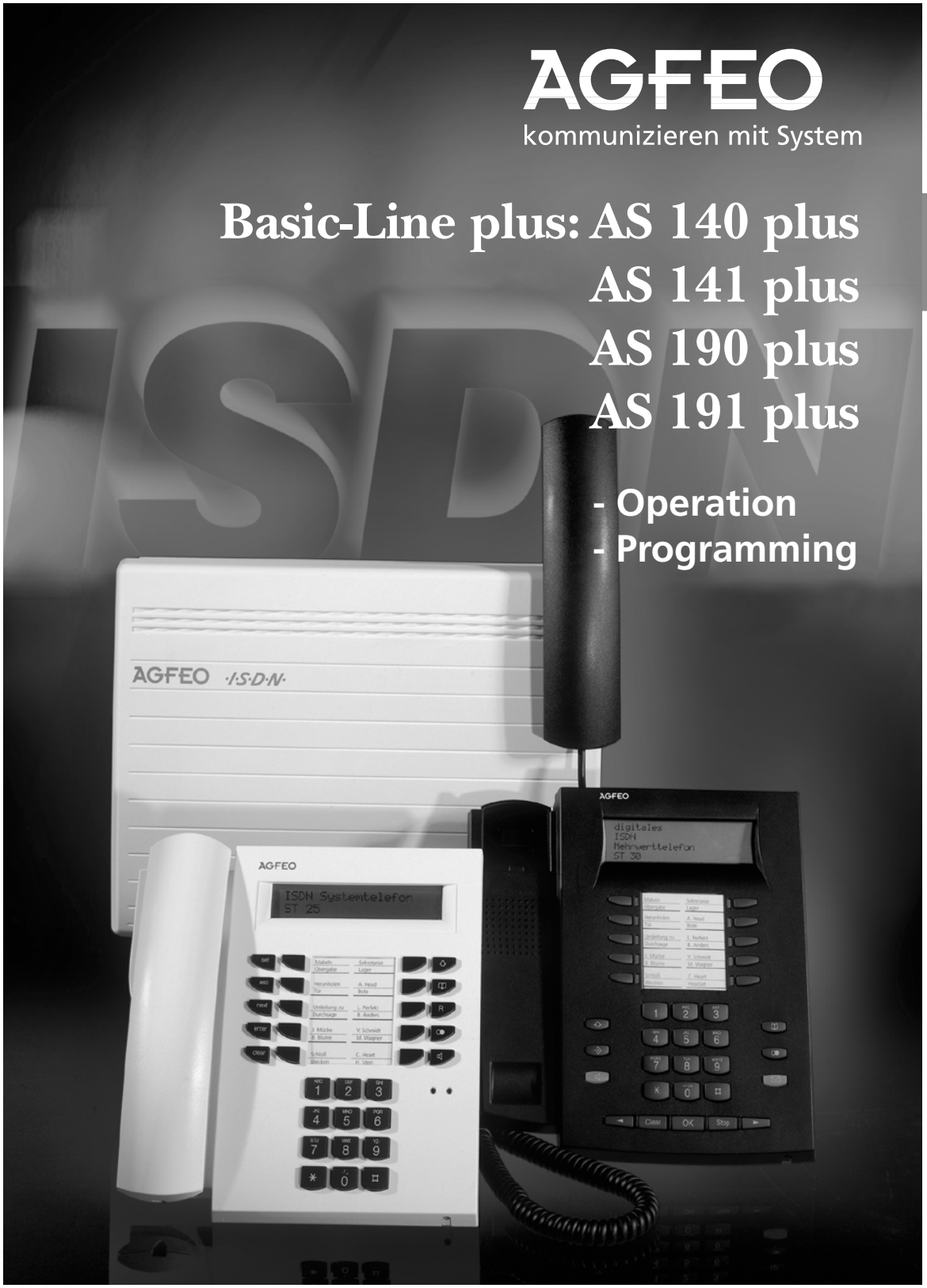
AGFEO

kommunizieren mit System

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

- Operation
- Programming



Overview of functions

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

	AS 140 plus	AS 141 plus	AS 190 plus	AS 191 plus
External ISDN basic access	1	1	1	1
Internal ISDN basic access	-	1	-	1
Internal ISDN basic access, extendable with plug-in S0-module 110	x	-	x	-
Ports for analog terminals only	4	4	8	8
System telephones digital ST 25, ST 30 for internal ISDN basic access	-	2	-	2
Door hands free unit (FTZ 123 D 12) - TFE	-	-	1	1
Ports for bell buttom	-	-	3	3
Switching relays - with/without dorr hands free unit (TFE)	-	-	2/4	2/4

Features of the telephone system

- Call waiting announcement / call waiting protection / rejection of call waiting announcement
- Call list display *
- Don't disturb for internal and external calls
- Point-to-point or point-to-multipoint connection
- Automatic exchange seizure adjustable
- Automatic dialling - connection without dialling
- Busy on busy
- CLIP, displaying the caller´s number on analog phones
- Code call
- Computer telephony integration (CTI)
- Direct call (baby call)
- External call access (5-level)
- Remote support, remote software download
- Remote control, e.g. changing diversion
- Flash time adjustable for every analog port
- Call charge evaluation with TK-Bill
- Picking up calls from an answering machine
- Fetching external and door calls
- Internal / external conference
- Telephone system configuration by telephone or PC
- Remote configuration
- Least Cost Routing (LCR) with automatic fallback
- Memory for storing phone numbers *
- Network code -Call by Call *
- Parking external calls
- Room inquiry / muting
- Internal and external room monitoring
- Relay switching (AS 190 plus, AS 191 plus)
- Reserving a dial-up line
- Inquiry / brokering
- Callback
- Call rhythms for incoming external calls, 5 adjustable
- Call forwarding, programmable and switchable
- Speed dial variant for analog and ISDN terminals
- Discriminator (barred range, local range)
- Day / night service, programmable and switchable
- Charge unit factor, charge unit limit
- TAPI interface
- Telephone directory (abbreviated dialling), central for all users
- Telephone lock and access codes
- Timer, automatic control of functions, 10 timers
- Door call diversion to external (AS 190 plus/AS 191 plus)
- Diversion from (Follow me)
- Diversion to internal and external users
- Support of multilink-compatible cordless telephones
- Print of connection charges
- Post-sending of connection costs to analog telephones
- Redial simple / extended / automatic *
- Internal / external music on hold
- Internal and external forwarding
- Appointment call / Wake up call *

* system telephones only

ISDN features that the telephone systems support

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

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

Introduction I

- Basic functions - "telephone calls", "accepting a call" and "forwarding a call"
- Convenience functions of the telephone system in alphabetical order

Operation 1
Analog / ISDN terminals

- Basic functions - "telephone calls", "accepting a call" and "forwarding a call"
- Convenience functions of the telephone system in alphabetical order

Operation 2
System telephones

- 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
- Programming from a analog telephone
- Remote configuration by a specialist dealer
- Downloading new firmware

Programming 3

- Glossary
- If something should go wrong
- Ringing and tones

Annex 4

List of key words L

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 plus, AS 191 plus) 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 briely 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.

Contents

Introduction

Overview of functions I -2
Overview of contents I -3
Safety notes I -4
Contents I -5
Important notes on using analog terminals I -8
Important notes on using ISDN terminals I -9
CTI - computer telephony integration I -10
Pictograms and keys I -11
System telephones I -11

Chapter 1 -Operation - analog / ISDN

Making telephone calls 1 - 1
Accepting calls 1 - 4
Forwarding a call 1 - 6
Call waiting announcement / Callback / Call list 1 - 8
Call waiting prevention 1 - 10
Picking up calls 1 - 11
Do not disturb - tone ringing off 1 - 12
Switching over the call variant 1 - 13
Activating or deactivating call variant 3 (internal call forwarding) 1 - 14
Announcement 1 - 15
Autodial - connecting without dialling 1 - 16
Busy on busy on / off 1 - 17
Announcement / Intercom system function 1 - 18
Placing a connection on hold 1 - 19
Identifying malicious callers (Malicious call tracing) 1 - 20
Conference 1 - 21
Least Cost Routing (LCR) – Cost-optimized telephoning 1 - 23
Parking an external call 1 - 24
Room monitoring 1 - 26
Relay switching 1 - 28
Inquiry / brokering 1 - 29
Callback on busy 1 - 31
Tariff units factor 1 - 32
Phonebook - storing and dialling phone numbers 1 - 33
Telephone lock - direct call (baby call) 1 - 35
Activating/deactivating timers 1 - 37
Diverting a door call to an external subscriber 1 - 38
Switching over the door call variant 1 - 40
Actuating a door intercom system and a door opener 1 - 41
Communicating a caller's phone number on the internal S0 bus 1 - 42
Communicating your phone number 1 - 43
Follow me - diverting calls from other telephones 1 - 44
Diversion to - diverting calls to another telephone 1 - 45
Connection data set - Setting and printing the printout 1 - 50
Displaying connection costs on an analog telephone 1 - 52
Connection costs - Defining a limit 1 - 53
Connection costs - Print and delete totals 1 - 54

Chapter 2 - System telephone operation ST 25

System telephones ST 25 2 -1
Setting up and cleaning the system telephones, inserting the marking strips 2 -2
System telephone display 2 -3
System telephone settings 2 -4
Function keys - freely programmable functions (overview) 2 -10
Function key assignments 2 -12
Making telephone calls 2 -17
Accepting calls 2 -21
Forwarding a call 2 -23
Forwarding an outside line 2 -25
Call waiting announcement (knocking)/ callback 2 -26
Call waiting prevention 2 -28
Picking up calls 2 -29
Call list 2 -31
Do not disturb - turning off tone ringing 2 -33
Switching over the call variant 2 -35
Activating or deactivating call variant 3 (internal call forwarding) 2 -37 2 -38
Forwarding a call during ringing 2 -39
Announcement 2 -40
Autodial - connecting without dialling 2 -41
Activating/deactivating busy on busy 2 -42
Voice message/intercom system function 2 -43
Placing a connection on hold 2 -46
Identifying malicious callers (malicious call tracing) 2 -47
Conference 2 -48
Least Cost Routing (LCR) – Cost-optimized telephoning 2 -51
Brokering - switching between several conversations 2 -52
Memory - storing a phone number 2 -53
Network code - Call by Call 2 -54
Parking an external call 2 -55
Room monitoring 2 -56
Relay switching 2 -57
Inquiry 2 -58
Callback on busy 2 -59
Successively viewing status messages 2 -60
Entering user names 2 -61
Storing phonebook numbers 2 -62
Phonebook - dialling numbers 2 -66
Telephone lock - emergency/direct (baby call) 2 -68
Appointment call - non-recurring appointment 2 -70
Activating/deactivating timers 2 -72
Switching over the door call variant 2 -73
Diverting a door call to an external subscriber 2 -74
Actuating an intercom system and door opener 2 -75
Communication your phone number 2 -76
Diversion from - diverting calls of other telephones 2 -77
Diversion to - diverting calls to another telephone 2 -78
Displaying and deleting connection costs 2 -82
Printing connection costs 2 -83
Connection costs - displaying your own costs 2 -84

Connection costs - Starting and stopping recording for certain users 2 -86
Redial - dialling a phone number again 2 -87
Wake up call - recurring appointment 2 -88
Destination dialing - Storing and dialing phone numbers 2 -90

Chapter 3 - Programming

Programming from a PC 3 - 1
Programming from the system telephone or a/b telephone 3 - 2
Determining what you want to program 3 - 5
Connection type/External phone numbers/ Call variants 3 - 10
Setting the ringer rhythm for incoming external calls 3 - 14
Door intercom – Door phone number/Door call variants 3 - 15
Internal phone numbers for analog ports 3 - 17
Terminal types for analog ports 3 - 18
Programming the internal phone numbers and terminal types for the internal S0 port 3 - 20
Relays 3 - 22
External access /Barred numbers 3 - 24
External access 3 - 25
Local network code 3 - 26
Internal phone number offset 3 - 27
Music on Hold (MoH) 3 - 28
Switch box – Internal phone number 3 - 29
Regional numbers (free range) 3 - 30
Barred numbers 3 - 31
Protecting telephone system functions against unauthorized use (code number) 3 - 32
Adjusting the flash time 3 - 36
Einstellung des Gebührenimpulses 3 - 37
Maintenance/testing 3 - 38
Registering the system telephone ST 25 digital 3 - 40
Remote setting - remote configuration 3 - 41
Downloading new firmware 3 - 42
3 - 42
Programming for advanced users 3 - 44
Programming tree 3 - 45

Chapter 4 - Annex

Glossary 4 -1
If something should ever not function 4 -3
What to do in the event of malfunctions 4 -4
Rings 4 -6
Tones 4 -7

List of key words L - 1

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.

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.

The telephone system communicates the counting pulses to analog terminals featuring a display of connection charges (charge pulses).

Modem - Data transmission speed up to 56600 bps, reduction possible by transmission path and cables to 33600 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 plus and AS 191 plus are already equipped at the factory with an internal S0 access.
The telephone systems AS 140 plus and AS 190 plus can be upgraded to AS 141 plus or AS 191 plus 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.

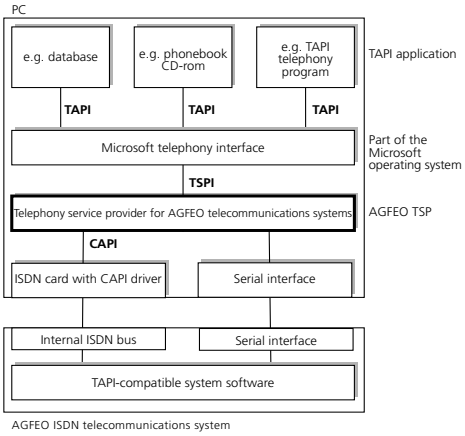
CTI - computer telephony integration

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

R	Inquiry key (signal key) for making an inquiry during a call		Star key for initiating specific functions
9	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.
- Digital ISDN system telephone ST 25
- Digital ISDN system telephone ST 30

The digital ISDN system telephones ST 25 and ST 30 can be connected to any internal ISDN bus of an AGFEO.

Up to two ST 25 or ST 30 can be operated on an internal ISDN access of your AS 141 plus and AS 191 plus.

The S0 module must be plugged in order to be able to connect an ST 25 or ST 30 to an AS 140 plus or AS 190 plus.

For usage of ST 30 read the separate manual „Digital added value ST 30“.

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).

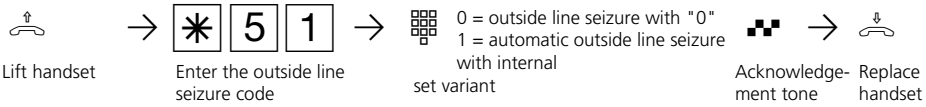
Outside line seizure "0" variant ("as-delivered" setting): after picking up the receiver, you hear the internal dial tone. If you wish to call an external subscriber, dial "0" to seize an outside line. When you wish to call an internal user or initiate a procedure, enter the internal phone number or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

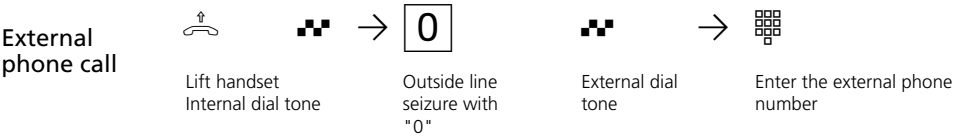
Direct outside line seizure variant: this variant can only be set by means of the PC configurator. It is suitable for terminals that only operate external connections, e.g. a fax machine or a modem. When you pick up the receiver, you hear the dial tone of the exchange. The outside line is seized directly. 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)



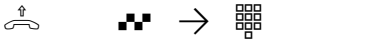
Outside line seizure on the combination port – After the code "1 0" has been dialled on the combination port (instead of "0"), the telephone system also seizes an outside line. However, it assigns the fax service to the connection. When an outside line is seized by dialling "0", the telephone service 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".

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.

Internal call

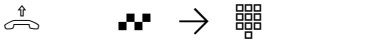


Lift handset
Internal dial tone

Enter internal phone number

Making a telephone call - automatic outside line seizure variant

External call



Lift handset
External dial tone

Enter external phone number

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".

When seizing an outside line automatically on a point-to-multipoint connection, the standard MSN is always communicated to the called party. Targeted communication of a different MSN is not possible.

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

Internal call

Lift handset
External dial tone

Press the hash key

Internal dial tone

Enter internal phone number

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

External call

Lift handset
Dial tone of the exchange

Enter external phone number

When using the "Direct outside line seizure" variant, only external dialling is possible, but not internal dialling.
When using the "Direct outside line seizure" variant on a point-to-multipoint connection, the standard MSN is always communicated to the called party. Targeted communication of a different MSN is not possible.

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

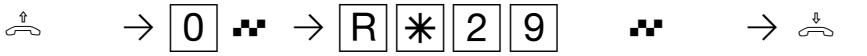
Seiting an outside line wiht a defined MSN (outside line seizure variant "0")

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

Lift handset | Prepare external dialling | Enter specific MSN | Terminate entry | Enter external phone number | Conduct call

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.



Lift handset | Outside line seizure, e.g. "0", busy tone. No outside line free. | Reserve outside line | Acknowledgement tone | Replace handset

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 9 9 instead of the * key.

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.

Call waiting announcement - You receive 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.

You are called

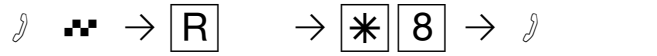
Your telephone rings → Lift handset → Conduct the call

Call waiting

You are conducting a call and you hear the external or internal call waiting tone → End the call

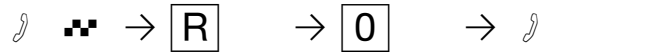
Automatic ringing by the waiting party → Lift the receiver → Conduct the call

External call waiting (free outside line)



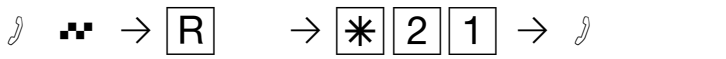
You are conducting a call and you hear the external call waiting tone → Inquiry, call is placed on hold → Fetch the waiting external call → Conduct the call

Internal call waiting



You are conducting a call and you hear the internal call waiting tone → Inquiry, the call is placed on hold → Fetch the waiting internal call → Conduct the call

Rejecting an external waiting call



You are conducting a call and you hear the external call waiting tone

Inquiry, the call is placed on hold

Reject the waiting call

Continue your call

Notes

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.

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.

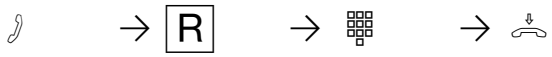
Internal forwarding without announcement
You call up the internal user in an inquiry and you replace the receiver without speaking with the internal user. The internal user hears call ringing, and is connected to the external subscriber after lifting the receiver.

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

Conduct external call → Inquiry, external call is placed on hold (R) → Enter internal phone number → Announce external call → Forward external call

Internal forwarding without announcement



Conduct external call → Inquiry, external is placed on hold (R) → Enter internal phone number → Forward external call

External forwarding

Conduct first external call → Inquiry, external call is placed on hold (R) → Seize outside line (0) → Enter external phone number → Conduct second external call →

Forward first external call (R * 2 0) → Replace the receiver

Notes

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.

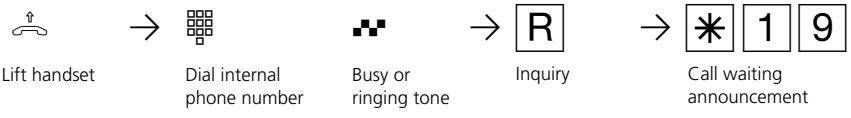
Call waiting announcement / Callback / Call list

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



Extension user does not answer. Replace the receiver. This initiates a callback or you enter yourself in the call list if you have called a system telephone.

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.

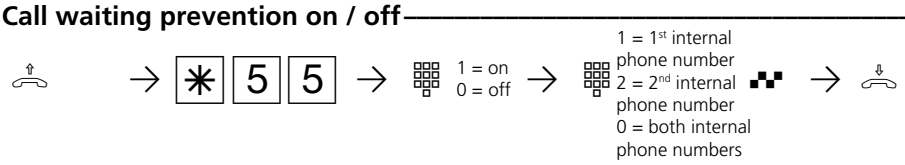
You cannot use the "call waiting announcement/callback/call list" features on a combined unit (phone/fax).

