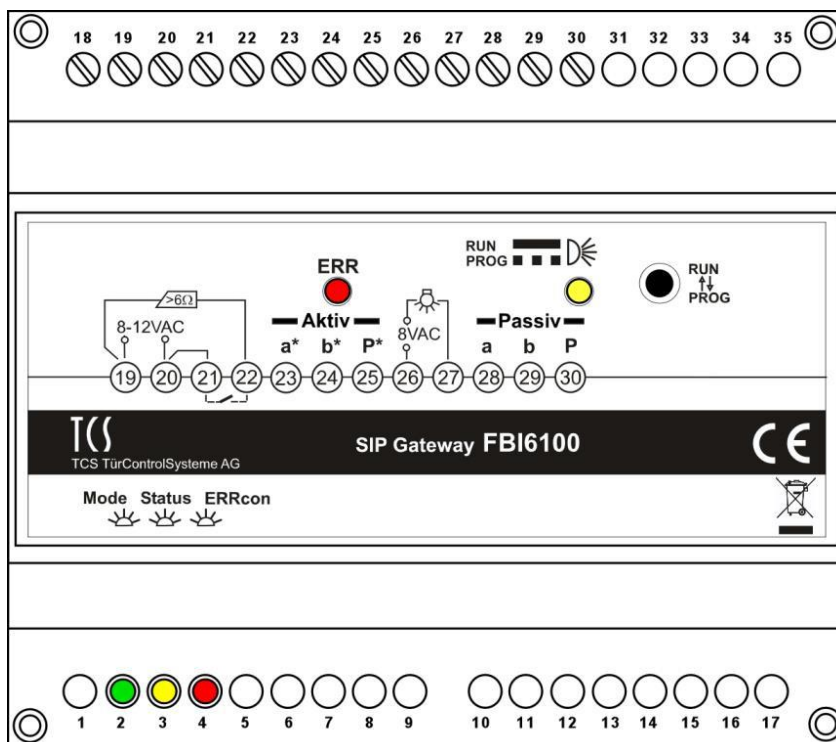


## Product information

**SIP-Gateway**

for 115 call destinations **FBI6100-0400**

for 10 call destinations **FBI6101-0400**



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## Scope of delivery

1 x FBI610x-0400  
1 x product information

### Please note!

- This product information describes the necessary steps to connect the FBI610x with a TCS front-door station and with a SIP server.
- For detailed information refer to the FBI610x user manual. You'll find the manual for free download under [www.tcsag.de](http://www.tcsag.de).

## Safety instructions

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



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













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

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

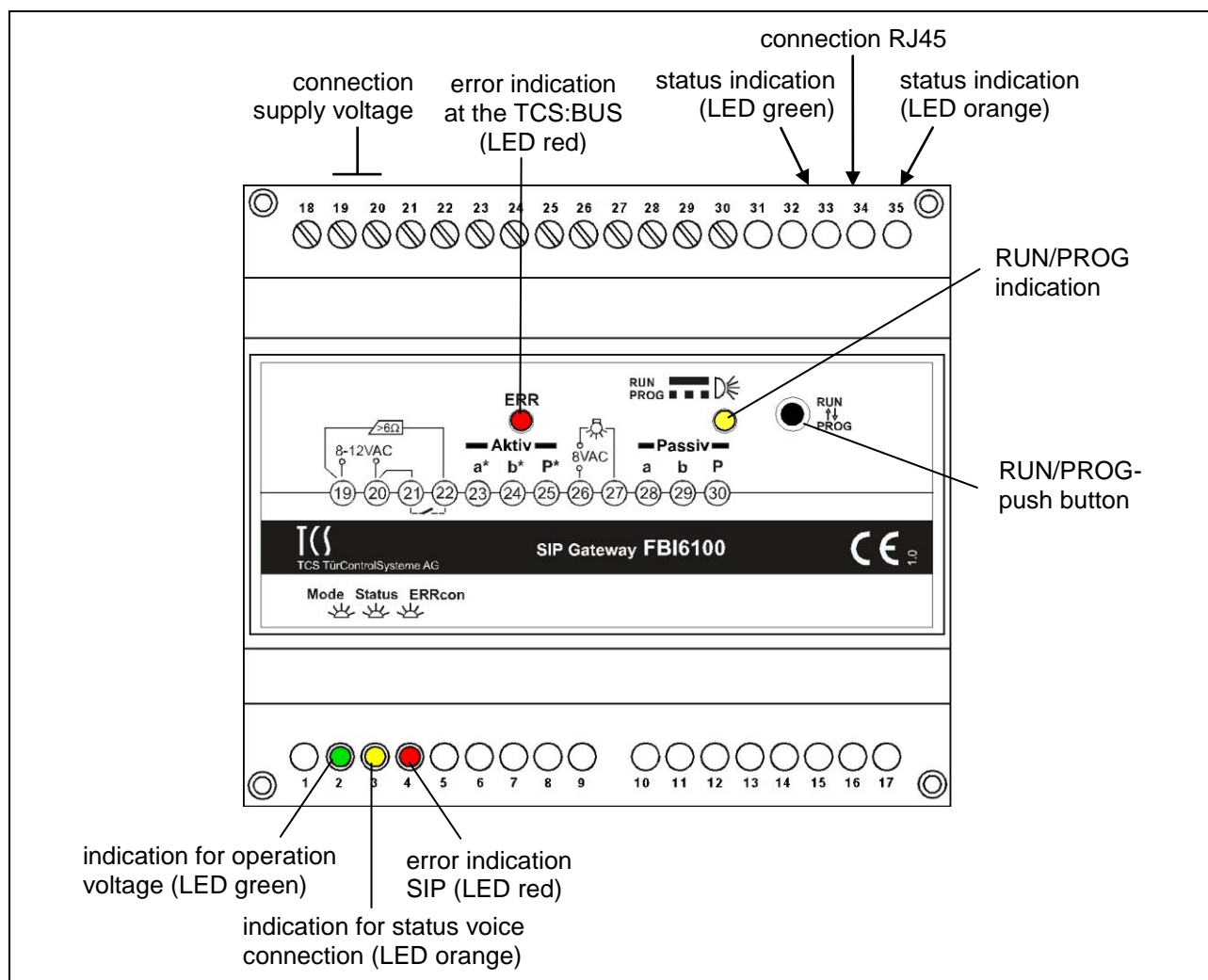
**!** With suitable measures to protect against lightning, it has to be ensured that a voltage of each 32 V DC is not exceeded at the a- and b-wire.

