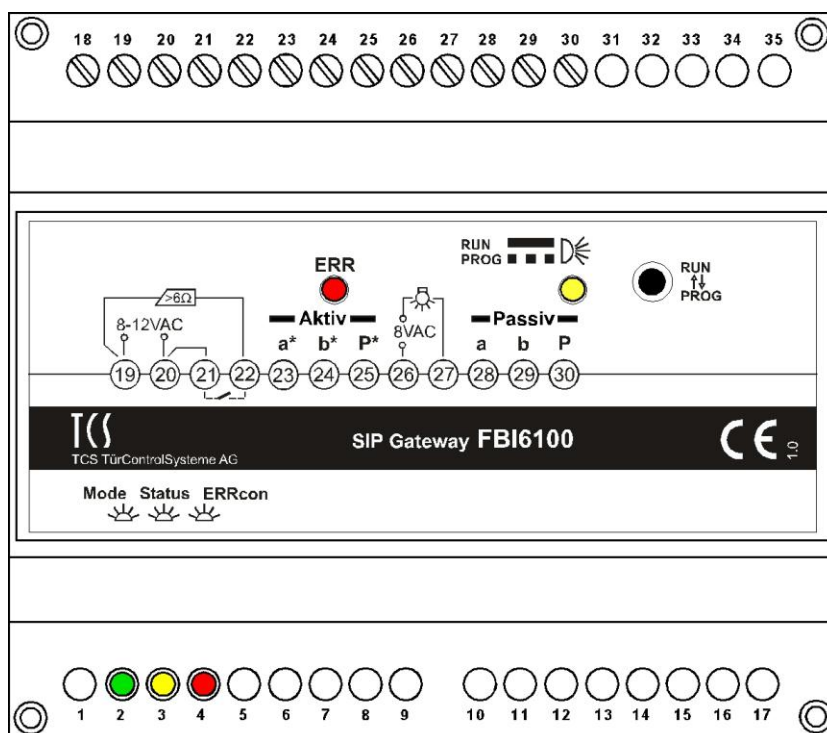




# Product information

**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 observe!

- This product information describes all 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.

