

# DOORSTATIONS FOR APARTMENT DOORPHONES

## BVD-SM100

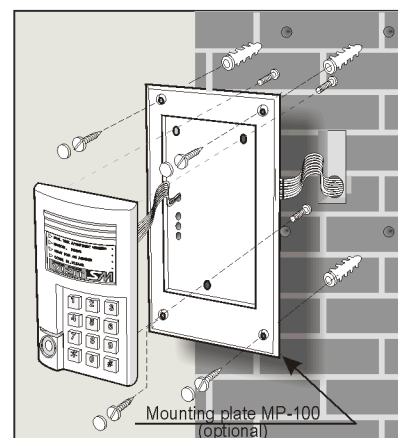
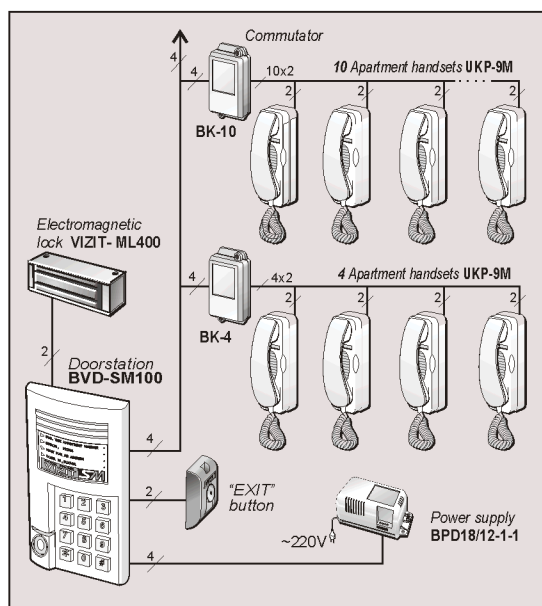


## DOORSTATION FOR VIZIT-SM APARTMENT DOORPHONE

### Features:

- Capacity up to 100 subscribers
- Duplex intercom between visitor and subscriber (80 seconds)
- The entrance door unlocking
  - by dialing three- or four-digit shared access code \*
  - by dialing three- or four-digit individual user's access codes (up to 100 codes) \*
  - with TM-buttons (up to 600) - DS1990A personal electronic identifiers are used as the keys (iButton®, Maxim/Dallas Semiconductor Ltd., USA). Each button houses a very personal computer chip that contains a unique, unalterable never repeated digital code
  - by pressing the "→" button at apartment handset during intercom
  - by pressing the indoor EXIT button
- Door lock's unlocking duration is programmable to 1 or 5 seconds
- Memorizing (up to 6 pcs for each of 100 apartments) and erasing the TM-buttons' codes in nonvolatile memory
- Beep sounds while pressing the keypad buttons and door opening
- Error beep sounds in case of misdial
- Short beep sounds in apartment's handset while using its individual access code or TM-button \*
- Programmable with keypad
- Light indication of operating mode
- Team-work with concierge communication console **VIZIT-PK1**

\* This function can be enabled or disabled during programming of the doorstation



Maximum length of wires

CIRCUIT		LENGTH, M		
		Diameter 0.3 mm	Diameter 0.5 mm	Diameter 0.75 mm
Audio	Doorstation - monitor (handset)	75	200	—
	Power supply - doorstation	—	20	30
	Power supply - electromagnetical lock VIZIT-ML400	—	20	30
		Cross-section 0.07 mm²	Cross-section 0.2 mm²	Cross-section 0.5 mm²

MODEL	BVD-SM100
Number of subscriber	100
Number of TM(DS1990A)-keys, no more	600
Individual access codes, no more	100
Operating voltage, VDC	16 ... 24
Temperature range	from -40°C to +45°C
Apartment handsets	UKP-8(M), 9M, 11
Power supply	BPD18/12-1-1
Electromagnetic locks	VIZIT-ML300, VIZIT-ML400
Electromechanical locks	12V 1.2A max
Dimensions, mm	172x87x25
Mounting	Superimposed

## OPERATING INSTRUCTION

**BVD-SM100** doorstation is intended for use in **VIZIT-SM** doorphone and provides two-way intercom, keypad codes and Touch-Memory button (TM-button) controller's functions.

## FEATURES

- Capacity up to 100 subscribers;
- Duplex intercom between visitor and subscriber (80 seconds);
- The entrance door unlocking:
  - by dialing three – or four – digit shared access code \*;
  - by dialing three – or four – digit individual user's access codes (up to 100 codes) \*;
  - with TM-buttons (up to 600) - DS1990A personal electronic identifiers are used as the keys (iButton®, Maxim/Dallas Semiconductor Ltd., USA). Each button houses a very personal computer chip that contains a unique, unalterable never repeated digital code;
  - by pressing the "↔" button at apartment handset or monitor during intercom;
  - by pressing the indoor EXIT button;
- Door lock's unlocking duration is programmable to 1 or 5 seconds;
- Memorizing (up to 6 pcs for each of 100 apartments) and erasing the TM-buttons codes;
- Beep sounds while pressing the keypad buttons and door opening. Error beep sounds in case of misdial;
- Short beep sounds in apartment's handset while using its individual access code or TM-button \*;
- Programmable with keypad;
- Light indication of operating mode;

\* This function can be enabled or disabled during programming of the doorstation.