## Connections, indication and operating elements

|   | Labelling                             | Function   |
|---|---------------------------------------|--|
|  | connection for supply voltage         | <b>Only operation mode ACTIVE!</b> 8 - 12 V AC (from bell transformer NWV1000-0400)  |
|  | a*/b*/P*<br>connection TCS:BUS ACTIVE | <p><b>Only operation mode ACTIVE!</b><br/>The SIP-Gateway realises the supply voltage for a BUS strand.</p> <ul style="list-style-type: none"> <li>• In this operation mode, a front-door station can be connected to the network at minimal effort.</li> <li>• One audio front-door station (incl. extensions) and 3 audio indoor stations can be operated in this mode.</li> <li>• The selection of connectable devices must be realised in compliance with the max. quiescent current output of the FBI610x.</li> <li>• Terminals are short-circuit protected.</li> </ul> |

|   |   |  |
|---|---|--|
|    | a/b/P<br>connection TCS:BUS<br>PASSIVE  | <p><b>Only operation mode PASSIVE!</b></p> <p>The supply voltage for the TCS:BUS is provided by an additional power supply and control unit.</p> <ul style="list-style-type: none"> <li>• This operation mode is selected if the SIP-Gateway is integrated into e.g. a video system, a system with several front-door stations, resp. if the system which is to be supplied exceeds the power output of the SIP-Gateways.</li> <li>• Terminals are short-circuit protected.</li> </ul> |
|    | Door release relay<br>(potential-free relay<br>contact – closing con-<br>tact)        | <ul style="list-style-type: none"> <li>• door release voltage via bridge terminal 20 to 21</li> <li>• 12 V, 50/60 Hz / 2 A (for door opener not less than 6 Ohm)</li> <li>• door release time can be adjusted: 0 to 99 sec</li> <li>• function can be adjusted via web interface</li> </ul>  |
|    | Internal light switch<br>relay (potential-free<br>relay contact – closing<br>contact) | <p>To control automatic light switching units, the following extensions can be connected:</p> <ul style="list-style-type: none"> <li>• automatic light switch unit (max. permitted contact load capacity of 24 V DC / 1 A)</li> <li>• staircase light control unit FNA1000 (or TZ1-SG) (with 8 - 24 V AC)</li> <li>• relay</li> <li>• adjustable light switch time: 0 to 99 sec</li> <li>• adjustable function via web interface</li> </ul>  |
|  | RJ45 socket   | <ul style="list-style-type: none"> <li>• connection for network (PC/Laptop) 10/100 Mbit</li> </ul>   |
|  | RUN/PROG push<br>button   | <p><b>Only operation mode ACTIVE!</b></p> <ul style="list-style-type: none"> <li>• Switching of the system mode:<br/>operation mode – programming mode</li> </ul>  |
|  | RUN/PROG indication<br>(LED orange)   | <ul style="list-style-type: none"> <li>• indication of the system mode:<br/><b>is ON:</b> operation mode<br/><b>blinks:</b> programming mode</li> </ul>  |
|  | error indication at<br>TCS:BUS (LED red)  | <ul style="list-style-type: none"> <li>• <b>flashes:</b> error in the connection to the TCS:BUS (see page 8)</li> <li>• <b>flashes OFF:</b> error in the network connection (see page 8)</li> </ul>  |
|  | indication operation<br>voltage (LED green)   | <ul style="list-style-type: none"> <li>• <b>is ON:</b> operation voltage is present</li> </ul>   |
|  | indication status voice<br>connection (LED or-<br>ange)                               | <ul style="list-style-type: none"> <li>• indication voice connection or connection estab-<br/>lishment FBI610x to an external device</li> </ul>  |
|  | error indication SIP<br>(LED red)   | <ul style="list-style-type: none"> <li>• <b>is ON:</b> start process (around 40 sec) or no connec-<br/>tion to the SIP server (see page 8)</li> </ul>  |
|  | status indication (LED<br>green)  | <ul style="list-style-type: none"> <li>• <b>blinks:</b> if data is sent or received via LAN</li> <li>• <b>is ON:</b> connection FBI610x to the network is estab-<br/>lished</li> </ul>   |
|  | status indication (LED<br>orange)   | <ul style="list-style-type: none"> <li>• <b>is ON</b> simultaneously green with status indication:<br/>no connection to the network</li> </ul>   |

