TCS®

Product Information

Front-door station series for flush-mount PUK
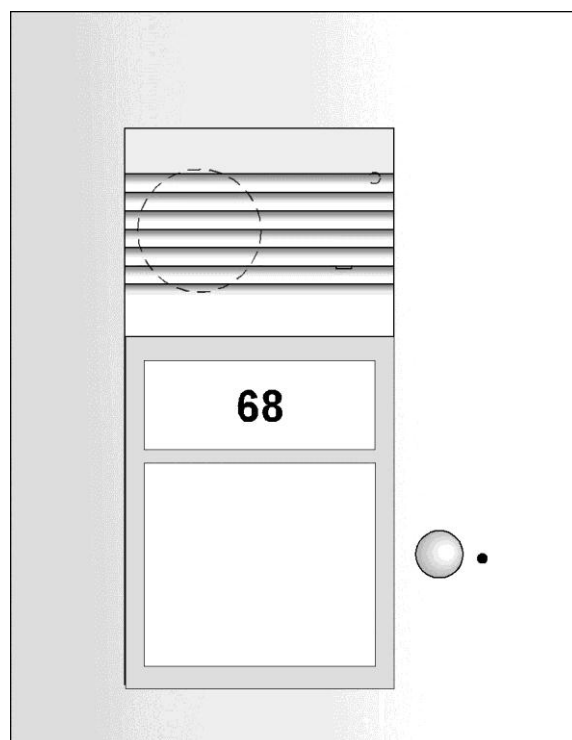
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Scope of delivery

1 x PUK (incl. flush-mount box)
1 x win:clip^{TM} key
1 x screwdriver with round handle
    connection terminal with 5 poles
    name plate, empty and with light symbol
    hexagon socket screws (to fix the device within the flush-mount box, 2 per button row)
    product information
    programming table

Safety instructions

General safety regulations

> **!** Attention! Mounting, installation, commissioning and repair of electronic devices have to be carried out only by qualified electricians. Thus, the standards and instructions for the installation of systems have to be observed.

For working on systems with main connection of 230 V alternating voltage, the safety requirements according to DIN VDE 0100 must be observed.

When installating TCS:BUS systems, the general safety regulations for telecommunication systems according to VDE 0800 must be observed. Inter alia:

- separated conduit of heavy current and low current lines,
- minimum distance of 10 cm in case of a common conduit,
- use of separators between heavy and low current lines within shared cable ducts,
- use of standard communication lines, e. g. J-Y (St) Y with a diameter of 0.8 mm
- existing lines (modernisation) with deviating cross-sections can be used in compliance with the loop resistance.

Installation – protective measures

> **!** With suitable measures to protect against lightning, it has to be ensured that a voltage of each 32 V DC is not to be exceeded at the connections a, b, R, S, P.

Intended use

- PUK are front-door stations for the outdoor use.
- They are characterized by a space saving design.
- The housing is equipped with the win:clip system.
- The front panel is made of 3 mm thick aluminium or stainless steel.
- Universal installation: flush-mount or cavity wall.