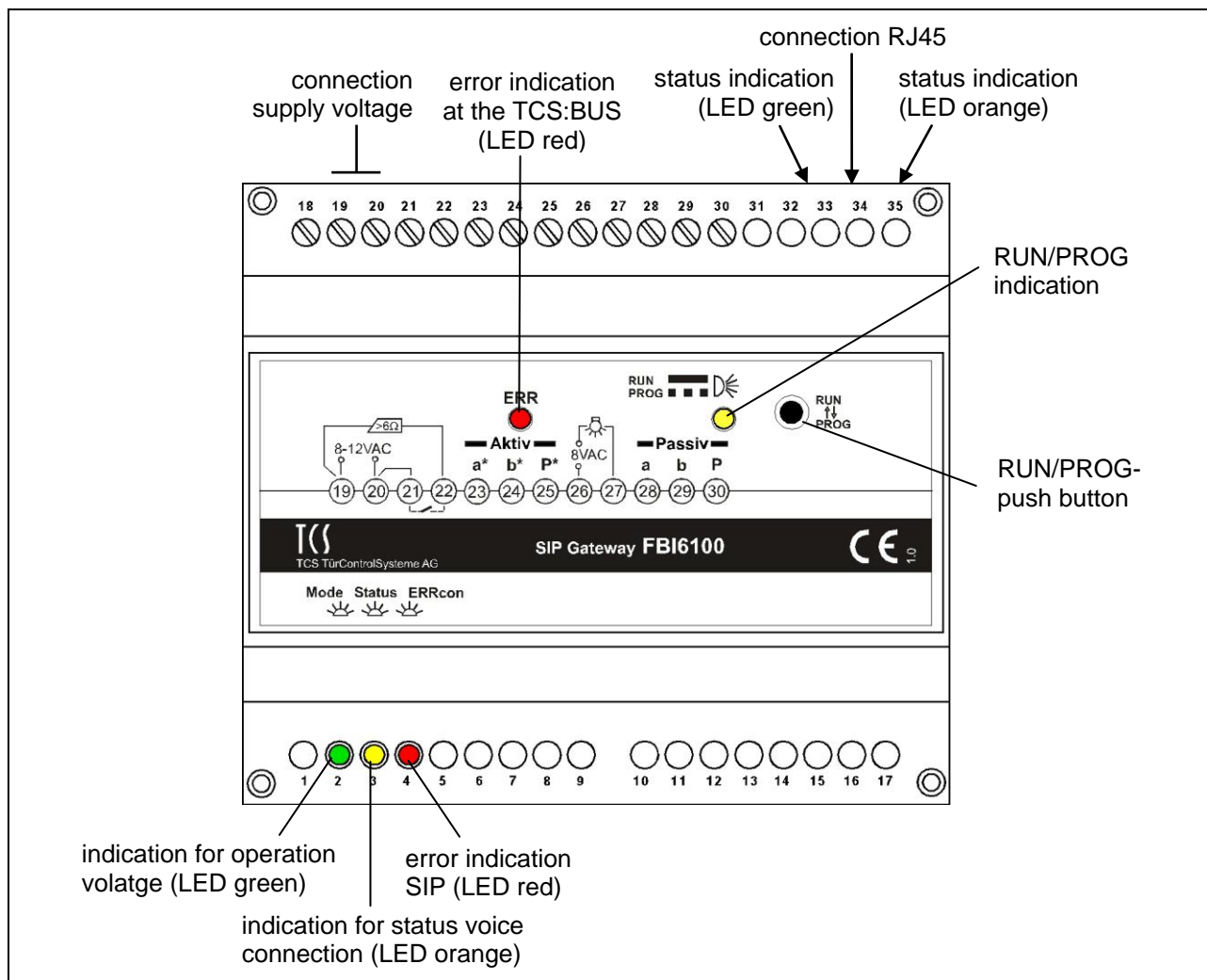
**!** With suitable measures to protect against lightning, it has to be ensured that a voltage of each 32 V DC is not exceeded at the a- and b-wire.

## Connections, indication and operating elements

	Labelling	Function
<b>19 20</b>	connection for supply voltage	<ul style="list-style-type: none"> <li>• <b>only operation mode ACTIVE:</b> 8 - 12 V AC (from bell transformer NWW1000-0400)</li> </ul>
<b>23 24 25</b>	a*/b*/P* connection TCS:BUS ACTIVE	<p><b>only for operation mode ACTIVE!</b> 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 expense.</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. offset current output of the FBI610x.</li> <li>• Terminals are short-circuit protected.</li> </ul>

<b>28 29 30</b>	a/b/P connection TCS:BUS PASSIVE	<p><b>Only for 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>
<b>21 22</b>	Door release relay (potential-free relay contact – closing con- 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 smaller 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>
<b>26 27</b>	Internal light switch relay (potential-free relay contact – closing 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)</li> </ul>
	RUN/PROG push button	<p><b>only for operation mode ACTIVE!</b></p> <ul style="list-style-type: none"> <li>• switching to the system mode: operation mode – programming mode</li> </ul>
	RUN/PROG indication (LED orange)	<ul style="list-style-type: none"> <li>• indication of the system mode: <b>lights up:</b> operation mode <b>blinks:</b> programming mode</li> </ul>
	error indication at 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 voltage (LED green)	<ul style="list-style-type: none"> <li>• <b>lights up:</b> operation voltage is present</li> </ul>
	indication status voice connection (LED or- ange)	<ul style="list-style-type: none"> <li>• indication voice connection or connection estab- lishment FBI610x to an external device</li> </ul>
	error indication SIP (LED red)	<ul style="list-style-type: none"> <li>• <b>lights up:</b> start process (around 40 sec long) or no connection to the SIP server (see page 8)</li> </ul>
	status indication (LED green)	<ul style="list-style-type: none"> <li>• <b>blinks:</b> if data is sent or received via LAN</li> <li>• <b>lights up:</b> connection FBI610x to the network is established</li> </ul>
	status indication (LED orange)	<ul style="list-style-type: none"> <li>• <b>lights up</b> simultaneously green with status indica- tion: 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 NWW1000-0400)
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 to 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