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 1st internal phone number (primary internal phone number), your 2nd 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



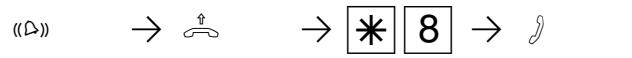
Lift handset | Call waiting prevention | on / off | Select internal phone number | Acknowledge-ment tone | Replace handset

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.

Un-selective pick-up of an external call

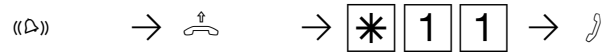


External call on another telephone → Lift the receiver on your receiver → Pick up external call → Conduct call

Selective call pick-up

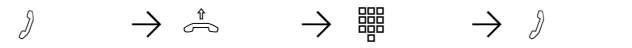
Door call on another telephone → Lift the receiver on your telephone → Enter the code → Key in the phone number of the internal extension. → Conduct call

Picking up a door call



Door call on another telephone → Lift the receiver on your telephone → Pick up door call → Conduct call

Picking up an answering machine call



Answering machine has accepted external call → Lift the receiver on your telephone → Enter the answering machine's internal phone number → Conduct external call

Notes

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

You can only pick up external calls non-selectively.
You can selectively pick up the call signalled to the selected extension.

Do not disturb - tone ringing off

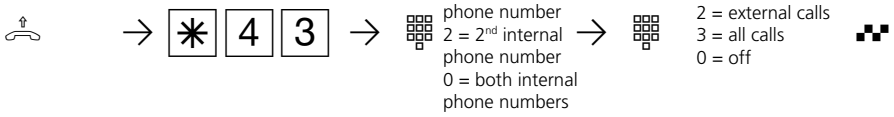
You do not wish to be disturbed by calls and you activate the do not disturb feature.

You can select whether the don't disturb feature is to apply for your 1st internal phone number (primary internal phone number), your 2nd 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



Lift handset

Do not disturb for

Select internal phone number

Define call type

Acknowledgement tone

Replace handset

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.

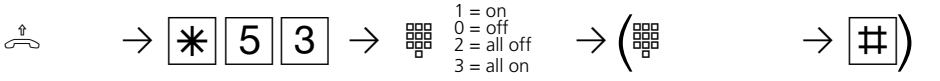
Switching over the call variant

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.

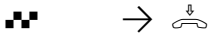
You can activate or deactivate call variant 2 (night service) at any time, from any internal or external telephone, and singly for each phone number in your telephone system. From an external telephone, to do this you must dial up the switching box of your telephone system.

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

Call variant 2 (night service) on / off

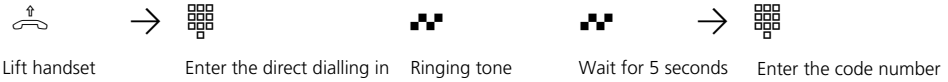


Lift handset → Switch call variant 2 → on / off → Enter phone number to switch individually → Conclude input



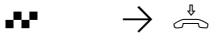
Acknowledgement tone → Replace handset

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



Lift handset → Enter the direct dialling in or multiple subscriber number of the switching box → Ringing tone 2 to 3 rings → Wait for 5 seconds internal music on hold → Enter the code number of the switching box within 15 seconds as a DTMF signal

Wate for 5 seconds internal music on hold if the code number is correct → Switch call variant 2 → on / off → Enter phone number to switch individually → Conclude input



Acknowledgement tone → Replace handset

Notes

If the selection ‘all off/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)

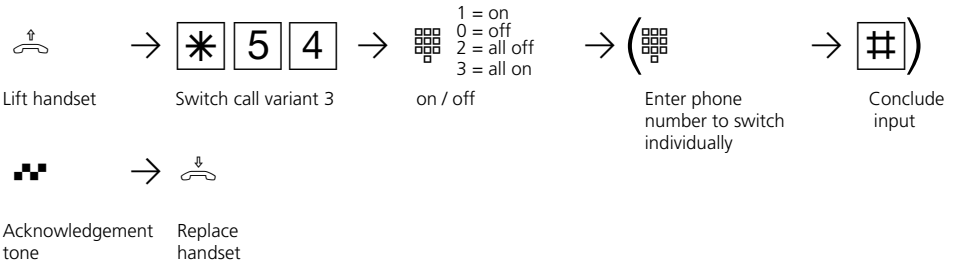
If you activate call variant 3 (internal call forwarding), the telephone system forwards an external call to other internal terminals.

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.

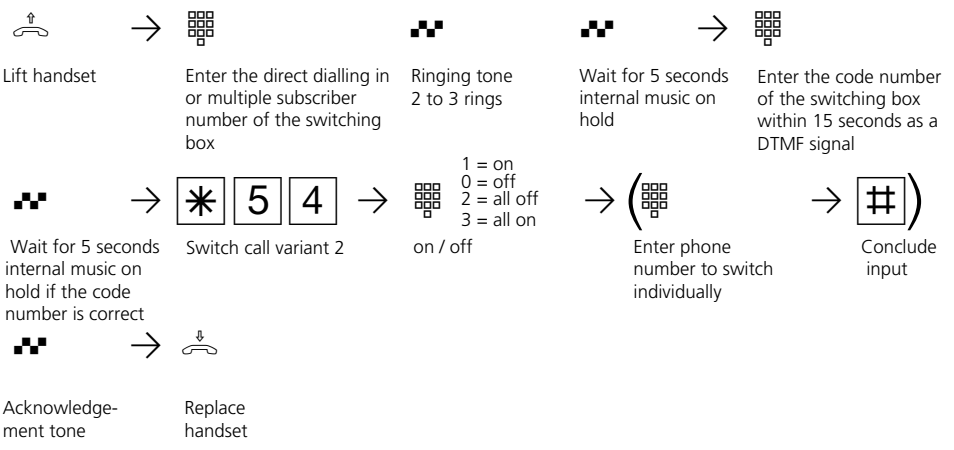
You can activate and deactivate call variant 3 (AVA 3) separately for each phone number in your telephone system, and from every internal or external telephone. From an external telephone, you must dial up the telephone system's switching box to do this.

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



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 a port for analog terminal.

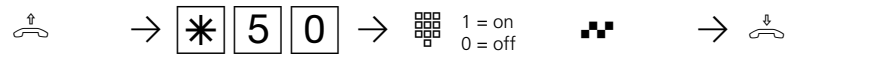
Announcement

Lift handset | Enter the announcement code | Acknowledgement tone | Make the announcement | Replace handset

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.

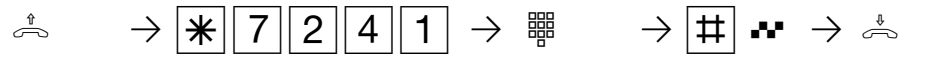
Autodial on / off



Lift handset | Automatic dialling | on / off | Acknowledge-ment tone | Replace handset

Autodial - Programming a phone number

You must start programming mode by entering *705



Lift handset | Program the autodial number | Enter an external phone number, max 24 digits | Conclude input, Acknowledgement tone | Replace handset

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

Clearing the autodial phone number

Programming mode must be started by entering *705

Lift handset | Clear autodial phone number | Acknowledgement tone | Replace handset

Continue programming or end programming mode by entering *700

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.

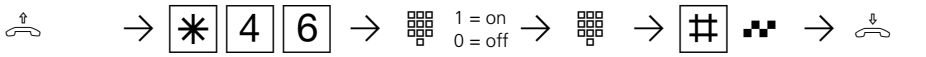
If you hear the error tone when you activate the autodial feature, no telephone number has been programmed.

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

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



Lift handset | Switch busy on busy | on / off | Enter the external phone number | Conclude input, Acknowledgement tone | Replace handset

Notes

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.

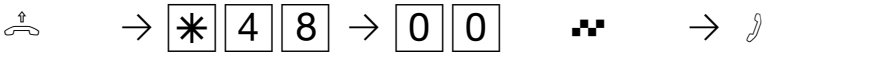
The loudspeakers on the system telephones concerned are activated automatically. If automatic microphone activation is set on an solely called system telephone, it can conduct a hands free call with you. Otherwise, he must use the receiver.

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

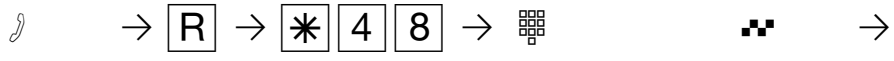
Lift handset — Enter the announcement code — Enter the internal phone number of a system telephone — Acknowledgement tone — Make the announcement

Announcement to all system telephones



Lift handset — Enter the announcement code — Announcement to all system telephones — Acknowledgement tone — Make the announcement

Announcement out of an external call



You are conducting an external call — Inquiry — Enter the announcement code — Enter the internal phone number of a system telephone or 0 0 for all system telephones — Acknowledgement tone

Make the announcement

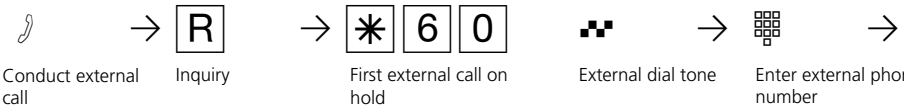
Notes

You can connect back to the external subscriber after entering R 0 if the announcement party does not answer or is busy.

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



Conduct external call → Inquiry → First external call on hold → External dial tone → Enter external phone number →

Conduct inquiry: Inquiry → Return to first external call → Continue first external call → etc.

Notes

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 R 0.

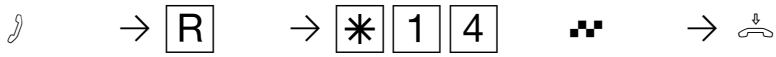
If you replace the receiver, you clear the current call and also the call on hold.

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



Conduct external call | Inquiry | Identify caller | Acknowledgement tone | Replace handset

Notes

You can continue the call after R * 1 4.

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.

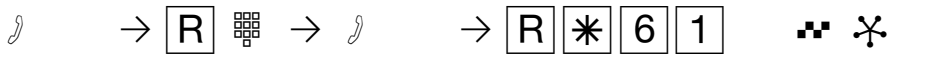
You hear the error tone:
- if you have not placed an order for identification of malicious callers with your network carrier.
- if the caller could no longer be identified by the exchange.

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.

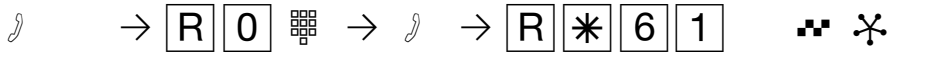
Conducting a conference in the ISDN exchange (point-to-multipoint connection)
To establish an ISDN three-party conference with two external subscribers, you must first place the first external call on hold in the ISDN exchange in order to conduct an inquiry call with the second external subscriber on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

Internal three-party conference



You are conducting an internal call → Inquiry, enter internal phone number → Conduct inquiry call → Inquiry, enter conference code → Acknowledgement tone. Conference with three parties

Internal / External three-party conference



You are conducting an internal or external call → Inquiry, enter "0" and external or internal phone number → Conduct inquiry call → Inquiry, enter conference code → Acknowledgement tone. Conference with two internal users and one external subscriber

ISDN three-party conference

Conduct external call → Inquiry → First external call on hold in the exchange → External dial tone → Enter external phone number →

Conduct inquiry → Inquiry → Code for ISDN three-party conference → Acknowledgement tone → Three-party conference with two external subscribers

Notes

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 ✳ 1 1 .
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 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 ✳ 6 1 .

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 R 0 , 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.

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.

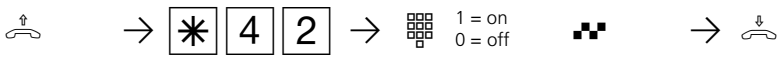
The Least Cost Router of the telecommunication system decides which network provider is the cheapest for your external connection on the basis of the local code you dial (tariff zone), the time of day and day of the week. Should the selected provider not offer a free line after a adjustable number of tries, the PBX automatically chooses a pre-defined alternative provider (fallback).

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



Lift handset | Code for LCR | on / off | Acknowledgement tone | Replace handset

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.
- 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 are available to all 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

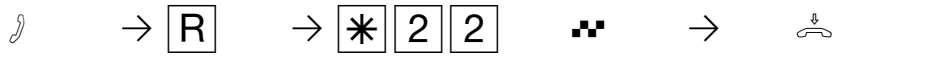
There are two ways to park an external call:
- Park in the telecommunications system. The outside line (B-channel) remains occupied during parking.
- Park (replug on bus) in the ISDN exchange (only at multipoint connection). The outside line (B-channel) is freed when parking in the exchange.

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

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

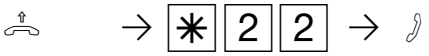
The outside line (B-channel) remains seized while a call is parked in the telephone system. The external subscriber hears music on hold. You receive a callback if you do not resume (unpark) the parked external call within 4 minutes.

Parking an external call



You are conducting an external call → Inquiry → Enter the parking code → Acknowledgement tone → Replace handset The call is parked.

Resuming the external call (unparking)



Lift handset → Enter the parking code → The call is unparked. Continue the external call.

Notes

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

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

Connection charges are incurred for the parked call.

If several calls are parked in the telephone system, priority is assigned to unparking the first call.

The PBX supports the menu "Park" of ISDN phones.

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

Hold external call → Park external call → Enter connection ID (0 to 9) → Acknowledgment tone → Replace handset

Continuing external call (unparking)

Lift handset → Continue external call → Enter connection ID (0 to 9) → Hold external call

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 R 0 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

Lift handset in the room to monitor

Initiate room monitoring

Acknowledgement tone

Place receiver next to the guarding telephone

Room monitoring from an internal telephone

Lift handset

Enter the guarding telephone's internal phone number

Listen into the room

Room monitoring from an external telephone

Lift handset

Enter the direct dialling in or multiple subscriber number of the switching box

Ringing tone 2 to 3 rings

Wait for 5 seconds internal music on hold

Enter the code number for the switching box within 15 seconds as a DTMF signal

Wait for s5 seconds internal music on hold if the code number is correct

Enter the internal number of the guarding telephone

Listen into the room

Cancelling room monitoring

Replace handset in the monitored room

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 plus, AS 191 plus: 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.

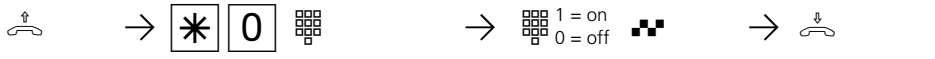
By programming, you define for each relay a internal phone number and whether it is to operate as a pulse relay (3 seconds on) or as an On / Off relay.

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 R4 is automatically assigned to the audio module.
If a door handsfree unit (FTZ 123 D12) is connected, the relays R3 and R4 are used for connecting the door handsfree unit and the door opener.

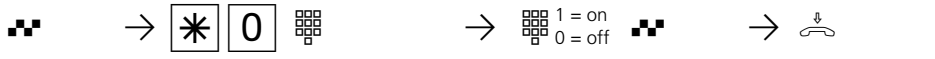
Relay on / off



Lift handset → Select the relay → Internal phone number of the relay → on / off → Acknowledgement tone → Replace handset

Relay on / off from an external location

Lift handset → Enter the direct dialling in or multiple subscriber number of the switching box → Ringing tone 2 to 3 ring → Wait for 5 seconds internal music on hold → Enter the code number of the switching box within 15 seconds as a DTMF signal



Wait for 5 seconds internal music on hold if the code number is correct → Select the relay → Internal phone number of the relay → on / off → Acknowledgement tone → Replace handset

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.

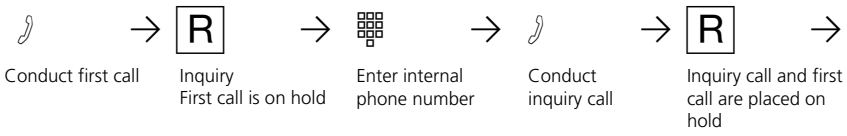
You must enter the right code number as a DTMF signal with a DTMF hand-held transmitter or telephone within 15 seconds as otherwise the telephone system will clear the connection.

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

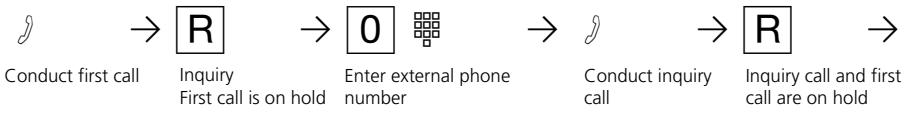


Conduct first call → Inquiry (First call is on hold) → Enter internal phone number → Conduct inquiry call → Inquiry call and first call are placed on hold →

Enter "0" to switch to the external call or the internal number to switch to the internal call → etc.

Back to the first call — Continue first call

External inquiry / brokering



Conduct first call → Inquiry (First call is on hold) → Enter external phone number → Conduct inquiry call → Inquiry call and first call are on hold →

Enter "0" to switch to the external call or the internal phone number to switch to the internal call → etc.

Back to first call — Continue first call

Inquiry in the room (muting)

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.

Internal or external call → Connection is placed on hold. You can talk without the telephone partner hearing. → Continue telephone call → Replace the receiver

Notes

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.

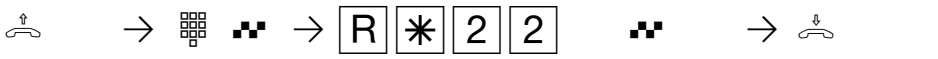
Connection charges are incurred for the external call, even while the call is on hold.

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



Lift handset

Call the external subscriber, busy tone, the subscriber is busy

Initiate callback

Acknowledgement tone of the exchange

Replace handset

Notes

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.

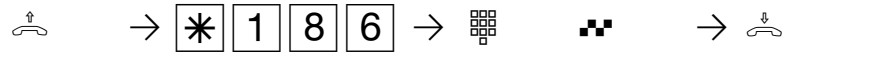
A callback is cleared if the callback does not come into being or if it has not come into being within 45 minutes after initiation.

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.

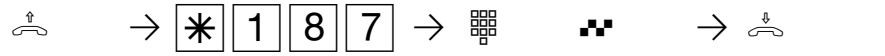
With the 4-digit base factor you set your telecommunications system to the amount which the network operator charges for one tariff unit.

Defining your own tariff factor



Lift handset	Define the tariff units factor	Enter tariff units factor 0000 ... 9999 (pfennigs)	Acknowledgment tone, enter the cost code if necessary	Replace handset

Entering the base factor for a tariff unit



Lift handset	Enter the base factor (of the network operator)	Enter the base factor 0000 ... 9999 (pfennigs)	Acknowledgment tone, enter the cost code if necessary	Replace handset

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.

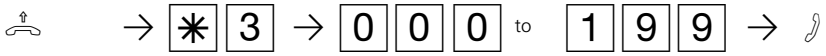
Phonebook - storing and dialling phone numbers

From your telephone or from a PC, you can centrally store up to 200 external phone numbers in the phonebook.
All users can dial the destinations in the phonebook, regardless of their external call privileges.

As well as normal phone numbers you can also store code digit procedures in your phonebook using the ✳ and # keys. This means you can then use all the procedures on telephones which do not support the ✳ and # keys.

You can speed dial phonebook lines 190 to 198 by keying in digits 90 to 98.
Example: To identify another external phone number to your system in order to split the charges when you have seized an external line (MSN), store:
✳ 0 0 → MSN → #

Phonebook - dialling numbers

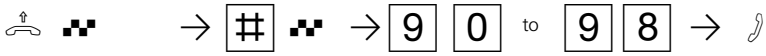


Lift handset | Enter the phonebook code | Enter the phonebook destination 0 0 0 to 1 9 9 ; the stored phone number is dialled. | Conduct the call

Speed dial variant - outside line seizure variant "0"

Lift handset
Internal dial tone | Enter speed dial destination, e.g. 95. The number stored under index 195 in the phonebook is dialled. | Conduct the call

Speed dial variant - automatic outside line seizure variant



Lift handset
External dial tone | Press the hash key
Internal dial tone | Enter speed dial destination, e.g. 95. The number stored under index 195 in the phonebook is dialled. | Conduct the call

Notes

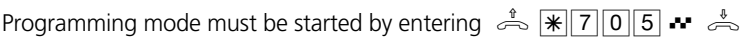
You can post-dial further digits after selecting a phonebook destination.

