TCS®

Product information

Modules of the series AMI in front-door stations

for flush-mount kits ZAU200x and communication posts K3xxxx
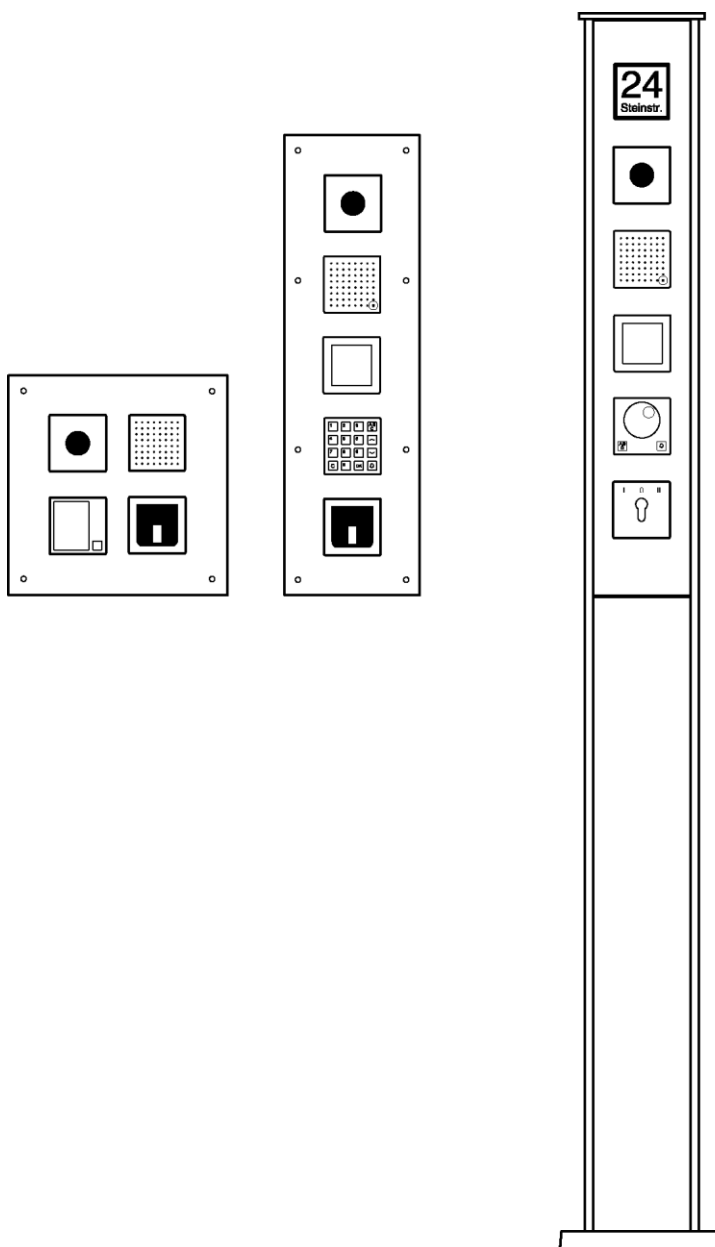
Table of contents

Scope of delivery

Product information *Modules of the series AMI in front-door stations*

Flush-mount kit ZAU200x

1x front panel incl. flush-mount box
1 x front panel sealing 3 x 9 mm with assembly instruction
1 x allen key 2.5
4 / 6 / 8 x countersunk screw (= number of drill holes) with hexagon socket and Pin, DIN 7991

Communication post K3xxxx

1 x communication post
4 x heavy duty anchor W-TM M10,
4 x cylinder screw with hexagon socket DIN 912 M10x75
1 x gripper ISO clip (pluggable top)
1 x key for hexagon socket screws DIN 911, SW 2.5
1 x screwdriver with round-handle

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 current standards for the installation of door communication systems must be observed.

When working in systems with 230 V mains voltage, the safety regulations according to DIN VDE 0100 must be observed.

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

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

Installation – protective measures

> **!** With suitable requirements 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, P, R, S, V1, V2.
>
> All front-door stations and modules are permitted for safety extra low voltage (SELV) and protective extra low voltage (PELV) only.

Intended use

Front-door stations of the series AMI can be assembled individually with functional modules. The modules have to be used in combincation with a flush-mount kit (ZAU200x) or a communication post (K3xxxx).
Other forms of installation must meet protection class IP44 at least.

Flush-mount kit

Modular front-door stations of the series AMI are front panels with flush-mount box.

Communication posts

The communication posts are stand-alone front-door stations constructed as posts.
The posts are suitable for a vertical installation outdoors and need to be installed on even, massive ground (e.g. concrete)

Possible hazards when using the device

The operating elements of the modules in the front-door stations can get very hot when placed in direct solar radiation (more than +50 °C). If possible, avoid direct solar radiation when selecting the mounting site.

Module descriptions

Installation positions for modules in a front-door station

Please find further information on each module in the product datasheet *Modules of the series AMI* on the internet under Product planning.

