

Technical Description

VIPCOS 640 Desktop Call Station

L. No. 703400



L. No. 703400

and

VIPCOS 640 Additional Housing

L. No. 703401



L. No. 703400 extendable up to 5 x 703401

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Translation of the German original

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1. Legends and Agreements

	<p>Danger! This sign refers to an extremely dangerous situation that, unless avoided, may cause serious injury or even death.</p>
	<p>Caution! This sign refers to a potentially dangerous situation that, unless avoided, may cause a device to be damaged by ESD.</p>
	<p>Notice! This sign refers to a potentially dangerous situation that, unless avoided, may cause material damage.</p>

<p>“Commands and entries”</p>	<p>In this document, all commands and entries that need to be entered from a user’s keyboard are enclosed by inverted commas.</p>
<p>See <i>Overview</i></p>	<p>All refers to chapters or figures of this description are displayed in <i>cursive</i>.</p>

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2. Overview

The VIPCOS Desktop Call Station V640 can be used as Subscriber for the VIPCOS Decentralized Communication System. The VIPCOS Desktop Call Station allows direct voice communication with other terminals. It can also be used for loudspeaker announcements and even for programmable local functions. A microphone monitoring is inside the device also as a built-in display that provides additional display options in plain text. The model described in these pages has 16-line keys. The number of keys can be extended by using an appropriate additional housing (L. no. 703401), which can be extended to 64, 112, 160, 208 and 256 keys, see accessories.

In addition to target keys for WL/EL, Fullduplex and SIP, the Intercom Call Station has volume control, voice memory, and a display for status messages. Depending on the configuration used, it enables you to control functions such as:

- Full duplex
- WL-Connections
- EL-Connections
- Group call
- Collective call
- Speech memory
- Priorities
- Call storage etc.

WL = Two-way Voice Communication

EL = One-way Voice Communication

The built-in display has additional display capabilities in plain text. In default settings the call station displays:

Vonamic VIPCOS V640

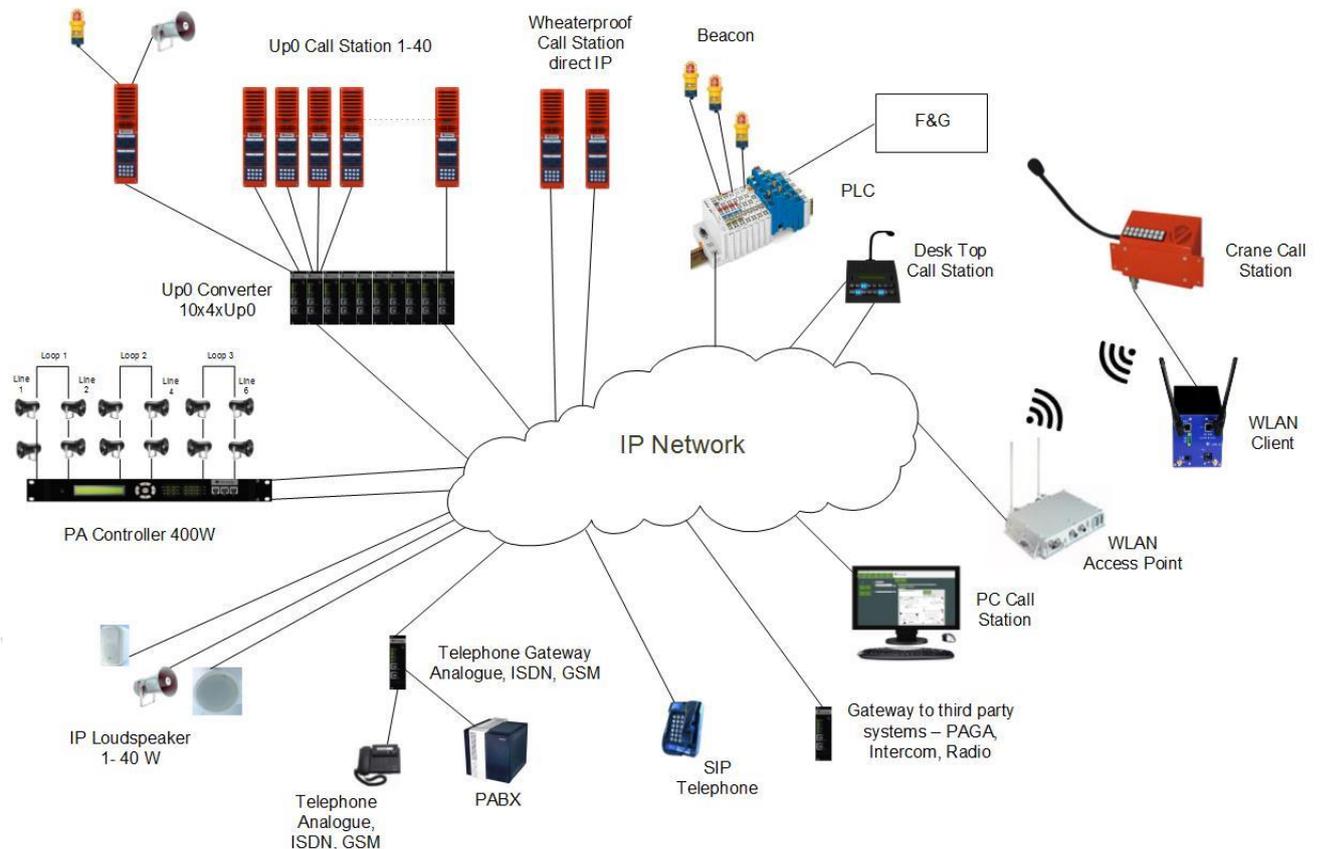
The 24 Characters of the first display line can be used for local Callstation Name's or customized information's e.g.:

SLAB YARD PULPIT NORTH

Internal memory block of 32 MB is built into every VIPCOS 640 Desktop Call Station. The internal memory block provides standard sounds and texts that can be enhanced using customer-specific announcements, sound sequences or audio files. The resultant sound files can be played back by means of a simple keystroke.

3. Application

The VIPCOS 640 Desktop Call Station is used in VIPCOS systems or can be integrated in nearly every SIP (Session Initiation Protocol) System. This device is direct connectable to a VIPCOS network node. Switches with Power over Ethernet and IGMP function are recommended to supply connected devices and in this case the VIPCOS 640 Desktop Call Station.



4. Design

The VIPCOS 640 Desktop Call Station consists of a black (RAL9005) plastic housing with built-in loudspeaker, a gooseneck microphone, illuminable LC display and a keypad including 16 keys with LED signaling. These keys can be labeled individually.

The rear panel has two RJ45 sockets for redundant network connections and two LED's for displaying the current operational readiness.

All electronic components are attached to a printed circuit board inside the device.

5. Transportation and Storage

Proper operation of the device requires both appropriate transport in transport packaging and appropriate storage conditions.

For storage of device observe the permitted climatic conditions and the permitted operable temperature range!

6. Assembly



Notice!

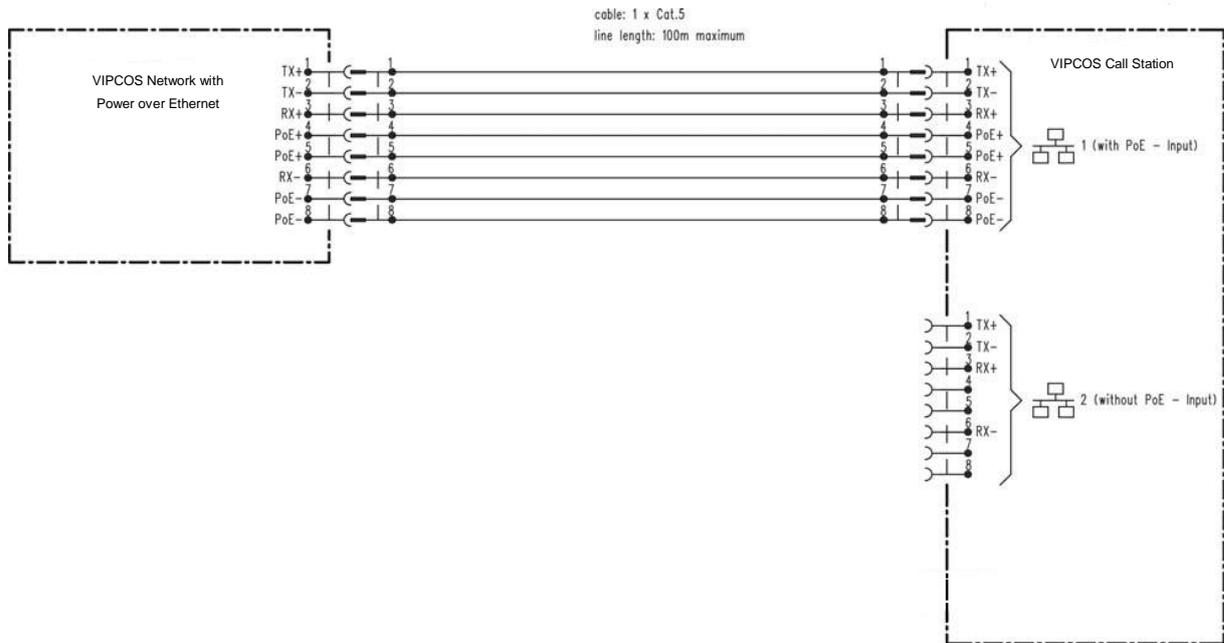
The device is designed for indoor use only and must be protected against cold and moisture.

