

carus

Product information
video indoor station
Carus Origo

CAI2000, CAI2010



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Scope of delivery

- 1 x CAI20x0-015x (top shell, wall adapter plate or tabletop device)
 - 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.

Terms

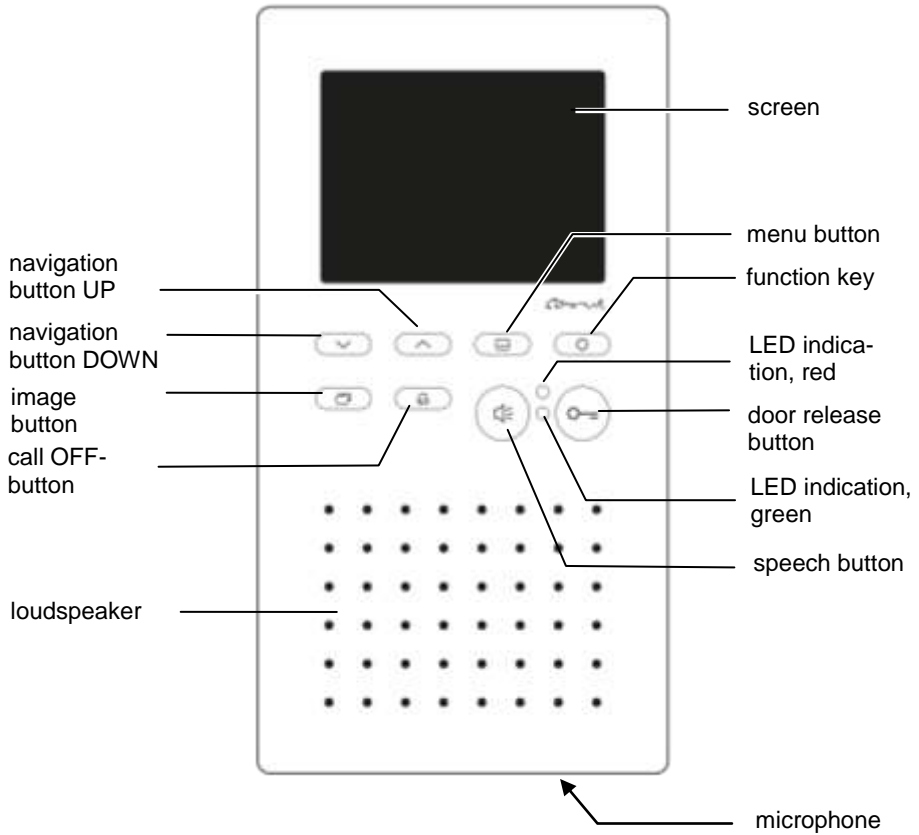
Main door call	Door call from the door with the main serial number (according to the serial number sticker on the device and the packaging). Two main door calls from front-door stations with AS = 0 and AS > 0 can be distinguished.
Sub door call	<p>Call from a front-door station. Different ring tones can be generated at an indoor station by using different buttons.</p> <p>Thus, the ring tone is distinguished by the used serial number. The indoor station occupies an area of five serial numbers: Serial number SN (according to serial number sticker), SN+1, SN+2, SN+3, SN+4. Each of these serial numbers generate a different ring tone.</p> <p><i>Programming the bell buttons of the front-door station can be realised with the Service Device TCSK-01 and configo™.</i></p>
On-Screen-Display (OSD)	The menu, which is shown on the screen and activated with the menu button of the device.

Technical data












supply voltage:	+24 V ± 8 % (power supply and control unit)
housing:	aluminium, anodised (colors as listed in catalogue)
dimensions (in mm):	H 186 mm x W 101 mm x D 24 mm
weight:	360 g
acceptable ambient temperature:	0 °C to 40 °C
input current:	I(a) = 0.4 mA, I(P) = 16.5 mA standby
max. input current:	I(Pmax) = 175 mA
video module	TFT color module
screen diagonal	3.5 inch
resolution:	320 x 240 pixel, RGB
video signal input:	symmetric 1 Vss FBAS,
floor video input:	asymmetric 1 Vss FBAS,

Video 6-wire installation necessary!

Device overview



Indication and operating elements

	Term	Function
	screen	<ul style="list-style-type: none"> display the video image display ring tone parameter and image parameter via OSD
	speech button	<ul style="list-style-type: none"> call acceptance, activate speaking, simplex communication end communication
	door release button	<ul style="list-style-type: none"> door release (factory setting) end communication trigger light switch function*
	function key	<ul style="list-style-type: none"> switching lights control function 8 (factory setting) internal calling door release automatic call diversion
	menu button	<ul style="list-style-type: none"> call up the menu ring tone parameter (in standby) call up the menu image parameter (standby or speech mode) select parameter which you want to change
	call OFF-button	<ul style="list-style-type: none"> ring tone stopper end speaking when the device is configured for simplex communication (with configTM)
	image button	<ul style="list-style-type: none"> to activate the image resp. switch-over between several cameras
	navigation button UP	<ul style="list-style-type: none"> increase the value of the selected parameter
	navigation button DOWN	<ul style="list-style-type: none"> reduce the value of the selected parameter
	LED indication, red	<ul style="list-style-type: none"> call OFF is activated (LED is ON) or door release automatic or call diversion, when activated
	LED indication, green	<ul style="list-style-type: none"> door call, incoming internal call, speaking activated indication for busy speech channel (LED blinks 3x), no image activation possible

