

User guide

MD PBX KEY CW MD
MD PBX KEY CW AV
MD PBX KEY CW ES
MD PBX KEY CW BG

Doorstation with telephone line interface for the connection to telephone systems.
Version with up to 99 speed dial calls



 **ROCOM**

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Description

The **MD PBX KEY CW** doorstation can be connected to any standard analogue telephone line, in normal cases to an extension line of a PABX. The unit is delivered in four different versions: the BG version for installation behind existing panels, the MD version with a designer aluminium case, the AV version with a vandal proofed aluminum panel and the ES version with a stainless steel casing.

The connection of the doorstation to the telephone switch is done using two wires. Further a 12 Vac power supply is needed for the door opener and the illumination lamp in the doorstation. For this another two wires are necessary. We suggest in any case to provide an illumination of the doorstation as the lamps heat will ensure that the condensing water formation and a too low operating temperature can be prevented. Please take care that in some extrem enviroment situations the unit might need an optional heating element. The device is deliverd with microphone and loudspeaker. The volume of the loudspeaker and the microphone can be regulated.

The unit can call different telephone numbers using to keypad and the input of a speed dial code. The stored numbers can have up to 16 digits lenght, including dial pauses if needed. The speed dial code input is activated using the "Speed dial code" button. After this a two digits long code has to be dialed using the keypad. The unit will then dial the stored number on the telephone line. The dial can be made using rotary dial pulses or DTMF tones. The telephone numer is programmed using a DTMF dial procedure. The digits 0 to 9 can be programmed as part of the telephone number. The digit # is used as a dial pause. The same DTMF dial procedur is also used for all other programmations. Only the setting for the hardware timer and the programming enable are done using jumpers on the board.

If needed the unit can also be called. After the auto answer the unit will send a acknowledge tone. If the programming enable jumper is set on on a programming session can be started dialing a DTMF tone within 6 seconds after the call answer. If no digit is dialed the unit will switch to speech modality after a second acknowledge tone. After dialing a telephone number and the call answer from the called party a normal conversation is possible with the doorstation using the handsfree device. At the end of the conversation the called party can activate one or two (optional) different contacts, i.e. to open a door.

The **MD PBX KEY CW** will automatically terminate the call if one of the following events will happen:

- after dialing a speed dial code with no programmed telephone number;
- if the pause between the input of the digitis is longer then 7 seconds with incomplete dial;
- after a programmable number of calls (1 to 99) with no answer;
- if the called party will send during the conversation the DTMF digit 3;
- after activating one of the two door opener contacts;
- with reconizing a busy tone (called party is busy or has hang up);
- after a programmable timeout (0 to 99 seconds) with no speech on the line;
- after a programmable timeout (0 to 999 seconds);
- after the timeout of a hardware timer (settable for 2, 4 or 4 minutes)