## Device overview



## Technical data

|                                 |   |
|---------------------------------|---|
| housing:                        | DIN-rail housing 6 SU for DIN-rail according to DIN EN 60715 TH35                 |
| weight:                         | 215 g   |
| acceptable ambient temperature: | 0 °C ... +40 °C   |
| degree of protection:           | IP 20   |
| <b>operation mode ACTIVE</b>    |   |
| supply voltage:                 | 8-12 V AC (from bell transformer NWV1000-0400)                                    |
| output voltage idle state:      | $U(a/b) = 24 \text{ V} \pm 1 \text{ V}$ , $U(b/P) = 26 \text{ V} \pm 1 \text{ V}$ |
| output voltage speaking:        | $U(a/b) = 22 \text{ V} \pm 1 \text{ V}$   |
| output current:                 | $I(a) = 40 \text{ mA}$ ,  |
| max. output current:            | $I(P_{\text{max}}) = 180 \text{ mA}$  |
| <b>operation mode PASSIVE:</b>  |   |
| supply voltage:                 | $+26 \text{ V} \pm 8 \%$ (power supply and control unit)                          |
| input current:                  | $I(a) = 0.05 \text{ mA}$ , $I(P) = 27 \text{ mA}$                                 |
| max. input current:             | $I(P_{\text{max}}) = 45 \text{ mA}$   |

## Intended use

- The FBI610x is an interface for the connection of TCS front-door stations to a VoIP network as end device (client) via Session Initiation Protocol (SIP).
- The SIP-Gateway can be used generally in 2 operation modes at the TCS:BUS: operation mode ACTIVE or operation mode PASSIVE.

## Short description

- providing the voltage supply of 24 V DC (for TCS:BUS, only operation mode ACTIVE)
- switching of the system mode between operation and programming mode, LED indication (only in operation mode ACTIVE).
- automatic detection of the operation mode PASSIVE or ACTIVE
- potential-free relay contacts (closing contacts) to control automatic light switch units / door opener
- single speech channel:  
Communication from front-door and indoor stations to more than one call destination is not possible simultaneously.
- optical indication for voice connection and operating voltage
- error detection and indication for TCS:BUS and network errors

## Connect the lines

### Notes

Mounting, installation and commissioning must be carried out only by IT professionals!

