

**OUTDOOR PANEL**

**METAKOM**  
**MK2007-RF(MF)**

Version 2



**PASSPORT**

**USER'S MANUAL**



## CONTENTS

Valid for filling

### To be completed by the repair company

Contents of the repair. Name and number according to the scheme of the replaced part or unit. The place and nature of the defect:

---

---

---

---

---

---

---

Signature of the person who carried out repairs \_

Date of repair \_  
( day, month, year )

Signature of the owner of the product, confirming the repair\_

Repair company stamp with the city:

1. PURPOSE	3
2. DISTINCTIVE FEATURES	5
3. OPERATING FUNCTIONS	6
4. SELF-TEST	7
5. TECHNICAL PARAMETERS	8
6. INSTALLATION PROCEDURE	8
7. PREPARATION FOR WORK	9
7.2 OUTDOOR PANEL PROGRAMMING MODE	14
ENTER TO PROGRAMMING MODE	15
7.3 DESCRIPTION OF THE SECTIONS OF THE	16
PROGRAMMING MODE	17
7.4 PROGRAMMING THE SUBSCRIBER'S TCH	
8. USING OUTDOOR PANEL BY SUBSCRIBERS	23
9.    TRANSPORTATION AND STORAGE	24
10.   WARRANTY OF THE MANUFACTURER	25
11.   COMPLETE OUTDOOR PANEL PACKAGE	26
APPENDIX 1	26

## 1. PURPOSE

The outdoor panel **METACOM MK2007-RF (MF) (version 2)** (hereinafter referred to as the intercom) represents a specialized microprocessor system intended for installation in multi-apartment buildings, offices, as well as for organizing a selective communication system with up to 10 subscribers.

Modification of the outdoor panel METACOM MK2007-RF (MF) has a built-in scanner of contactless RFID keys with an operating frequency of 125 kHz.

Modification of the outdoor panel METACOM MK2007-RF (MF) has a built-in scanner of Mifare contactless keys with a working frequency of 13.6 MHz.

As the subscriber keys in the modification of METACOM MK2007-RF (MF), contactless keyholders METAKOM supporting Proximity technology (hereinafter RF keys) are used. For the modification of METACOM MK2007-RF (MF), contactless METAKOM fobs supporting Mifare technology (hereinafter MF-keys) are used. MF-keys have a special identification number coding system. The built-in MF reader supports the work with the keyfobs encoded in the factory.

As terminal devices installed at subscribers, it is recommended to use TKP-01, TKP-05M, TKP-06M, TKP-10M, TKP-10M, TKP-12M, TKP-14M or other interphone handsets designed for intercoms with coordinate The addressing system for the production of METACOM.

The door phone provides a call signal to the subscriber's TCH, a duplex connection of the visitor to the subscriber, remote opening of the lock upon a signal from the TCH.

The lock can also be opened by means of the RF (MF) -key, using the code dialed on the outdoor panel, or by pressing the EXIT button installed at the entrance door inside the entrance.

To enable the use of different types of locks, the METACOM MK2007-RF (MF) outdoor panel is available in two versions:

Full model name	Lock type	Terminal marking of terminal blocks	Description of the output node
MK2007-RF(MF)E	Electromagnetic lock without control board	LOCK -line normally closed to the common wire of the lock GND.	Powerful key transistor. When you open the lock, it turns off.
MK2007-RF(MF)M	Electromechanical lock without control board	LOCK - line normally open with the common GND lock wire.	Powerful key transistor. When you open the lock, it turns on.

Cut-off line Counterfoil coupon N1 for warranty repair of the METACOM outdoor panel MK10.2

Valid for filling

### TEAR-OFF COUPON N1

FOR THE WARRANTY REPAIR OF THE OUTDOOR PANEL

METAKOM

MK10.2

#### To be completed by the manufacturer

Serial number of the product \_

Release date \_  
(day, month, year)

Representative of the QC of the manufacturer  
\_\_\_\_\_  
(QC stamp)

Address for return of the coupon to the manufacturer:  
Russia, 241024, Bryansk city, Delegate street, 68, LTD "Metakom"

#### To be completed by a trade or installation organization

Date of sale \_  
(day, month, year)

Seller \_  
(signature or stamp)

Stamp of the trade organization:

Date of commissioning \_  
(day, month, year)

Installer \_\_\_\_\_  
(signature or stamp)

The stamp of the organization that conducted the installation:

Valid for filling

**To be completed by the repair company**

Contents of the repair. Name and number according to the scheme of the replaced part or unit. The place and nature of the defect:

---

---

---

---

---

---

Signature of the person who carried out repairs \_

Date of repair \_  
( day, month, year)

Signature of the owner of the product, confirming the repair\_

Repair company stamp with the city:

The output stage with a transistor is designed for direct control of the lock winding without the use of any additional control board or demagnetization.

The power supply of the outdoor panel and lock can be provided from the METACOM BP-2U power supply.

The full name of the calling panel consists of the following elements::

**MK2007 – RF E V N**

-----  
1      2      3 4 5

- |           |  |
|-----------|--|
| 1. MK2007 | - model name;                                      |
| 2. RF(MF) | - support for contactless remote controls METAKOM; |
| 3. E      | - for electromagnetic lock,                        |
| M         | - for electromechanical lock,                      |
| 4. V      | - built-in video camera and infrared illumination, |
| {space}   | - without a video camera,                          |
| 5. N      | - intercom supports work on the network.           |