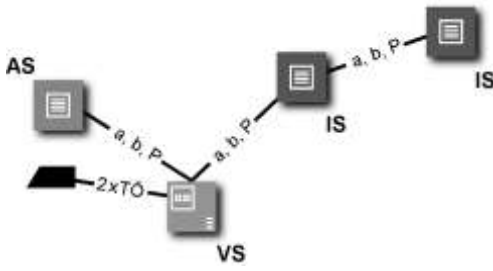
* if light switch function is activated in the front-door station

Intended use

- CAI20x0 are video indoor stations with color display for hands-free talking and simplex communication. They can be used for the operation within building communication systems and combined audio-video systems.
- The CAI20x0 are operated by pressing the keys and via the On-Screen-Display.
- The CAI20x0 are suitable for surface-mount and can be used as tabletop device.

! The video indoor station CAI20x0 must be installed on a flush-mounted wall outlet socket. The space for cabling is limited within the device.

Max. number CAI20x0 in 6-wire operation

small and medium-sized systems	max. number CAI20x0	
VBVS05	12	
larger systems	max. number CAI20x0	<p>AS front-door station VS power supply and control unit IS indoor station</p> <p><i>Note: The max. number of front-door stations which can be connected is limited. Details are described in the respective product information!</i></p>
BVS20 + NGV1011	60	

Short description

- hands-free talking, manually controlled simplex communication can be activated
- blue door release button
- button for call acceptance resp. reversing key speak/listen, when simplex communication is activated
- one function key (ex works allocated with control function; with alternative allocation: internal call, door release automatic, call diversion, light switch function, control function; can be configured with configo™)
- image button to activate the image resp. to switch-over between different cameras
- menu button to activate, control the OSD menu
- two navigation buttons for OSD navigation and adjustment
- 13 polyphonic ring tones can be selected and adjusted via OSD
- acoustic and optical call distinction between front-door, flat door and internal call
- acoustic door call distinction, per bell button four different ring tones
- acoustic door call distinction for two doors
- ring tone mute with optical indication
- OSD-based: max. 10 internal calls and max. 10 control functions can be triggered, adjustable with configo™
- OSD-based operation of the central image buffer FVM1000 (accessory, not included in the delivery)
- ring tone volume can be adjusted in 4 steps via OSD
- conversation volume can be adjusted in 8 steps via OSD
- brightness, contrast, color saturation can be adjusted via OSD
- one parallel call can be activated via configo™
- max. 10 short messages can be received and displayed
- optical indication for new stored images in central image buffer (FVM1000)
- optical short-term memory of door calls
- optical display of a busy line in case of an established voice connection
- optical indication for unread short messages
- the device is equipped with a connection for a floor push button
- audio / video privacy function and automatic call cut-off

Installation

Installation CAI2000 (wall mounting)

Attention!

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

Ensure not to over tighten the screws when installing the wall adapter plate on uneven surfaces. Otherwise the plate might be deformed.

Install the adapter plate

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

In order to connect the cables without any problems, a flush-mounted socket must be installed behind the device.

- Position the flush-mounted socket behind the cable entry.
- Install the bottom shell directly to the wall and use the enclosed screws to fix it. (Alternatively the device can be installed directly on a flush-mount socket.)



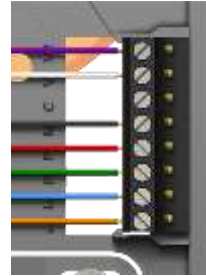
Connect the lines

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 auxiliary terminals!
- Use only connecting lines with the same diameter within one terminal contact.

- Guide the connection lines (without spare cable loop) in the top shell directly to the terminals.
- Thus, the top shell can be snapped-on without any problems and the connection lines will not get clamped.
- Connect the lines according to the labelling.



V2
V1

M
P
E
b
a

Terminating resistor CAI2000

In delivery state the terminating resistor is inactive:

- The jumper bridges the upper two contacts.



If the device is to be installed at the end of a cable chain, the terminating resistor must be activated.

- The jumper bridges the lower two contacts.



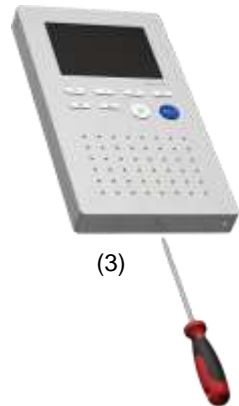
Snapping-on the top shell

- Position the top shell at both adjustment brackets of the bottom shell (1). Snap-in the top shell below with slight pressure (2).



Open the device

- There is a rectangular release opening at the bottom of the device (3). Insert a small screwdriver straight and with slight pressure into this opening. The screw driver must not be wider than 7 mm and thicker than 2 mm. Otherwise the top shell can be damaged.
- The top shell can be removed at the bottom (1).
- Lift the top shell out of the two upper adjustment brackets (2).

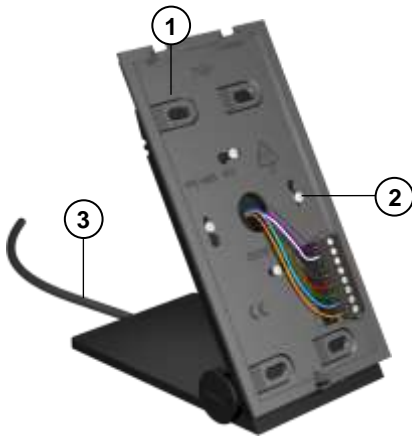


Installation CAI2010 (tabletop device)

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*.

