product information
Indoor station for hands-free talking
Carus Adapto

CAI1000, CAI1010
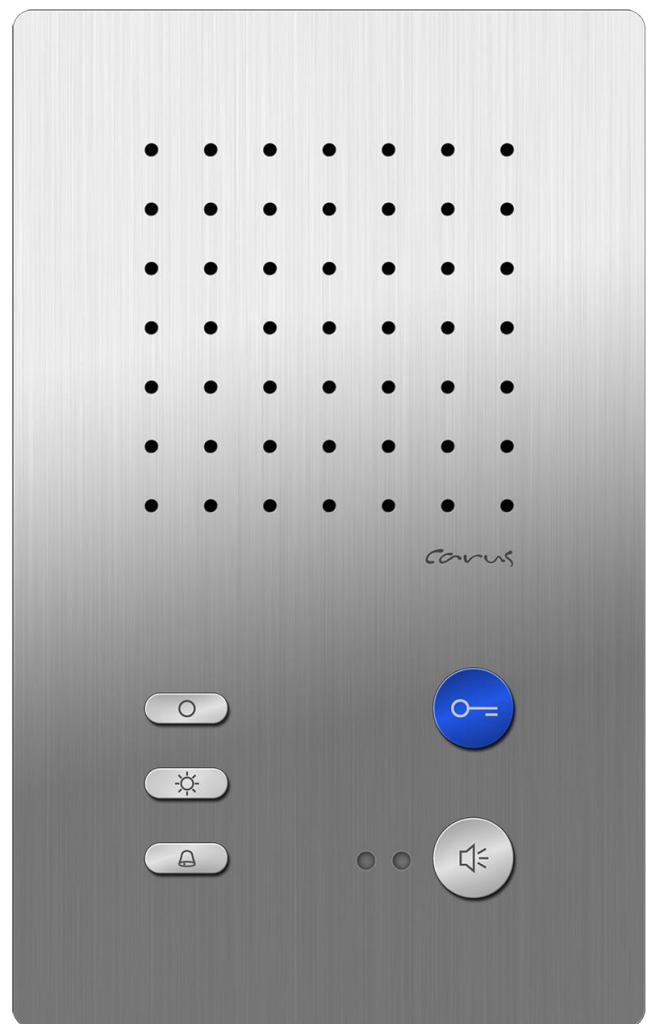
Table ofcontents

Scope of delivery

1 x CAI10x0 (top shell, bottom shell or tabletop device)
2 x release bracket
4 x Phillips head screw
4 x dowel
     assembly instruction
     product information
     instruction manual

Safety instructions

General safety regulations

> **!** Assembly, installation, commissioning and repair of electronic devices must be carried out by qualified electricians and in compliance with current standards.

When working on main power connections of 230V AC, the general and regional installation and safety regulations must be met. i.e. DIN VDE 0100