## 2. DISTINCTIVE FEATURES

- Presence of a mode of auto-collection of keys;
- In the modification MF, subscriber keys are used with the encoding of the identification number (keys are coded in the manufacturer);
- Transfer of all the doorphone settings to a personal computer (or other intercom) and back via the METAKOM adapter MKA-02U and the TM-key DS1996 (L). It is possible to configure all modes of home-background operation and enter user RF (MF) keys with the help of a personal computer (PC) in a comfortable laboratory environment. The information prepared in this way is transferred to the non-volatile memory of the outdoor panel. A copy of this information is stored on the PC and used for subsequent service;
- The possibility of diagnosing the system during commissioning (test the hands-on subscriber with the output of the parameters of the audio line on the indicator);
- Adjustment of parameters of position determination of the handset for each subscriber separately;
- The possibility of parallel operation of two call blocks per one subscriber line;
- Vandal-proof design - special keypad design, installation on site with a special key;
- The fastening of the calling panel is similar to the fastening of the doorphones CD-1803, CD-2000, AO-3000 and so on.
- Waterproof keyboard with illumination of each key, backlighting of the electronic keys;
- Copying the subscriber key database from the memory chip of the same doorphone;
- Return to the factory settings of the outdoor panel, storing previously stored keys in memory;
- Self test on power up or reset.

Cut-off line Counterfoil coupon N1 for warranty repair of the METACOM outdoor panel MK10.2

Valid for filling

### TEAR-OFF COUPON N1

FOR THE WARRANTY REPAIR OF THE OUTDOOR PANEL

METAKOM

MK10.2

#### To be completed by the manufacturer

Serial number of the product \_

Release date \_  
(day, month, year)

Representative of the QC of the manufacturer  
\_\_\_\_\_  
(QC stamp)

Address for return of the coupon to the manufacturer:  
Russia, 241024, Bryansk city, Delegate street, 68, LTD "Metakom"

#### To be completed by a trade or installation organization

Date of sale \_  
( day, month, year)

Seller \_  
( signature or stamp)

Stamp of the trade organization:

Date of commissioning \_  
( day, month, year)

Installer \_\_\_\_\_  
( signature or stamp)

The stamp of the organization that conducted the installation:

Table №1

flat №	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Code	0529	7970	8740	1362	9813	4966	8801	2433	0899	2307	4628	0278	3352	6961	9538	3923	0356	9077	4727	2039
flat №	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Code	5377	5379	0562	2085	2644	8022	2663	3426	4226	4339	7940	8469	0565	5416	3137	8786	6002	0372	2964	1029
flat №	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Code	7943	1794	9521	6707	3396	0853	0117	6775	6288	9729	0500	3348	0308	5942	4920	9553	2673	8066	6547	1796
flat №	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Code	4614	9495	4897	5682	2115	0837	1140	2181	2951	5376	2050	5666	0036	2628	0853	7526	0880	4978	4739	4867
flat №	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Code	2309	3335	4662	1841	6737	5986	8804	3686	9350	0247	9744	9249	0803	4901	4662	4950	2151	2673	8578	9971
flat №	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Code	8452	3861	6438	0823	7248	3922	7538	1908	4500	2565	9479	3330	1058	8499	3667	1350	7270	2664	1394	3585
flat №	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Code	1554	9492	3892	4165	3128	3921	2402	7810	0132	5877	2069	0294	6960	4131	6979	3939	9573	2949	2680	5120
flat №	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Code	5634	9491	8755	5414	5190	9318	6753	0385	8850	0003	3845	4871	6198	3377	8273	7522	0341	5478	9621	0744
flat №	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Code	1296	4882	1571	9027	3638	1125	3672	0369	9873	1011	1013	1798	8230	1094	7745	5473	2915	3941	5268	2294
flat №	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Code	9223	1312	4371	4147	8275	5717	1141	7558	2177	7154	1539	7971	6437	8005	0086	1090	2387	1892	3445	1525
flat №	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
Code	6677	0264	7201	1345	2883	2885	3670	0103	3222	8192	0785	4868	0789	0836	3142	4951	7521	0114	8594	3587

Table №7

flat №	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Code	2065	4627	3605	0053	9542	0102	5488	6273	5266	8436	6149	4118	0039	2338	0819	2643	4723	0358	6549	6135
flat №	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Code	6913	3361	2851	0805	5445	0598	3446	2929	8337	2788	2052	4614	7989	4663	9537	4419	8035	1381	1684	7173
flat №	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Code	3335	2306	1811	5442	0068	5732	8294	1670	0129	3570	0515	4628	2597	8517	9031	8785	3426	0371	4484	2293
flat №	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Code	3093	3366	6448	0065	5202	0581	8820	2181	9366	8192	3857	8211	2852	9796	2118	0614	9313	7794	9618	1539
flat №	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Code	3845	4871	0536	9280	1602	0098	8804	4228	1911	7159	1040	8466	4131	2883	9541	1351	3943	5474	4497	0228
flat №	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Code	4853	8725	0023	6711	1074	6241	4180	7540	2934	2294	7687	5408	7714	3138	0821	6229	5237	9847	2433	3058
flat №	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Code	6930	8227	3124	3623	2104	3921	9058	8834	7300	7684	4885	6950	1298	5185	7762	8020	9829	0630	2695	1280
flat №	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Code	0273	3603	6436	4646	7238	3174	6753	4993	0146	8436	0788	7446	9255	0049	5171	3667	6771	4213	2950	2566
flat №	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Code	5904	3075	2580	6211	0837	6501	9063	2432	3955	4083	3332	4614	8230	1576	1872	0579	7794	9347	2196	3318
flat №	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Code	1814	0514	0787	3876	4435	8036	0102	0646	2960	2561	4626	8980	3621	0566	4679	2641	1619	8066	5764	2293
flat №	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
Code	3334	0279	4385	5411	1076	9827	4694	7030	5014	2048	2050	5907	5924	1062	2630	6758	6000	4737	0116	8195

## 3. OPERATING FUNCTIONS

- Indication of operating modes on a 3-character display;
- Sound control of button pressing;
- Call the subscriber by pressing a button on the outdoor panel;
- Sound control of making a call to the subscriber (sending a ringing tone of another key, if the subscriber's handset is not packed);
- Full-duplex subscriber-visitor;
- Remote opening of the lock from the subscriber's TCH;
- Local opening of the lock by a set of a general or individual access code;
- Local opening of the lock by an individual RF (MF) key;
- Local opening of the lock from the entrance by pressing the EXIT button;
- Sound signaling the use of an individual subscriber code or RF (MF) -key on the TCH of the corresponding subscriber (function included on request);
- Ability to prohibit the maintenance of the subscriber's TCH while maintaining access to the individual code;
- Code lock operation in common code mode, in individual codes mode or jointly (programmable);
- Adjustment of all parameters of work for the most complete conformity to the requirements shown on a place of installation;
- Use the master RF (MF) key to quickly enter the programming mode.

