

# TELSTROM IP MODULAR VIDEO DOOR PHONE

*Installation Manual*



# Overview

Thank you for purchasing the Telstrom Door Phone, it is a completely modular and scalable door entry solution for apartments, offices or gate control.

The Telstrom IP Video Door Phone can be used to replace traditional intercoms, by using your existing LAN / Ethernet cabling. It can be connected to a wide range of devices:

- an IP PBX and integrated as a SIP extension of the PBX.
- As a SIP trunk / SIP extension from an Internet Telephony Service Provider (ITSP)
- In peer to peer mode. A one to one connection is made between door phone and PC / SIP desk phone.

The visitor simply presses any of the speed dial buttons on the Door Phone. Each speed dial button can be programmed with either one or two numbers for either Day/Night mode or Busy mode.

An optional keypad can also be connected which serves three purposes, 1.) to provide coded access to gain entry 2.) push dialing a number, e.g. dialing an extension 201 of the PBX and 3.) entering a [speed dial bin code](#) 1-64, where each bin code is allocated a number. E.g. User enters 6 on the keypad, the door phone calls 555666.






The two [relays](#) can be activated individually after answering a call with a DTMF code or via the Pop-up application.

Optional H.263 Video of the visitor can be viewed on either a computer running a Video SIP soft phone (e.g. X-lite), Windows PC running the Pop-up application, Video Desk Phone (e.g. GXV-3000), Android 2.1 phone or streamed to a Digital Video Receiver (DVR).

## Benefits:






- Works on your existing structured cabling
- Power Over Ethernet (POE)
- SIP 2.0 protocol
- Configuration via Web interface. (remote access via port forwarding)
- Up to 24 speed dial buttons with backlighting
- Up to 9999 users via optional Keypad (extension dialing)
- Optional Video Camera video via HTTP streaming or H.263 video
- Two time profiles. Day / Night or Busy profile
- Modular options
- Flush or Surface mount options.
- Two NC / NO relays
- Variable Volume, Microphone, Echo adjustment (Trim Pots)
- Board heating system to avoid condensation.
- Opening / Closing Relays via DTMF
- Changing Day/Night profile via DTMF

## AVAILABLE OPTIONS:


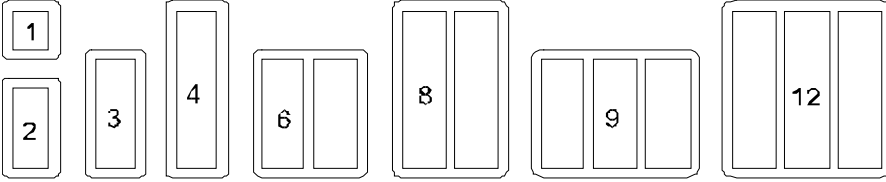
<p><b>POP-UP</b></p>	<p>Windows Pop Application (included) The application is a video and SIP softphone for use with the IP door phone.</p>	<p>Download application and setup guide from <a href="http://www.telstrom.net">www.telstrom.net</a></p>
<p><b>MIPC</b></p>	<p>IP DoorPhone controller</p>	
<p><b>MIPCC</b></p>	<p>IP DoorPhone controller with IP Camera</p>	
<p><b>Speed Dial Buttons:</b> (buttons 1 to 4 max, for additional buttons add on with <b>M-EXTA</b> &amp; <b>M-EXTB</b> modules.)          For speed dialing contacts: e.g. User presses button 1, and the door phone automatically dials 201 for Homer.</p>		
<p><b>MIP1B</b></p>	<p>DoorPhone extender with 1 button</p>	
<p><b>MIP2B</b></p>	<p>DoorPhone extender with 2 buttons</p>	
<p><b>MIP4B</b></p>	<p>DoorPhone extender with 4 buttons</p>	

### Additional Buttons: (From 8 to max 24 buttons)


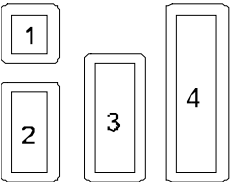
When more than 4 buttons are required.

<b>M-EXTA</b>	4 button extender A. <i>(must be preceded with <u>one</u> of MIPxB)</i>	
<b>M-EXTB</b>	4 button extender B (e.g. A,B - A,B - A,B etc) <i>(must be preceded with a M-EXTA)</i>	
<b>Optional Extras: (8 to 24)</b>		
<b>MKYB</b>	For dialing contacts e.g. User dials 201 for Homer  Coded access. Entering passwords to gain access	
<b>MBLK</b>	Blanking plate module	
<b>MNME</b>	Backlit name display module for a printed list of apartments and names. Recommended with a keypad.	