## SPECIFICATIONS

Max. number of apartment handsets:	100
Max. number of individual access codes:	100
Max. number of TM- buttons for each apartment:	6
Max. number of TM-button codes:	600
Door lock control:	N.O & N.C relay contacts;
Max. switchable current:	1.5 A (30 VDC max);
Intercom line DC impedance, no more:	30 Ohms;
Supply voltage, V:	20 ± 4; 0.4 A (max);
Dimensions, mm:	175 x 90 x 30;
Weight, kg:	0.6

## OPERATING CONDITIONS

Ambient temperature	– 30°C ... + 45°C
Relative humidity	Up to 98 % at 25°C

## PARTS LIST

Doorstation BVD-SM100:	1 pc.
Operation instruction:	1 pc.
Package box:	1 pc.

Doorstation is intended for use as a main unit of a doorphone system jointly with:

- commutators : **BK-4** or **BK-4V** (up to 50 pc.). Each one provides connection up to 4 handsets;  
**BK-10** (up to 20 pc). Each one provides connection up to 10 handsets;
- electromagnetic lock **VIZIT-ML400 (ML300)** or electromechanical lock (1.5A max),
- power supply **BPD 18/12-1-1** (220 VAC) or **BPD 18/12-1-2** (110 VAC),
- apartment handsets **UKP-8, -8M, -9M, -11**

NOTE: Above-mentioned equipment can be supplied to a consumer according to a separate order.

Parts lists, specifications and wiring diagrams of equipment are present in its instructions.

## INSTALLATION

First of all it is necessary to study wiring diagrams given in doorphone operating instruction.

**ATTENTION!** The direct hit of rain or snow onto the doorstation is not permitted.  
To reduce the influence of the exterior climatic factors it is recommended to protect the doorstation from rain or snow. In this case the reliability is considerably increased.

Mounting dimensions of the doorstations are given on Figure 1.

M5 screws should be used for mounting the doorstation upon the door (Figure 2).

Mounting plate MP-100 (not included) should be used for mounting the doorstation upon the wall (Figure 3).

**EXIT** button should be installed inside an entrance near the door and ensures door opening when pressed.

A power supply should be installed in any convenient place of a porch at the distance of 30 meters (max.) from the doorstation.

Commutators should be installed on floors in niches near a ceiling, if it's possible. Handsets should be installed in apartments.

An installation of doorphone units should be performed in conformity with its instructions. Connection diagrams are given on Figures 4, 5.

It's forbidden to use an electromagnetic lock with impedance less then 20 Ohms and without degaussing module.

A damper diode from montage kit should be connected to an electromechanical lock (Figure 5).

It's forbidden to use electromechanical locks with impedance less than 10 Ohms.

Minimal cross section of wires for **+E, GND, NC, COM, NO** circuits is **0.35 mm<sup>2</sup>**, whereas **0.12 mm<sup>2</sup>** is enough for the rest circuits.

## SAFETY INSTRUCTIONS

Doorstation, commutators and lock do not contain voltage above 24 VDC.

**ATTENTION!** The power supply contains dangerous for life high voltage.  
Do not forget to turn off power supply before replacing a fuse.  
To avoid damage or electric shock do not make any repair when the power is on.

## BK-4 AND BK-10 COMMUTATORS

4- wires line is used for connecting **BK-4** and **BK-10** commutators to the doorstation.

**LINE, GND, SEL** and **Ek** are input terminals of commutators and should be connected to corresponding terminals of the doorstation (Figures 4, 5). Each handset should be connected to commutator via 2-wire cable.

First of all, the jumpers that define the apartment numbers should be set to proper positions.

**BK-4 Commutator** provides connections up to 4 handsets, which may have numbers of the same or adjacent decade, as for instance, **01 – 04** or **08 – 11**, or **439 – 442**.

Positive terminal of a handset must be connected to any of **LN** outputs of the commutator (internally connected).

Negative terminal of a handset must be connected to corresponding **FA, FB, FC** or **FD** output of the commutator.

Connected 6 jumpers (**DA, DD** and **EA, EB, EC, ED**) to corresponding pins (**0...9**) of the apartment numbers decoder.

**DA** and **DD** jumpers define a decade digit, while **EA, EB, EC** and **ED** jumpers define a unit digit in apartment numbers.

If all apartment numbers are in the same decade (for example, **№01, №02, №03, №04**), then P1 jumper must be in its place.

1. Connect **DA** jumper to **0**-pin (**0** – decade for **FA, FB, FC, FD** outputs).
2. Connect **DD** jumper to **DA1**- pin (**DA** and **DA1** are internally connected).
3. Connect **EA, EB, EC, ED** jumpers to **1, 2, 3, 4** - pins respectively.

Apartment numbers will be coded as follows: **FA - №1, FB - №2, FC - №3, FD - №4**.

If two apartments have numbers from one decade, while the rest of apartments – from another decade, (for example, **№08, №09, №10, №11**), then P1 jumper must be in its place.