### General notes

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

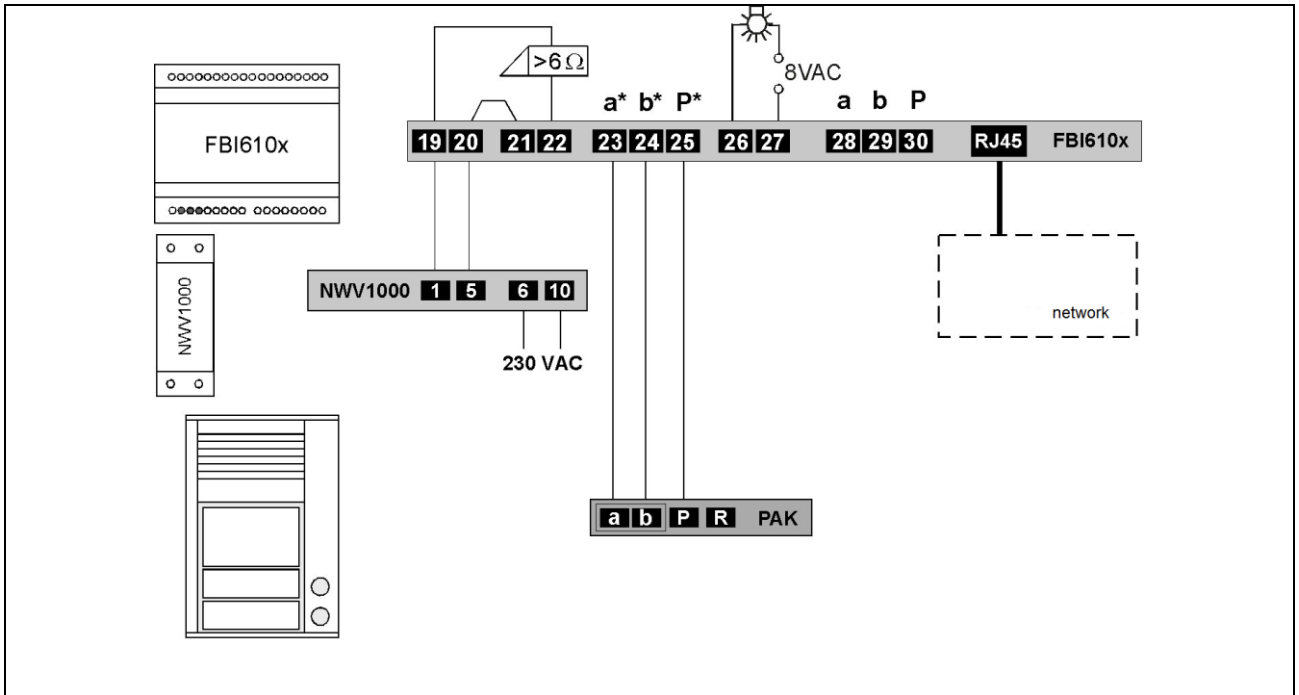
### Connect the TCS system

- Isolate the ends of the lines.
- Connect the TCS system to the FBI610x in compliance to the operation mode and the type of system completely and according to the wiring example.