Functional group with display module		when arranged vertically …
AMI10200	loudspeaker module	…the modules will be combined as follows: Loudspeaker module (above) Display module (below resp. next to the loudspeaker module) Keypad or jogwheel module (below resp. next to the display module)
AMI10100	display module LCD graphic, 100 flats	
AMI10103	display module LCD graphic, 200 flats	
AMI10105	display module LCD graphic, 1000 flats	
AMI10300	keypad module	
AMI10400	jogwheel module	
Functional group with built-in door loud-speaker		**when arranged vertically …**
AMI11100	built-in door loudspeaker module	above the bell button module
AMI10901	bell button module, 1 button	below resp. next to the built-in door loudspeaker, jogwheel, keypad and display module
AMI10902	bell button module, 2 buttons	
AMI10903	bell button module, 3 buttons	
AMI10904	bell button module, 4 buttons	
Access control		**when arranged vertically …**
AMI11200	code lock module	below keypad, jogwheel, bell button and illumination module or as stand alone device
AMI12300	transponder reader module	
AMI10800	fingerprint scanner module *	
Additional modules		**when arranged vertically …**
AMI11000	blind module	installation as placeholder, reserve
AMI10500	camera module *	above loudspeaker, built-in door loudspeaker module and below the information module
AMI10600	dome camera module	
AMI11300	information module	always arranged on top
AMI11400	illumination module	above keypad, jogwheel, codelock and transponder reader module
AMI10700	key switch module	always aranged below

* Note*:*
Recommended mounting height fingerprint scanner: at least 1.30 m.
Recommended mounting height camera: 1.60 m.

<table>
<tr><td>!</td><td>

- Subject to technical changes! The here mentioned module arrangements are a recommendation of the TCS TürControlSysteme AG and are to guarantee the functionality of the modules. When of an individual arrangement of the modules is required, cable lengths have to be considered which may be customised items.

- We recommend to arrange the modules in the same order horizontally as vertically. The positioning of the modules can be started from both sides.
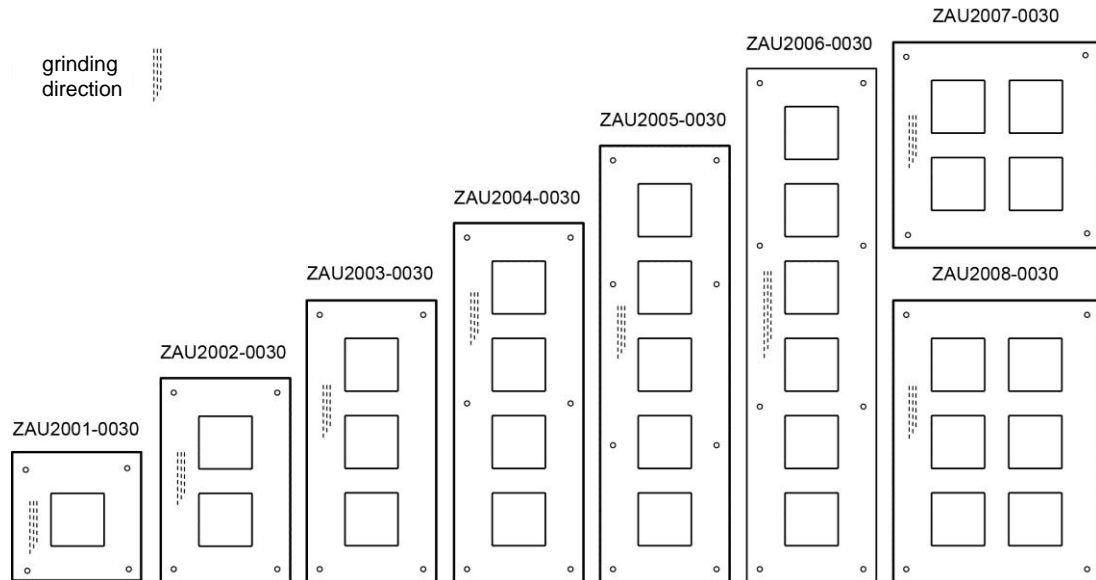</td></tr>
</table>

Technical data

Modules (except display module)

dimensions, visible front panel H x W	82 x 82 mm
module grid spacing	120 mm
degree of protection at the front panel when modules are installed correctly	at least IP44