#### 4. SELF-TEST

When you turn on the power of the outdoor panel or press the C button (RESET), the self-test procedure is performed. When an error is detected, an appropriate sound signal and a light indication are output.

If the EEPROM chip is initialized, the message "Er2" is displayed and an error signal is output. If the error is caused by the fact that a new (or previously used in the other device) EEPROM was installed, perform a full initialization of the EEPROM (see section 7.3). If the error message continues to appear, replace the EEPROM chip.

When a keyboard malfunction occurs, the indicator "Er4" is displayed, its operation is blocked, and the function of opening the door lock from the exit button and RF keys is working.

If the audio line is short-circuited, the message "Er5" appears on the indicator when the line "Er6" is interrupted.

#### COMPLETE SET OF OUTDOOR PANEL

1. Outdoor panel 1 pc.
2. Passport 1 pc.
3. Fixing kit 1 pc.
4. Special key 1 pc.
5. Packing box 1 pc.



## 10. MANUFACTURER'S WARRANTY

The manufacturer guarantees the compliance of the METAKOM MK2007-RF (METAKOM MK2007-MF) with the requirements of MTCM.420570.004 TU when the user uses, stores and transport rules.

Warranty period - 12 months from the date of sale, but not more than 18 months from the date of manufacture.

Service life is 5 years from the date of manufacture.

Without presentation of a voucher for warranty repair and (or) in violation of the safety of seals, mechanical, electrical or other types of damage caused by improper transportation, storage, operation or actions of third parties, no claims for quality are accepted Repair is not carried out.

The address of the manufacturer:

Russia, 241024, city of Bryansk, ul. Delegate, 68, LLC "Metacom"

phone / fax: (4832) 68-28-26

Tel. (4832) 68-37-95

<http://www.metakom.ru>

E-mail: [os@metakom.ru](mailto:os@metakom.ru)

## 5. SPECIFICATIONS

Maximum resistance of the access line	Not more than 30 Ohm
Maximum number of subscribers served	255
Maximum subscriber number (for network version)	999
Maximum number of RF (MF) keys	3000
Number of RF (MF) keys per apartment	To 3000
Offset of subscriber numbers	1...999*
Number of ringing signals applied to the TCH	2...62*
Duration of the lock opening	2...102sec*
Restriction of the duration of the conversation	40...200 sec.*
Maximum number of individual codes	999
Maximum number of the code table	255
Number of digits of subscriber code	4
Number of digits of the total code	4
Number of digits of the master code	6
Operating temperature range	-30...+40°C**
Relative humidity (at 35 ° C)	95%
Supply voltage (DC)	15...18 V
Maximum current consumption in standby mode (without a video camera), not more	200 mA
Peak consumption current (when a call signal is applied to a subscriber's TCH)	380 mA
Overall dimensions of the block, not more (height x width x thickness)	180 x 150 x 35 mm.
Unladen weight, not more than	0,9 kg.

\* - programmable parameter

\*\* - for modifications with index "V" operating temperature range -10 ... + 40 ° C.

## 6. INSTALLATION PROCEDURE

**ATTENTION! There is a dangerous voltage in the power supply - 220V. Do not perform installation and maintenance work with the power turned on. In the outdoor panel and other doorphone devices, except for the power supply unit, there are no voltages exceeding 18V.**

The following sequence of actions is recommended::

Carefully study this instruction manual and block diagram.

Prepare a niche for installing the outdoor panel (see the layout in Figure 1).

Install the power supply, lock, switch and opening button from the room. Connect the outdoor panel housing to the protective earth bus.

Set the apartment's lodging in a telephone conversation room (TCH).

Install the wiring. Make taps from the loops and connect the TCH of all the subscribers. (Fig. 2, 3).

Program the subscriber handsets (See section 7.2).

Check that the connections are correct.

Turn on the power, the test line will automatically start and the initial preparation for operation, then the "\_" symbol should flash on the indicator. Enter the programming mode (see section 7.2) and do the following:

- a) Change the login code into the programming mode and, if required, program the master RF (MF) key. Be careful when entering the code. **WRITE MASTER CODE!**
- b) If required, set the number of the first subscriber, the number of subscriber numbers to be served (see section 7.3). These parameters should always be set first, since all further operations with subscriber numbers will depend on the set value.
- c) Program subscriber RF (MF) -keys.
- d) If a common code is used in the code lock mode, then change the common code and switch the outdoor panel to the common code mode. Write down the general code (see section 7.3).
- e) If individual codes are used, create a code table (see section 7.3). Record the code table number.
- f) If necessary, change the duration of the ringing signal, the duration of the lock opening, the duration of the call restriction, etc. The factory settings are in most cases optimal.
- g) NOTE: Items a) ... f) can be pre-made using a personal computer. In this case, the prepared information is transferred to the outdoor panel memory via the METAKOM MKA-02U adapter and the DS1996 (L) TM key.

Check the operation of the outdoor panel in the intercom mode and in the code lock mode.