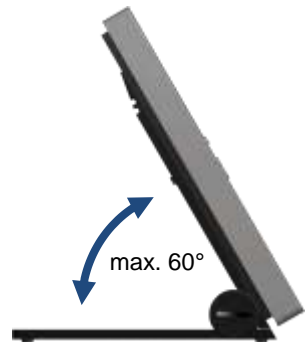
In delivery state the device is equipped with a terminating resistor between V1 and V2. Observe the notes for installation under the point *terminating resistor* when installing a video device.



- 1 bottom shell**
- 2 screws**
(4 x)
- 3 connecting cable**
(2.5 m)

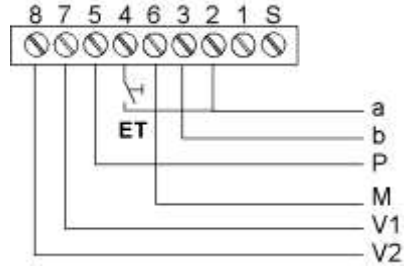
Put up the table rack

- Turn the table rack into the desired position and fix the position by tightening the knurled screws by hand.
- The cable is already pre-installed.



Cable assignment

Wires Plug PIN no.		Connect to connection terminal
2	orange	a
3	green-	b
4	white	E
5	blue	P
6	blue-white	M
7	green	V1
8	brown- white brown	V2



Terminating resistor CAI2010

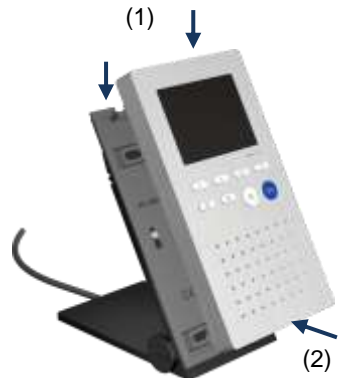
Observe when installing video tabletop devices:

The installation of the lines to the connection sockets must be realised star-shaped and must NOT be looped through.

Noncompliance leads to a video image with limited quality.

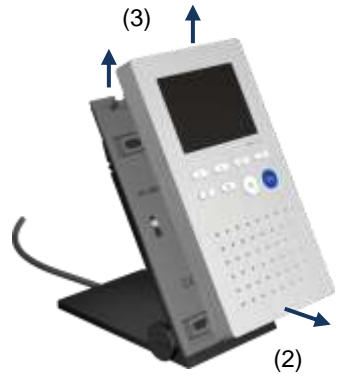
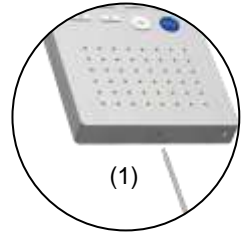
Install the device

- Position the top shell at both adjustment brackets of the bottom shell (1).
- Snap-in the top shell below with slight pressure (2).