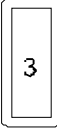

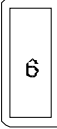

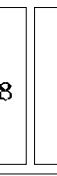

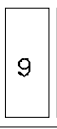
## Surface Mount Boxes with Rain Hood:

<p><b>MSBx</b></p> <p>Where x is number of modules</p>	<p>A wide selection of surface mount boxes including rain hoods.</p>	
		

## Flush Frame and Masonary Boxes:

<p><b>MFFx</b></p> <p>Where x is number of modules</p>	<p>A selection of flush (masonry) mount boxes with included frame. These can be mounted vertically or horizontally and combined for larger installs. Optional vertical only Rain Hood available MFRx</p>	
		

## Flush Roof used with Masonary Boxes:

<p><b>MFR<sub>x</sub></b></p> <p>Where x is number of modules</p>	<p>A selection of flush rain hoods, only used with MF<sub>x</sub></p> <p>These can be only be mounted vertically.</p>						
							

## CONNECTIVITY OPTIONS:

The IP Modular Door phone offers the following connectivity options:

The audio (SIP) can be connected to either:

- A SIP extension off an IP PBX using SIP 2.0
- SIP Telephone provider.
- Peer to Peer mode: directly between the Door Phone and a SIP end point using IP addresses e.g. Door Phone to SIP Desk Phone etc.

The optional video camera can be connected via:

- Windows PC running the Telstrom Pop-Up application.
- Computer with a SIP video softphone
- H.263 Video Desk Phone. E.g. GXV-3000
- Android Phone 2.1 or later
- SIP Telephone provider running H.263.
- HTTP streaming

Two relays:

- Each relay can be controlled individually or in a sequence. Both relays are (NO) Normally Open or (NC) Normally Closed.
- The called person on a handset, answers the visitors call and enters a code to unlock either of the relays.
- The called person using the Windows Pop-up application clicks either one of the relay opening buttons.

# WIRING:

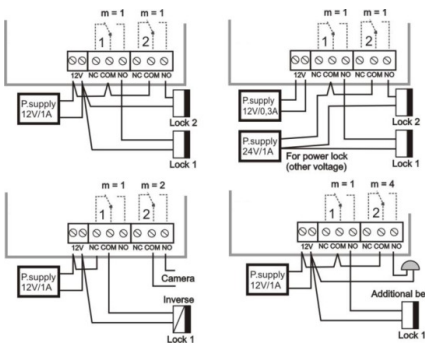
## Power Requirements

It is necessary to use either one of the following options:

- AC voltage of a min. 10VAC to a maximum of 15VAC or
- DC voltage of min. 12VDC to max. 18VDC.
- POE (Power of Ethernet) IEEE 802.3af max load 350 mA

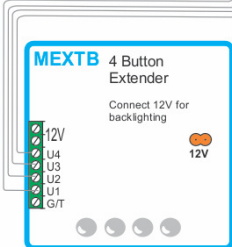
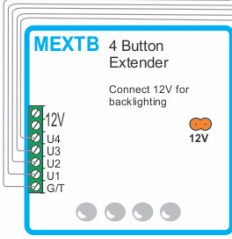
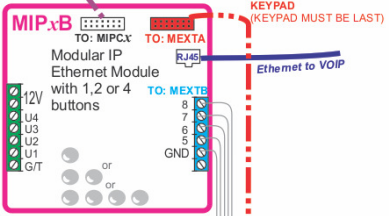
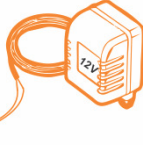
The voltage must be connected to the terminal marked “12V”. The voltage load depends on the number of modules connected and backlighting of buttons. The maximum load will not exceed 300mA. This source can be also used for powering lock(s), but you must also add the load demand of the locks. Generally a 12V/1A DC power supply meets most demands.

## Relay Connections



On the main board there are two relays and each relay has two options for wiring locks / switches. Either “NO” Normally Open or “NC” Normally Closed” depending on your requirements. The contacts on both relays are galvanically isolated from each other and from other circuits. The relays require 12V to be triggered.