**!** Use a small screwdriver to connect the lines and to avoid damaging the device.

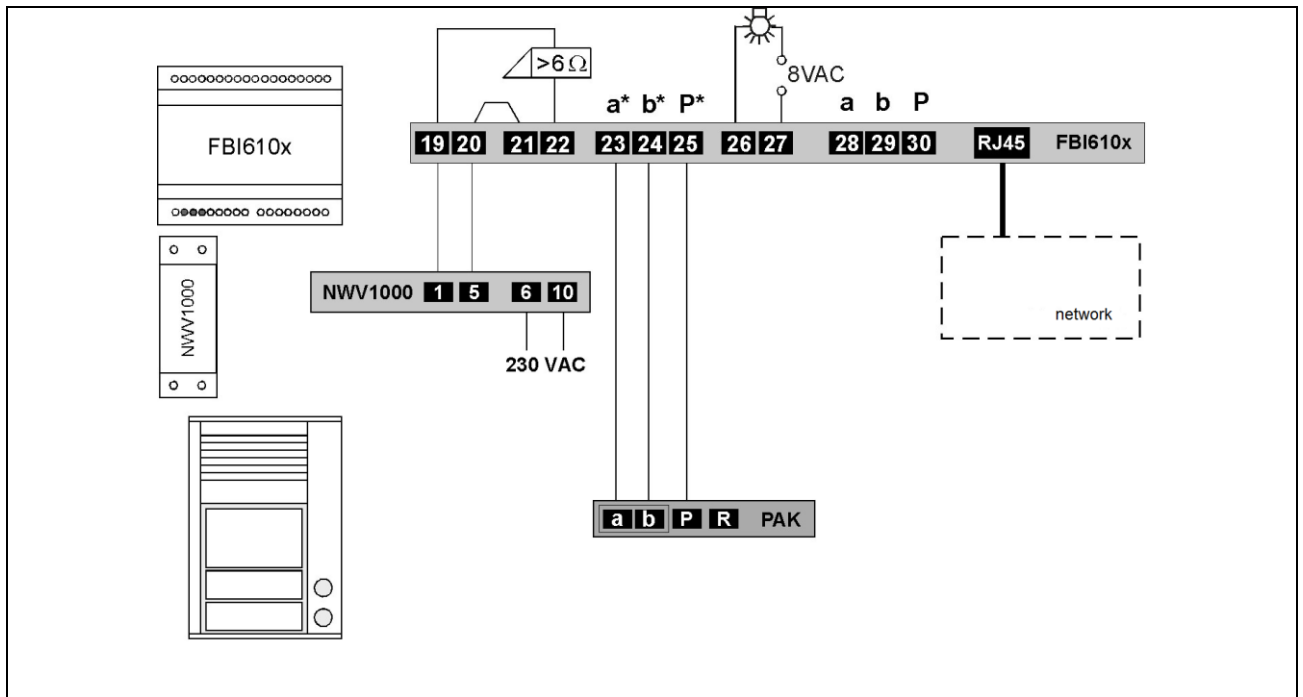
### **Connect the TCS system**

- Strip the ends of the lines.
- Connect the TCS system to the FBI610x depending on the operation mode and the type of system completely and according to the wiring example.

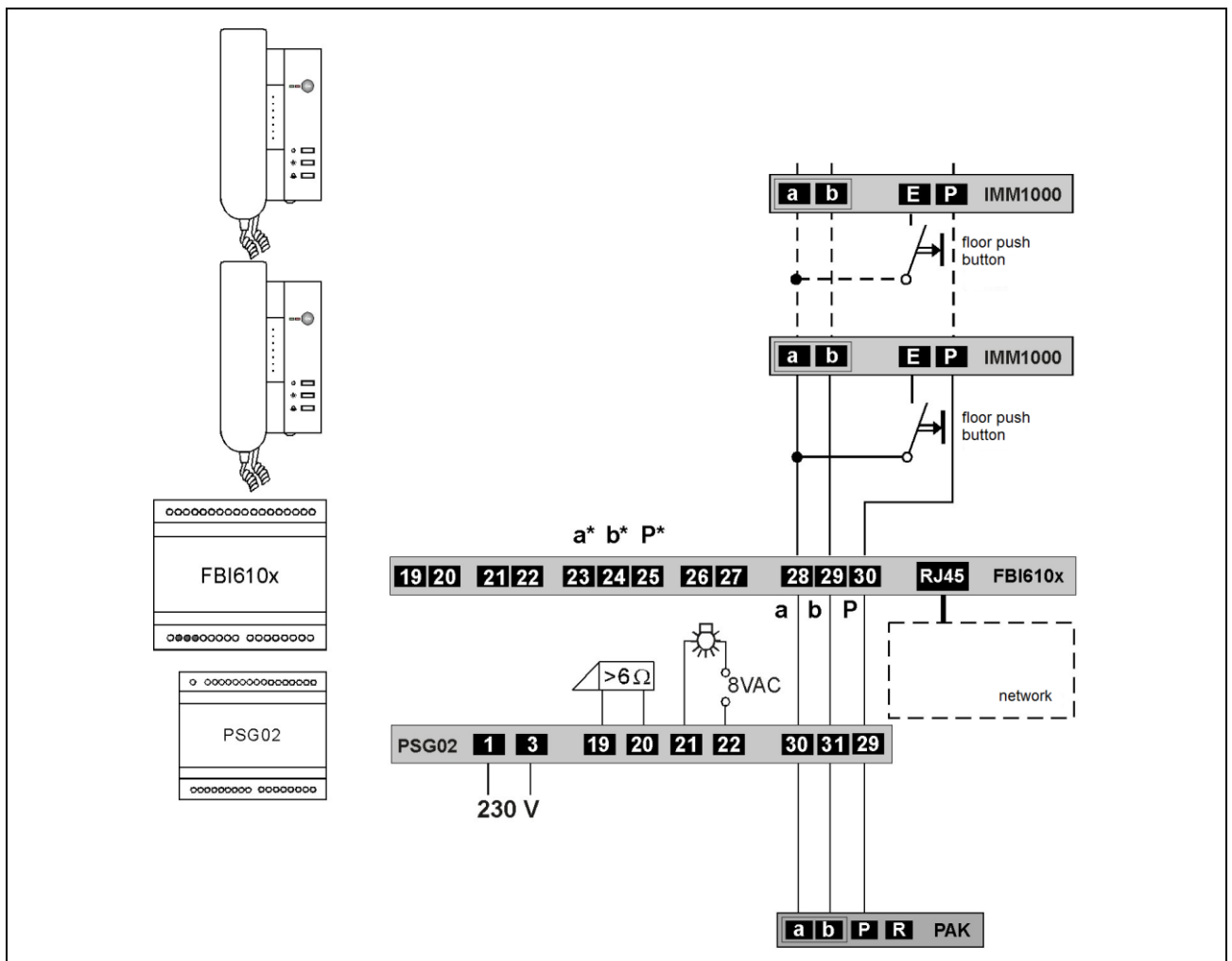
### **Connect the network**

Establish a connection between the RJ45 interface at the FBI610x and your network by using a patch cord.