**If two call blocks are installed for parallel operation on a common subscriber line, it is first necessary to connect the subscriber line with one outdoor panel, conduct line testing and check the health of the outdoor panel in the intercom mode. Disconnect the power supply.**

## 9. TRANSPORTATION AND STORAGE

Packaged products can be transported by all modes of transport, except for unsealed aircraft compartments and open decks of ships and vessels, in accordance with the rules for the carriage of goods operating on this type of transport.

As a transport container used boxes wooden, group and other containers, ensuring the safety of the goods during transportation.

Products should be stored only in a packed form when there are no acidic, alkaline or other aggressive impurities in the surrounding air..

## 8. USING OUTDOOR PANEL BY SUBSCRIBERS

After power on, the intercom is in standby mode. The indicator "\_" flashes on the indicator.

After subscriber dialing the subscriber number and pressing "B", the connection with the subscriber's TCH is established and the set number of ringing tones is applied. If the subscriber does not pick up the handset, after the set number of ring signals has been exhausted, the outdoor panel returns to the standby mode. When the receiver is off, the call signals are given in a different key. In this case, for the call of the subscriber with the visitor, it is necessary to put the pipe-ku, wait for the call signal of another key and lift the handset.

When the subscriber picks up the handset, the message "SAY" is displayed, meaning that the connection with the subscriber is established and the visitor can speak.

The lock is opened by pressing the button on the TCH of the subscriber. In this case, the message "OPn" is displayed and the corresponding sound signal sounds.

If the subscriber has hung up, the conversation is interrupted and the outdoor panel returns to standby. You can also interrupt the conversation by pressing the "C" button on the outdoor panel.

After the set time limit has expired, the conversation will be interrupted automatically (see section 7.).

If the function of "general" or "individual" codes is turned on, when the button "B" is pressed from the standby mode, a flashing message "1" will appear on the indicator. After this it is necessary to enter the code (the factory common code is 1234, the individual code is taken from the table ). If the code is entered correctly, the lock is opened.

If the network protocol is activated, at the time of a call and a conversation on the Slave intercom, "nEt" lights up. In this case, dialing the number on the keyboard is blocked. The door is opened by the exit button or by the RF (MF) key.

**Connect the second outdoor panel line according to the connection diagram. Power the call blocks and connect the DB terminals to the call units. Next, check the operation of the call blocks in the pre-mophon mode.**

Secure the outdoor panel to a previously prepared niche with the supplied hardware kit. Make a note in the tear-off coupons about the commissioning date of the unit.

If the volume of the call is insufficient, adjust the required parameters (microphone sensitivity and speaker volume) with trim resistors on the back of the outdoor panel.

Install power supply and switch, if possible, in boxes, niches, at the ceiling. The power supply should be installed not more than 15 meters, and the commutator should be no more than 30 meters from the outdoor panel. The "EXIT" button provides opening of the lock when leaving the entrance and is installed near the entrance door inside the entrance.

To reduce the influence of climatic factors (low temperature, high humidity, hoarfrost, dew), the outdoor panel and the lock should be installed on the second door of the entrance located in the vestibule.

The cross-sections of the wires connecting the power supply unit to the outdoor panel and the lock must be at least 0.35 mm<sup>2</sup> (KSPV 2x0.64 or IIIBBII 2x0.5), the rest - not less than 0.12 mm<sup>2</sup>. As a connecting wire, it is recommended to use a wire with colored insulation of cores. To reduce the influence of external influences, connect the outdoor panel and the switch to a shielded cable (KSPEVG 4x0.2 or KSPEV 4x0.5). For the installation of video equipment, use a coaxial cable of the type RK-75.

For intercoms MK2003.2 with a network function when installing a digital line (AV), use a twisted pair. On long lines of communication on

"Master" and the last "Slave" intercom to install 120 ohm resistors between the terminals AB.

The "+" terminal of the TCH is connected to the bus of tens, and the "-" TCH is connected to the bus of the switch units. Before connecting the TCH, the line must be checked for a short circuit. Line resistance should not exceed 30 ohms.

In the intercom there is protection against short circuit of the line. At this time, communication with the TCH will be impossible. All other functions are available.

Installation of other doorphone units is carried out in accordance with the passports for these units.

## 7.4 PROGRAMMING THE SUBSCRIBER'S TCH

Each subscriber's TCH is programmed so that its number coincides with the apartment number. If the apartment number exceeds 255, the TCH is programmed by assigning numbers with a shift to a certain number, which is then taken into account when programming the outdoor panel and affects the operation of the system. The apartment numbers, expressed in binary code, are assigned to each TCH in the corresponding category of the programmer from the specified range: 1, 2, 4, 8, 16, 32, 64, 128.

Calculated by summing the numbers under those pairs of pins on which the jumpers are worn.

Example: when programming the TCH of subscriber number 12, it is necessary to put jumpers on pairs with numbers 4 and 8 ( $4 + 8 = 12$ ). For the number 45, the corresponding pairs are 1, 4, 8, 32 ( $1 + 4 + 8 + 32 = 45$ ).

**Warning: The TCH can not be programmed to zero without setting any jumper. This is not provided for in the program and worsens the operation of the system.**

When programming the TCH, it is especially important to be careful. If two TCHs are programmed the same, the signal will flow to both quarters. However, it may not be possible to negotiate, depending on the amplification in the sound path, and also to open the lock with the tubes removed. This is a normal response of the system in this situation.