Flush-mount kit ZAU200x

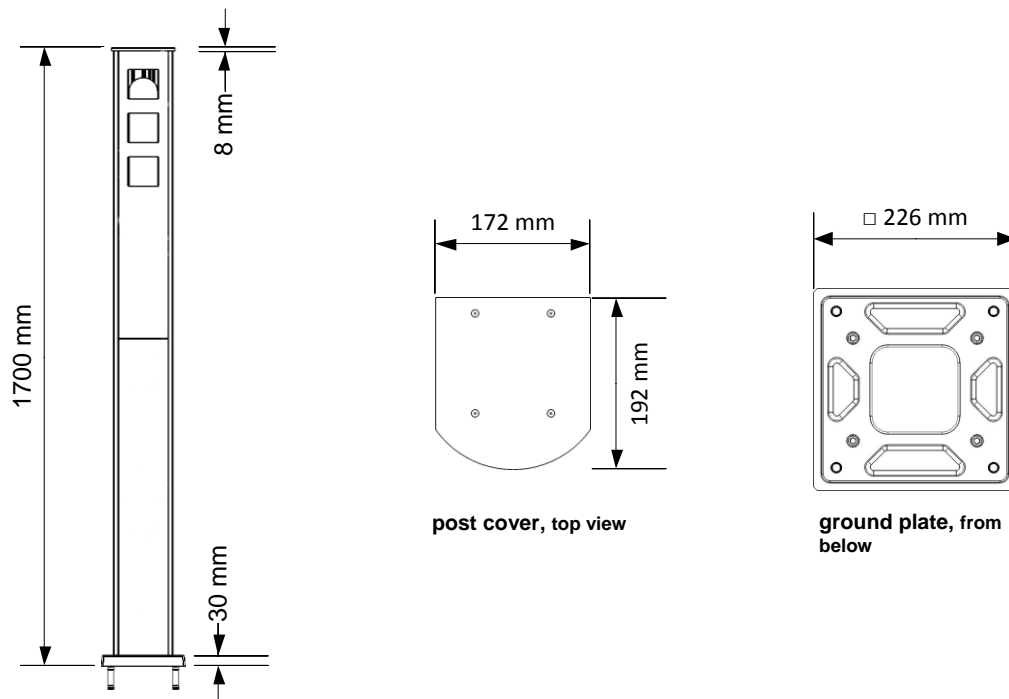|				
supply voltage	+24 V ± 8 % (power supply and control unit)			
front panel flush-mount box	stainless steel, grinded steel, zink-coated			
dimension and weight	article	front panel	flush-mount box	weight
		H x W x D in mm	H x W x D in mm	In total in g
	ZAU2001-0030	200 x 200 x 3	180 x 180 x 50	1400
	ZAU2002-0030	320 x 200 x 3	300 x 180 x 50	2090
	ZAU2003-0030	440 x 200 x 3	420 x 180 x 50	2780
	ZAU2004-0030	560 x 200 x 3	540 x 180 x 50	3480
	ZAU2005-0030	680 x 200 x 3	660 x 180 x 50	4160
	ZAU2006-0030	800 x 200 x 3	780 x 180 x 50	4860
	ZAU2007-0030	320 x 320 x 3	300 x 300 x 50	3110
	ZAU2008-0030	440 x 320 x 3	420 x 300 x 50	4090
audio system: 3-wire technique necessary!				
video system: 6-wire technique necessary!				

Overview

grinding
direction

ZAU2001-0030
ZAU2002-0030
ZAU2003-0030
ZAU2004-0030
ZAU2005-0030
ZAU2006-0030
ZAU2007-0030
ZAU2008-0030

Communication post K3xxxx

supply voltage	+24 V $\pm$ 8 % (power supply and control unit)
housing front panel	aluminium profile, powder-coated, micaceous iron ore dark grey aluminium, anodised nature
H x W x D	1700 x 225 x 225 mm optionally H = 1300 or 2600 mm (customised item on request)
empty weight	13 kg
audio system: 3-wire technique necessary!	
video system: 6-wire technique necessary!	

Short description

Communication posts K31xxx to K36xxx are realised with a standard height of 1700 mm. They can be assembled with a maximum of 6 functional modules of the series AMI.
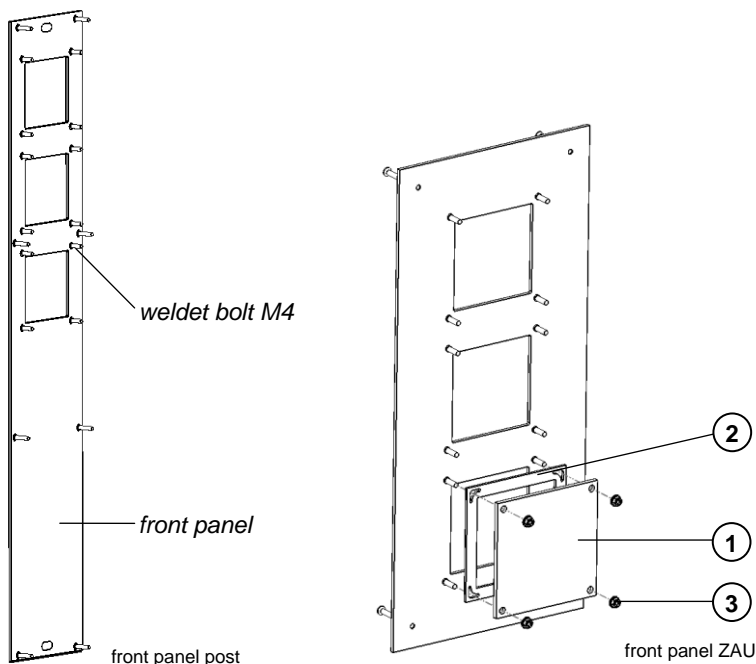
Overview

8 mm

1700 mm

30 mm

172 mm

192 mm

post cover, top view

□ 226 mm

ground plate, from below

Installation of the modules

Installation of the modules into the front panel (standard)

The modules are suited for the installation into the front panels of the flush-mount kits ZAU200x and K3xxxx with a thickness of 3 mm.

weldet bolt M4

front panel

front panel post

front panel ZAU

• Put the module unit (**1)** with front panel sealing (**2**) from behind on-to the welded bolts at the front panel.