TCS:BUS system installations must be in compliance with the general safety regulations for telecommunication systems according to VDE 0800. Including:
- separated cable routing of high and low voltage lines,
- minimum distance of 10 cm in case of a common cable routing,
- use of separators between high and low voltage lines within shared cable ducts,
- use of standard telecommunication lines, e.g. J-Y (St) Y with 0.8 mm diameter,
- already existing lines (modernisation) with deviating cross-sections can be used in compliance with the loop resistance.
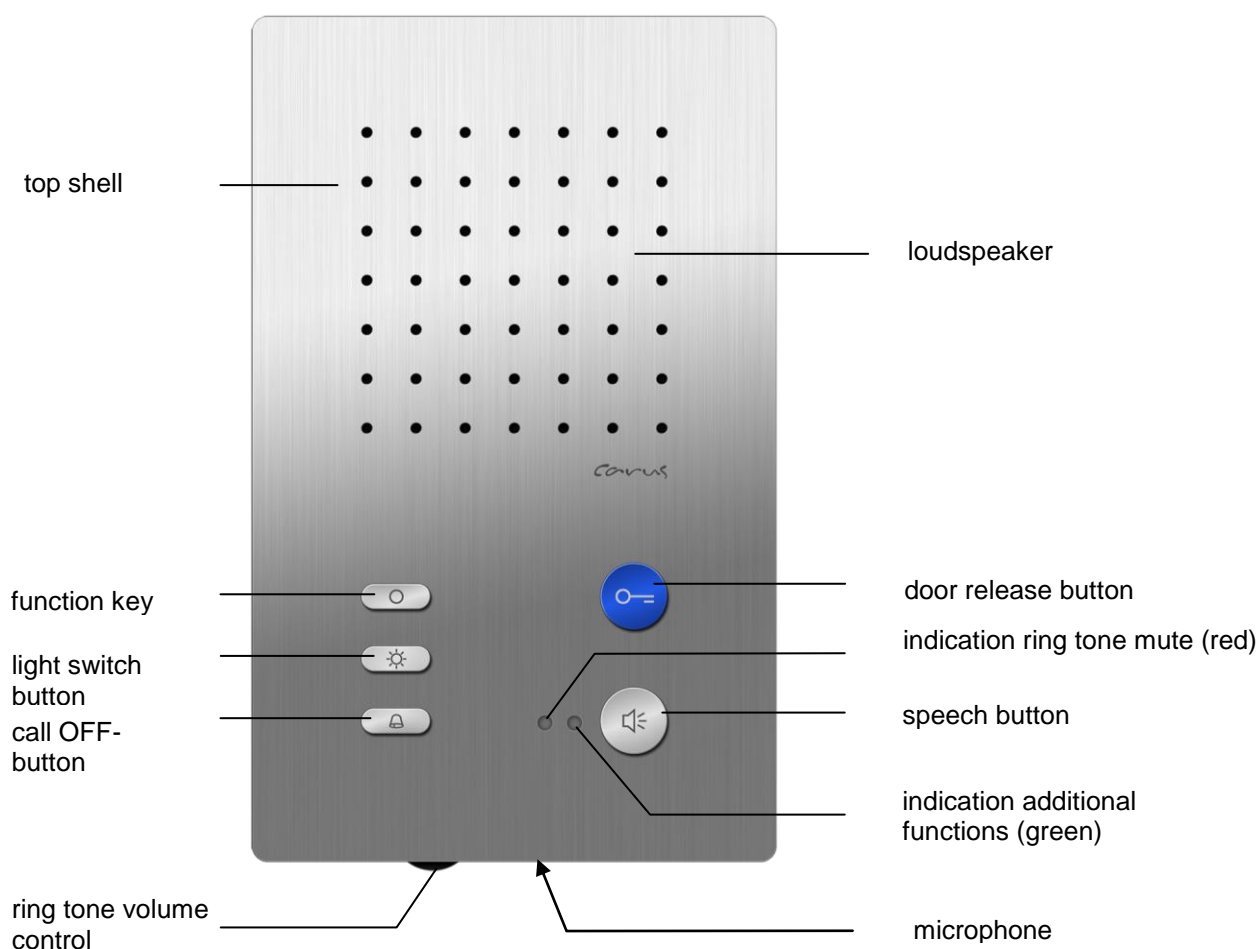
Installation – protective measures

> **!** Through suitable measures to protect against lightning, it has to be ensured that a voltage of 32 V DC is not exceeded at each connection.

Technical data

supply voltage:	+24 V $\pm$ 8 % (power supply and control unit)
housing:	aluminium anodised (colors as listed in price list)
dimensions CAI1000:	H 163 mm x W 101 mm x D 16 mm
dimensions CAI1010:	H 156 mm x W 101 mm x D 160 mm
weight:	530 g (CAI1000), 865 g (CAI1010)
acceptable ambient temperature:	0 °C to 40 °C
input current:	I(a) = 0.4 mA, I(P) = 2 mA
max. input current:	I(Pmax) = 100 mA

3-wire installation necessary!