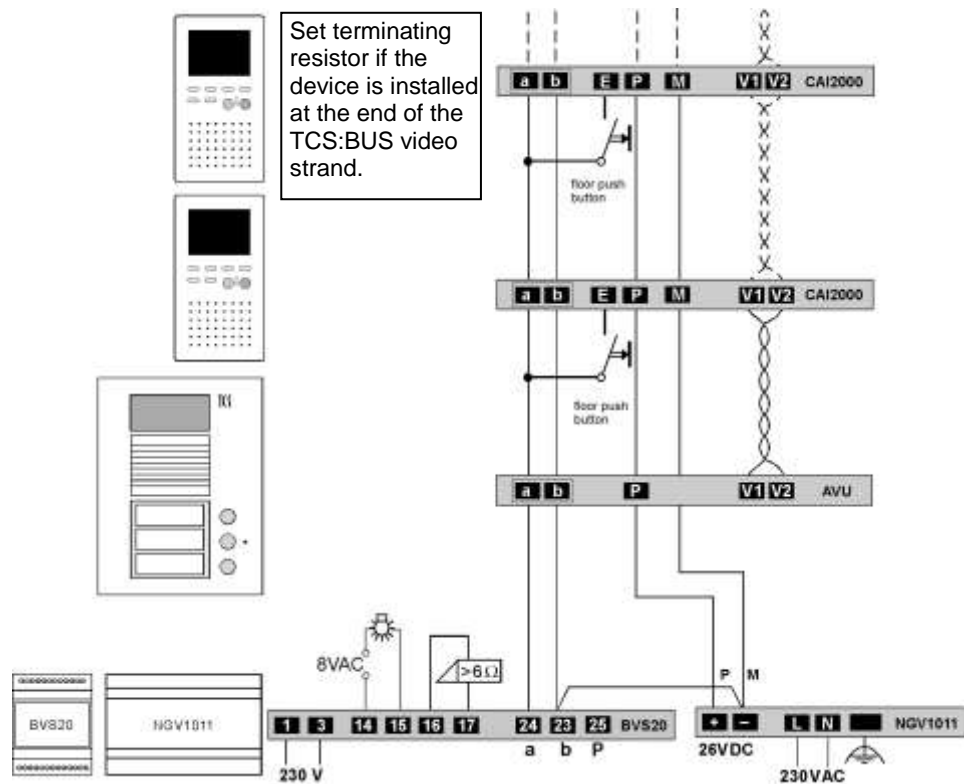


Deinstall the device

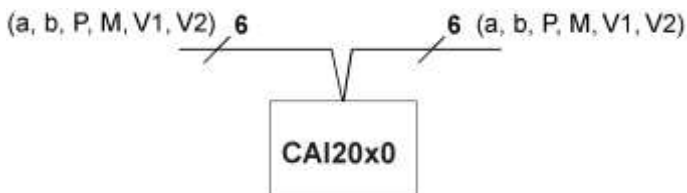
- There is a rectangular release opening at the bottom of the device (1).
- Insert a small screwdriver straight and with slight pressure into this opening. The screw driver must not be wider than 7 mm and thicker than 2 mm. Otherwise the top shell can be damaged.
- The top shell can be removed at the bottom (2).
- Lift the top shell out of the two upper adjustment brackets (3).



Wiring diagram

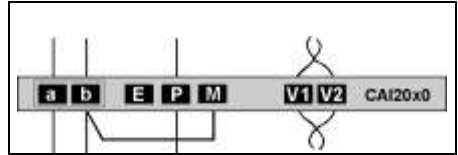


Connection diagram



5-wire special operation

In case that only 5 lines are available to connect the device and the M-wire cannot be connected, you can use the device in 5-wire special operation.



! Installing a wire bridge between the wires b and M is only permitted when observing some conditions.. For a solution for your project, please contact our hotline.

Commissioning



First install the system completely, than connect it to the mains voltage!

- Install the devices of the system completely.
- V1 and V2 must not be connected with the P-, a- or b-wire. When connecting the video wires V1 (+) and V2 (-) the polarity must be observed.
- Proof the a-, b- and P-wire against each other on short-circuit.
- Switch on the main voltage.

Error detection and indication

Errors are signalled optically and acoustically: single error tone and permanent flashing of both LEDs.

error cause	indication error mode	error tone	our solution
a- and P-wire are mixed or short-circuited	<p>both LEDs are flashing</p>		change a- and P-wire or remove short-circuit, device is in standby mode again
a- or M-wire not connected or not supplied			connect the a- or M-wire or check the power supply, device is in standby mode again
button sticks (press longer than 15 seconds)			release button at the device or release floor push button, device is in standby mode again

Settings

Factory settings

AS-address dependent image activation

If there are also front-door stations without cameras within a system with CAI20x0 and video front-door stations, the image is not activated when the CAI20x0 is called by an audio front-door station.

To guarantee this function, the possible AS addresses are separated into two sections:

AS address 0 – 31*	reserved for video front-door stations	the image is activated in case of a door call (from max. 16 video front-door stations)
AS address as of 32*	free, for front-door stations without camera	the image is not activated in case of a door call

*) *The video AS-border can be configured with the configurator configo™.*

Note:
*The AS-addresses of the front-door stations have to be assigned via the Service Device.
For detailed information see section Service information in the TCS Installer 5 / 4 (Version 1) or TCS Installer 7 / 4 (Version 2).*

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

serial number for parallel call	1000000
function key	light switch button

Pre-adjusted times

communication time	2 min
remaining conversation time after pressing the door opener	4 sec
image switch time	80 sec
blinking period of the green LED, when "video/speech channel is busy" when pressing the reverse key for speaking/hearing or pressing the image button	3 sec 3 x flashing
internal standby time	around 30 s
floor door release time	around 30 s
timeout menu ring tone parameter	10 sec
timeout menu image parameter	10 sec

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	menu	–	x
ring tones for front-door calls, internal calls and floor calls	menu	–	x
call diversion	–	x	x
door release automatic	–	x	x
10 internal calls via OSD	–	–	x
10 control functions via OSD	–	–	x
internal call via function key	–	x	x
control function 8 via function key	–	x	x
light switch function	–	x	x
parallel allocation	–	x	x
floor door release function on / off	–	–	x
automatic hands-free talking after internal call on / off	–	–	x
determine video-AS border and door call-AS border	–	–	x
image activation in case of a floor call	–	–	x
allocate short message groups	–	–	x
image buffer FVM1000 is always blocked	–	–	x
image buffer FVM 1000 (in comfort mode) on / off	–	–	x

Programming the function key with Service Device TCSK-01

The indoor station is acting like a device for duplex communication. The commands "9" have to be used to configure the comfort simplex communication device (see *product information Service Device*). A programming with the commands "9" has to be initiated once with the command *95#Ser.-No.#. Then the programming of the function key is to be realised with the Service Device.

initiation	*95#Ser. Nr (#)
call diversion	*90#Ser.-Nr. (#)ZielSNr (#)
door release automatic	*91#Ser.-Nr (#)

internal call	82 Ser.-Nr IntSNr
control function 8	83 Ser.-Nr
light switch function	84 Ser.-Nr C
parallel allocation	89 Ser. Nr FarGNr
Note: Deactivation of the parallel allocation corresponds to the parallel allocation to serial number 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 OSD menu

- The navigation within the OSD menu, the image buffer ^{a)} indication and live image are realised via the navigation buttons UP and DOWN.
- The OSD main menu can be activated when no live image is displayed and if the indoor station is in standby mode. That means that no voice connection is established and no door call has come in.
- Symbols in the ODS menu are only displayed when the specific function was configured. In delivery state, not all possible functions are configured.
- The live image is activated by pressing the image button or the speech button or when receiving a door call.
- The OSD menu or image buffer ^{a)} indication is deactivated automatically after 10 sec, if no button is pressed. Or: Press the function key to exit the menu.
- The live image is deactivated automatically after 80 sec without any activity, by ending the voice connection or when a video channel is used by another device (not in case of a voice connection).