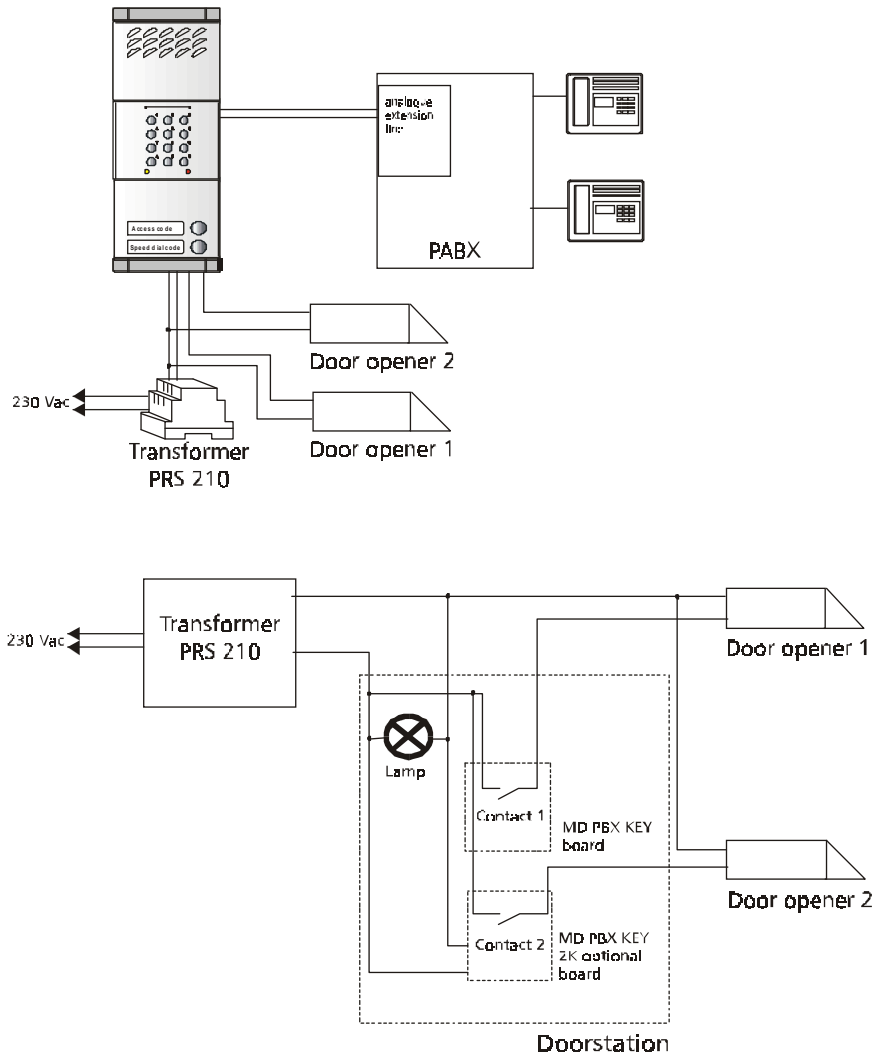
Further the unit can also activate one or two (optional) contacts using the dial of a special access code on the keypad. This function is activated using the button "Access

code". Up to ten different codes, for each contact, can be programmed with lengths between 3 and 6 digits. The activation time of a contact can be programmed (from 0 to 99 seconds). The second contact (optional) can also be programmed for an automatic activation. In this case the contact will be activated for the programmed time with every line seizure (i.e. to activated lights or videocameras). Also the function with an ON/OFF mode is programmable for the second contact. In this case every time a code is inserted for this contact it will switch between ON and OFF (i.e. to activated special appliances, lights or alarm systems). After the input of a wrong code the unit will drop and seize the line again. The time between the possible input of a code will also increase from 5 to 45 seconds. To reset the unit the input of a right code is required.