Device overview

top shell

loudspeaker

function key

door release button

indication ring tone mute (red)

light switch button

call OFF-button

speech button

indication additional functions (green)

ring tone volume control

microphone

Indication and operating elements

	Term	Function
◁€	speech button	• call acceptance, activate speaking, simplex communication • end communication • ring tone selection (door call front-door station 2 AS > AS-border*)
○=	door release button	• door release (= factory setting**) • end communication • ring tone selection (door call front-door station 1 AS > AS-border)
○	function key	• control function 8 (=factory setting) • internal calling (to indoor station) • door release automatic • call diversion • ring tone selection internal call (call from the indoor station)
☼	light switch button	• switching lights • ring tone selection floor call (call from the flat door)
🔔	call OFF-button	• ring tone stopper • end communication • initiate the programming
🔴	indication ring tone mute (red)	• call OFF is activated (LED is ON) or • indication for busy speech channel (LED blinks)
🟢	indication additional functions (green)	• door call, incoming internal call, speaking activated • door release automatic or call diversion, when activated • alternatively door status indication
	ring tone volume control	ring tone volume can be adjusted continuously

* *factory setting: AS-border = 0, limit value of the AS-address areas can be configured with configuration software configo™ or can be configured in the factory on request.*
** *WE = factory setting*

Intended use

- The CAI10x0 are indoor stations for hands-free talking. Manually controlled simplex communication can be activated.
- The CAI10x0 are suitable for surface-mount and can be used as tabletop device.
- They can be used for the operation within TCS audio systems and combined audio / video systems.

Max. number CAI10x0 in 3-wire operation

When using power supply and control unit	max. number CAI10x0	
BVS20 or NBV1000, 1 strand	6	
VBVS05, 1 line	80	
BVS20 + NGV1011	60	*AS front-door station* *VS power supply and control unit* *IS indoor station* *Note: The max. number of front-door stations which can be connected is limited. Details are described in the respective product information!*

Short description

- blue door release button with floor door release function (can be activated)
- speech button: for call acceptance and changeover key speaking / listening
- function key (ex works allocated with control function) with alternative allocation (can be activated) internal call, door release automatic, call diversion
- ring tones can be adjusted by the resident, 13 ring tones can be selected
- acoustic and optical call distinction between front-door, flat door and internal call, acoustic call distinction for 2 doors
- ring tone volume can be adjusted manually
  ring tone mute with optical indication
- optical indication of door calls
- optical display of a busy line in case of an established voice connection
- automatic hands-free talking after internal call can be activated
- one parallel call can be activated
- sending sender serial number in case of internal calls can be de-/activated, source indication at CAI11x0 or CAI2xx0 possible (with configuration software configo^{TM})
- unlimited communication time can be de-/activated (with configuration software configo^{TM})
  (limited by other indoor or front-door stations, to which a voice connection is established)
- audio privacy function and automatic call cut-off

Installation

Installation CAI1000 (wall mounting)

Attention!
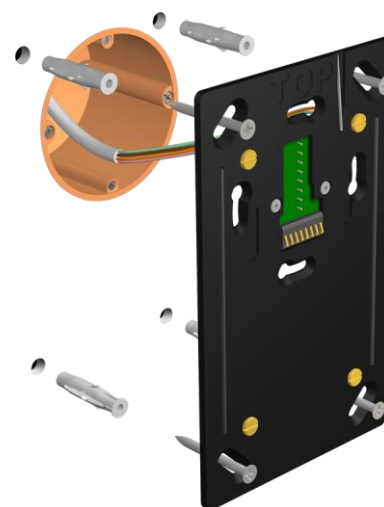The indoor stations have to be (de-)installed only voltage-free!

Ensure not to over tighten the screws when installing the wall bottom shell on uneven surfaces. Otherwise the plate might be deformed. Further, the devices may not be locked into position correctly on the bottom shell.

Install the bottom shell

For an optimal operation, a mounting height of 1.6 m is recommended.