Where  $x$  is number of buttons  
 Where  $y$  is C for camera, or no camera



## Modules Installation



Each module is supplied with a 14 pin ribbon cable and connects to the following module supplying communication and 12V is wired separately. The following example shows the wiring of the IP modular containing IP door phone with camera and 16 buttons:


Note: Where  $y$  denotes with or without camera, and where  $x$  denotes number of buttons.

1. MIPC $y$  – Modular IP Door Phone Controller with IP Camera
2. MIP $x$  $B$  – IP Door Phone extender with 1,2 or 4 buttons
3. MEXT $B$  – 4 button extender B (e.g. A,B - A,B - A,B etc)
4. MEXT $A$  – 4 button extender A (e.g. A,B - A,B - A,B etc)
5. MEXT $B$  – 4 button extender B (e.g. A,B - A,B - A,B etc)

## Keypad Module - MKYB



The Keypad module must always be installed last in the line of all the modules via the ribbon cable. The keypads module position must be defined in the Web GUI under [basic settings](#).

To gain coded access to the premises, press the  button and then enter the relevant relay code to open the relay.

Pressing **X** will hang-up the current call or cancel the entry.

## TIME PROFILES:

The IP Door Phone supports three time profiles:

- **Automatic Day / Night profile hands over at a set time.**
- **Manual Day / Night profile change over via DTMF tones**
- **Busy Profile**

### Automatic Day / Night Profile

In Day / Night profile it allows each speed dial button to have two phone numbers stored against it. The first number for office hours and the second for after hours. This mode changes at a predetermined time and the Door Phone uses the Network Time Protocol (NTP) to sync its clock.

**Example:** If a visitor presses button 1 during the day, the door phone calls Homer on 201. If it is after hours, and the visitor press button 1, the door phone calls Marg on her mobile 12345678.

### Manual Day / Night Profile

This mode is the same as automatic profile except the change from day to night profile is controlled manually by calling the Door Phone and entering 10 (*default*) for Day Mode and 11 (*default*) for Night mode.

## Busy Mode

In this mode, if the first number that is called from a speed dial button e.g. 201 and if 201 is busy, then it will call the second stored number against that speed dial button, e.g. Marg on her mobile 12345678.

Also, if the visitor presses a button twice it will call the second number, eg. Marg on her mobile 12345678.

## VISITOR AT THE DOOR:

When a visitor arrives at the door, they have three options to contact the required tenant depending on the Door Phone configuration.

1. Push a Speed Dial Button with assigned phone number
2. Using the optional Keypad, direct dial the tenant's extension.
3. Using the optional Keypad, dial a speed dial bin code (between 1-64) that is assigned to the tenant's phone number.
4. Using the optional Keypad, enter a code to gain access (open relay) to the property with a password.

The Door Phone will place a call to the desired tenants number (or IP address in Peer to Peer mode) depending what Mode it is currently in ([refer to Time Profile](#)).

## TENANT INSIDE THE PREMISES:

The tenant receives calls from Visitors at the door and can also place calls to the Door Phone to listen/view outside the property.

### Visitor outside at Door Phone, calling tenants phone.

The tenant who answers the call from the Door Phone Visitor can:

- Have a conversation with the visitor
- View the visitor at the door (if using the optional Video)
- Open either 1,2 or both relays. E.g. Open the Door (relay 1) and switch the light on (relay 2)
- Terminate the call

### Tenant calling Door Phone.

The Tenant can call the Door Phone and do the following:

- Have a conversation with outside (intercom)
- View the visitor at the door (if using the optional Video)
- Open either 1,2 or both relays. E.g. Open the Door (relay 1) and switch the light on (relay 2) via DTMF or PC
- Change [Time Profile](#) e.g. Day/Night or Busy via DTMF or PC
- Hangup the call, which hangs up the Door Phone via DTMF or PC

## TENANT LEAVING / ARRIVING AT PREMISES

The tenant can change day / night profiles manually, as well as open and close relays when at the door phone by entering either:

- A code via an optionally attached keypad. [Refer Relays 2.](#)
- A code via pressing button 1 and 2 in a set sequence. [Refer Relays 2.](#)

For example the tenant could change to night mode, when he leaves his premises, so when visitors press the button on the door phone, calls go through to the [\(second group speed bin\)](#) to the tenants mobile.