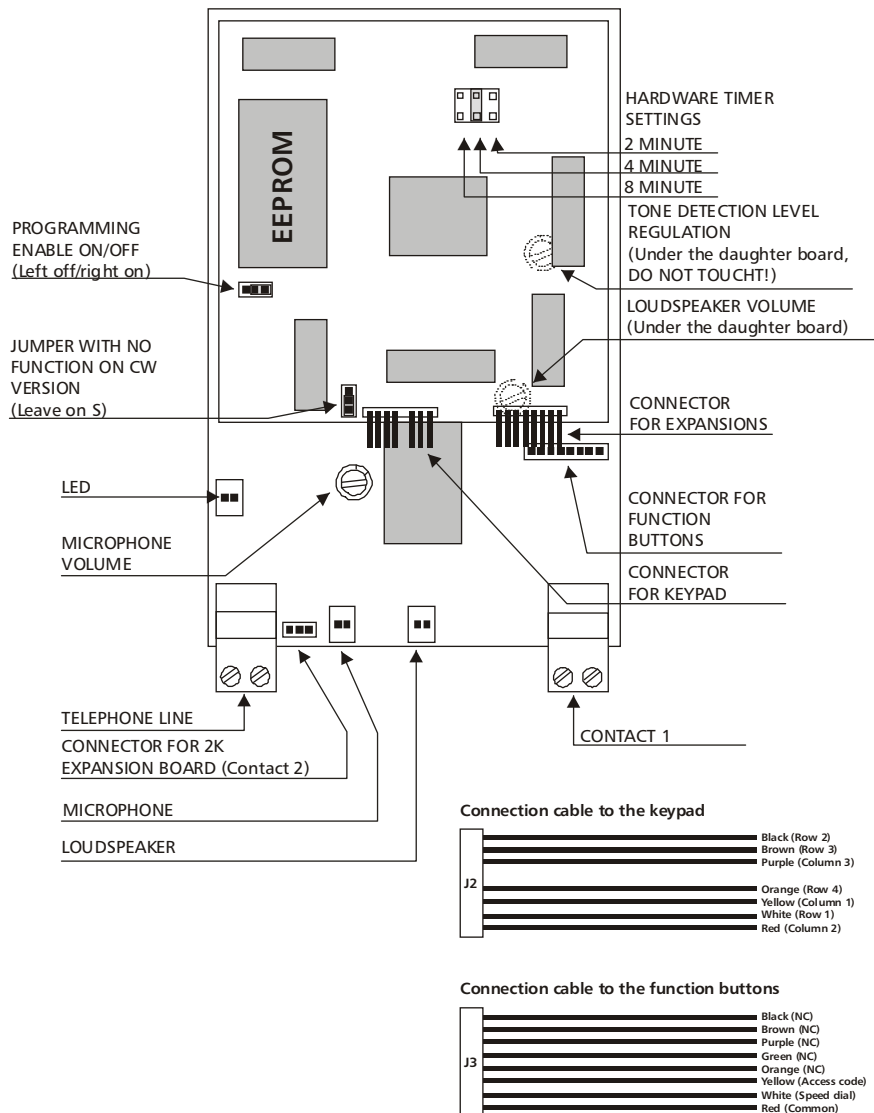
Features

- Up to 99 speed dial calls programmable (01 to 99)
- Programmation using DTMF tones
- Programmable contact activation time
- Auto answer function
- High quality handsfree speech controlled unit
- Digital tone detection
- Volume regulation for loudspeaker and microphone
- With DTMF dial controlled door opener contact
- Optional external second relays for the comand of videocameras or a similar devices
- Line disconnect with DTMF dial
- Automatic line disconnect after door opening
- Connection to any PABX T/R analogue extension line
- Programmable DTMF or rotary dial
- Programmable time out timer
- Setable hardware timer
- Data storing on EEPROM
- Access code for activation of both door opener contacts (second contact is optional)
- Up to 10 differnet code for each contact programmable
- 3 to 6 digits long code programmable
- Programmable automatic activation of the second contact (optional) with line seizure
- Programmable ON/OFF mode for the second contact (optional)
- Increasing line seizure time between codes input with wrong code entry

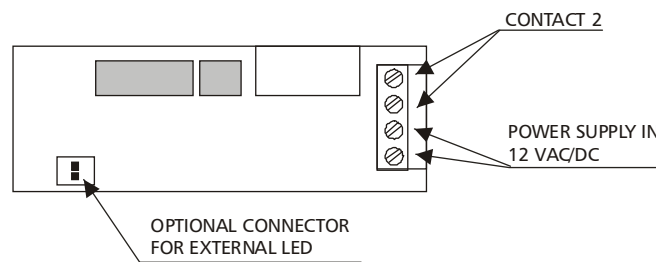
Connection diagram



View of the MD PBX KEY electronic board



View of the MD PBX KEY 2K electronic board (option)



Please note!

The MD PBX KEY 2K optional board enables the use of the second contact. This board has to be powered with a 12 Vac/dc voltage even if the main MD PBX KEY board doesn't need a power supply. This is required as the device needs a voltage to let the ON/OFF mode of the contact working (status memory).

The provided connection cable to the main board has to be connected on the indicated connector (connector J6). Please take care that the yellow cable is on the left side (close to the telephone line connector) and the brown cable on the right side. Other wise the mother board could be damaged.

