



TCS TürControlSysteme AG  
Geschwister-Scholl-Straße 7  
39307 Genthin  
Germany

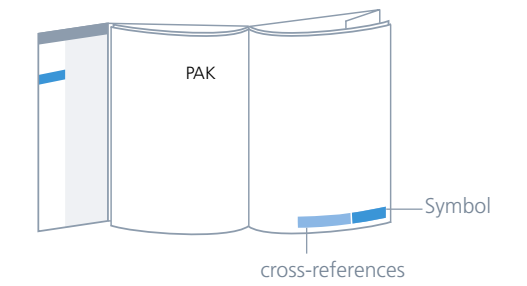
Phone +49 3933 87 99 10  
Fax +49 3933 87 99 11  
Web [www.tcs-germany.de](http://www.tcs-germany.de)  
Email [info@tcs-germany.de](mailto:info@tcs-germany.de)



## Products 2005|06

### Manual

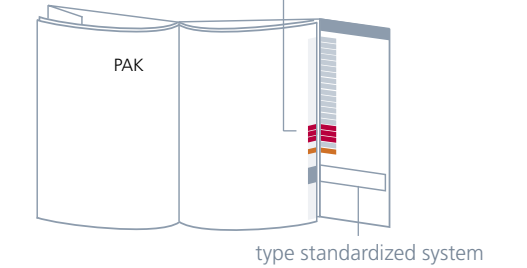
left flap: an overview of the product groups



1. **Symbols** give an overview over the complete range of product showing all product groups as well as their basic colours. You will find symbols on internal sides.
2. In addition to the symbols you will find **cross-references** with detailed information about the particular subjects.

right flap: combinations for standardized systems

Border marks inside showing possible combinations of the components



The flap for **planning and amplification of standardized systems** shall be used as follows:

1. TCS standard door communication systems consist of three basic components only: front-door station, in-house station and power supply unit. They can be used in different combinations with each other.
2. The coloured border marks on the right internal side refer to alternative combinations of the product groups.
3. The coloured border marks below help to find a required type of the **standardized systems** (audio and video system, access controls).
4. Following the next flap you will find 3 **possibilities to amplify the systems**: multiple-station units, connection to telecom systems, control and switching modules.

You have found the PAK front-door station on internal page 08/09.

On the right side you can see the border marks. The red mark refers to in-house station ISH1030, the TCS series and IMM. The orange mark refers to power supply units of the standardized systems.  
In total, these combinations can be combined in a door communication system and amplified with the multiple-station unit, telecom connection or switch and control modules.

Left flap to turn up

Right flap to turn up

Example

## The TCS leading products

	<b>Packs</b>
	<b>Front-door stations</b>
	Audio front-door stations
	Series PAK
	Series PDS   PDT
	Series PES   PET
	Posts PSD   PSE
	Series PUK
	Series AD
	TCU   TKCE
	Video front-door stations
	Access control
	<b>In-house stations</b>
	Audio in-house stations
	Door-telephone ISH1030
	Series IMM
	Intercom systems TC-Series
	Video in-house stations
	VME30
	Series VM(X)
	<b>Power supply units</b>
	<b>Extended functions</b>
	<b>Systems</b>
	<b>Customized items</b>
	<b>Service devices and software</b>

In the first line.

Since the company was founded in 1995 TCS has manufactured state-of-the-art door communication systems using the non-polarized TCS:BUS technology the company has developed itself. TCS is now recognized as a leader in modern building communication technology with its trail-blazing innovations.

Door-to-door communication from its very beginning: time and space-saving quality at a price you can afford and which makes life noticeably easier. Easier for planners, for specialist dealers and for electricians; easier for property developers and managers and for residents. TCS offers the ideal solution to all your communication system problems at a reasonable price and with low maintenance. The range of products is also ideally suited to large-scale projects. The ring tone for the front-door and the flat door is distinctive and it has an audio privacy function. In addition to the video door communication systems for door communication TCS today offers also complex systems including call, emergency call and danger alert systems as well as resident information systems.

All this technology is based on the reliable and flexible cutting-edge TCS:BUS.

Just see for yourself!

## Combinations for standardized systems

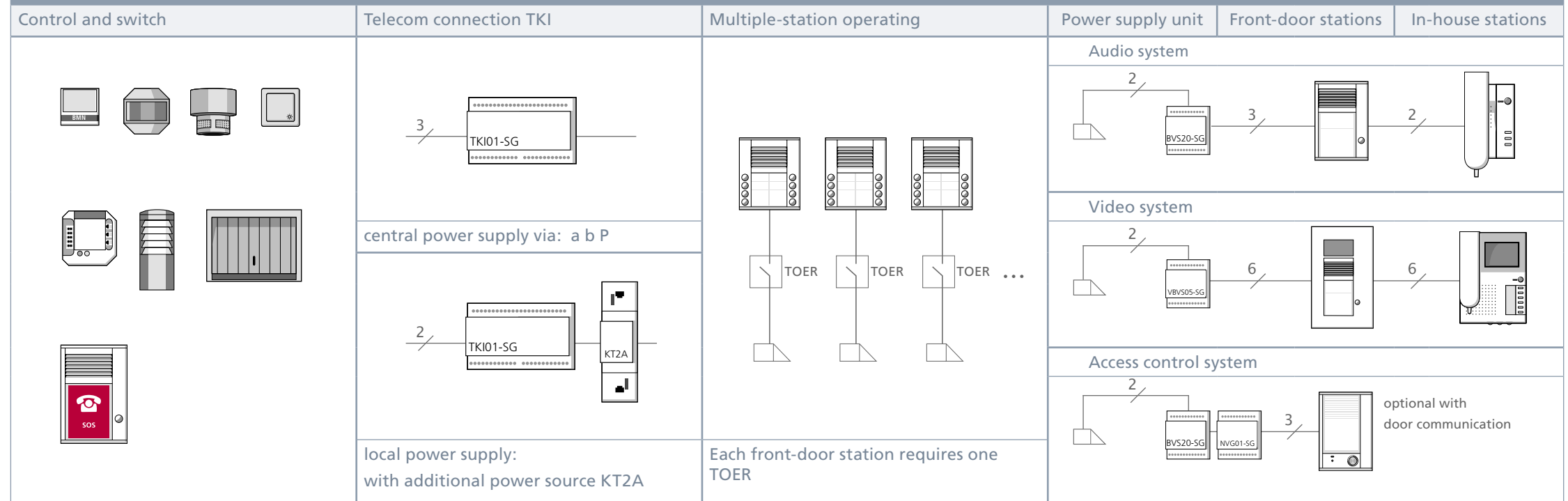
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Product	Page	Category	System
PAK	page 08   09	Audio	Front-door stations
PDS   PDT	page 10   11		
PES   PET	page 12   13		
PUK	page 14   15		
TCU   TKCE	page 16   17		
PSD   PSE	page 18   19		
AD 1, 2, 3	page 20   21		
AD 4	page 22   23		
VPDS, VPES	page 24   25	Video	
VPEK, VPUK	page 24   25		
VPSD   VPSE	page 26   27		
AD 1, 2, 3	page 26   27		
VKA, VKM	page 26   27		
i-   t-PAKL	page 28   29	Access control	In-house stations
AZU, tLeser	page 28   29		
i-   t-PDS	page 30   31		
i-   t-PES	page 30   31		
ISH1030	page 32   33	Audio	
TC-Serie	page 34   35		
IMM	page 36   37		
VME30	page 38   39	Video	
VM(X)	page 40   41		
...	page 41   42	Standard systems	Power supply unit

Technical help in-house stations		Audio					Video
		Duplex communication			Simplex communic.		blw Color
		ISH1030	IMM1000	IMM1100	TC2000	TC20P	VM(X)
basic functions	automatic call cut off						
	Audio privacy function						
	Door release button / optional light						
	Light switch button						
	Function keys						
	Ring tone mute						
	Adjustable ring tone volume						
additional functions	Redirecting						
	Automatic door release						
	Internal call						
	Parallel call						
	Control function						
	Status indication, sensor with a binary input						
	Specific connection to one front-door station						
	Floor door release						
manually adjustable	Brightness						
	Contrast						
LED-display	Function indication						
No. of ring tones	13						
Acoustic / optical call distinction	Front-door call 1						
	Front-door call 2						
	Flat-door call						
	Internal call						

= Possible

## Extension possibilities standard systems



# Content

Page	Flats	Product name	
<b>02   03</b>	The TCS product system		
	<b>Packages</b>		
<b>04   05</b>	for 1 - 8 flats	pre:packs	
<b>06   07</b>	for 1 - 2 flats	home:packs	
	<b>Front-door stations</b>		
	Front-door stations Audio		
<b>08   09</b>	16 mm Surface-mount	for 1 - 8 flats	PAK
<b>10   11</b>	20 mm Surface-mount	for 1 - 23 flats	PDS   PDT
<b>12   13</b>	20 mm Surface-mount	for 4 - 92 flats	PES   PET
<b>14   15</b>	3 mm Flush-mount	for 1 - 30 flats	PUK
<b>16   17</b>	Built in door loud speaker, bell button extension	for 1 - 144 flats	TCU   TCXE
<b>18   19</b>	Posts, free-standing or surface-mount	for 1 - 5 / 20 flats	PSD   PSE
<b>20   21</b>	Front-door stations with display	up to 500 flats	AD1, AD2, AD3
<b>22   23</b>	Front-door stations with touch screen	up to 1000 flats	AD4
	Front-door stations Video		
<b>24   25</b>	20 mm Surface-mount / 3 mm Flush-mount	for 1 - 88 / 24 resid.	VPDS, VPES / VPUK
<b>26   27</b>	Displays, posts with video, external cameras		AD with Video, VPSD/E, VKA, VKM, VKR
	Front-door stations Access control		
<b>28   29</b>	16 mm Surface-mount		iPAKL   tPAKL
<b>30   31</b>	20 mm Surface-mount	for 1 - 10 flats	iPDS   tPDS, iPES   tPES
	<b>In-house stations</b>		
	In-house stations Audio		
<b>32   33</b>	Door-telephone		ISH1030
<b>34   35</b>	Intercom and signal systems, accessories		TC-Series
<b>36   37</b>	In-house-telephone and station, accessories		IMM1000, IMM1100
	In-house stations Video		
<b>38   39</b>	Video in-house station for council housing		VME30
<b>40   41</b>	For surface and flush-mount		VM(X)
	<b>Power supply units</b>		
<b>42   43</b>	For standardized systems		BVS20, BVS100, NBV, NVG, KT2A
<b>44   45</b>	For complex and special systems		VBVS05, BVS30, VBVS30, PSG
	<b>Extended functions</b>		
<b>46   47</b>	For stations und power supply units		TOER, SK10, TRE, TZ
<b>48   49</b>	To switch, for announcements, to control		BRE2, BMN, FBS
<b>50   51</b>	For video		VZS, VZE, VSW, VT
<b>52   53</b>	Telecommunication interfaces		TKI, TKID, TKI:home
	<b>Systems</b>		
<b>54   55</b>	Concierge in-house station, emergency call		PFC, PFS, GAG, GAZxx, GFAXx, NPAK
<b>56   57</b>	Emergency call systems, sheltered housing		GFA000, TCx, User Software
<b>58   59</b>	Access control systems		User Software, iTL232
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<b>60   61</b>	Material, color, engraving, layout		
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<b>64   65</b>			TCSK, Maintenance Package and software
<b>66   69</b>	<b>System and technology basics</b>		
<b>70   71</b>	<b>Subsidiaries and representatives, references</b>		

# From basic intercom stations to complex building communication

**TCS**  
**Door communication systems**  
 Ring, speak, open. All on one BUS. In addition to the pre-configured home:pack and pre:pack solutions the TCS building block system consisting of front-door in-house stations and power supply units is ideal for new developments or for renewing of out-dated bell systems equipment.

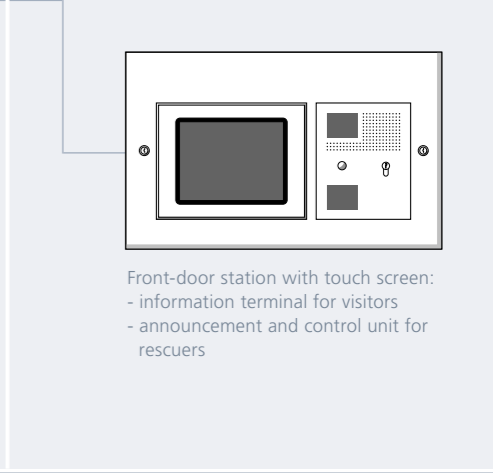
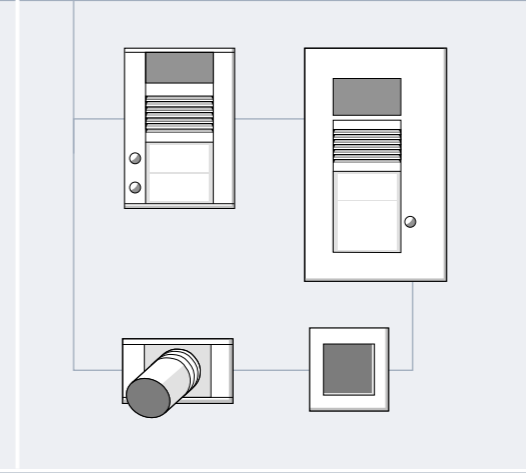
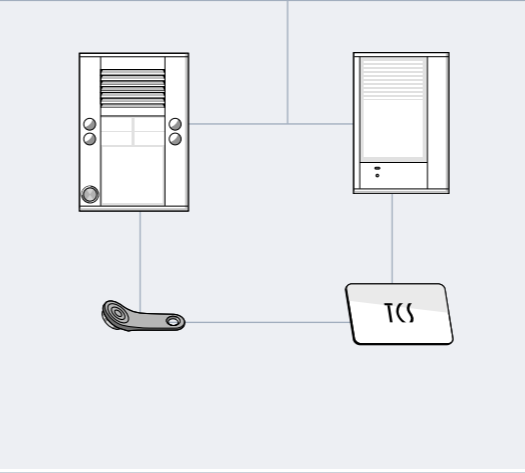
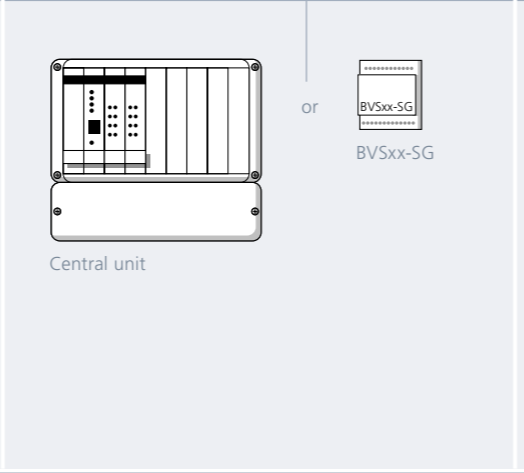
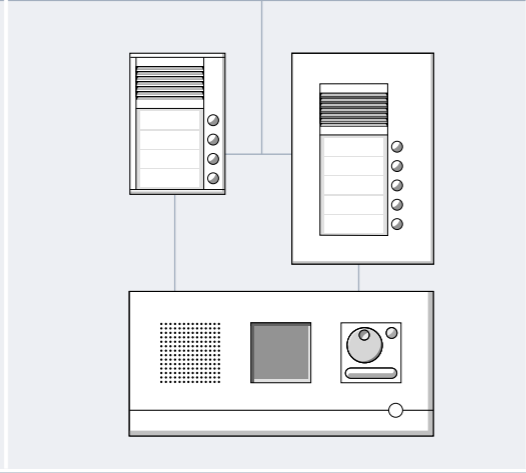
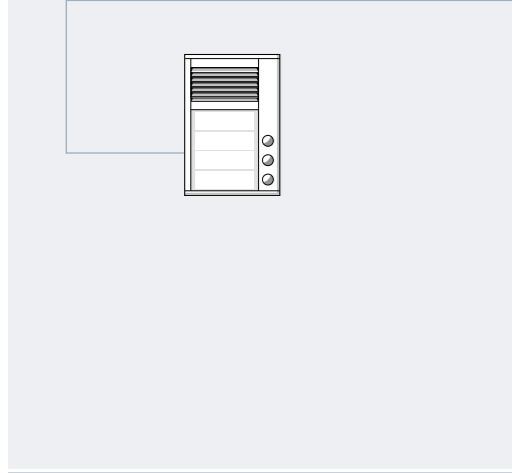
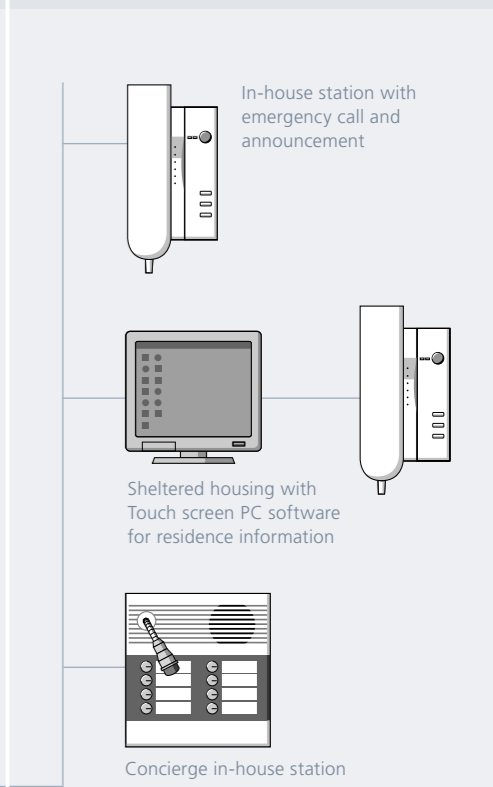
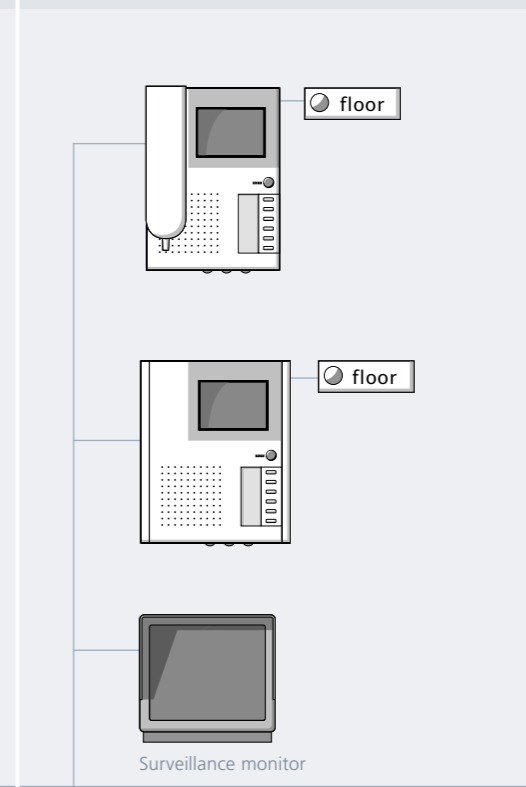
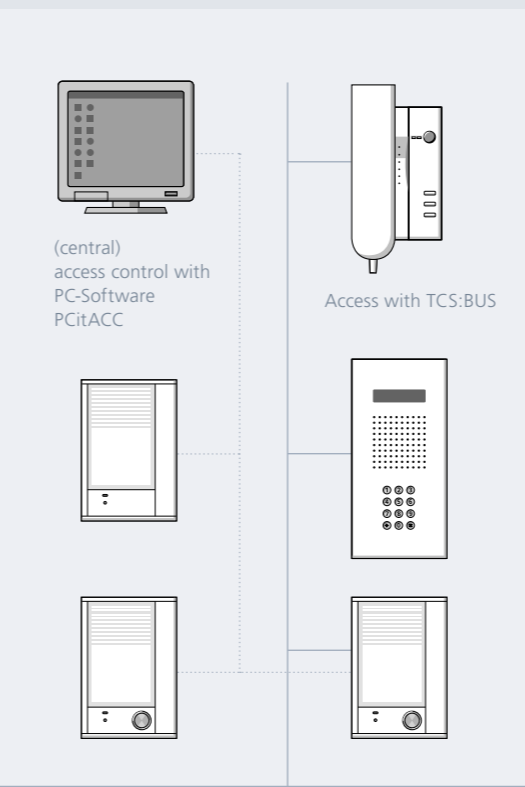
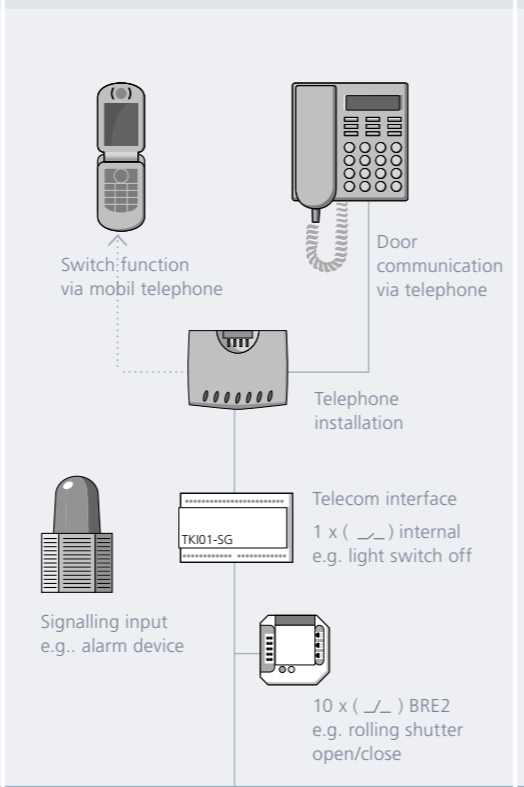
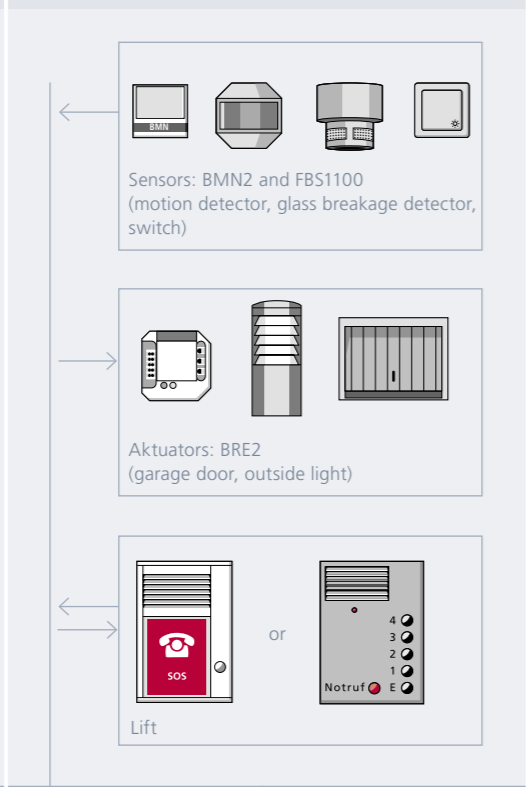
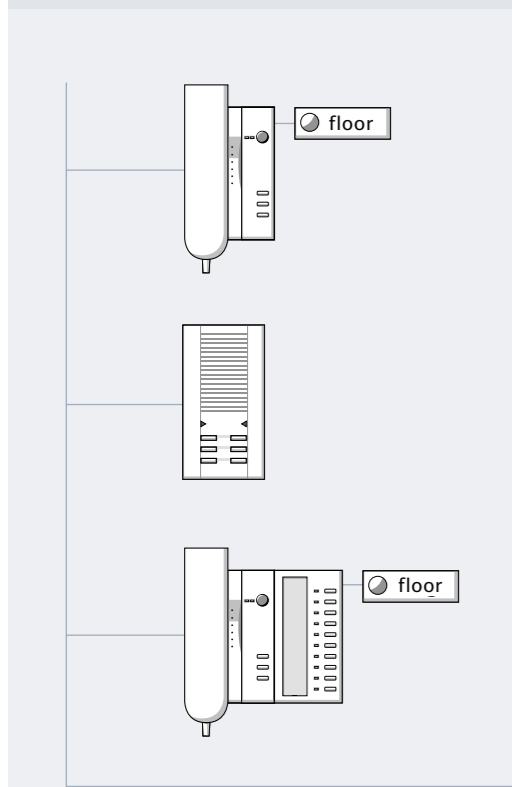
**TCS**  
**Call and monitoring systems**  
 Control and switching modules are available for building surveillance. Fault reports and operational status can be monitored so that devices can be controlled via a switching module or simply a light switched on.