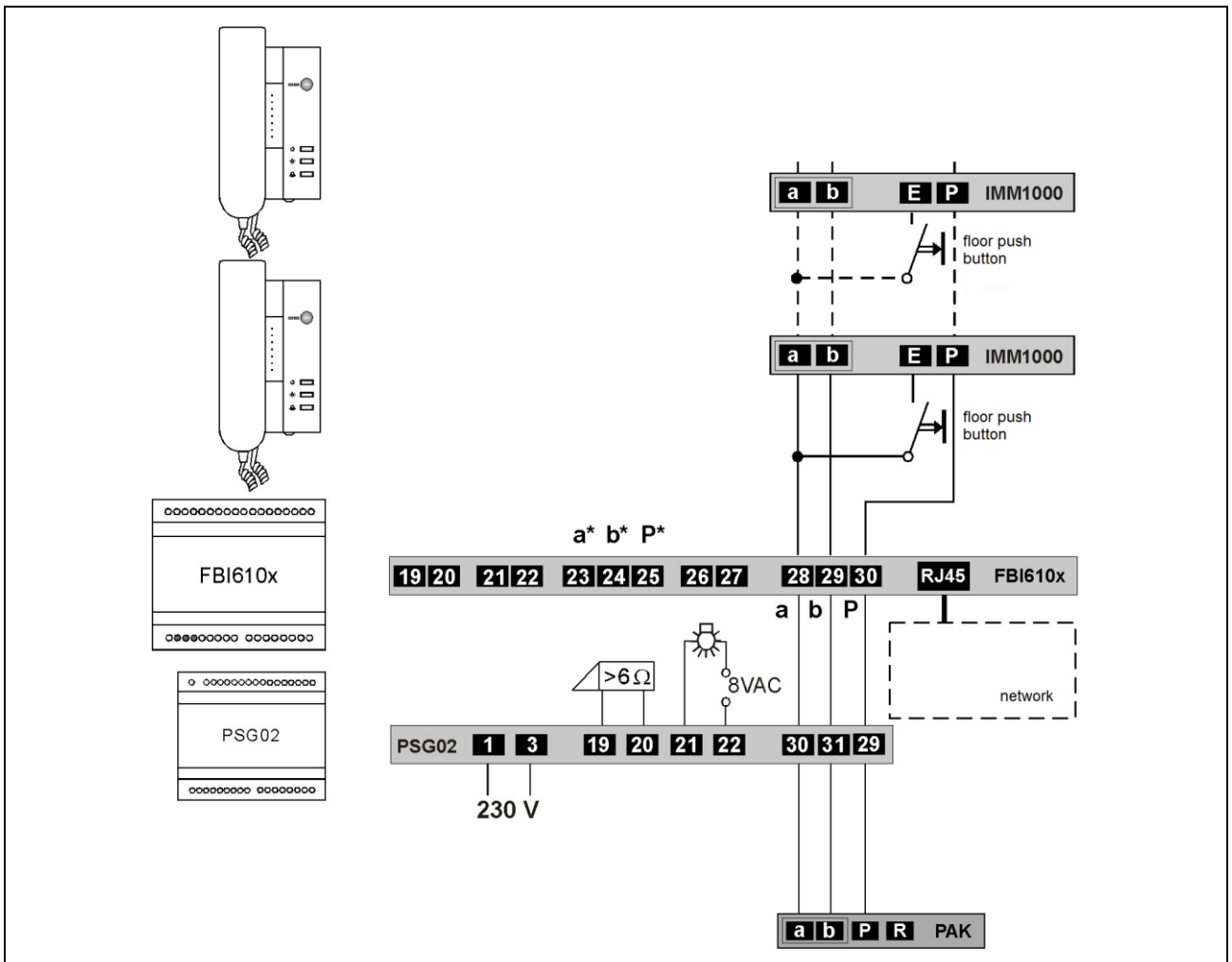
### Connect the network

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> <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 <b>Only operation mode ACTIVE:</b> a-b or a-P short-circuited	 <b>ERR</b> error indication flashes (1:7, 1 Hz)	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> defective network connection or no connection to the SIP server	 <b>ERR</b> error indication flashes out (7:1, 1 Hz)	Check the network, check data transmission, check login data for SIP server, device is in standby mode again
<u>Network error</u> defective network connection or no connection to the SIP server	 <b>ERR</b> error indication SIP lights up*	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 ethernet 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).