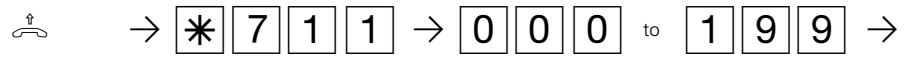
You can redial the entire phone number with the redial function.

You hear the error tone after dialling a blank phonebook destination.

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.

Phonebook - storing a number

Programming mode must be started by entering 



Lift handset

Enter the phonebook programming code

Enter a phonebook destination 00 to 199 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

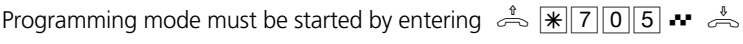
Conclude input

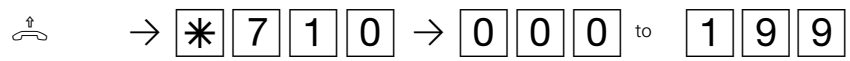
Acknowledge-ment tone

Replace handset

Continue programming or end programming mode by entering

Phonebook - clearing a phone number

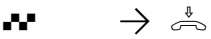
Programming mode must be started by entering 



Lift handset

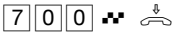
Enter the code for clearing and entry

Enter the phonebook destination 000 to 199 that you wish to clear



Acknowledge-ment tone

Replace handset

Continue programming or end the programming mode by entering 

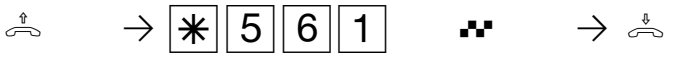
Telephone lock - direct call (baby call)

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.

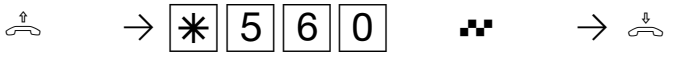
If you have programmed a telephone code for your telephone, you must enter your 4-digit code number to unlock it.

Locking a telephone



Lift handset → Lock the telephone → Acknowledgement tone → Replace handset

Unlocking a telephone



Lift handset → Unlock telephone → Acknowledgement tone, if necessary enter the telephone code → Replace handset

Notes

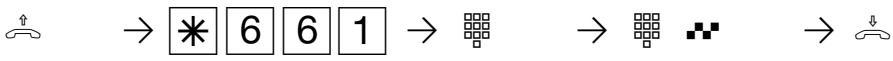
Enter telephone code?
If you hear the acknowledgment tone after entering the code, no telephone code has been programmed for your telephone. There is no need to enter the telephone code. If you hear the error tone, the last input was wrong. Begin the input again.

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 acknowledgement 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.

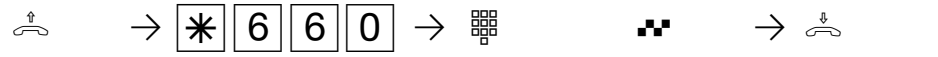
ISDN-Phones - Looking via *-procedure is not possible.

Programming a telephone code



Replace handset → Program telephone code → Enter old telephone code → Enter the new 4-digit telephone code (0000 to 9999), acknowledgement tone → Replace handset

Clearing a telephone code

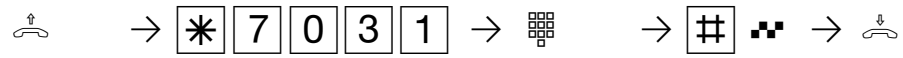


Direct call (Baby call)

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

Programming a direct number

Programming mode must be started by entering *705



Continue programming or end programming mode by entering *700 !

Clearing a direct phone number

Programming mode must be started by entering *705

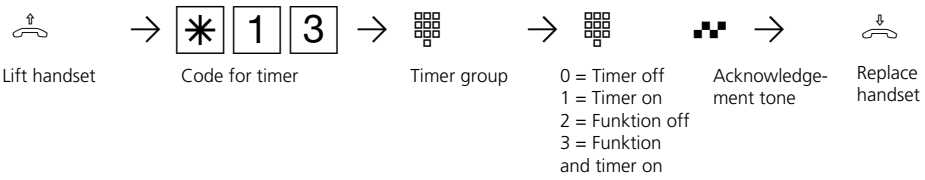
Continue programming or end programming mode by entering *700

Activating/deactivating timers

The telecommunications system provides 10 timers. You can use them to program the system to activate or deactivate functions at specific times and on specific days.
The following functions can be controlled by timer:
- Call variants (night service, day time service)
- Internal call forwarding
- Busy on Busy
- External call privileges
- Telephone lock
- Second Call Busy
- Relays
- Diversions

You can assign a function to any timer.
The timers can only be programmed in the "TK-Set" program.
You can activate or deactivate timer control from any telephone (such as for long weekends or holiday times). When a timer is switched off the "off" defaults of the functions are automatically active.
You can also switch the "on/off" defaults for the functions from any telephone (such as to set an earlier or later close of business).
You can combine several timers in a group and control them collectively.

Activating/deactivating timers



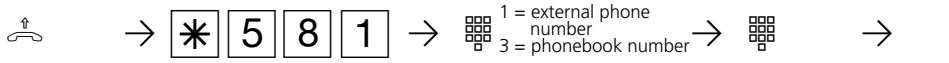
Diverting a door call to an external subscriber

AS 190 plus, AS 191 plus: 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.

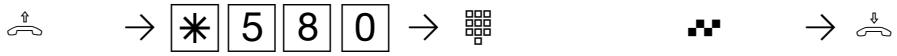
Door call diversion on



Lift handset → Door call diversion qn → Diversion destination → Enter the internal phone number of the door →

Enter the external phone number or phonebook number → Conclude input → Acknowledgement tone → Replace handset

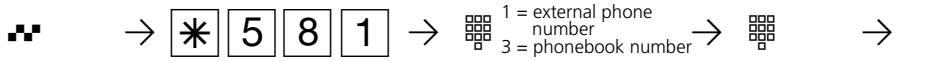
Door call diversion off



Lift handset → Door call diversion off → Enter the internal phone number of the door → Acknowledgement tone → Replace handset

Door call diversion on / off from an external location

Lift handset → Enter the direct dialling in number or multiple subscriber number of the switching box → Ringing tone 2 to 3 rings → Wait for 5 seconds internal music on hold → Enter the code number of the switching box within 15 seconds as a DTMF signal



Wait for 5 seconds internal music on hold if the code number is correct → Door call diversion on → Diversion destination → Enter the internal phone number of the door →

Enter the external phone number or phonebook number → Conclude input → Acknowledgement tone → Replace handset

Notes

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.

The external door call will be disconnected after 10 minutes.

You bear the connection costs of door call diversion.

You cannot actuate the electrical door opener.

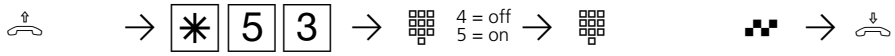
Switching over the door call variant

AS 190 plus, AS 191 plus - 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 variant 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.

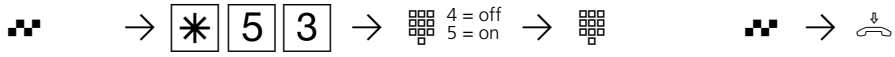
Door call variant 2 (night service) on / off



Lift handset | Switch door call variant 2 | on / off | Enter the internal phone number of the door | Acknowledgement tone | Replace handset

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

Lift handsetr | Enter the direct dialling in or multiple subscriber number of the switching box | Ringing tone 2 to 3 rings | Wait for 5 seconds internal music on hold | Enter the code number of the switching box within 15 seconds as a DTMF signal



Wait for 5 seconds internal music on hold if the code number is correct | Switch door call variant 2 | on / off | Enter the internal phone number of the door | Acknowledgement tone | Replace handset

Notes

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

AS 190 plus, AS 191 plus - 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.

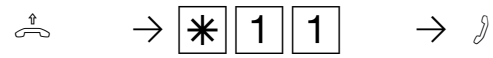
If another telephone rings with the door call, you can fetch the door call to your telephone.

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

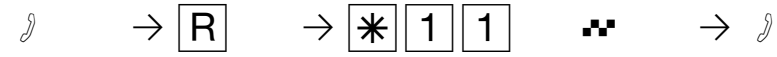
Door call at your telephone → Lift the receiver → Conduct door conversation

Calling the door station / picking up a door call



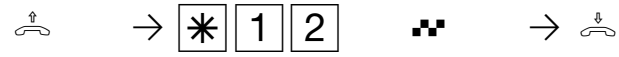
Lift handset → Call the door station (✱ 1 1) → Conduct the door conversation

Actuating the door opener during a door conversation



You are conducting a door conversation → Inquiry (R) → Actuate the door opener; it is on for 3 seconds (✱ 1 1) → Acknowledgement tone → Continue door conversation

Actuating the door opener directly



Lift handset → Actuate the door opener; it is on for 3 seconds (✱ 1 2) → Acknowledge-ment tone → Replace handset

Actuating the door opener during an external conversation

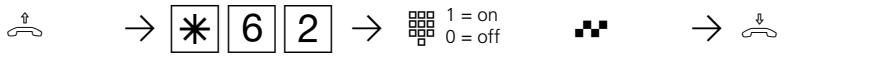
You are conducting an external conver-sation → Inquiry (R) → Actuate the door opener; it is on for 3 seconds (✱ 1 2) → Acknowledgement tone → Return to external conversation (R) → Continue external conversation

Communicating a caller's phone number on the internal S0 bus

AS 141 plus, AS 191 plus - 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



Lift handset → "0" to seize an outside line → On / off → Acknowledgement tone → Replace handset

Notes

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.

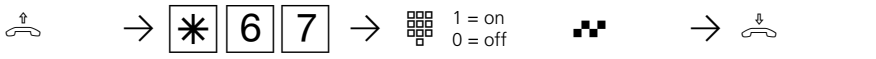
Communicating your phone number

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.

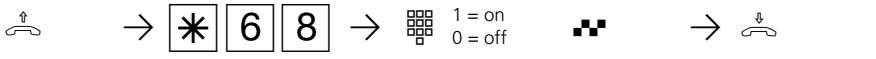
Enter this feature as an additional feature on the phone with which you apply for your ISDN connection. If you wish to be able to activate / deactivate communication of phone numbers in individual cases, you must order this separately.

Communicating your phone number to the caller on / off



Lift handset | Communication to the caller | On / off | Acknowledgement tone | Replace handset

Communicating your phone number to the called party on / off



Lift handset | Communication to the called party | On / off | Acknowledgement tone | Replace handset

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 wich MSN is transfered, in order to seperate the call charges. To seize the outside line, dial the following procedure instead of "0". * 0 0 - MSN- # - external phone number.

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

Lift handset → Follow me - on → Enter the number of the phone from where you wish to divert calls → Acknowledgement tone → Replace handset

Follow me - off

Lift handset, Special dial tone → Follow me - off → Acknowledgement tone → Replace handset

Notes

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.

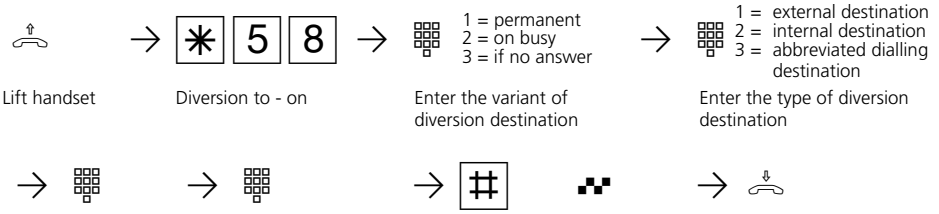
Diversion to - diverting calls to another telephone

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.

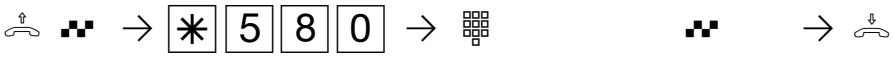
From an external location, you switch diversions by dialling up the telephone system's switching box. After entering the code, you set diversions with the same procedures and the same codes as from an internal location.

Diversion to - on



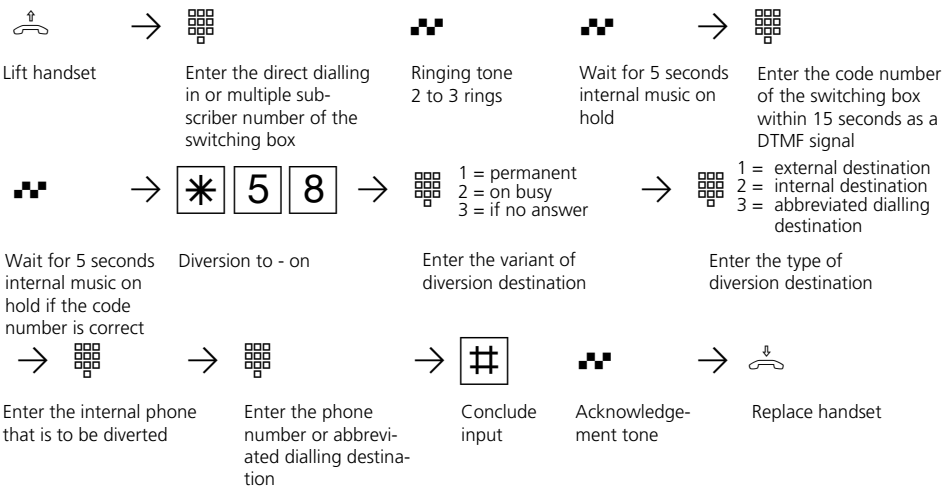
Lift handset
Diversion to - on
Enter the variant of diversion destination
Enter the type of diversion destination
Enter the internal phone number that is to diverted
Enter the phone number or abbreviated dialling destination
Conclude input
Acknowledge-ment tone
Replace handset

Diversion to - off



Lift handset
Special dial tone
Diversion to - off
Enter the internal phone whose diversion is to be deactivated
Acknowledge-ment tone
Replace handset

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



Notes

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 privileged to dial the external phone number.

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

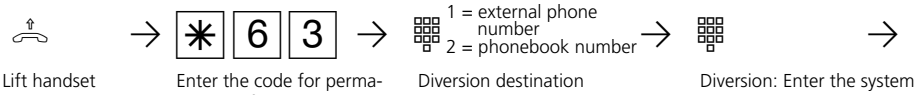
Diversions by the ISDN exchange
You can only use the "call forwarding" feature after specially ordering this feature from your network carrier. The ISDN exchange then forwards all calls to your system or your multiple subscriber number to another destination that you have specified. Calls can be forwarded 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.

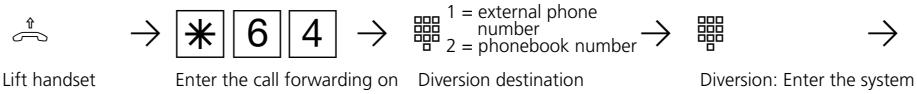
Permanent call forwarding on



Lift handset → Enter the code for permanent call forwarding (*63) → Diversion destination (1 = external phone number, 2 = phonebook number) → Diversion: Enter the system or multiple subscriber number →

Conclude input → Destination:Enter the external phone number or phonebook number → Conclude input → Wait for the acknowledgement tone → Replace handset

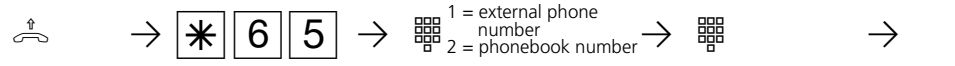
Call forwarding on busy on



Lift handset → Enter the call forwarding on busy code (*64) → Diversion destination (1 = external phone number, 2 = phonebook number) → Diversion: Enter the system or multiple subscriber number →

Conclude input → Destination:Enter the external phone number or phonebook number → Conclude input → Wait for the acknowledgement tone → Replace handset

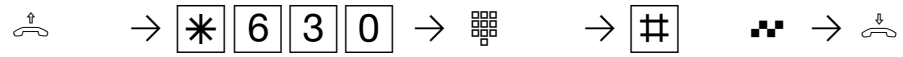
Call forwarding if no answer on



Lift handset → Enter the call forwarding if no answer on code → Diversion destination → Diversion: Enter the system or multiple subscriber number →

Conclude input → Destination:Enter the external phone number or phonebook number → Conclude input → Wait for the acknowledgement tone → Replace handset

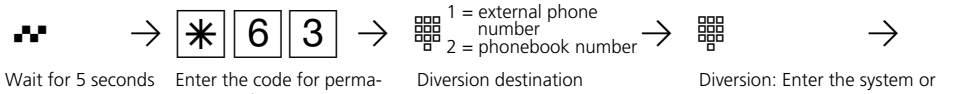
Call forwarding off



Lift handset → Enter the call forwarding off code → Enter the system or multiple subscriber number → Conclude input and wait for the acknowledgement tone → Replace handset

Configuring call forwarding from an external location (example: permanent call forwarding)

Lift handset → Enter the direct dialling in or multiple subscriber number of the switching box → Ringing tone 2 to 3 rings → Wait for 5 seconds internal music on hold → Enter the code number of the switching box within 15 seconds as a DTMF signal



Wait for 5 seconds internal music on hold if the code number is correct → Enter the code for permanent call forwarding → Diversion destination → Diversion: Enter the system or multiple subscriber number →

Conclude input → Destination:Enter the external phone number or phonebook number → Conclude input → Wait for the acknowledgement tone → Replace handset

Notes

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.

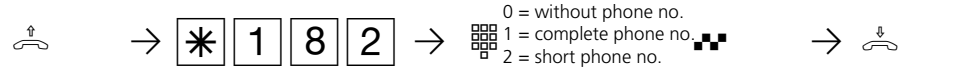
Connection data set - Setting and printing the printout

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



Lift handset | Define printout for selected phone number | Enter the digit | Acknowledgment tone, enter the cost code if necessary | Replace handset

Printing the connection data set for all subscribers

Lift handset | Print the connection data set for all subscribers | Enter the digit | Acknowledgment tone, enter the cost code if necessary | Replace handset

Printing the connection data set for individual subscribers

Lift handset | Print the connection data set for individual subscribers | Enter internal phone number | Enter digit, acknowledgment tone, enter the cost code if necessary | Replace handset

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

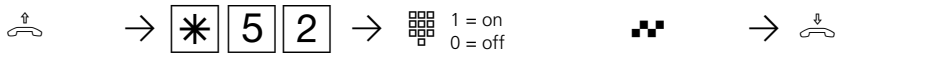
Displaying connection costs on an analog telephone

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

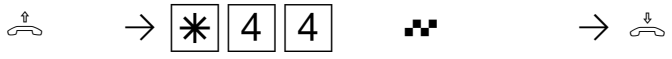
You can display the costs of your last connection that are stored in the telephone system at any time. To do this, it suffices if you have requested the "communication of connection charges at the end of the connection" feature from your network carrier.

Communication of charge pulses on / off



Lift handset → Communication of charge pulses → Enter the digit → Acknowledgement tone → Replace handset

Displaying the costs of the last connection



Lift handset → Display costs of the last connection → Acknowledgement tone; wait until the display appears → Replace handset

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.

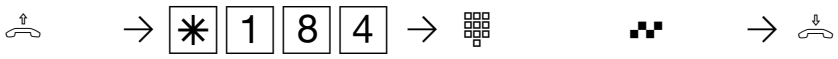
You can also define what is to happen when the cost limit is reached.
Can the subscriber finish the started conversation but not start a new one or is the connection cleared? Another external call is not possible until after the connection costs of this subscriber have been cleared.

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

Entering cost limit

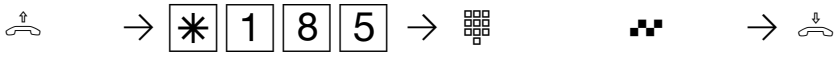
Lift handset → Define cost limit → Enter internal phone number → Enter cost limit 7 digits, 0... 9999999 pfennigs, acknowledgment tone, enter the cost code if necessary → Replace handset

Cleardown at cost limit



Lift handset → Define cleardown at cost limit → Enter digit, 1 = clear connection 0 = do not clear → Acknowledgment tone, enter the cost code if necessary → Replace handset

Clear cost limit



Lift handset → Clear cost limit → Enter internal phone number → Acknowledgment tone, enter the cost code if necessary → Replace handset

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.