## AVAILABLE TENANT VIDEO/AUDIO DEVICES

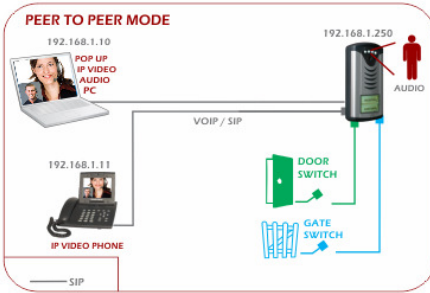
There are few different phones and video phones that a tenant can use inside their premises.

- IP Desk Phone running SIP 2.0 e.g. Aastra, Cisco, Polycom etc
- IP Video Desk Phone running SIP 2.0 and H.263 Video Protocol. e.g. Tornado M20, Grandstream GXV-3000, Yealink vp-2009p, Tanberg E20,
- Computer based Soft Phone running SIP 2.0. e.g. Telstrom Video Pop-up, Counterpath Bria, X-lite etc.
- Computer based Soft Phone running SIP 2.0 and H.263 Video Protocol. e.g. Telstom Video Pop-up, Counterpath Bri, X-lite etc.
- Analogue Telephone Adapter (ATA) – converts SIP from Door Phone to an FXS port to connect a traditional handset. E.g. Linksys PAP2T, Grandstream HT286. IP Video sent to PC.
- Digital Video Receiver (DVR) for streaming / recording video and streaming to TVs etc

# P2P (PEER 2 PEER) OR SIP PROXY

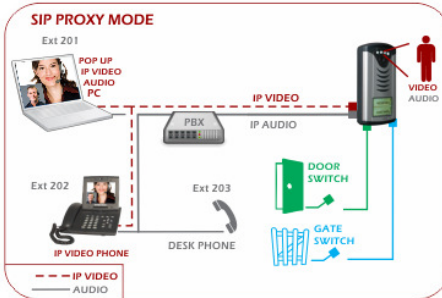
The Door Phone supports two modes of VOIP operation.

## 1.) P2P Mode



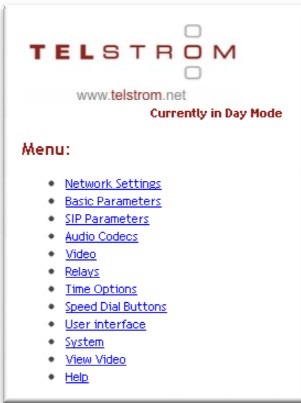
In this mode the Door Phone communicates directly to the Tenants device. There is no server / IP PBX required in this mode. The Door Phone calls IP addresses of the devices it needs to communicate with. Set DIP switch 2 (up)

## 2.) SIP Proxy Mode (registers against a SIP Proxy)



In this mode the Door Phone registers against either an IP PBX or an ITSP as a SIP extension. The DoorPhone is seen as a normal extension of the PBX and can make and receive calls. Set DIP switch 2 (down)

# PROGRAMMING VIA WEB GUI



To setup the door phone you will need to change your PC's IP address to 192.168.1.x to be able to configure the Door Phone on 192.168.1.250 (default).

Point your browser to <http://192.168.1.250>

Username: admin

Password: 1234

The first page will show the view of the video camera (if installed). Click setup to configure

the Door Phone.

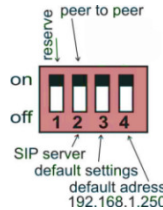
## Network Settings:

Network Settings:

DoorPhone Hostname:	<input style="width: 90%;" type="text"/>
IP set via DHCP:	<input type="checkbox"/>
DHCP client ID:	<input style="width: 90%;" type="text"/>
IP Address:	<input style="width: 90%;" type="text" value="192.168.1.250"/>
Network Mask:	<input style="width: 90%;" type="text" value="255.255.0.0"/>
Default Gateway:	<input style="width: 90%;" type="text"/>
Primary DNS server:	<input style="width: 90%;" type="text"/>
Secondary DNS server:	<input style="width: 90%;" type="text"/>

default values
save and restart

Ask your network administrator for the relevant network settings to configure the Door Phone. We strongly suggest assigning a static IP address and not “IP set via DHCP”



To default the IP address of the Door Phone: DIP switch 4 (down). Default settings DIP switch 3 (down). After power up, push the DIPs switches back up.

The reset is required to be set on for at least

5 minutes, then switch it off and repower the unit.