In order to connect the cables without any problems, the device must be installed on a flush-mounted socket.
- Position the flush-mounted socket behind the cable entry. Ensure that the connection terminal does not contact the flush-mounted socket.
- Do not use the bottom shell as drilling template!
- Only use the bottom shell as aid for marking the holes.
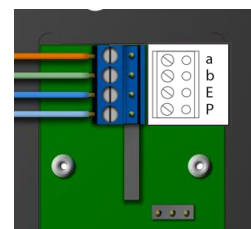- Install the bottom shell directly to the wall and use the enclosed screws to fix it.

Connect the lines

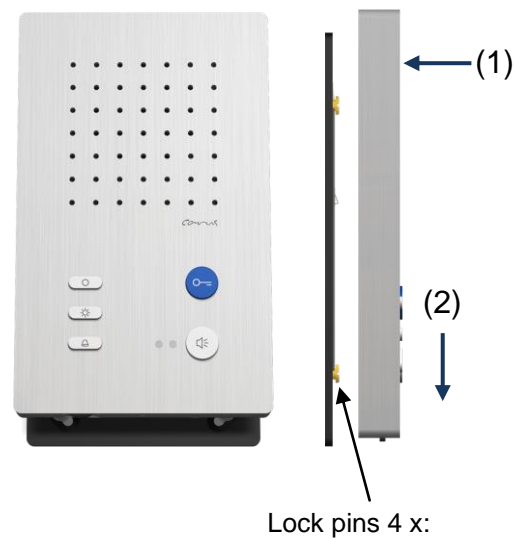| acceptable cross-section (diameter)	0.08 … 0.82 mm^2 (Ø 0.32 … 1.0 mm)
max. number of wires per terminal contact	each 2 x 0.8 mm, 3 x 0.6 mm

- Further wires have to be connected via auxiliar terminals!
- Use only connecting lines with the same diameter within one terminal contact.

- Connect the lines according to the labelling.

a
b
E
P

Install the device

- Take the device into both hands and position it on the bottom shell.
- Position the device centrally on the bottom shell and leave out a little space of 10 mm to the bottom edge of the bottom shell.
- Press the device flush to the bottom shell (1). Slide it carefully and vertically downwards (2) until the lock pins of the bottom shell lock into the holes in the rear panel of the device.
- Slide it downwards until stop.
- To make sure that the device is locked correctly, slightly try to push it upwards. That should not be possible.

Lock pins 4 x:

Deinstall the device

- For deinstalling the device, the enclosed release bracket is necessary.
- Insert the release bracket into the opening of the bottom shell behind the device (1).
- Push the device upwards (2) and pull it out towards you (3).
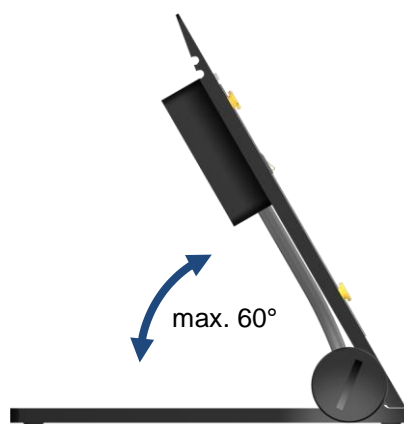
Installation CAI1000 (tabletop device)

Attention! The video indoor stations have to be (de-)installed only voltage-free!

The table rack is pre-configured and has to be connected to a RJ45 socket. Therefore please note the connection diagram under *cable assignment*.
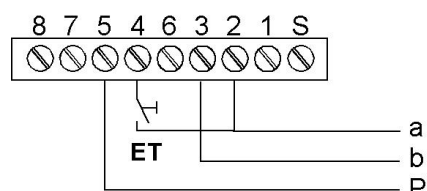

1 bottom shell

2 lock pins
   (4 x)

3 connecting cable
   (2.5 m)

4 knurled screws

5 grub screw
   (hexagonal socket)

Put up the table rack

- Turn the table rack device into the desired position and fix the position by tightening the knurled screws by hand.