1. Connect **DA** jumper to **0**-pin (**0** – decade for **FA, FB** outputs).
2. Connect **DD** jumper to **1**-pin (**1** – decade for **FC, FD** outputs)
3. Connect **EA, EB, EC, ED** jumpers to **8, 9, 0, 1** – pins respectively.

Apartment numbers will be coded as follows: **FA - №8, FB - №9, FC - №10, FD - №11**.

If one apartment has number from one decade, while the rest three – from another decade, (for example, **№10, №11, №12, №09**) then P1 jumper must be removed.

1. Connect **DA** jumper to **1**-pin (**1** – decade for **FA, FB, FC** outputs).
2. Connect **DD** jumper to **0**-pin (**0** – decade for **FD** output)
3. Connect **EA, EB, EC, ED** jumpers to **0, 1, 2, 9** -pins respectively.

Apartment numbers will be coded as follows: **FA - №10, FB - №11, FC - №12, FD - №09**.

**BK-10 Commutator** provides connections up to 10 handsets, which must have numbers of the same decade.

Positive terminal of a handset must be connected to any of **LN** terminals of the commutator (internally connected).

Negative terminal of a handset must be connected to corresponding **E0 – E9** terminal, which defines the unit digit in apartment number.

Set the decade jumper to a corresponding position observing the digits beside it.

An example of wiring the handsets is represented on Figure 5 (apartments from № 11 to № 19).

## DOORSTATION PROGRAMMING

There are two programming modes: **system setup** and **service settings**.

### SYSTEM SETUP

The following parameters are set in **system setup** by default:

Parameter	Initial setting value
Shared access code value	4230
Individual and shared access codes	Enable
Number of digits in both access codes	3
Entrance door lock unlocking duration, sec.	5
TM-button usage signaling	Enable
Password (pswd) for service settings mode	1234

To enter into the system setup: Shut down the power; disconnect two wires in flat cable "Programming" at the doorstation's rare panel.

Turn on the power – one beep sounds ( 🔊 ).

To change any setting press buttons according to the next table:

SETTING		PRESS
Shared access code	Three-digit	1, 3, ( ) #
	Four-digit	1, 4, ( ) #
	Disabling	1, 0, ( ) #
	New code setting	8, code, ( ) #
User's access code	Three-digit	2, 3, ( ) #
	Four-digit	2, 4, ( ) #
	Disabling (for all apartments)	2, 0, ( ) #
TM-button usage signaling (Beep in apartment whose TM-button was used)	Enabling	3, 3, ( ) #
	Disabling	3, 4, ( ) #
Door lock unlocking duration	1 sec.	4, 1, ( ) #
	5 sec.	4, 5, ( ) #
Restoring the initial settings (by default)		5, 1, ( ) #
Changing the password (pswd) for service settings mode		9, pswd, ( ) #

**NOTE:** # - button should be pressed after each setting for saving this change in a non-volatile memory. Thus, the doorstation is got ready for changing of any other setting. Otherwise, this change will be lost and previous value will be restored.

To exit the system setup mode shut down the power, then connect together two wires in flat cable "Programming". Turn on the power – doorstation enters the stand-by mode.

### SERVICE SETTINGS

To enter into the service settings: Dial **#999**. Two beeps sound.

Enter 4-digit password (1234 – by default). If the password is O'K then one beep sounds ( ). Two-tone error beep sounds if password is wrong.

#### • User's access codes memorizing (for each apartment)

1. Press **2**;
2. Dial the number of apartment for which the code is being set ( ). In case of one- or two-digit apartment number dial **00** or **0** previously.
3. Dial four digits of individual user's access code for given apartment ( ). 4<sup>th</sup> digit may be any except **0** because 0 disables call signal if 3-digit code is used. Press **#** for memorizing the individual user's access code ( – DONE)

#### • User's access codes on/off (for each apartment)

For disabling the user's code for given apartment dial this apartment's number and then **0000** as a code. CALL signal to this apartment remains possible.

#### • Apartment call disable (for 3-digit access code only)

It's possible to disable CALL signal to an apartment when any visitor dials this apartment's number. In user's access codes memorizing mode (look above) enter user's code, for example: **"5240"**, where **524** opens the doorlock and **0** disables CALL signal. Repeat procedure for remaining apartments, if needed. Press **\*** for returning into stand-by mode.

#### • TM-button codes memorizing

Doorstation's memory consists of **100** blocks (one for each apartment), every of them has **6** memory cells. So, it's possible to memorize up to 6 TM-button's codes for each apartment.

1. Press **3**.
2. Dial an apartment number, for example: **008** ( ).
3. Touch the reader with TM-button ( – "Code is read").
4. Press **#** ( – "Done"; – "Memory block is filled"). Repeat steps 3 – 4 for memorizing the remaining TM-button codes (up to 6). Repeat steps 2 – 5 for memorizing TM-button codes for another apartments. Press **\*** for returning into stand-by mode.

#### • TM-button codes erasing

If one TM-button get lost then whole memory block (6 cells) must be cleared. After that remaining TM-buttons may be memorized back again.