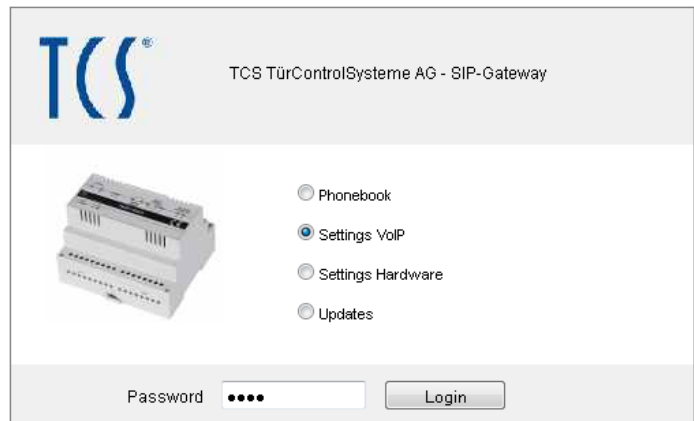
Otherwise the used PC/Laptop must be set temporary to an IP address within the address area of the FBI610x to establish a connection with the SIP-Gateway. To install / modify your network connection, please use the network installation assistant or the help menu of your operating system (buzzword: *Install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

- To install the network connection, eventually you need administrator.
- 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**

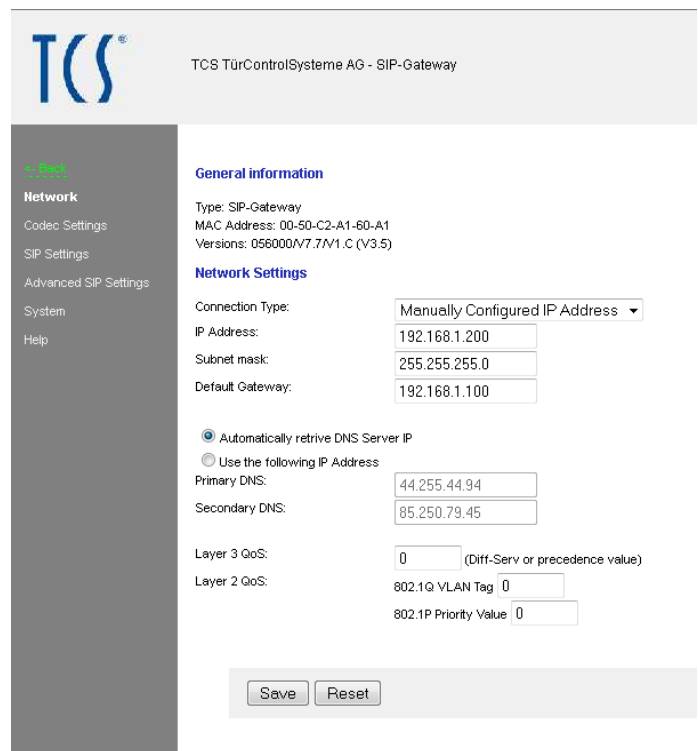


- Open an internet browser.
- Enter the IP address of the SIP Gateway into the address line: `http://192.168.1.200`
- The start page is called.
- Select *Settings VoIP*.
- Enter the password (preset: 1234) and click *Register*.



### 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 enter also the IP address of your DNS server.
- Confirm with *Save*.



- The IP address can be obtained automatically via a DHCP (Dynamic Host Configuration Protocol) server.

! If the IP address was changed manually, eventually the web browser can 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 into the field *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 here.*

The screenshot shows the 'SIP Settings' configuration page for TCS TürControlSysteme AG - SIP-Gateway. The page has a left-hand navigation menu with options: Home, Network, Codes Settings, SIP Settings (selected), 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 URI)' in parentheses.
- SIP Server Port:** Text input field containing '5060' with '(Default 5060)' in parentheses.
- 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:** Text input field containing '620'.
- Username:** Text input field containing '620' with '(Optional, e.g. John Doe)' in parentheses.

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

## Configure the telephone book

- Register under *Telephone book*.
- Enter your required call destinations for your connected front-door station (see table below).
- Click **Save**.