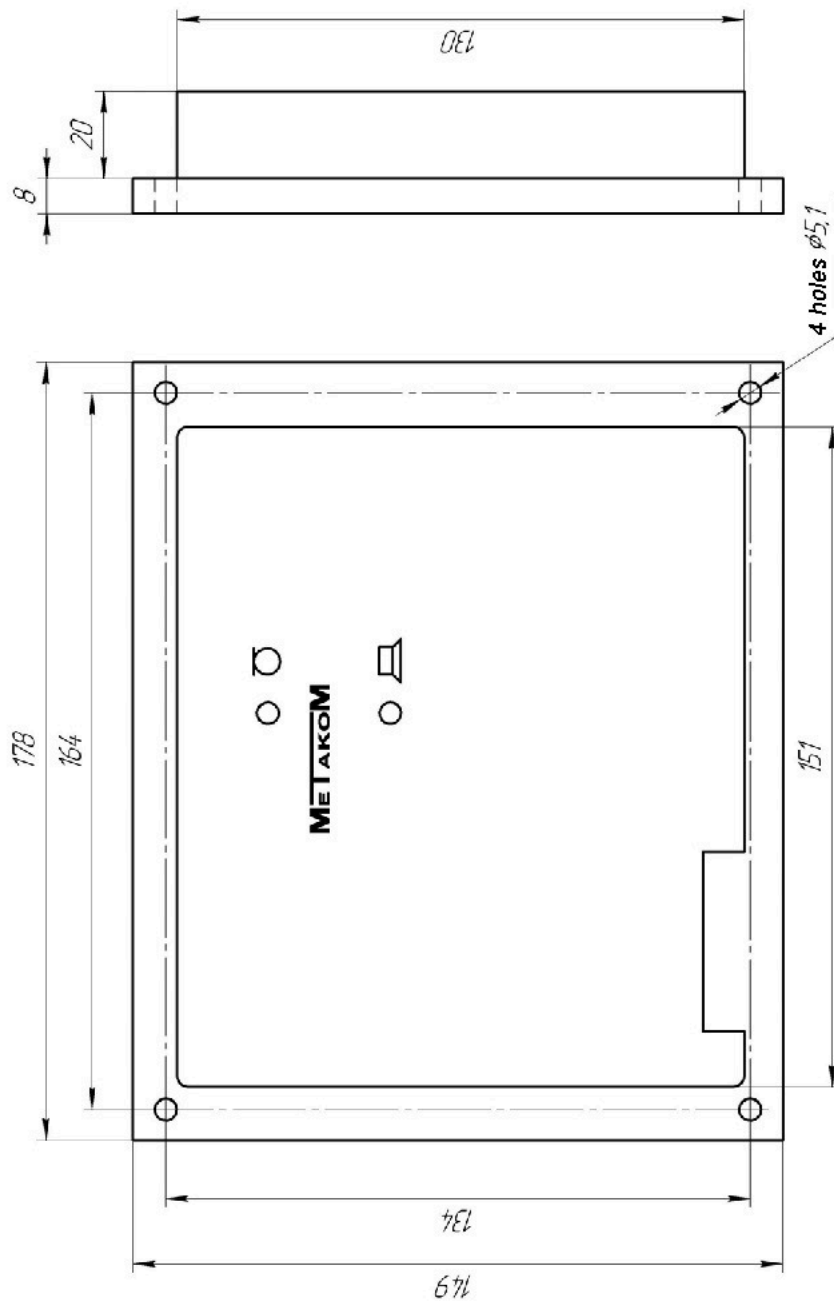


Fig. 1 Markup for installation of the outdoor panel

located on the back of the panel under the protective cover (before installing the chip, the cover must be removed). The first leg of the chip is installed to the bottom edge of the case.

To record the subscriber base database, 2 modes are used - the overwrite mode and the key addition mode. In the overwrite mode, keys stored in the memory of the outdoor panel are erased and keys from external memory are written to their place. In the mode of adding keys, keys from external memory are appended to the keys stored in the internal memory.

After entering the section, the message "FL\_" will be displayed.

To record subscriber keys in the internal memory of the outdoor panel in the rewrite mode, you must press:

"1" - to overwrite RF (MF) keys from the outdoor panel MK2007 V2.

"2" - to overwrite RF (MF) keys from the outdoor panel MK2007 V1.

To record subscriber keys in the internal memory of the outdoor panel in the add mode, you must press:

"4" - to add RF (MF) keys from the outdoor panel MK2007 V2.

"5" - to add RF (MF) keys from the outdoor panel MK2007 V1.

#### Section No. 28 Deactivating the sound signal on the outdoor panel

Used to mute the audio signal in the caller's dynamics in the call mode. When this function is enabled, the ringing tone is only given to the subscriber. All other sounds of the outdoor panel are not disabled. After entering the section to mute the sound, you need to dial "1" "B", to turn on the sound - "0" "B".

#### Section No. 29 Select the melody of the sound signal.

Used to set one of the 2 variants of the ringing tone for calls. After entering the section, you need to dial the number of the subscriber for which you need to change the call melody, press "B", then press "1" "B" - to set the first melody, "2" "B" to set the second melody, "3" « B » - to install the third melody. If it is necessary to conduct actions for all subscribers, then instead of the subscriber number, press "0" next "B".

#### Section No. 30 Test line in standby mode.

Used to check the standby voltage on the line. It should be in the range "470 ... 670". If the standby voltage is out of range, the panel may not work correctly. It is necessary to eliminate the cause of the malfunction.