Installation

Depending on the delivered version install the **MD PBX KEY CW** doorstation as required. With flush mounting versions the front plate and the installed electronic board should be take off during the installation operations of the box. For the MD Version also for the wall mounting version the front plate and the installed electronic board should be dismantled for the installing operations. With the AV and ES version you can separate the complete unit with front panel, back box and electronic board from the wall mounting case. In this case you don't need to dismount the electronic board. With the AV version with flush mounting installation do not forget to apply the delivered fitting strip to the front panel.

With the BG version for installation behind existing panels, install the electronic board in his case or letter box. **Please take care that a too large distance between board and microphone can reduce the voice quality of the unit.** The function buttons contacts are to be connected powerless. With the installation of the loadspeaker and the microphone please take care that enough acoustic separation between the two items is granted. Especially the backward generated sound waves from the loadspeaker should not get outside the case or reach the microphone. If the delivered installation holders for microphone and loadspeaker are used, this should not be a problem.

If possible use different cables to connect the telephone line and the AC power supply for the lamp, door opener and optional 2K expansion board. This will reduce the

possibility to have "humming" noises on the connection. After the installation and cabling using the in this documentation provided connection diagram, the numbers to be dialed are to be programmed. Before starting with the programming procedure the programming enable jumper SW4 has to be set on ON. Now call the unit using a telephone with an DTMF dial pad. After the answer and the acknowledge tone from the device you have 6 seconds time to start the programming procedure. If no DTMF tone is dialed in this time, the unit will switch to speech mode. Follow the programming procedure as described in the next pages. This items can be programmed on the device:

- Program and delete the dial number for each speed dial code;
- Rotary or DTMF dial mode;
- Number of call with no answer;
- Max. time without speech on line;
- Max. connection time (software timer);
- Programm and delete the access codes for contact 1 and 2 (optional);
- Operating mode for contact 2 (optional) as door opener, automatic function, ON/OFF mode;
- Max. line seizure time for access code input;
- Activation time for the contact 1 and 2 (optional);

After the programming, the hardware timer (jumper J1, default 2 minutes) should be set as required. The unit is now ready to work. You should set up a connection with the door unit. A regulation of the sending and receiving volume may be necessary. To do this you should use the regulators placed on the **MD PBX KEY CW** doorstation. Please take care to regulate VERY carefully. If this is done by two people it might be helpful. **If the loudspeaker will send only "broken" tones, or it has a too low volume, changing the volume of the microphone on the MD PBX KEY CW may help.**

With a very loud external environment the unit may have difficulties detecting the busy tone. This may happen also with tone which are not within the values as indicated in the technical specification at the end of this document. In this case you should use always the dial of the digit "3" to terminate the connection.

Please take care that if you need the external power supply the used transformer should have an **open circuit voltage of no more than 15 Vpp**. We suggest the use of our transformer PRS 210.

Please note that only **one door opener with 40 Vpp and 2 A** can be connected to the build in relays of the unit. If you need to drive more door openers or if you need an higher voltage or current you should use an external relays. We suggest the use of our relays 1471 or 1471E.

Furthermore please consider this for the installation:

- If you are using digital sets or featurephones on your PABX please take care that these are enabled to send DTMF tones also after an incoming call. You need this to open the door.

How to programm a speed dial number



- 1) Using a telephone with a DTMF dial pad call the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
- 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
- 3) **Within 6 seconds** dial now the programming code * # 1
- 4) You will hear a **short acknowledge tone**
- 5) Dial now * [telephone number max. 16 digits long (1 to 0, # for pause)] * [speed dial code (01 to 99)]
- 6) You will hear a **short acknowledge tone**
- 7) Repeat the step 5 until all numbers are programmed
- 8) Dial now * *
- 9) You will hear a **long acknowledge tone**
- 10) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEX CW will **hang up**
- or
- 11) Dial the programming code for **another programming function**

Please note:

- Each speed dial call number can be single changed or programmed

How to delete a speed dial number



- 1) Using a telephone with a DTMF dial pad call the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
- 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
- 3) **Within 6 seconds** dial now the programming code * # 1
- 4) You will hear a **short acknowledge tone**
- 5) Dial now #* [speed dial code (01 to 99)]
- 6) You will hear a **short acknowledge tone**
- 7) Repeat the step 5 more numbers are to deleted
- 8) Dial now * *
- 9) You will hear a **long acknowledge tone**
- 10) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEX CW will **hang up**
- or
- 11) Dial the programming code for **another programming function**