1. Press **4**.
2. Touch the reader with TM-button whose code is to be erased ( – "Code is found ") Or: dial an apartment number, for example: **008** for clearing its memory block ( ).
3. Press **#** ( – "Done"). Repeat steps 2 – 3 for erasing the other TM-buttons codes. Press **\*** for returning into stand-by mode.

## FUNCTIONAL CHECK AND ADJUSTMENT

After the installation and electric wiring being completed disconnect temporarily any apartment handset from commutator's outputs. Connect a test handset instead of disconnected one observing polarity. Note that the test handset must be hung up.

Turn on the power. **"Dial the apartment number"** LED glows at the doorstation.  
Press **★** (RESET). Pressing of any button entails one short beep.

- Dial the apartment number to which the test handset is connected. **"Dial the apartment number"** shuts off and **"Wait for an answer"** glows. Two-tone CALL signal sounds simultaneously at the doorstation and the test handset.  
Pick up the handset. Check the duplex intercom between doorstation and handset.  
If it's necessary, adjust the handset volume and doorstation volume with trimmer resistors at the doorstation's rear panel.  
If acoustic feedback results in a whistle then adjust the **"BALANCE"** trimmer resistor. In some cases it may be useful to lower the volume.
- Press **↔** button at the handset for a short while. The entrance door unlocks for 1 or 5 sec. **"Come in, please"** glows and beep sounds during 5 sec. Then **"Wait for an answer"** glows again, intercom is still available (up to 80 sec.).  
Hang up the handset. Doorphone returns into stand-by mode and **"Dial the apartment number"** glows.
- Press **★**, **#**, and dial shared access code. Lock opens, beep sounds, **"Dial the apartment number"** shuts off, **"Come in, please"** glows.
- Press **★**, **#**, and dial any wrong code. **"Dial the apartment number"** shuts off, **"Error, press ★"** glows and two-tone error beep sounds during 5 sec. Then the doorphone returns into stand-by mode. If **★** button is pressed while error beep sounds, then stand-by mode engages immediately.

Error beep sounds if any wrong code or not connected apartment's number is dialed, or not memorized TM-button is attached to the reader.

Disconnect the test handset from commutator's outputs and reconnect an apartment handset back again.

Check the CALL signal, duplex intercom and door unlocking for every connected handset, one by one.  
Set access codes, memorize TM-buttons, then check their operation.

- ❗ It's possible to change or disable an individual user's access code without entering the service settings mode. Two persons can carry out this procedure. One of them must be near the doorstation and another one - near a handset.

☎ Dial an apartment number at the doorstation keypad.

📞 Having heard CALL signal – pick up the handset and press **↔** button six times.

☎ **"Dial the apartment number"** LED glows and one beep sounds (**"Ready to memorize new code"**). Dial a new individual user's access code and inform the person with the handset that code is dialed (intercom still works).  
To disable an individual user's access code dial **0000**.

📞 Press **↔** button one time to memorize new code, then hang up the handset.

## OPERATION

- ☎ To call apartment, dial its number at the doorstation. There is no need to dial non-significant zero if number contains one or two digits.  
**"Dial the apartment number"** LED shuts off, **"Wait for an answer"** LED glows. Two-tone CALL signal sounds simultaneously at the doorstation and the handset. When the handset is picked up then CALL signal terminates. Speak to each other.

To unlock the entrance door the subscriber must press **↔** button at the handset. The door unlocks, beep sounds, **"Wait for an answer"** LED shuts off, **"Come in, please"** LED glows. Open the door and come in. Don't forget to close the door!  
To return the doorphone into stand-by mode the subscriber must only hang up the handset.

- ☎ To unlock the entrance door using shared access code dial **★, #, code**.  
If code is O'K, then beep sounds, **"Come in, please"** LED glows, the door unlocks.  
If code is incorrect, then two-tone error beep sounds during 5 sec. Press **★** and try again.

- ☎ To unlock the entrance door using an individual user's access code dial without pauses **the apartment number, #, code**.  
If code is O'K then the door unlocks as usually and one short beep sounds at the corresponding apartment's handset.  
If the dialed code is incorrect then two-tone error beep sounds during 5 sec. Press **★** and try again.

- ☎ To unlock the entrance door using a TM-button just touch the reader with it – one short beep sounds. If TM-button's code is found in memory (the search time – up to 3 sec), then the door unlocks as usually and one short beep sounds at the corresponding apartment's handset (if TM-button usage signaling is on). If TM-button's code is not found then two-tone error beep sounds during 5 sec.

- ☎ To unlock the entrance door on the inside of the porch press indoor **EXIT** button. Beep sounds and the door unlocks as usually.

Door unlocking and TM-button usage signaling does not function if a visitor speaks to subscriber.