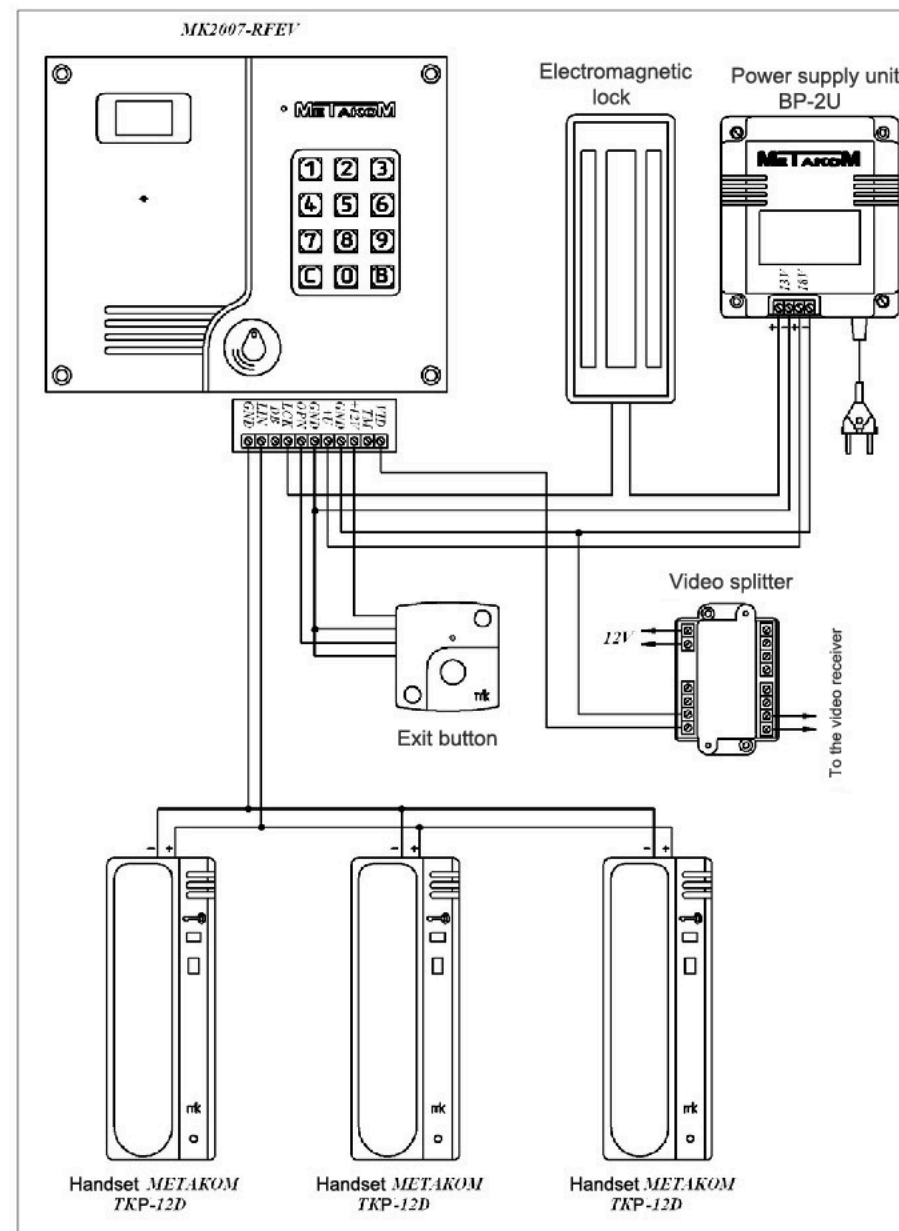


Fig. 2 Example of mounting the outdoor panel MK2007-RF (MF) EV

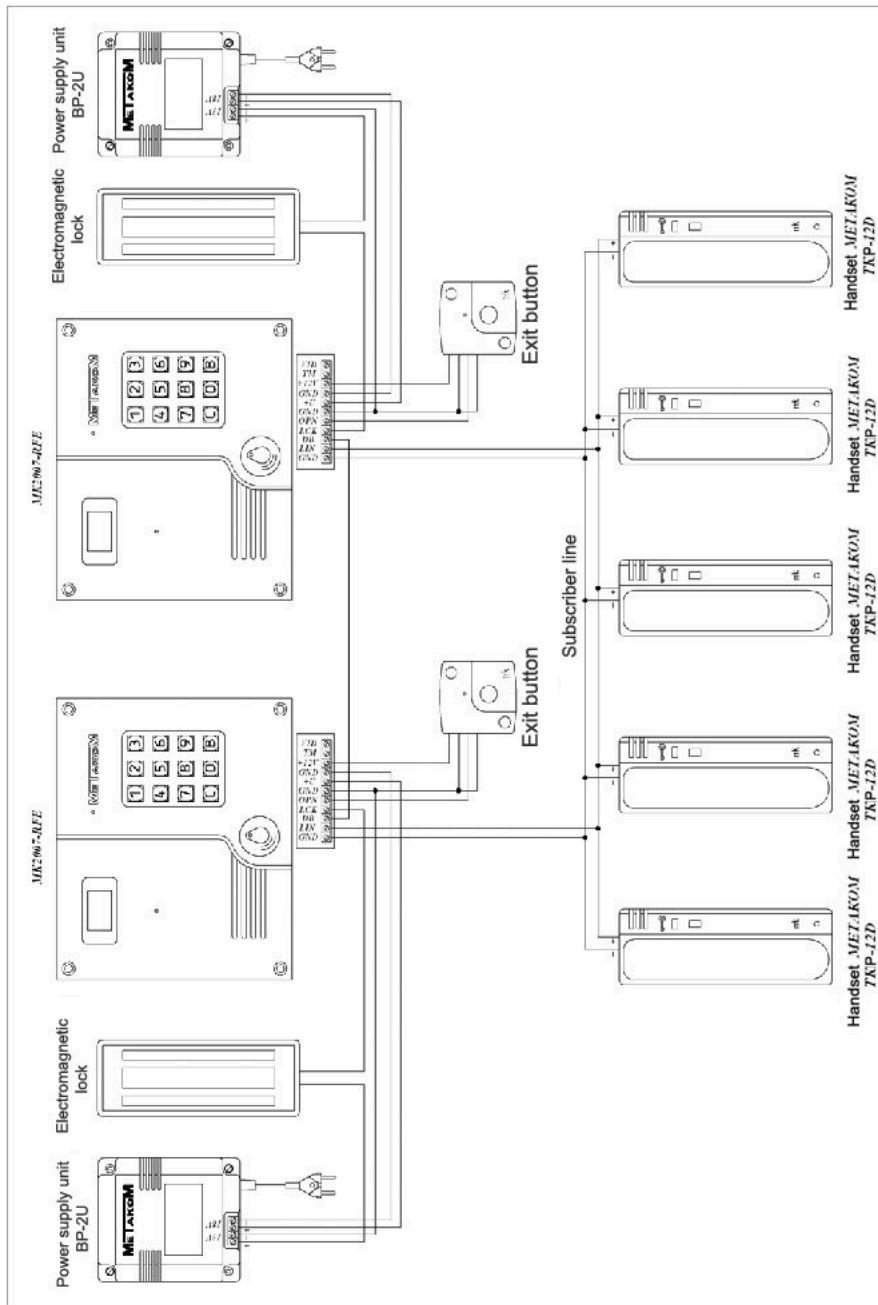


Fig. 3 Example of installation of MK2007-RF (MF) E call blocks with parallel operation per one subscriber line.

To record subscriber keys in the memory of the outdoor panel in the overwrite mode, press "2". A flashing "dS1" message appears indicating that the first key is being read. Then attach the key DS1996 (L) to the reader, the data transfer will begin. If an error occurs, an error signal will sound. The end of the recording is a sign of the end of the information transfer. If the number of subscriber's keys is more than 1000, then the message about reading the second key "dS2" will be displayed, if the information is read out in full, the record selection mode will be output (the message "dS-" will be displayed).

To record subscriber keys in the memory of the outdoor panel in the key addition mode, you must press "3". A flashing "dS1" message appears indicating that the first key is being read. Then attach the key DS1996 (L) to the reader, the data transfer will begin. If an error occurs, an error signal will sound. The end of the recording is a sign of the end of the information transfer. If the number of subscriber's keys is more than 1000, then the message about reading the second key "dS2" will be displayed, if the information is read in full, the reader will enter the read mode (the message "dS-" will be displayed). In this mode, the memory of keys may overflow, in this case, before the keys are written, the message "Err 9" will be issued and the keys will be written until the memory is full.

**Warning: be sure to wait until the reading is correct, otherwise the outdoor panel may fail.**

#### Section No. 23 Changing the system code

Used to change the access code to programming mode. After entering the section, you must type the new system code. After dialing the 6th digit, the new code will be automatically saved.

#### Section No. 24 Master key recording

Used to record a master key intended for fast entry into the programming mode. A RF (MF) key can be used as the master key. After entering the section, you need to press: "1" - to record the master key, "0" to delete the master key. After entering the recording mode, you must attach the key to the reader, if the key is read correctly, the master key will be recorded.

#### Section No. 25 Return to factory settings.

Used to set the factory settings. After entering the section, you must press "1" to confirm the installation, then the automatic change of parameters will begin, and the key database will not change.

#### Section No. 26 Transferring the key database

Used to quickly transfer the key database from the memory chip of compatible call blocks. The memory chips of the call blocks MK2007 V1, MK2007 V2 are supported. The memory chip is installed in the holder DIP-8

### Section No. 21 Recording of electronic media DS1996 (L)

Used to transfer information from the memory of the outdoor panel to the TM-key DS1996 (L). To transfer information, it is necessary to connect the readers (KTM-1P key contactor) to the terminal blocks "TM" and "GND".