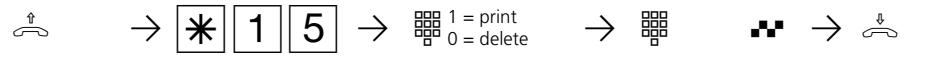
Enter the cost code in four digits. If the code is correct you will hear the acknowledgment tone. If the code is incorrect, you will hear the error tone. Replace the handset and start the entire input again from the beginning with the correct cost code.

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 (S0 access)

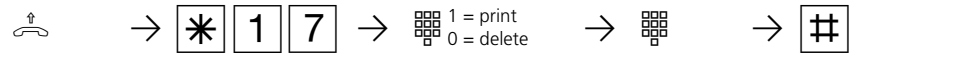
Providing you have registered the billable feature "Transmission of connection charges at the end of the connection" with the network operator.
You can print out the total connection costs and clear them at any time if necessary.

Printing and deleting connection costs for a subscriber



Lift handset → Connection costs for a subscriber → Print or delete → Enter internal phone number, Acknowledgment tone, enter the cost code if necessary → Replace handset

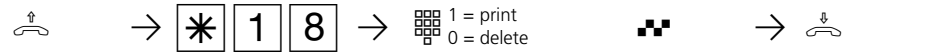
Printing and deleting connection costs for a external phone number



Lift handset → Connection costs for an external phone number → Print or delete → Enter external phone number → Terminate MSN input

Acknowledgment tone, enter the cost code if necessary → Replace handset

Printing and deleting connection costs for the telecommunications system



Lift handset → Connection costs for the telecommunications system → Print or delete → Acknowledgment tone, enter the cost code if necessary → Replace handset

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.

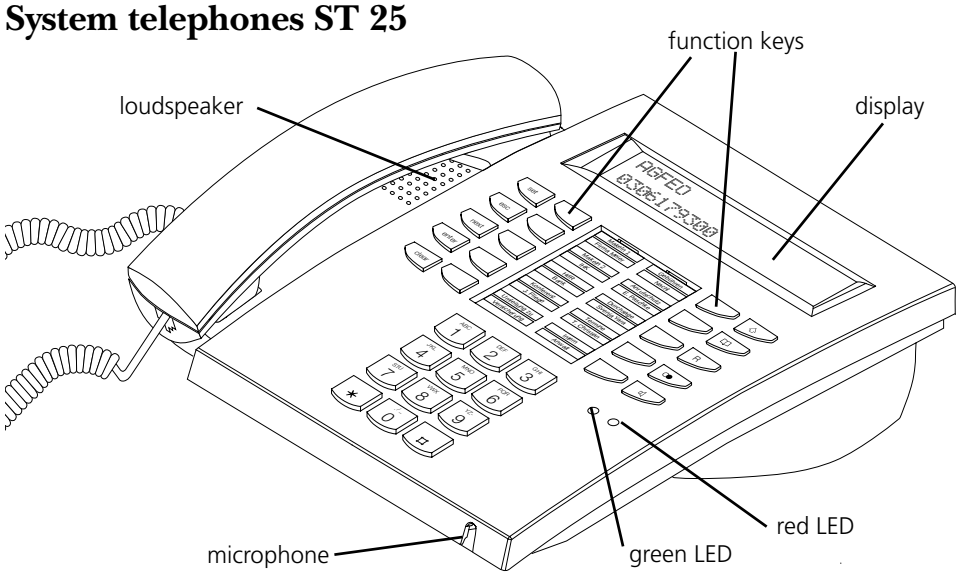
Example of a printout of the connection costs

```
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

System telephones ST 25



[1] ... [0] Dialling key pad - For dialling a number and entering data

[*], [#] # and * keys

[set] Set key - for initiating and ending programming

[esc] esc key - for clearing a connection or for cancelling programming mode

[next] next key - for scrolling further in the display in the event of different functions

[enter] enter key - for confirming inputs

[clear] clear key - for clearing a display or data

[⇧] shift key - to use the second level of function keys and to switch the phonebook register mode (numeric / alphabetical)

[📖] Telephone directory key - to call up the telephone directory

[R] Inquiry key - for inquiries and brokering

[⟲] Redial key - for dialling the number dialled last

[🔊] Loudspeaker key - for activating the loudspeaker and switching to hands free mode. You can alter the function by programming.

[ ] 10 function key - in the "as-delivered settings", these keys have default assingnments. You can change their functions by programmimg.

Red LED - Flashes in the event of an appointment call and an entry in the call list; lights up when do not disturb is no.

Green LED - Flashes when hands free mode is on, lights up by operating a headset.

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).

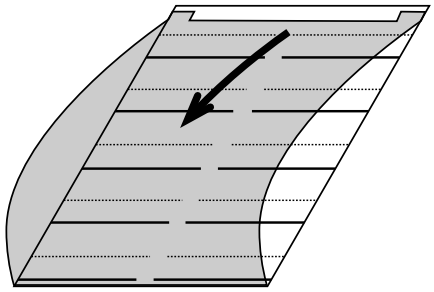
Inserting the marking strips of the function keys

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

Now you can remove it.

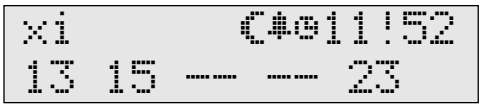
Insert the labelling strip. You can print the appropriate labels on your PC with the configuration program TK-Set.

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



1st Display line

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 plus, AS 191 plus). One line (one B-channel) is busy.
X	External S0-port. Both outside lines (both B-channels) are busy.
I	Internal S0-port (AS 141 plus, AS 191 plus). 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 2nd 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.

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 (ST 25)
- 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

set 2 1	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
set	Conclude programming. In future, your telephone will ring at the newly set volume.	

Setting the tone ringing tone

set 2 2	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
set	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 (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.

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

Status display variant 1

set — 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.

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

Example: Internal user 11, 12, 13, 15, 18, 22 and 23 are busy.

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

Status display variant 2

enter — 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.

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
	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<
	Enter a digit, e.g. "1" 1 = direct access (automatic outside line seizur) 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 plus and AS 191 plus with the procedures of the analog and ISDN terminals.

Function keys - freely programmable functions (overview)

Reject	Reject current call. Caller hear busy tone.
Call waiting prevention	Deactivate Call Waiting tone. Caller hear busy tone. Special function keys that can be configured: - call waiting prevention for call to the first internal phone number - call waiting prevention for call to the second internal phone number - call waiting prevention for call to the 1st and 2st internal phone number
Do not disturb	To turn off tone ringing (do not disturb) Special function keys that can be configured: - Do not disturb for calls to the first internal phone number - Do not disturb for calls to the second internal phone number - Do not disturb for calls to the first and second internal phone numbers - Do not disturb for internal calls - Do not disturb for external calls - Do not disturb for internal and external calls
Call variant 2	To turn call variant 2 (night service) on or off Special function keys that can be configured: - Single switching of call variant 2 for each external phone number of the telephone system - Joint switching of call variant 2 for all external phone numbers of the telephone system.
Call variant 3	Call variant 3 (call forwarding) on or off Special function keys that can be configured: - Single switching of call variant 3 for each external phone number of the telephone system - Joint switching of call variant 3 for all external phone numbers of the telephone system.
Announcement	Announcement via an audio module or a loudspeaker system
Busy on Busy	Caller hears busy tone if an extension is busy when a call is distributed. Special function keys programmable: - Activate Busy on Busy for every call distribution individually - Activate Busy on Busy for all call distributions globally
Call by Call	To select a network provider, take over from the LCR
clr (clear)*	To clear a setting
Voice message	Voice message to system telephones Special function key that can be configured: - Voice message to defined internal users
Units	Display of call charges
Malicious call tracing	Identification of malicious callers by the ISDN exchange
Remote scanning	Postdial a stored DTMF tone sequence ([1] ... [0], [*], [#]), e.g. to remotely scan an answering machine.
Pick up	To pick up external calls. Special function key that can be configured: - Picking up internal calls and external calls of defined internal users.
Headset	For operating a headset (only on the digital system telephone)
Incognito	Conceal your own phone number from the called party

Internal key	To dial internal users. Special function key that can be configured: - Internal call to a defined internal user
ISDN call forwarding	To turn ISDN call forwarding on or off
ISDN hold	To place an external call on hold in the exchange (only possible on a point-to-multipoint connection)
Conference	To initiate a conference with internal users or external subscribers
Open listening volume	Change loudspeaker volume for open listening.
LCR	Activate or deactivate LCR (Least Cost Routing) for your system telephone.
Brokering	For brokering between several external connections
Memory	Store an external phone number from the display.
MSN / External key	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
Reserve	To reserve an outside line (B channel) when all lines are busy
Relay	AS 191 plus - To switch the relays
Inquiry*	To initiate inquiry, connecting, brokering.
Telephone lock	To lock the system telephone and to activate emergency / direct call
Phonebook*	To dial a phone number from the phonebook
Appointment	To turn an entered appointment on or off
Timer	Activate or deactivate a timer (timer control of the telecommunications system, such as call variants, diversions, relays) Special function keys programmable: Timers 1 ... 9, 0
Door	AS 191 plus - To establish a connection to the door hands free unit
Door opener	AS 191 plus - Switch on electric door opener for 3 seconds
Transfer	To transfer an external call to an external user
Diversion from	To divert all calls from another telephone to the current telephone
Diversion to	To divert all calls to another internal user or external subscriber
Wake up	To turn the entered wake up time on or off
Forward to	Forward an incoming call to another phone number without answering the call.
Destination memory	To dial a stored phone number
- public	- The phone number is stored in your telephone and in the phone book.
- private	- The phone number is only stored in your telephone.

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

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

Changing function key assignments

set 3 1	"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
or next	Enter first letter of the function´s name, e.g. „D“ for destination key, or, by pressing the "next" key, scroll down until the desired function is displayed or	Destination key enter next esc
next	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	"enter": confirm selection and modify a different function key or	Press FP key Key esc
set	"set": end programming. The function of the function key has been reassigned.	-- 11:52 -- -- -- -- --

Key assignments with special functions (examples)

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

"Do not disturb" function key

```
Do not disturb
enter  next  esc
```

enter — "enter": confirm selection of the function.

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

Enter the phone number to which do not disturb is to apply:
1 = 1. internal phone number (example)
2 = 2. internal phone number
1 and 2 = 1. and 2. internal phone numbers

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

enter — "enter" confirm

```
Do not disturb
int: 1   ext: 2
```

Enter the call mode to which do not disturb is to apply:
1 = internal calls (example)
2 = external calls
1 and 2 = internal and external calls

```
Do not disturb
int:>1<  ext: 2
```

set — "set": end programming.
You can turn the do not disturb mode on / off by pressing the "don't disturb" key.

"Call variant 2" and "call variant 3" function keys (example: call variant 2)

```
Call variant 2
enter  next  esc
```

enter — "enter": confirm selection of the function.

```
Call variant 2
ext.23456781
```

next — "next": select the phone number or name of the S0 access for which the call variant is to be turned on / off

```
Call variant 2
ext. AGFEO 2
```

next — If you wish to turn the call variant on /off for "all" phone numbers

```
Call variant 2
ext. all
```

next — Select "without" if the phone number is only to be selected when switching

```
Call variant 2
ext. without
```

set — "set": end programming

	"Voice Message" function key	Voice message enter next esc
enter	"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	"set": end programming	
	Function key for "pick up" of a call	Pick up enter next esc
enter	"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	"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

```
Internal key
enter  next  esc
```

enter — "enter": confirm selection

```
Internal key
telephone __
```

Enter the internal phone number of the internal user you wish to reach directly by pressing the internal key. Example: 13

```
Internal key
telephone 13
```

set — "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

```
MSN/external key
enter  next  esc
```

enter — "enter": confirm selection

```
MSN/external key
ext. 23456781
```

next — "next": select the phone number or name of the S0 access to which the "MSN" key is to apply

```
MSN/external key
ext. AGFEO 2
```

next — Select "without" if the phone number is not to be selected until the key is pressed

```
MSN/external key
ext. without
```

set — "set": end programming

"Relay" function key (AS 191 plus)

```
Relay
enter  next  esc
```

enter — "enter": confirm selection

```
Relay
relay number __
```

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

```
Relay
relay number 12
```

set — "set": end programming

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.

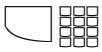
If you wish to manage connection costs via a different MSN, press the corresponding MSN / external key to seize the outside line. You can configure an MSN / external key on the system telephone for every MSN.

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
```

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/__
Please dial
```

Press the **MSN / external key** to seize an outside line. The costs of the connection are charged to this phone number. Example: 23456782

```
ext. 23456782
Dial number
```

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

```
ext. Sales
Dial number
```

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

```
Calling
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
reserve ?
```

Press the **"enter" key** to reserve an outside line.

```
Reservation
confirmed
```

Replace the receiver

```
Xi          11:52
13 15 16 17 23
```

Reservation call of the telephone system.

```
Your line
```

Lift the receiver. You hear the external dial tone.

```
ext. 23456781
Please dial
```

Dial the external phone number

```
Calling
98765432
```

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 (1...0,* 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 loud-speaker other pe´rsons in the room may listen to the call you are conductimg 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.

Internal call: in the display, you see where the call is coming from. You can enter the name on any system telephone.

```
from KELLER
for HAUPT
```

Lift the receiver. The name or, for example, `telephone 13` is displayed

```
KELLER
```

External call: 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.

```
03098765432
N: 23456781
```

```
MAIER
N: 23456781
```

```
MAIER
N: AGFEO
```

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.

```
MAIER
__ __ __ __ __
```

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.

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.

```
MAIER
03087654321
```

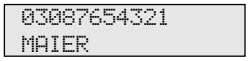
Accepting the second call
1st possibility - replace the receiver to end the current call. Your telephone rings. You are connected to the new call.

```
03087654321
N: 23456781
```

Lift the receiver. You are connected to the caller.

```
03087654321
__ __ __ __ __
```

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.



Rejecting the waiting (knocking) call

Press the "reject" 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.

Continue the call

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.

Internal forwarding with and without announcement

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

```
MAIER
__ __ __ __ __
```

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
Internal subscriber answers the call - announce the external call.
Replace the receiver. Internal subscriber 13 and external subscriber are now connected to each other.

```
Telephone 13
MAIER
```

Internal subscriber does not answer -
by pressing the „esc" key you switch back to the external subscriber. You may forward the external call to another internal subscriber.

```
MAIER
__ __ __ __ __
```

Internal subscriber is busy -
by pressing the „esc" key you switch back to the external subscriber. Otherwise you will be connected to the external subscriber automatically after 10 seconds. You may forward the external call to another internal subscriber
or
by pressing the „enter" key **park the connection** and replace the receiver.
If the internal subscriber replaces the receiver, he gets the external call of the waiting external subscriber.

```
parking ?
enter
```

```
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.

You receive an **automatic call back-immediately** if the internal subscriber is busy or his don´t disturb is activated, **after 45 seconds** if the internal subscriber does not answer.

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

```
MAIER
N: 23456781
```

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/--
Please dial
```

Replace the receiver

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

Notes

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 You want to announce your waiting call to the busy internal user and you may wish to initiate a callback.	Telephone 13 is busy
enter	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.

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 - programming and switching

Enter "set" and press the **"call waiting prevention" key** or enter "set 14" to set up call waiting prevention. This display message appears when a 1st and 2nd internal phone number (primary and secondary) are defined for your telephone.

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

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

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

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
```

Conclude programming

Call waiting prevention on/off

The receiver is on the hook. By pressing the **„call waiting prevention" key** you activate/ deactivate the programmed call waiting prevention.

```
Call waiting
on
```

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

«🕭» 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

«🕭» 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.

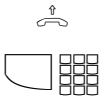
```
Telephone 15
```

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" outsize 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
-- -- -- -- --
```

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.

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**.

The call list contains up to 10 entries. If a 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.

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

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

Call list on/off

set 2 *

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

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

set

"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.

enter

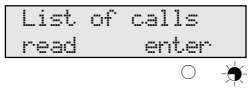
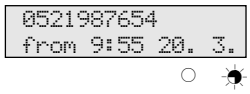
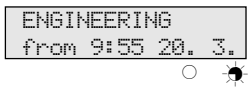
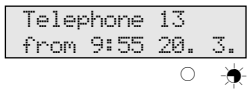
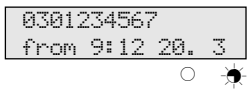
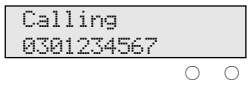
Press the "enter" key.

```
List of calls
```

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

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

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.	
next next	There is at least one entry in the call list.	
enter	To see the first entry: Press the "enter" key. On the display, you see an external phone number and the date/time of the last call or the entry in the phonebook (name) and the date/time of the last call or a reminder to call an internal user and the date/time of the last call. Now, you have several possibilities	  
Scrolling: next	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. If the other user answers, the entry is cleared from the call list. If the other user does not answer, the entry remains.	
Clearing: clear	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
```

○ ✹

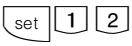
Do not disturb off

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
-- -- -- -- --
```

○ ✹

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

set	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.
next	Press "next" to select the external phone number in yor telephone system or	ext. 23456781 on: 1 off: >0<
next	Select the name of the external phone number or	ext. AGFEO on: 1 off: >0<
next	"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	"set" : end programming	-- € 11:52 -- -- -- -- --

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.	`--  11:52` `-- -- -- -- --`
AVA 2	Press the **"AVA 2" (night)** key. Call variant 2 is now **on**.	`Call variant 2` `ext.AGFEO`
esc	Return to the standard display. As a check, you see the moon symbol in the display and the "!" symbol.	`--  ☾ 11:52` `-- -- -- -- --`
AVA 2	Press the **"AVA 2" (night)** key. The call variant 2 is now **off** if it was on beforehand.	`AVA2 off` `ext.AGFEO`
esc	Return to the standard display. The moon symbol and the "!" symbol in the display is off. Call variant 1 (daytime service) is on.	`--  11:52` `-- -- -- -- --`

Notes

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

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

You can deactivate (switch off) the displayed setting clear 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

set + **"call variant 3" key**	Enter "set" and press the **"call variant 3" key** or "set 19" to activate call forwarding	Forwarding next/external ..
next	Select the external phone number by pressing "next" or	ext. 23456781 on: 1 off: >0<
next	Select the name of the external phone number or	ext. AGFEO on: 1 off: >0<
next	"all" if you wish to activate/deactivate call forwarding 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 forwarding on "0": Call forwarding off Example: "1" - on	ext. 23456781 on: >1< off: 0
	"Next": select and switch a further call variant 3 or	
set	"Set": conclude programming	-- 11:52 -- -- -- -- --

Call variant 3 on/off with a special function key

If you have permanently assigned a 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**.	
esc	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.	
esc	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 next several times. Press enter to indicate the external phone number to which the setting applies.
You can deactivate (switch off) the displayed setting clear with clear.

Forwarding a call during ringing

You can divert an external call on your system telephone to another internal extension or external subscriber while the phone is ringing. Then you do not have to answer the call.

To be able to divert calls to an external subscriber the ISDN „Call Deflection" feature must be available on your local exchange and be enabled for the line.

Forwarding a call during ringing

((🕭))	An external call comes in. The display identifies the caller.	MAIER cl.: Office
	Press the "**call deflection" key.** You can forward the call to an internal or external phone number.	Call deflection int: 1 ext: 2
2	Select forwarding to an external phone number, for example.	Call deflection _
	Key in the external number you want to forward to, choose an entry from the phonebook or press a speed dial key.	Call deflection 61793015
enter	Press "enter". The call is forwarded to the external number you selected. The call to your system is cleared.	-- 11:52 -- -- -- -- --

Rejecting a call during ringing

Press the **"reject" 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.

Call forwarding for extensions on the point to point connection

The ISDN "Call Deflection" feature can be used to implement call forwarding for extensions on the point to point connection (Partial Rerouting). For this, the "Partial Rerouting" box under "Customisation" in the "TK-Set" program must be checked.

If you program a diversion to an external subscriber from the extension, the system does not divert the call to the external party over the second B-channel. The call is diverted by the exchange during the ring phase.

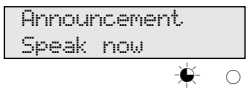
Announcement

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 a port for analog terminal.

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.



or

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

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.

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 - programming and switching

set + key	Enter "set" and press the **"busy on busy" key** or "set 1#" to initiate the function.	Busy on Busy next/Externalno.
next	Select the external phone number with "next" or	ext. 23456781 on: 1 off: >0<
next	Select the name of the external phone number	ext. AGFEO on: 1 off: >0<
	In the example, the external phone number 23456781 is selected.	ext. 23456781 on: 1 off: >0<
keypad	"1": Busy on busy on "0": Busy on busy off Example: "1" - on	ext. 23456781 on: >1< off: 0
set	"Next", select external phone numbers and set busy tone on busy or "Set": conclude programming	-- 11:52 -- -- -- -- --

Busy on busy on/off

receiver + key	The receiver is on the hook. By pressing the **„busy on busy" key** you activate/deactivate the programmed function.	Busy On Busy off ext. 23456781

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.

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 **"voice message" key**. You can now choose who is to hear your voice message.