• Fix the module unit with 4 fastening screws (**3**) (enclosed in the delivery).
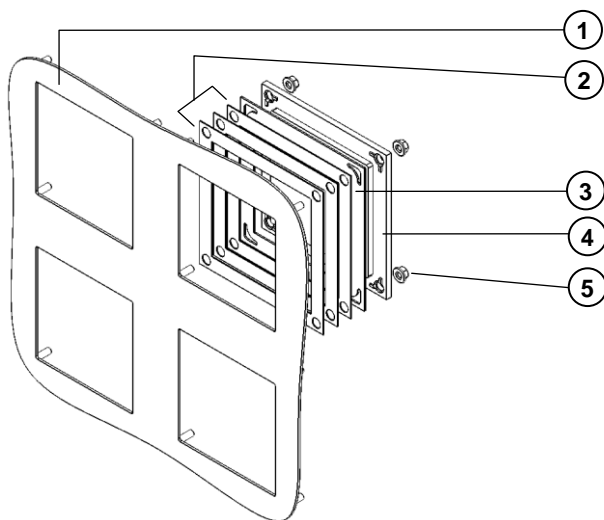
Recommendation:

Wire the modules (see product information of the specific module)**, before** installing the front panel into the post or the flush-mount kit.

> **!** Installation display module AMI1010x see product information *Functional group with display module* > installation, page 8.

Installation of the modules into the front panel (special design)
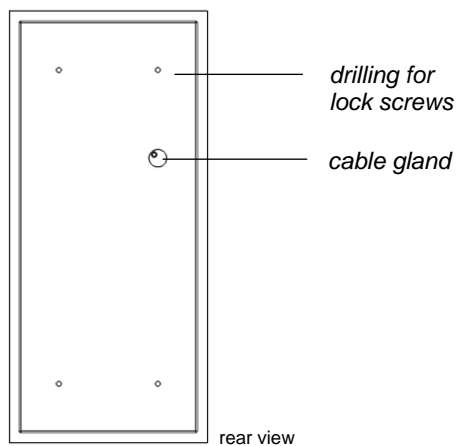
When using a thinner front panel (1.5 to 2.5 mm) the thickness must be increased to 3 mm spacer (enclosed in the delivery when modules are ordered individually).

- Put 1 to 3 spacer foils (**2**) from behind on the front panel onto the welded bolts (**1**).
- Put on the module unit (**4**) with the front panel sealing (**3**).
- Fix the module unit with 4 fastening screws (**5**) (enclosed in the delivery).

Installation flush-mount kit ZAU200x

Installation flush-mount box
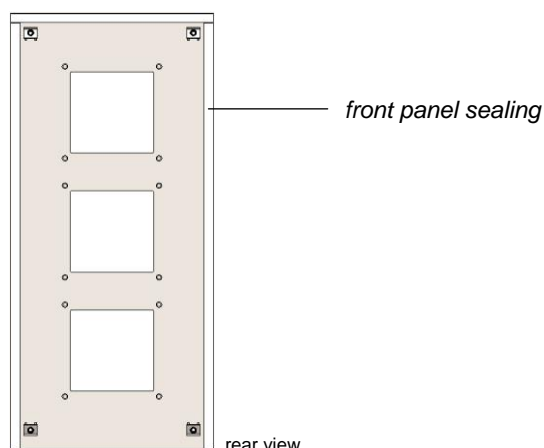

drilling for lock screws

cable gland

rear view

- Loosen the lock screws with the enclosed allen key and remove the front panel from the flush-mount box.
- Insert the supply cable through the cable gland into the flush-mount box and fasten it.
- Insert the flush-mount box into the prepared wall niche.
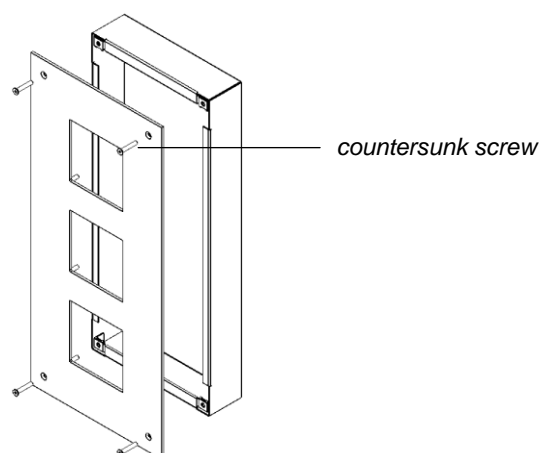 **Note**: The flush-mount box must be flush with the wall of the house.