## ABBREVIATIONS

OP	OPEN
NC	Normally closed contact
COM	Common contact
NO	Normally open contact
LINE	Intercom line
PRG	PROGRAMMING
GND	GROUND
SEL	SELECT
Ek	Commutators power and code
+E	Doorstation power

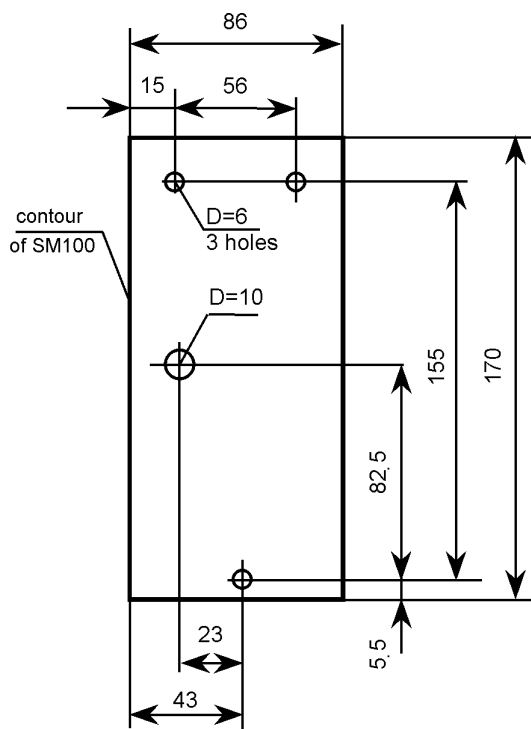


Figure 1 – Mounting dimensions of the doorstation.  
Units are millimeters.

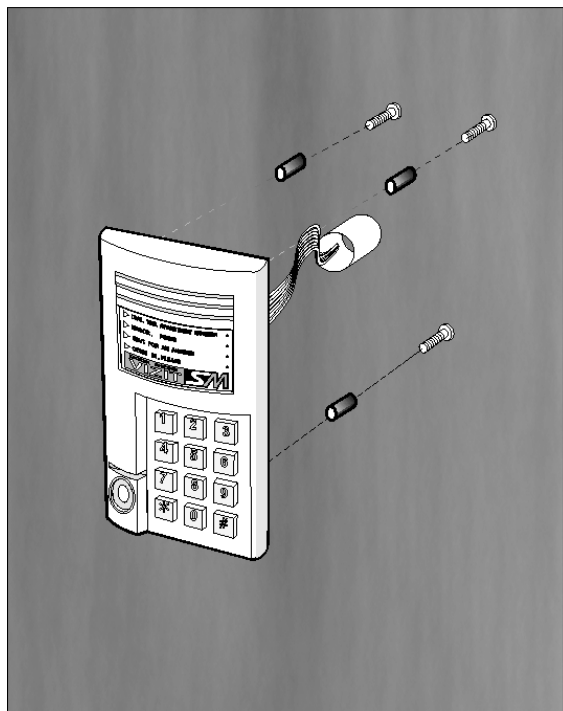


Figure 2 – Mounting of the doorstation on the door.

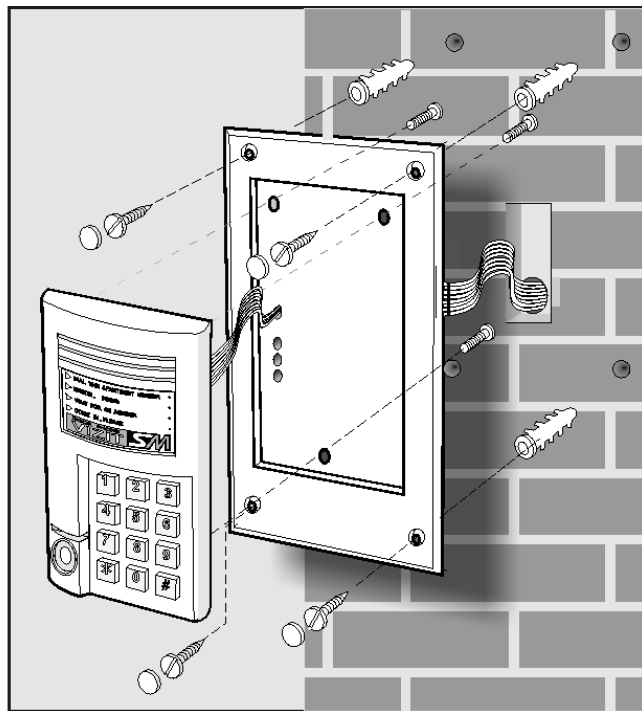


Figure 3 – Mounting of the doorstation on the wall.