6.1 Connection to a net node

The following examples are all based on the assumption that in the VIPCOS network there is some sort of structured cabling in accordance with the requirements of DIN EN 50173 or ISO/IEC 11801. All switches, adapters, gateways, extenders and modems in the network should have auto crossover and IGMP functionality. Otherwise the using of crossover cables instead of standard patch cables are required.

More information about VIPCOS system is to find in the system description VIPCOS. This document will be delivered with each system.

The standard way of connecting the VIPCOS 640 Desktop Call Station to a VIPCOS network node, using shorter cables of up to 100 meters (measured from the V640 Intercom Call Station connector to the network node connector), is by means of Power over Ethernet, subsequently referred to as PoE.



Example 1: Network 1 PoE – net node powering, 1 x Cat.5

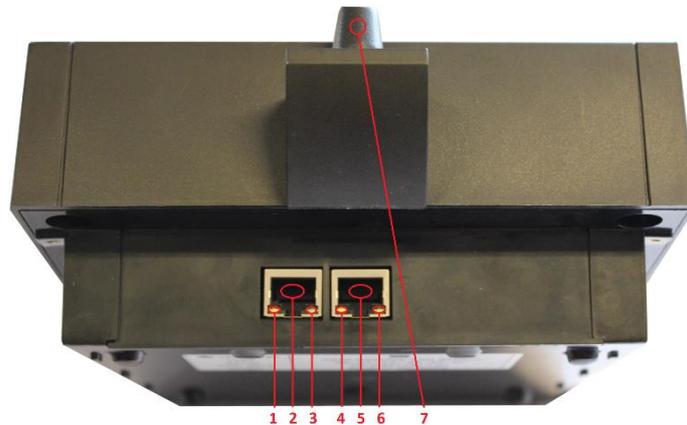
Please note that there is the possibility of using a PoE injector in order to provide PoE for the V640 Desktop Call Station.

7. Interfaces, Controls and Displays

The following elements can be found on the front side of the device:



The following elements can be found on the rear side of the device:



- 1 Yellow illumination diode indicating connection at network connection 1
- 2 Network Connection 1
- 3 Green illumination diode indicating data exchange at network connection 1
- 4 Yellow illumination diode indicating connection at network connection 2
- 5 Network Connection 2
- 6 Green illumination diode indicating data exchange at network connection 2
- 7 10 Gooseneck microphone

8. Commissioning

Each device that leaves the production site gets a standard check list with a static IP address (192.168.100.10). After switching on the system, and after resetting functions or connecting an V640 Desktop Call Station, there is an automation initialization procedure running which takes about seven seconds and is terminated with the rest position. The call station is then ready for operation.

The Call Station initialization is shown as running light from left to right of all 16 keys. After successful initialization the Display will show:

Vonamic VIPCOS V640

When initialization is finished, all settings are back to their default values.

9. Configuration

To be used in a VIPCOS system, the V640 must be configured with relevant data.

The Desktop Call Station is configured via the IP network using a standard internet browser to visit the configuration website of the device or using the software VIPCOS Configuration (Reference number 701200). The user interface which has been implemented has a clearly structured layout.

10. Functionality

10.1 Overview

The VIPCOS 640 Call Station is part of the innovative VIPCOS system which distinguishes itself from other, conventional intercom systems by virtue of its "decentralized IP-intelligence".

As the switchboard software is located inside the call station, the call station itself can act independently and communicate without a central switchboard.

For this purpose, the call station is connected to an IP-compliant Ethernet system by means of a Cat 5 cable directly via the switch.

The second RJ45 sockets of the call station enable a redundant connection to a second Ethernet system.

10.1.1 Local Functions

Local functions affect only one call station. They do not have any influence on any other call stations. The required specifications are automatically transmitted to a call station during initialization. This makes it possible to use this call station immediately on the basis of individual local functions, i.e those functions that have been intended only for this station.