**Wiring example operation mode ACTIVE**



**Wiring example: operation mode PASSIVE**






## Commissioning

- Install the devices of the system completely.
- Check the a-, b- and P-wire against each other for short-circuits.
- Switch on the mains voltage.  
After switching on the voltage supply, the FBI610x starts automatically.

### Note

|   |   |
|---|---|
| ! | The SIP Gateway restarts automatically after a voltage interruption, even if the device was switched off.                           |
| ! | Switching off the power supply during a storage process or software update can cause a loss of data or a malfunction of the device. |

### Error detection and indication

|   |   |   |
|---|---|---|
| <u>Error at the TCS:BUS</u><br><b>Only operation mode PASSIVE:</b> a-wire is not connected / not supplied, a-b short-circuit or a- and P-wire are interchanged / short-circuited<br><b>Only operation mode ACTIVE:</b> a-b or a-P short-circuited | <br><b>error indication flashes (1:7, 1 Hz)</b>      | Connect a-wire / check power supply, interchange a- and P-wire or remove short-circuit, device is in standby mode again |
| <u>Network error</u><br>defective network connection or no connection to the SIP server   | <br><b>error indication flashes out (7:1, 1 Hz)</b> | Check the network, check data transmission, check login data for SIP server, device is in standby mode again            |
| <u>Network error</u><br>defective network connection or no connection to the SIP server   | <br><b>error indication SIP lights up *</b>        | Check the network, check the data transmission, check the SIP server, device is in standby mode again                   |

\* No error during the start process, indication, lights up and expires after around. 40 sec if no error was detected.

## Start browser: connection establishment PC – SIP Gateway

### Prepare the intranet connection

The PC/Laptop must be equipped with a network connection and the device must be located in the same subnet as the SIP-Gateway. If your network and server are working in the 192.168.1 address area (C net), you can directly access the SIP-Gateway (provided that another device does not use the IP address of the SIP-Gateway).

Otherwise the used PC/Laptop must be set temporary to an IP address within the address area of the FBI610x to establish a connection with the SIP-Gateway. To install / modify your network connection, please use the network installation assistant or the help menu of your operating system (catchword: *Install the network*). If several FBI610x, which are in delivery state, are to be installed within one network, the devices must be commissioned one by one and assigned to a free IP address.



- To install the network connection, you eventually need administrator rights.
- In delivery state, the following values are pre-set at the FBI610x:

**IP address: 192.168.1.200, net mask: 255.255.255.0, password: 1234**

To setup / adjust your network connection, please use the network installation assistant or the help of your operation system (catchword: **Network setup**).

### **Example: network setup under Windows XP**

Open the *Network and data telecommunication connections* in one of the following methods:

1. Click with the right mouse button on the icon *Network surrounding* on the desktop and select *Settings*.

or

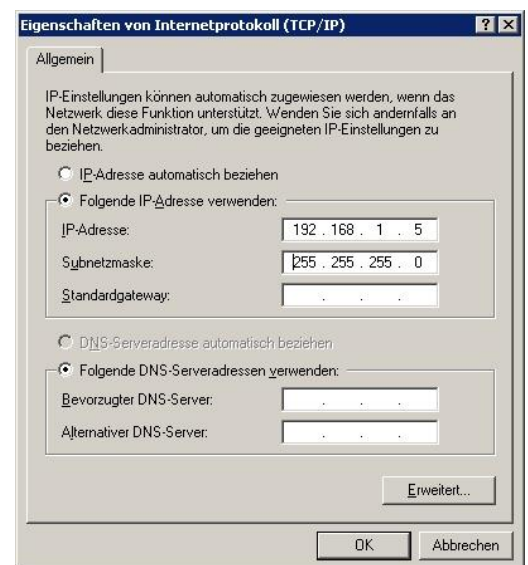
2. Click the button Start (toolbar on your desktop) > Settings > System control > Network connection.

- Select *LAN connection* in the menu.
- Select *Settings*.