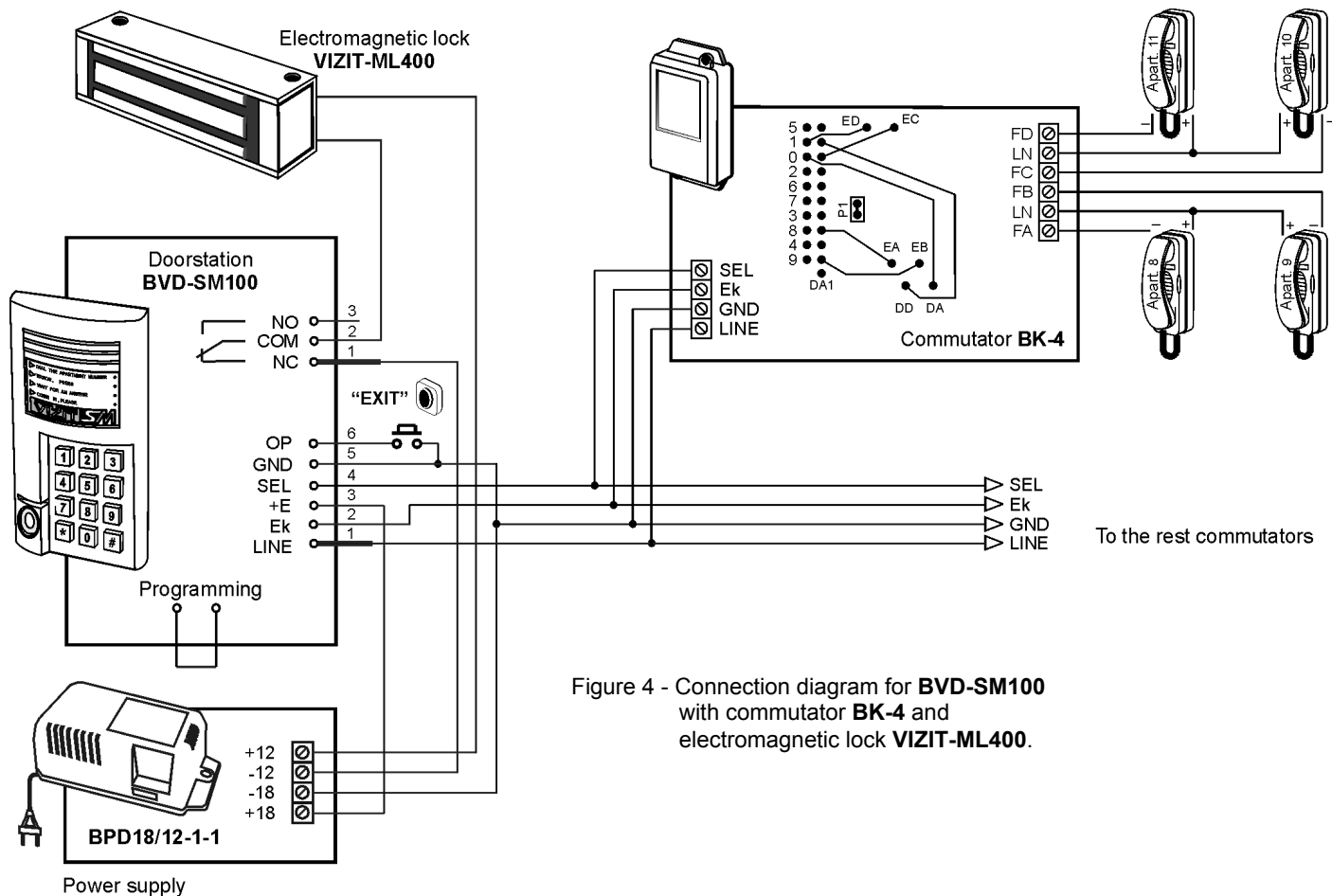


Figure 4 - Connection diagram for **BVD-SM100** with commutator **BK-4** and electromagnetic lock **VIZIT-ML400**.