```
Voice message
-- -- -- -- --
```

Enter the phone numbers of the telephone systems that you wish to reach (up to 5 system telephones).

```
Voice message
13 22 -- -- --
```

Press the "enter" key for a voice message in the hands free mode
or

use the receiver.
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.

```
Voice message
Speak now
```

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.

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

After the voice message: press the "loudspeaker" key or replace the receiver. This ends the operation.

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

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.

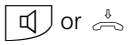
```
Voice message
Speak now
```

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.

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



After the voice message: press the "loudspeaker" key or replace the receiver. This ends the operation.

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

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.

```
98765432
-- -- -- -- --
```

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.

```
Voice message
Speak now
```

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.

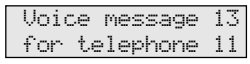
```
Telephone 13
98765432
```

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.

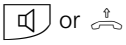
```
x-          11:52
13 -- -- -- --
```

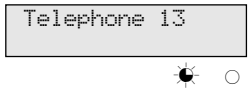
When you hear a telephone voice message

You hear the acknowledgement tone and then a voice message.

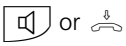


If you wish to speak to the person announcing the message:

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



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.

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

Notes

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

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

You can vary the voice message volume by entering the "Open listening volume" key.

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

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)

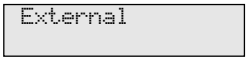
You can only use the "identifying malicious callers" feature after specially ordering this feature from your network carrier.
The ISDN exchange stores the caller's phone number, your phone number, the date and the time of the call. You can trace the caller during a call.

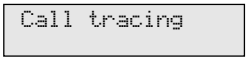
Tracing a caller

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

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

Replace the receiver





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 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. 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.

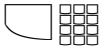
```
Telephone 17
Telephone 13
```

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.



Press the **"brokering" key** and dial the external phone number.

```
Calling
03012345654
```

The external subscriber has picked up.

```
03012345654
03098765432
```

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

```
03012345654
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
__ __ __ __ __
```

Press the **"ISDN hold" key**. You hear the external dial tone.

```
Please dial
```

Dial the phone number of the external subscriber with whom you wish to inquiry.

```
Calling
02345678999
```

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.

```
02345678999
__ __ __ __ ____
```

If the other party answers, you can talk with both external subscribers after pressing the **"conference" key**.

```
Conference
```

You end the three-party conference if you replace the receiver.

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

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.

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 if the local code you dial (tariff zone), the time of day and day of the week. Should the selected provider not offer a free line after a adjustable number of tries, the PBX automatically chooses a pre-defined alternative provider (fallback).

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

Press the **"LCR" function key** to activate or deactivate the LCR function for your phone. Example shows LCR active.

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.
- 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 were available to all 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
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)
hld.: conversation on hold
cl.: newly arriving ringing
con.: connected (active) conversation

```
Telephon 13
03012345678
```

```
MAIER
hld.: 23456789
```

```
Extern 2
cl.: AGFEO 1
```

The active conversation is automatically displayed again after around 10 seconds.

```
03012345678
con.: 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
set	Press the "set" key. The phone number/name is stored in the memory.	Function menu No.-> Memory
set	"set": return to the standard display	

Displaying and dialling a memory phone number

	Press the **"memory" key**. The stored external phone number, if applicable with the name, is displayed.	MAIER 03098765432
or next	With the **„memory" key** or with „next" you choose from one of the last 5 external numbers.	
	Lift the receiver. The phone number is dialled automatically.	Calling 03098765432
	Conduct the call	

Using a memory phone number/name (example - programming destination dialling)

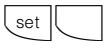
set	Press "set" and **destination key private**.	Enter number _
	Press the **"memory" key.** The stored phone number is accepted. Any existing destination phone number is overwritten.	Enter number 03098765432
enter	Press "enter" to confirm. Enter the name or, if applicable, press the **"memory" key**. The name is accepted.	Enter name MAIER
set	"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).

```
Call by Call
enter  next  esc
```

An entered network provider is displayed.

```
Arcor
01070
```

With 'next' you can select another network provider from the LCR.

```
MOBILCOM
01019
```

'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.

```
MOBILCOM
01019
```

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.

```
MOBILCOM
0521987650
```

Notes

The network code (e.g. 01019) dialed with the "Call by Call" key is stored in the redial last number memory.

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 __ __ __ __ __
enter	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
enter	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 * 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

set 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
enter	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.	
set	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.	

Relay switching

AS 190 plus, AS 191 plus: 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 R4 is automatically assigned to the audio module.
If a door handsfree unit (FTZ 123 D12) is connected, the relays R3 and R4 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<
next	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 R26 on:>1< off: 0
esc	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**. If the relay is a pulse relay, the second line of the display remains unchanged.	Relay 25 on
esc	The displayed message appears on its own after some time or return to the standard display by pressing "esc".	-- 11:52 -- -- -- -- --

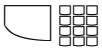
Inquiry

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

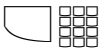
You are conducting an external or internal telephone conversation.
Example: External

```
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

```
03012345678
__ __ __ __ __
```

or

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
__ __ __ __ __
```

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?
enter	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 appointment 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.	`-- 11!52` `-- -- -- -- --`
next	The date is displayed.	`-- 11!52` `5. July 1998`
next	There is at least one entry in the call list.	`List of calls` `read enter`
next	To see whether there are any further messages, press the "next" key. You see the next message, if available.	`Appointment call`
next	Continue scrolling by pressing "next". Example: Diversion	`Diversion` `read enter`
enter	Continue scrolling by pressing "next". Example: ISDN call forwarding	`11 permanent to` `0123456789`
next	Read out with "enter". Internal phone number 11 is diverted permanently to external phone number 0123456789	`ISDN call forw.` `read enter`
enter	Read out with "enter". ISDN call forwarding on (active) for the external phone number with the name "AGFEO 1" to external phone number 0234567890	`on AGFEO 1` `0234567890`
esc	Back to standard display: Automatically – after approx. 20 seconds Immediately – with "esc"	

Notes

By pressing next , you can successively view available displays. If applicable, you can press enter 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.

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

Entering user names

set 3 2	Initiate the function	Enter name 11 _
1 next 2	Enter the name with the digit keys, e.g. AD (see notes)	Enter name 11 AD
enter	Confirm the name by pressing "enter"	Change User name
set	"set": end programming.	

Notes

Enter a name on the digital keypad:

1 ··· 0	If necessary, press several times Example: 1 = A 11 = B 111 = C 1111 = 1	
next	To the next input field or automatically after a time out	
⇧ next	To the previous input field; character can be overwritten	
clear	Delete the flashing character	
⇧ clear	Clear the entire entry	
⇧	By pressing ⇧ you change between small and capital letters. The display shows ABC or abc.	

Storing phonebook numbers

You can centrally store up 200 important external phone numbers and affiliated names in the telephone system.
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 ⇧.

As well as normal phone numbers you can also store code digit procedures in your phonebook using the ✳ and # keys. This means you can then use all the procedures on telephones which do not support the ✳ and # keys.

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

set 🕮	Press the "set" and "phonebook" keys to initiate the function or go directly to input by entering "set 51".	Phonebook Add entry
enter	Confirm; the first free memory is displayed.	PB 010 Number _
⌨	Enter the external phone number that you wish to store.	PB 010 Number 0304050
enter	Confirm	PB 010 Name _
1 next 2	Enter the name, e.g. AD (1 = A, next, 2 = D; see notes under "Entering user names")	PB 010 Name AD
enter	Confirm	Phonebook Add entry
set	"enter": store a further phone number or "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.

Phonebook - changing a number

set 🕮	Press "set" and the "phonebook" key to initiate the function or go direct to input by entering "set 52".	Phonebook Add entry
next	Select the program item by pressing "next"	Phonebook Change entry
enter	Confirm the selection	Enter short no. 000 ... 199 # *
0 0 5	Enter the three digits for which the phone number is stored as an abbreviated dialling number (between 000 and 199), e.g. 005	ANTON 03040 50
enter	Confirm	PB 005 Number 03040 50_
clear	Clear individual digits of the phone number by pressing "clear" or clear all of it by pressing the "shift key" and "clear".	PB 05 Number 0304 05_
▦	Change the number	PB 005 Number 03040 55
enter	Confirm	PB 005 Name ANTON_
enter	Confirm or clear and modify the displayed name	Phonebook Change entry
set	"enter": Change a further destination in the phonebook or "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 by pressing the * key. By pressing the # key, you can scroll down ("next"), beginning with the abbreviated dialling number 000.

Phonebook - clearing a number

set 🕮	Press "set" and the "phonebook" key to initiate the function or go directly to input by entering "set 53".	Phonebook Add entry
next next	Select the program item with "next"	Phonebook Clear entry
enter	Confirm the selection	Enter short No. 000 ... 199 # *
0 0 5	Enter the three-digit abbreviated dialling number that you wish to clear (between 000 and 199), e.g. 005	ANTON 0304055
enter	Confirm the entered abbreviated dialling number.	Clear No. 005 ? enter esc
enter	Confirm clearing by pressing "enter" or cancel the operation be pressing "esc".	Phonebook Clear entry
set	"enter": Clear a further abbreviated dialling destination or "set": End clearing	

Entering an emergency number

set 🕮	Press "set" and the "phonebook" key to initiate the function or go directly to input with "set 54"	Phonebook Add entry
next next next	Select the program item by pressing "next"	Enter Emergency number
enter	Confirm the selection	Select emergency * or #
*	Select the emergency call, e.g. *	Enter number _
⌨	Enter the emergency phone number	Enter number 98765
set	"enter": Enter the emergency phone number # or "set": End input	

Entering a direct number

set 🕮	Press "set" and the "phonebook" key to initiate the function or go directly to input by entering "set 55"	Phonebook Add entry
next next	Select the program item by pressing "next"	Enter Baby call
enter	Confirm the selection	Enter number _
⊞	Enter the direct phone number you wish to store	Enter number 012346789545
set	"set": End input	

Notes

To clear an input, clear individual characters by pressing clear or clear everything by pressing ⇧ clear.

You activate the emergency and/or direct phone number (baby call number) with the "lock" key or "set 13".

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 ... 199 # *
⌨	Enter the abbreviate dialling number. The phone number is displayed or	ANTON 052123456
⌗	with the ⌗ key, you can scroll through the stored entries in sequence from 000 to 199 until you have found the required name (scroll back with the * key).	BERTA 022135745
or 🔊	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 ... 199 # *
⇧	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
next	Press the "next" key to move to input of the second letter. The input cursor flashes.	Select letter A_

	Enter the second letter, e.g. N = 55. You can scroll down by pressing # and you can scroll up by pressing * .	ANTON 052123456
or	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 ... 199 # *
	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
or	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 **"Telephone 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 **"Telephone 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

set 1 3

Initiate the function by entering "set 13". The current setting is marked in the display

```
Lock telephone
on: 1   off:>0<
```

"1": Lock the telephone

```
Lock telephone
on:>1<  off: 0
```

set

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.

Unlocking your telephone without a function key

set 1 3	Initiate the function by entering the "set 13". The current setting is marked in the display.	Lock telephone on: >1< off: 0
	"0": Unlock the telephone	Lock telephone on: 1 off: >0<
	If the telephone code is prompted in the display: enter the code.	
set	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.	-- 11:52 -- -- -- -- --

Emergency call

	The telephone is locked and the receiver is on the hook.	Emergency/baby * or #
	Emergency call memory * or #. Example: "*". The phone number is displayed.	Emergency call 1 123
	Lift the receiver. The phone number is dialled automatically or	Emergency call 123
	press the "loudspeaker" key. You are in the hands-free mode and a phone number is dialled automatically. You can now speak.	

Direct call (baby call)

	The telephone is locked. Lift the receiver.	Emergency/baby * or #
next	When any key is pressed, the phone number stored as the direct number is dialled. You can now speak.	Baby call 45678

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

set

Press the "set" key and the **"appointment" key** or, when not using a function key, press "set 15" to initiate appointment input.

```
Appointment time
__:__
```

enter

Enter the time with four digits, e.g. 1315, and press the "enter" key. Clear any previous entry if necessary by pressing "clear".

```
Enter date
__.__.__
```

Enter the date with six digits. Example: 210798

```
Enter date
21.07.98
```

set

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.

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

Appointment call off

Press the **"appointment" key**. The stored appointment appears in the top line of the display. The appointment call is off.

```
13:15  21.07.98
Appointment off
```

esc

Press the "esc" key to show the standard display. The clock symbol has disappeared from the display.

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

Appointment call on

Press the **"appointment" key**. The stored appointment appears in the top line of the display. The appointment call is on.

```
13:15  21.07.98
Appointment on
```

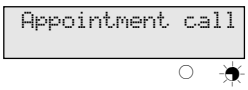
esc

Press the "esc" key to show the standard display. To enable a check, the display shows the clock symbol.

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

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.



esc

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.

You can only alternately turn a stored appointment on or off with the "appointment" function key.

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.

The appointment call is only signalled on your telephone, even if you have set "diversion to".

Activating/deactivating timers

The telecommunications system provides 10 timers. You can use them to program the system to activate or deactivate functions at specific times and on specific days.
The following functions can be controlled by timer:
- Call variants (night service, day time service)
- Internal call forwarding
- Busy on Busy
- External call privileges
- Telephone lock
- Second Call Busy
- Relays
- Diversions

You can assign a function to any timer.

The timers can only be programmed in the "TK-Set" program.
You can activate or deactivate timer control from any telephone (such as for long weekends or holiday times). When a timer is switched off the "off" defaults of the functions are automatically active.
You can also switch the "on/off" defaults for the functions from any telephone (such as to set an earlier or later close of business).
You can combine several timers in a group and control them collectively.

Activating/deactivating timers

Press the **"Timer" key** to control the programmed timer in the system.

"1": The timer is active. The function(s) is/are switched at the pre-set time.
"0": Deactivate timer. The function(s) immediately return to their "off" defaults.

Press "next" to control the functions.

"1": Functions are set to their "on" defaults and the timer is active.
"0": Functions are set to their "off" defaults.

Conclude programming.

Switching over the door call variant

AS 190 plus, AS 191 plus - 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

set + **"call variant 2" (night)**	Enter "set" and press the **"call variant 2" (night)** key or enter "set 11" to activate door call variant 2 (night service).	Call variant 2 next/Externalno.
next	Press "next" to select the door phone number, e.g. 30	Door 30 on: 1 off:>0<
	"1": Call variant 2 on "0": Call variant 2 off Example: "1" - on	Door 30 on:>1< off: 0
set	"set" : end programming The door call variant 2 is on. The display shows the "!" symbol.	-- 11!52 -- -- -- -- --

Notes

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

Press enter 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

AS 190 plus, AS 191 plus - 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 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

set + "diversion to" key	Initiate the function by pressing "set" and the "diversion to" key or "set 17".	Diversion to Sourcenumber __
keypad	Enter phone number of the door (source number) from which you want to divert calls to an external subscriber, e.g. 20	Diversion 30 to internal ?
next	Press "enter" to confirm	Diversion 30 to external ?
enter	Enter phone number of the door (source number) from which you want to divert calls to an external subscriber, e.g. 20	Diversion 30 _
keypad	With 'next' to selection – diversion to external subscriber	Diversion 30 98765432
enter	Press "enter" to confirm. Define the diversion mode	Diversion 30 p:>1< b: 2 n: 3
keypad	"1": **P**ermanent diversion (Türruf kann nur ständig umgeleitet werden)	Diversion 30 p:>1< b: 2 n: 3
enter	Press "enter" to confirm	Diversion 30 on: 1 off:>0<
keypad	"1": Diversion on "0": Diversion off. Example "1"	Diversion 30 on:>1< off: 0
set	"set": end input	--- 11!52 __ __ __ __ __

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

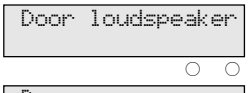
AS 190 plus, AS 191 plus - If you have connected a door hands-free unit (TFE) to your telephone system, you can speak to a visitor who is standing at your door.
Your telephone rings with the door call when the visitor presses the bell push. After the last ring, you have 30 seconds time (for as long as 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.

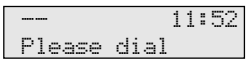
Lift the receiver. You are connected to the door intercom and you can talk to the visitor.



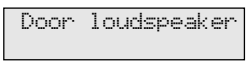
To open the door: press the "door" key. The door opener is activated for three seconds. To enable a check, this is displayed and you hear the acknowledgement tone.

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.

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

set 8 2 — 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
```

keypad — "1": The phone number is communicated
"0": The phone number is not communicated.
Example: "0".

```
No. -> Called
on: 1   off: >0<
```

set — Conclude programming.

Communication of your phone number with a function key on/off

Press the **„incognito" key** to activate or deactivate the communication of your phone number. Example: communication activate.

```
No. -> Caller
on
```

Communication of your phone number to callers on/off

set 8 3 — 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
```

keypad — "1": The phone number is communicated
"0": The phone number is not communicated
Example: "0".

```
No. -> Caller
on: 1   off: >0<
```

set — 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.

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!

You may make telephone calls as usual on an transferred telphone. 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.
Status request with next next ... enter.

Diversion from – programming and switching

set	Activate the function with "set" and "Diversion from" key or "set 18".	Diversion from Sourcenumber ___
	Enter phone number (source number) whose calls are to be diverted to your phone, e.g. 13.	Diversion 13/___ on: 1 off: >0<
	"1": Diversion on "0": Diversion off. Example "1"	Diversion 13/___ on: >1< off: 0
set	"set": end input. Every call for telephone 13 now rings on your phone.	-- 11!52 -- -- -- -- --

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 next next ... enter.

Programming and switching diversion to

set	Initiate the function by pressing "set" and the **"diversion to" key** or "set 17".	Diversion to Sourcenumber __
	Enter the phone number of the telephone (source number) whose calls you want to divert to another internal or external subscriber, e.g. 11.	Diversion 11/__ to internal ?
next	With 'next' possibly to selection – diversion to external subscriber	Diversion 11/__ to external ?
enter	Confirm selection with 'enter' Example: Diverting to an external subscriber	Diversion 11/__ _
	Enter the external phone number to which you wish to divert calls.	Diversion 11/__ 98765432
enter	Press "enter" to confirm. Define the diversion mode	Diversion 11/__ p:>1 b: 2 n: 3
	"1": **P**ermanent diversion Example: 2 "2": Diversion on **b**usy "3": Diversion if **n**o answer (after 15 seconds)	Diversion 11/__ p: 1 b:>2<n: 3
enter	Press "enter" to confirm	Diversion 11/__ on: 1 off:>0<
	"1": Diversion on "0": Diversion off. Example "1"	Diversion 11/__ on:>1< off: 0
set	"set": end input. The ! symbol stands for active call diversion.	__ 11!52 __ __ __ __ __

Diversion to – switching with function key

	Activate function with the "Diversion to" key. The current diversion status is displayed.	11 busy to 98765432
enter	Deactivate or activate the diversion as you wish with 'enter'.	11 deactivated t 98765432
next	With "next" possibly activate or deactivate diversion of the 2nd internal phone number.	12 permanent to Telefon 21
esc	Return to initial menu with "esc".	-- 11!52 -- -- -- -- --

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 next 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.