- The cable is already pre-installed.

max. 60°

Cable assignment

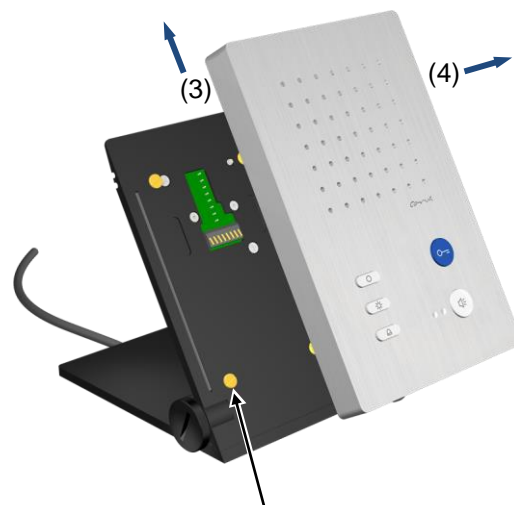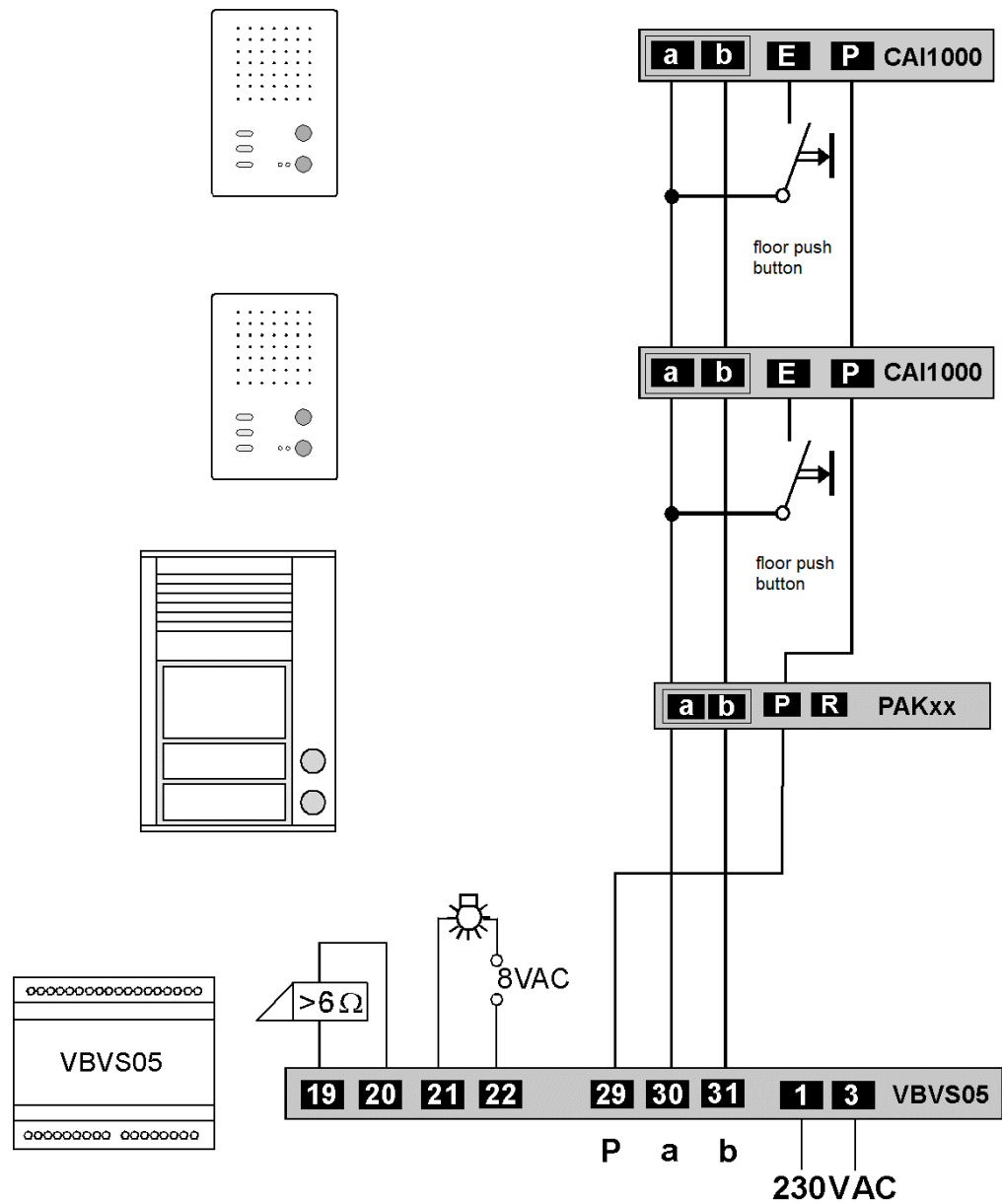| Wires Plug PIN no.		Connect to connection terminal:
2	orange-green	a
3	green-white	b
4	blue	E
5	blue-white	P