Device overview PUK

connection terminal

loudspeaker

EEPROM

volume control microphone

volume control loudspeaker

diffusion foil

front panel

loudspeaker cover

opening for win:clip^{TM} key

attachement hole 1

connection jack

bell button

microphone

attachement hole 2 (under the diffusion foil

condensed water drain

Illustration shows PUK01/1, without name plate glass
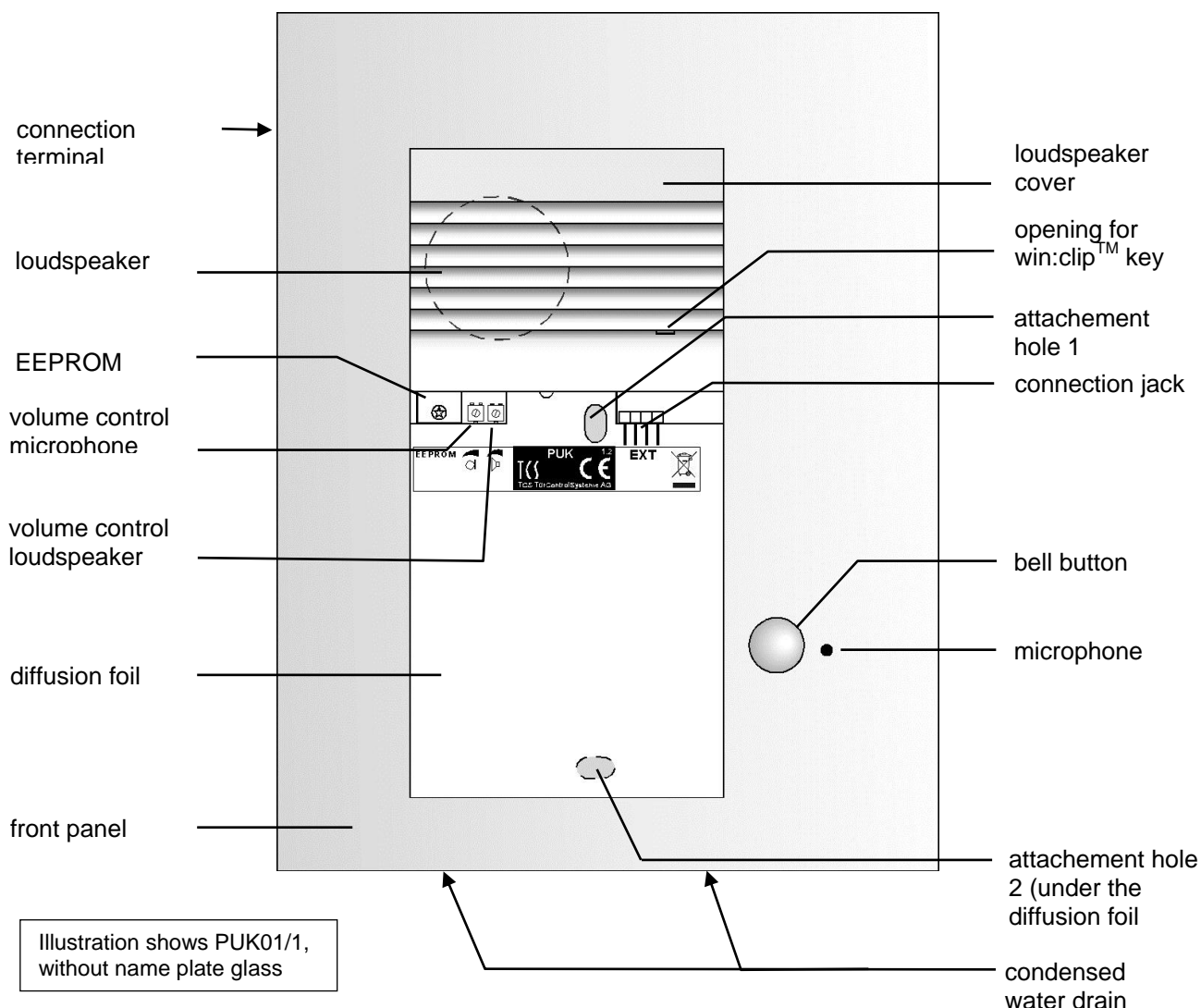
Technical data

supply voltage:	+ 24 V ± 8 % (over power supply and control unit)
housing:	aluminium, anodised (colors as shown in price list)
name plate glass:	acrylic glass
acceptable ambient temperature:	-20 °C ... + 50 °C
input current:	PUKxx/1 I(a) = 0.4 mA, I(P) = 19 mA
stand-by	PUKxx/2 I(a) = 0.8 mA, I(P) = 36 mA
	PUKxx/3 I(a) = 1.2 mA, I(P) = 53 mA
max. input current:	
	PUKxx/1 I(Pmax) = 36 mA
	PUKxx/2 I(Pmax) = 40 mA
	PUKxx/3 I(Pmax) = 58 mA

3-wire technique necessary.

Short description

- for up to 30 flats
- win:clip™ principle
- name plate size: H from 19 mm to 53 mm x W 62 mm
- information field size: H from 19 mm to 37 mm x W 62 mm
- bell buttons made of metal with gold-plated, maintenance-free contacts
- each bell button can be allocated with two indoor stations
- long-life and energy saving name and information plate illumination
- shatter-proof name plate glass
- acknowledgement tone when pressing the bell button
- communication time ex works: 56 sec / adjustable with Service Device or configo ^{TM}
- any bell button can be used to switch the light, light symbol enclosed
- volume and microphone sensitivity can be adjusted manually
- plug-in memory to easily replace front-door stations identical in construction
- R-terminal to connect an extended function - door release
- door release time at R-terminal ex works: 3 sec / can be adjusted with configo ^{TM}
- door standby time (to control the short-term memory within the indoor station) ex works: 56 sec / adjustable with configo ^{TM}
- voice communication within the door standby time / adjustable with Service Device or configo ^{TM}

win:clip system

The device is equipped with the win:clip system, thus opening and closing the station can be realised without screws.