^{a)} only if an image buffer (FVM1000) is installed

Main menu


















selected parameter

















symbol
main menu

symbol of the selected
menu

Indication *empty storage*

Symbols and their meaning

symbol	meaning	symbol	meaning
	ring tone button for door calls <= AS-border	0...9	indication of adjusted values as numbers
	ring tone selection for door calls <= AS-border		symbol for call setup menu
	ring tone selection for internal calls		image buffer; automatic image recording activated = green, deactivated = red*
	ring tone selection for floor calls		menu send internal call
	ring tone selection for sub ring tone 1		menu send control function
	ring tone selection for sub ring tone 2		menu time setting of the image buffer menu*
	ring tone selection for sub ring tone 3		main menu
	ring tone selection for sub ring tone 4		menu short messages*






 ring tone volume	 screen to read a short message*
 contrast setting	 delete short messages*
 brightness setting	 date setting*
 color saturation setting	 time setting*
 symbol camera for fading-in the AS-address	 delete image buffer (all stored images) *
 call diversion is activated	 hourglass as progress indicator*
 door release automatic activated	 no stored images in the FVM1000*
 ring tone mute activated	 conversation volume setting

* Only, if image buffer is ON and function short message is activated.

Help function

To simplify the operation of the device, symbols are faded-in in the upper right corner when calling up the live image, the main menu and the sub menu. The symbols indicate which buttons are available in the specific screen. Fading-in the symbols ends automatically after 5 sec or a keystroke.



symbol	meaning
 	Navigation buttons UP, DOWN can be used to navigate within the menu.
	Menu button can be used to confirm.
	Function key can be used as cancel button.
	Navigation button DOWN can be pressed and hold for 4 sec.

Internal calls and control functions

The plain texts, which should appear in the selection menu, can be set with the configuration software configo™. Internal call destinations or control processes can be entered there as plain text.

10 internal calls and 10 control functions can be sent via the OSD menu.

Simple

Each triggering sends the same control protocol. There is no status indication of the device, which is to be switched. The serial number and the control function number can be configured as parameter. Thus, it is possible to automatically generate the unique serial number of the video indoor station CAI20x0.


ON/OFF

Two different control protocols with the same serial number are sent alternating. One control function number is used for switching on and the other for switching off. Via two different symbols, which appear independently in front of the list entry, the latest switched status can be seen. The control function number as well as the serial number can be configured here. If required, the device-unique serial number can be generated.

Send control function

Triggering the control function can have three different effects:

- A control protocol is sent (no symbol in the menu).
- Two different control protocols are sent alternately (symbol in the menu with red/green point). The color of the point indicates the triggered switching process, but not the actual state of the device which is to be switched.
- A control protocol is sent and the execution of the switching process is indicated in the menu by a red/green point.

- Press the menu button. Select the symbol *Send control function* . Or call up the menu with the function key when the device is configured appropriately.
- Select the required function with the navigation buttons UP or DOWN.
- Triggering by pressing the menu button. A positive acknowledgement tone sounds. The OSD is deactivated after 5 sec (or switches back to the live image).



Send internal call

- Press the menu button. Select the symbol Send internal call. Select the required call destination with the navigation buttons UP or DOWN.
- Trigger a call by pressing the menu button. A positive acknowledgement tone sounds. The OSD is deactivated (or switches back to the live image).
- When the call is accepted at the indoor station, another acknowledgement tone sounds.



Receive internal call

- When the indoor station receives an internal call with sender serial number, the number is displayed.
- If the name of the calling indoor station is programmed (via configuration software configTM), the name is displayed.

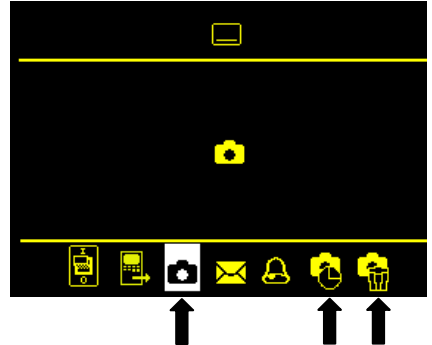


External image buffer (not included in the delivery)

Images or image sequences can be stored with the external image buffer FVM1000. The number of images is limited to 64 per device. The oldest image is overwritten.

- Ensure, that the video indoor station CAI20x0 is ready for operation.
- Set the operation mode *comfort mode* **at the FVM1000**:
- End the programming mode. Thus, the video indoor station CAI20x0 detects the FVM1000. An acknowledgement tone sounds.
- The symbols *image buffer* 📷, *time setting* ⌚ and *delete image buffer* 🗑️ can be seen in the main menu.

*Note: The **automatic** image storage is not activated.*



Activate/deactivate the automatic image storage

Activation

- Press the menu button longer than 4 sec. An acknowledgement tone sounds. The main menu is faded-in for 3 sec. The color of the symbol *image buffer* 📷 changes from red to green.