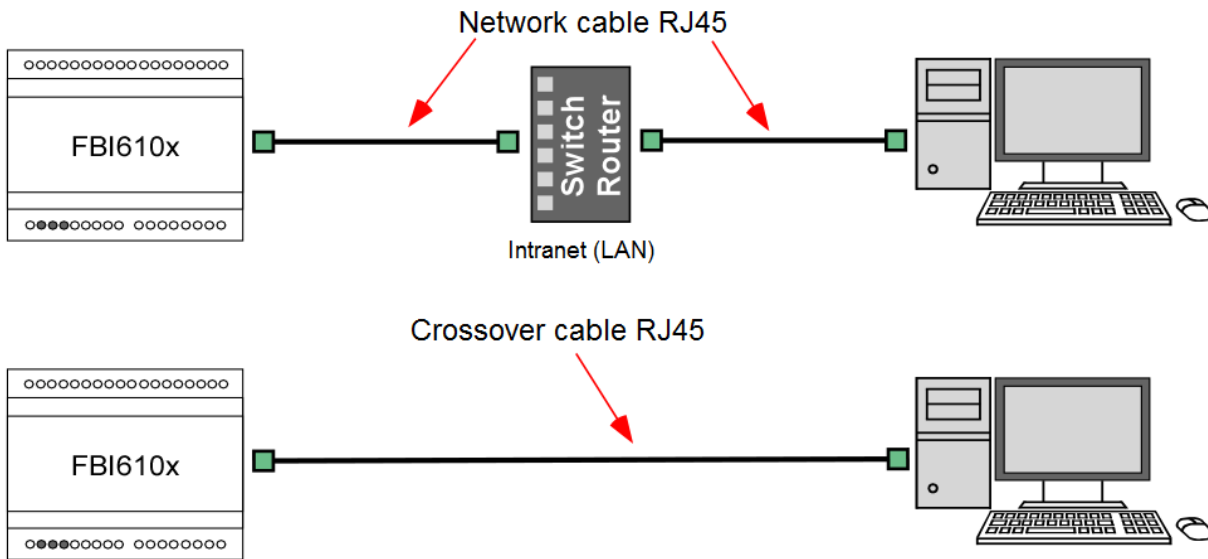
- Click *Internet protocol (TCP/IP)* (see illustration).
- Click *Settings*.



- Activate *Use the following IP-address*.
- Enter an IP-address, which differs from the one of the TCS:Server only in its last digit, e.g. 192.168.1.5.
- Enter the number of the subnet mask: 255.255.255.0.
- Confirm with *OK*.

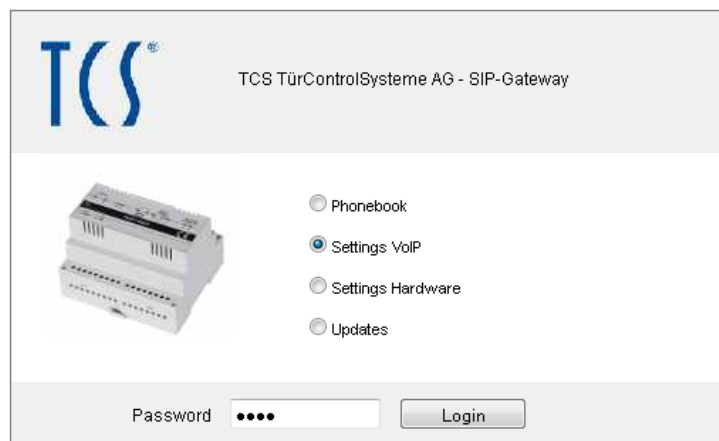


### Establish a network connection for configuration



- Establish a connection from the PC/Laptop to the SIP-Gateway via switch or router.
- Alternatively connect the SIP-Gateway directly to a PC/Laptop via a crossover cable (twisted pair cable).

- Open an internet browser.
- Enter the IP address of the SIP Gateway into the address line: <http://192.168.1.200>
- The start page is called.
- Select *Settings VoIP*.
- Enter the password (preset: 1234) and select *Register*.



### Enter / change IP address

- Manually configured IP address is already selected.
- Enter a free IP address which belongs to the address area of the required network.
- Enter the number of the related subnet mask.
- Eventually also enter the IP address of your DNS server.
- Confirm with *Save*.

The screenshot shows the TCS TürControlSysteme AG - SIP-Gateway web interface. The left sidebar contains navigation links: < Back, Network (selected), Codec Settings, SIP Settings, Advanced SIP Settings, System, and Help. The main content area is titled 'General information' and 'Network Settings'. Under 'General information', it shows: Type: SIP-Gateway, MAC Address: 00-50-C2-A1-60-A1, and Versions: 056000V7.7M1.C (V3.5). Under 'Network Settings', there are several fields: Connection Type (set to 'Manually Configured IP Address'), IP Address (192.168.1.200), Subnet mask (255.255.255.0), and Default Gateway (192.168.1.100). Below these are radio buttons for 'Automatically retrieve DNS Server IP' (selected) and 'Use the following IP Address'. The 'Use the following IP Address' section includes Primary DNS (44.255.44.94) and Secondary DNS (85.250.79.45). At the bottom, there are 'Save' and 'Reset' buttons.



If the IP address was changed manually, the web browser can possibly no longer display the page with the feedback. If this is the case, enter the new IP manually into the browser to get back to the start page. Eventually, change the address area of your PC/Laptop again.

### Change the password

- Register under *Settings VoIP*. Select *System* in the navigation bar.
- Enter your new password under *Administrator password*. You can also remove the password if there is no need for security.



Please observe that without any password protection, the system can be manipulated by anyone!

- Click *Save*.

## Enter / change SIP settings

- Register under *Settings* *VoIP*.
- Select *SIP settings* in the navigation bar.
- Enter here the necessary data for your SIP server / telephone system, which you have determined during the registration of the FBI610x.
- Click **Save**.