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

set + **"ISDN call forwarding" key**	By pressing "set" and the **"ISDN call forwarding" key** or "set 81", initiate programming of the call forwarding destination.	ISDN call forw. next/position
next	By pressing "next", select a position that has no entry for programming ISDN call forwarding.	No entry next/position 1
enter	Press "enter" to confirm. The first external phone number of your telephone or the name assigned to an external phone number is displayed.	External number ext.23456781
next	Press "next" to select an external phone number/name for which you wish to program ISDN call forwarding.	External number ext.AGFEO
enter	Press "enter" to confirm the selection	Enter number _
	Enter the phone number of the diversion destination without "0" for outside line seizure	Enter number 98765432
enter	Press "enter" to confirm	ext.AGFEO p:>1<b: 2 n: 3

Select the call forwarding variant, **p**ermanent = 1, on **b**usy = 2, if **n**o answer = 3 (after 15 seconds) e.g. "2".

```
ext.AGFEO
p: 1 b:>2<n: 3
```

"enter": program further call forwarding settings or

set

"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
```

next

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
```

enter

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
```

esc

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.

You can only program a call forwarding destination if the affected connection is not already forwarded. If applicable, deactivate call forwarding.

You can make outgoing external calls despite call forwarding. You hear the special dial tone of the ISDN exchange.

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)

set 7 2	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
next	Scroll to the display of the connection costs of the desired user with "next"	Costs of U23 9,72DM
clear	Delete the displayed connection costs	Costs of U23 deleted
next	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) or	Costs of S0 223,00DM
	all costs (all data sets) or	All data sets 223,00DM
set	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	

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**.

```
          0,36DM
__ __ __ __ __
```

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

```
Cost of call
         0,48DM
```

If no call costs are communicated, the duration of the call is displayed.

```
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.

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

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
	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
	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. Enter the next user or	Record ext13 stopped
set	"set": exit programming	

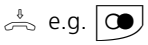
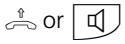
Redial - dialling a phone number again

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.	Redial 03061082 94
	By pressing the "redial" key, select one of the last 5 external phone numbers dialled.	Redial 03098765 43
	Lift the receiver. The displayed external phone number is dialled.	Calling 03098765 43

Automatic redial

	While the receiver is on the hook, you press the "redial" key, for example. The phone number dialled last is displayed.	Redial 03061082 94
	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.	Automatic rd. 10 03061082 94
	If the other party answers: Lift the receiver or press the loudspeaker key as otherwise the connection will be cleared after 10 seconds.	Connect 03061082 94

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.

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

set

Press the "set" key and the **"wake up" key** or "set 16" to initiate input of the wake up time.

```
Wake up time ?
__:__
```

enter

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: >0<
```

1 set

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

0 set

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
```

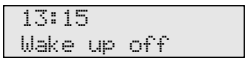
esc

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.



esc

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.

esc

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 to wish to have a wake up call, for example, simply turn it off by pressing the "wake up" key.

When on, a wake up call will wake you up every day at the same time.

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.

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

set	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
enter	Confirm selection with "enter".	Destination dialing program
set	"set": end input	

Storing a phone number for destination key private

set	Activate the function with "set". Press the desired **destination key private.** (For the second level: first the "shift" key, then the destination key). An already stored number will be displayed.	Enter phone no. _
	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
enter	Confirm with "enter".	Enter name _

Storing a name

1 next 2 — Enter the name. Example: AD (1 = A, "next", 2 =D). If necessary, clear any existing name by pressing the "clear" key.

```
Enter name
AD
```

enter — Then press the "enter" key to confirm.

```
Program destina-
tion dialing
```

enter — To program further destination keys: Press "enter" key. Enter further phone numbers.

```
Press
destination key
```

set — Press "set" to terminate the operation. The entered phone number is stored specifically for the required destination key.

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

Dialling a phone number with a destination key

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.

```
ANTON
052123456
```

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.

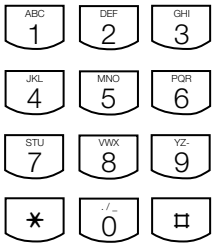
To keep the old number, press the "esc" key and select a different destination key.

To add to incomplete telephone numbers when dialling: Press the destination dialling key and then post-dial the additional digits.

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



next — To switch to the next input field or automatically after a time out

⇧ next — To switch to the previous input field: character can be overwritten

clear — Delete the flashing character

⇧ clear — To clear the entire entry.

⇧ — By pressing ⇧ you change between small and capital letters. The display shows ABC or abc.

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

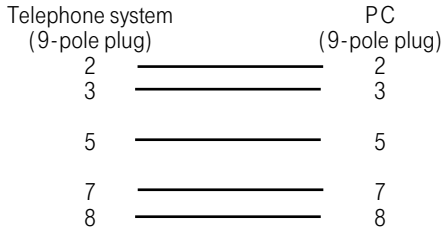
- IBM or compatible PC with a CPU 80386 or higher (recommended, Pentium)
- 3.5" diskette drive
- Hard disk
- VGA card
- Monochrome monitor
- Windows 98, Windows NT
- Windows 3.1, Windows 95

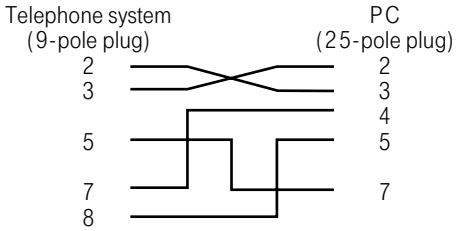
Installing the configuration program

- 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





Programming from the system telephone or a/b telephone

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.

The programming instructions with the ✳-procedure you can execute on the system telephone and on the a/b telephone.

Notes on programming with ✳- procedures

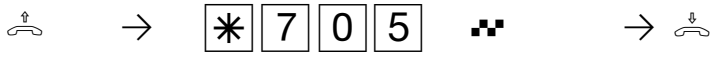
Programming with the ✳-procedure always covers the steps:
Start programming mode, input and exit programming mode.

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.



Lift handset → Start programming mode → Enter acknowledge tone or setup code → Replace handset

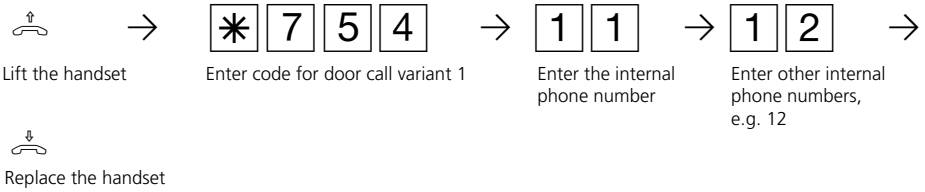
Enter setup code?
If you hear the acknowledge tone after ✳ 7 0 5, no setup code is programmed in the telephone system. It is not necessary to enter the setup code.
If you hear the error tone, the last input is wrong. Start the input again from the beginning.

If you do not hear any tone after ✳ 7 0 5, 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.



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.

The message "done" appears in the system telephone display.

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.

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 ✳ 7 0 5 !

Lift handset — Reinstate as-delivered state — Acknowledge tone — Replace handset

Continue programming or exit programming mode with ✳ 7 0 0 !

As-delivered state

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 plus: 11 to 18, telephone
  AS 191 plus: 11 to 20, telephone
  AS 140 plus: 11 to 14, telephone
  AS 141 plus: 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 plus, AS 191 plus:** Transfer of "0" to dial from call list at internal S0 port: off
- Charge pulses 16 kHz

AS 141 plus, AS 191 plus with system telephone ST 25 or ST 30

- 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	Name
	PTMP	PTP	PTP-DDI	(without dialing code, max. 11 digits	(max. 11 digits)
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
1st internal phone number (primary)									
2nd internal phone number (secondary)									
Telephone name									
Telephone									
Answering machine									
Fax									
Modem									
Combiport									
Radio cell									
Audio module									

Definitions for the internal S0 port (AS 141 plus, AS 191 plus)

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 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 circuit, night circuit - AS 141 plus, AS 191 plus)

Door hands free unit (TFE)	Bell push				
Internal phone numbers	1:		2:		3:
Bell push 1, door call variant 1 (day circuit) rings					
Bell push 1, door call variant 2 (night circuit) rings					
Bell push 2, door call variant 1 (day circuit) rings					
Bell push 2, door call variant 2 (night circuit) rings					
Bell push 3, door call variant 1 (day circuit) rings					
Bell push 3, door call variant 2 (night circuit) rings					

Determining the relay functions (AS 141 plus, AS 191 plus)

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 R4 is automatically assigned to the audio module.

If a door hands free unit (FTZ 123 D12) is connected, the relays R3 and R4 are used to connect the door hands free unit and the door opener.

Definition of the external access

Subscriber has access for external phone numbers

Extension	External phone number / name	1st 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	1st Internal phone number (primary)
00		
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		

Definition of the external accesses

External accesses	1st internal phone number (primary)														
unrestricted															
national															
regional															
local															
incoming (semi-restricted															
assigned to barred numbers															

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)	

Connection type/External phone numbers/Call variants

The telephone system automatically recognises whether you are connected to a PTP (Point To Point) or PTMP (Point To Multi-point).

Enter the following for the basic access of the PBX.

1. External numbers of your basic access.
- 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.

2. Call variants (AVA)
- call variant 1 (day time service)
- call variant 2 (night service)
- call variant 3 (call forwarding internal)

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 "O" (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.
When dialling an invalid DDI number, the caller hears the busy tone.

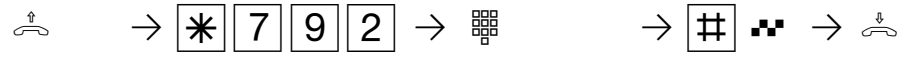
- Call variant 3 (call forwarding internal)
- You can determine to which internal subscriber the call is forwarded when a call is not answered.
- For this case define after how many rings calls are to be forwarded. Calls are forwarded immediately if the subscriber or subscribers of an external phone 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 set 1 9 and on the a/b telephone with ✱ 5 4 1 /✱ 5 4 0

Execution of functions is described overleaf.

System port - Entering the system phone number

You must start programming mode by entering ✳ 7 0 5

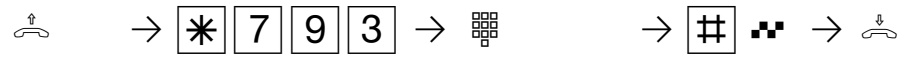


Lift handset — Program the system phone number — Enter the system phone number, max. 11-digit, without pre-dialing code and without direct dialing number — Conclude input, Acknowledgement tone — Replace handset

Continue programming or end programming mode by entering ✳ 7 0 0

System port - Entering special direct dialing (PTP-DDI)

You must start programming mode by entering ✳ 7 0 5

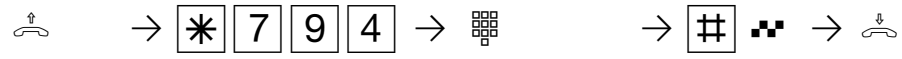


Lift handset — Program special direct dialing — Enter direct dialing number, max. 3 digits — Conclude input, Acknowledgement tone — Replace handset

Continue programming or end programming mode by entering ✳ 7 0 0

Multiport - Entering the multiple subscriber number

You must start programming mode by entering ✳ 7 0 5



Lift handset — Program multiple subscriber numbers (MSN) — Enter multiple subscriber number, max. 11 digits, without pre-dialing code — Conclude input, Acknowledgement tone — Replace handset

Continue programming or end programming mode by entering ✳ 7 0 0

Deleting external phone number (system phone number or multiple subscriber number)

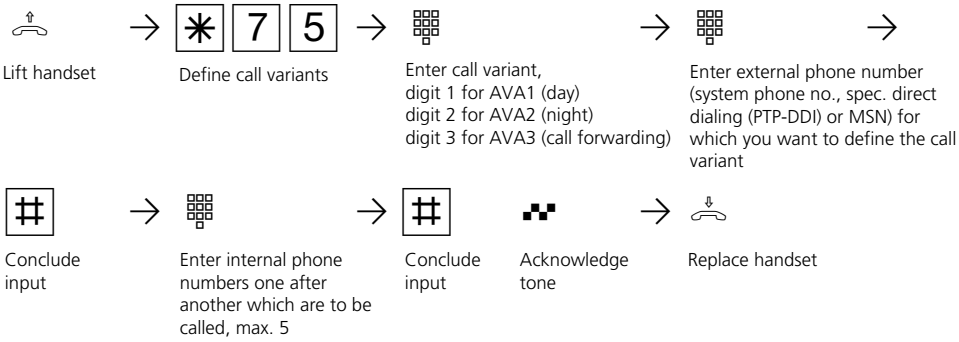
You must start programming mode by entering ✳ 7 0 5

Lift handset — Delete external phone number — 1 = delete all, 0 = delete single external phone no — Enter external phone nos. that are to be deleted — Conclude input, Acknowledgement tone — Replace handset

Continue programming or end programming mode by entering ✳ 7 0 0

Defining call variants

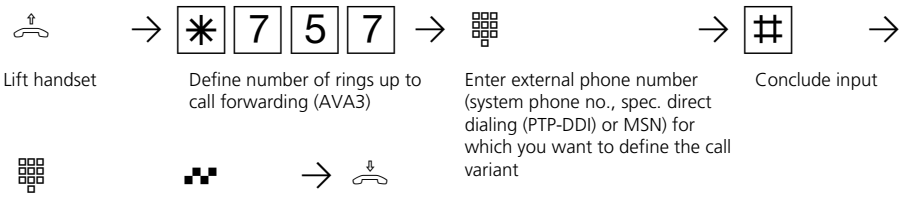
You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆



Continue programming or end programming mode by entering ✆ ✳ 7 0 0 ▪▪

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).

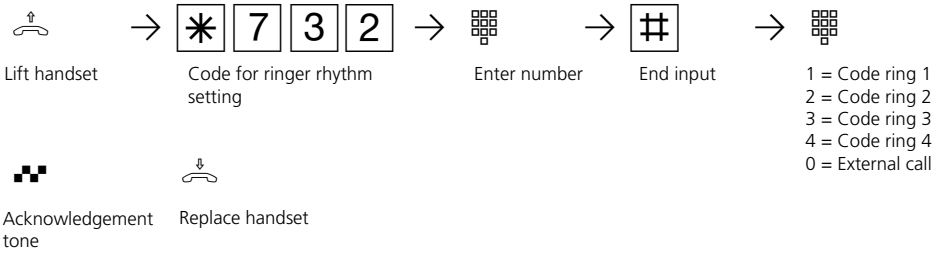
You can also enter the internal phone numbers of the relays (R1 to R4) in the call variants.
If an **audio module** is connected to the telephone system, relay R4 is occupied and a call variant may not be entered.

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 set 1 9 and on the a/b telephone or ISDN telephone with ✳ 5 4 1 /✳ 5 4 0 .

Setting the ringer rhythm for incoming external calls

In order to distinguish between calls to different numbers, the phone numbers in the system can be assigned four different ringer rhythms instead of the normal external call ringer. The ringer rhythms are code rings 1 and 2, supplemented by code rings 3 and 4.

Programming mode must be started with ✳ 7 0 5 !

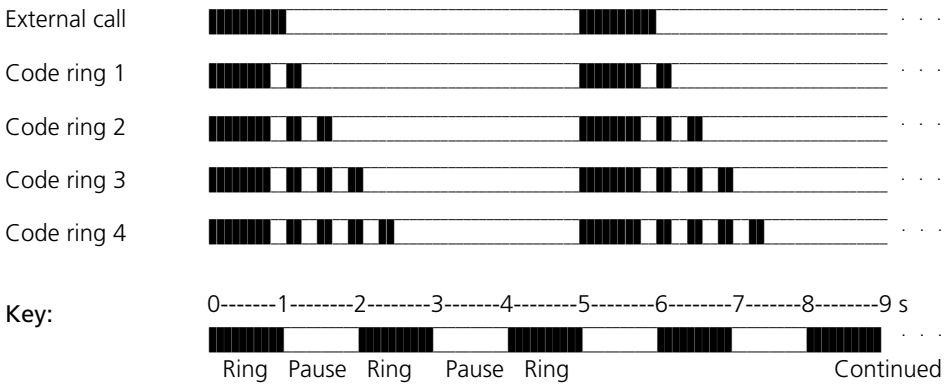


Continue programming or quit programming mode with ✳ 7 0 0 !

Note

Ringer rhythms

All ringer rhythms for incoming calls begin with an initial 500 ms pulse, followed by a 2 second pause. This is a technical requirement to allow caller identification (Calling Line Identification Presentation - CLIP). Thereafter the ring can be programmed differently to distinguish between calls to different extension numbers in the system (see diagram).



The rings may be different, depending on the terminal equipment in use.

The code calls 3 and 4 are not signalled to analog ports that are set to type "radio cell".

Door intercom – Door phone number/Door call variants

AS 190 plus, AS 191 plus:
There are 3 inputs where you may connect potential-free contacts, e.g. door bell contacts or alarm contacts. Every action of the contacts may be signalled to a diversion of internal subscribers (door call variant) or be forward to an external subscriber (door call forwarding).
In the following, the use of the contacts as door bell contacts is described . To every contact one internal number out of the available internal numbers is assigned. This internal door number is used when you want to program a door call forwarding.

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 a door call number

You must start programming mode by entering ✳ 7 0 5

Lift handset — Define number of rings — Enter bell push 1. 2 or 3 — Enter internal phone number 00 = delete internal phone number — Replace handset

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

Lift handset — Define door call variant — Enter call variant digit 4 for AVA 1(day) digit 5 for AVA 2 (night) — Enter bell push 1. 2 or 3

Enter internal phone numbers of the users one after another which are to ring, max. 5 — Replace handset

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.

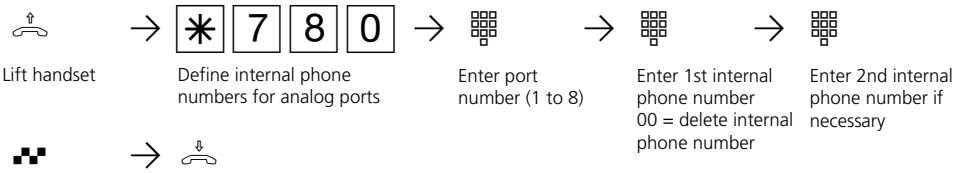
Internal phone numbers for analog ports

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

You must start programming mode by entering



Continue programming or end programming mode by entering

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.

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 0 0 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 4 is automatically assigned to the audio module. The audio module or the loudspeaker system is switched through relay 4 when an announcement is made. The definition "Audio module" means that a call to this port does not generate a knocking tone.

Defining terminal types for analog ports

You must start programming mode by entering

Lift handset

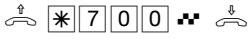
Define terminal types for analog ports

Enter port number (1 to 8)

Enter digit for terminal type
1 = Telephone
2 = Answering machine
3 = Fax
4 = Radio cell
5 = Modem
6 = Combi-port
7 = Audio module

Acknowledge tone

Replace handset

Continue programming or end programming mode by entering 

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 plus, AS 191 plus - 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.

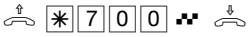
You must enter the internal phone numbers (MSN) at the ISDN terminals.

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

You must start programming mode by entering

Lift handset	Define internal phone numbers for the internal S0 port	Enter position (1 to 8)	Enter internal phone number, acknowledge tone 00 = delete internal phone number	Replace handset

Continue programming or end programming mode by entering 

Notes

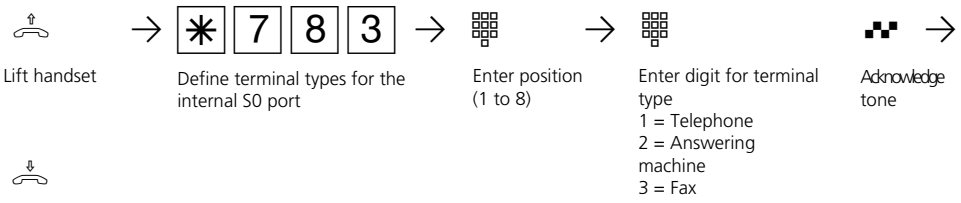
The internal phone number block is already defined under ✳ 7 0 2 by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the position.

Example: Decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

Delete internal phone number - Enter 0 0 instead of the internal phone number.

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 an 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 plus, AS 191 plus: 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.

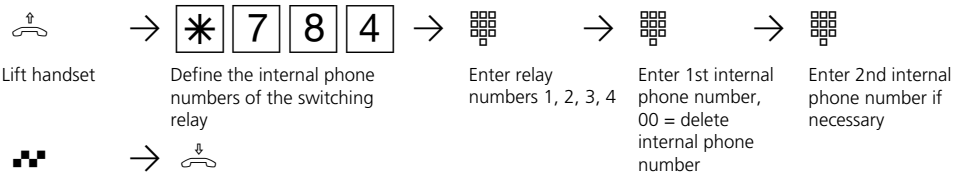
You can assign two internal phone numbers from the phone number list like any terminal.