Install the device

- Take the device into both hands and position it on the bottom shell.
- Position the device centrally on the bottom shell and leave out a little space of 10 mm to the bottom edge of the bottom shell.
- Press the device flush to the bottom shell (1). Slide it carefully and vertically downwards (2) until the lock pins of the bottom shell lock into the holes in the rear panel of the device.
- Slide it downwards until stop.

- **Tighten the grub screw with a suitable screwdriver only by hand!**

- To make sure that the device is locked correctly, slightly try to push it upwards. That should not be possible.

Deinstall the device

- Loosen the grub screw for deinstalling the device. Take the device into both hands.
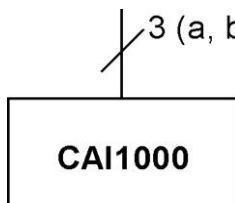- Push the device upwards (3) and pull it out towards you (4).

Lock pins 4 x:

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Wiring diagram

| a | b | E | P | CAI1000 |

floor push
button

| a | b | E | P | CAI1000 |

floor push
button

| a | b | P | R | PAKxx |

>6 Ω

8VAC

| 19 | 20 | 21 | 22 | 29 | 30 | 31 | 1 | 3 | VBVS05

P   a   b

230VAC

VBVS05

Connection diagram

3 (a, b, P)

CAI1000

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Commissioning

- Install the devices of the system completely.
- Proof the a-, b- and P-wire against each other on short-circuit.
- Switch on the main voltage.

Settings

Ring tone selection

For 4 different incoming calls (calls from 2 front-door stations, floor call, internal call) the ring tones can be selected.

1	End voice communication: Press call OFF-button and keep it pressed for around 8 s. A positive acknowledgement tone sounds. The ring tone selection is activated.	
	By pressing the following buttons a ring tone can be selected. You can choose between 13 tones. 7 alpha tones, 6 gong tones.	
2a	select door ring tone of the front-door station*	Press the *door release button* until the required ring tone sounds. The ring tone selected last, will be stored.
2b	select door ring tone of the second front-door station (if available)	Press the *speech button* until the required ring tone sounds. The ring tone selected last, will be stored.
2c	select door ring tone of the floor door	Press the *light switch button* until the required ring tone sounds. The ring tone selected last, will be stored.
2d	select internal call tone	Press the *function key* as often as the required ring tone sounds. The ring tone selected last, will be stored.
3	Press call OFF button short. In case that no button is pressed for around. 8 sec, the device ends the ring tone selection automatically. An acknowledgement tone sounds, the ring tone selection is deactivated.	

*   The first configuration of this door ring tone is adopted for the second front-door station.
    Only after having select the ring tone for the second front-door station separately (2b), it always has to be selected independently.