**TCS**  
**Telecommunication**  
 Telecommunication systems can be linked to the TCS:BUS via interface devices. Thus the TCS:BUS functions such as front-door call, switching and speaking can be linked to the landline and mobile network. In this way you can receive an alarm call worldwide.

**TCS**  
**Access control**  
 Whether it is your own garage door or the CEO's suite - the TCS access control system provides a suitable solution for every situation. The devices are either fitted with a contact system (iKey readers) or a non-contact system (for tCard or tKey readers).

**TCS**  
**Video door communication systems**  
 Our comprehensive product range offers visual access controls for single or multiple flats, e.g. closed-circuit TV surveillance for commercial buildings and open spaces (multiple camera systems).

**TCS**  
**System solutions**  
 Call systems for concierges as well as alarm and information announcement functions can be set up using this module and device program. Areas of application could include sheltered housing, danger alert systems etc.





## Packages

# pre:packs

Fully integrated.  
Most door communication systems are provided for 1 - 8 flats. With a pre:pack range of fully-configured standardized systems made up of the three TCS basic components things have become a lot easier. All the pre:pack devices are pre-programmed and come in specially designed packaging. The easy-to-follow instructions guarantee a swift and safe assembly and installation. All eight of the pre-configured standard units are available as flush-mount versions. (The article reference number of these versions contains the letter „U“). The latest pre:pack systems are also available for 1 and 2 flats and offer a highly efficient solution for a single and two-family home.

### selective performance parameters front-door station

- : for up to 8 flats
- : surface-mount / flush-mount
- : win:clip™ principle
- : metal bell buttons with gold-plated, maintenance-free contacts
- : long-life and energy-saving illumination of the nameplate and the information field
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : volume and microphone level manually adjustable
- : material / colours: aluminium anodised nature (EN)
- : dimensions:
- surface-mount:  
H ranges from 153 mm to 241 mm x W 104 mm x D 16 mm
- flush-mount front panel:  
H ranges from 208 mm to 340 mm x W 150 mm x D 3 mm
- flush-mount box:  
H ranges from 159 mm to 291 mm x W 126 mm x D 40 mm

### selective performance parameters in-house station

- : surface-mount / stand-alone (desktop accessory)
- : blue-coloured door release button
- : light switch button
- : 1 function key ex works: configured for control function
- : choice of 13 melodious ring tones
- : ring tone volume / manually adjustable
- : ring tone mute with optical display
- : audio privacy function and automatic call cut-off
- : colour: pure white
- : dimensions: H 212 mm x W 94 mm x D 65 mm

### selective performance parameters power supply and control unit

- : front-door station and in-house stations are pre-configured
- : functions extendable through accessories
- : determined period of time for door release and light switch on, not adjustable
- : DIN-rail case with 4 standard slots



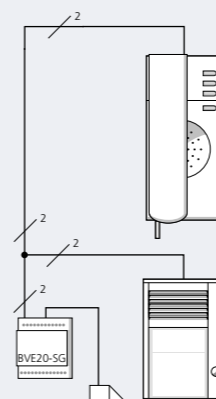
pre:pack PPA01-EN



pre:pack PPU01-EN

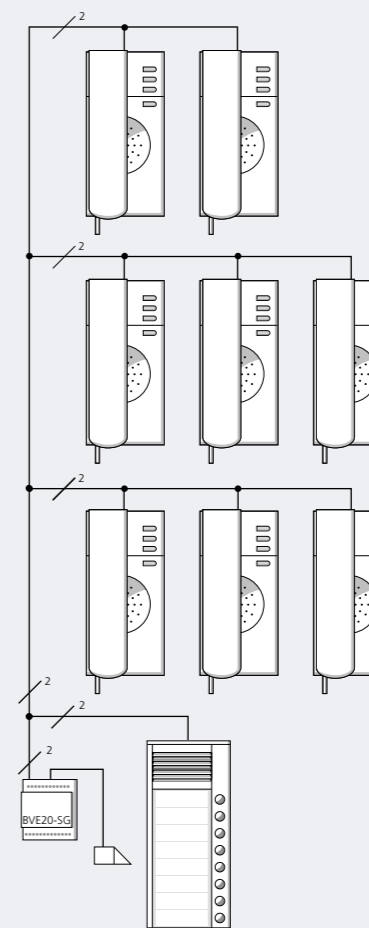
### From pre:pack01

- : 1 x front-door station (PAK01-EN/P or PUK01-EN/P)
- : 1 x door-telephone ISH1030 (pre-configured)
- : 1 x power supply and control unit BVE20-SG



### ... to pre:pack08

- : 1 x front-door station (PAK08-EN/P or PUK08-EN/P)
- : 8 x door-telephones ISH1030 (pre-configured from 1 - 8)
- : 1 x power supply and control unit BVE20-SG



### The compact solution for one and two flats

Compared with systems manufactured from separate components the new pre:pack devices provide an easy and time-saving installation of the standardized TCS systems for up to 8 flats. The advantages of the pre:pack systems are the following:

- 1) No programming required as it is no longer necessary to assign telephones to bell buttons. This reduces costs for installation, as time is money.
- 2) No need to order lots of individual parts and create complex invoices - just give the single article reference number.
- 3) Addition of other units is possible, e.g. signal units, sensors / activators, telecom-interfaces etc.

Article reference numbers

pre-configured standardized systems, surface-mount:  
PPA01-EN  
PPA02-EN  
PPA03-EN  
PPA04-EN  
PPA05-EN  
PPA06-EN  
PPA07-EN  
PPA08-EN

pre-configured standardized systems, flush-mount:  
PPU01-EN  
PPU02-EN  
PPU03-EN  
PPU04-EN  
PPU05-EN  
PPU06-EN  
PPU07-EN  
PPU08-EN



pre:pack

A: Surface-mount  
U: Flush-mount

Number of bell buttons

EN: Aluminium anodised nature



## Packages

# home:packs

The home:pack is a high-quality package for a single family home. All the three TCS basic components included in the set are already pre-configured. The new features of this set are the compact and attractively designed in-house telephone station IMM and the high-performance power supply and control unit BVS20-SG which you can use for light switch or garage door release. For users with great demands concerning function and design the home:pack offers efficient components for installation inside as well as outside.

### selective performance parameters ... of front-door station PSK

- : for up to 2 flats
- : surface mount
- : projection 16mm
- : win:clip™ principle
- : choice of long-life and energy-saving illumination of the nameplate and the information field
- : illuminated plastic bell buttons with gold-plated and maintenance-free contacts
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : volume and microphone level manually adjustable
- : material / colours: aluminium anodised nature (EN)
- : dimensions:  
H ranges from 153 mm to 241 mm x W 104 mm x D 16 mm

### ... of in-house station IMM1000

- : surface-mount / stand-alone (desktop system)
- : blue-coloured door release button, flat-door release can be activated additionally
- : light switch button
- : 1 function key ex works: configured for control function / alternate allocation for internal call, automatic door release, redirecting
- : choice of 13 melodious ring tones
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : acoustic call distinction for 2 doors
- : ring tone volume / manually adjustable
- : audio privacy function and automatic call cut-off
- : dimensions: H 215 mm x W 97 mm x D 43 mm

### ... of power supply and control unit BVS20-SG

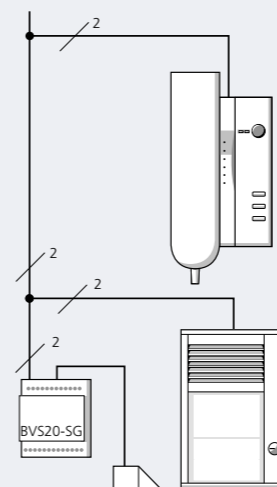
- : front-door station and in-house station are pre-configured
- : extendable functions through accessories
- : for systems with one line 40 mA each
- : max. loop resistance: 20 ohm
- : line and P-terminal short circuit protected
- : DIN-rail case with 4 standard slots



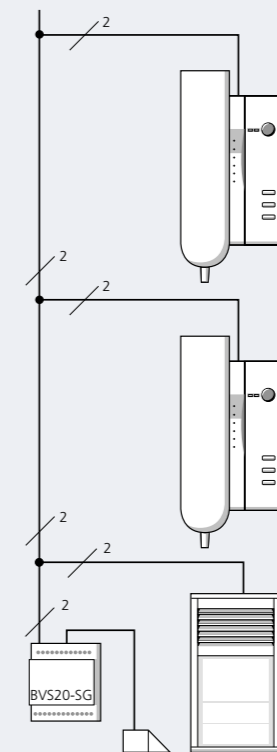
home:pack



homeplus:pack



home:pack



homeplus:pack



### A range of four colours

You can choose between blue, white, orange and green in our range of home:pack colours for illuminated front-door nameplate.

Compact, fully configured systems for door-to-door communication in detached or shared flats as well as in combined living and working situations. If required, all the home:pack systems can be supplemented with further TCS components.

Article reference numbers

home:pack  
PSC2010-0010

homeplus:pack  
PSC2020-0010

accessory components:

TC20L-RW  
See page 34 | 35

TC20LS-RW  
See page 34 | 35

TKI:home  
See page 50 | 51

TOER2-EB  
See page 44 | 45

TRE2-EB  
See page 44 | 45



## Front-door stations audio

# PAK

### Front-door station series for surface-mount for up to 8 flats

The TCS front-door stations are made of high-quality aluminium sections and are very hard-wearing. A feature of the surface-mount units is their minimal projection. The new PAK front-door stations for instance, project only 16 mm - less than the visible part of some flush-mount models.

In addition to the shatter-proof plastic glass (with 10-year guarantee) to protect the nameplates all the front-door stations have been fitted from the very beginning with long-life LEDs.

### selective performance parameters

- : for up to 8 flats
- : surface-mount
- : projection 16 mm
- : win:clip™ principle
- : nameplate label size:
  - H ranges from 19 mm to 53 mm x W 62 mm
- : information field size:
  - H ranges from 19 mm to 37 mm x W 62 mm
- : metal case made of rugged aluminium sections
- : metal bell buttons with gold-plated and maintenance-free contacts
- : any bell button can be assigned to one in-house station
- : long-life and energy-saving illumination for the nameplate and the information field
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : length of call ex works: 56 seconds / adjustable via the Service Device
- : any bell button can be used for light switch on, light symbol attached
- : volume and microphone level manually adjustable
- : plug-in memory to exchange identical front-door stations
- : on-service door release ex works: 56 seconds, adjustable via the Service Device
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : input current: I(a) = 0.4 mA, I(P) = 11 mA standby
- : maximum input current: I(Pmax) = 21 mA
- : operating temperature range: - 20 °C to 50 °C

- : dimensions:
  - H ranges from 153 mm to 241 mm x W 104 mm x D 16 mm



#### PAK08-EN

The PAK series also include a protective roof (cover) PAKDA-EN. Please also see the illustration of the protective roof for PRODA of the series PES on page 13

#### PAK01-EN

H 153 mm  
W 104 mm  
D 16 mm



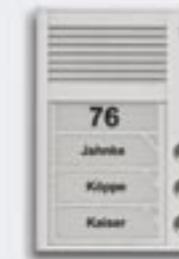
#### PAK02-EN

H 153 mm  
W 104 mm  
D 16 mm



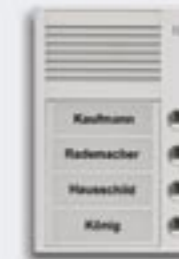
#### PAK03-EN

H 153 mm  
W 104 mm  
D 16 mm



#### PAK04-EN

H 153 mm  
W 104 mm  
D 16 mm



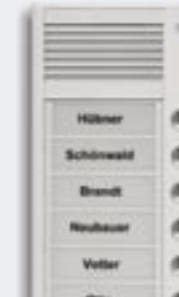
#### PAK05-EN

H 175 mm  
W 104 mm  
D 16 mm



#### PAK06-EN

H 197 mm  
W 104 mm  
D 16 mm



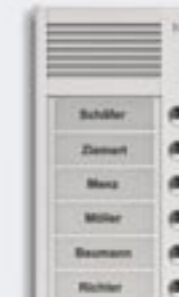
#### PAK07-EN

H 219 mm  
W 104 mm  
D 16 mm



#### PAK08-EN

H 241 mm  
W 104 mm  
D 16 mm



### win:clip™ principle



### Surface-mount front-door stations with a projection of just 16 mm

The PAK series is the flattest surface-mount station of the compact class projecting only (!) 16 mm. Because of the typical for TCS aluminium sections the size of the surface-mount station is reduced to the size of flush-mount stations. Attractive and hard-wearing metal case incorporates the electronic components.

The PAK series - robust, compact and timeless.

### Article reference numbers

PAK01-EN  
PAK02-EN  
PAK03-EN  
PAK04-EN  
PAK05-EN  
PAK06-EN  
PAK07-EN  
PAK08-EN

Surface-mount station

Number of bell buttons

Standard colours:  
EN: Aluminium anodised nature

protective roof  
PAKDA-EN

#### Further information:

www.tcs-germany.com

online pricelist

access control page 28|29

emergency call NPAK p. 54

customized items page 60|63



Enough space to indicate the name and the business

## Front-door stations audio



PDS01-EN



PDS02-EN + PDT04-EN

# PDS | PDT

### Front-door station series for surface-mount for up to 23 flats

Attractive and extremely hard-wearing metal case made of robust aluminium sections, projecting 20 mm. The product series design consists of the complete station package PDS..., which, combined with the PDT.. additional bell button extension, provides the front-door stations with the required number of bell buttons. Within certain limits the layout of the bell buttons and nameplate labels can be adapted to suit the customers needs.

#### selective performance parameters of the PDS series

- : up to 3 flats
- : surface-mount
- : projection 20 mm
- : nameplate label size:
  - H ranges from 34 mm to 72 mm x W 74 mm
- : metal case made of rugged aluminium sections
- : metal bell buttons with gold-plated and maintenance-free contacts
- : any bell button can be assigned to 2 in-house stations
- : long-life and energy-saving illumination of the nameplate
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : length of call ex works: 56 seconds / adjustable via the Service Device
- : any bell button can be used for light switch on, light symbol attached
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : input current (PDS): I(a) = 0.4 mA, I(P) = 16 mA standby
- : maximum input current (PDS): I(Pmax) = 65 mA
- : operating temperature range: - 20 °C to 50 °C
- : dimensions:
  - H ranges from 128 mm to 204 mm x W 135 mm x D 20 mm

#### selective performance parameters of the PDT

- : for up to 5 flats
- : interconnection of up to 4 PDT extensions to PDS possible (up to 23 flats)
- : input current (PDT): I(a) = 0.4 mA, I(P) = I(Pmax) = 11 mA
- : dimensions:
  - H ranges from 128 mm to 204 mm x W 135 mm x D 20 mm

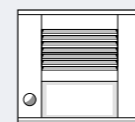
### PI135-xx

#### Info module

- : long-life, energy-saving illumination of the information field
- : trunk connection to PDS / PDT
- : dimensions: H 90 mm x W 135 mm x D 20 mm

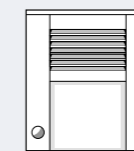
#### PDSA1-xx

H 128 mm  
W 135 mm  
D 20 mm



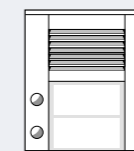
#### PDS01-xx

H 166 mm  
W 135 mm  
D 20 mm



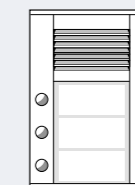
#### PDS02-xx

H 166 mm  
W 135 mm  
D 20 mm



#### PDS03-xx

H 204 mm  
W 135 mm  
D 20 mm



#### PI135-xx

H 90 mm  
W 135 mm  
D 20 mm



#### PDT03-xx

H 128 mm  
W 135 mm  
D 20 mm



#### PDT04-xx

H 166 mm  
W 135 mm  
D 20 mm



#### PDT05-xx

H 204 mm  
W 135 mm  
D 20 mm

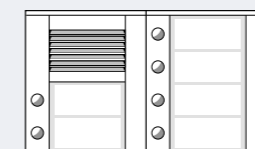


### Examples for the combination of the series PDS and PDT

H 128 mm  
W 270 mm  
D 20 mm



H 166 mm  
W 270 mm  
D 20 mm



H 204 mm  
W 270 mm  
D 20 mm



PI135-EN



PDS01-WS



PDS01-EB



### Extremely large dimensions of the nameplate area

The very standard models of the PDS / PDT series with relatively large nameplate areas offer enough space for long or double names as well as the indication of business. These nameplates allow to put in visitor information and office or opening hours in a very readable form. The dimensions of the nameplate are H 72 x W 74 mm.

At the customers' request the series can be manufactured in all RAL colours.

Article reference numbers

PI135-EN

PDSA1-EN  
PDS01-EN  
PDS02-EN  
PDS03-EN  
PDT03-EN  
PDT04-EN  
PDT05-EN

Front-door stations

Version: Design

Construction:  
S: with complete speaking device  
T: bell tableau

Number of bell buttons

Standard colours:  
EN: Aluminium anodised nature

Special colours:  
We deliver the following special colours: Anodised, painted according to RAL classic color range.

Further information:  
[www.tcs-germany.com](http://www.tcs-germany.com)

[online pricelist](#)  
[access control page 30131](#)

[video page 24125](#)  
[customized items page 60163](#)





# Front-door stations audio



PES08-EN



PES12-EN + PET20-EN

# PES | PET

## Front-door station series for surface-mount for up to 92 flats

Even on a small surface you can easily and clearly install a number of bell buttons. An extremely hard-wearing casing of this surface-mount station projecting 20 mm is a low-cost solution where robustness and high quality are required.

The series is economically orientated and consist of the complete package PES..., which, combined with the PET... additional bell button extension, provide the front-door stations with the required number of bell buttons.

### selective performance parameters of the PES

- : for up to 20 flats
- : surface-mount
- : projection 20 mm
- : nameplate label size: H 15 mm x W 39 mm
- : metal case made of rugged aluminium sections
- : metal bell button with gold-plated and maintenance-free contacts
- : any bell button can be assigned to 2 in-house stations
- : long-life and energy-saving illumination of the nameplate
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : any bell button can be used for light switch on, light symbol attached
- : volume and microphone level manually adjustable
- : on-service door release ex works: 56 seconds, adjustable via the Service Device
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : input current (PES): I(a) = 0.4 mA, I(P) = 16 mA standby
- : maximum input current (PES): I(Pmax) = 65 mA
- : operating temperature range: - 20 °C to 50 °C
- : dimensions:  
H ranges from 128 mm to 280 mm x W 135 mm x D 20 mm

### selective performance parameters of the PET

- Bell button extension for surface-mount for up to 28 flats
- : interconnection of up to 4 PET amplifications to PES possible (up to 92 flats)
- : surface-mount with a projection 20 mm
- : nameplate label size: H 15 mm x W 39 mm
- : input current (PET12-xx - PET20-xx): I(a) = 0.4 mA, I(P) = I(Pmax) = 12 mA
- : input current (PET22-xx - PET28-xx): I(a) = 0.4 mA, I(P) = I(Pmax) = 23 mA

## Dimensions of the series PES and PET

<b>PES04-xx</b> 128 mm x 135 mm x 20 mm	<b>PET12-xx</b> 147 mm x 135 mm x 20 mm	<b>PES14-xx</b> 223 mm x 135 mm x 20 mm	<b>PET22-xx</b> 242 mm x 135 mm x 20 mm
<b>PES06-xx</b> 147 mm x 135 mm x 20 mm	<b>PET14-xx</b> 166 mm x 135 mm x 20 mm	<b>PES16-xx</b> 242 mm x 135 mm x 20 mm	<b>PET24-xx</b> 261 mm x 135 mm x 20 mm
<b>PES08-xx</b> 166 mm x 135 mm x 20 mm	<b>PET16-xx</b> 185 mm x 135 mm x 20 mm	<b>PES18-xx</b> 261 mm x 135 mm x 20 mm	<b>PET26-xx</b> 280 mm x 135 mm x 20 mm
<b>PES10-xx</b> 185 mm x 135 mm x 20 mm	<b>PET18-xx</b> 204 mm x 135 mm x 20 mm	<b>PES20-xx</b> 280 mm x 135 mm x 20 mm	<b>PET28-xx</b> 280 mm x 135 mm x 20 mm
<b>PES12-xx</b> 204 mm x 135 mm x 20 mm	<b>PET20-xx</b> 280 mm x 135 mm x 20 mm		

## Examples for combinations of the series PES and PET

	147 mm x 270 mm x 20 mm
	242 mm x 270 mm x 20 mm
	147 mm x 405 mm x 20 mm
	223 mm x 405 mm x 20 mm
	280 mm x 405 mm x 20 mm



**PES06-EN**  
**On mounting board**  
Depending on the number of flats the mounting boards are manufactured on request according to the corresponding length.



**PES16-EN**  
**With PRODA roof**  
The protecting roof PRODA can be used for all front-door stations of the series PDS and PES in its standard size.

## Robustness as principle concept

Because of aluminium sections the series PES are extremely robust, our customers confirm this day-to-day. The shatter-proof plastic glass of the casing make the front-door stations vandal proof. Because of the economical button order on the plate these series are optimal for conventional flats with a great number of residents.

## Article reference numbers

- PES04-EN
- PES06-EN
- PES08-EN
- PES10-EN
- PES12-EN
- PES14-EN
- PES16-EN
- PES18-EN
- PES20-EN

- PET12-EN
- PET14-EN
- PET16-EN
- PET18-EN
- PET20-EN
- PET22-EN
- PET24-EN
- PET26-EN
- PET28-EN

Front-door stations

Version: Economic

Construction:  
S: with complete speaking device  
T: bell tableau

Number of bell buttons

Standard colours:  
EN: Aluminium anodised nature

Special colours:  
We deliver the following special colours: Anodised, painted according to RAL classic color range.

protective roof  
PRODA-EN



# Front-door stations audio

# PUK

## Front-door station series for flush-mount for up to 30 flats

The attractive TCS PUK series provide flush-mount front-door stations. All PUK units include telephone, loud speakers and bell button wiring which can be quickly and easily connected to the TCS:BUS. The PUK stations are also fitted with the recently developed win:clip™ nameplate plastic glass. This feature combined with hidden screws and the well designed and easily mounted glass cover makes the TCS PUK flush-mount front-door stations vandal proof.