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 R4 is assigned to the audio module.
If a door handsfree unit (FTZ 123 D12) is connected, the relays R3 and R4 are used for connecting the door handsfree unit and the door opener.
Do not determine internal phone numbers for this relay.

Defining internal phone numbers of the switching relays

You must start programming mode by entering



Continue programming or end programming mode by entering

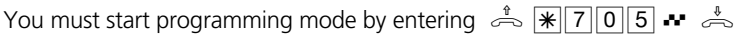
Notes

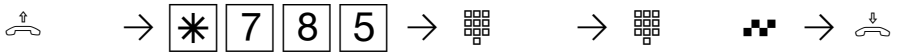
The internal phone number block is already defined under ✳702_by entering the first decade. You can freely select internal phone numbers from the internal phone number block for the position.
Example: decade 1 is prescribed. You can dial internal phone numbers between 11 and 59.

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 



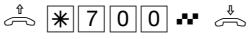
Lift the handset

Define function of the switching relay

Enter relay number 1, 2, 3, 4

1 = on/off relay
0 = pulse relay 3 s acknowledge tone

Replace handset

Continue programming or end programming mode by entering 

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 R4)	none	x	-

o = any
x = setting

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

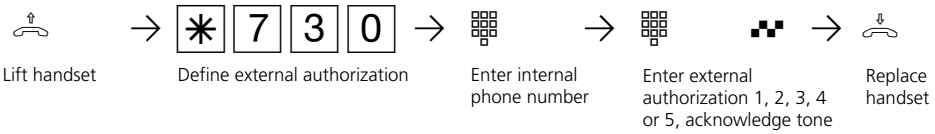
External access /Barred numbers

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").

Programming external access

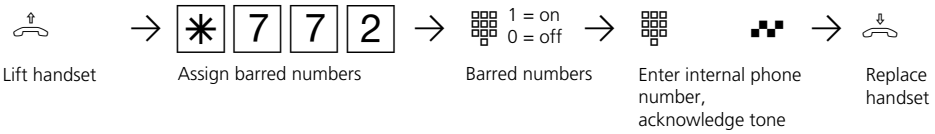
You must start programming mode by entering ✳ 7 0 5



Continue programming or end programming mode by entering ✳ 7 0 0

Assigning barred numbers

You must start programming mode by entering ✳ 7 0 5



Continue programming or end programming mode by entering ✳ 7 0 0

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.

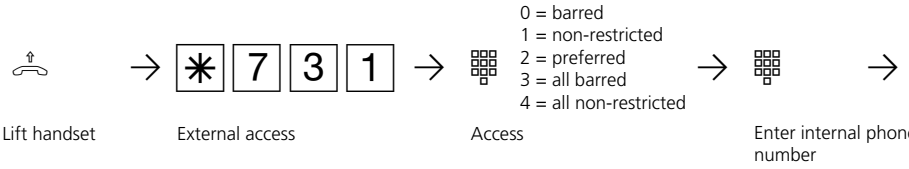
External access

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 ✳ 0 0 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 outgoing external phone number/s

You must start programming mode by entering ✳ 7 0 5



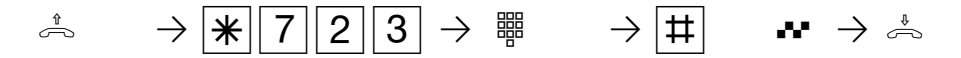
Continue programming or end programming mode by entering ✳ 7 0 0

Local network code

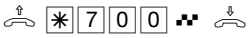
Enter your local network code. It is then no longer necessary to enter the local network code when you store short dialing destinations in your local network. When the phone number is transferred the local network code is added automatically.

Enter the local network code

You must start programming mode by entering



Lift handset | Enter the local network code number | Enter the local network code | Conclude input | Acknowledge tone | Replace handset

Continue programming or end programming mode by entering 

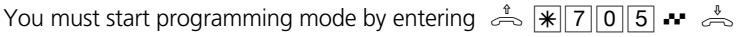
Internal phone number offset

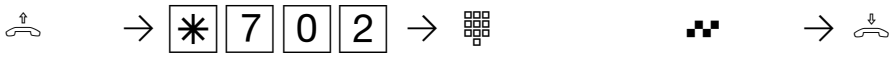
A maximum of 49 internal phone numbers are available in the telephone system. You define the 1st decade with which the internal phone numbers begin.

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.

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.

1. Defining the 1st decade of the internal phone numbers

You must start programming mode by entering 



Lift handset | Define the 1st decade of the internal phone numbers | Enter 1st decade (digit 1...5) with which the internal phone numbers begin | Acknowledge tone | Replace handset

Continue programming or end programming mode by entering

Internal phone numbers

Decade	Phone number list	Number
1	11 to 59	49
2	21 to 69	49
3	31 to79	49
4	41 to 89	49
5	51 to 99	49

Music on Hold (MoH)

Determine whether the held user is to hear music during refer back and handover.

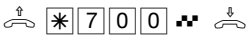
If you select the internal music on hold, you will hear a sequence of 8 melodies.
If you select the external music on hold music or information can be played by a audio unit (CD player or cassette player) connected to the telephone system.

N. B.! The played melodies must not violate the rights of third parties (GEMA-free).

Determine music on hold (MoH)

You must start programming mode by entering

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 

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.

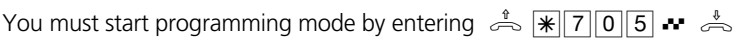
Switch box – Internal phone number

You can dial the switch box of the telephone system from an external source abd 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

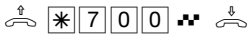
In order to be able to use the switch box you must assign an internal phone number to it. At the PTP this internal phone number is the DDI of the switch box. At the PTMP you have to enter the switch box call number as a single internal call number in the call distribution (call variant) of an external phone number (MSN).

Please see the appropriate functions in chapter 1 (Operation – analog / ISDN terminals) for operation of the switch box.

Defining internal phone number of the switch box

You must start programming mode by entering 

Lift handset	Define internal phone number of the switch box	Enter internal phone number, 00 = delete internal phone number	Acknowledge tone	Replace handset

Continue programming or end programming mode by entering 

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

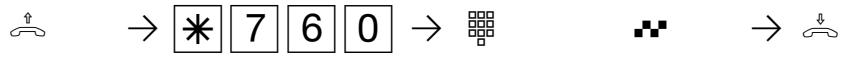
You must start programming mode by entering ✳ 7 0 5

Lift handset | Define regional numbers | Enter regional no. position 1, 2 ... 9, 0 | Enter the pre-dialing code max. 6 digits | Conclude input, Acknowledgement tone | Replace handset

Continue programming or end programming mode by entering ✳ 7 0 0

Deleting regional numbers

You must start programming mode by entering ✳ 7 0 5



Lift handset | Delete regional numbers | Enter regional no. position 1, 2 ... 9, 0 | Acknowledge tone | Replace handset

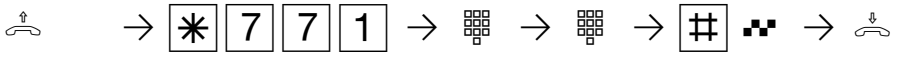
Continue programming or end programming mode by entering ✳ 7 0 0

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

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆



Lift handset | Define barred numbers | Enter barred number position 1, 2 ... 9, 0 | Enter barred number max. 6 digits | Conclude input, Acknowledgement tone | Replace handset

Continue programming or end programming mode by entering ✆ ✳ 7 0 0 ▪▪ ✆

Deleting barred numbers

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆

Lift handset | Delete barred number | Enter barred number position 1, 2 ... 9, 0 | Acknowledge tone | Replace handset

Continue programming or end programming mode by entering ✆ ✳ 7 0 0 ▪▪ ✆

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 set 9 or * 7 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

set 9 *	Start function. Note the display. If the setup code is requested after pressing 9, you must enter the code in 4 digits.	Setup code define
enter	Confirm with "enter"	Setup code on: 1 off: >0<
keypad enter	Switch on: "1"Switch off: "0", confirm with "enter"	Setup code change
enter	"enter", the current **setup code** is displayed, delete with "clear" if necessary	Setup code 2580
keypad	Enter the 4-digit setup code, e.g. 1234	Setup code 1234
enter next	Confirm with "enter", scroll with "next"	Cost code define
enter	Confirm with "enter", the current code is displayed	Cost code _____
keypad	Enter the 4-digit **cost code**, e.g. 5678 or "clear" to delete the code.	Cost code 5678

enter	Confirm with "enter"	Cost code define
next	Scroll with "next" to define the **switch box code**	Switch box code define
enter	Confirm the selection with "enter", the current code is displayed	Switch box code _____
	Enter 4-digit code, e.g. 4567 or e "clear" to delete the code	Switch box code 4567
set	"set": exit programming	

Defining the setup code

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆

✆ → ✳ 7 2 6 1 → ⠿ ▪▪ → ✆

Lift handset — Define setup code — Enter setup code in 4 digits — Acknowledge tone — Replace handset

Continue programming or end programming mode by entering ✆ ✳ 7 0 0 ▪▪ ✆

Deleting the setup code

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆

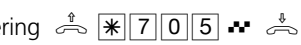
✆ → ✳ 7 2 6 0 ▪▪ → ✆

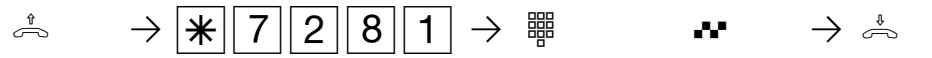
Lift handset — Define setup code — Acknowledge tone — Replace handset

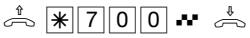
Continue programming or end programming mode by entering ✆ ✳ 7 0 0 ▪▪ ✆

Enter setup code?
If you hear the acknowledge tone after ✳ 7 0 5, no setup code is programmed in the telephone system. It is not necessary to enter the setup code.
If you do not hear any tone after ✳ 7 0 5, 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.

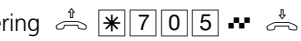
Defining the cost code

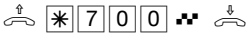
You must start programming mode by entering 



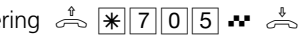
Continue programming or end programming mode by entering 

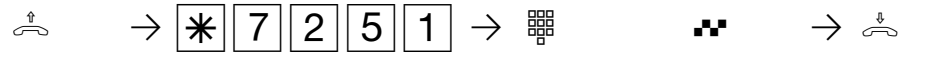
Deleting the cost code

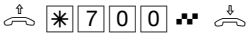
You must start programming mode by entering 

Continue programming or end programming mode by entering 

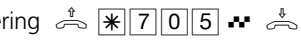
Defining the switch box code

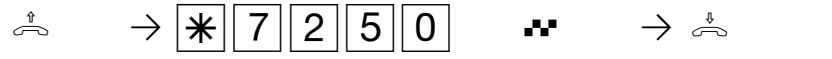
You must start programming mode by entering 

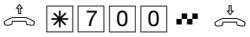


Continue programming or end programming mode by entering 

Deleting the switch box code

You must start programming mode by entering 



Continue programming or end programming mode by entering 

Start configuration with switched on setup code

Representation in these instructions:

set 9 ⌗ — 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.

```
Maintenance/test
enter  next  esc
```

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
```

next — "next": scroll further to the "Maintenance/test" menu.

```
Maintenance/test
enter  next  esc
```

Adjusting the flash time

Analog telephones with tone dialling need a flash key, among others, to transmit calls (R key or Signal key). To adapt the telecommunications system to the different flash times of the telephones you can program the flash time range for your analog extension in the system. You will find the flash time of your telephone in the telephone's technical specifications.

To test whether the set flash time is correct:
- Set up an external call.
- Press the Flash key.
- If you hear the internal dial tone the time is correctly set.
- If the connection is cut the flash time is programmed too short in the system.

Adjusting the flash time for your own extension

Programming mode must be started with ✳ 7 0 5 !

Lift handset	Code for flash time adjustment	Enter code for flash time range 2 = 50 to 200 ms 3 = 50 to 300 ms 4 = 50 to 400 ms 5 = 50 to 500 ms 6 = 50 to 600 ms	Acknowledge-ment tone	Replace handset

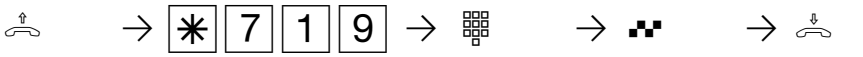
Continue programming or quit programming mode with ✳ 7 0 0 !

Setting the charge pulse

The charge pulse the PBX sends to analog telephones may be switched from 16 kHz to 12 kHz.

The analog phones available in Germany usually use the 16 kHz-pulse.

Programming mode must be started with ✳ 7 0 5 !



Lift handset	Code for charge pulse setting	1 = 16 kHz 2 = 12 kHz	Acknowledge-ment tone	Replace handset

Continue programming or quit programming mode with ✳ 7 0 0 !

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

set 9 ⌗	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 display
enter	The software version number and the system type are displayed.	AS140 plus V 1.0 esc
esc	Initiate the function.	Version display
next	Scroll further. The countrycode can be modified by a service technician ("as-delivered" settings: Germany).	Country show
next	Scroll further. Service number, which is able to remote control, configure or download new software after your permission (set *).	Service number define
enter	An already defined service number if necessary delete or change.	Service number define
⌨	Enter the service number	Service number 0987654321
enter	Confirm with "enter"	Service number define
next	Scroll further to the "restart" menu	Restart enter next esc

enter	"enter": system restart (reset) (All user data is loaded anew into the RAM and programming is ended automatically) or	-- 00:00 ----------
next	"next": scroll further to the "clear memory" menu	Clear memory enter next esc
enter	"enter": Initiate clearing of the memory (re-setting the system to the "as-delivered" state. A safety prompt follows.	Confirm enter esc
enter	"enter": confirm clearing of the memories if you really wish to clear.	Clear memory Please wait
	The memories are cleared (approximately 2 minutes). (All data is cleared and programming is ended automatically.)	-- 00:00 ----------
esc	or "esc": return to the start of the program	Maintenance/test enter next esc
set	"enter": return to the maintenance and test program "set": end programming	

Resetting the telephone system (analog terminals / ISDN terminals)

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆

✆ → ✳ 7 3 4 ▪▪ → ✆

Lift handset	Reset the telephone system	Acknowledge tone	Replace the handset

The reset is performed.

Deleting the memory (analog terminals / ISDN terminals)

You must start programming mode by entering ✆ ✳ 7 0 5 ▪▪ ✆

✆ → ✳ 7 0 9 ▪▪ → ✆

Lift handset	Delete memory (reset to the as-delivered state)	Acknowledge tone	Replace handset

The memory is deleted.

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.

During configuration of the telecommunications system, a primary internal telephone number, and possibly a secondary internal telephone number, from the number repertoire of the telecommunications system is assigned to each digital telephone, just like any other terminal.

You must register the digital system telephone when you connect it to the telecommunications system for the first time.
If you unplug a registered digital system telephone from the internal S0 bus and connect it to the same internal S0 bus (slot) later on again, you do not need to register it again.
You must register the digital telephone again if you connect it to a different internal S0 bus.
The internal numbers may also be changed afterwards.

Registering internal phone numbers of the digital system telephone

set 9 # 6

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     1999
```

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.

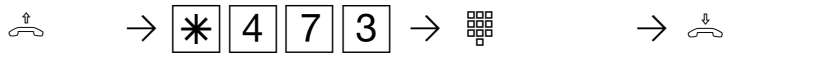
To allow remote maintenance, you should enter into the telephone system the "remote service number" your dealer uses or the "service number" your service center (under set 9 #) uses to maintenance. Remote service is only possible if the entered number agrees with the communicated phone number.

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. Remove 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

set *	Initiate the function.	Enter number
	Enter the remote service number (programming phone number)	Enter number 01234567890
enter	Press "enter" to confirm. Decide whether remote service is to be allowed without access to the central abbreviated dialling data or	Remote service hidden names
next	by pressing "next", whether remote service is to be allowed completely.	Remote service complete
set	Conclude selection by pressing "set". Remote service is allowed for 8 hours.	

Entering the programming phone number



Lift handset → Programming phone number → Enter phone number → Replace handset

Allowing remote service

Lift handset → Start remote service → Enter phone number → Acknowledge tone → Replace handset

Downloading new firmware

The AGFEO ISDN telecommunications system can be updated to the latest firmware version without tampering with the telecommunications system hardware. You can download the new firmware into the telecommunications system via a PC connected to the telecommunications system's serial RS 232 C interface. If your telecommunications systems has an internal S0 bus, you can also download firmware via a PC featuring an ISDN card connected to the internal S0 bus.

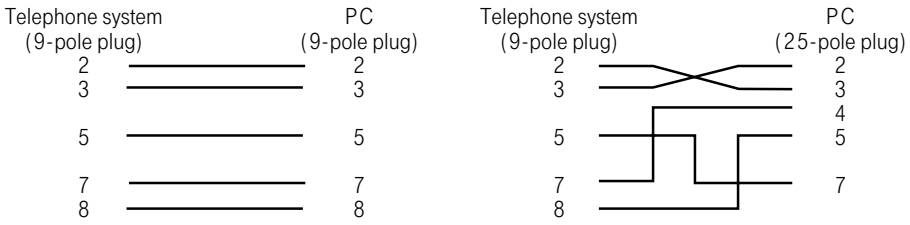
Your specialist dealer can also remotely download the new firmware by ISDN into your telecommunications system.

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".
- Save the LCR-table.

Downloading new software

- Insert the included "firmware 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 automatically 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 firmware 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* ——————————

set 9 ⌗	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.	Versionsnummer ansehen
next next ...	"next": moves you to the "clear memory" menu.	Speicher löschen enter next esc
enter	"enter": initiates clearing of the memory (the system is reset to the "as-delivered" settings); this is followed by a safety prompt.	bestätigen enter esc
enter	"enter": confirms clearing of the memory if you really wish to clear it.	Speicher löschen Bitte warten
	The memories are cleared (approximately 2 minutes). (All data is deleted and programming is ended automatically.)	-- 00:00 1.Januar 1999

Deleting the memory (analog terminals / ISDN terminals) ——————————

The programming mode must be started with ✆ ✳ 7 0 5 ▪▪ ✆

✆ → ✳ 7 0 9 ▪▪ → ✆

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 firmware.

Programming for advanced users

You can reach each program directly by pressing set 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 navigate in the programming tree by pressing the enter and next keys.

The programming tree is illustrated on the next pages.

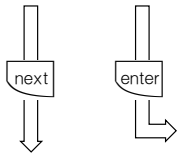
Rules for working with the programming tree

You initiate programming by pressing the set key. If necessary by pressing the next key several times, you can then reach the program point you are looking for.