10.1.2 WL volume +/-

When this local function has been set up after initialization, there are two control keys, one for "Volume +", the other for "Volume -". Each actuation of the speaker volume for call connections increases or diminishes the volume by one setting. A volume setting in this instance is 2 dB (decibel). In addition to the basic setting, the initializing process also stipulates the minimum and maximum values.

Cancellation	Call	Group preselection				Volume +	Volume -
01	02	03			GR 01	GR 02	GR 03

Key functions are examples!

Following key actuation "Volume - " the display indicates the percent loudness value to the maximum and the currently selected volume level:



10.1.3 Ideal key

The basic setting can be reset at any time by actuating the ideal key, even after the values have been manually changed. This is invaluable if the preset values have been inadvertently changed so that the Call Station can be operated in the standard settings.

Key functions are examples!

Cancellation	Call	Group preselection			Ideal	Volume +	Volume -
01	02	03			GR 01	GR 02	GR 03

The call station display indicates key actuation in the following manner:



10.2 WL destination keys

10.2.1 Simplex/Fullduplex intercommunication connections (WL/Fullduplex)

Intercom connections are conducted from a keyboard via a loudspeaker and microphone. They do not create any acoustic feedback, which is why they can be used with any loudspeaker volume, no matter how high.

Each available user is assigned an individual key at each call station. Inside or next to these keys, there are light-emitting diodes signaling the current operational status of the associated call station. In this context, continuous light indicates that the line is currently engaged by another active voice communication. On the other hand, intermittent light indicates that a connection has been established.

To establish voice communication with any user, simply press the key assigned to this user. Once this has been done, the user can be addressed immediately. It is essential that the key is held down while you're speaking. Release the key when you have finished! The own call station display will indicate the connection as follows (example):

PPL Supervisor Office
Send: Crane KK-16-CB2

During the call, the call station at the other end will display a flashing light, either inside or next to the key associated with the caller. There might be the following display (example):

Crane KK-16-CB2
Recv: PPL Supervisor Office

All other call stations will display a continuous light in their associated diodes, which serves as an Engaged signal. Other stations cannot join in the ongoing call (unless they have priority status or Fullduplex connections are available), i.e. engaged lines or connections cannot be used. In other words, as long as a target key indicates an engaged status (continuous light), the associated user cannot normally be called until the continuous light goes out and the line is clear again.

After you have finished speaking and released the key, all associated functions will be terminated and all associated lamps will go out. If the other person wants to respond, they press the required key and answer. This process can be repeated any number of times.

10.2.2 Loudspeaker announcements (EL)

The procedure for loudspeaker announcements is the same as for simplex intercommunication connections. Simply press the key and speak. By pressing the key, a connection to a loudspeaker or loudspeaker circuit will be established. This one-sided connection will continue until the key is released.

The display is also similar:

PPL Supervisor Office
Send: Speaker Area 1+2

10.2.3 Group call

A group call combines a number of users or loudspeaker circuits to form a pre-defined group. As usual, connections are established by pressing a key and these connections continue until this key is released. Engaged call stations or loudspeaker circuits will normally not be interrupted.

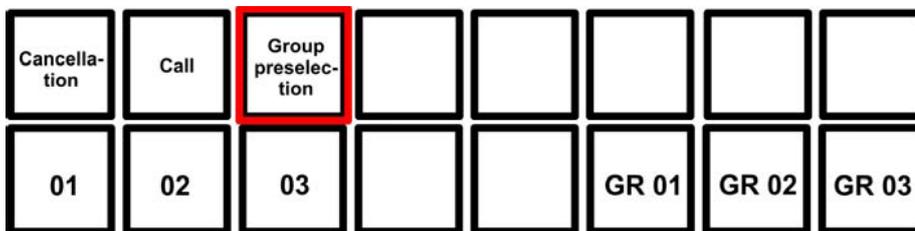
As usual, target call stations display a flashing light in their associated diodes. For the two call stations involved, all other call stations receive a continuous light as an Engaged signal. Displayed messages are identical to those of simple intercom connections, for example:

PPL Supervisor Office
Send: Group All Call

10.2.3.1 Dynamic Group Call

Individual users or even pre-defined groups can be combined to form temporary larger groups. To do so, carry out these steps:

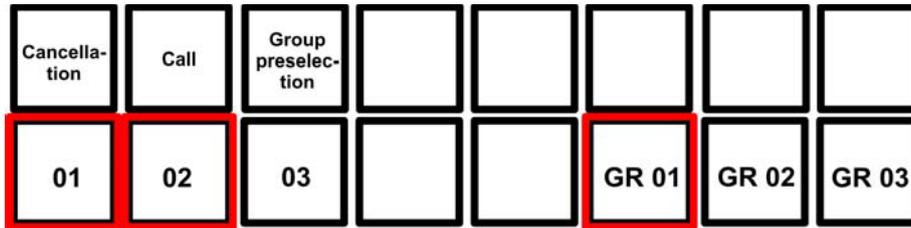
- a) Group preselection
Press this key to select and activate this function. The key's lamp will flash.