### selective performance parameters

- : for up to 30 flats
- : flush-mount
- : front panel 3 mm
- : win:clip™ principle
- : nameplate label size:
  - H ranges from 19 mm to 53 mm x W 62 mm
- : information field size:
  - H ranges from 19 mm to 37 mm x W 62 mm
- : metal bell button with gold-plated and maintenance-free contacts
- : long-life and energy-saving illumination of the nameplate and the information field
- : shatter-proof nameplate
- : any bell button can be used for light switch on, light symbol attached
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : input current (one column): I(a) = 0.4 mA, I(P) = 23 mA standby
- : input current (two columns): I(a) = 0.8 mA, I(P) = 36 mA standby
- : input current (three columns): I(a) = 1.2 mA, I(P) = 53 mA standby
- : maximum input current (one column): I(Pmax) = 36 mA
- : maximum input current (two columns): I(Pmax) = 40 mA
- : maximum input current (three columns): I(Pmax) = 58 mA
- : operating temperature range: - 20 °C to 50 °C
- : **dimensions one column, front panel:**
  - H ranges from 208 mm to 340 mm x W 150 mm x D 3 mm
- : **flush-mount box:**
  - H ranges from 159 mm to 291 mm x W 126 mm x D 40 mm
- : **dimensions two column, front panel:**
  - H ranges from 208 mm to 340 mm x W 274 mm x D 3 mm
- : **flush-mount box:**
  - H ranges from 159mm to 291 mm x W 250 mm x D 40 mm
- : **dimensions three columns, front panel:**
  - H ranges from 208 mm to 340 mm x W 398 mm x D 3 mm
- : **flush-mount box:**
  - H ranges from 159 mm to 291 mm x W 374 mm x D 40 mm

### PUK08/1-EN

Any of the buttons can be connected to a light switch. A label indicating this light function is included in the pack.  
 Recommendation: Choose a front-door station with more bell buttons than you need at present. This allows you to easily install a further in-house station at any time.

## Overview of different versions and dimensions



	one column Height metal panel (P), W150 mm H. flush-mount-box (B), W126 mm	two columns Height metal panel (P), W274 mm H. flush-mount-box (B), W250 mm	three columns Height metal panel (P), W398 mm H. flush-mount-box (B), W374 mm
1 Knopf	<b>PUK01/1</b> P 208 mm, B 159 mm		
2 Knöpfe	<b>PUK02/1</b> P 208 mm, B 159 mm		
3 Knöpfe	<b>PUK03/1</b> P 208 mm, B 159 mm		
4 Knöpfe	<b>PUK04/1</b> P 208 mm, B 159 mm		
5 Knöpfe	<b>PUK05/1</b> P 230 mm, B 181 mm		
6 Knöpfe	<b>PUK06/1</b> P 252 mm, B 203 mm		
7 Knöpfe	<b>PUK07/1</b> P 274 mm, B 225 mm		
8 Knöpfe	<b>PUK08/1</b> P 296 mm, B 247 mm	<b>PUK08/2</b> P 208 mm, B 159 mm	
9 Knöpfe	<b>PUK09/1</b> P 318 mm, B 269 mm		
10 Knöpfe	<b>PUK10/1</b> P 340 mm, B 291 mm	<b>PUK10/2</b> P 230 mm, B 181 mm	
12 Knöpfe		<b>PUK12/2</b> P 252 mm, B 203 mm	<b>PUK12/3</b> P 208 mm, B 159 mm
14 Knöpfe		<b>PUK14/2</b> P 274 mm, B 225 mm	
15 Knöpfe			<b>PUK15/3</b> P 230 mm, B 181 mm
16 Knöpfe		<b>PUK16/2</b> P 296 mm, B 247 mm	
18 Knöpfe		<b>PUK18/2</b> P 318 mm, B 269 mm	<b>PUK18/3</b> P 252 mm, B 203 mm
20 Knöpfe		<b>PUK20/2</b> P 340 mm, B 291 mm	
21 Knöpfe			<b>PUK21/3</b> P 274 mm, B 225 mm
24 Knöpfe			<b>PUK24/3</b> P 296 mm, B 247 mm
27 Knöpfe			<b>PUK27/3</b> P 318 mm, B 269 mm
30 Knöpfe			<b>PUK30/3</b> P 340 mm, B 291 mm

### win:clip™ principle in four steps



## TCS win:clip™

An inspired and eminently practical solution: The TCS front-door stations with the recently developed win:clip glass have no visible screws. When installing and changing nameplates a specially designed small wrench is used to easily remove and replace the glass. (see illustration)



Flush-mount front-door station

Number of bell buttons

Number of bell button columns

Standard colours:  
 EN: Aluminium anodised nature  
 optional customizing:

## Article reference numbers

one column  
 PUK01/1-EN  
 PUK02/1-EN  
 PUK03/1-EN  
 PUK04/1-EN  
 PUK05/1-EN  
 PUK06/1-EN  
 PUK07/1-EN  
 PUK08/1-EN  
 PUK09/1-EN  
 PUK10/1-EN

two columns  
 PUK08/2-EN  
 PUK10/2-EN  
 PUK12/2-EN  
 PUK14/2-EN  
 PUK16/2-EN  
 PUK18/2-EN  
 PUK20/2-EN

three columns  
 PUK12/3-EN  
 PUK15/3-EN  
 PUK18/3-EN  
 PUK21/3-EN  
 PUK24/3-EN  
 PUK27/3-EN  
 PUK30/3-EN





## Front-door stations audio

# TCU | TCKE

### Built in door loud speaker for up to 144 flats

The door speaker is designed for use behind any front panel and letterbox arrays. A choice of several securing points ensures easy installation in various conditions.

To isolate the microphone in difficult circumstances you can displace it up to 25 cm and 32 further bell buttons can be added with the bell button extension TCKE and the TCU door loud speaker can be connected with it.

### TCU

#### Built in door loud speaker for up to 16 flats

##### selective performance parameters

- : for up to 16 flats
- : installation behind the front panel
- : each bell button can be assigned to 2 in-house stations
- : acknowledgement tone when bell button is pressed
- : length of call ex works: 56 seconds / adjustable via the Service Device
- : bell button can be used for light switch on
- : volume and microphone level manually adjustable
- : microphone can be displaced about 25 cm for decoupling
- : plug-in memory to exchange identical front-door stations
- : on-service door release ex works: 56 seconds adjustable via the Service Device
- : communication during the on-service door release / adjustable via the Service Device
- : 2- resp. 3-wire technique possible
- : 3-wire technique necessary if TOER1 is connected
- : input current: I(a) = 1.2 mA standby
- : operating temperature range: - 20 °C to 50 °C
- : dimensions: H 80 mm x W 109 mm x D 30 mm

### TCKE

#### Built in bell button extension for up to 32 flats

##### selective performance parameters

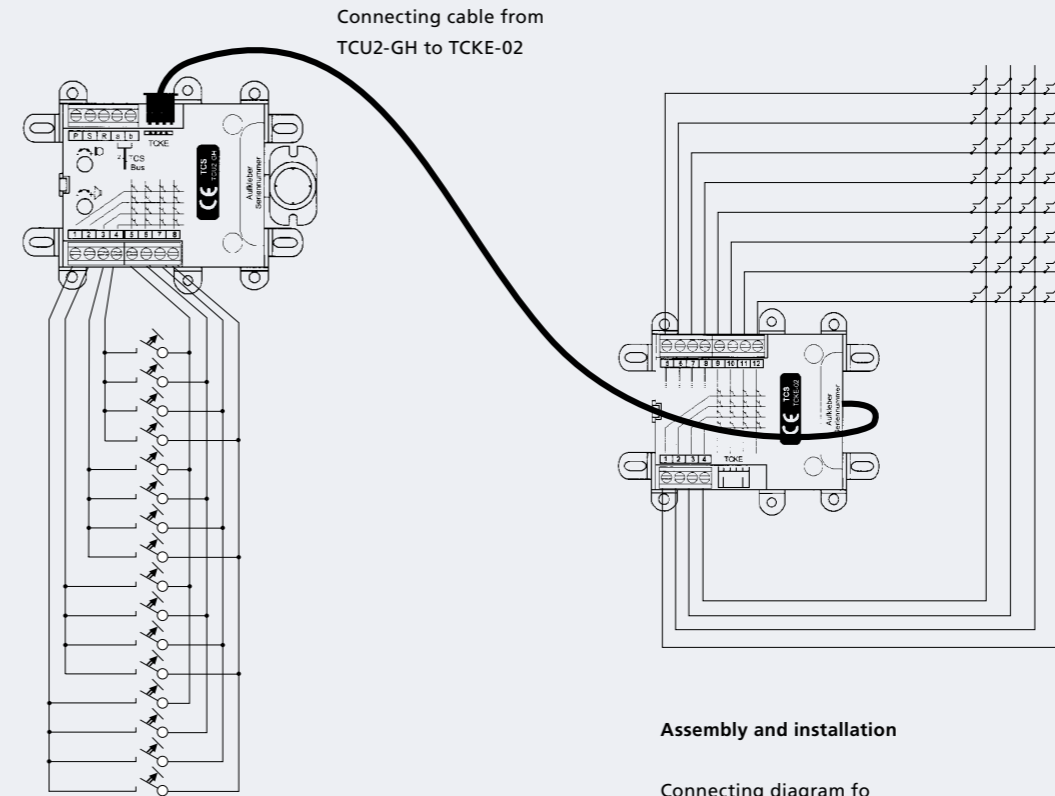
- : for up to 32 flats
- : interconnection of up to 4 TCKE extensions to TCU possible (up to 144 flats)
- : each bell button can be assigned to 1 in-house station
- : bell button can be used for light switch on
- : 2-wire technique
- : input current: I(a) = 1.0 mA standby
- : operating temperature range: - 20 °C to 50 °C
- : dimensions: H 80 mm x W 104 mm x D 25 mm



TCU2-GH



TCKE-02



#### Assembly and installation

Connecting diagram for  
16 bell buttons on TCU2-GH  
32 bell buttons on TCKE-02

Up to 4 TCKE-02 can be switched in series

### 12 point for mounting

To offer TCS-quality independently from our front-door stations the TCU has been developed. The TCU was designed highly flexible for the installation behind various front panels with 12 different fastening points. You can amplify it with the TCKE so that even larger systems can be connected with it.



Article reference numbers

Door loud speaker TCU2-GH

Bell button extension TCKE-02





## Front-door stations audio



Posts VPES16, PDS04, PES16

# Posts

The attractive, compact and sober appearance distinguishes the TCS call and communication posts applicable for all purposes. They can be used as front-door stations as well as information posts.

## Series PSD

Front-door station series, free-standing or surface-mount, for up to 5 flats

### selective performance parameters

- : for up to 5 flats
- : free-standing / surface-mount
- : nameplate label size: H 34 mm x W 74 mm
- : metal case made of rugged aluminium sections
- : metal bell button with gold-plated and maintenance-free contacts
- : any bell button can be assigned to 2 in-house stations
- : long-life and energy-saving illumination of the nameplate
- : shatter-proof nameplate
- : acknowledgement tone when bell button is pressed
- : length of call ex works: 56 seconds / adjustable via the Service Device
- : any bell button can be used for light switch on, light symbol attached
- : volume and microphone level manually adjustable
- : plug-in memory to exchange identical front-door stations
- : electronics interchangeable
- : on-service door release ex works: 56 seconds adjustable via the Service Device
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : operating temperature range: - 20 °C to 50 °C
- : dimensions: H 1636 mm x W 135 mm x D 71 mm

## Series PSE

Front-door station series, free-standing or surface-mount, for up to 20 flats

### selective performance parameters

- : nameplate label size: H 15 mm x W 39 mm
- : any bell button can be used for light switch on, light symbol attached
- : dimensions: H 1636 mm x W 135 mm x D 71 mm

### Examples for standard versions

**PSD1603-EN**  
with large nameplates



**PSE1610-EN**  
with standard key layout and light switch button



### Examples for customized versions

Series PSE  
with ikey-reader for access control



Series PSE  
with customized key layout and light switch button



**At the customer's request call and communication posts can be manufactured for specific purposes. The customer can choose from the following:**

- : height of the post
- : free-standing or surface-mounted
- : with video
- : with access control
- : with special features (e.g. hollow-wall switch box)
- : number of buttons
- : dimensions of the nameplate area

Every post is a customized item. You can find further information in the chapter: customized items on page 62/63.

## Flexible

A free-standing post is advantageous for entrances without conventional options for mounting.

The posts can be fitted with the standard panels PDS and PES and various bell button orders. Generally, the total height can be chosen. It may be shaped individually as audio- and / or video version. In addition, an access control as well as special installations may be integrated via the installation of switch cabinets.

Article reference numbers

Posts PSD  
1 column  
PSD1601-EN  
PSD1602-EN  
PSD1603-EN  
PSD1604-EN  
PSD1605-EN

Posts PSE  
2 column  
PSE1604-EN  
PSE1606-EN  
PSE1608-EN  
PSE1610-EN  
PSE1612-EN  
PSE1614-EN  
PSE1616-EN  
PSE1618-EN  
PSE1620-EN

Post PSD  
Post PSE

Height:  
1636 mm

Number of  
bell buttons

Standard colours:  
EN: Aluminium anodised nature

Special colours:  
We deliver the following special colours: Anodised, painted according to RAL classic color range.



## Front-door stations audio

# Displays

As comprehensive product family the display front-door stations provide advanced communication in the entrance areas. The typical TCS design with flat metal surfaces and robust structures mediates security, long-life feature and user-friendly application. According to customer's request the display stations are available with modules for specific applications: with keyboard or jog wheel, with a camera module, with access control or other modules which can be integrated. Even the front panel dimensions can be customized.

Article  
reference  
numbers

AD1  
LED, vertical,  
12 keys keyboard,  
up to 60 flats  
ADU14011-0010

AD2  
LED, vertical,  
12 keys keyboard,  
up to 200 flats  
ADU24013-0010

AD3  
LCD, horizontal,  
jog wheel,  
up to 200 flats  
ADU31012-0010

LCD, horizontal,  
16 keys keyboard,  
up to 100 flats  
ADU33012-0010

LCD, vertical,  
jog wheel,  
up to 100 flats  
ADU32012-0010

LCD, vertical,  
16 keys keyboard,  
up to 100 flats  
ADU34012-0010

Surface-mount,  
stainless steel,  
LCD, horizontal,  
16 keys keyboard,  
up to 100 flats  
ADA33012-0030

For further information on  
the articles please refer to  
the online pricelist or ask our  
hotline for information.



### AD1 Front-door station series with 7-segment display for flush-mount for up to 60 respectively 200 flats

The AD1 is a front-door station with code-lock function and numbered keypad suitable for housing complexes with up to 60 or 200 flats. Every residence can be called via a calling number with up to 4 digits. The door release is activated when you enter one of the three possible codes.

#### Code-lock function

When you enter a 4-digit code a door release order is being submitted via the :BUS. To enable this feature a door release relay TOER1-EB has to be connected to the device or ensure that a BUS-relay TOER2-EB has been trained on the AS-address of the device. These relays activate the door release in case of release.



### AD2 Front-door station series with LC-display for flush-mount for up to 200 flats

#### selective performance parameters

- : for up to 200 flats
- : flush-mount
- : front panel 3 mm
- : text LC-display, two rows, height of signs character 8 mm
- : code lock function (number of codes: 3)
- : choice of the station to be called via an alphabetically sorted resident's list or via the target number's entry (apartment no.)
- : by pressing the bell button symbol the selected station can be called
- : acknowledgement tone when bell button is pressed
- : parameters and data adjustable via the AD1/AD2 configuration tool
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : operating temperature range: - 20 °C to 50 °C
- : dimensions:
  - front panel: H 320 mm x W 150 mm x D 3 mm
  - flush-mount box : H 296 mm x W 128 mm x D 40 mm



### AD3 Front-door station series with graphic LC-display for surface-mount / flush-mount for up to 500 flats

Installing the TCS display front-door stations you no longer have large, confusing bell panels with countless buttons and ever out-of-date or unreadable labels. Now up to 500 names can easily and lucid be displayed.

Thus this compact solution is highly convenient compared to ordinary front-door stations. In addition, the AD3 offers a language selection. Its hard-wearing and vandal-proof design is available in a variety of versions which combine low maintenance with multi-functional features.

#### selective performance parameters

- : for up to 500 flats
- : surface-mount / flush-mount
- : front panel 3 mm
- : graphic LC-display, 128 x 128 dots
- : jog wheel / key pad with 16 keys to enter the name
- : code lock function (number of codes: one code with 6 digits for all residents, additionally it is possible to assign one individual code with 4 digits to each resident)
- : acknowledgement tone when bell button is pressed
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : input current: I(a) = 0.4 mA, I(P) = 137 mA standby
- : maximum input current : I(Pmax) = 224 mA
- : operating temperature range: - 20 °C to 50 °C
- : dimensions horizontal:
  - front panel: H 200 mm x W 420 mm x D 3 mm
  - flush-mount box: H 180 mm x W 400 mm x D 50 mm
- : dimensions vertical:
  - front panel : H 420 mm x W 200 mm x D 3 mm
  - flush-mount box: H 400 mm x W 180 mm x D 50 mm



An AD3 configuration tool can be used for writing, updating and transferring resident's data from the PC to the display front-door station and allows tele-servicing. The extension package PCADD21/22 with a signal level converter to cover distances between 15 m and 1500 m.

## manuell data entry

A keyboard is included to the delivery of the AD3 display front-door station. The keyboard enables to link yourself to the connection, which lays behind the round logo label so that you can change the data easily and directly and follow the changes you are doing contemporarily.



## Front-door stations audio

# Touch screen

The display front-door station AD4 is the appealing information and communication point in the entrance area. Representative, multi-lingual and with a variety of useful functions for communication with the visitor and for providing information. The AD4 helps you to manage sophisticated residential houses and apartments as easily as a large number of office or business house users. Its coloured touch screen with a size of 12.1" is noticeable and placed behind a shock and scratch-resistant safety glass in the centre of a robust high-grade steel front. Long-life electronic devices and a thermostatic controlled heating for low temperatures secure a persisting function. The user quickly finds his target address via the touch screen and the intuitively constructed menu. Now information screens can refer the visitor to the housing or office situation, attendance times; layout plans or other conditions.

The stations may be customized user-specifically in the frame given by the customer's individual desires and requirements. The integration of video cameras, single call keys and purpose-built card readers can be considered, for instance. This exceptional and high-quality front-door station is also part of the TCS product system and can be combined with all components. Thus modern and comfortable audio and video communication systems can be realized with the indoor-stations IMM and VM(X).

### selective performance parameters

- : for up to 1000 flats
- : surface-mount / flush-mount
- : surface-mount: projection: 123 mm
- flush-mount: front panel: 8 mm
- : color touch screen 12.1"
- : touch screen with large virtual key fields
- : front vitrification, IP 65 rated
- : multi-lingual operator guidance
- : additional screens for user information, e.g., visiting hours, site plans, advertising
- : optional: alert feature in case of danger
- : code lock function (number of codes: six codes with 6 digits for all residents, additionally it is possible to assign one individual code with 4 digits to each resident)
- : material: stainless steel (ES)
- : 3-wire technique necessary
- : input current: I(a) = 0.4 mA standby
- : input voltage: 230 V, 50 / 60 Hz
- : operating temperature range: - 20 °C to 50 °C
- : avoid direct solar radiation
- : dimensions surface-mount: H 480 mm x W 760 mm x D 123 mm
- : dimensions flush-mount: front-panel: H 480 mm x W 760 mm x D 8 mm flush-mount box : H 450 mm x W 730 mm x D 120 mm



AD4 flush-mount



AD4 surface-mount with GFA-key



Front-door station AD4 with video and access control module, concierge call, mail delivery lock and danger alert



AD4 with engraving and fire brigade switch lock

The selection can be carried out via an alphabetical list of names. Entering the first letter of the requested name a pre-selection is carried out. Afterwards the exact target name can be selected via a scroll function. The name is displayed in a virtual nameplate with a bell button symbol. Operating the virtual bell button the call is being triggered.



### Quick and simple display

Compared to the confusing large bell panels with many buttons the display front-door stations are the ideal solution. Names can easily be found due to the alphabetical order and the changing of names can be managed easily and in a professional way even in complex systems. With the included keyboard you can link yourself to the stored resident list of the station via the included interface. You can change it as shown on the display - quickly, simply and easily.

Article reference numbers

Standard product with horizontal touch screen  
ADU45015-0030

The AD4 is generally customized and each unit has different features also in combination with other units.

Below some examples:

With horizontal touch screen and danger alert lock  
ADU46015-0030

With horizontal touch screen and black/white video  
ADU45116-0030

With horizontal touch screen and access control  
ADU45045-0030





If the customer requires a video front-door station, as shown on this and the following pages, you can choose between surface-mount and flush-mount. It is also possible to install a video module in free-standing posts. In addition, an external camera as well as a camera module can be installed.

## Front-door stations video: VPDS, VPES, VPUK

Article reference number

Surface-mount:

Profi-design  
VPDS01-EN  
VPDS02-EN  
VPDS03-EN

Profi-economic  
VPES04-EN  
VPES06-EN  
VPES08-EN  
VPES10-EN  
VPES12-EN  
VPES14-EN  
VPES16-EN

Flush-mount

1 column  
VPUK01/1-EN  
VPUK02/1-EN  
VPUK03/1-EN  
VPUK04/1-EN  
VPUK05/1-EN  
VPUK06/1-EN  
VPUK07/1-EN  
VPUK08/1-EN

2 columns  
VPUK08/2-EN  
VPUK10/2-EN  
VPUK12/2-EN  
VPUK14/2-EN  
VPUK16/2-EN

3 columns  
VPUK12/3-EN  
VPUK15/3-EN  
VPUK18/3-EN  
VPUK21/3-EN  
VPUK24/3-EN



### VPDS / PDT

Front-door station series with video for surface-mount for up to 22 flats

The VPDS includes all performance parameters of the series PDS audio area. In addition, the front-door station in the video area includes an integral camera.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL and infra-red light
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.7$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$
- : recommended mounting-height: 1.6 m
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique
- : input current (black/white):  $I(a) = 2,8$  mA,  $I(P) = 150$  mA standby
- : maximum input current (black/white):  $I(P \text{ max}) = 260$  mA
- : operating temperature range:  $-20$  °C to  $50$  °C
- : dimensions:  
H ranges from 204 mm to 242 mm x W 135 mm x D 20 mm



#### Video in 6-wire technique

TCS video installations are based on the three basic functions: TCS:BUS for audio and control, video transmission and DC supply. Each function uses one cable pair, so that 6 wires are required in total. TCS is offering with that system a multiple - benefit technology.

All video and audio components are fully compatible to each other, so you can mix or replace audio and video components as desired. Also, the wiring principles are always the same, independent of audio or video, black and white or colour, scale or complexity of the installation and provide an important advantage for the installer and the investor, too.

For setting-up the system or in case of troubleshooting, this system is offering another valuable benefit: The strictly divided functionality can be examined easily and logically because the installer can check the three basic functions separately with dedicated check tools.