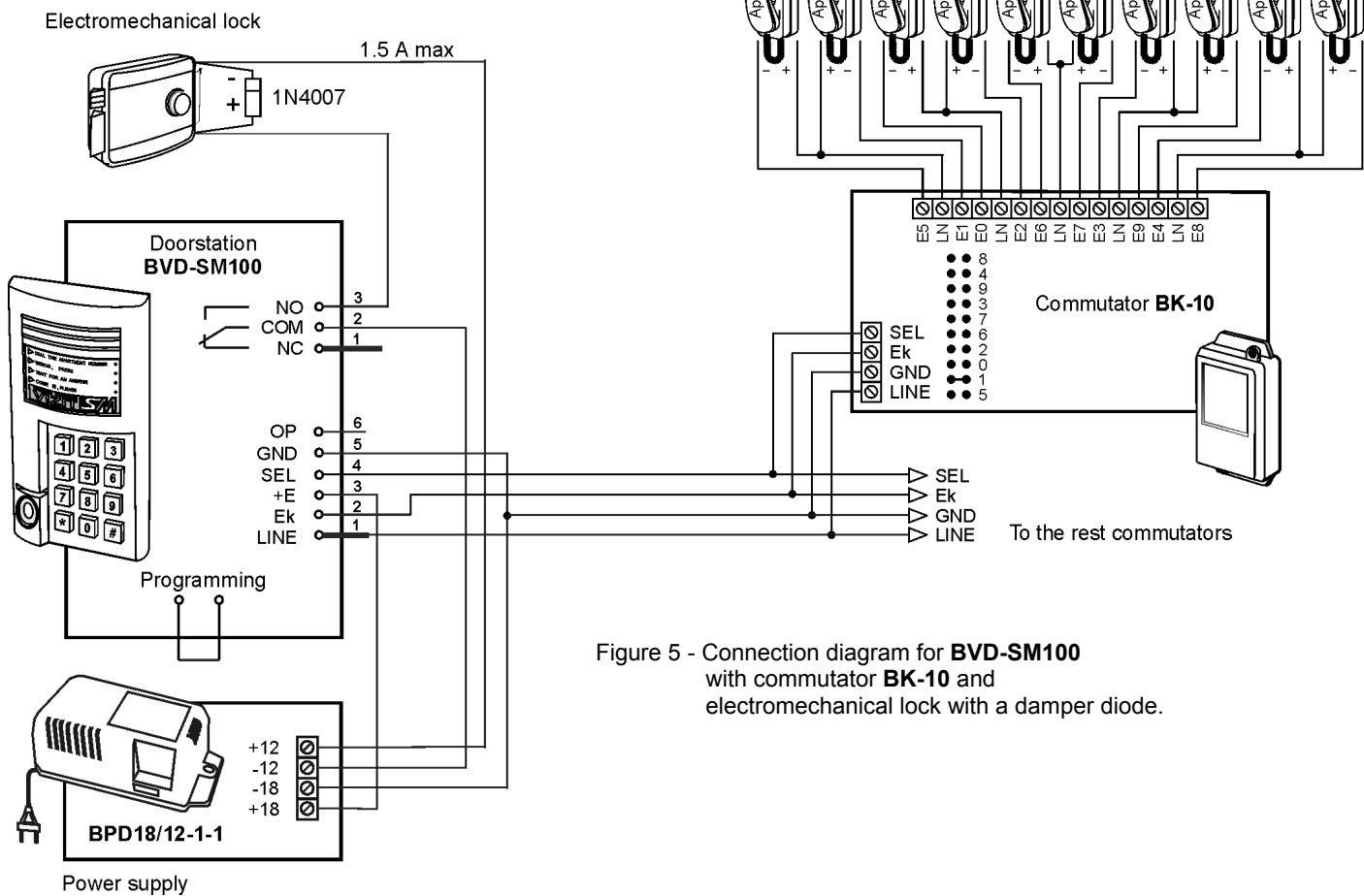


Figure 5 - Connection diagram for **BVD-SM100** with commutator **BK-10** and electromechanical lock with a damper diode.