Open the housing
1. Push the enclosed win:clip key into the small opening within the loudspeaker cover.
   Press the key into the opening until stop and keep it in this position.
2. Push the name plate glass slightly upwards until it jumps out.
3. Put out the glass.
4. Remove the win:clip key.
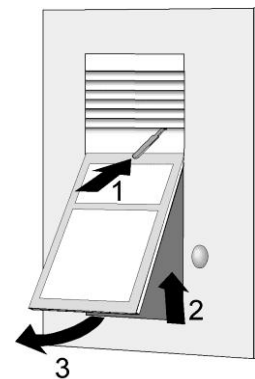
Close the housing
1. Push the enclosed win:clip key into the small opening within the loudspeaker cover.
   Press the key into the opening until stop and keep it in this position.
2. Push the name plate glass under the loudspeaker cover.
3. Press the name plate glass onto the device. Push it slightly downwards until it snaps-in.
4. Remove the win:clip key.

Installation

Notes

Flush-mount box

- Guide the connection cable through the conduit within the flush-mount box and fix it with suitable screws to the wall.
- The profile of the front-door station should be flush with the underground.

Front-door station

- Attach the front-door station with the encloses hexagon socket screws via the attachment holes to the studs in the flush-mount box.
- It must be observed that the screws are not over-tightened. This could cause the deformation of the housing. Thus, it may be impossible to install or remove the loudspeaker cover and the nameplate glass.

!	Do not, under any circumstances, seal the device with silicone! Condensed water must be able to run and evaporate!

Connecting the lines

General information

| !	Connect the lines with the enclosed small screwdriver to prevent damaging the device. Please note, • do not place the lines in front of the LED, this would affect the name field illumination • please observe that no line will be clamped below the spacer at the backside of the front-door station

Connecting

1. Strip the cable ends.
2. Connect the lines depending on the type of system and according to the wiring diagram.

Connecting with a screw terminal with 5 poles

- The screw terminal with 5 poles to connect the front-door station with the TCS:BUS is plugable.
- Connect the TCS:BUS to a, b and P and if existing, connect a relay for controlling a door opener (FAA1100-0600) to the terminals R and P.
- Attach the screw terminal at the backside of the front-door station according to the marking.
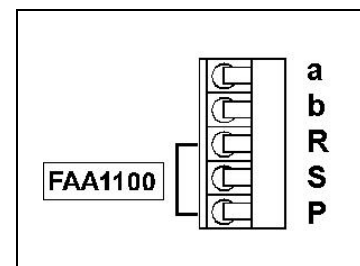
Wiring example
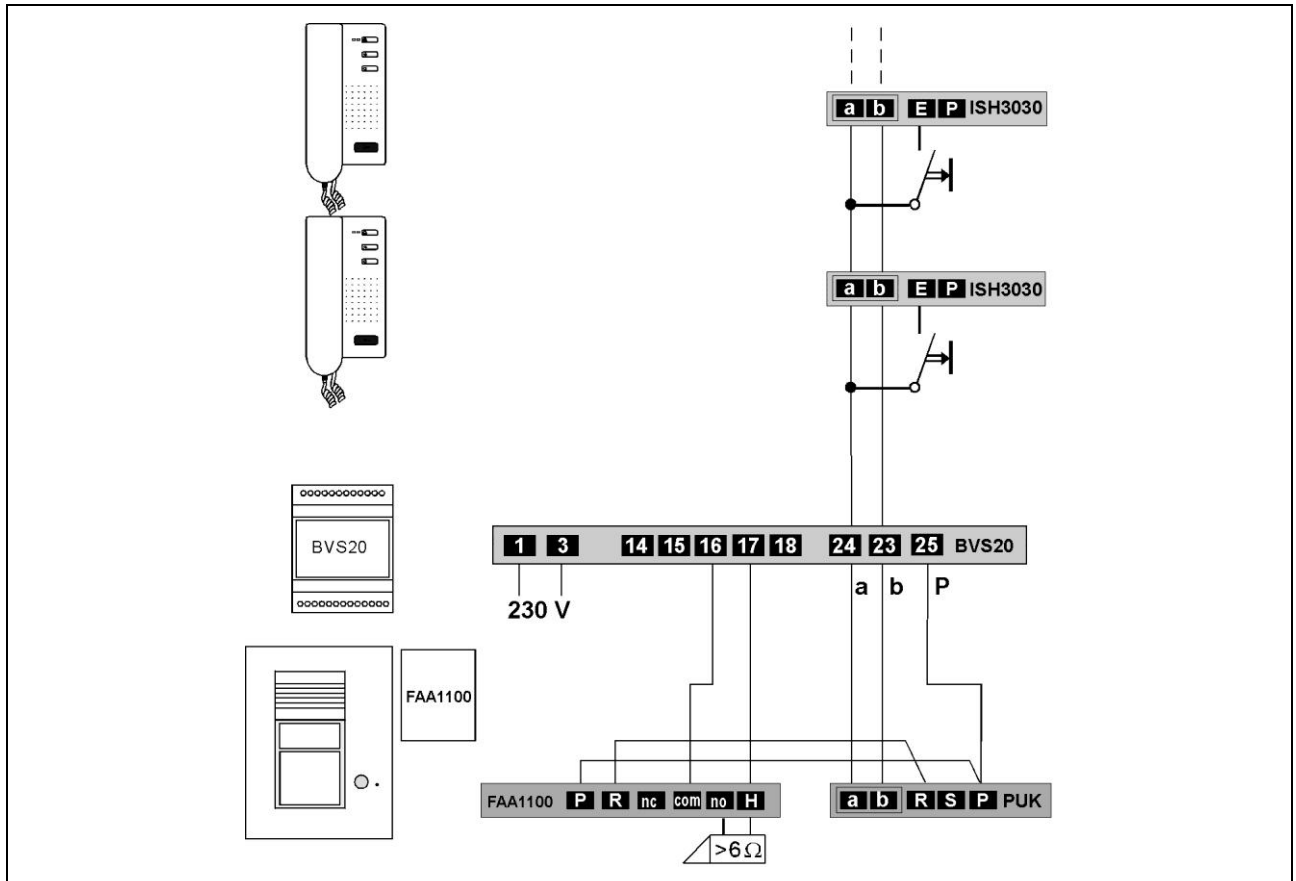
When using several front-door stations within one system:
Use the R-terminal to connect a door release relay.