After all, the system is capable to decrease the number of components used due technical reasons.



### VPES / PET

Front-door station series with video for surface-mount for up to 88 flats

The VPES includes all performance parameters of the series PES audio area. In addition, the front-door station in the video area includes an integral camera.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL and infra-red light
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.7$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$
- : recommended mounting-height: 1.6 m
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique
- : input current (black/white):  $I(a) = 2.8$  mA,  $I(P) = 150$  mA standby
- : maximum input current (black/white):  $I(P \text{ max}) = 260$  mA
- : operating temperature range:  $-20$  °C to  $50$  °C
- : dimensions:  
H ranges from 166 mm to 280 mm x W 135 mm x D 20 mm



### VPUK

Front-door station series with video for flush-mount for up to 24 flats

The VPUK includes all performance parameters of the series PUK audio area. In addition, the front-door station in the video area includes an integral camera.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : camera field size: H 40 mm x W 72 mm
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$
- : recommended mounting-height: 1.6 m
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique
- : dimensions of front panel with one column:  
H ranges from 252 mm to 340 mm x W 150 mm x D 3 mm



## Front-door stations video: Display stations with video, video posts, external and integral cameras



### AD1 and AD2 with video

Front-door station series with video for flush-mount for up to 60 respectively 200 flats

Depending on the application function modules are fitted in the display stations. In addition to the keyboard you can also choose an access control.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$ , recommended mounting-height: 1.6 m
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique



### VKA10 and VKA10-color

Camera for surface-mount outside

Suitable for high-differing light conditions.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : manual swivelling (ball joint: horizontal  $180^\circ$  / vertical  $180^\circ$ )
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.1 Lux
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique
- : input current (black/white):  
 $I(a) = 0,0$  mA,  $I(P) = I(P_{max}) = 162$  mA
- : dimensions: diameter: 57 mm, length 110 mm  
camera base: H 76 mm x W 135 mm x D 20 mm



### AD3 with video

Front-door station series with video for surface-mount and flush-mount for up to 500 flats

Depending on the application function modules are fitted in the display stations. In addition to the 16 keys keyboard or a jog wheel you choose a camera module black/white or color video

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique



### VKM10 and VKM10-color\*

Camera, built in, outside

Designed for use behind any front panel and letterbox arrays.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : manual panning and fitting  $\pm 7^\circ$  H / V (in combination with the VKR-mounting-frame)
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.2 Lux
- : based on the TCS-video system in a 6-wire technique
- : input current (black/white):  
 $I(a) = 0,0$  mA,  $I(P) = I(P_{max}) = 112$  mA
- : dimensions: H 80 mm x W 109 mm x D 35 mm



### Posts VPSD and VPSE

Front-door station series with video free-standing or surface-mount for up to 5 flats

The VPSD and the VPSE include all performance parameters in the audio area of the PSD and PSE. In addition, the posts in the video area include an integral camera.

#### selective performance parameters

- : black/white-camera CCD-sensor 380 TVL / color-camera CCD-sensor 420 TVL
- : color-camera: automatic day/night switch
- : focal length:  $f = 3.6$  mm and photo sensitivity 0.2 Lux
- : diagonal capture  $90^\circ$
- : video output 1 Vpp composite video balanced
- : based on the TCS-video system in a 6-wire technique
- : in total: H 1636 mm x W 135 mm x D 71 mm



### VKR10-xx

Mounting-frame for VKM10 and VKM10-color

The mounting frame is used in combination with the integral camera VKM10(-EB) and VKM10-color.

- : surface-mount
- : projection 5 mm
- : metal case made of rugged aluminium sections
- : material / colours: aluminium anodised nature (EN), white painted (WS)
- : dimensions (in total): H 82 mm x W 78 mm x D 5 mm
- : dimensions (without the frame outside):  
H 76 mm x W 72 mm

Article reference number

AD1 with video  
LED, vertical,  
12 keys keyboard,  
60 flats  
black/white video  
ADU14111-0010

AD2 with video  
LED, vertical  
12 keys keyboard,  
200 flats  
black/white video  
ADU24113-0010

AD3 with video  
LED, horizontal  
Jog wheel,  
100 flats  
black/white video  
ADU31112-0010

LED, horizontal,  
16 keys keyboard,  
100 flats  
black/white video  
ADU33112-0010

LED vertical  
Keyboard,  
100 flats  
black/white video  
ADU32112-0010

Surface-mount camera  
VKA10-GH/02

Built in cameras  
black/white  
VKM10-EB  
\*color  
FVK2200-0300

Mounting frame  
VKR10-EN  
VKR10-WS



## Front-door access control: iPAKL | tPAKL, AZU30000, tLeser-GH



iPAKL



tPAKL



AZU30000



tLeser-GH

Whether it is for your own garage door or entry to the CEO's suite of offices our access control system offers the ideal solution to every operating range. Entry is possible at the front-door station or key-reading device using electronic keys. The units are either fitted with a contact (ikey reader) or a non-contact (tCard or tKey reader) system.

### iPAKL

**Station for surface-mount for the access control**

- : to read iKeys
- : surface-mount
- : projection 16 mm
- : win:clip™ principle
- : information field size: H 61 mm x W 64 mm
- : metal case made of rugged aluminium sections
- : long-life and energy-saving illumination of the information field
- : shatter-proof nameplate
- : for up to 89 iKeys in the decentralized running (manual read-in)
- : for up to 250 iKeys in the decentralized running (software supported)
- : for up to 1000 iKeys in the centralized running (PC-administration)
- : potential-free relay contact (closing contact): 24 V DC / 2 A
- : optical and acoustic acknowledgement when key is read in
- : max. loop resistance: 20 or 60 ohm / can be activated
- : material / colours: aluminium anodised nature (EN)
- : 3-wire technique necessary
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H 153 mm x W 104 mm x D 16 mm

### tPAKL

**Station for surface-mount for the access control**

- : to read tKeys and tCards
- : potential-free relay contact (two-way contact): 24 V DC / 2 A
- : unlighted information field
- : ... moreover the performance parameters of iPAKL are valid: optical and acoustic acknowledgement when key is read

### AZU30000

**Built in reader for iKeys**

It is an integral module for reading transponders of the TCS access control. It has been designed for the installation into switch cabinets with a suitable frame.

### tLeser-GH

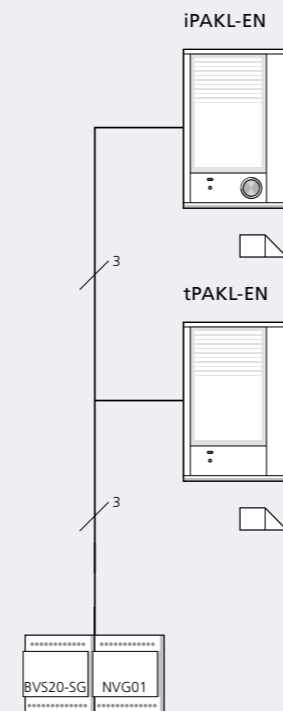
**Built in reader for tKeys/tCards**

It is an installation module for reading the transponder of the TCS access control. It was designed to install the front-door stations PUK, AD, posts and behind any front panel.

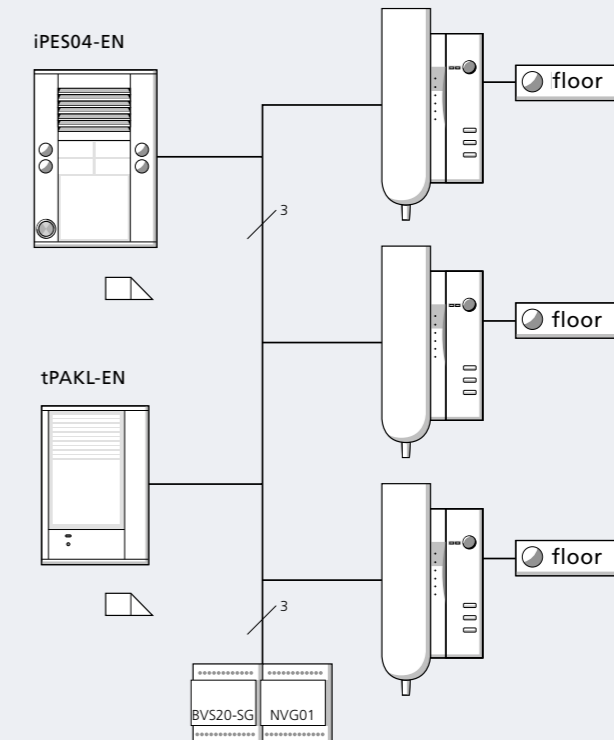
## User Software „Access control“

User program for the central access control, see also page 56

Simple access control with up to 4 readers



Access control with a TCS:BUS system



Types of keys



iKey



tKey



tCard

### The alternative solution for locking systems

Almost every front-door station can be combined with TCS access control, which complement the door release with electronic keys rather release the door with conventional keys of ordinary cylinder locking systems.

The advantage: in case of loss the electronic key may easily be replaced by a new one and without great expense, without having to change the entire locking system.

The lost key is only being deleted from the storage and hence it is no longer authorized for access. Instead the extra key is being read in, functions like the previous one and nobody has to waive security.



Article reference number

Readers, surface-mount  
iPAKL-EN  
tPAKL-EN

Reader, built in  
AZU30000-0610

On request:

tLeser-GH  
built in transponder reader

iPUKxx/1-EN  
tPUKxx/1-EN  
compact flush-mount  
front-door station  
1 column with iKey or  
transponder reader

iPUKxx/2-EN  
tPUKxx/2-EN  
compact flush-mount  
front-door station  
2 columns with iKey or  
transponder reader

iPUKxx/3-EN  
tPUKxx/3-EN  
compact flush-mount  
front-door station  
3 columns with iKey  
transponder reader

iVPUKxx/1-EN  
tVPUKxx/1-EN  
video front-door station  
1 column with iKey or  
transponder reader

iVPUKxx/2-EN  
tVPUKxx/2-EN  
video front-door station  
2 columns with iKey or  
transponder reader

iVPUKxx/3-EN  
tVPUKxx/3-EN  
video front-door station  
3 columns with iKey or  
transponder reader





## Front-door access control: iPDS | tPDS, iPES | tPES



iPDS01-EN

### iPDS

**Front-door-station series with access control for surface-mount for up to 3 flats and iKeys**

#### selective performance parameters

The performance parameters consist of the performance parameters of the series PDS in addition to the following:

- : nameplate label size:  
H ranges from 34 mm to 72 mm x W 74 mm
- : information field size: H 110 mm x W 74 mm
- : for up to 89 iKeys in the decentralized running (manual read-in)
- : for up to 250 iKeys in the decentralized running (software supported)
- : for up to 1000 iKeys in the centralized running (PC-administration)
- : potential-free relay contact (closing contact): 24 V DC / 2 A
- : optical and acoustic acknowledgement when key is read
- : max. loop resistance: 20 or 60 ohm / can be activated
- : operating temperature range: -20 °C to 50 °C
- : dimensions:  
H ranges from 280 mm to 318 mm x W 135 mm x D 20 mm



iPES06-EN

### iPES

**Front-door station series with access control for surface-mount for up to 10 flats and iKeys**

#### selective performance parameters

The performance parameters consist of the performance parameters of the series PES in addition to the following:

- : nameplate label size: H 15 mm x W 39 mm
- : information field size: H 91 mm x W 84 mm
- : for up to 89 iKeys in the decentralized running (manual read-in)
- : for up to 250 iKeys in the decentralized running (software supported)
- : for up to 1000 iKeys in the centralized running (PC-administration)
- : potential-free relay contact (closing contact):  
24 V DC / 2 A
- : optical and acoustic acknowledgement when key is read
- : max. loop resistance: 20 or 60 ohm / can be activated
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H ranges from 242 mm to 300 mm x  
W 135 mm x D 20 mm



tPDS02-EN

### tPDS

**Front-door station series with access control for surface-mount for up to 3 flats and tKeys/tCards**

#### selective performance parameters

The performance parameters consist of the performance parameters of the series PDS in addition to the following:

- : nameplate label size:  
H ranges from 34 mm to 72 mm x W 74 mm
- : information field size: H 110 mm x W 74 mm
- : for up to 89 tKeys/tCards in the decentralized running (manual read-in)
- : for up to 250 tKeys/tCards in the decentralized running (software supported)
- : for up to 1000 tKeys/tCards in the centralized running (PC-administration)
- : potential-free relay contact (two-way contact): 24 V DC / 2 A
- : optical and acoustic acknowledgement when key is read
- : max. loop resistance: 20 or 60 ohm / can be activated
- : operating temperature range: -20 °C to 50 °C
- : dimensions:  
H ranges from 280 mm to 318 mm x W 135 mm x D 20 mm



tPES06-EN

### tPES

**Front-door station series with access control for surface-mount for up to 10 flats and tKeys/tCards**

#### selective performance parameters

The performance parameters consist of the performance parameters of the series PES in addition to the following:

- : nameplate label size: H 15 mm x W 39 mm
- : information field size: H 91 mm x W 84 mm
- : for up to 89 tKeys/tCards in the decentralized running (manual read-in)
- : for up to 250 tKeys/tCards in the decentralized running (software supported)
- : for up to 1000 tKeys/tCards in the centralized running (PC-administration)
- : potential-free relay contact (two-way contact):  
24 V DC / 2 A
- : optical and acoustic acknowledgement when key is read
- : max. loop resistance: 20 or 60 ohm / can be activated
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H ranges from 242 mm to 300 mm x  
W 135 mm x D 20 mm

Article reference number

Series i/tPDS  
iPDS01-EN  
iPDS02-EN  
iPDS03-EN

tPDS01-EN  
tPDS02-EN  
tPDS03-EN

Series i/tPES  
iPES04-EN  
iPES06-EN  
iPES08-EN  
iPES10-EN

tPES04-EN  
tPES06-EN  
tPES08-EN  
tPES10-EN

on request:

tPESxx-EN  
Front-door station Profi Economic with transponder reader

tPDSxx-EN  
Front-door station Profi Design with transponder reader

iPETL-EN  
tPETL-EN  
Station Profi Economic with iKey or transponder reader

iVPDSxx-EN  
tVPDSxx-EN  
video front-door station series VPES with iKey or transponder reader

iVPESxx-EN  
tVPESxx-EN  
video front-door station series VPDS with iKey or transponder reader



## In-house stations audio

# ISH1030

### Door-telephone for the business area

The ISH1030 is a door-telephone for the business area fitted with a lot of convenient features. It is the best alternative to reduce costs. Just compare!  
It provides all basic logic functions of modern door telephone such as continuous control of the ring tone volume, choice of the ring tone, status display via two LEDs, distinctive ring tones of house and flat door and ring tone deactivation. It can be combined in any way within one system.  
The ring tone speaker with a diameter of 66 mm guarantees a high-fidelity ring tone with a high-tone intensity at any time. Different ring tones can be adjusted individually to the sense of hearing and special conditions.  
The ISH1030 was fitted with additional convenient features and it replaces the TTS25 as well as the TTS30. The type TTP30 is replaced by the new in-house station program IMM.

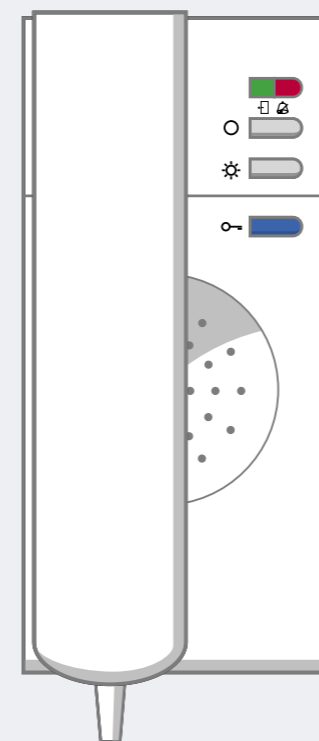
### selective performance parameters

- : surface-mount / stand-alone (desktop accessory)
- : duplex communication
- : casing made of antistatic and recyclable plastic
- : blue-coloured door release button
- : light switch button
- : 1 control key ex works: configured for control function
- : choice of 13 melodious ring tones
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : ring tone volume / manually adjustable
- : ring tone mute with optical display
- : optical display of a busy line
- : audio privacy function and automatic call cut-off
- : audio in-house stations and video in-house stations can be combined within one system
- : 2-wire technique
- : input current: I(a) = 1.6 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.2 mA standby
- : maximum input current: I(Pmax) = 67 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 212 mm x W 94 mm x D 65 mm

### TUS2-ZB

#### Desktop accessory for the ISH1030

- : base made of aluminium
- : connection cable 3m with a 6-pole modular connector
- : connecting socket UAE8 or RJ45 provided by customer
- : color: aluminium anodised nature (EN)
- : dimensions: H 185 mm x W 67 mm x D 26 mm



### Functions of the ISH1030

#### The green LED

- 1) The green LED functions as optical call display and distinguishes the calling source door-call or flat-door (a call is displayed by the LED illumination, the flat-door is not).
- 2) A triple blinking displays an engaged line.

#### The red LED

- When the red LED lights up it is the optical display that the ring tone is deactivated.

#### Key functions

- Function key**  
Using this key different functions can be activated, e.g. external illumination, the garage door or alarm system on/off.
- Light switch button**  
Using this button the staircase-light can be switched on.
- Door release button**  
Using this button you can open the front-door.



Desktop accessory TUS2-ZB



ISH1030 with TUS2-ZB



### Operativeness from the very beginning

Already the door-telephone ISH1030 in the standard version includes performance parameters such as call cut off with LED display, the acoustical and optical call display, the display of busy line and the step-less control of the ring tone volume.  
In addition, the ISH1030 is able to signalise up to 3 call sources via different ring tones.

Article reference number

door-telephone ISH1030-0040

Desktop accessory TUS2-ZB



## In-house stations audio

# TC-series

The in-house stations distinguish through a compact construction for the surface-mount. When a call is received the bell rings and the line to the front-door can be set by pressing the switch button speak / listen. When pressing and releasing the button you can control communication with the front-door. The communication link is automatically broken when the button is pressed again. You have a choice of 13 ring tones for front-door call and flat-door call. The intercom system can be used as an alternative to the door telephones. Providing the same standard of convenience they offer a suitable solution to the demand for more compact devices without handset.

Article reference number

Stations for simplex communication  
TC2000-RW  
TC20P-RW

Signal units  
TC20L-RW  
TC20LS-RW

Desktop accessory  
TC20T-RW



### TC2000-RW

#### Station for simplex communication

- : surface-mount / stand-alone (desktop accessory)
- : simplex communication
- : door release button
- : light switch button
- : switch button speak / listen (push to talk)
- : choice of 13 melodious ring tones
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : ring tone volume / manually adjustable
- : ring tone mute with optical display
- : optical display of a busy line
- : audio privacy function and automatic call cut-off
- : audio in-house stations and video in-house stations can be combined within one system
- : 2-wire technique
- : input current: I(a) = 1.0 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 0.6 mA standby
- : maximum input current: I(Pmax) = 40 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 170 mm x W 90 mm x D 26 mm



### TC20L-RW

#### Signal unit for additional reproduction of calls

- : 2 parallel calls can be activated
- : surface-mount / stand-alone (desktop accessory)
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : for grouped alerting and grouped announcement
- : single announcement after the internal call / can be activated
- : 2-wire technique
- : input current: I(a) = 1.0 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.5 mA, I(P) = 1.3 mA standby
- : maximum input current: I(Pmax) = 40 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 170 mm x W 90 mm x D 26 mm



### TC20LS-RW

#### Signal unit for the additional optical reproduction of calls

- : 2 parallel calls can be activated
- : surface-mount / stand-alone (desktop accessory)
- : with optical display for grouped alerting and grouped announcement
- : single announcement after the internal call / can be activated
- : 2-wire technique
- : input current: I(a) = 0.9 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.2 mA standby
- : maximum input current: I(Pmax) = 72 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 170 mm x W 90 mm x D 26 mm



### TC20P-RW

#### Station for simplex communication with extended functions

- : surface-mount / stand-alone (desktop accessory)
- : simplex communication
- : door release button, flat-door release can be activated
- : light switch button
- : 3 function keys ex works: configured for control function / alternate allocation internal call, automatic door release, redirecting
- : switch button speak / listen (push to talk)
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : acoustic call distinction for two doors
- : one parallel call can be activated
- : 2-wire technique
- : input current: I(a) = 1.0 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.5 mA, I(P) = 1.3 mA standby
- : maximum input current: I(Pmax) = 40 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 170 mm x W 90 mm x D 26 mm



### TC20T-RW

#### Desktop accessory for TC-series

- : desktop made of plastic
- : connecting cable 3 m with a 6-pole modular connector
- : color: pure white
- : dimensions: H 56 mm x W 36 mm x D 8 mm





## In-house stations audio

# IMM

Clear casing shapes and a simple operating distinguish the attractive appearance of the new TCS in-house series. Functional design of the single device perfectly fits to the ergonomic design of the handset. Straight and modest shapes are the characteristics of these items.

### IMM1000

#### In-house-telephone for the living area

The IMM1000 meets all requirements for a modern, user-friendly and functional house-telephone. The change of the ring tone volume, the selection of ring tones, the selection of distinctive ring tones for front-door/flat-door/internal calls and the ring tone mute are compulsory. The display of the bell call with time-saving call storage via a green LED is a big advantage.

A red LED lights up when the ring tone mute is activated. In addition, the IMM1000 offers the possibility to install customized features such as call signal for additional devices. This possibility, the compact construction and the clear design enable to use the system in a variety of applications and in a flexible way in the housing and business area.

### IMM1100

#### In-house station for the living area and business area

The clear design and the all-purpose features provide a highly flexible use of the in-house station IMM1100 in a variety of applications and circumstances - whether it is for the in-house telephone with extended features for internal communication, control and switch functions in the domestic area, for universal concierge solutions or for user-friendly central communication and control.

The system provides the same features like the IMM1000. In addition, the function key module next to it offers a description field. Next to each of the 10 buttons an LED is assigned to each feature display. The buttons and the LED can be set simply and without auxiliary devices for frequently required basic functions of the building communication.



IMM1000



IMM1100



Desktop accessory for in-house telephone IMM1000



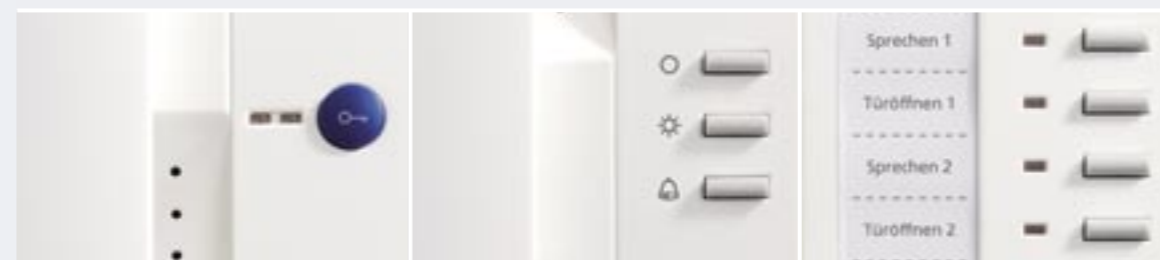
Desktop accessory for in-house station IMM1100

#### selective performance parameters of the IMM1000

- : surface-mount / stand-alone (desktop accessory)
- : blue-coloured door release button, flat-door release can be activated
- : light switch button
- : 1 function key (circle symbol) ex works: configured for control function / alternate allocation: internal call, automatic door release, redirecting
- : choice of 13 melodious ring tones
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : acoustic call distinction for 2 doors
- : 1 parallel call can be activated
- : 2-wire technique
- : input current: I(a) = 2.1 mA standby
- : 3-wire technique possible
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.7 mA standby
- : maximum input current: I(Pmax) = 78 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 215 mm x W 97 mm x D 43 mm

#### Function of the 10 keys of the IMM1100

- In-house station for the living area and the business area
- : specific internal call (connection between in-house stations)
- : connection to a specific front-door
- : specific door release (selection of one front-door out of several front-doors to open this door)
- : redirecting
- : control function
- : status indication, sensor with a binary input
- : alternate control function (on / off)



#### An innovative design for the in-house area

IMM is the name of the new design line in the in-house area. Ergonomic and compact are the outstanding features of the in-house-telephone and the in-house station. Both of the units combine a high-grade functional feature with the most user-friendly characteristics. The IMM1100 makes it possible to meet various customer's requirements.