> **!** **Not enclosed**: Screws and dowels to fix the post in the wall niche.

Installation of the front-door station (front panel)

front panel sealing

rear view

- Cut the enclosed front panel sealing for the front-door station to length: first cut the upper, then the stripes for the sides.
- Stick the cutted front panel sealing with small distance to the outer edge onto the front panel.

> **!** The lower side stays free and prevents water from condensing within the system!

countersunk screw

- Screw the front panel with lock screws using the allen key onto the flush-mount box.

  Thus, the front panel sealing is compressed and provides an adequate sealing against external influences.

Installation communication post K3xxxx

The installation is realised on a concrete foundation (or ground anchor) provided by customer with heavy-duty anchors (enclosed in the delivery).
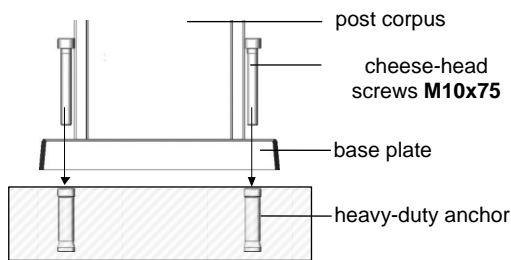
> **!** Please ensure that there is free space for the installation at the backside of the communication post on the installation site.
>
> We recommend to provide a cable length of 1 m on site.
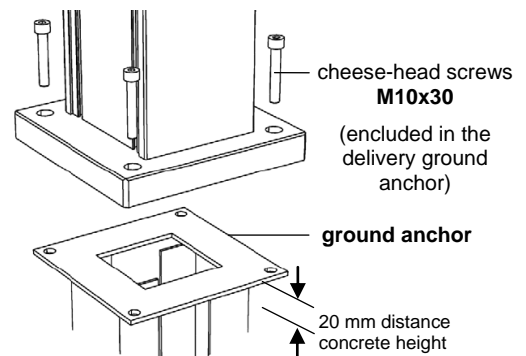
Fix the post to the ground

> **!** Ensure that a line is available to the functional earth.

… with heavy-duty anchor

post corpus

cheese-head
screws **M10x75**

base plate

heavy-duty anchor

… with ground anchor

cheese-head screws
M10x30

(encluded in the
delivery ground
anchor)

ground anchor

20 mm distance
concrete height

- Use the base plate of the post as stencil to mark the drill holes.
- Drill and clean drill holes.
- Drive the heavy-duty anchor flush into the foundation.
- Insert the connection cable provided by customer as well as the earthing through the base plate of the post.

- Concrete the ground anchor vertically in the ground, concrete height 20 mm below the upper edge of the ground anchor.
- Remove the protection caps.
- Insert the connection cable provided by customer as well as the earthing through the ground anchor and the base plate of the post.

- Fix the base plate with 4 cheese-head screws with a key for hexagon socket screws 8 mm (not enclosed in the delivery / length of the screws see the illustration above).
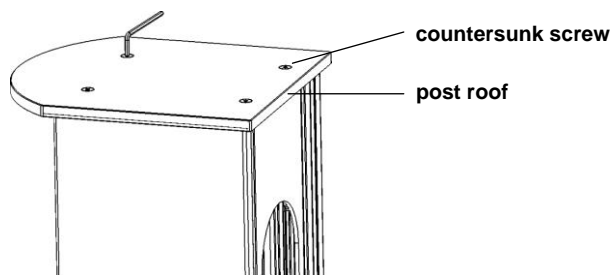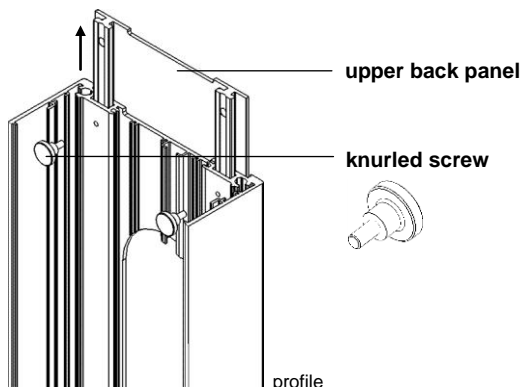
> **!** Ensure that the connection cable provided by customer is not clamped or damaged!