How to programm the dial mode



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
- 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
- 3) **Within 6 seconds** dial now the programming code * # 1
- 4) You will hear a **short acknowledge tone**
- 5) Dial now #1 for rotary dial,
or
- 5) Dial now #2 for DTMF dial
- 6) You will hear a **short acknowledge tone**
- 7) Dial now * *
- 8) You will hear a **long acknowledge tone**
- 9) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or**
- 10) Dial the programming code for **another programming function**

How to programm the number of calls without answer



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
- 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
- 3) **Within 6 seconds** dial now the programming code * # 2
- 4) You will hear a **short acknowledge tone**
- 5) Dial now* [number of calls without answer (01 to 99)]*
- 6) You will hear a **short acknowledge tone**
- 7) Dial now * *
- 8) You will hear a **long acknowledge tone**
- 9) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or**
- 10) Dial the programming code for **another programming function**

Please note:

- After counting the programmed number of calls without answer the unit will hung up
- The default value is "05" for 5 calls

How to programm the max. time without speech



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code * # 3
 - 4) You will hear a **short acknowledge tone**
 - 5) Dial now * [max. time without speech in seconds (01 to 99)]*
 - 6) You will hear a **short acknowledge tone**
 - 7) Dial now * *
 - 8) You will hear a **long acknowledge tone**
 - 9) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 10) Dial the programming code for **another programming function**

Please note:

- If during the connection the unit will not detect speech for the programmed time it will hang up
- The default value is "99" for 99 seconds without speech

How to programm the max. connection time (software timer)



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code * # 3
 - 4) You will hear a **short acknowledge tone**
 - 5) Dial now # [max. connection time in seconds (001 to 999)]#
 - 6) You will hear a **short acknowledge tone**
 - 7) Dial now * *
 - 8) You will hear a **long acknowledge tone**
 - 9) Dial now the code #, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 10) Dial the programming code for **another programming function**

Please note:

- After the programmed time out the unit will hang up
- The default value is "999" for 999 seconds connection time
- Please take also care of the hardware timer (default value is 4 minutes)

How to programm the access codes for contact one



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code *** # 4**
 - 4) You will hear a **short acknowledge tone**
 - 5) **Dial now * [access code for contact one (3- to 6 digits long)] * [access code number (1 to 0)]**
 - 6) You will hear a **short acknowledge tone**
 - 7) Repeat the step 5 until all access codes are programmed
 - 8) **Dial now * ***
 - 9) You will hear a **long acknowledge tone**
 - 10) **Dial now the code #**, you will hear a **long acknowledge tone** and then the MD PBX KEX CW will **hang up**
- or
- 11) **Dial the programming code for another programming function**

Please note:

- Up to 10 different access code can be programmed for the contact one
- The codes for the contact one and two are to be different!

How to delete the access codes for contact one



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code *** # 4**
 - 4) You will hear a **short acknowledge tone**
 - 5) **Dial now #* [access code number (1 to 0)]**
 - 6) You will hear a **short acknowledge tone**
 - 7) Repeat the step 5 if more access codes are to be deleted
 - 8) **Dial now * ***
 - 9) You will hear a **long acknowledge tone**
 - 10) **Dial now the code #**, you will hear a **long acknowledge tone** and then the MD PBX KEX CW will **hang up**
- or
- 11) **Dial the programming code for another programming function**

Please note:

- If all access codes are deleted or no one was programmed, we suggest to disconnect the "access code" functional button as the keypad might be blocked in this case

How to programm the access codes for contact two



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code * # 5
 - 4) You will hear a **short acknowledge tone**
 - 5) **Dial now * [access code for contact one (3- to 6 digits long)] * [access code number (1 to 0)]**
 - 6) You will hear a **short acknowledge tone**
 - 7) Repeat the step 5 until all access codes are programmed
 - 8) **Dial now * ***
 - 9) You will hear a **long acknowledge tone**
 - 10) **Dial now the code #**, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 11) **Dial the programming code for another programming function**