Article reference number

In-house-telephone IMM 1000 IMM1000-0140

In-house station IMM 1100 IMM1100-0140

Desktop accessory the IMM1000 ZIT1300-0010

Desktop accessory the IMM1100 ZIT1301-0010

Extension module

Call relays TRE2-EB See page 47



## In-house stations video

# VME30



VME30

### Video in-house station for council housing

See for yourself.

The TCS video system is easy to plan, to install and to operate. The system consists of 3 components (front-door station with built in camera, video in-house station, video power supply and control unit) and can be adapted to suit a detached family home or a large-scale block of flats. For the different modes of installation suitable power distributors for both, one gang box and DIN-rail-mounted units, are available. The system is installed using a 6-wire :BUS which transmits the video and sound signals and all control information as well as supplying all units with power. Large systems can be divided into different sections.

These may require additional power supply and control units. By integrating the video component into the TCS:BUS system it becomes possible to easily control individual cameras and video in-house stations within the system.

### selected performance parameters

- : monitor black/white
- : screen diagonal 4"
- : resolution black/white: more than 420 TVL
- : surface-mount or flush mount (flush-mount box and mounting-frame VM30-UP required)
- : duplex communication
- : based on a the TCS-video system in a 6-wire technique
- : casing made of antistatic and recyclable plastic
- : blue-coloured door release button
- : The function and control key can be activated and configured for internal calls via jumpers. Addresses are factory preset.
- 3 VME30 are able to establish internal communication to each other at maximum.
- : light switch button
- : ring tone OFF button with optical display
- : 3 non-adjustable ring tones for front-door, flat-door and internal call
- : ring tone volume / manually continuously adjustable
- : brightness / manually continuously adjustable
- : connector for the floor-switch button included in the device
- : audio and video privacy function and automatic call cut-off
- : audio in-house stations and video in-house stations can be combined within one system
- : video signal input balanced 1 Vpp Composite Video
- : colour: white
- : input current: I(a) = 0.4 mA, I(P) = 5 mA standby
- : maximum input current: I(Pmax) = 400 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 222 mm x W 163 mm x D 70 mm

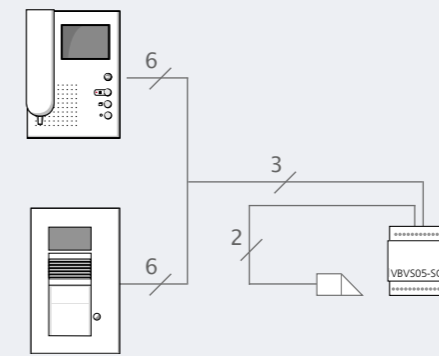
- Door release button**  
Using this button you can open the front-door.
- Red light**  
Red Light on indicates ringtone mute activated.
- Function key**  
to switch on monitor and switch between different cameras
- Control key**  
Using this key you can e. g. trigger bus relays or establish a concierge call (doorman).

The function and control key can be activated and configured for internal calls via jumpers. Addresses are factory preset. 3 VME30 are able to establish internal communication to each other at maximum.

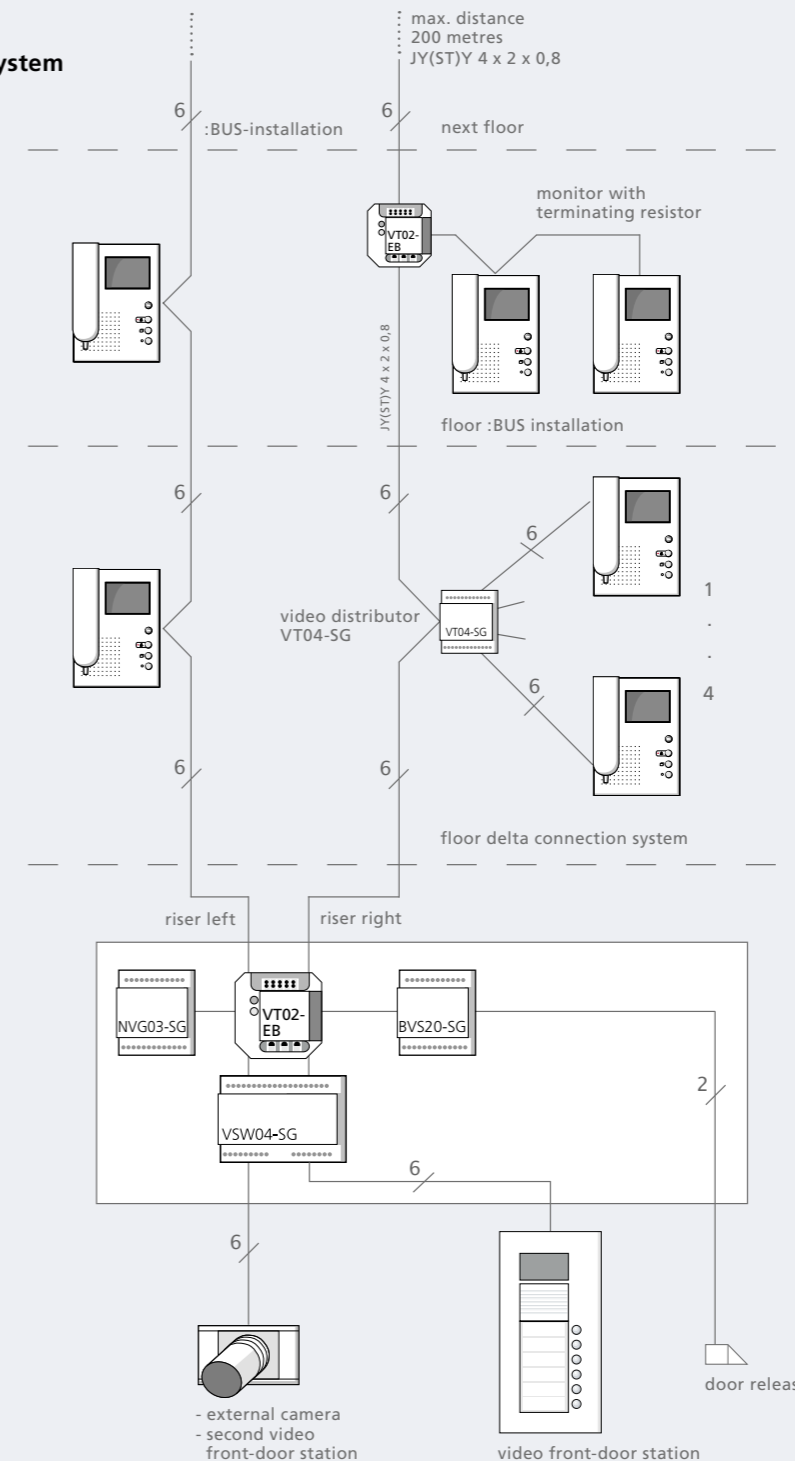
### Brightness and volume control behind telephone receiver

- Brightness
- Volume

### The simplest version for detached family homes and small systems



### TCS video door communication system



## In-house stations video

# VM(X)

### in-house station with video for the living area and the business area

VM(X) means individuality and function.

#### The design

VM(X) means individuality and function. Clear casing shapes and an easy-to-handle feature are distinctive for the new TCS in-house station line. The sober design of the single devices fit to the ergonomic designed handset.

The sober design fit to any house ambience and to any modern office - whether it is as gentle flush-mount or surface-mount version, with handset for duplex communication or without handset for simplex communication - the operating elements are arranged clearly and functionally. You can choose from variations with ordinary picture tubes or with contrast flat screen showing extremely sharp and colourful pictures.

#### The installation

These video in-house stations are part of the TCS video system and are distinctive for simple assembly, installation and first operation.

Simple door- and house-communication for a single or a two-family house can be realized using only few components - they are even useful for spacious business buildings where complex communication is necessary.

The installation is based on a 2-wire-BUS, one twisted twisted pair for video signal transmission and one central power supply.

#### The assembling

Because of a two-step assembly the VMX offers more possibilities on-site. First you have to couple the connecting cable to the base/flush-mount box.

Afterwards you can check the installation easily via the connectors, which are easy to find. After the installation you just have to click the monitor into the base. In this way it will be protected against impurity and theft.

#### As a component in the building automation

The two keys provided for potential control functions render the VM(X) an ideal component in the area of building automation.

In addition to the standard functions light switch and door release you even have the possibility to control the garage door or the alarm system, for instance.



VMH30



VML30 for flush-mount with mounting frame



Desktop accessory



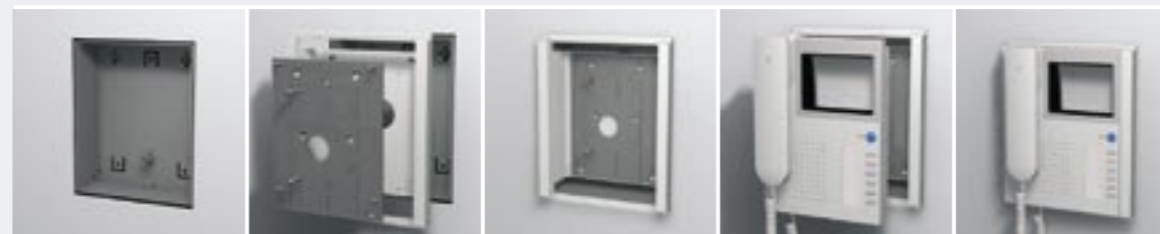
VML30



VMH30 for flush-mount with mounting-frame

#### selected performance parameters

- : monitor black/white or color with TFT-display
- : screen diagonal 4"
- : resolution black/white: more than 420 TVL / resolution color: 480 x 243 px
- : surface-mount / flush-mount (flush-mount box and mounting-frame VM30-UP required / stand-alone (desktop accessory)
- : simplex communication / duplex communication
- : based on the TCS-video system 6-wire technique
- : casing made of antistatic and recyclable plastic
- : blue-coloured door release button, flat-door release can be activated
- : function key to switch between different cameras
- : light switch button with an alternate allocation: specific internal call or control function
- : 2 function keys ex works: configured with control function / alternate allocation: specific internal call, automatic door release, redirecting
- : VML: switch button speak / listen (push to talk), VMH: function key (triangle symbol) ex works configured with control function
- : choice of 13 melodious ring tones
- : acoustic and optical call distinction for front-door, flat-door and internal call
- : acoustic call distinction for 2 doors
- : ring tone volume / manually adjustable, ring tone mute with optical display
- : 1 parallel call can be activated
- : audio in-house stations and video in-house stations can be combined within one system
- : video signal input balanced 1 Vpp composite video
- : input current: I(a) = 0.4 mA, I(P) = 5.0 mA standby
- : maximum input current (black/white): I(Pmax) = 360 mA
- : maximum input current (color): I(Pmax) = 280 mA
- : operating temperature range: 0 °C to 40 °C
- : dimensions surface-mount VML/VMH: H 222 mm x W 163 mm x D 70 mm
- : dimensions flush-mount (with frame) VML/VMH: H 240 mm x W 196 mm x D 16 mm
- : dimensions flush-mount box: H 221 mm x W 182 mm x D 70 mm



#### Secure and clean while installing

Because of a two-step assembly the VMX offers more possibilities on-site. First you have to couple the connecting cable to the base/flush-mount box. Afterwards you can check the installation easily via the connectors, which are easy to find. After the installation you just have to click the monitor into the base. In this way it will be protected against impurity and theft.

Article reference number

Video in-house station with handset  
VMH30-WS  
VMH30C-WS

Video in-house station without handset  
VML30-WS  
VML30C-WS

Flush-mount box/ mounting-frame  
VM30-UP

Desktop accessory  
VMT30-EN





Compact and lots of varieties

## Power Supplies for Standardized systems



### BVS20-SG

#### Power supply and control unit for systems with 1 line

- : example for a system: for 1 x PES10 and 10 x ISH1030 or 10 x IMM1000
- : for systems with 1 line 40 mA each
- : maximum loop resistance: 20 ohm
- : output current a-terminal:  $I(a) = 40 \text{ mA}$
- : output current P-terminal:  $I(P) = 80 \text{ mA}$
- : input voltage: 230 V (210 - 260 V), 50/60 Hz
- : door release function with integrated power supply:  
12 V, 50/60 Hz / 2 A (door opener more than / identical 6 ohm)
- : potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : door-release time between 0.8 to 8 seconds / manually adjustable
- : operating temperature range: 0 °C to 40 °C
- : controls and indicates the system's operating modes
- : DIN-rail case with 4 standard slots



### NVG01-SG

#### Power supply unit for 1 A DC

- : output current P-terminal:  $I(P) = 1 \text{ A}$
- : input voltage: 230 V (90 - 260 V), 50/60 Hz
- : output voltage: 26 V DC
- : P-terminal prevent from short-circuit
- : switched power supply with high efficiency
- : operating temperature range: 0 °C to 40 °C
- : controls and indicates the system's operating modes
- : EMV designed in accordance with EN50081 and EN50082-2, radio interference according to EN 55011
- : : DIN-rail case with 5 standard slots



### BVS100-SG

#### Power supply and control unit for systems with 3 lines

- : example for a system: for 1 x PES/PET and 3 x 20 pieces ISH1030 / IMM1000
- : for systems with 3 lines 60 mA each, maximum loop resistance: 20 ohm
- : output current a-terminal:  $I(a) = 3 \times 60 \text{ mA}$
- : output current P-terminal:  $I(P) = 100 \text{ mA}$
- : input voltage: 230 V (210 - 260 V), 50/60 Hz
- : door release function potential-free relay contact (closing contact) for the door release: 24 V DC / 2 A
- : light switch function with potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : door-release time between 0.8 to 8 seconds / manually adjustable
- : operating temperature range: 0 °C to 40 °C
- : controls and indicates the system's operating modes
- : DIN-rail case with 6 standard slots



### NVG03-SG

#### Power supply unit for 2.5 A DC

- : output current P-terminal:  $I(P) = 2.5 \text{ A}$
- : input voltage: 230 V (90 - 260 V), 50/60 Hz
- : output voltage: 26 V DC
- : P-terminal prevent from short-circuit
- : switched power supply with high efficiency
- : operating temperature range: 0 °C to 40 °C
- : controls and indicates the system's operating modes
- : EMV designed in accordance with EN50081 and EN50082-2, radio interference according to EN 55011
- : DIN-rail case with 8 standard slots



### NBV1000

#### Power supply and control unit combination (BSG2-EB und KT2A-SG/01) with 1 line

The NBV1000 is a set consisting of BUS-control unit and transformer, which is highly suitable for upgrading existing and simple bell systems of TCS:door communication systems. Only 2 bell wires are necessary between the transformer and the BSG2-EB. Existing cables of bell systems can easily be utilized. Laying cables is not necessary.

Up to 20 participants can be controlled of which one is an illuminated front-door station. It even offers you a good alternative if your switch cabinet is not as spacious.



### KT2A-SG/01

#### Transformer for 8 V AC

- : power supply for alternating voltage 8 V, 50/60 Hz
- : output current terminals:  $I = 1.5 \text{ A}$
- : input voltage: 230 V (220 - 240 V), 50/60 Hz
- : operating temperature range: 0 °C to 40 °C
- : EMV designed in accordance with EN50081 and EN50082-2, radio interference according to EN 55011
- : DIN-rail case with 2 standard slots

Article reference number

Power supply and control units  
BVS20-SG  
BVS100-SG

Power supply and control unit combination  
NBV1000

Power supply units  
NVG01-SG  
NVG03-SG

Transformer  
KT2A-SG/01



Compact and lots of varieties

## Power Supplies for Complex systems and customized systems



### VBVS05-SG

**Power supply and control unit for small video systems with 1 line without distributor and parallel operation** (see page 69)

- : for video systems with 1 line 60 mA each
- : maximum loop resistance: 20 ohm
- : output current a-terminal: I(a) = 60 mA
- : output current P-terminal: I(P) = 600 mA
- : input voltage: 230 V (188 - 260 V), 50/60 Hz
- : door release function with integrated power supply:  
12 V, 50/60 Hz / 2 A (door opener more than / identical 6 ohm)
- : light switch function with potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : door-release time between 0.8 to 8 seconds / manually adjustable
- : operating temperature range: 0 °C to 40 °C
- : DIN-rail case with 6 standard slots



### BVS30-SG / VBVS30-SG

**Power supply and control unit for subsystems (with video) with 1 line**

Provide a de-centralized supply of (video-) subsystems. With the VBVS30 it is possible to switch-over the video signal. They function as interfaces between the subsystem and the central TCS:BUS, which means that they connect the subsystem with a central and/or main front-door station. Both are delivered specifically pre-configured.

#### performance parameters of BVS30-SG

- : for systems with 1 line 50 mA each
- : maximum loop resistance: 20 ohm
- : input current terminal 20: I(+) = 85 mA no load
- : output current P-terminal: I(P) = 500 mA
- : input voltage: 26 V DC
- : potential-free relay contact (closing contact)  
for the door release: 24 V DC / 2 A
- : potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : door-release time ex works: 3 seconds / not adjustable
- : light switch time ex works: 0.5 seconds / not adjustable
- : operating temperature range: 0 °C to 40 °C
- : DIN-rail case with 6 standard slots

#### performance parameters of VBVS30-SG

- : for systems with 1 line 50 mA each, max. loop resistance: 20 ohm
- : input current terminal 21: I(+) = 180 mA no load
- : output current P-terminal I(P) = 500 mA
- : input voltage: 26 V DC
- : door release function with potential-free relay contact (closing contact)  
for the door release: 24 V DC / 2 A
- : DIN-rail case with 6 standard slots



### PSG01-SG

**Power supply and control unit for customized systems with long lines**

Combining the PSG01-SG and the concierge front-door station PFSxx multi-storeys and lift intercoms can be built-up. Using the door speaker type TCP2-GH wires can be reconciled up to 60 ohm loop resistance.

- : for complex systems and customized systems with 1 line 60 mA each
- : supports maximum loop resistance: 60 ohm
- : output current a-terminal: I(a) = 60 mA
- : output current P-terminal: I(P) = 600 mA
- : input voltage: 230 V (188 - 260 V), 50/60 Hz
- : door release function with integrated power supply: 12 V, 50/60 Hz / 2 A (door opener more than / identical 6 ohm)
- : light switch function with potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : line and P-terminal short-circuit protected
- : operating temperature range: 0 °C to 40 °C
- : controls and indicates of the system's operating modes
- : EMV designed in accordance with EN50081 and EN50082-2, radio interference according to EN 55011
- : DIN-rail case with 6 standard slots



### PSG02-SG

**Power supply and control unit for customized systems with extended functions**

Combining the PSG02-SG with a suitable power unit (e.g. NVG03) even smaller systems can be set for fire brigade or sheltered housing. Using the :BUS-power supply and control unit PSG02-SG you can realise this solution even more economically. It depends on the application how to combine the :BUS-power supply and control unit with the right in-house station (e.g. fire brigade = TTF30, sheltered housing = TTN30).

- : for customized systems with 1 line 60 mA each
- : it can be used in systems for sheltered housing and danger alert
- : supports maximum loop resistance: 8 ohm (for grouped alerting and grouped announcement)
- : output current a-terminal: I(a) = 60 mA
- : output current P-terminal: I(P) = 600 mA
- : input voltage: 230 V (188 - 260 V), 50/60 Hz
- : door release function with integrated power supply: 12 V, 50/60 Hz / 2 A (door opener more than / identical 6 ohm)
- : light switch function with potential-free relay contact (closing contact) for the light: 24 V DC / 1 A
- : DIN-rail case with 6 standard slots

Article reference number

Power supply and control unit for small video systems  
VBVS05-SG

Power supply and control units for subsystems  
BVS30-SG  
VBVS30-SG

Power supply and control units for special systems  
PSG01-SG  
PSG02-SG

Further information:

[www.tcs-germany.com](http://www.tcs-germany.com)  
[online pricelist](#)

[system and technology basics](#)  
page 66 | 69





## Extended functions for stations and power supplies



### TOER1-EB

#### Door release relay for the electrical connection with front-door station

- : for one specific door-release in case of more than 1 front-door station
- : to connect with the R-terminal and P-terminal of the front-door station
- : potential-free relay contact (two way contact): 24 V DC / 2 A
- : recommended installation: into the front-door station (PDS, PES, PUK, AD1 - AD3) or behind the front-door station (PAK)
- : operating temperature range: -20 °C to 50 °C
- : no programming necessary
- : dimensions: H 13 mm x W 20 mm x D 10 mm

In the future the design of this device will change. Therewith the functionality will extend.



### TRE1-EB

#### Built in call relay to activate external signal units

- : for specific triggering of existing signal units
- : suitable for the installation into the ISH1030
- : to connect with 1 terminal of the ISH1030
- : potential-free relay contact (closing contact): 24 V DC / 2 A
- : switch time ex works: 3 seconds / manually adjustable
- : operating temperature range: 0 °C to 40 °C
- : no programming necessary
- : dimensions: H 64 mm x W 21 mm x D 18 mm



### TOER2-EB

#### Door release relay for local-independent installation

- : for one specific door-release in case of more than 1 front-door station
- : IP 20 rated, suitable for the installation into the one gang box and protect against moisture
- : potential-free relay contact (closing contact): 24 V DC / 2 A
- : with own :BUS-connector for local-independent installation
- : alternatively control functions can be utilized
- : door-release time ex works: 1 second / adjustable via the Service Device
- : 2-wire respectively 3-wire technique possible
- : maximum 10 TOER2-units in 2-wire technique can be used
- : maximum diameter of a line: 0.8 mm
- : operating temperature range: -20 °C to 50 °C
- : programming via the Service Device
- : dimensions: H 52 mm x W 52 mm x D 23 mm

For input current information see planning aids on the internet.



### TRE2-EB

#### Call relay for local-independent installation

- : for specific triggering of existing signal units
- : IP 20 rated, suitable for the installation into the one gang box and protect against moisture
- : potential-free relay contact (closing contact): 24 V DC / 2 A
- : with own :BUS-connector for local-independent installation
- : utilization of 1 control function / adjustable via the Service Device
- : switch time ex works: 1 second / adjustable via the Service Dev.
- : 2-wire respectively 3-wire technique possible
- : maximum 10 TRE2-units in 2-wire technique can be used
- : maximum diameter of a line: 0.8 mm
- : operating temperature range: -20 °C to 50 °C
- : programming via the Service Device, optional by hand
- : dimensions: H 52 mm x W 52 mm x D 23 mm

For input current information see planning aids on the internet.