2-wire special operation

In this operation mode, only one front-door station can be connected! One P-wire is to be build by a jumper between terminal a and P.

Note: The front-door station is not working, if the jumper is set at b instead at a.
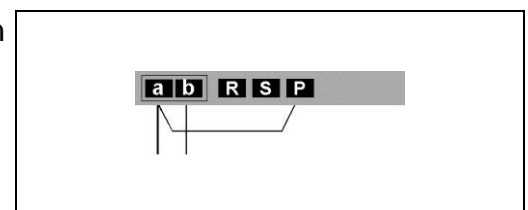
Commissioning

- Install the devices of the system completely.
- Check the a, b and P wire against each other for short-circuits.
- Switch on the mains voltage.

Adjusting the volume of microphone and loudspeaker

! For adjustments, use the enclosed screwdriver!

Ex works the volumes are adjusted on an average. A change isn't always necessary.
Please observe when adjusting:
The volume of loudspeaker and microphone cannot be adjusted independently of each other. When the volumes are too high, there is a back coupling effect (whistling).

volume control

microphone	loudspeaker
control the volume at the indoor station	control the volume at the front-door station

Labelling the name tags

Please find the templates under:
www.tcsag de \ Downloads \ Produktnutzung \ Vorlagen für Namensschildbeschriftungen \ Namensschildbeschriftung Außenstationen der Serien PAK und PUK

1. Fill in the required names into the template. Print out the name tags on the special foil* and cut them to size. Or label the enclosed tags.
2. Push the cut tags from above into the gabs in the name plate glass. For an easy insertion, use the insertion aid (plastic platelet, within the scope of delivery), to open the gabs.
The inserted in name tags stand 2 mm above the gab and can be easily pulled out upwards.

* *We recommend, printing the name tags on a resistant special foil. The foils can be ordered directly at TCS:*
   Printable polyester foil for name tags DIN A4.

gab for name tag

name tag

name plate glas
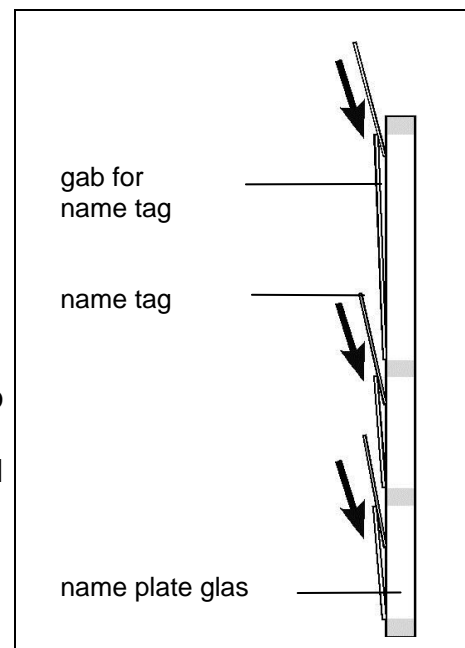
Bell button programming

Basic principle

- All devices at the TCS:BUS have got an unique serial number.
- When programming a bell button, the serial number is allocated to an indoor station and stored in the EEPROM of the front-door station. Per bell button, 1 or 2 indoor stations (serial numbers) can be allocated and called.
- When a bell button is not allocated to a serial number (condition ex works/allocation deleted), this button can be used to switch lights.