Factory settings

The device is equipped with am EEPROM which stores the following factory settings:

serial number for parallel call	1000000
function key	control function 8

Pre-adjusted times

communication time	2 min
flashing period of the green LED, if the voice channel is busy after the voice communication is established	3 sec 3 x flashing
internal standby time, if the device is calling or is called	around 30 s
floor door release time	around 30 s

Configuration options

Function	manually	TCSK-01	configo™ *as of version 1.7.x*
fixed simplex communication	–	–	x
simplex communication to the front-door station	–	–	x
ring tone volume	x	–	–
ring tones for 2 front-door calls, internal calls and floor calls	x	–	x
call diversion	x	x	x
door release automatic	x	x	x
internal call via function key	x	x	x
control function 8 via function key	x	x	x
parallel allocation	–	x	x
floor door release function on / off	x	–	x
automatic hands-free talking after internal call on / off	x	–	x
determine door call AS-border	–	–	x
block ring tone output	x	–	–
block ring tone selection	x	–	x
block programming	x	–	x
Reload factory settings	x	–	x

Programming

Manual programming

Legend for programming

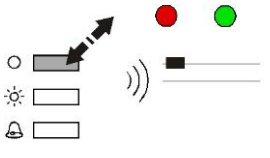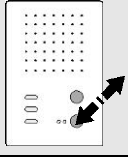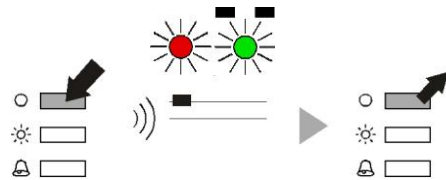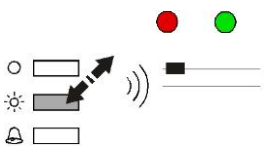|			
press button shortly	↗	negative acknowledgement (NoProg tone)	))) ▬—
press the button until...	↙	repeat	▶▶▶
release the button	↗	further	▶
LEDs off	● ●	LEDs blinking	☀ ☀

The programming is realised in four steps:
1 **Initiate the programming**
2 **Pre-selection**
3 **End-selection**
4 **End the programming**

1 **Initiate the programming**

Press the call OFF-button (8 sec),   release
until an acknowledgement tone sounds shortly

Programming function	**2** **Pre-selection** Press the button (8 sec) until an acknowledgement tone sounds shortly and the green LED blinks, release the button	**3** **End-selection** shortly press the button, an acknowledgement tone sounds shortly and the green LED expires
door release automatic		
call diversion	**Execute at the required indoor station:** press speech button	
Note: Before programming the call diversion, the AS-address of the front-door station is to be fixed and blocked.		

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Programming function	2 Pre-selection	3 End-selection
internal call (at function key)	**Execute at the required indoor station:** press speech button	
control function 8 (on function key)		
automatic hands-free talking after internal call switch on (when switched off) or switch off (when switched on)		
switch on floor door release function (if switched off) or switch off (if switched on)		
parallel allocation	**Execute at the required indoor station:** press speech button	
delete parallel allocation		

Programming function	2	Pre-selection	3	End-selection
block ring tone selection				
block extended programming				
deactivate programming lock **Attention!** • Switch on the programming mode of the system at the BVS first. • Execute the steps 1 to 4. • Switch off the programming mode of the system.				
Reload the factory settings				press the door release button for 8 sec
4	**End the programming**			
By shortly pressing the call OFF-button or automatically, if no button is pressed for 8 seconds.				

Programming the function key with Service Device TCSK-01

door release automatic	✳ 91 # Ser.-Nr. #
call diversion	✳ 90 # Ser.-Nr. # ZielSNr. #
internal call 1	✳ 92 # Ser.-Nr. # IntSNr #
control function 8	✳ 93 # Ser.-Nr. #
parallel allocation **activate** **parallel call** **switch off** NOTE**:** To deactivate parallel allocation means parallel allocation to serial number 0.	✳ 99 # Ser.-Nr. # ParSNr # ✳ 99 # Ser.-Nr. # 0 #

ser. no.   =   *the serial number of the indoor station that is to be configured new*
TarSerNo.   =   *the serial number of the indoor station, to which the call is to be diverted*
IntSerNo.   =   *the serial number of the indoor station, which is to be called internally*
ParSNo.   =   *the serial number of the indoor station, to which the new configured indoor station is allocated*