### SK10-SG

#### Quad front-door station coupler for subsystems

- : for systems with 1 line 50 mA each, for front-door stations only
- : connects 1 front-door station with 1 out of 4 subsystems
- : interconnection of up to 5 SK10-SG possible (for up to 20 subsystems)
- : status indication of the active connection with the subsystem, maximum loop resistance: 20 ohm
- : output current a-terminal: I(a) = 35 mA (on the line)
- : output current P-terminal: I(P) = 60 mA
- : input voltage: 230 V (207 - 244 V), 50/60 Hz
- : door release function with integrated power supply: 12 V, 50/60 Hz / 2 A (door opener more than / identical 6 ohm)
- : operating temperature range: 0 °C to 40 °C
- : DIN-rail case with 6 standard slots



### TZ1-SG

#### Staircase-light control unit

- : the staircase light is being activated by the light button of the in-house station and front-door station
- : light switch time between 0.5 to 12 minutes / manually adjustable
- : automatic identification of 3-wire respectively 4-wire circuit
- : pump mode for the extension of the determined time
- : permanent light function (2 hours)
- : nominal switch capacity: 250 V, 50/60 Hz / 16 A
- : operating temperature range: -20 °C to 50 °C
- : pre-warning of switched-off contactor according to DIN 18015-2
- : DIN-rail case with 1 standard slot

Article reference number

Door release relays  
TOER1-EB  
TOER2-EB

Front-door connector  
SK10-SG

Call relays  
TRE1-EB  
TRE2-EB

Staircase light control unit  
TZ1-SG



## Extended functions to switch, annunciate, control

Sensors and combining device for switch functions can be trained directly at the TCS:BUS of the door communication system.

Each sensor and each combining system has its own address and serial number. BRE2-EB and BRE2-SG can be trained for different :BUS-actions without using any auxiliary devices.

Article reference number

Relays  
BRE2-SG  
BRE2-EB

Sensors  
BMN2-EB  
FBS1100-0900

Configuration tool

Call relais  
TRE2-EB  
See page 47



### BRE2-SG

#### Combining device with binary input / output, single

- : output for switch functions and input to release control functions
- : input distinguishes open and close
- : input requires the connection of one potential-free switch
- : potential-free relay (two-way) contact: 230 V, 50/60 Hz / 3 A
- : changeable performance parameters without the use of auxiliary means:
  - switch time ex works: 1 second / manually adjustable and via the BRE configuration tool
  - to release the switch time through: bell buttons of any front-door station, floor-switch button / door release button at any in-house station
- : parameter settings adjustable via the BRE configuration tool
- : 3-wire technique necessary
- : input current (binary input): 2.5 mA
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.4 mA no load
- : maximum input current: I(Pmax) = 30 mA
- : maximum diameter of a line: 1.4 mm
- : operating temperature range: -20 °C to 50 °C
- : status indication for input and output
- : DIN-rail case with 1 standard slot



### BMN2-EB

#### Sensor with binary input, dual

- : input for the release the control functions, twofold
- : input distinguishes open and close
- : input requires the connection of one potential-free switch
- : IP 20 rated, suitable for the installation into one gang box and protect against moisture
- : 2-wire respectively 3-wire technique possible
- : it can be used in systems for emergency call
- : maximum 10 BMN-units in 2-wire technique can be used
- : input current (binary input): 0.4 mA (use suitable contacts)
- : input current (2-wire): I(a) = 1.1 mA (both inputs deactivated)
- : input current (3-wire): I(a) = 1.4 mA, I(P) = 1.1 mA (both inputs deactivated)
- : maximum input current (2-wire): I(a) = 2.5 mA (both inputs activated)
- : maximum input current (3-wire): I(Pmax) = 2.3 mA (both inputs activated)
- : maximum length of the connecting line: 2 m
- : maximum diameter of a line: 0.8 mm
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H 52 mm x W 52 mm x D 23 mm

### BRE2-EB

#### Combining device with binary input / output, single

- : output for switch functions and input to release control functions
- : input distinguishes open and close
- : input requires the connection of one potential-free switch
- : IP 20 rated, suitable for the installation into the one gang box and protect against moisture
- : potential-free relay (two-way) contact: 230 V, 50/60 Hz / 3 A
- : changeable performance parameters without the use of auxiliary means:
  - switch time ex works: 1 second / manually adjustable and via the BRE configuration tool
  - to release the switch time through: bell buttons of any front-door station, floor-switch button / door release button at any in-house station
- : 2-wire respectively 3-wire technique possible
- : maximum 3 BRE2-EB-units in 2-wire technique can be used
- : input current (binary input): 2.5 mA
- : input current (2-wire): I(a) = 1.5 mA no load
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.6 mA no load
- : maximum input current (3-wire): I(Pmax) = 4.4 mA
- : maximum diameter of a line: 0.8 mm (M+, M-, a, b, P-terminal)
- : maximum diameter of a line: 1.4 mm (com, nc, no-terminal)
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H 52 mm x W 52 mm x D 23 mm



### FBS1100-0900

#### Sensor with binary input, single

- : input for the release of control functions, single
- : input distinguishes open and close as well as the time of pressing the button
- : input requires the connection of one potential-free switch
- : IP 64 rated, suitable for the installation into the one gang box
- : 2-wire respectively 3-wire technique possible
- : not suitable for the application in systems with emergency call
- : maximum 10 FBS-units with 2-wire technique can be used
- : input current (binary input): 0.4 mA (use suitable contacts)
- : input current (2-wire): I(a) = 1.3 mA (input deactivated)
- : input current (3-wire): I(a) = 0.4 mA, I(P) = 1.0 mA (input deactivated)
- : maximum input current (2-wire): I(Pmax) = 1.7 mA (input activated)
- : maximum input current (3-wire): I(Pmax) = 2.3 mA (input activated)
- : maximum length of the connecting line: 2 m
- : integrated connecting lines with a length of 8 cm, diameter 0.8 mm
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H 17 mm x W 26 mm x D 8 mm



- Applications:
- connecting sensors e.g. light barriers, twilight switch to TCS front-door stations
  - transmitting of additional control functions e.g. for the garage door and rolling shutter control together with BRE2-EB1SG
  - it cannot be used in systems for emergency call

## Extended functions for video systems



### VZS01-EB

#### Video transmitter

The VZS01-EB video signal transmitter is designed for applications where a standard video sources like CCTV-cameras, video recorders or others should be linked to any TCS-system.

For this, the VZS01 is designed to convert unbalanced composite video signals into balanced composite video signals. Also, the VZS01 has a 12 V DC regulated power output to feed external cameras with 12V DC power input, so no external power supply is necessary in those applications. Benefits:

- : to connect cameras of different manufacturers with the video system
- : IP 20 rated, suitable for the installation into one gang box and protect against moisture
- : video level output between -3dB to 9 dB / manually adjustable
- : integrated power supply for the external camera: DC output 12 V regulated with 250 mA maximum
- : maximum input current: I(Pmax) = 300 mA
- : input voltage: 26 V DC (P-Line)
- : input video impedance (unbalanced): 75 ohm
- : output video impedance (balanced): 100 ohm
- : operating temperature range: -20 °C to 50 °C
- : dimensions: H 52 mm x W 52 mm x D 23 mm



### VSW04-SG

#### Quad video switch

- : to select camera input as one-of-four scheme
- : cascadable up to 5 units with one-of-sixteen scheme
- : manual mode with switch input
- : automatic mode switches camera input to video front-door station from which an actual call was made
- : step mode with function key on every video in-house station
- : input current P-terminal: I(P) = 21 mA no load
- : 2-wire balanced video input and output
- : operating temperature range: 0 °C to 40 °C
- : DIN-rail case with 6 standard slots



### VZE01-EB

#### Video receiver

The VZE01-EB video signal receiver is designed for applications where the video signal of any TCS-installation should be linked to standard video components such as video recorders, CCTV-monitors, TV-Sets or PCs with AV input . The adjustable video amplification and contrast loss compensation is capable to regenerate video signals at the end of long or bad cables. The complete isolation between input and output is avoiding earth loops and is protecting components.

- : operable at standard composite video signals
- : IP 20 rated, suitable for the installation into the one gang box and protect against moisture
- : maximum input current: I(Pmax) = 100 mA
- : input voltage: 26 V DC (P-Line)
- : input video impedance (balanced): 100 ohm
- : output video impedance (unbalanced): 75 ohm
- : brightness (video level) between -10 dB to 2 dB / manually adjustable
- : contrast of the video signal / manually adjustable
- : operating temperature range: -20 °C to 40 °C
- : dimensions: H 52 mm x W 52 mm x D 23 mm



### VT02-EB

#### Dual video distributor

- : one balanced video input to two balanced video outputs
- : active amplifiers with best input/output performance, no loss or retroaction
- : adjustable video amplification to compensate losses of cabling
- : IP 20 rated, suitable for the installation into one gang box and protect against moisture
- : 3-wire technique necessary
- : video level output for each line between -3 dB to 9 dB / manually adjustable
- : maximum input current: 100 mA
- : input voltage: 26 V DC (P-Line)
- : input / output impedance (balanced): 100 Ohm
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 52 mm x W 52 mm x D 23 mm



### VT04/1-SG

#### Quad video distributor

- : one balanced video input to four balanced video outputs
- : active amplifiers with best input/output performance, no loss or retroaction
- : 4 video amplification adjusters to compensate losses of cabling
- : 3-wire technique necessary
- : video level output for each line between -3 dB to 9 dB / manually adjustable
- : maximum input current: 200 mA
- : input voltage: 26 V DC (P-Line)
- : input / output impedance (balanced): 100 Ohm
- : operating temperature range: 0 °C to 40 °C
- : DIN-rail case with 6 standard slots

Article  
reference  
number

Transmitter  
VZS01-EB

Receiver  
VZE01-EB

Change-over  
switches  
VSW04-SG

Distributors  
VT02-EB  
VT04/1-SG



## Extended functions for the connection with telecommunication systems



TKI01-SG



TKID5-SG



TKI:home

TK interface units connect the TCS:BUS with the telephone network. The connection is made through the usual a/b telephone wall jack or an analogue or an ISDN switchboard. Many of the TCS:BUS system functions are available at telephones with DTMF in-house and worldwide.

### TKI01-SG

**Interface for the connection with telecommunication systems via an analogue port / up to 16 call numbers**

- : interface to connect front-door stations and in-house stations with a telecommunication network worldwide
- : it can be connected through an analogue a/b-telephone wall jack or a PABX switch board with an analogue port
- : input requires the connection of one potential-free switch
- : input to establish the calling / separate call number memory
- : 16 call numbers can be stored, max. 16 digits each
- : telephone keys of commercial telephones and mobile phones control the door-release, light and indicate control function via a multi-frequency dialling
- : selects one front-door of up to 3 front-door stations and one internal call of up to 3 in-house stations via one commercial telephone
- : specific activation of up to 10 actuators via one commercial telephone
- : day / night switch, redirecting
- : potential-free relay contact (two-way contact): 24 V DC / 1 A - switch time of the relay ex works: 10 seconds / adjustable via the multi-frequency dialling
- : up to 64 telecommunication systems can be connected with one TCS:BUS
- : 3-wire technique necessary
- : maximum input current: 60 mA DC / 180 mA, 50/60 Hz
- : input voltage: 26 V DC / alternate supply via KT2A-SG/01
- : DIN-rail case with 6 standard slots

### TKID5-SG

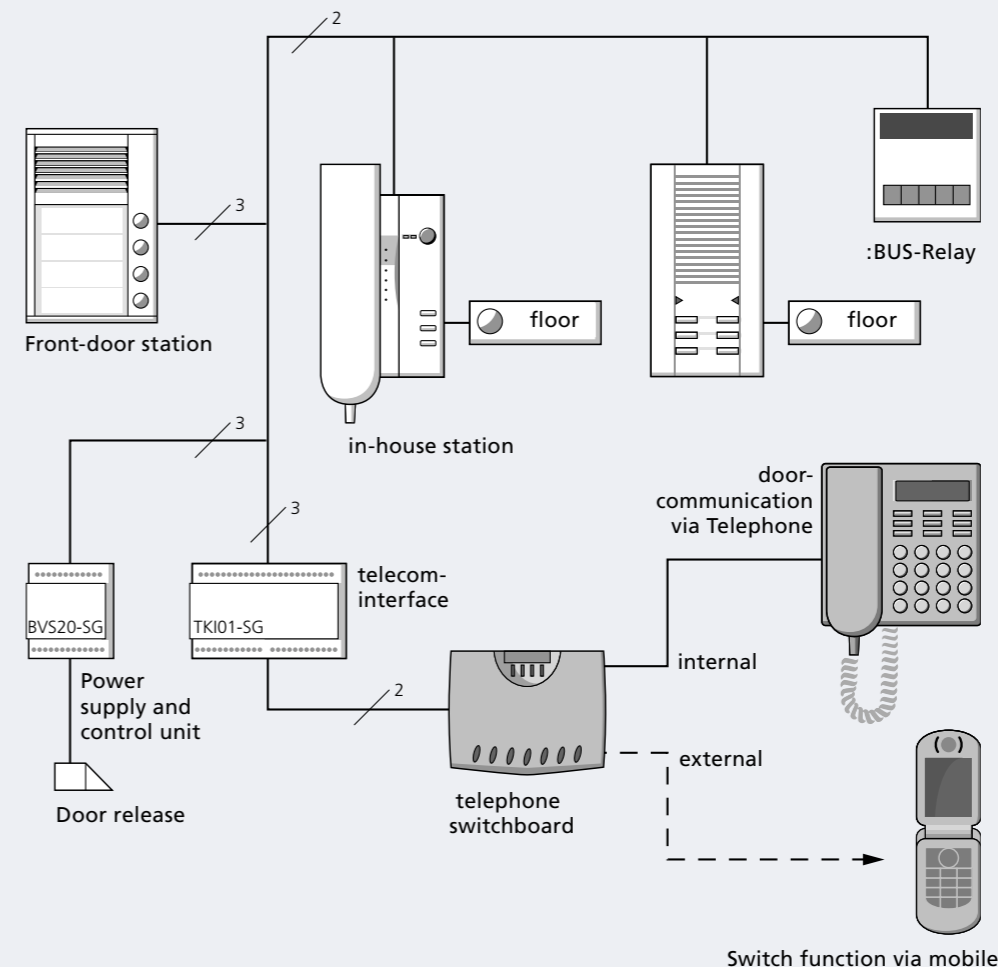
**Interface for the connection with telecommunication systems via an analogue port / up to 10,000 call numbers**

- : interface to connect front-door stations and in-house stations with a complex telecommunication system
- : for up to 10,000 call numbers within one system

### TKI:home

**Interface for the connection with telecommunication systems via an analogue port / up to 2 call numbers**

- Corresponds to TKI01-SG in addition to the following
- : pre-programmed for the extension of home:packs
- : 2 call numbers can be stored, max. 16 digits each



### Functions worldwide

The following functions are available through a telecommunication connection of a TCS door communication system, in-house and worldwide:

A bell ring from the front-door station becomes a call within the house internal network, landline network or mobile network and after answering a phone call functions such as door release, light switching and additional switch and control orders are possible.

Turn your telephone into a remote control and switch with \*0 up to \*9 up to ten BUS-relays! If the signalling device contact of an alarm system is activated the telecommunication interface dials the (emergency)number left by the user. After receiving the alarm you can active rear a switch contact (illumination, announcement). Via a return call an acoustic room surveillance can take place.



Article reference number

TKI for up to 16 phone numbers  
TKI01-SG

TKI for more than 16 phone numbers  
TKID5-SG

Home:pack Extension  
TKI:home





## Systems: concierge in-house station and emergency call



PFS08-EN

### PFCxx-EN

#### Concierge in-house station for the business area

For the application of a concierge in-house station you have available the concierge front-door station PFCxx-EN with 8 (PFC08) or 16 keys (PFC16). Via the power supply and control unit PSG02-SG compact systems can be built up.

In addition to the feature door speak you have the feature „concierge“ at your disposal. A main parameter of the concierge function is to answer a phone ring and to redirect calls. In the delivery of the PFC08-EN the power supply unit NTPFS to supply the station will be included.

TCS offers the PFS configuration tool and the Maintenance Interface for programming of systems with the concierge front-door stations.

### PFSxx-EN

#### Concierge in-house station for customized systems

For the application in special systems such as multi-storey, lift and point-of-sale intercoms you have available the series PFSxx-EN. Via the power supply and control unit PSG02-SG compact systems can be built-up.

The models of 8 to 32 keys allow an optimal adjustment at the circumstances. The features range from simple door-speaking up to complex systems for sheltered housing. In the delivery of the PFS08-EN the power supply unit NTPFS01 to supply the station is included.

TCS offers the PFS configuration tool and the Maintenance Interface for programming of systems with the concierge front-door stations.

### NPAK01-EN

#### Front-door station for long lines

The NPAK01 is a 3-wire TCS:BUS front-door station suitable for long cables (In this example use the power supply and control unit PSG01-SG).

The NPAK01-EN has one switch output reacting to door release order. The loop resistance of the connecting cable can be up to 60 ohm. The confirmation signal after operating the key has a particular sound especially for point-of-sale and barrier systems.

Using the recommended combination, NPAK01-EN with concierge front-door station, the NPAK can set up a real simplex communication. The resulting volume is noticeably better than the volume of the duplex communication is.

NPAK01-EN



### GAG10

#### Control unit for up to 360 in-house stations

Using the :BUS main control unit on the basis of the series GAG10 up to 360 in-house stations can be connected to the intercoms. To do this it is necessary to connect the P-wire with the in-house stations as well.

Such systems can be used also for the function „Concierge“ and not only for door-speaking. Due to the application of a 19“-technique you will receive a very compact :BUS main control unit with very low efforts regarding assembling and wiring. The features fire brigade announcement and sheltered housing are possible as well.



### GAG20

#### Control unit for more than 360 in-house stations

Using the :BUS main control unit on the basis of the series GAG20 intercoms of nearly any size can be connected to the intercoms. To do this it is necessary to connect the P-wire with the in-house stations as well.

Such systems can be used also for all supporting features and not only for door-speaking. Due to the application of a 19“-technique you will receive a very compact :BUS main control unit with very low efforts regarding assembling and wiring.

### Plug-in cards

For the assembly of central systems with the casings GAG10 and GAG20 the following plug-in cards are available:

GAZ10-SK, GAZ20-SK, GAZ21-SK for large systems with numerous devices  
GFA10-SK, GFA20-SK, GFA21-SK for large systems with additional applications like sheltered housing, alerting, announcement and emergency call

: input voltage: 24 V DC  
: operating temperature range: 0 °C to 40 °C  
: dimensions: H 100 mm x W 160 mm (3 height units and 5 dimension units)



Example for Plug-in Card GAZ10-SK

Article reference number

Concierge in-house stations  
PFC08-EN  
PFC16-EN

PFS08-EN  
PFS12-EN  
PFS16-EN  
PFS20-EN  
PFS24-EN  
PFS28-EN  
PFS32-EN

Power supply unit  
NTPFS01

Control units  
GAG10  
GAG20

Plug-in cards  
GAZ10-SK  
GAZ20-SK  
GAZ21-SK

GFA10-SK  
GFA20-SK  
GFA21-SK

Front-door station for long cables  
NPAK01-EN

Maintenance Package  
PC-PSI

## Systems: emergency call systems, sheltered housing, resident information systems



Article reference number

Control console for danger alert and announcement  
GFA000

User Interface, RS232  
PC1-I

Stations and Telephones  
TC20F-RW  
TTF30-RW/01  
TC20N-RW  
TTN30-RW/01

Software  
Basic software for up to 200 records  
PCSW200

for up to 500 records  
PCSW500

for up to 1000 records  
PCSW1000

Program extensions

SMS  
PCSMS

PSA  
PCPSA

Sheltered housing-danger alert  
PCBWO

TKI  
PCTKI

Service  
PCSER



### GFA000

#### Control console for alerting and announcement

- : it can be used in systems for alerting and announcement (fire brigade)
- : surface-mount, bolting control console, transparent panel
- : large, illuminated LC-display to display the functions
- : 3 soft keys with multiple allocation
- : jog wheel to select the floors or the functions
- : manual microphone (with button for the announcement)
- : key switch button to change between operation and maintenance
- : maximum loop resistance: 10 ohm
- : input current a-terminal: I(a) = 0,5 mA standby
- : maximum input current: I(Pmax) = 300 mA
- : input voltage: 24 to 26 V DC, protection scale: IP54
- : dimensions: H 230 mm x W 270 mm x D 90 mm

### „Call control centre“

#### „Call control centre“ for the functions danger alert, concierge and sheltered housing

- : it can be used in systems for sheltered housing, alerting and announcement
- : User Software to control the communication between the main control and the residents
- : to be used in connection with the User Interface (PC1-I) only
- : easy-to-handle via touch screen possible
- : for grouped alerting and grouped announcement (fire brigade)
- : System requirements:

PC with Pentium II-processor (300 MHz clock frequency), 30 MB free fixed-disk storage, CD-drive, graphic controller with SVGA-resolution (800 x 600 dpi), minimum 256 colours, 64 MB RAM, operating system WIN 98 SE / 2000 / XP

#### Program extensions

If required these extensions can be ordered (even later) and released via a registration key.