## Basic Settings

Basic Parameters:

<p><b>1 Time Profile:</b></p> <p><input checked="" type="radio"/> Day /Night Mode</p> <p><input type="radio"/> Busy Mode</p>	<p><b>2 Extend duration of current call:</b></p> <p><input checked="" type="radio"/> * - star</p> <p><input type="radio"/> # - hash</p>
<p><b>3 Terminate call Codes:</b></p> <p>Code 1: <input style="width: 40px;" type="text" value="55"/></p> <p>Code 2: <input style="width: 40px;" type="text" value="66"/></p>	<p><b>4 Code of switching:</b></p> <p>Code to switch to Day profile: <input style="width: 40px;" type="text" value="11"/></p> <p>Code to switch to Night profile: <input style="width: 40px;" type="text" value="10"/></p>
<p><b>5 Day/Night Timer Profile:</b></p> <p><input checked="" type="radio"/> Manual switching</p> <p><input type="radio"/> Timed switching</p>	<p><b>6 IP Modular: Keypad Mode:</b></p> <p><input checked="" type="radio"/> Direct Dialing</p> <p><input type="radio"/> 1-64 coded dialing</p>
<p><b>7 IP Modular: position of keypad:</b> <input style="width: 40px;" type="text" value="0"/></p>	<p><b>8 Backlight mode:</b></p> <p><input type="radio"/> Off</p> <p><input checked="" type="radio"/> Auto</p>

### 1. Change between Day Night Mode and Busy Mode.

2. The tenant can enter either a “\*” or “#” to extend the current call duration.

3. The tenant can enter codes during a conversation to terminate the current call.

4. The tenant can manually change the profile between Day or Night by entering the code.

5. The Door Phone can either switch profiles between Day and Night profiles either a.) Manually or b.) Automatically.

6. If the optional keypad (IP Modular) is attached, then choose if you want a.) Direct dialing – e.g. calling extensions via the keypad. Or b.) Dialing a speed bin number 1-64.

7. If the optional keypad is attached, what is the installed position of it. i.e. What module number / position has the keypad been installed.

## SIP Settings

### SIP parameters:

Always send 180 Ringing:	<input checked="" type="radio"/>
Send 183 session in progress:	<input type="radio"/>
Enable Symmetrical RTP:	<input type="checkbox"/>
Send DTMF as SIP INFO:	<input checked="" type="radio"/>
Send DTMF according to RFC2833:	<input type="radio"/>

If you have set DIP switch 2 (up) [P2P Mode](#) then you will see limited settings as the Door Phone will just be contacting via IP addresses.

Change these settings to match your IP PBX, ITSP.

If DIP switch 2 (down) [SIP Proxy](#), you will see the following screen.

### SIP parameters:

SIP Proxy Server	Address:	<input type="text"/>
	Port:	<input type="text" value="5060"/>
SIP Registration Server	Address:	<input type="text"/>
	Port:	<input type="text" value="5060"/>
Account	Username:	<input type="text"/>
	Password:	<input type="text"/>
	Expiration [sec]:	<input type="text" value="600"/>

Ask your IP PBX or ITSP administrator for the relevant settings. In most cases the SIP Registration Server Address / Port are not required. After saving, a prompt will show either “Registration Successful” or “Registration Failed”.

If the registration failed check, the user credentials, IP address and available [audio codecs](#).

## Audio Codecs

### Audio Codecs:

Priority 1:	<input type="text" value="G711μ"/>
Priority 2:	<input type="text" value="G711a"/>
Priority 3:	<input type="text" value="G726-32bit"/>
Priority 4:	<input type="text" value="GSM"/>
<input type="button" value="default values"/> <input type="button" value="save changes"/>	

Ask your IP PBX or ITSP administrator for the relevant codes to be used. These should match the device you are connecting to. To change the microphone and speaker gains as well as adjust the levels of the echo canceller refer to [Audio Volumes](#).

## Video Settings

### Video:

Resolution:	<input type="text" value="320 x 240"/>
Frames per sec.:	<input type="text" value="5"/>
Brightness:	<input type="text" value="37"/>
Contrast:	<input type="text" value="50"/>
Colour:	<input type="text" value="0"/>
Hue:	<input type="text" value="0"/>
Gamma:	<input type="text" value="25"/>

Here you can change the resolution and frame rate of the video stream to the web browser and receiving video clients.