Key functions are examples!

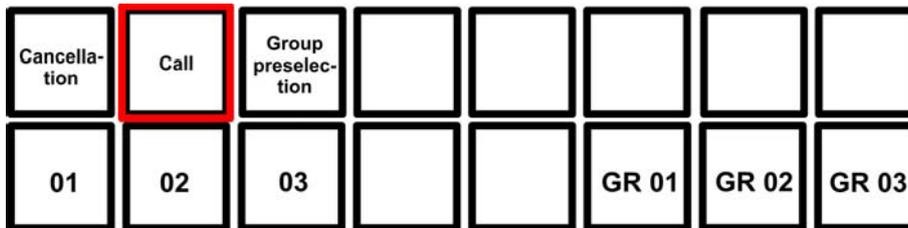
This function will continue until the Group preselection key is pressed again. The key's lamp will stop flashing.

- b) Combining a number of groups
 After pressing the Group Preselection key, you can select a number of different users or groups by pressing the associated call keys. The lamps in the keys associated with the selected persons will steady light.



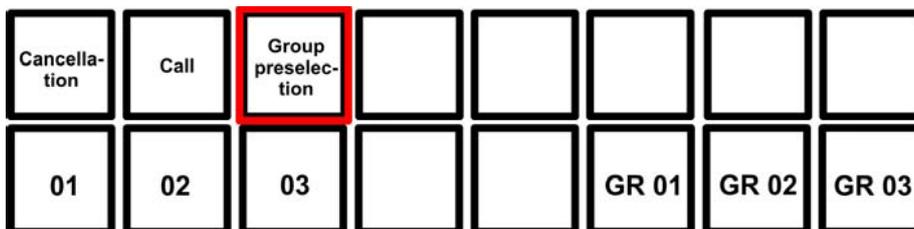
Key functions are examples!

- c) Call key
 After selecting the new group, this group can be called by pressing the call key. Simply press the call key and start speaking. After pressing the key, the required connection will be established. The connection will be broken after releasing the key. All other connection keys will display a continuous light as an Engaged signal.



Key functions are examples!

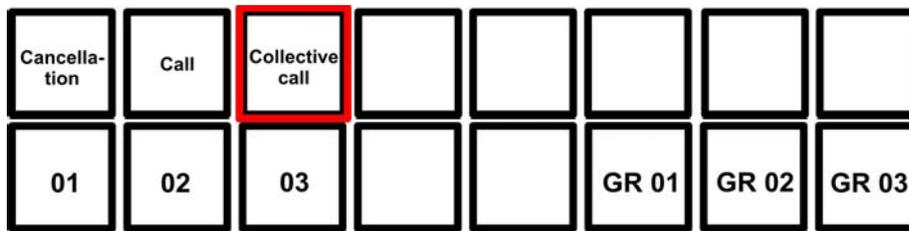
- d) Cancellation of dynamic Group Function
 The group preselection will remain active until the key is pressed again.



Key functions are examples!

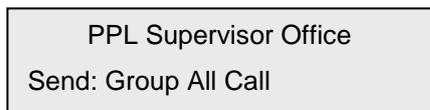
10.2.4 Collective call

A collective call combines all users and loudspeaker circuits to form a larger group which can be called by pressing the collective call key on the VIPCOS Desktop Call Station. As usual, the connection remains active until the key is released.



Key functions are examples!

Displayed messages are identical to those of simple intercom connections: example

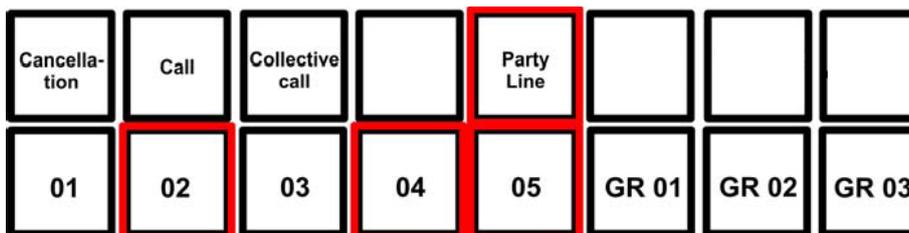


10.2.5 Party Line connections

10.2.5.1 Establishing a Party Line connection

This function enables users to set up conference calls between a number of users. To do so, press the Party Line key to start the selection. The key's lamp will flash.