To record the system settings in the DS1996 (L), press "1", wait for the flashing message "- DS" to appear. Then attach the key DS1996 (L) to the reader, the data transfer will begin. If an error occurs, an error signal will sound. A sign of the end of the information transfer is the audio signal of the end of recording and the output to the mode of recording selection (the message "- DS" will be displayed on the indicator).

To record the subscriber base in DS1996 (L), press "3". At the same time, a message on the number of DS1996 (L) keys required for writing TM-keys (a figure in front of the DS) will be displayed briefly on the indicator. Then a flashing "1DS" message will appear, indicating that the first key will be recorded. Then attach the key DS1996 (L) to the reader, the data transfer will begin. If an error occurs, an error signal will sound. A sign of the end of the information transfer is the audio signal of the end of the recording and a message about recording the second key "2DS" will be displayed, if the information is recorded in full, then the recording selection mode will be output ("- DS" will be displayed).

**Warning: be sure to wait for the correct ending of the record, otherwise in the future when reading incorrect information in the operation of the outdoor panel there may be failures..**

### Section No. 22 Reading the electronic media DS1996 (L)

Used to transfer information from the TM-key DS1996 (L) to the memory of the outdoor panel. To transfer the information necessary to connect a reader (reader keys KTM-1H) to the terminal blocks "TM" and «GND». After entering the section, the message "dS-" will be displayed.

To read the system settings of the DS1996 (L) is necessary to press "1", wait for the flashing message "dS". Then attach the key DS1996 (L) to the reader, the data transfer will begin. If there is an error, an error signal will sound. A sign of the end of the transmission of information is a sound recording is finished and access to re-bench reading selection (on the indicator will display the message «dS-»).

To record the subscriber base database, two modes are used in the outdoor panel memory: the overwrite mode and the key addition mode. In the overwrite mode, the keys stored in the memory block is erased and the call overwritten by the keys from DS1996 (L). In the key addition mode, the keys from DS1996 (L) are appended to the stored keys.

## 7. PREPARATION FOR WORK

Preparing the intercom for work consists in programming the parameters to match the system to the requirements of the installation site and the input of the RF (MF) subscriber key. Programming is carried out directly from the outdoor panel keypad or on a personal computer using a special program, the METAKOM MKA-02U adapter and the Dallas iButtontm DS1996 (L) TM key. All parameters are stored in the device's non-volatile memory (hereinafter EEPROM), ensuring the safety of data in the absence of supply voltage.