Dismount the post roof
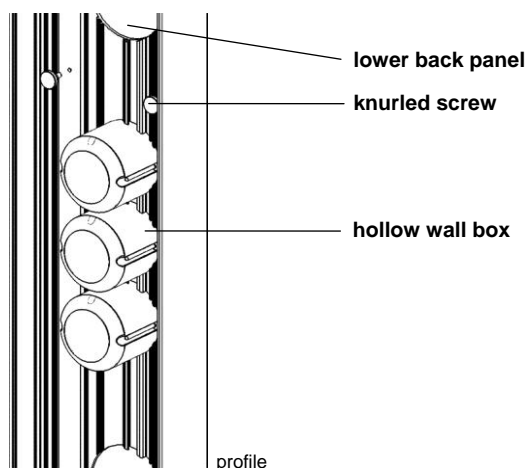
countersunk screw

post roof

- Loosen and remove the 4 countersunk screws in the post roof with the enclosed allen key.
- Remove the roof of the post.
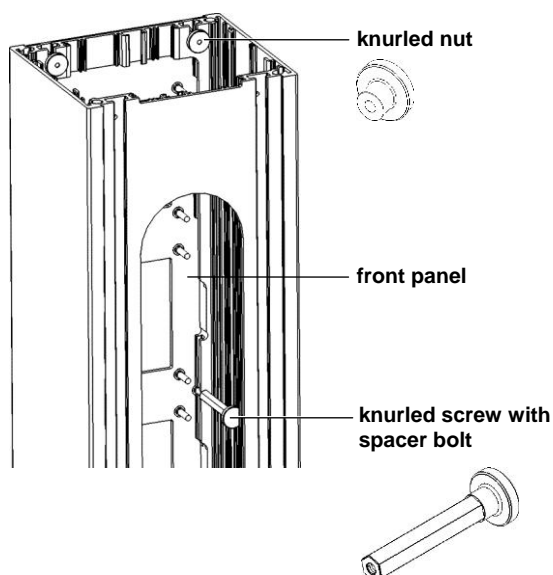- Put down the roof on clean ground.

Open the post

upper back panel

knurled screw

profile

- Loosen the two knurled screws which are located on top in the inside of the post corpus.
- Push out the **upper back panel**.

lower back panel

knurled screw

hollow wall box

profile

- Loosen the two knurled screws which are located at the inside of the post corpus, directly above the hollow wall boxes.
- Push out the **lower back panel**.

Dismount / install the front panel

knurled nut

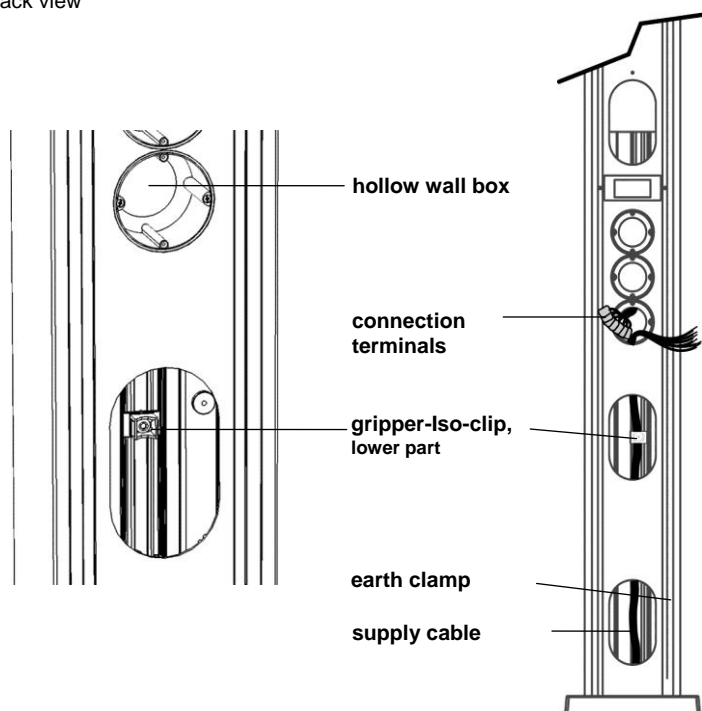**front panel**

knurled screw with spacer bolt

- Screw off the knurled nuts and knurled screws with spacer bolts (location of the modules).
- Remove the front panel of the post corpus to install the modules.

> **!** In the middle part of the front panel of a post with up to 3 modules, there are 2 knurled screws with spacer bolts, and in case of 4, 5 or 6 modules 4 knurled screws with spacer bolts which needs to be loosened / tightened.

- For the installation of modules into the front panel see *Installation of the modules into the front panel (standard)*, page 8.
- Put on the front panel with the assembled modules onto the post corpus and fix it again from the inside using the knurled nuts and knurled screws with spacer bolts.

Connect the post

Back view

hollow wall box

connection terminals

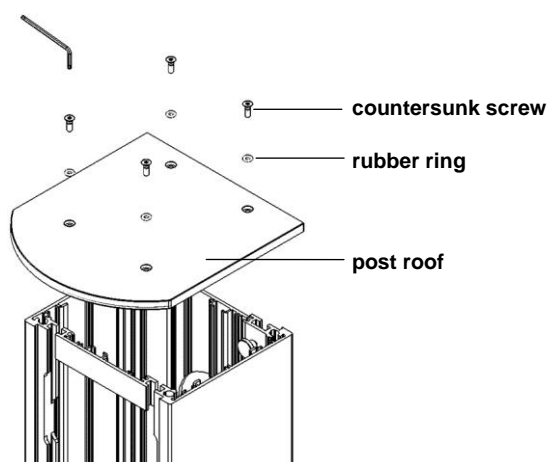gripper-Iso-clip, lower part

earth clamp

supply cable

- Break out an opening in one of the hollow wall boxes for the supply cable.
- Guide the supply cable through the opening to the connection terminals and fix it with the pluggable top part of the grippe-Iso-clip (encluded in the delivery).
- Connect the wires to the connection terminals according to the type label.
- Connect the provided to the connection terminal functional earth.