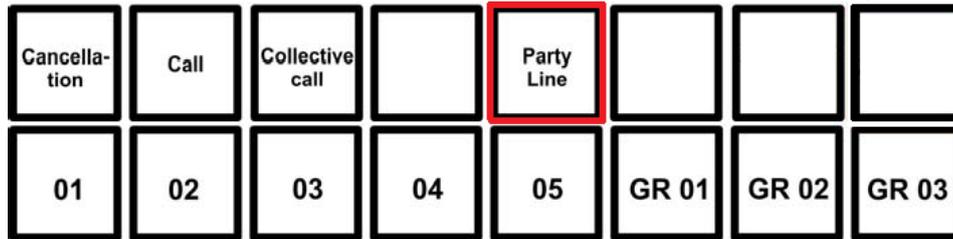
Next, select the required participants by pressing the associated keys, for example "2", "4", "5".



Key functions are examples!

This will cause the lamps of the selected persons to steady light. The selected persons can now start the conference call. You can see which users have been selected by the indicator lights on the destination Key. At the call stations of the selected users, the lamp of the Party Line key will start to flash. If you want to speak to all other users of the conference call, press the Party line speech key and keep it pressed until you have finished speaking. Then release the key.

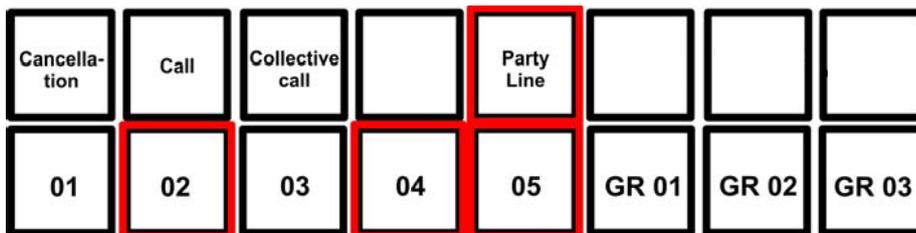
To stop the Party Line function, press the Party Line Button again. The Keys lamp will stop flashing.



Key functions are examples!

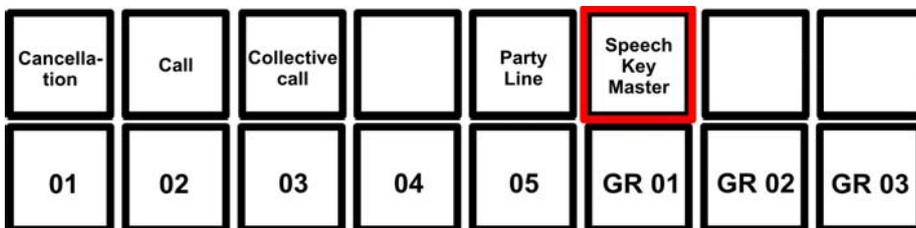
At the call stations of the selected users, this will cause the light in the Party Line key to switch off.

The starting call station will be the Master and handle the whole conference. It can add and delete subscriber as needed even when the function is already started. Press the Party Line key to start the function. Next, select the required users (as described above). This will cause the keys of the selected persons to steady light, thus indicating that this person can now start a conference call.



Key functions are examples!

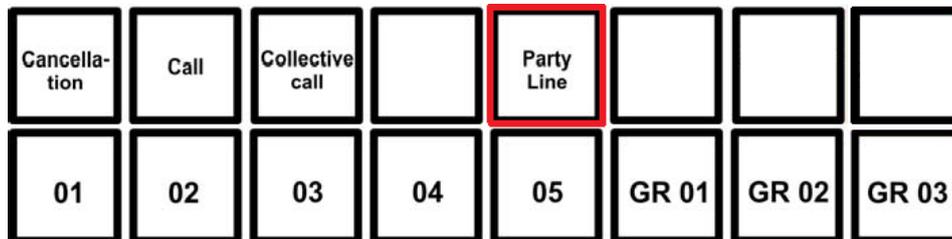
At the own call station, the Speech Master key's lamp will active. To talk to the other conference members, press this key and keep it pressed until you've finished speaking. The keys of the other conference members (for example, "2", "4", "5") will show a continuous light.