#### SMS

- : the describing text of the record can be redirect as text SMS-message to the mobile phone and the pager
- : supports the providers D1, D2, E-Plus, O2
- : further international and European providers on demand

#### PSA

- : redirecting to person searching systems (PSA) via RS232
- : supported PSA Bosch: Alpha1, Alpha2; Multitone: D3NA und ASCOM: Line protocol
- : the describing text of the releasing unit can be displayed on the pager

#### sheltered housing / danger alert

- : announcement and room-monitoring of appropriate in-house stations
- : loud-speaking simplex communication
- : danger alert

#### TKI

- : call initiations can be redirect via the telephone system
- : the called station can process incoming calls
- : static and dynamic switches of call destinations
- : standardized recorded messages with the flat's call number
- : recorded messages related to the call initiation

#### Service

- : enables to maintain the systems by the contractor's central or by the manufacturer

For system requirement go to User Software „access control“

### User Interface, RS232

#### Interface for the User Software, RS232

- : it can be used in systems for sheltered housing, alerting and announcement, to be used for the User Software only
- : auxiliary device for the operation and the technical support of TCS-systems
- : for grouped alerting and grouped announcement (fire brigade)
- : it is possible to feed voice-messages
- : links the PC with a TCS system
- : status indication for operation modes and transmission status
- : standardized RS232-connector
- : interface to switch on the telephone for the User Interface (PC1-I)
- : electrodeposited disconnection of the TCS-system and the PC
- : 3-wire technique necessary
- : dimensions: H 35 mm x W 115 mm x D 85 mm



Stations and telephones for special systems

### TC20F-RW

#### Station for simplex communication for alerting and announcement

### TTF30-RW/01

#### Telephone for alerting and announcement

### TC20N-RW

#### Station for simplex communication for sheltered housing with remote-controlled simplex communication

### TTN30-RW/01

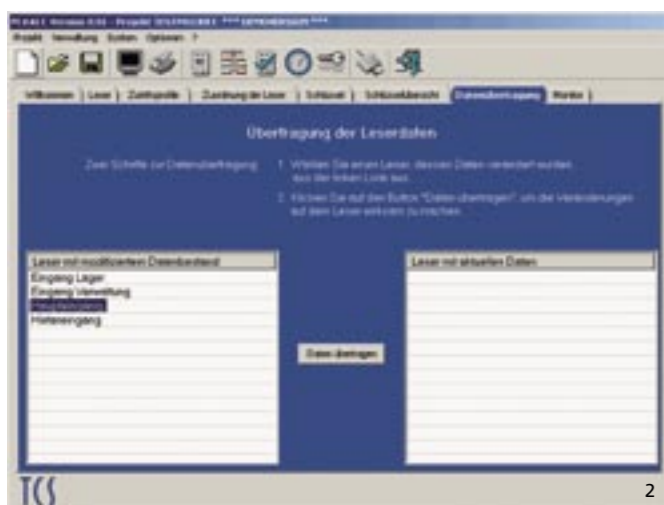
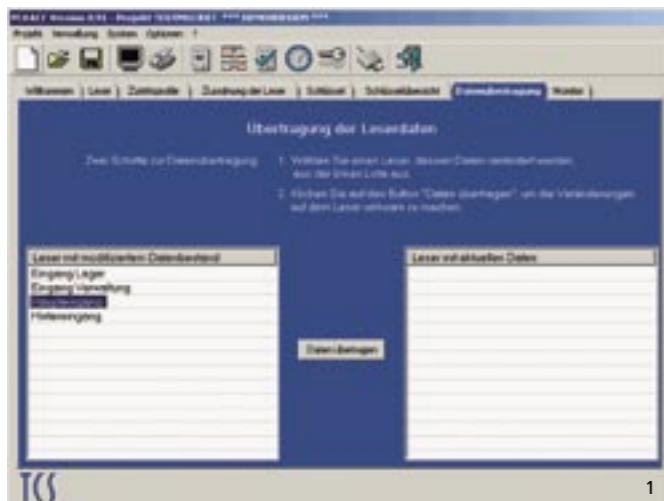
#### Emergency call phone for sheltered housing with remote-controlled simplex communication





Systematically and lots of varieties

## Systems: access control system



### User Software „access control“

In general, access control systems can be realised in two operating modes.

1. as de-centralised operation

The reader, de-centralised, decides on the entry using the key data only.

2. as a central operation

A computer that has to be active the whole time carries out the utilization of the keys. In this operation form entry profiles can be created independently from time, person and location.

### User Software “access control“

#### User Software for the central access control

Using this program you can administer the access rights of a TCS system easily and simply. The following functions can be controlled through the software:

- : it can be used in systems for remote access control
- : to be used in connection with the User Interface (PC1-I) only
- : parameters of the reader such as AS-address, serial number, relay switch-time can be set and stored
- : access profiles (such as time-, person- and local-depending) with different authorizations and time zones can be created
- : reads in and deletes keys via the Key-Reader with i- and t-reader (not included in the delivery)
- : key-number and key-owner can be assigned
- : access authorization can be assigned, even time-depending
- : key records include description, number and response
- : system's monitoring
- : prints key reports, completion certificate
- : project administration
- : records of log files
- : 3 password-protected user levels
- : for up to 7 TCS:BUS-systems in a parallel administration
- : Software available in Germany only

#### : system requirements:

PC with Pentium II-processor (300 MHz clock frequency), 30 MB free fixed-disk storage, CD-drive, graphic controller with SVGA-resolution (800 x 600 dpi) and minimum 256 colours, 64 MB RAM, operating system WIN 98 SE / 2000 / XP

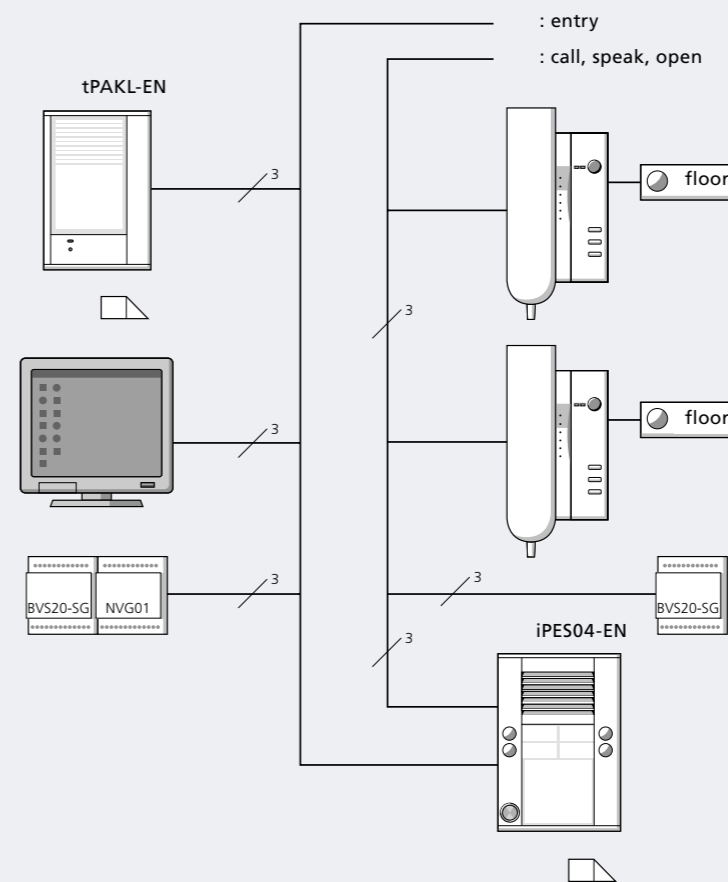
### Key Reader, RS232

#### Device to read-in keys, RS232

- : reads in key numbers via the access control configuration tool or the User Software „access control“ (not included in the delivery)
- : optical and acoustic acknowledgement when key read in
- : status indication for operation modes and transmission status
- : standardized RS232-connector
- : operating temperature range: 0 °C to 40 °C
- : dimensions: H 170 mm x W 90 mm x D 26 mm

itL232

### Centrally controlled access control with separated TCS:BUS systems



On the pages 28 - 31 you will find front-door stations for access controls based on keys and transponder

Article reference number

User Program „access control“ PCitACC

Key reader, RS232 itL232



### Simply administering of access control systems

The PC software PCitACC was developed for the central control of extended and complex access controls.

It not only enables the user to simply edit the prevailing front-door station but it also allows to assign individual access rights' profile for the single user of the system.





As individual as clients are

## Customized items



VPUK with enlarged front panel made of polished brass and extra large nameplates. It was combined with a coloured engravings.

### From serial product to an exclusive single product

In addition to serial products TCS offers standardized customized items, which enable to offer individual products on an economic basis. By different dimensions, engravings, markings and special features we meet our customer's requirements - everything made in the TCS typical compact construction. Exclusiveness guarantees our special product to realise your special and detailed requirements regarding design and functions. Metal surfaces, high-grade purified and precisely worked, in combination with long-levity, an almost time-less design, combined with the demand of high-quality - these are the characteristics of a TCS front-door station.

### From the request to the offer

TCS differentiates three product categories:

1. standard products
2. customized items based on standard products
3. special products differing from the standard product.

Of course, it is necessary that they contain projecting and construction service and which are accurately discussed with the customer and treated as projects.

#### 1. Your inquiry

For customer inquiries for customized items TCS developed planning forms. Filling-in these planning forms the customer formulates his exact ideas and sends it by fax to TCS requesting an offer. The customer receives, by return, a corresponding offer. These planning forms contain the prevailing limits for changing the products.

For inquiries regarding special products we will be at your disposal at any time.

#### 2. Our planning forms

Planning forms can be obtained as follows:

1. by contact our sales offices as return fax or
2. on the TCS homepage [www.tcs-germany.de](http://www.tcs-germany.de) as download.

However, best would be to contact one of our representatives in proximity to you. He will be pleased to discuss with you the various possibilities of production. Of course, he will handover planning forms to you.

*continues on page 62*



Four examples of the front-door station PAK with anodised surfaces in different colours and with flat polished finish. (photographs are similar to original products, see page 62 for limits)



Front-door station series PDS and PES each two examples with different paintwork according to RAL. In the first illustration we combined a black paintwork with a dark glass panel of the video integral camera.



In the first example of the front-door station series PES/PET different sizes of nameplate and information fields were created through the different key layout. Both illustrations on the right are examples for the front-door station series PUK / VPUK as audio and video version with a front panel made of stainless steel and grinded surface.

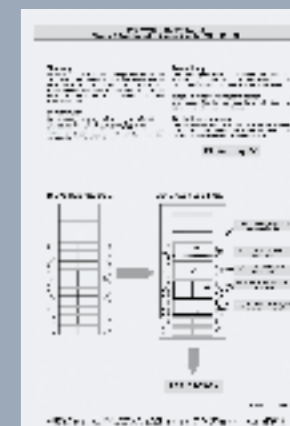
### The personal front-door station

Flexible planning and processing principles meet nearly every customer demand for determined functional composition and for individual door communication. Raster individual key layouts turn any standard front-door station into a unique item.

In addition, you have a choice of colours, materials, engravings and surfaces.

### Hint

Our technical sales department will be pleased to help you.



Planning forms  
For PES / PET



As individual as clients are

## Customized items

### 3. Your order

Before placing the order for a customized item you will receive an offer from TCS to your inquiry.

This offer consists of the following:

A: a technical description of the customized item and  
B: a quotation

To place your order you have to release the technical description for production with your signature. The delivery time varies according to the efforts and is individually stipulated on the offer. TCS reserves the right to exclude the right to withdraw from an order placed before.

What you should consider:

#### Data formats

The usual vector data and type faces will be processed. We can guarantee an optimal data processing using the type face „true type“ and the graphic format .dxf with outline. Other provided formats such as pixel graphics will be processed on request.

#### Colour commitment

The paintwork of customized items will be according to the RAL colours.

Anodised colours from the basic colour aluminium. All patterned anodised colours are possible. Other colours can be provided on request. A colour pattern can help although we will not be able to re-produce it exactly!

#### Limits

1. there is only a limiting procedure to re-produce anodised colours. That means that an additional order for the same anodised colour will not be of the same result, which is due to the technology and cannot be influenced therefore.

2. an extended colouring with anodised colours is neither reasonable and will be realised only after a detailed discussion with the customer. For example, a complete PUK or Display stations cannot be produced with anodised colours with a homogenous colour over the entire surface. The concerned areas are too large and the material's characteristic of the component is too different.

3. anodised colours are not always non-fade. Hence the problem of the colour changing and re-producing appear as described in point 1.

4. polished anodised colours are only recommendable for small surfaces (such as speaking grid + PAK profile). Hence you should consider point 2 therefore.

5. some components of one article will differ within the anodised colours. For example, a speaking grid of a front-door station has other characteristics (direction of rolling) than the profile has. Hence even in one production step a different anodised colour or a different colour impression might occur.

#### Surface

##### Basic material aluminium

The surface aluminium will be offered anodised (E6 EV1).

##### Basic material stainless steel

The surface stainless steel will be offered grinded or radiated.

##### Basic material brass

Polished, stove-enamelled or radiated.

The front-door station of the series PUK and AD can be produced in this material on request.

##### Polished, nature

On request the front-door stations PUK and AD can be produced in these kind of materials. The customer will be informed about the consequences following as the surface of the material is getting an oxide film by and by.



Four examples of the front-door station series PUK made of the materials aluminium nature, stainless steel grinded and brass polished as audio and video station. In addition, various nameplates and information fields were created by different key layouts and engravings were made.



One example of the front-door station series PUK with bronze-anodised surface.

The other example is made of brass - chemically nickel-plated.

In addition, in the example on the right various large nameplates and information fields were created through a different key layout.

Product characteristic		PAK	PUK	PDS   PDT	PES   PET	PSD   PSE	AD1 bis AD4
Material	Aluminium	X	X	X	X	X	X
	Stainless steel		X				X
	Brass		X				X
Changes of the construction	External dimensions of the front-door stations	X	X	X	X	X	X
	Bell button layout and size of the information field	X	X	X	X	X	
Colour and surface protection	Anodised aluminium	X	X	X	X	X	X
	Stove-enamel (transparent)		X				X
	Varnishing according to RAL			X	X	X	X
	to nickel-plate (*brass only)		X*				X*
Engraving	Engraving a text and/or an image	X	X	X	X	X	X
Surface	Polished (*brass only)	X	X*	X	X		X*
	Ground		X				X
	Radiated		X				X

Further information:

[www.tcs-germany.com](http://www.tcs-germany.com)

[online pricelist](#)

[front-door stations page 8 | 13](#)

[video front-door station p. 24 | 27](#)

[access control page 28 | 31](#)





## Service and maintenance



Service Device TCSK-01

### Service Device

#### Service Device to program and analyse systems

The unique TCS:BUS Service Device was designed to provide a time-saving installation of standardized systems and it supports a simple error search.

The small service miracle is very reasonable, easy to handle and is just of the size of a telephone handset.

Entire systems can be configured and put into operation without any problem - all this a really „one-man-programming“ on the front-door station without having to enter the flat and therefore without having to fix an appointment etc.

The Service Device is just one part of a wide-spread service offer that is extended through a Germany-wide hotline-consulting, one information and download platform and a compact installation help in pocket size.

#### Features and advantages when putting into operation a TCS:BUS system and during the service:

1. simple programming of the bell buttons without the need of a „2nd man“ in the facilities
2. setting up special functions like:
  - : programming lock; the system's program cannot be changed by mistake; the lock can also be removed with the Service Device
3. checking of speaking connection:
  - : from the Service Device to the front-door station
  - : from the Service Device to the in-house station
4. checking the :BUS-installation in the service mode
  - : display diverse :BUS-parameters such as :BUS current, BUS-order etc.
5. call suppression
  - : calls from the in-house door or front-door can be suppressed
  - : all basic functions can be tested without bothering the user by several bell rings; a not-intended operation of the system by the tenant is prevented.



Maintenance Interface PSI-01  
as a component of the Maintenance Package, RS232

### Maintenance Package, RS232

#### Maintenance Package composed of interface and auxiliary software, RS232

- : to configure, to analyse and to maintain TCS systems
- : to be used for auxiliary software only
- : easy programming
- : composed of Maintenance Interface (PSI-01) and different auxiliary software's
- : includes limited full versions for the User Software with fee-required registration keys
- : Software available in German only

### Maintenance Software

#### Auxiliary software for long-term monitoring and error analysing

Maintenance software offers a comfortable possibility to display and log events in a TCS:BUS system:

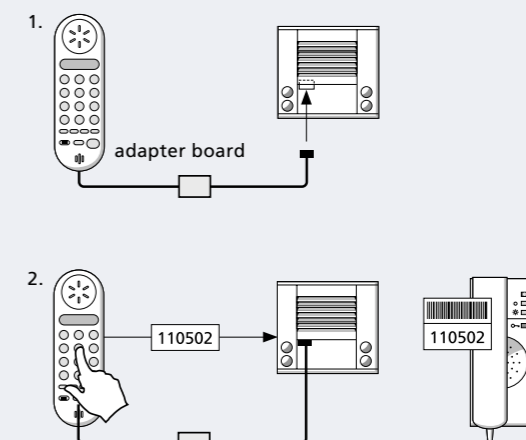
1. display and clear text interpretation of :BUS log-files
2. records all :BUS actions with date and time in a log-file
3. displays the voltage shape with a digital storage oscilloscope and stores a picture in a bmp-file.
4. submits any :BUS protocols , e.g. speaking line, light switch, door release function and control protocols
5. programming and deleting of bell buttons
6. display of the present bus current
7. display of existing calls
8. connects internal and door speaking lines analogue to the TCSK-01

#### system requirements:

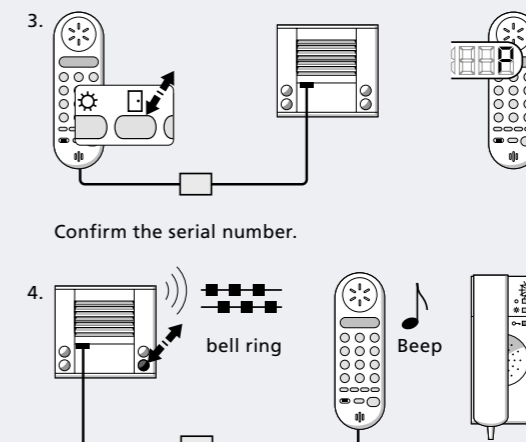
PC with Pentium II-processor (300 MHz clock frequency), 10 MB free fixed-disk storage, CD-drive, graphic controller with SVGA-resolution (800 x 600 dpi) and minimum 256 colours, 64 MB RAM, operating system WIN 98 SE / 2000 / XP

### Programming the bell buttons

The Service Device is connected to the front-door station.

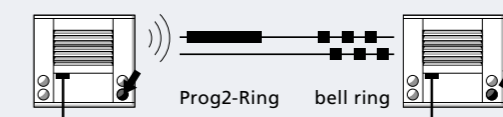


Dial the serial number of the in-house station.



Confirm the serial number.

A second serial number can be programmed on a already occupied bell button.



### One-man programming

Designed for a time-saving installation of standard systems the Service Device also supports a rapid system check. It is very reasonable, easy to handle and just of the size of a telephone handset. Just plug a service connector into the BUS of the front-door station.

In this way a central programming of the basic functions from the front-door station is easy.

The voltage supply is being made directly through the BUS. Hence discharged batteries might not create any problems. Installing a TCS system as well as programming, configuring and maintaining is simple, time-saving and does not require to run long distances.

Article reference number

Service Device TCSK-01

Maintenance Package, RS232 PC-PSI



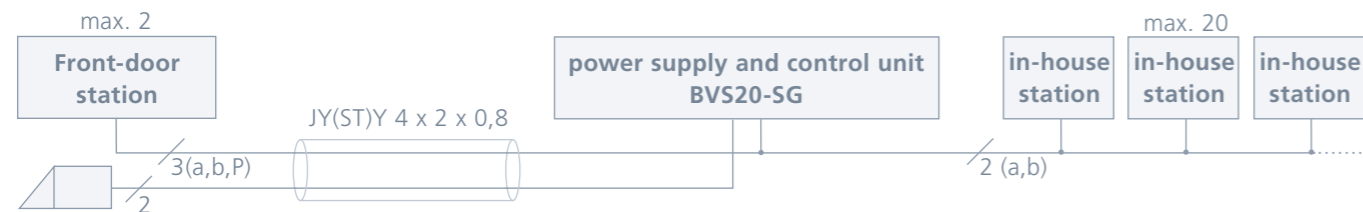


# System and technology basics for audio systems

## Principle circuit diagrams

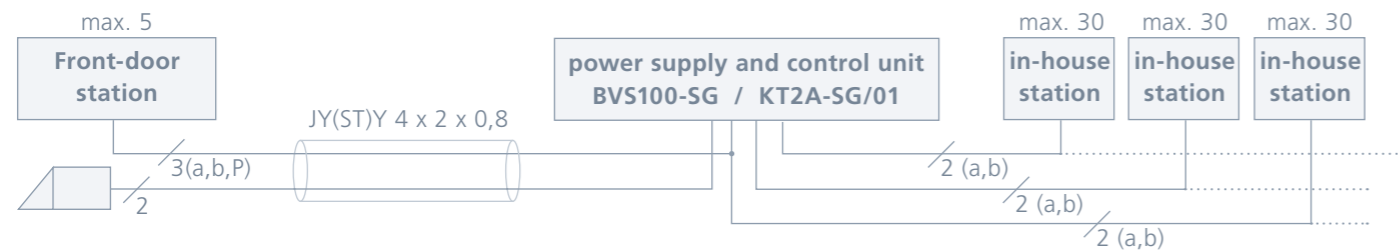
### Audio systems with up to 20 in-house stations on one line

Through the power supply and control unit BVS20-SG the supply of an audio system with one line up to 40 mA is possible. (e.g. for two front-door stations and 20 in-house stations and one door-release)



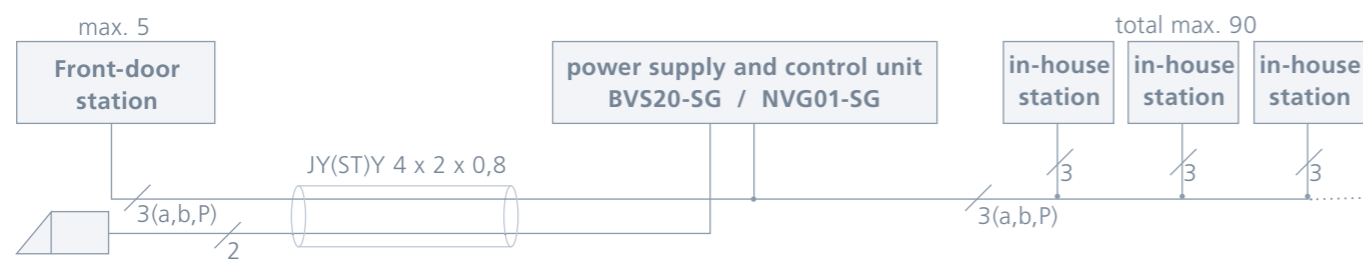
### Audio systems with up to 90 in-house stations on three lines

Through the power supply and control unit BVS100-SG plus the transformer KT2A-SG (for the door-opener voltage) the supply of system with three lines and 60 mA each is possible. (e.g. for five front-door stations and 3 x 30 in-house stations ISH1030 / in total 90 in-house stations and one door-release). The wiring is carried out through a 2-wire technique.



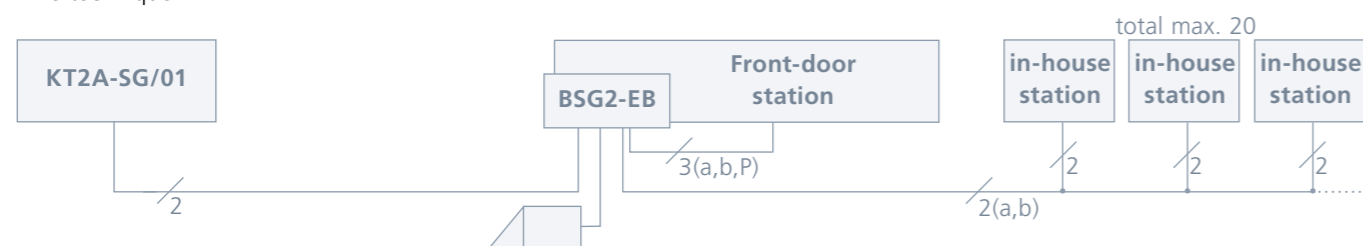
### Audio systems with up to 90 in-house stations on one line

Through the power supply and control unit BVS20-SG plus the 1 A direct current power supply unit NVG01-SG the supply of an audio system with one line is possible. (e.g. for five front-door stations PES20 and 90 in-house stations ISH1030 plus one door-release). The wiring is carried out through a 3-wire technique.