Please note:

- Up to 10 different access code can be programmed for the contact one
- The codes for the contact one and two are to be different!
- The second contact is an optional feature!
- If the value of 999999 is programmed as access code 1, the contact two will be automatically activated for the programmed activation time every time the line is sized

How to delete the access codes for contact two



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code * # 5
 - 4) You will hear a **short acknowledge tone**
 - 5) **Dial now #* [access code number (1 to 0)]**
 - 6) You will hear a **short acknowledge tone**
 - 7) Repeat the step 5 if more access codes are to be deleted
 - 8) **Dial now * ***
 - 9) You will hear a **long acknowledge tone**
 - 10) **Dial now the code #**, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 11) **Dial the programming code for another programming function**

Please note:

- If all access codes are deleted or no one was programmed, we suggest to disconnect the "access code" functional button as the keypad might be blocked in this case

How to programm the max. time for an access code input



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code *** # 6**
 - 4) You will hear a **short acknowledge tone**
 - 5) Dial now **# [max. time for an access code input in seconds (01 to 99)]#**
 - 6) You will hear a **short acknowledge tone**
 - 7) Dial now *** ***
 - 8) You will hear a **long acknowledge tone**
 - 9) Dial now the code **#**, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 10) Dial the programming code for **another programming function**

Please note:

- After pressing the "access code" function button the unit will hung up if no access code is dialed within the programmed time
- The default value is "30" for 30 seconds time for access code input

How to programm the activation time for contact one



- 1) Using a telephone with a DTMF dial pad **call** the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doortstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code *** # 7**
 - 4) You will hear a **short acknowledge tone**
 - 5) Dial now *** [activation time for contact one in seconds (01 to 99)]***
 - 6) You will hear a **short acknowledge tone**
 - 7) Dial now *** ***
 - 8) You will hear a **long acknowledge tone**
 - 9) Dial now the code **#**, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 10) Dial the programming code for **another programming function**

Please note:

- The contact one will be activated for the programmed time after DTMF dial from called party or access code input
- The default value is "05" for 30 seconds time for access code input

How to programm the activation time for contact two



- 1) Using a telephone with a DTMF dial pad call the doorstation using the **internal telephone number** of the extension line where the MD PBX KEY CW is connected to
 - 2) The MD PBX KEY CW doorstation will answer the call automatically. After the answer you will hear a **long acknowledge tone**
 - 3) **Within 6 seconds** dial now the programming code *** # 7**
 - 4) You will hear a **short acknowledge tone**
 - 5) Dial now **# [activation time for contact one in seconds (01 to 99)]#**
 - 6) You will hear a **short acknowledge tone**
 - 7) Dial now *** ***
 - 8) You will hear a **long acknowledge tone**
 - 9) Dial now the code **#**, you will hear a **long acknowledge tone** and then the MD PBX KEY CW will **hang up**
- or
- 10) Dial the programming code for **another programming function**

status. This will be kept until the next comand input
- The contact two is an optional feature!

Please note:

- The contact one will be activated for the programmed time after DTMF dial from called party or access code input
- The default value is "05" for 30 seconds time for access code input
- If you programm the value 00 the contact two will be in ON/OFF mode. In this case every activation will switch the contact

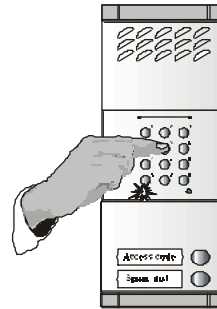
How to use

Call from outside

- The visitor presses the function button **Speed dial**



- The **red LED** the doorstation will switch on, the line is seized. Now the speed dial code of the desired extension can be **dialed on the keypad**
- If an error occurs the dial can be **interrupted** by pressing the buttons **A (*)** or **B(#)**
- The input should be done within **7 seconds** after the line seizure