Key functions are examples!

For example, while user “2” is speaking, the associated lamp at his (or her) own call station is flashing. All other persons involved in the call have a continuous light.

To cancel the Party Line connection, press the Conference Cancellation key. The display will show the clear function. The lamp next to the Party Line key will go out for the selected users.



Key functions are examples!

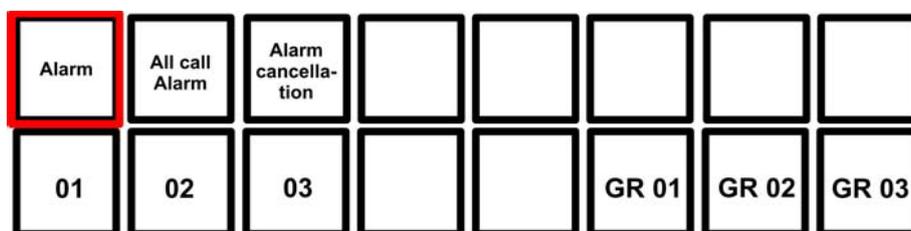
10.2.6 Announcements with Pre-tone

When you press the key with configured Pre-tone, a connection to another call station will be established and the Pre-tone replayed (Also on the own station), after which you may speak to the selected call station. Cancel the connection by releasing the key.

Announcements can also be sent either to a selected group or as a collective call. After you've pressed the Group Call or the Collective Call key with configured Pre-tone, a connection to the pre-defined group / to all target call stations will be established and the Pre-tone replayed. Now you can make an announcement to the selected target group. To finish the call, simply release the key.

10.2.7 Triggering an alarm

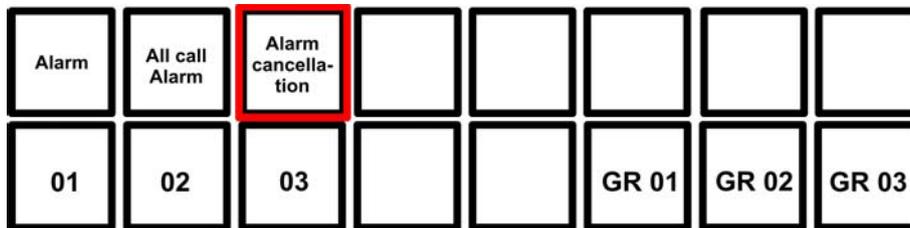
By briefly pressing this key (for example, “Alarm”) an alarm sound can be sent to the preconfigured loud-speaker circuits, single subscribers or Groups.



Key functions are examples!

Press this key shortly.

The alarm will continue until it is cancelled by pressing a pre-defined key (for example, "Alarm Cancellation").



Key functions are examples!

10.3 Functions without assigned keys

10.3.1 Priorities

All connections and functions are given a defined priority. Busy connections or functions can only be interrupted by connections or functions of a higher priority. Connections of the same or lower priority are not executed with a busy connection or function. The system allows for 255 priority levels.

10.3.2 Call storage function

The call storage function will save unanswered calls. If there were any unanswered calls, the caller(s) will be identified by the call station's associated target key(s) flashing. In this way, users can see at a glance who tried to call them during their absences. The Call storage function will be terminated as soon as the call is finally made or after a configurable time.

To avoid Call storage being activated again and again for each reply in an intercom call, the VIPCOS system controls the call intervals and activates Call storage only after a certain pre-defined time interval has elapsed.

10.4 Special functions

10.5.1 Availability in VIPCOS systems

10.5.1.1 Telephony function



Notice!

VIPCOS SIP Server Hardware is required when using IP telephones in VIPCOS systems. You maybe could use your own SIP server, this need to be proofed by Vonamic GmbH. A corresponding gateway is also necessary for connecting analogue or ISDN telephones.

A V640 Intercom Call Station dialing by a telephone subscriber.

A telephone subscriber always dials a V640 Desktop Call Station by dialing the subscribers ID number configured in the VIPCOS Webinterface. The connection is established immediately and the telephone subscriber can talk directly. Slow blinking of the LED on the line key configured on the V640 Intercom Call Station signals the call and readiness to speak. The speech-connection sequence is not like that in a normal telephone conversation. An intercom connection is involved instead. The line key must be pressed to activate the microphone on the V640 Desktop Call Station and it may only be released after speaking is finished. The speech direction from the V640 Desktop Call Station to the telephone subscriber always takes precedence. The telephone subscriber is always audible at the V640 Desktop Call Station due to an Fullduplex connection.