Programming a bell button

Make sure that the indoor station is connected to the TCS:BUS and the mains voltage is switched ON (the LED at the power supply / control unit is ON).

> **!** Before an already programmed bell button can be programmed anew, the previous programming must be deleted.

Legend

press button shortly	↗↙	busy ton	))) ▬ ▬ ▬
press button until	↙	negative acknowledgement tone (bell buton already programmed)	))) ▬ ▬
release button	↗	SNapp tone	))) ▬
LED blinks	☼ ▬ ▬	negative acknowledgement signal (NoProg tone)	))) ▬
LED blinks fast	☼ ▬▬▬▬	delete-melody	))) ▬ 6s ▬
LED is ON	☼ ▬▬▬	Prog2 tone (start programming of the 2nd serial number)	))) ▬▬▬
ring tone	))) ▬ ▬ ▬	repeat	▶▶▶
progsperr tone	))) ▬▬ ▬▬	further	▶
period of time (e.g. 6 sec)	◄6s►		

1	Initiate

Power supply and control unit

press shortly   LED blinks   programming mode of the system is ON

2a	Programming via voice communication

establish voice communication to the front-door station   press button shortly   ... a ring tone sounds at the front-door and indoor station [1]

2b	Alternatively: **programming via floor push button** (if the indoor station is not accessible)

Press floor push button 2 times in quick succession, each time a ring tone sounds   press button shortly   ... a ring tone at the front-door station and a ring tone at the indoor station sounds [1]

Repeat the steps, until all bell buttons are programmed

3	End

Power supply and control unit

press short   LED is ON   Programming mode of the system is OFF

1) If a Progsperr tone sounds instead, a programming lock is set in the front-door station. The programming lock can only be removed with the Service Device TCSK-01.

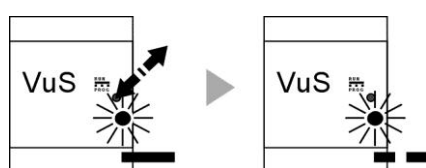## *Programming a second indoor station at a bell button (parallel call)*

The parallel call is calling 2 indoor stations from the bell button of the front-door station.
The floor push button is only calling the permanently wired indoor station.
If bell button and floor push button are to have the same functionality, the function parallel allocation must be used. Thus several indoor stations are reacting on the same bell button as well as on the same floor push button. The parallel allocation has to be adjusted with the Service Device TCSK-01 or the configuration software configo ^{TM}.

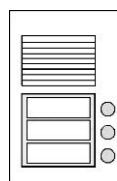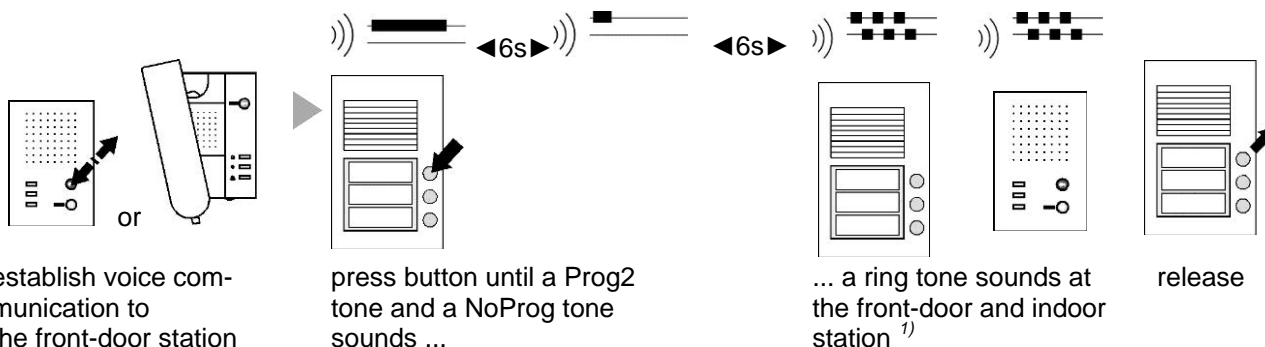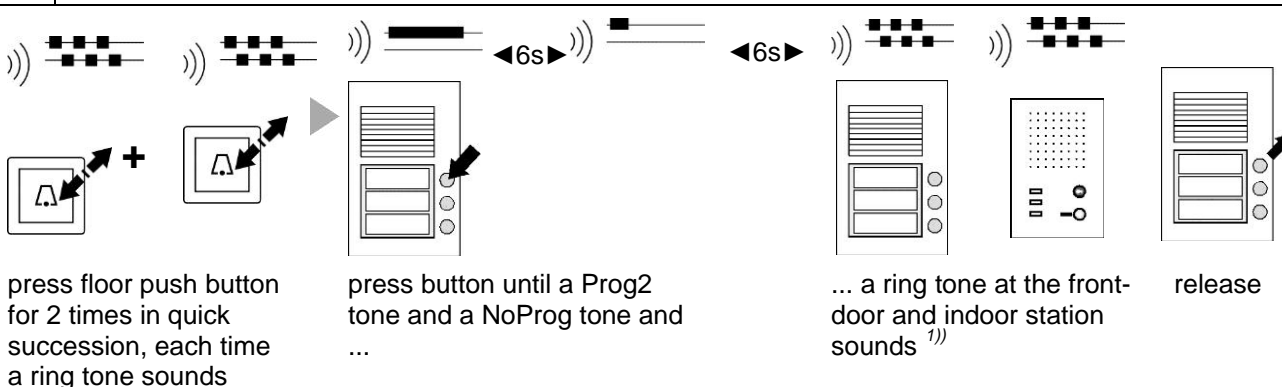|	
Note: Repeated programming of an already programmed bell button always changes only the second serial number. If you want to change the serial number programmed first, you have to delete both serial numbers and reprogram the device again.	
1 **Initiate**	
Power supply and control unit press shortly LED blinks	programming mode <u>of the system is </u>ON