## Relays

### Relay 1:

<b>1</b>	Relay mode:	<input type="text" value="1"/>
<b>2</b>	Door Phone Keypad Day/Night Code:	<input type="text"/>
<b>3</b>	Door Phone Keypad Day Code:	<input type="text"/>
<b>4</b>	Door Phone Keypad Night Code:	<input type="text"/>
<b>5</b>	Tenant code:	<input type="text" value="55"/>
<b>6</b>	Relay duration [sec]:	<input type="text" value="05"/>
<b>7</b>	Control incoming call:	<input checked="" type="checkbox"/>

### Relay 2:

<b>1</b>	Relay mode:	<input type="text" value="1"/>
<b>2</b>	Door Phone Keypad Day/Night Code:	<input type="text"/>
<b>3</b>	Door Phone Keypad Day Code:	<input type="text"/>
<b>4</b>	Door Phone Keypad Night Code:	<input type="text"/>
<b>5</b>	Tenant code:	<input type="text" value="66"/>
<b>6</b>	Relay duration [sec]:	<input type="text" value="05"/>
<b>7</b>	Control incoming call:	<input checked="" type="checkbox"/>

Mode 5, delay between relays 1 and 2 [sec]:

The Door Phone has two normally closed NC or normally open NO relays .

### 1 Relay modes:

- 1) Switch Mode: In this mode the relevant relay will be activated for a period of seconds set in **6** when the tenant code **5** has been sent or the access code has been entered.

- 2) Camera Mode: In this mode the relevant relay will close when the tenant answers a call from the door phone and the relay will open when the call is hung-up.
- 3) Lighting Mode: The relay will close when the tenant answers the call from the door phone, and will remain closed for a period of **6** x seconds after the call is hung-up.
- 4) Bell Mode: The relay will close when someone pushes a button on the door phone and will open after a period of **6** x seconds.
- 5) Sequence Relay Mode: In this mode relay 1 is activated for **6** x seconds, then Relay 2 is activated for **6** x seconds. Whenever Relay 1 is activated it follows the sequence. Relay 2 can be opened separately.

## **2** External Day/Night Change Over Code: [2 to 6 digits]

The tenant when outside the property can change the day/night mode from the door phone by pushing the buttons 1 & 2 in the correct sequence. E.g. The tenant is going on holiday and the night mode number is forwarded to the tenants mobile, so changing to night mode “121121” all visitors at the door phone would call the tenants mobile. Requires a two button IP Door Phone or optional keypad.

Tips: Don't use similar codes for external use. E.g. 12221 & 12222

## **5** Tenants phone codes: [1-2 digits]

The tenant can open relay 1 or 2 individually or at the same time depending on the code entered. Setting the same code for both relays will open both relays when the tenant enters the DTMF command from their handset. The tenant can activate the relays during a call to or from the door phone. To use a single digit command prefix the code with “\*” e.g. \*1

## **6** Relay duration [in seconds 01 – 99]

## **7** Incoming call control

Example: If the tenant gave access to a visitor to park their car, and the electric gate opens and while this happens the tenant accidentally enters a code for a relay to close the gate which damages the car. Turning this off would avoid the issue.

**8** Relay duration for mode 5, between relay 1 and relay 2. [in seconds 01 – 99]

## Time Options

Maximum call duration [minutes], the call can be extended refer [Basic Settings 2](#).

Time Options:

Maximum call duration [min]:	<input type="text" value="2"/>
Numbers of rings:	<input type="text" value="1"/>
Inter-digit DTMF delay [sec]:	<input type="text" value="2"/>
Duration between hangup and redial [sec]:	<input type="text" value="2"/>
Duration before redial [sec]:	<input type="text" value="25"/>
Relay activation tones:	<input checked="" type="checkbox"/>
Audio signaling of others tones:	<input checked="" type="checkbox"/>
<input type="button" value="default values"/> <input type="button" value="save changes"/>	

When the tenant calls the door phone, the number of rings before answering the call.

The DTMF delay of the door phone accepting digits from the tenant between each keypress.

The minimum duration between hanging up and placing the next call.

The delay in seconds to place the next call if the first call is unanswered after x seconds.

Signal with a tone to the tenant when a relay has been opened and closed.

Signal with a tone to the tenant when other events occur.