A busy signal is audible on the telephone if the V640 Intercom Call Station has just established another active speech connection. Connection reestablishment can start after hanging up and picking up the receiver again. The conversation can be terminated by hanging up the telephone subscriber's receiver or by pressing a "delete" key specially set up for the operation on the V640 Desktop Call Station.

The connection is automatically terminated after a preconfigured time of at most 90 seconds if the proper line key is not actuated during the connection, nobody speaks at the dialled destination, or a possibly configured "delete" key is not pressed after termination of the conversation.

A V640 Intercom Call Station dialing a telephone subscriber.

Only telephone subscribers who have been assigned a permanent line button on the V640 Desktop Call Station through configuration in the VIPCOS system can be dialed up. The line key must be briefly pressed to establish the connection. The steady line lamp signals connection establishment. The telephone is dialed directly and an audible signal occurs on the telephone. A dial tone is audible at the V640 Intercom Call Station until the telephone subscriber has lifted the receiver. After the connection is established by lifting the telephone receiver, the telephone subscriber can speak directly as accustomed and will be heard at the V640 Intercom Call Station. The speech-connection sequence is not like that in a normal telephone conversation. An intercom connection is involved instead. The V640 Desktop Call Station's operator controls the microphone activation of the own Station. The telephone subscriber can speak immediately after actuating the line key on the V640 Intercom Call Station. The key must remain actuated while speaking and may only be released after speaking is finished. The speech direction from the V640 Intercom Call Station to the telephone subscriber always takes precedence. The telephone subscriber is always audible at the V640 Desktop Call Station due to an Fullduplex connection.

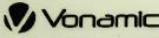
If the telephone connection dialed is busy, then a busy signal is audible on the telephone loudspeaker. A press on the hang-up key at the V640 Desktop Call Station terminates the dialing procedure. An additional connection can be established directly by pressing the line key.

The conversation can be terminated by hanging up the telephone subscriber's receiver or by pressing a "Hang-up" key specially set up for the operation on the V640 Intercom Call Station.

The connection is automatically terminated after a preconfigured time of at most 90 seconds if the proper line key is not actuated during the connection, nobody speaks at the dialed destination, or a possibly con-figured "delete" key is not pressed after termination of the conversation.

11. Name plate

The name plate is located on the device's lower rear side:

1		
2	Type	V640 Desktop Call Station
3	Serial	00-01-1A-30-00-0F
4	Year 2018	FW 0.99 / HW 1.01
5	Origin	Made in Germany



- | | | |
|---|--------|--|
| 1 | Logo | Manufacturer logo and QR Code |
| 2 | Type | Product name |
| 3 | Serial | Serial number. All manufactured devices can be identified through this number. |
| 4 | Year | Time of production. Firm-, and Hardware Version |
| 5 | Origin | Country of Origin |

12. Maintenance

Operating the device does not require observing a maintenance plan.

13. Technical Data

Power supply

Via Network Connection: PoE (**P**ower **o**ver **E**thernet) in conformity with IEEE 802.3af
 Via net node: 48V DC -10/+15%

IP Hardware Interface

LAN: 100-BASE-T Autonegotiation
 Ethernet: Ethernet, in conformity with IEEE 802.3u(100Mbit/s)

Transmission protocol

IP: UDP; TCP / IP
 WL/Fullduplex: VONAMIC-Protocol

V640 Intercom Call Station data

Loudspeaker amplifier: max. 1W to 8 Ohm
 Microphone: Electret microphone monitored
 Microphone amplifier: Sensitivity approx. 1mV
 Frequency range: 300Hz ... 16kHz
 Power consumption: 5W
 Maximum power consumption: 10W
 Display: 2 x 24 characters
 Number of keys: 16 (Basic module L. No. 703400)
 64 (extended one extended module L. No. 703401)
 112 (extended two extended modules L. No. 703401)
 160 (extended three extended modules L. No. 703401)
 208 (extended four extended modules L. No. 703401)
 256 (extended five extended modules L. No. 703401)

Measurements (width x depth x height): 88 x 183 x 260 mm
 Weight: approx. 1,1 kg (Basic module L. No. 703400)
 approx. 1,1 kg (each extended module L. No. 703401)

Environment data

Admissible climatic conditions: 3K4, in conformity with DIN EN 60721, respectively IEC 721 part 3-3
 Admissible temperature range: 0°C ... +60°C
 Protection class t: IP20 in conformity with DIN EN 60529