An image is stored automatically when a door call is received.

Deactivation

- Press the menu button longer than 4 sec again. An acknowledgement tone sounds. The main menu is faded-in for 3 sec. The color of the symbol *image button* 📷 changes from green to red.



Symbol in the live image:
automatic image storing is activated

Store images manually

When the image is activated, an image can be stored manually.

- Shortly press the navigation button UP.
- A symbol is faded-in with date, time and number and indicates the successful storage.
- The green LED is blinking until the image has been viewed.



View stored images

When the green LED blinks, new images were stored:

- By pressing the menu button the image is displayed immediately.

When the green LED does not blink:



- Press the menu button. The main menu is displayed.
- Select the symbol *image buffer* , to display the image.
- Browse through all new stored images with the navigation buttons UP or DOWN.

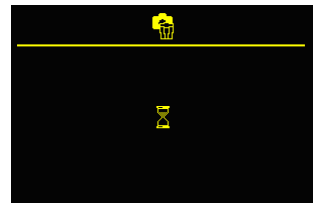


Image with date, time, image number of all stored images.

Note: The symbol  is displayed, when another indoor station accesses the image buffer, a door call comes in or a voice connection is already established.


Delete a stored image

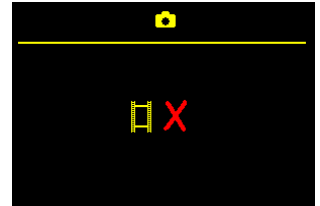
- To delete the displayed image, press the navigation button DOWN for 4 sec until an acknowledgement tone sounds. The image is deleted. The image stored before is displayed.



Delete all stored images

In the image buffer all stored images, allocated to the indoor station, can be deleted.

- Press the menu button. The main menu is displayed.
- Select the symbol *Delete image buffer* .
- Confirm the selection by pressing the menu button.
- Depending on the number of stored images, the deletion process can take a few seconds.




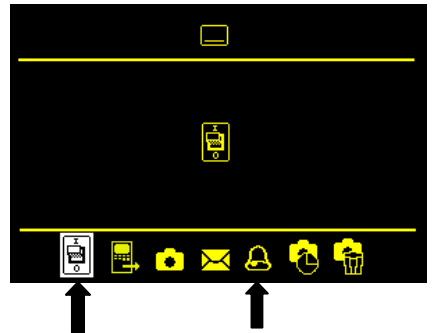
*If all stored images of the allocated serial number have been deleted in the FVM1000 or no stored images are available when a call comes in, the information **empty storage** is displayed for 4 sec. Then the main menu is displayed.*

Set ring tone parameter


Call up menu ring tone parameter

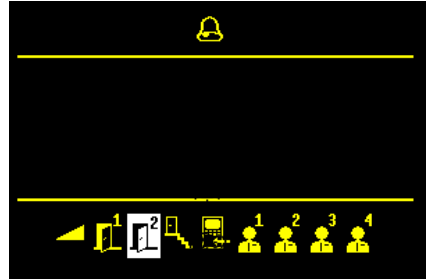
(in standby mode)

- Press the menu button, the main menu is displayed.
- Press the navigation button UP (or DOWN) to get to the symbol *Ring tone parameter* .
- Press the menu button again to call up the menu ring tone parameter.




Set the ring tone volume

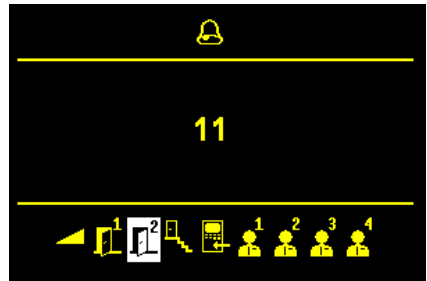
- Press the navigation button UP (or DOWN), the symbol *ring tone volume*  is pre-selected.
- Press the navigation button UP or DOWN to adjust the volume. The level of the ring tone volume (1 to 4) is displayed.



The adjusted ring tone sounds in the selected volume and is stored.

Ring tone selection

- Press the navigation button UP or DOWN to move to the symbol *Ring tone selection*  (e.g. for door 2).
- Press the navigation button UP or DOWN to select the ring tone. The number of the ring tone (e.g. 11) is displayed.

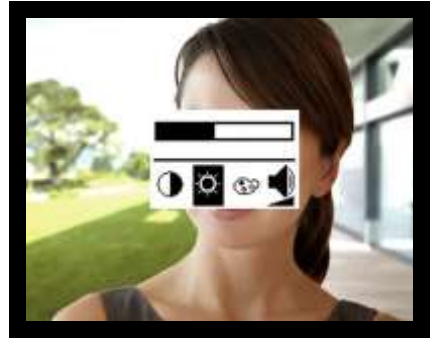


When selecting a ring tone, the ring tone sounds and is stored.

Set the conversation volume

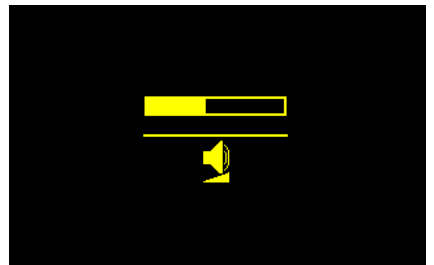
... in case of a voice connection to the door:

- Press the menu button during a voice connection. The menu to set the image parameter and the symbol for conversation volume setting are displayed.
- Press the navigation button UP or DOWN to change the value. The setting immediately has an effect on the established voice connection. The value is stored.