*Note for user name:*

*This field is used only for information and does not have a special function. You can enter e.g. the position of the front-door station.*

The screenshot shows the 'SIP Settings' page of the TCS TürControlSysteme AG - SIP-Gateway. The interface includes a navigation menu on the left with options like 'Network', 'Codec Settings', 'SIP Settings', 'Advanced SIP Settings', 'System', and 'Help'. The main content area is titled 'SIP Settings' and contains the following fields:

- SIP Registration:** Radio buttons for 'No' and 'Yes' (selected).
- SIP Server:** Text input field containing '192.168.1.10' with '(IP or URL)' as a hint.
- SIP Server Port:** Text input field containing '5060' with '(Default: 5060)' as a hint.
- SIP Domain:** Text input field containing '192.168.1.10'.
- SIP Server as Outbound Proxy:** Radio buttons for 'No' and 'Yes' (selected).
- Use DNS SRV:** Radio buttons for 'No' and 'Yes' (selected).
- SIP User ID:** Text input field containing '620'.
- SIP Authentication ID:** Text input field containing '620'.
- SIP Authentication PIN:** Password input field containing '620'.
- Username:** Text input field containing '620' with '(Optional, e.g. John Doe)' as a hint.

At the bottom of the form, there are 'Save' and 'Reset' buttons.

**!** The Reset button resets the content to the latest stored data state. It does not reload the factory settings.

|                                |  |
|--------------------------------|--|
| SIP registration               | Displays, if the SIP-Gateway should register at the SIP-Server. If this option is not activated, only direct connections (peer to peer) can be realised. Thus, the IP-address of the SIP-device, that is to be called, must be entered in the phonebook. A connection via call numbers cannot be realised.                         |
| SIP server and SIP server port | Enter the IP-address or URL of the SIP providers / SIP server. The port number shows to which port the server belongs.   |
| SIP domain                     | The SIP domain is used to identify devices and to establish a connection. Thus, the number is used within the SIP protocol (e.g. <a href="mailto:1234@sipgate.de">1234@sipgate.de</a> ). Without the domain no connection via call number can be realised. Instead of a name also the IP-address of the SIP server can be entered. |
| SIP server as outbound Proxy   | Use the SIP server as proxy for outgoing calls. The SIP server has to support this function. Thus, calling can be realised through a NAT firewall.   |
| DNS SRV                        | Use the DNS server entry to call a device within the SIP domain.   |
| SIP User ID                    | The user ID is the ID within a SIP domain. The ID is used to identify the SIP-Gateway. In case of an incoming call the allocation is realised via the user ID. A caller transmits the call request as "<Call number>@sipdomain.de" or as "<User-ID>@sipdomain.de".   |
| SIP authentication ID          | User name to register at the SIP server.   |
| SIP authentication PIN         | Password to register at the SIP server.  |
| user name                      | The user name field is only for your information. It has no special function. Here you can enter e.g. the position of the front-door station.  |

## Configure the phonebook

In this menu a TCS:BUS serial number is connected to a SIP telephone number which is to be called.

- Register under *Phonebook*.
- Enter the required call destinations for your connected front-door station.
- Click **Save**.

| Name | Number | Serialnumber | Incomming | Outgoing         | Group-ID |
|------|--------|--------------|-----------|------------------|----------|
| Test | *621   | 1000         | Accept    | Announcement OFF | None     |
|      |        |              | Reject    | Announcement OFF | None     |
|      |        |              | Reject    | Announcement OFF | None     |

*Phonebook FBI610x-0400  
with up to 10 resp. 115 call  
numbers.*



The Reset button resets the content to the latest stored data state. It does not reload the factory settings.

| Column        | Function  |
|---------------|---|
| name          | This text is used only to inform the installer resp. for a better assignment of call number and serial number to a resident or a flat. This text is only displayed here. This field is mandatory and must be filled out. Otherwise the entry is inactive.   |
| number        | Entry of the selected SIP telephone numbers without special characters.   |
| serial number | TCS:BUS serial number, which is to be programmed at the front-door station. The serial number has max. 6 digits. Shorter serial numbers are entered and displayed without leading zeroes. A pseudo serial number or a parallel serial number can be used.   |
| incomming     | Decision, how to react in case of an incoming call of the corresponding number. The following can be selected: rejecting, automatic acceptance, automatic acceptance with playing a stored announcement (the caller can hear it) and manual acceptance. The additional option "beep" ensures that conversation partners hear a signal tone after the audio connection is established. |
| outgoing      | Decision, if in case of an outgoing call, a stored announcement (e.g. position of the communication system) should be played for the caller.  |
| group ID      | Via the group ID, 10 different call chains can be determined. Phonebook entries with the identic ID are handled as call chain. If an entry of this group is called by a front-door station and the call is not accepted, all entries with the same ID are called one by one.  |

### Adjust the switch time for door opener and light relay

- Register under *Settings hardware*.
- Select *System* in the navigation bar.
- Select the values.

The switch time is to be adjusted by selecting numbers from 0...99 sec. The left selection field adjusts the 10th seconds, the right one the 1th seconds.