## Speed Dial Bins / Buttons:

**Speed Dial Buttons:**

	Day	Night/Busy
Button/Code 1:	192*168*1*230	192*168*1*231
Button/Code 2:	201	0215556666
Button/Code 3:		
Button/Code 4:		

----- UP TO 64 SPEED DIAL BINS -----

Button/Code 64:		
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The Speed Dial Bins / Buttons table allows you to set numbers against each button. E.g. Visitor presses button 1, it calls 201. Using the optional keypad, you can dial the Bin code which would call the associated number. If you have a two button door phone, then Bins 3-64 would not be used.

Example Table of Speed Dials. ([refer to Time Profile](#))

Speed Bin/Button	Option 1 (Day)	Option 2 (night/busy)	
1) e.g. SIP Proxy mode	201	12345678	If mode is (Day/Night) then call 12345678 after hours. If mode is (Busy) then call 12345678 if 201 is busy.
2) e.g. P2P mode	192.168.10.16	192.168.10.150	If Door Phone set as Peer to Peer. If mode is (Day/Night) then call 192.168.10.150 after hours. If mode is (Busy) then call 192.168.10.150 if 192.168.10.16 is busy.

## User Interface

### User interface:

Video on start page:	<input checked="" type="checkbox"/>
Video in SIP call (H.263) :	<input checked="" type="checkbox"/>
Web interface TCP port:	<input type="text" value="80"/>
Enable telnet:	<input type="checkbox"/>

These are basic settings depending on your setup.

The door phone Web GUI can be accessed remotely by asking the IT administrator to forward a TCP port to the static IP address of the door phone. This port can be changed to

the IT administrator's requirement.

# System Settings

## System:

The screenshot displays the 'System' settings page with the following sections:

- SIP Firmware version: 1.48 Base Firmware version: 6.0**
  - Download log file
  - start enhanced logging
  - Show call logs
  - Show SIP logs
- Network Time Server (NTP) Used for getting the current date/time:**
  - Input field
  - GMT-13
  - save
- Syslog server:**
  - Input field
  - save
- Firmware upgrade:**
  - Input field
  - browse
  - save
- Upload language:**
  - Input field
  - browse
  - save
- Save configuration:**
  - save
- Upload configuration:**
  - Input field
  - browse
  - save

At the top of the screen displays the current firmware and SIP firmware versions, check [www.telstrom.net](http://www.telstrom.net) for later versions.

To try and fault find problems you can start enhanced logging and then place the call and view the log file to diagnose the problem. It is always good practice to replicate the situation using a SIP soft phone like x-lite before raising a support ticket.

If you require automatic time changes between day and night profiles you will require to enter a relevant [NTP server address](#) to your location.

Note: Winter/ Summer time changes are not automatically changed by the door phone, but should be provided by the NTP server.

You can backup save the current configuration and load previous configurations.

## View Video

The view video page shows a JPG stream of images coming from the Door Phone camera. The resolution, frame rate etc can be changed. Refer to [Video Settings](#).

## AUDIO LEVELS / ECHO CANCELLATION:



*The default levels in most cases should be sufficient, if you do adjust make a note of the factory setting.* The microphone, speaker and echo canceller levels can all be manually adjusted by turning the trim pots which are located on the top section of the main board. Make the adjustments while on a call in the environment that will be used.

# TECHNICAL PARAMETERS

## Electrical Parameters

Parameter	Value	Conditions
Communication interface	Ethernet 10BaseT, 100BaseTx	
VoIP protocol supported	SIP	
Band width	300Hz – 3400 Hz	
Power supply of lighting through, switches and heating	12VDC $\pm$ 2V, 10-12VAC $\pm$ 2V	
Max. consumption	300mA	12VDC
Max. voltage of switch contact	48V	at I < 1A
Max. current of switch contact	2A	at U < 30 V
Operational temperature	-20 to +50°C	

## GUARANTEE CONDITIONS:

This product was shop-checked. The producer guarantees that this product will keep the features described in these operating instructions in the course of guarantee provided the user follows instructions described in the operating manual.

If making a claim within the guarantee period, please contact your dealer. Only the producer will make guarantee repairs. Request a Return Material Authorisation number describing the reason for claim, proof of purchase and your exact address and contact details. You will then be advised of corrective action to be taken.

The guarantee does not include:

- mechanical, thermal, chemical and other damages caused by user's activities or location
- defects caused by natural disasters
- defects caused by repair or modifications carried out by user or other unauthorised person
- willful damage of product
- incorrect use of product caused by other use than specified in operating manual (e.g. installation, programming)
- damage caused during product transport to customer and from supplier