2a	**Programming via voice communication**
establish voice com-munication to the front-door station	press button until a Prog2 tone and a NoProg tone sounds ...	... a ring tone sounds at the front-door and indoor station $^{1)}$	release

2b	Alternatively: **programming via floor push button** (if the indoor station is not accessible)
press floor push button for 2 times in quick succession, each time a ring tone sounds	press button until a Prog2 tone and a NoProg tone and ...	... a ring tone at the front-door and indoor station sounds $^{1))}$	release

▶▶▶   Repeat the steps, until all bell buttons are programmed

3	End

Power supply and control unit

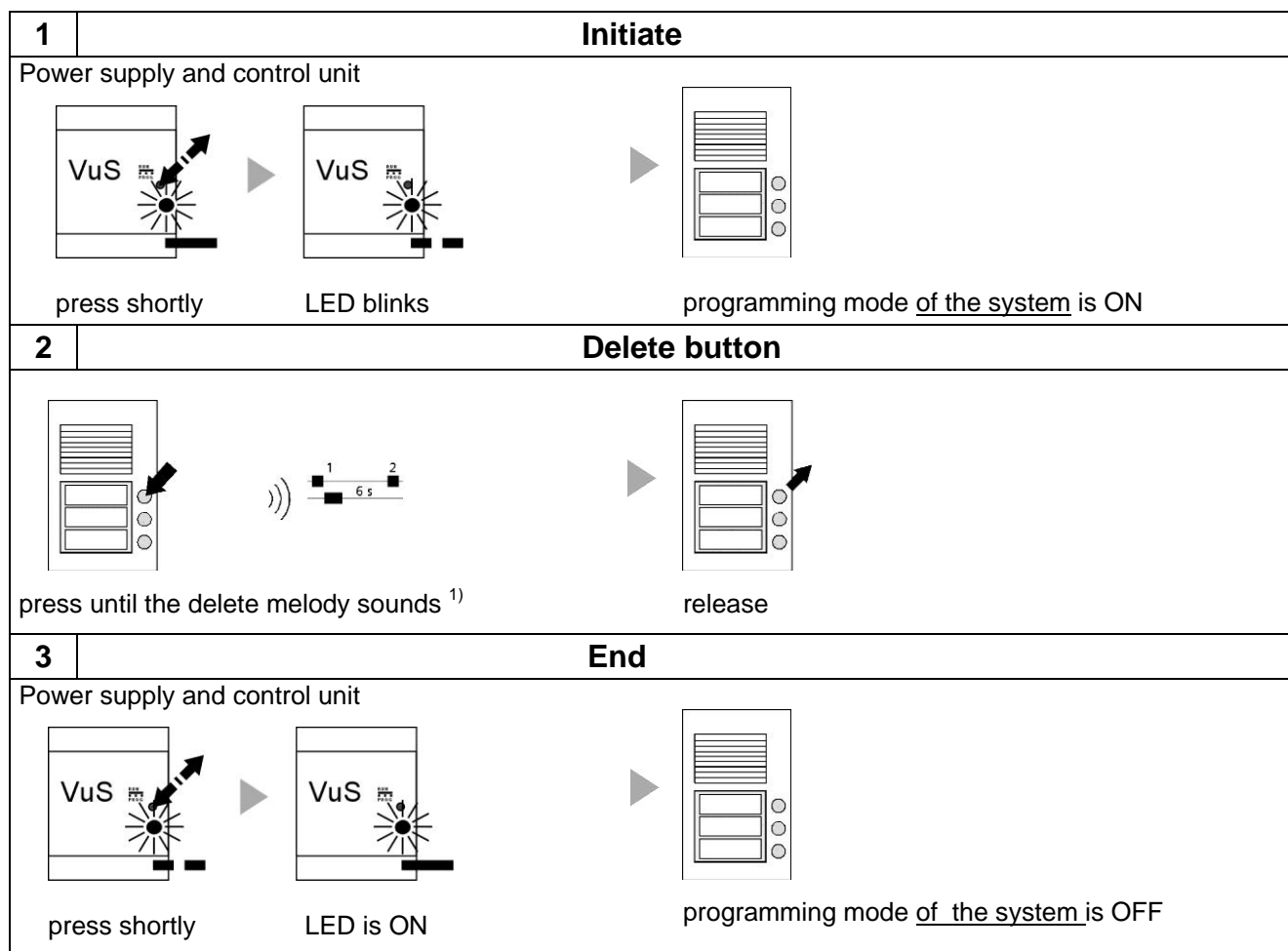| VuS	▶	VuS	▶	
press shortly		LED is ON		programming mode of the system is OFF
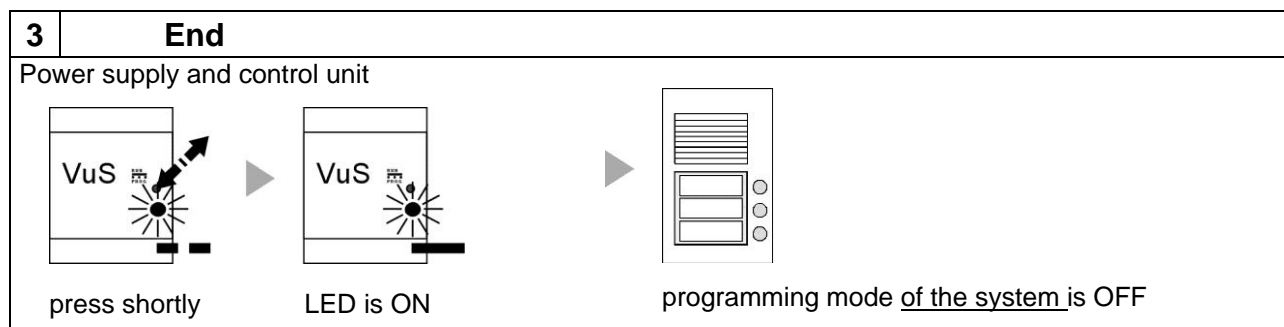
1) If a Progsperr tone sounds instead, a programming lock is set in the front-door station.
The programming lock can only be removed with the Service Device TCSK-01 or the configuration software configo^TM.

Delete the programming

Before an already programmed bell button can be reprogrammed, the previous program-