... in case of an internal voice connection:

- After the sender of the internal call was displayed, the menu to set the internal conversation volume is displayed.
- Press the navigation button UP or DOWN to change the value.



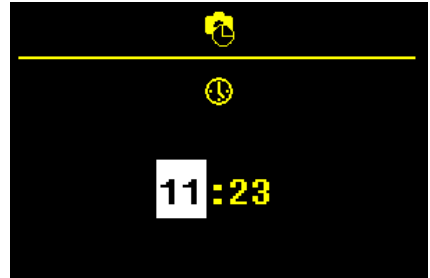
Set date and time of the image buffer (not included in the delivery)

This dialog only appears when the use of an external image buffer and the permission to set date and time has been set in the EEPROM.

- Press the menu button.
The main menu is displayed.
- Select the symbol *time setting image buffer via navigation button* .
- Confirm the selection by pressing the menu button.
- The menu **date** is displayed.
- The marked number can be changed with the navigation buttons UP or DOWN.
- By pressing the menu button the adjustment of the parameter is closed. The menu automatically switches to the next parameter.
-



- When the setting for *day* is completed the menu automatically switches to the setting **time**.
- The marked number can be changed with the navigation buttons UP or DOWN.
Switch over to the next position by pressing the menu button.
- By pressing the menu button again the menu setting is closed.



Set image parameter






Symbols in the live image:

The symbols in the live image are faded-in for 10 sec by activating the image (after the image button was pressed or a door call has been received) or for 3 sec after pressing the speech button.

- Press the image button or speech button to activate the live image.



The symbols for ring tone mute, door release automatic, call diversion and image buffer mode are only displayed when the function is activated.

	image from camera AS-address (e.g. with AS-address 05)			ring tone mute
	call diversion is activated	or		door release automatic activated
	automatic image storage is activated; menu image buffer is activated (only when FVM1000 is installed)			

Set contrast, brightness and color saturation

- Press the speech button or the image button. The image from the video front-door station is displayed.
- Press the menu button. The menu for the setting is displayed.
- Press the menu button again to switch over to the next image parameter.
- Press the navigation button UP or DOWN to change the value of the image parameter.



a,b here
short-circuit

The change can be seen immediately in the video image.

Reload factory settings

Only the manually adjusted values can be reloaded to factory setting.

- Press the navigation buttons UP and DOWN simultaneously for 8 sec.
- The successful reset is signalled by an acknowledgement tone.

Select the camera by stepping with the image button

- Press the image button or speech button to activate the live image of the camera selected last. When a door call is received, the live image of the calling video front-door station is displayed.
- Press the image button again to switch over to the next video front-door station or camera.

Short messages

- The video indoor station CAI20x0 can receive short messages via the TCS:BUS. The messages can be stored and displayed.
- Max. 10 short messages can be stored.
- The received message can include max. 95 characters.

Read short messages

When the green LED blinks, new images were stored:

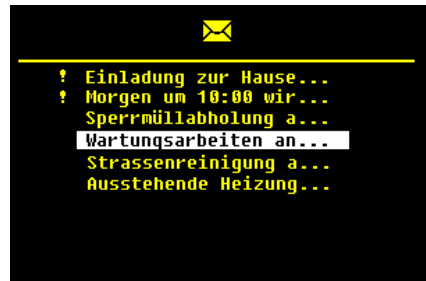
- Press the menu button to get directly to the menu *short messages*.


New, unread messages are marked with an exclamation.

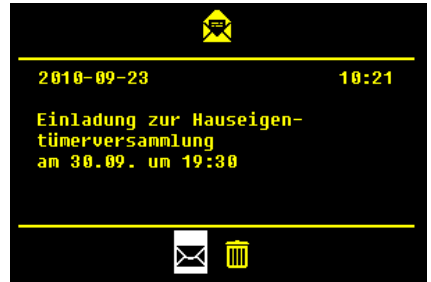
-

When the green LED does not blink:

- Press the menu button.
- Select the symbol *Short messages*



- Select the required message with the navigation buttons UP or DOWN.
- Confirm the selection by pressing the menu button.
You can read the message now. The message includes the text, the sent date and time.
- Select the symbol short messages , confirm the selection by pressing the menu button. Then go back to the menu short messages.



Delete short messages

Read short messages can be deleted by the user. When more short messages have been received, than can be stored, the oldest message is overwritten automatically.



General information on the conduit in TCS video systems

6-wire operation

6-wire operation is the standard operation mode. Video operation, where two separated masses (b and M) are used.

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

- Please observe when selecting the length of the lines: the loop resistance a-b and M-P must not exceed 8Ω (table 1).
- Loop resistance $> 8 \Omega$: plan multiple wiring of the strands (double twisted lines).
- Optional strand or star formed wiring

- Do not use more than 20 indoor stations per strand. For systems with more video indoor stations plan to use video distributors (FVY1200, FVY1400).
- Up to 64 front-door stations (16 of them video front-door stations) and almost an unlimited number of indoor stations can be connected within one system polarity-free (a/b; polarity-free only in 6-wire operation). Thus, a suitable power supply and control unit is to be used.