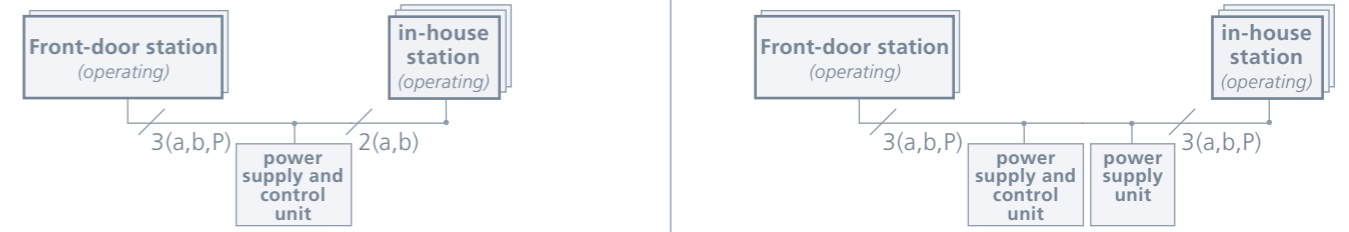
### Audio systems with up to 20 in-house stations on one line

Through the multi-functional unit NBV1000 (control unit and transformer BSG2-EB and transformer KT2A-SG/01) the supply of an audio system with one line and only two wires between the front-door station and the KT2A-SG/01 is possible. (e.g. for one front-door station PES20 and a 20 in-house stations ISH1030 plus a door-release). The wiring is carried out through a 2-wire technique.



## Calculating audio systems

### Example of audio systems in 2- and 3-wire technique (with 2 front-door stations and 4 in-house stations)



### Calculating the current supply of an example of an audio system (to determine a sufficiently powerful supply and control unit BVS)

For two front-door stations:  $I_{a \text{ in total front-door station}} = 2 \times I_{a \text{ stand by}}$  and  $I_{P \text{ in total}} = 1 \times I_{P \text{ stand by}} + 1 \times I_{P \text{ max operating}}$

For four in-house stations:  $I_{a \text{ in total in-house station}} = 4 \times I_{a \text{ stand by}}$  and  $I_{a \text{ in total in-house station}} = 4 \times I_a$   
 ( $I_{a \text{ max operating}}$  is ignored, because of a power reserve of the BVSxx.)  $I_{P \text{ in total in-house station}} = 3 \times I_{P \text{ stand by}} + 1 \times I_{P \text{ max operating}}$

For the whole system shall be considered:  
 $I_{a \text{ in total system}} = I_{a \text{ in total front-door station}} + I_{a \text{ in total in-house station}}$   
 $I_{P \text{ in total system}} = I_{P \text{ in total front-door station}} + I_{P \text{ in total in-house station}}$

The results for  $I_{P \text{ in total}}$  and  $I_{a \text{ in total system}}$  need to be equal to  $I_P$  and  $I_a$  to the values indicated on the power supply and control units (BVS).

## Overview of the current and voltage values for the calculation of audio systems

### Input current of the front-door stations (3-wire connection)

	$I_a$ input current	$I_P$ input current	$I_{P \text{ max operating}}$
Series PAK	0,4 mA	11 mA	21 mA
Series PUK	0,4 mA	23 mA	36 mA
Series PDS	0,4 mA	16 mA	65 mA
Series PES	0,4 mA	16 mA	65 mA

### Input current of the in-house stations (2-wire connection)

	$I_a$ input current
ISH1030	1,4 mA
IMM1000	2,1 mA

### Input current of the in-house stations (3-wire connection)

	$I_a$ input current	$I_P$ input current	$I_{P \text{ max operating}}$
ISH1030	0,4 mA	1,0 mA	67 mA
IMM1000	0,4 mA	1,7 mA	78 mA

### Output current of the power supply and control units (Current, DC)

	$I$ (unoperating)	$I_b$	$I_a$	$I_P$
NBV1000		$I_a + I_P$	50 mA	100 mA
BVS20-SG		$I_a + I_P$	40 mA	80 mA
BVS100-SG		$I_a + I_P$	3 x 60 mA	100 mA
BVS20-SG + NVG03		$I_a + I_P$	40 mA	2500 mA

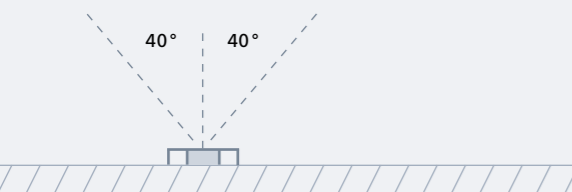
### Output voltage of the power supply and control units (Voltage, DC)

	U (DC)	$U_{a/b}$	$U_{P/b}$
BVS20-SG		24 V ± 1V	24 V ± 1V
NBV1000		24 V ± 1V	24 V ± 1V
BVS100-SG		24 V ± 1V	24 V ± 1V
BVS20-SG + NVG03		24 V ± 1V	26 V

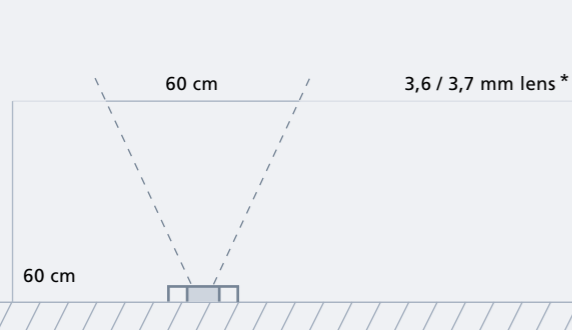
# System and technology basics for video systems

## View from top

No back lighting in this area

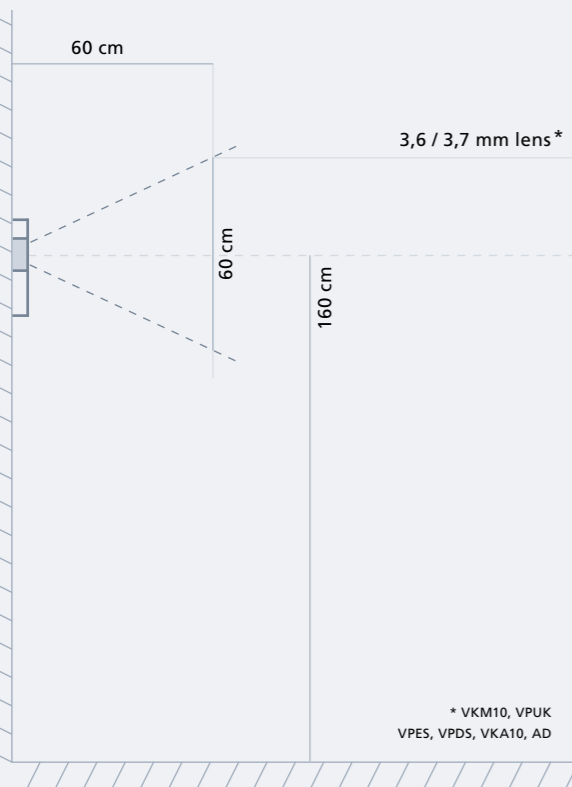


Horizontal dihedral angle



## Side view

Vertical dihedral angle



\* VKM10, VPUK  
VPES, VPDS, VKA10, AD

### 1. rules for the selection of the location for video front-door stations

the cameras must not be aligned to:

- : direct back-lighting
- : direct solar radiation
- : a screen background with high luminosity or extreme contrasts
- : intensively reflecting walls
- : shiners and other sources of light

### Optimal mounting height:

recommended mounting height:

- : standing persons: appr. 160 cm (normal case)
- : children, wheelchair users: appr. 120 cm
- : sitting in the car: appr. 100 . 120 cm
- : sitting in the truck: appr. 180 - 220 cm

In any case please consider that the centre line poses the centre of the picture.

### Horizontal and vertical capture range

The capture range is made up for a viewer distance of 30 to 90 cm (head's region).

For monitoring tasks outside this area the door-stations are suitable only conditionally, as the objects will be displayed too small-sized. For these cases please use the installation camera VKA10 which is available with lenses of greater focal lens.

### 2. Choice of the wire material

To transmit the video signals a twisted core pair shall be used. There are two possibilities:

- : for standard systems TCS recommends the cable type JY (ST)Y n x 2 x 0.8 with n = core pair (at least 4).

For certain load conditions or long distances it might become necessary to double several core pairs for the TCS:BUS and the direct current. Video cables must not be doubled!

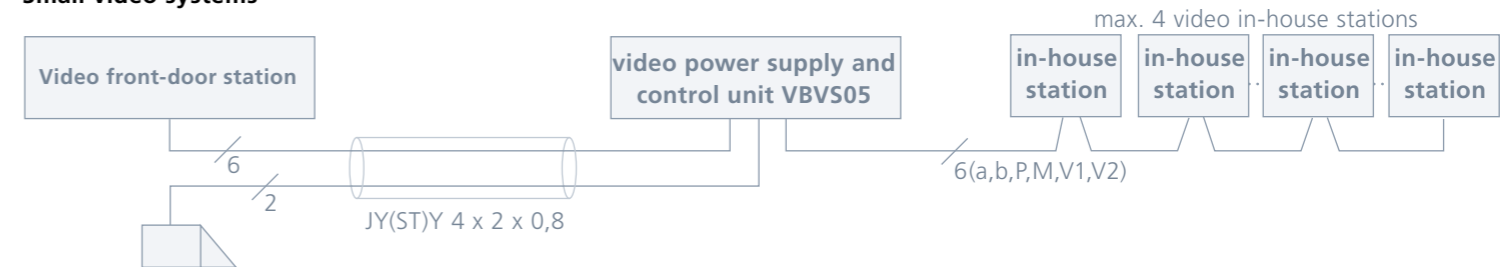
- : for long distances or high complexness rate:

CAT7-cable with at least 0.8mm core diameter, optimal 1.0 - 1.2 mm (AWG 20 - 23). This cable type has singly shielded core pairs.

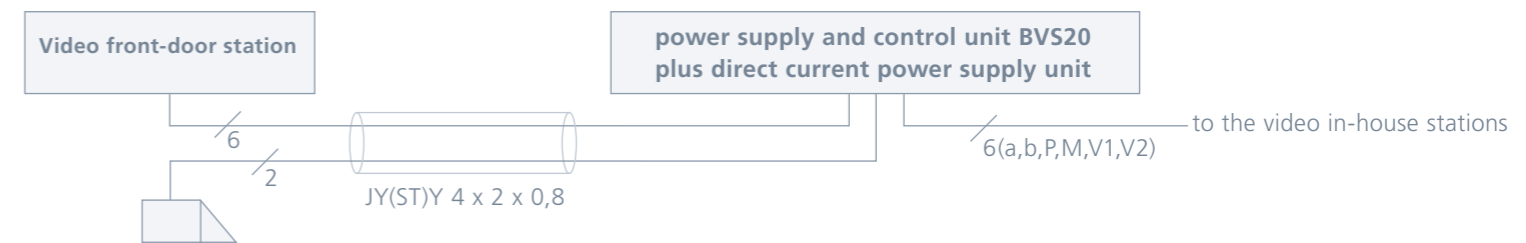
### 3. principle circuit diagrams

Through the control and power supply unit VBVS05-SG only one front-door station and up to four video in-house stations can be operated. The system does not allow the parallel operation of video in-house stations. There is only one video in-house station operating. The system is based on the wiring that is shown below and does not allow the application of distributors.

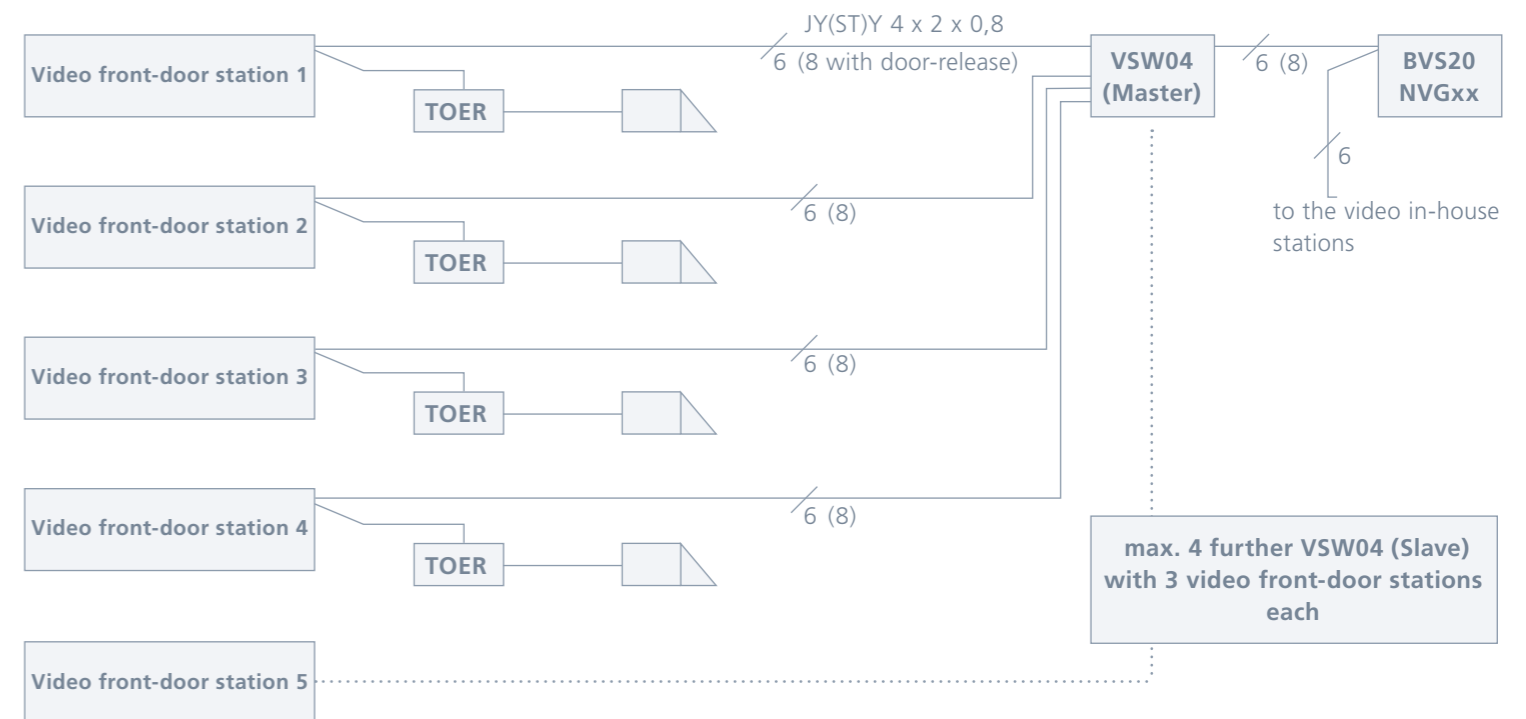
#### Small video systems



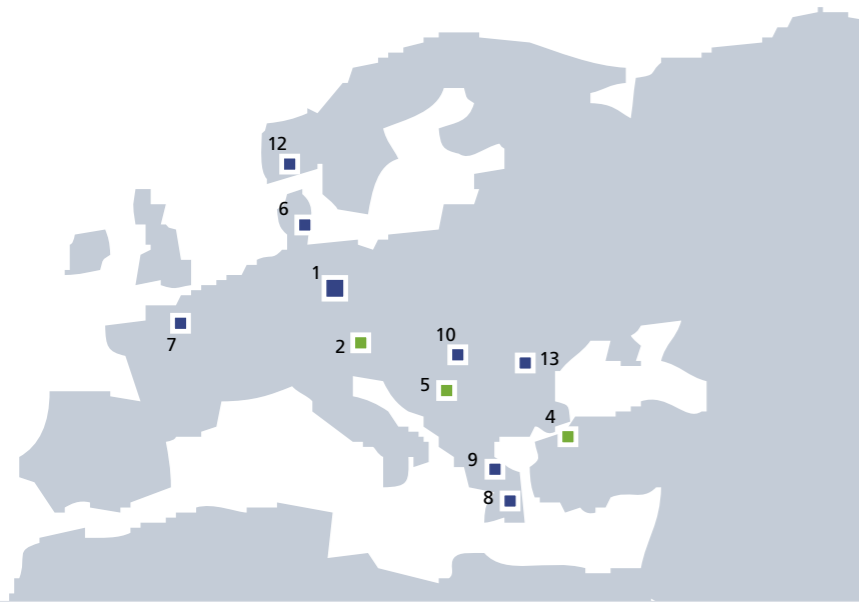
#### One camera



#### More cameras



## Subsidiaries and representatives



■ TCS sales offices  
■ Subsidiaries

### Head quarter

1 *Germany*  
**TCS TürControlSysteme AG**  
 Geschwister-Schöll-Straße 7  
 39307 Genthin  
 Phone: +49 3933 - 8799 10  
 Fax: +49 3933 - 8799 10  
 Email: info@tcs-germany.de

### Subsidiaries

2 *Austria*  
**TCS TürControlSysteme GmbH Österreich**  
 Hauptstraße 25  
 A-2801 Katzelsdorf  
 Phone: +43 26 22 - 7862 70  
 Fax: +43 26 22 - 7862 72  
 Email: TCS\_GmbH@netway.at

3 *China*  
**TCS Intelligent Building Technology Co.Ltd.**  
 Mr. Ma  
 A 1510, Orient International Building  
 85 Lou Shanguan Road  
 VC-200336 Shanghai  
 Phone: +86 21 62 - 0978 29  
 Fax: +86 21 62 - 0975 53  
 Email: ma@tcs-germany.de

4 *Turkey*  
**TCS Istanbul Elektrik Elektr. San. Tic. Ltd.**  
 Mr. Övün  
 Sarmayk Apartmany Dükkan 2  
 TR-34876 Istanbul  
 Phone: +90 21 64 52 - 67 68  
 Fax: +90 21 64 52 - 62 06  
 Email: okan.oevuen@tcs-germany.de  
 Web: www.tcs-germany.com

5 *Serbia & Montenegro*  
**d.o.o. TCS S.E. Europe**  
 Mr. Milan Djukic  
 Vase Pelagica St. 22  
 YU-26300 Vrsac/CPT Vrsac  
 Phone: +38 11 38 - 06 761  
 Fax: +38 11 38 - 06 761  
 Email: miland@hemo.net

### Sales offices

6 *Denmark*  
**Scantron A/S**  
 Buchwaldsgade 51  
 DK-5000 Odense C  
 Phone: +45 66 13 - 99 66  
 Fax: +45 66 13 - 99 29  
 Email: info@scantron.dk  
 Web: www.scantron.dk

7 *France*  
**Matilec**  
 Mr. Grancher  
 7 rue de la Croix Blanche  
 F-77310 Pringy  
 Phone: +33 16 40 - 98 888  
 Fax: +33 16 40 - 99 778  
 Email: matilec@matilec.com  
 Web: www.matilec.com

8 *Greece*  
**Emporiki ltd.**  
 Mr. Papadopoulos  
 2 km . Xanthi-Petinos  
 GR-67100 Xanthi  
 Phone: +30 25 41 - 0831 34  
 Fax: +30 25 41 - 0831 34  
 Email: Paelektro@otenet.gr

9 *Greece*  
**Symplexis LTD**  
 Mr. Chonopoulos  
 Averopoulou 20  
 GR-17342 AG.Dimitrios  
 Phone: +30 21 09 - 95 61 20  
 Email: info@Symplexis.gr

10 *Hungary*  
**PHOEBUS Tana'csado'**  
 Kereskedelmu e's Szolga'Itato' KFT  
 Mr. Sandor  
 Tüske u. 6/a.  
 H-1026 Budapest  
 Phone: +36 12 75 - 11 61  
 Fax: +36 12 75 - 11 61  
 Email: phoebuskft@axelero.hu

11 *India*  
**M&V Market Development Service Pvt.**  
 Mr. Radhakrishnan  
 Phase 1 Mehrauli-Gurgaon Road  
 IND-122002 Gurgaon  
 Phone: +91 12 45 - 04 39 25  
 Fax: +91 12 45 - 04 39 27  
 Email: pramod\_rk@mv-india.com

12 *Norway*  
**Qualitronic**  
 Mr. Jubal-Andersen  
 Twetenveien 157  
 N-0671 Oslo  
 Phone: +47 22 75 - 74 60  
 Fax: +47 22 26 - 49 10  
 Email: qualitronic@broadpark.no  
 Web: www.qualitronic.no

13 *Romania*  
**S. C. Gamma International S.R.L**  
 Mr. Koch  
 Jud. Nures, Str. Horia Teculescu 65  
 RO-545400 Sighisoara  
 Phone: +40 26 57 - 71 140  
 Fax: +40 74 42 - 40 897  
 Email: akhdl@web.de

## References



**Berlin**  
 Lift emergency call system  
 Nordic Embassy



**Paris**  
 communication system  
 "Les Portes de la Defense"



**Shanghai**  
 communication system  
 residential buildings  
 "ShuiQinMuHua"



**Travemünde**  
 Rehabilitation of a large-scale system comprising 450 rooms  
 Maritim Hotel  
 Travemünde



**Budapest**  
 communication system  
 Bartók-ház Center



**Vienna**  
 communication system  
 Gasometer



## Technical help front-door station

### Audio

Mounting forms // Number of flats	from 1	up to 2	up to 3	up to 4	up to 5	up to 8	up to 16	up to 20	up to 23	up to 30	up to 48	up to 76	up to 80	> 80 res.
Surface-mount	home:pack													
Surface-mount	pre:pack													
Surface-mount	PAK													
Surface-mount	PDS			PDS   4 x PDT										
Surface-mount				PES					PES   4 x PET (up to 92 flats)					
Free-standing				PSE										
	PSD													
Assembly	TCU							TCU   4 x TCKE (up to 144 flats)						
Flush-mount	PUK										customized PUK			
Surface-mount and Flush-mount	AD 1 - 4 (up to 60, 200, 500 or 1000 flats)													

### Video

Mounting forms // Number of flats	from 1 to 3	up to 4	up to 5	up to 6	up to 7	up to 9	up to 16	up to 20	up to 21	up to 24	up to 44	up to 76	up to 80	> 80 res.
Flush-mount	VPUK (up to 24 flats)										customized VPUK			
Surface-mount	VPDS	VPDS PDT		VPDS   4 x PDT (up to 21 flats)										
Surface-mount				VPES				VPES   4 x PET (up to 88 flats)						
Free-standing	VPSD													
		VPSE (up to 20 flats)												
Surface-mount and Flush-mount	AD 1 - 4 mit Video (up to 60, 200, 500 or 1000 flats)													

Starting from 80 flats we recommend you to do plan the communication system only together with our technical staff or local sales office.

## PES | PET detail's planning

Combinations // Number of flats	PES   PET combination audio					Combinations // Number of flats	VPES   PET combination video				
	PES	+ 1. PET	+ 2. PET	+ 3. PET	+ 4. PET		VPES	+ 1. PET	+ 2. PET	+ 3. PET	+ 4. PET
<b>Desired number of flats</b>	4	16	28	40	52	<b>Desired number of flats</b>	4	20	36	52	88
	6	20	34	48	62		6	24	42	60	
In order to reach the same height the difference of a PES to an aligned PET is always 8 bell buttons.	8	24	40	56	72	In order to reach the same height the difference of a VPES to an aligned PET is always 12 bell buttons.	8	28	48	68	
	10	28	46	64	82		10	32	54		
	12	32	52	72	72		12	36	58		
	14	36	58		82		14	40	66		
	16	40	64		92		16	44	72		
	18	44	70				18				
e.g. PES10+PET18 = 28 WE	20	48	76			e.g. VPES10+PET22=32WE					