ming must be deleted.

1	Initiate

Power supply and control unit

VuS	▶	VuS	▶	
press shortly		LED blinks		programming mode of the system is ON

2	Delete button

press until the delete melody sounds ^1)		release

3	End

Power supply and control unit

VuS	▶	VuS	▶	
press shortly		LED is ON		programming mode of the system is OFF

1) If a Progsperr tone sounds instead, a programming lock is set in the front-door station.
The programming lock can only be removed with the Service Device TCSK-01 or the configuration software configoTM.

General information on the conduit in TCS audio systems

The conduit is determined by structural conditions and is limited only by its length.

- Observe when selecting the cable length: the loop resistance must not exceed 20 Ω (table)
- To keep the max. permitted loop resistance, the cross-section of the wire can be doubled, that means, for one wire two lines are used (illustration). The lines must be twisted.
- when using shielded lines: connect the shields with each other and connect one side to ground (b-wire) at the power supply
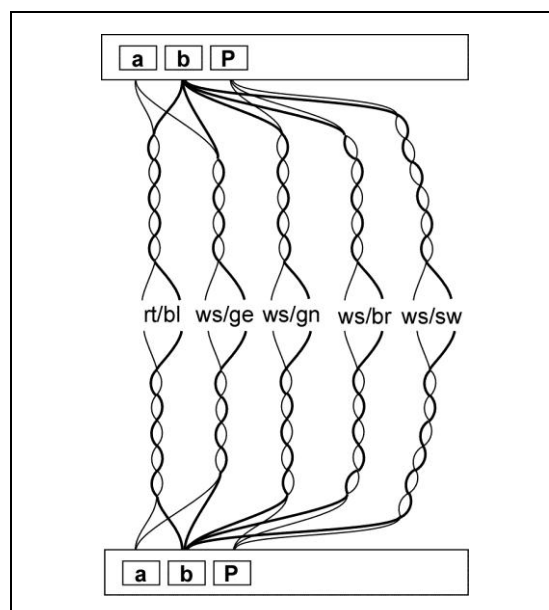- optional strand or star formed wiring