Close the post

See also *Open the* post, page 11.

- Put the rear back panel into the post profile, align it and fix it with both knurled screws from the inside.
- Put the upper back panel into the post profile, align it and fix it the same way.

Close the post roof

countersunk screw

rubber ring

post roof

- Put the roof of the post with the rounded part forward on the post corpus.
- Fix the roof of the post with the 4 countersunk screws and rubber rings using the allen key.

Connect the lines

! All modules are permitted exclusivley for safety extra low voltage (SELV) and protective extra low voltage (PELV).

Commissioning

- **First install the system completely, than connect it to voltage!**
- Check the a-, b- and P-wire against each other for short-circuits.
- Switch on the power supply.

Note on the connection of more than one front-door station

- In a system with a voltage supply realized by a single DC power supply NGV1011-0400, max. 5 front-door stations with display modules can be connected.
- If a front-door stations with modules is operated parallel to other front-door stations with modules, their AS-addresses must be fix.
  The setting can only be realised with the Service Device TCSK-01 or the configuration software configo^{TM}.
- Setting the AS-address of a front-door station when using a display module is realised with a PS/2 keypad via the menu navigation, with the Service Device TCSK-01 or the software ADx-configurator.

General information on the conduit in TCS systems

TCS audio systems

The conduit of the lines is determined by structural conditions and is only limited 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 wire cross section can be doubled, that means, that for one wire two cables are used (illustration). The lines have to be twisted.
- When using shielded cables: Connect the shielding with each other and put it on mass (b-wire) on one side at the power supply.
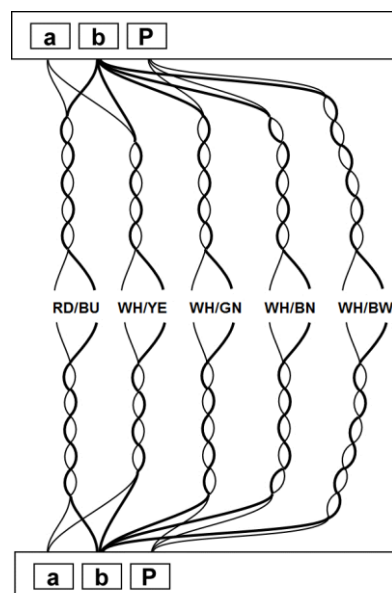- Optional strand or star shaped wiring.

Table: loop resistances

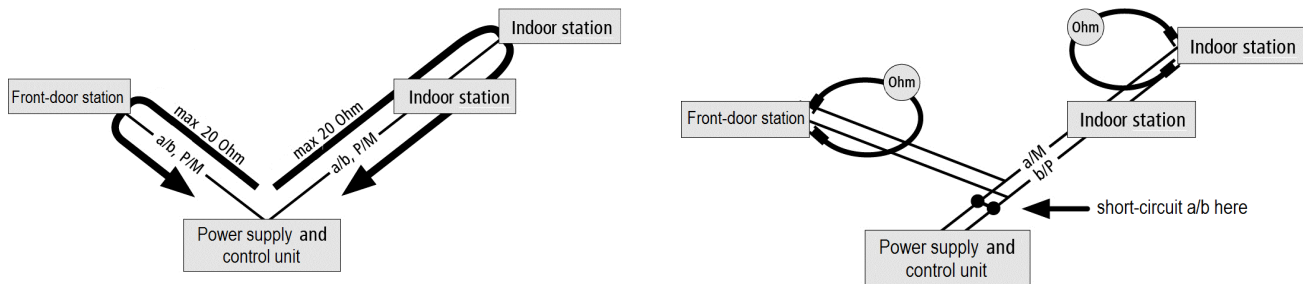| Line length in m	Line diameter	
	0.6 mm	0.8 mm
	Loop resistance in Ω	
10	1.28	0.71
20	2.55	1.43
30	3.83	2.14
40	5.10	2.86
50	6.38	3.57
60	7.65	4.29
70	8.93	5.00
80	10.20	5.71
90	11.48	6.43
100	12.76	7.14
150	19.13	10.71
200	25.51	14.29
250		17.86
300		21.43

Principle loop resistance

- None of the devices (front-door station, indoor station or extended function) should be further than 20 Ohm away from the power supply and control unit!