Every program has a program number. With 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".

set	Initiate programming	Function menu
next	Scroll to the next program point	Settings of telephone
next	Scroll to the next program point	FP keys/device Name change
⇧ next	Move back by one program point	Settings of telephone
	or	
set 1 2	enter the required program number, e.g. 12, do not disturb	Dont dist. 11/__ int: 1 ext: 2
esc	Move back by one level	Do not disturb on/off
esc	Cancel programming: Press "esc" several times	--- 11:52
	or	
set	end programming "set"	--- 11:52

Programming tree



1 Function	1 Call variant 2/door call variant 2	(night service, on/off)
	2 Do not disturb	(internal/external on/off)
	3 Telephone lock	(lock telephone, on/off)
	4 Call waiting prevention	(on/off)
	5 Appointment	(time/date and activate)
	6 Wake up	(time, on/off)
	7 Diversion to	(to internal user/external subscriber, on/off)
	8 Diversion from	(from internal user, on/off)
	9 Call forwarding	(Call forwarding, call variant 3, on/off)
	0 Room monitoring	(on/off)
	* Autodial	(on/off)
	# Busy on busy	(MSN, on/off)
2 System telephone settings	1 Tone ringing volume	(set)
	2 Tone ringing tone	(set)
	3 Display contrast	(set)
	4 Automatic microphone activ. .	(on/off)
	6 Headset volume	(set) - ST 25 only
	5 Listening volume	(set)
	7 Telephone code	(enter)
	8 Cost display	(display of call charges/time)
	9 Status display	(display of status/date)
	0 Language changeover	(german/english)
	* Call list	(on/off/with names only)
	# Direct access (automatic/ "0" outside line seizure)	(on/off)
3 Keys/name	1 Modify function key assignments	
	2 Modify user names	
4 Destination dialling	Destination key	(phone number/name)
5 Abbreviated dialling/ phonebook	1 Add phonebook entry	(phone number/name)
	2 Modify phonebook entry	(phone number/name)
	3 Clear phonebook entry	(phone number)
	4 Enter emergency numbers ...	(phone number)
	5 Enter direct number	(phone number)
	6 Enter autodial	(phone number)
7 Costs	1 Display own call costs	
	2 Display/delete call costs	(costs of user)
	3 Print call costs	(print costs of user/MSN/S0)
	4 Cost recording Start	(user)
	5 Costs recording Stop	(user)
8 ISDN functions	1 ISDN call forwarding	(permanently/on busy/if no answer)
	2 Phone number communication to the called party	(on/off)
	3 Phone number communication to the caller	(on/off)

9 Set up telecommunications system	* Code	1 Setup code (on/off, modify)
	.....	2 Cost code
	.....	3 Switching box code
	# Maintenance/test	1 Software version number
	.....	2 National variant
	.....	3 Service number
	.....	4 System restart
	.....	5 Clear memories (restore "as-delivered" settings)
	.....	6 ST 25 digital registering (ST 25 only)
*** Remote service**	Remote service.....	(remote service number/without names/complete)
# Version	Version	(system type/version)

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.

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 with to inquire with another user during a conversation. The signal key must have a flash function, i.e. it must produce a brief interruption.

Door hands free unit
This is a door station with a bell push 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.

Lift the receiver → Deactivate special dial tone functions → Acknowledgement tone → Replace the receiver

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.

What to do in the event of malfunctions

Malfunction	Possible causes	Remedy
Telephone system programming unclear		Reset the telephone system
		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: - MSN missing - MSN-internal user assignment missing	 Enter the MSN Assign the internal user to the MSN (ringing distribution)
Forwarding an external call (inquiry) is not possible	The inquiry key [R] on the telephone is set as an earth key	Set the telephone to DTMF and set the inquiry key to flash
	Wrong flash time	Adjust flash time on the phone or on the respective port of the PBX.

Malfunction	Possible causes	Remedy
Distorted speech connection	S0 bus incorrectly installed Connection error	Connect wire pairs correctly

Resetting the telephone system

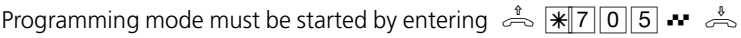
By resetting, you can restore the telephone system's programming to a defined state. This may be necessary if you wish to reset unclear settings or if you wish to reprogram the telephone system.
After a reset, the telephone system again operates according to the previously set program. All settings made in the programming mode or by means of the PC program are retained provided the programming mode has been ended properly.

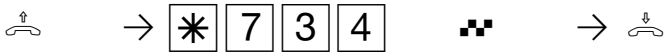
Important: the following are cleared when you reset the telephone system.
- All existing internal and external connections
- Remote support
- Internal return calls
- ISDN callback on busy
- Outside line reservations

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 



Lift the receiver → Reset the telephone system → Acknowledgement tone, reset is triggered → Replace the receiver

The reset is performed.

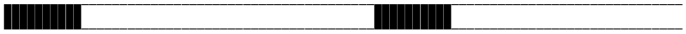
Software reset (system telephones)

Rings

External call

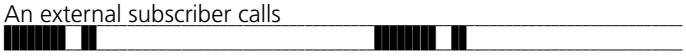
All ringer rhythms for incoming calls begin with an initial 500 ms pulse, followed by a 2 second pause. This is a technical requirement to allow caller identification (Calling Line Identification Presentation - CLIP). Thereafter the ring can be programmed differently to distinguish between calls to different extension numbers in the system (see diagram).

External call

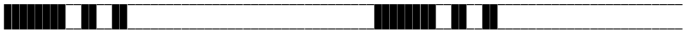


An external subscriber calls

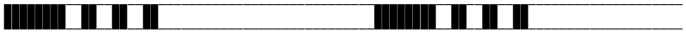
Code ring1



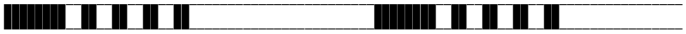
Code ring 2



Code ring 3



Code ring 4



Internal call

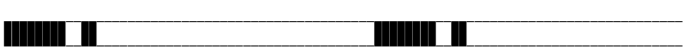
An internal user calls

Door ringing

A visitor rings at the door

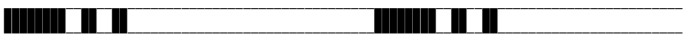
Code call rings to radio cells

- Code ring 1



Call via the first internal phone number

- Code ring 2



Call via the second internal phone number

Outside line reservation / Appointment call (system telephone)

Wake up call (system telephone)

1 minutes rising volume

0-------1--------2--------3-------4--------5--------6--------7-------8--------9 s

Key:

Ring Pause Ring Pause Ring Continued

Note

Ringing may differ depending on the terminal used. The code calls 3 and 4 are not signalled to analog ports that are set to type "radio cell".

Tones

Dial tone
- Internal

Signals that you may dial after lifting the receiver

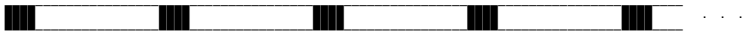
- External

Continuous tone that you hear when you have seized an outside line after dialling "0" or after pressing an MSN key

Ringing tone
- Internal

Internal user is rung

- External



External user is rung

Busy tone

The dialled internal user or external subscriber is busy

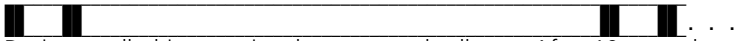
Special dial tone

Signals that you may dial after lifting the receiver, but that do not disturb, autodial or diversion is on

Call waiting (knocking) tone
- 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

Acknowledge-ment tone

Input accepted

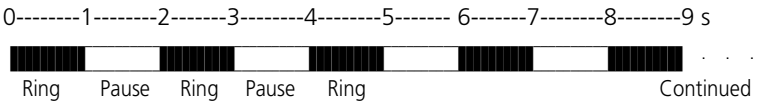
Error tone
- a/b telephone

Operating error/input rejected

- System telephone

Operating error/input rejected

Key:



List of key words

A

Accepting calls 1 - 4, 2 -21
Acknowledgement tone 4 -7
Activating /deactivating call variant 3 1 - 14, 2 -37
Actuating a door opener 1 - 41, 2 -75
Advice of Change. *See* Connection costs
Allocation of names
...to users 2 -61
Analog terminals I -8, 3 - 5
Announcement 1 - 15, 2 -40
Answering machine 3 - 19, 3 - 21
...picking up a call 1 - 11, 2 -29
Appointment call 2 -70
As-delivered state 3 - 4
...reinstating 3 - 4, 3 - 39, 3 - 43
Audio module 2 -40, 3 - 7, 3 - 18
Autodial 1 - 16, 2 -41
Automatic call back 2 -24
Automatic outside line seizure 1 - 2, 2 -9
Automatic redial 2 -87

B

B channel. *See* Outside line
Baby call. *See* Direct call
Barred numbers 3 - 24, 3 - 31
Barred range 1 - 3, 2 -20
Base station 1 - 3, 2 -17
Brokering 1 - 29, 2 -52
Busy on busy 1 - 17, 2 -42
Busy tone 4 -7

C

Call by Call 1 - 23, 2 -10, 2 -54
Call charges 1 - 3
Call Deflection 2 -39
Call diversion. *See* Diversion from/to
Call external subscriber 1 - 1, 2 -17
Call forwarding 1 - 48, 2 -80, 3 - 13, 4 -2. *See* Diversion to
...for extensions on the point to point connection 2 -39
Call Hold (HOLD). *See* Hold (ISDN)
Call internal user 1 - 2, 2 -17
Call list
...display 2 -32
...enter in 2 -31
...entry in 1 - 8
...on/off 2 -8, 2 -31
Call variant 3 - 3, 3 - 4, 3 - 6, 3 - 7, 3 - 12, 4 -1
...programming 3 - 10
...switching over 1 - 13, 2 -35
Call waiting announcement 1 - 8
...reject 1 - 5, 2 -26
Call waiting announcement tone 1 - 4, 4 -7
Call waiting prevention 1 - 10, 2 -10, 2 -28
Call waiting tone 1 - 8
Callback 1 - 30
Callback on busy 1 - 31, 2 -59
Calling Line Identification Restriction (CLIR). *See* Communicating a phone number
Calling the door station 1 - 41, 2 -75
Charge pulses 1 - 52
Charges. *See* Connection costs
Checks in case of malfunction 4 -3
Clear memory 3 - 4
Code call 1 - 3, 2 -17, 3 - 18
Code numbers 3 - 32
...cost code 3 - 32
...setup code 3 - 32
...switching box code 3 - 32
Code ring 3 - 14, 4 -6
Combi-device 3 - 18
Combination port 1 - 1
Communicating a phone number 1 - 1, 1 - 43
...on the internal SO bus 1 - 42
...on/off 1 - 43
Communication of the charge pulses 1 - 52
Conference 1 - 21, 2 -48
Configuring 4 -2
Connected Line Identification Presentation (CLIP). *See* Communicating a phone number
Connecting a PC 3 - 1, 3 - 42
Connection assignment
...PC cable 3 - 1
Connection costs
...defining a limit/cleardown 1 - 53
...displaying 1 - 52
...displaying and deleting 2 -82
...displaying your own costs 2 -84
...example of printout 1 - 55
...print and delete totals 1 - 54
...printing 2 -83
...starting and stopping recording 2 -86
Connection data set
...notes 1 - 50
...setting and printing the printout 1 - 50
Connection ID 1 - 25
Cordless telephones 1 - 3

Cost code 1 - 32, 3 - 32
...programming 3 - 32
Cost display 2 -6
Cost limit 1 - 53
...cleardown at 1 - 53
Country code 3 - 38
CTI - computer telephony integration I -10

D

Date 2 -7
Decade 3 - 27
Defining a door call number 3 - 15
Defining decade of internal phone numbers 3 - 27
Defining door call variants 3 - 15
Destination dialing - Storing and dialing phone nu
2 -90
Destination key
...private 2 -90
Destination memory
...private 2 -11
...public 2 -11, 2 -90
Dial tone 4 -7
Dialling method I -8
Dialling with the receiver on the hook 2 -20
Direct access 2 -9
Direct call (Baby call)
...dial 2 -69
...entering number 1 - 36, 2 -65
Direct dialing number 3 - 11
Display 2 -1, 2 -3
...internal phone number 2 -3
...setting the contrast 2 -5
...status 2 -3
Diversion from 1 - 44, 2 -77
Diversion to 2 -78
...through the ISDN exchange 1 - 47, 2 -80
...through the telephone system 1 - 45, 2 -78
Do not disturb 1 - 12, 2 -33
Door call 4 -6
...accepting 1 - 41
...diversion to an external subscriber 2 -74
...picking up 1 - 41, 2 -75
Door call variant
...switching over 1 - 40, 2 -73
Door hands free unit 4 -2
DTMF dialling method I -8
DTMF post dialling 1 - 3, 2 -20
Dual tone multifrequency dialling (DTMF) 4 -2

E

Emergency call
...dial 2 -69
...entering phone number 2 -64
Enter codes 3 - 32
Enter system phone number 3 - 11
Entering names 2 -61
Error tone 3 - 2, 4 -7
Extended redial 2 -87
External 4 -1
External access 3 - 25
External call 4 -6
External call authorization 2 -86
External phone numbers of the telephone system
3 - 10

F

Fallback 1 - 23, 2 -51
Fax 3 - 18
Features I -2
Firmware
...downloading new software 3 - 42
Flash time 3 - 36
Follow me. *See* Diversion from
Forwarding
...a call during ringing 2 -39
...external 1 - 6, 2 -24
...internal 1 - 6, 2 -23
...of an outside line 2 -25
Free range 3 - 30
Function keys
...changing assignment 2 -12
...overview 2 -10

G

Global Call 3 - 10
Group formation 3 - 20

H

Hand free 2 -20
Hands free microphone automatically on 2 -5
Hash key I -8, I -9
Having callers identified 1 - 20
Headset 2 -10
...volume 2 -5
Hold (ISDN) 1 - 19, 2 -46

I

ISDN
...placing a connection on hold 2 -46
Identifying malicious callers 1 - 20, 2 -47
Incoming external connection 4 -1
Inquiry 1 - 29, 2 -58
...in the room 1 - 29, 2 -58
Installing the configuration program 3 - 1
Internal 4 -1
Internal call 4 -6
Internal phone number
...display 2 -3
...on/off 3 - 27
...programming for internal S0 port 3 - 20
...switch box 3 - 29
Internal phone numbers 3 - 17
...defining for switching relays 3 - 22
ISDN 4 -1
...call deflection 2 -39
...call forwarding 1 - 47, 2 -80
...callback on busy 1 - 31, 2 -59
...communicating a phone number 1 - 43, 2 -76
...holding a connection 1 - 19, 2 -46
...identifying malicious callers 2 -47
...parking (replug on the S0 bus) 1 - 25, 2 -55
...PC fax card 3 - 21
...telephones I -9
...terminals I -9
...three-party conference 1 - 21, 2 -49

K

Keys I -11

L

Language changeover 2 -8
Least Cost Routing (LCR) 1 - 23, 2 -51
Limit. *See* Connection costs defining a limit
Line seizure/with "0" 3 - 4
Local network code 3 - 26
Locking/unlocking the telephone 1 - 35, 2 -68
Loudspeaker system 2 -40, 3 - 18

M

Maintenance/testing 3 - 38
Malfunctions 4 -3
Malicious Call Identification (MCID) 1 - 20, 2 -47
Manual line selection. *See* MSN define specific
Memory storing a phone number 2 -53
Messages 2 -60
Modem I -8, 3 - 18
MSN (Multiple Subscriber Number) 1 - 1, 4 -2
...define specific 1 - 3, 2 -18
Multipoint connection 1 - 25, 2 -55
Multiport 3 - 11
Music on Hold 3 - 28, 4 -2
...externally 3 - 28
...setting the volume 3 - 28
...switch internally 3 - 28
Muting 1 - 29, 2 -58

N

Names 2 -61
Network code 1 - 23, 2 -51, 2 -54
Network provider 1 - 23, 2 -51, 2 -54
NTBA 4 -2

O

Outgoing external connection 4 -1
Outside line 4 -2
Outside line reserving 1 - 3, 2 -19
Outside line seizure
...automatic 1 - 2, 2 -9, 2 -17
...direct 1 - 2
...on the combination port 1 - 1
...setting 1 - 1, 2 -9
...with "0" 1 - 3
...with '0' 2 -18
...with define MSN 1 - 3, 2 -18
Overview of functions I -2

P

Parking 1 - 24, 2 -55
...in the telephone system 1 - 24
Partial Rerouting 2 -39
Phone book
...alphabetical 2 -66
...changing a number 2 -63
...dialling numbers 2 -66
...numeric 2 -66
...programming phone number 2 -62
...storing a number 1 - 34
Phone numbers 3 - 17
...decade 3 - 17

...direct dialing phone number 3 - 27
...phone number block 3 - 27
...phone number list 3 - 17
Picking up a call 1 - 11, 2 -29
Picking up a call from an answering machine 2 -29
Pictograms I -11
Point-to-point connection 1 - 2
Post-dialling 1 - 3, 2 -20
Post-dialling digits 1 - 3
Power failure 4 -3
Preparing dialling 2 -20
Programming
...from a PC 3 - 1
...from the a/b telephone 3 - 2
...from the system telephone 3 - 2
Programming code exiting 3 - 3
Programming external access 3 - 24
Programming mode starting 3 - 2
Programming tables 3 - 5
Programming tree 3 - 45
...rules 3 - 44
Protective measures I -4
Pulse dialling 4 -1
Pulse dialling method I -8

R

Radio cell 1 - 3, 1 - 44, 3 - 18, 4 -1
Redial
...automatic 2 -87
...extended 2 -87
Regional numbers 3 - 30
Rejecting a call during ringing 2 -39
Relays 3 - 23
...assigning internal phone numbers 3 - 22
...switching 1 - 28, 2 -57
Remote configuration 3 - 41
Remote control
...call forwarding 1 - 48
...call variant 3 1 - 14
...diversion to 1 - 46
...door call diversion 1 - 38
...relay on/off 1 - 28
...room monitoring 1 - 26
Remote setting 3 - 41
Reserving an outside line 1 - 3, 2 -19, 2 -20, 2 -22
Resetting the telephone system 3 - 39, 4 -5
Ringer rhythms 3 - 14
Ringing distribution 1 - 13, 2 -35, 4 -2
Ringing tone 4 -7
Room monitoring 1 - 26, 2 -56
RS 232 interface 3 - 1, 3 - 42
Ruf heranholen 1 - 11

S

S0 port programming internally 3 - 20
Safety notes I -4
Seizure 4 -1
Service ID 3 - 18
Service number 3 - 38
Services 4 -1
Setting the charge pulse 3 - 37
Setting the ringer rhythm 3 - 14
Setting the tone ringing 2 -4
Setup code 3 - 2, 3 - 32, 3 - 33
Short dialing 3 - 26
Signal key R (inquiry) 4 -2
Software
...displaying the version number 3 - 38
Special dial tone 1 - 12, 1 - 16, 1 - 44, 2 -77, 2 -78, 4 -7
...deactivating 4 -3
...ISDN exchange 1 - 49
Speed dial variant 1 - 33
Standard telephone I -8
Star key I -8, I -9
Status display 2 -3, 2 -7
Status messages 2 -60
Switch box 3 - 29
...code 3 - 33
...phone number 3 - 13
Switching box 4 -2
... diversion to 1 - 45
...call forwarding 1 - 14
...call variant 2 1 - 13
...call variant 3 1 - 13
...room monitoring 1 - 26
...switch relays on/off 1 - 28
System port 3 - 27
System telephone I -9
...cleaning 2 -2
...display 2 -3
...inserting the marking strips 2 -2
...setting up 2 -2
...settings 2 -4
...ST25 digital, registering 3 - 40
System type
...displaying the system type 3 - 38

T

TAPI I -10
Tariff factor
...base factor 1 - 32
...own factor 1 - 32
Telephone 3 - 18
Telephone code 2 -6
...clear 1 - 36
...enter 1 - 35
...program 1 - 35
Telephone lock 1 - 35, 2 -68
Telephone system resetting 3 - 39
Telephoning
...external 1 - 1, 2 -17
...internal 1 - 2, 2 -17
Terminal type
...defining for the internal S0 port 3 - 21
...for analog ports 3 - 18
...for the internal S0 port 3 - 20
Terminals 4 -1
...analog I -8
...ISDN I -9, 3 - 20
Three-party conference (3 PTY) 1 - 21, 2 -48
Time 2 -7
Timer 1 - 37, 2 -72
TK-Phone I -10
Tone ringing
...setting the tone 2 -4
...setting the volume 2 -4
Total counters display 2 -82
Tracing a caller 2 -47

U

User group 3 - 17

V

Voice message 2 -43

W

Wake up call 2 -88

Copyright

Copyright 1999 AGFEO GmbH & Co. KG
Gaswerkstr. 8
D-33647 Bielefeld

We reserve all rights for this documentation, particularly in the event of patent granting and utility model registration.

Neither the entire documentation nor parts of if may be duplicated, transmitted, modified, stored in a database system nor translated to any language or computer language in any form, manually or otherwise, using any means whatever. This applies to electronic, mechanical, optical, chemical and other media.

Trademarks and company names used in this documentation are subject to the rights of the respectively affected companies.

Technical modifications

AGFEO GmbH & Co. KG reserves the right to implement, without prior announcement, modifications to depictions and information in this documentation that serve the purpose of technical progress.

This documentation was elaborated with great care and attention and is revised on a 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.

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

If you have any questions regarding operation of your telephone system which these operating instruction 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 plus, AS 191 plus (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.

CE

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.

Ident. No. 534 676
Modifications and errors reserved.
Printed in Germany
1991

AGFEO GmbH & Co. KG
Gaswerkstr. 8
D-33647 Bielefeld
Internet: http://www.agfeo.de