The screenshot shows a mobile application interface for system settings. On the left is a navigation menu with options: < Back, Audio, System (highlighted), Call Options, and Status / Remote. The main content area is titled 'System' and contains two relay configuration sections. The first section is for 'Relay 1 function', set to 'Door opener', with an 'On-Time / Turn-off delay of Relay 1' of '[\* 1sec] 0 4'. The second section is for 'Relay 2 function', set to 'Light', with an 'On-Time / Turn-off delay of Relay 2' of '[\* 1sec] 0 4'. Each delay field consists of a left dropdown (0) and a right dropdown (4).

### Programming the TCS front-door station

Program the serial numbers which are used in the phonebook of the FBI610x with config™ or TCSK-01 at the required buttons of your front-door station.

The buttons of the front-door station can be programmed also manually:

- Switch on the programming mode of the system.  
**In the operation mode ACTIVE:** Shortly press the RUN/PROG button at the FBI610x  
**or in the operation mode PASSIVE:** Shortly press the RUN/PROG button at your power supply and control unit. The RUN/PROG LED starts blinking.
- First delete already programmed buttons by pressing the button for a long period (see product information front-door station).
- Call the FBI610x from the number which is allocated to the serial number in the phonebook. Select a front-door station.
- After the voice connection is established, shortly press the bell button which is to be programmed. Although a negative acknowledgement tone sounds at the front-door station, the button was successfully programmed.

- ! This function is only available, if the corresponding phonebook entry under *incoming* is not set on *Reject*.
- The incoming call number at the FBI610x must be identic with the phonebook entry.

## Operation

### **Door call from front-door station**

An incoming call is directly connected to the front-door station by accepting the call at the called telephone (delivery state). If the option *confirmed acceptance* ('7') was activated (activation see *user manual*), the button 7 must be pressed to accept the call. The controlling of the FBI610x is realised via the MFV dial of the connected telephone.

Key function after call from FBI610x

example tel. 1234

Key function after call from FBI610x

MFV

|   |   |   |             |
|---|---|---|-------------|
| 1 | 2   | 3 | no function |
| 4 | 5   | 6 | #           |
| 7 | <b>activate door opener</b><br><small>(the connection is separated automatically)</small> |   |             |
| 8 | <b>activate light relay</b>   |   |             |
| 9 | <b>end the connection</b>   |   |             |

### **Call from a telephone to a front-door station**

A telephone can establish a connection to the FBI610x only if the incoming SIP telephone number is stored in the phonebook and the corresponding entry under *Incoming* is not set on *Reject*.

After the FBI610x has accepted the call, you have to select the front-door station via the telephone keypad. See illustration *Select front-door station*.

Key function after a call at the FBI610x

Call

Key function after a call at the FBI610x

MFV

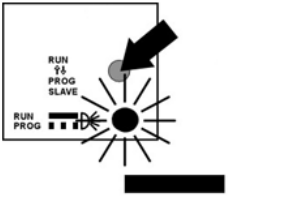
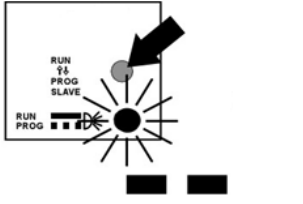
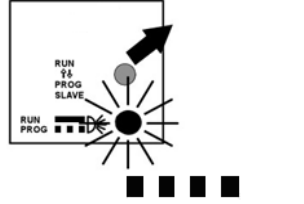
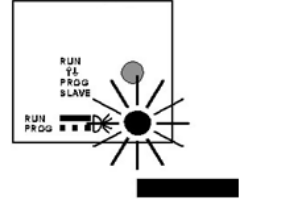
|   |   |  |   |
|---|---|--|---|
| 1 | 2   | <b>select door station</b><br><small>1=AS0 / 2=AS1</small> |   |
| 4 | 5   | 6  | <b>select indoor station</b><br><small>4=SerNoX / 5=SerNoY / 6=SerNoZ</small> |
| 7 | <b>activate door opener</b> <sup>1)</sup><br><small>(the connection is separated automatically)</small> |  |   |
| 8 | <b>activate light relay</b> <sup>1)</sup>   |  |   |
| # | no function   |  |   |
| * | 0...9   | activate optional BRE/TOER2                                |   |

*Using the binary output causes a configuration, see user manual of the FBI610x.*

## Reload to factory settings

! When loading the factory settings all VoIP and hardware settings are reset. The entries in the phonebook remain unchanged.  
**IP address: 192.168.1.200, netmask: 255.255.255.0, password: 1234**

### Reload to factory setting

|   |   |  |   |
|---|---|--|---|
|  |  |  |  |
| yellow LED lights up  | yellow LED blinks   | yellow LED blinks fast   | yellow LED lights up  |
| Press RUN/PROG button and hold it...  | keep RUN/PROG button pressed ...  | ..., until LED blinks, then release  | factory settings loaded   |

## Service

! First use the detailed formation and the FAQ in the user manual of the FBI610x. Find the manual for free download under [www.tcsag.de/Downloads](http://www.tcsag.de/Downloads).

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

### Headquarters

TCS TürControlSysteme AG, Geschwister-Scholl-Str. 7, 39307 Genthin  
 Tel.: +49 (0) 3933/879910, FAX: +49 (0) 3933/879911, [www.tcsag.de](http://www.tcsag.de)