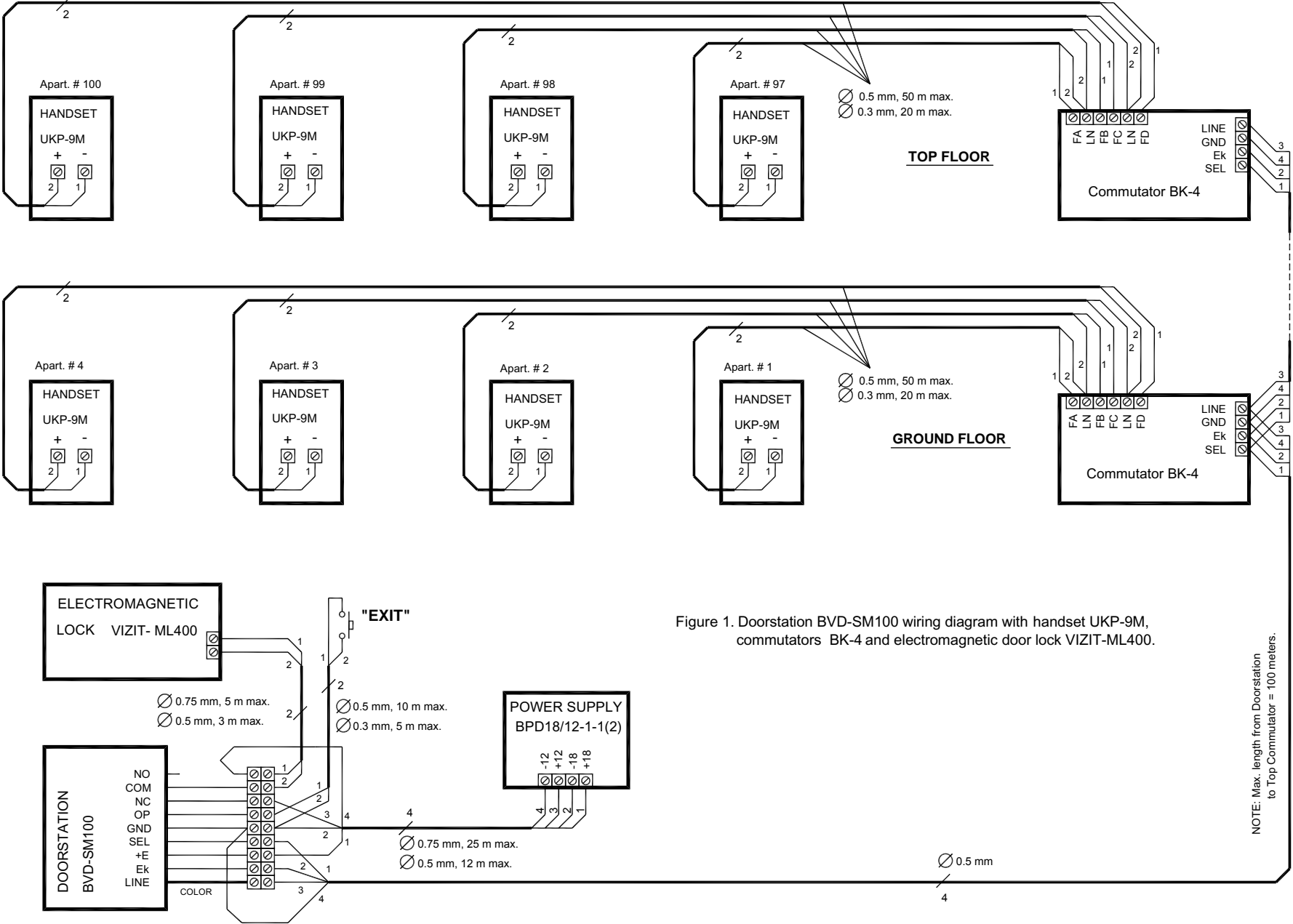


Figure 1. Doorstation BVD-SM100 wiring diagram with handset UKP-9M, commutators BK-4 and electromagnetic door lock VIZIT-ML400.



# APPENDIX

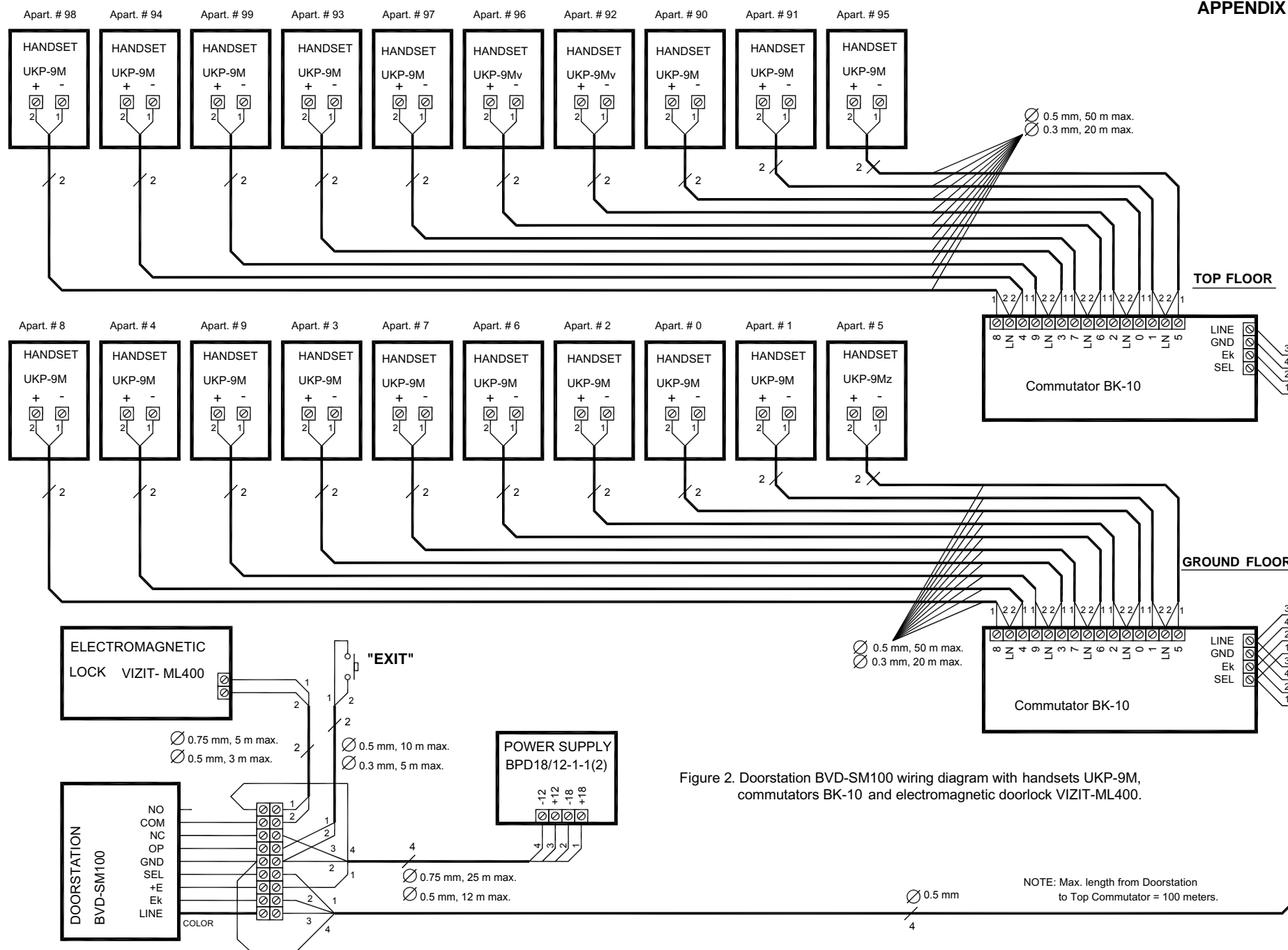


Figure 2. Doorstation BVD-SM100 wiring diagram with handsets UKP-9M, commutators BK-10 and electromagnetic doorlock VIZIT-ML400.