- The extension is **called**
- On the loudspeaker a **ring back tone** can be heard
- If the extension is busy or doesn't answer within a programmed time the line will be dropped automatically
- If the called party **answers the call** the handsfree device in the doorstation is activated and the extension **can talk to the visitor**



- At the end of the conversation the called extension can dial the digit 7 to activate the contact 1 and to terminate the conversation

or

- dial the digit 8 to activate the contact 2 and to terminate the conversation

oder

- dial the digit 3 to terminat the conversation without door opener contact activation

- Hang up the handset



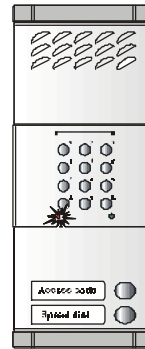
- 3** Hang up
- 7** Activate contact 1 and hang up
- 8** Activate contact 2 and hang up

Call from inside

- Dial the telephone number of the doorstation



- The red LED on the doorstation will switch on, the call is answered, the calling party will here a acknowledge tone
- Wait about 6 seconds to hear a second long acknowledge tone
- Now the handsfree device at the doorstation is activated and a conversation can be done



- At the end of the conversation the called extension can dial the digit 7 to activate the contact 1 and to terminate the conversation

or

- dial the digit 8 to activate the contact 2 and to terminate the conversation



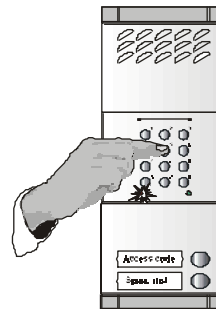
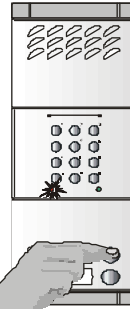
oder

- dial the digit 3 to terminat the conversation without door opener contact activation
- Hang up the handset

- 3** Hang up
- 7** Activate contact 1 and hang up
- 8** Activate contact 2 and hang up

Access code

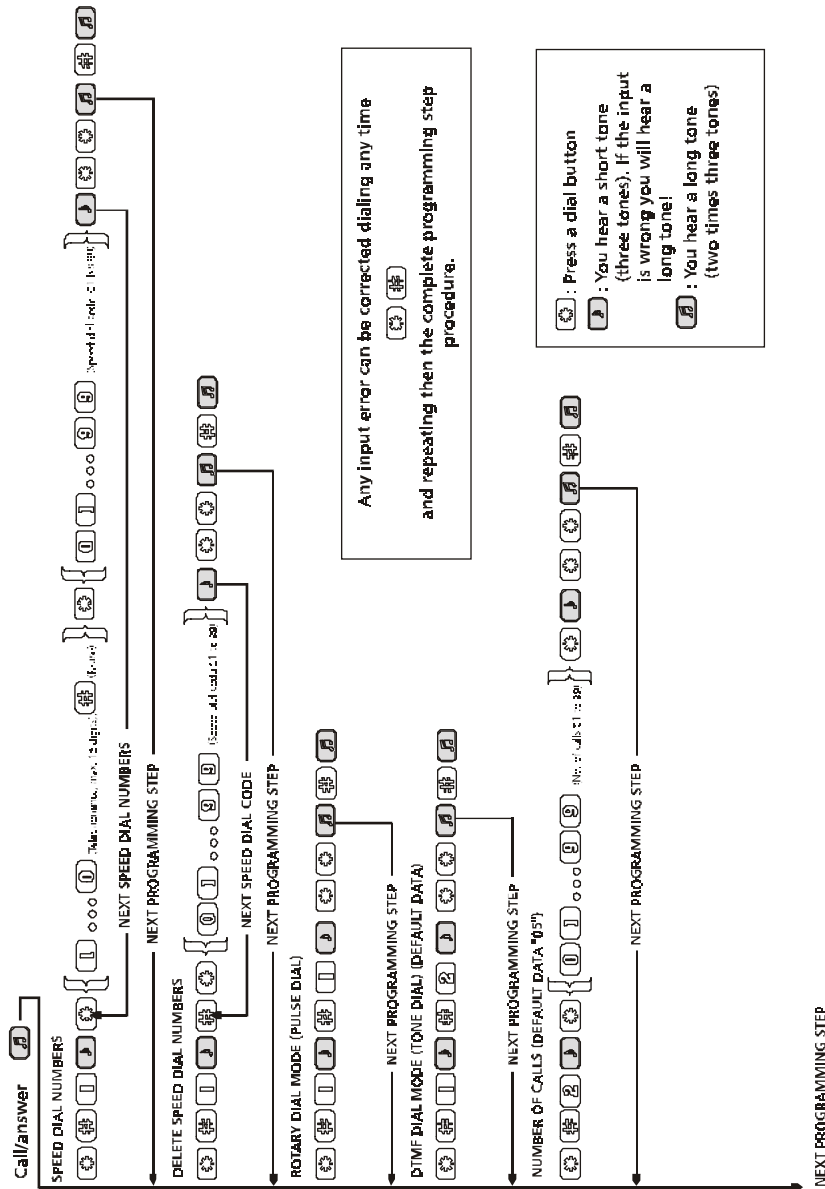
- The visitor presses the function button **access code**
- The **red LED** on the doorstation will switch on, the line is seized. Now the visitor should dial a valid access code on the keypad
- If an error occurs the access code input can be **interrupted** by pressing the buttons **A (*)** or **B(#)**
- If a wrong access code is inserted the line will be dropped and seized again. **Please note!** With every wrong access code input the **pause** between the line interruption and new seizure will be longer, **up to 45 seconds**. Only the input of a correct code will reset this status
- After the complete dial of the access code terminate the input pressing the **B(#)** **button**, after this the contact one or two will be activated depending from the dialed access code