Table 1: loop resistances

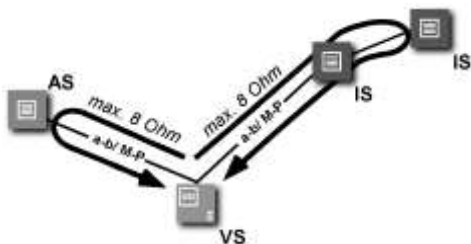
length of the line a-b/ M-P in m	cable diameter	
	0.6 mm	0.8 mm
	loop resistance in Ω	
10	1.28	0.71
20	2.55	1.43
30	3.83	2.14
40	5.10	2.86
50	6.38	3.57
60	7.65	4.29
70		5.00
80		5.71
90		6.43
100		7.14

Principle loop resistance

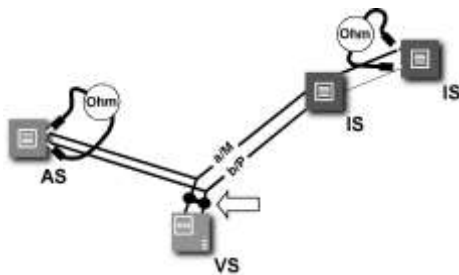
None of the devices (AS, IS or FE) should ever be located more than **8 Ohm** away from the power supply and control unit (VS).

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 and can stay connected.



8 Ohm:
 around 65 m distance AS-VS by 0.6 mm diameter
 around 115 m distance AS-VS by 0.8 mm diameter






*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.

FAQ

Error pattern	Possible cause	Our suggested solution
The video image is black and white.	The color saturation control of the indoor station is set to a minimum.	Adjust the contrast or color saturation control.
	The transmission level of the video BUS is too low.	At many components of the video BUS (e.g. FVY) the transmission level can be adjusted. Please see the product information of the active transmission components.
	The light intensity of at least 10 lux is not achieved. Thus, the camera switches over to black and white.	The camera modules of the front-door stations are very light sensitive. Ensure that there is sufficient illumination or use an external camera.
The colors on the screen of the indoor station are too bright or the image in general is too bright.	The color saturation level of the station is set too high.	Turn down the color saturation control.
	The brightness level of the station is set too high.	Turn down the brightness control.

	<p>The level of the video signal is too high.</p>	<p>Turn down the level of the video bus (e.g. rotary control on the board of the camera). This only works, when the terminating resistor is placed correctly at the station or active extended functions (e.g. FVY).</p>
	<p>The terminating resistor at the end of the strand is not plugged.</p>	<p>Plug the terminating resistor.</p>
<p>The colours on the screen are without contrast.</p> 	<p>The level of the video signal is not high enough.</p>	<p>The connection line of a camera was extended, although this is not permitted.</p> <p>The connection line between two active video components was exceeded impermissible.</p> <p>Loss of levels can be compensated to a certain part by rotary controls at active video components (see product information of the components).</p> <p>Check if the number of allowable video indoor stations per strand was not exceeded.</p>
	<p>The terminating resistor at video distributors or video switches with looped-through signal is not plugged correctly.</p>	<p>Remove the terminating resistors at relevant components. Only the last video component in a strand needs a terminating resistor.</p>
<p>In one building block with multiple indoor stations, only one indoor station shows black lines on the video image.</p> 	<p>Image interferences due to transition resistance.</p>	<p>The P-wire is not connected correctly.</p> <p>The connection contacts are not correctly fixed.</p>
	<p>Image interferences due to near disturbing sources such as external power supplies or other electric appliances, which are not shielded.</p>	<p>Relocate the video distributor or any other passive assembly package.</p>
	<p>Distortion due to compensation currents caused by potential differences.</p>	<p>Please check the line installation and try to install active components on one potential.</p>

<p>Distorted image</p> 	<p>No accurate video signal due to interchanged video wires.</p>	<p>The video BUS is not protected against polarity reversal. Please interchange the wires V1 and V2.</p>
<p>The image "rolls".</p> 	<p>The video signal cannot be synchronized.</p>	<p>Please check, if all wires of the video BUS are connected. Eventually you have to readjust the level.</p>
<p>Multiple contours occur</p> 	<p>Image reflections occur, so called "ghost images", due to open lines.</p>	<p>The video strand is not connected. Please place the terminating resistor in the last device of the strand.</p>
<p>Contours of a second image are visible.</p> 	<p>Two video sources interfere.</p>	<p>Please remove the second video source from the strand. Connect the second video source, if necessary, via a video switch to the existing TCS:BUS.</p>

No image. When pressing the image button there is no respond.	No signal present.	Connect the monitor before the video switch and check if there is a signal. Measure the voltage between P and b. The voltage value is around 26 V. If this is not the case, check the BUS voltage supply.
	Not both wires of the video BUS are connected.	Please check the correct connection of the connection terminal.
The video image turns white after a while. Switching the supply voltage off and on again, the signal will be normal again. The video image turns white after a while again.	Thermal defect of the outdoor camera.	One of the wires of the video BUS short-circuits the P- or the a-wire. This causes an impermissible increased current. Please check the wiring for short-circuits.
		The camera is defective.

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



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 electrician.

- 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**.

Accessory

short text	article number
central image buffer	FVM1000-0400

Service

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

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