The screenshot shows the 'Phonebook' configuration page. The left-hand navigation menu has options: Home, Phonebook (selected), and Internal Calls. The main content area is titled 'Phonebook' and displays a table with the following columns: Name, Number, Serialnumber, Incoming, Outgoing, and Group-ID.

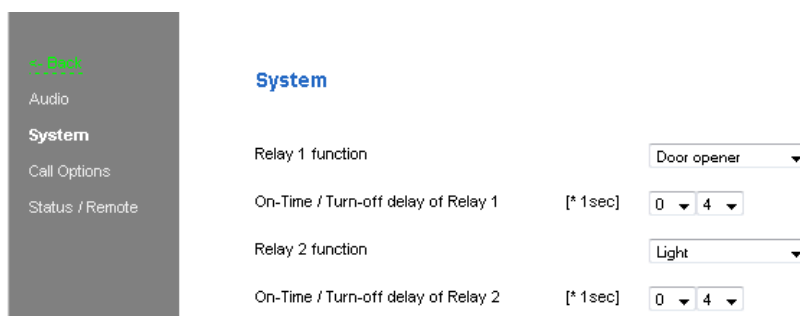
Name	Number	Serialnumber	Incoming	Outgoing	Group-ID
Test	**621	1000	Accept	Announcement OFF	None
			Reject	Announcement OFF	None
			Reject	Announcement OFF	None

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 not displayed somewhere else.
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.
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 manually acceptance. The additional option "pieps" realises 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 by the called person.
group ID	Via the group ID, 10 different call chains can be determined. Telephone book 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 after the other.

## 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.



## Programming the TCS front-door station

Program the serial numbers which are used in the telephone book of the FBI610x with configo™ 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 telephone book. Select a front-door station.
- After the voice connection is established, shortly press the bell button which is to be programmed. Despite a negative acknowledgement tone sounds at the front-door station, the button was successfully programmed.

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

activate speaking <sup>1)</sup>

1	2	3	no function
4	5	6	# no function
7	activate door opener (the connection is separated automatically)		
8	activate light relay		
9	end the connection		
*	*	activate binary actuator	
*	0...9	activate optional BRE / TOER2	

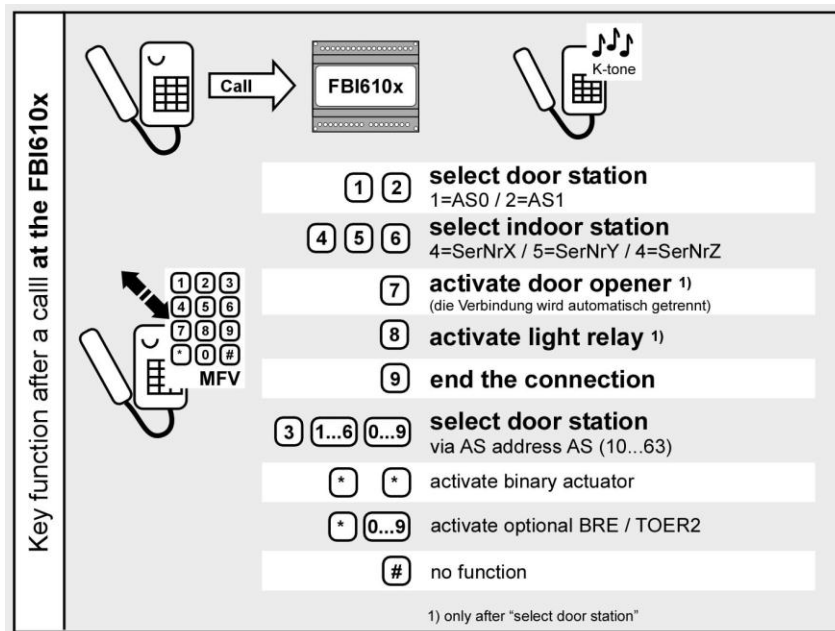
1) only if \*confirmed acceptance (7) is activated

## 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 telephone book 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 graphic *Select front-door station*.

Using the binary output conditions 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 telephone book 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

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

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

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