Technical data

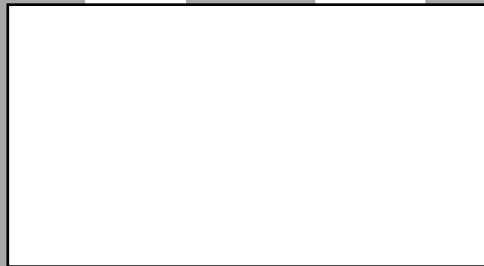
Power supply	from telephone line
Telephone line voltage	min. 24 Vdc, max. 60 Vdc
Voltage insertion drop on T/R	10 V +/- 5% at 25 mA
Current consumption	off hook: min. 18 mA stand-by: 2 μ A
Telephone line impedance	600 Ohm
Dial mode	rotary dial, DTMF programmable
Rotary dial	impulse frequency: 10 Hz dial pause: 820 ms impulse duration: 60 ms impulse pause: 40 ms open line resistance: > 300 KOhm
DTMF dial	standard DTMF Tone duration: 70 ms Tone pause: 70 ms
Tone recognition	detectable tone frequency: 390 to 480 Hz detectable ringback tone: tone duration from 770 to 1100 ms. Release after 7/8 tones detectable long busy tone: tone duration from 170 to 550 ms. Release after 5/6 tones detectable short busy tone: tone duration from 70 to 150 ms. Release after 10/11 tones
Dooropener	Contact 1: DTMF digit "7" Contact 2: DTMF digit "8" (optional) Min. detectable DTMF tone duration: 45 to 50 ms Max. contact load: 40 Vpp, 2 A Closure duration: 1 to 99 seconds programmable
Time out	2, 4 or 8 minutes selectable
Environmental temperature	-5° to 45° C
EMC	EN 60555-2 EN 55022 EN 50082-1 EN 60950
Security	EN 60950
Dimensions	MD PBX KEY MD Frontplate: 124 x 304 x 19 Installation box: 124 x 304 x 55 Wall mounting case: 151 x 323 x 80 MD PBX KEY AV Frontplate: 180 x 293 x 4 Installation box: 155 x 282 x 55 Wall mounting case: 182 x 303 x 98 MD PBX KEY ES Frontplate: 123 x 307 x 14 Installation box: 115 x 299 x 45 Wall mounting case: 142 x 324 x 90 MD PBX KEY BG Electronic board: 85 x 150 x 35 Loudspeaker holder: 75 x 75 x 28

Programming overview



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