Table: loop resistances

cable length in m	cable diameter	
	0.6 mm	0.8 mm
	loop resistance in Ω	
10	1.28	0.71
20	2.55	1.43
30	3.83	2.14
40	5.10	2.86
50	6.38	3.57
60	7.65	4.29
70	8.93	5.00
80	10.20	5.71
90	11.48	6.43
100	12.76	7.14
150	19.13	10.71
200	25.51	14.29
250		17.86
300		21.43

Principle loop resistance

None of the devices (AS, IS or FE) should be further than 20 Ohm away from the power supply and control unit (VS).

Measure loop resistance

- Switch off the 230 V / 50 Hz of the VS.
- Install a-b short-circuit at the VS.
- Other devices are not disturbing the measurement, they can stay connected.
- Measure the resistance at a/b at the last IS or AS.
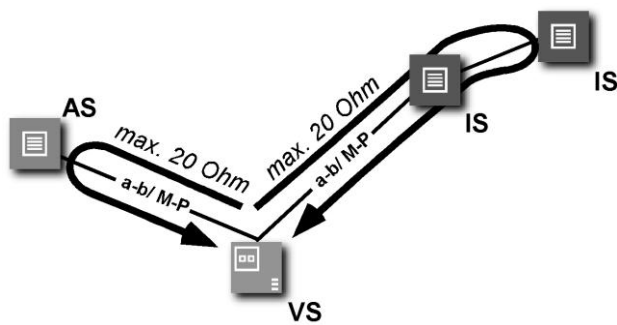
20 Ohm:

max. 160 m distance AS/IS-VS by 0.6 mm diameter
max. 300 m distance AS/IS-VS by 0.8 mm diameter
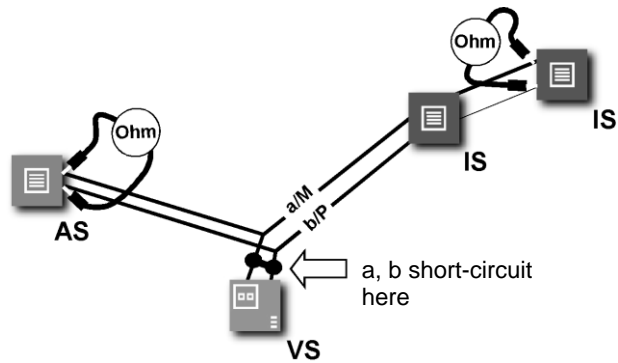
AS   *front-door station*
VS   *power supply and control unit*
IS   *indoor station*
FE   *extended function*

Repair

Replace the EEPROM storage

All programmed data such as serial numbers and parameters are stored in the EEPROM.
If the door loudspreaker has to be exchanged, the EEPROM board can be removed from
the programmed front-door station and inserted into a new, identical constructed front-door
station.

! Before replacing the EEPROM switch off the supply voltages!

Note: Every front-door station of the serien PUK is fitted with an EEPROM.

- Open the housing, respectively row.
- Pull off the small PCB from the electronic circuit board.
- Put the EEPROM boards into the new, unprogrammed front-door stations onto the pins.
  Make sure that all four poles of the pin are plugged into the socket of the small PCB and
  that the component site can be seen.
- After the exchange, all programming are available again.

Cleaning

! Avoid water from entering the device!
Do not use any abrasive detergents!

Clean the device with a dry or slightly wet cloth.
Remove stronger stains with a standard plastic cleaner.

Conformity

The device meets the requirements of the EU directive 2004/108/EG by respecting the standards: EN 61000-6-3, EN 55024.
The declarations of conformity are available under www.tcsag.de, Downloads, trade information.

Information on disposal

The adjoining symbol shows, that the device has to be disposed separateley from domestic waste. The materials used are recyclable. Please do help protecting out environment and dispose the device via a collection point for electronic scrap.

Dispose the parts of the packaging in collecting tanks for cardboard and paper resp. plastics.

Warranty

We offer a **simplified processing** in case of warranty for electricians.
- Please note our **conditions of sale and delivery**, download from www.tcsag.de, downloads, trade information and also included in our current price list.
- Please contact the **TCS HOTLINE**.

Accessory

short text	article number
laser film foil matt in A4 format	0001060
spare part key front-door / indoor stations	E32649

Service

Please send your questions and inquiries to
hotline@tcsag.de