Measurement loop resistance

Procedure for measurement:
- Switch off the 230 V / 50 Hz power supply and control unit.
- Install a/b short circuit at the power supply and control unit.
- Other devices are not disturbing the measurement and can stay connected.
- Measure the resistance at the strand at a/b of the last indoor or front-door station.

Rule for 20 Ohm:

Distance from TCS:BUS® power supply to the most
distant front-door or indoor station:
- **at 0.6 mm** wire diameter **max. 160 m**,
- **at 0.8 mm** wire diameter **max. 280 m**

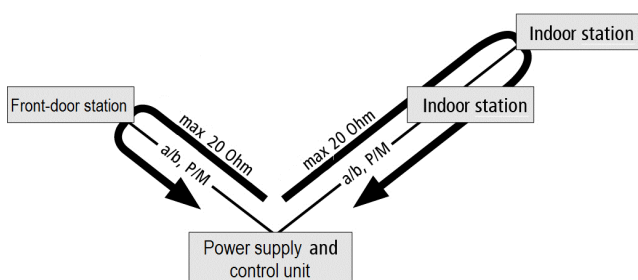## *TCS video systems*

6-wire operation

- The 6-wire operation is standard operation mode. Video operation, where two separated masses (b and M) are used.
- The conduit of the lines is determined by structural conditions and is only limited by its length.
- Observe when selecting the cable length:
  the loop resistance must not exceed 8 Ω at a-b and M-P (table 1).
- In case of loop resistance > 8 Ω: plan mulitple wiring of the strands (double twisted lines).
- Optional strand or star shaped wiring.
- Do not use more than 20 video indoor stations per strand. For systems with more video indoor stations you have to provide 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 selected.

Table 1: loop resistances

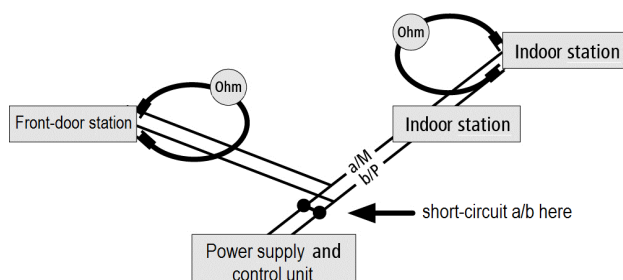| Line length a-b/ M-P in m	Line diameter	
	0.6 mm	**0.8 mm**
	Loop resistance in Ω	
10	1.28	0.71
20	2.55	1.43
30	3.83	2.14
40	5.10	2.86
50	6.38	3.57
60	7.65	4.29
70		5.00
80		5.71
90		6.43
100		7.14

Principle loop resistance

None of the devices (front-door station, indoor station or extended function) should be further than 8 Ohm away from the power supply and control unit!

Measurement loop resistance

Procedure for measuring:

- Switch off the 230 V / 50 Hz of the power supply and control unit.
- Install a/b short-circuit at the power supply and control unit.
- Other devices are not disturbing the measurement and can stay connected.
- Measure the resistance at a/b at the strand of the last indoor or front-door station. Remove the short-circuit.
- To measure the loop resistance at P/M proceed in the same way as for a/b.

Rule for 8 Ohm:

Distance from TCS:BUS® power supply to the most distant front-door or indoor station:

- **at 0.6 mm** wire diameter **max. 65 m**,
- **at 0.8 mm** wire diameter **max. 115 m**

Optional accessory

Short text	Article number
name field foil	on request
colored foil red, green, blue, orange	on request
cleaning cloth for stainless steel	on request
ZAB ground anchor K3 post	ZAB3001-0002

If necessary, you can order accessory by calling the TCS Hotline under +49 (0) 4194 / 9881188 or by mailing to hotline@tcsag.de

Cleaning

The material of your front-door station needs regular maintenance to preserve the surfaces.

> **!**
> - To clean the device use a **slightly wet** microfibre cloth.
> - Remove stronger stains with a mild household cleaner and warm water.
> - Do not use any abrasive detergents!
> - When using standard stainless steel cleaner, please observe the instructions for use carefully.

Acrylic glass	To preserve the dust-resistant effect for a long time, we recommend to clean the plastics with an antistatic plastic cleaner.	
Aluminium	The anodised surfaces can be cleaned with light detergents. The surfaces have a self-cleaning effect in their texture.	
Stainless steel	Especially fingerprints and grease residues can react aggressively on surfaces of stainless steel. Regular maintenance preserves the look of your front-door station and makes the repeated cleaning of the surface easier.	
	polished surfaces	In case of polished surfaces, cleaning products such as scouring milk, steel wool or similar products with grinding particles must NOT be used.
	grinded / brushed surfaces	In case of grinded or brushed surfaces, the cleaning should always be carried out in grinding resp. brushing direction to preserve the optical grinding pattern. After the cleaning, the stainless steel surfaces should always be rubbed dry to remove water spots or residues from cleaning detergents.

Conformity

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 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 note our **conditions of sale and delivery**, download from www.tcsag.de > Downloads > trade information.

Notes

Service

Please send your questions and inquiries to

hotline@tcsag.de