General information on the conduit in TCS audio systems

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

- Observe when selecting the length of the lines: the loop resistance must not exceed 20 Ω (table).
- To keep the max. permitted loop resistance, the wire cross-section can be doubled. That means using two lines for one wire (illustration). The lines have to be twisted.
- In case of using shielded cables: Connect the shielding with each other and put i tone-sided on mass (b-wire) in the power supply.
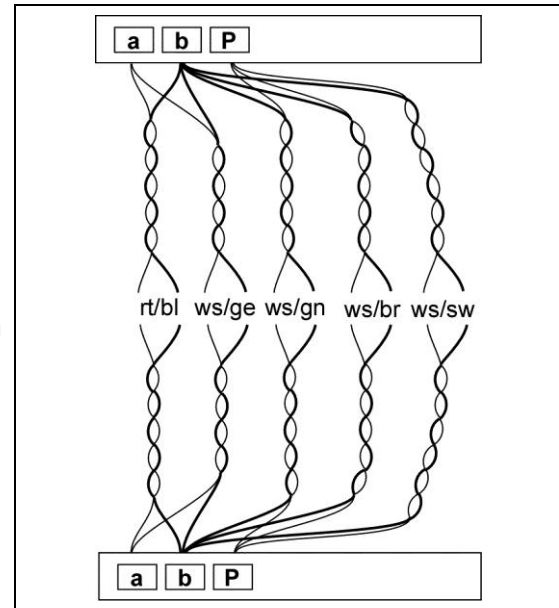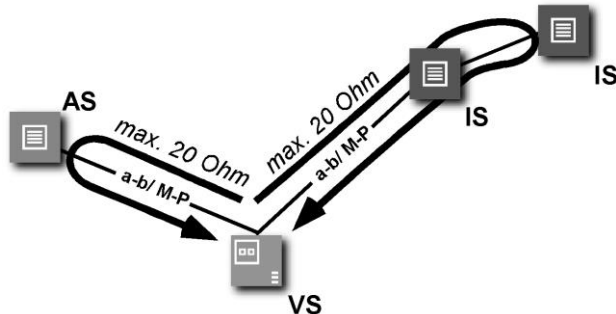- Optional strand or star formed wiring.

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	31.89	17.86
300	38.27	21.43

Principle loop resistance

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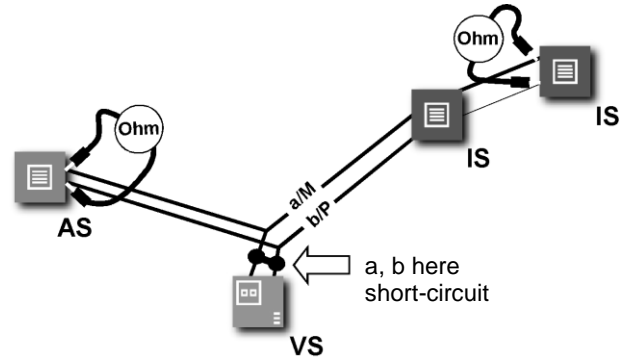

20 Ohm:

max. 160 m distance AS/IS-VS by 0.6 mm diameter
max. 280 m distance AS/IS-VS by 0.8 mm diameter

Measurement loop resistance

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

AS   front-door station
VS   power supply and control unit
IS   indoor station
FE   extended function

Repair

! Repairs have to be carried out only by qualified electricians.

Cleaning

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

Clean the indoor station with a dry or slightly wet cloth. Remove stronger stains with a pH-neutral cleaner.

Conformity

CE Declarations of conformity for download under www.tcsag.de > Downloads > Commercial information.

Information on disposal

The adjoining symbol shows that the device has to be disposed separately from domestic waste. The materials used are recyclable. Please do help protecting our 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 observe our **standard terms and conditions of sale**, available under www.tcsag.de > Downloads > Commercial information and enclosed in our latest catalogue.
- Please contact us: **hotline@tcsag.de**.

Service

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