When the outdoor panel is delivered, the EEPROM contains the initial settings shown in the table.

N	Parameter	Value
1	Offset of subscribers	No
2	Prohibition of subscribers	All are allowed
3	Autoset mode	Disconnected
4	Lock opening time	4 sec
5	Talk time	90 sec
6	Number of ringing tones	10
7	Using common or individual code	Codes disabled
8	Number of code table	1
9	Enable subscriber notification by key or code	Disconnected
10	Handset position detection threshold level	5
11	Threshold level of the activation of the button for opening the lock on the subscriber handset	5
12	System code	123456
13	Master key	Not programmed
14	Network Protocol	Disconnected

In the programming mode, it is possible to repeatedly change any of these parameters, as well as return all settings to their original state.

In the outdoor panel, you can view the serial number. The serial number is set at the factory and will not be changed later on. For viewing, it is necessary to press and hold any button, turn on the power supply, hold the button until the sound signal appears, then the number of the serial number will be displayed, the first number is the highest digit of the serial number number, then seven remaining values are displayed in order eight-digit serial number.

## 7.1 OUTDOOR PANEL PROGRAMMING MODE

In programming mode, access to partitions is made by typing the corresponding section number on the keyboard and pressing the "B" button, if there is a subsection, access to it is made by pressing the corresponding buttons. Exiting the sections and the programming mode is done by pressing the "C" button. After entering certain sections, the indicator of the previous saved parameter is displayed. If no changes have been made or the buttons are pressed, then after a while the unit will automatically exit the section or the programming mode. If you enter incorrect data, the message "Err" is output and an error beep sounds. The table shows the names of the sections and a combination of buttons for accessing them.

N menu	Menu name	Enter menu	Submenu	Enter submenu
1	First subscriber number	«1» «B»	—	—
2	Switch Type	«2» «B»	—	—
3	Number of switches	«3» «B»	—	—
4	Disconnecting subscribers	«4» «B»	—	—
5	Record RF (MF) keys	«5» «B»	Common keys	«1» «B»
			Individual keys	«2» «B»
6	Erasing RF (MF) key	«6» «B»	Common keys	«4» «B»
			Individual keys	«5» «B»
			All keys	«6» «B»
9	On autoset key mode	«9» «B»	—	—
10	Lock opening time	«10» «B»	—	—
11	Talk time	«11» «B»	—	—
12	Ring time	«12» «B»	---	---
13	Enable common or individual code	«13» «B»	Enable common code	«1»
			Disable common code	«3»
			Enabling in. code	«4»
			Disable the in. code	«6»
14	Changing the General Code	«14» «B»	—	—
15	Changing the code table	«15» «B»	—	—
16	Changing individual code	«16» «B»	—	—
17	Notification by code or key	«17» «B»	---	---
18	Subscriber Handset Test	«18» «B»	—	—
19	Setting the threshold for determining the position of the handset	«19» «B»	—	—
20	Setting the threshold for the opening of the lock button on the subscriber handset	«20» «B»	—	—
21	Record in DS1996	«21» «B»	Recording System Settings	«1»
			Writing keys	«3»
22	Reading in DS1996	«22» «B»	Reading system settings	«1»
			Reading keys	«3»

If the thresholds are different, correction is necessary (adjustment can be made within 1 ... 100 - for the threshold for determining the position of the user's handset and 1 ... 100 - for the threshold for the opening of the lock button on the subscriber's handset). Correction of thresholds is described in Section 19, 20.

### Section No. 19 Setting the threshold for determining the position of the handset

Used to adjust the threshold for determining the position of the handset. If there is an incorrect positioning of the handset (long line, use of some video monitors with adapters, etc.), then the threshold for determining the position of the handset can be adjusted in a certain range. The threshold value is between 461 ... 560, the factory value is 460 + 50, where 50 is the threshold offset. The outdoor panel determines that the handset is in the "stacked" state if the level falls within the range 181 ... 510. If the level of the handset is above the value of 510, the outdoor panel will determine that the handset is in the off state. To correct the position of the handset, it is necessary to increase the offset to a value above the detection threshold of the handset. The threshold shift is in the range 1 ... 100. If, after removing the handset, the ringing signal continues to flow to the subscriber's handset, it is necessary to reduce the offset to a value below the detection threshold of the removed handset. Determine the amount of displacement can be from section # 18, measuring the value of the state of the handset in the laid down and removed position.

After entering the section, you need to dial the number of the subscriber for which you want to change the lower threshold and press "B", then dial the threshold offset value and press "B". If it is necessary to conduct actions for all subscribers, then instead of the subscriber number, press "0" next "B".

### Section No. 20 Setting the threshold of operation of the button for opening the lock on the subscriber's handset

Used to adjust the threshold for the opening of the lock button on the subscriber handset. If an incorrect signal definition occurs unlocking the lock (long line, use of some video monitors with adapters, etc.), it is possible to adjust the threshold for the opening of the lock release button on the subscriber handset in a certain range. The threshold value can be in the range of 781 ... 830, the factory setting is 780 + 50/2, where 50 is the threshold offset. When you press the lock release button, the signal level should be above the threshold value (with factory settings above 810). If the level is lower (measured in section 18 by pressing the lock release button), you can correct the threshold value by reducing the offset. If in a conversation mode the lock is opened spontaneously without pressing the opening button (for example, during a loud conversation), then it is necessary to increase the threshold by increasing the offset.

After entering the section, you need to dial the number of the subscriber, for which you need to change the threshold and press "B", then type the offset value of the hom and press "B". If it is necessary to conduct actions for all subscribers, then instead of the subscriber number, press "0" next "B".



fragments fed to the TCH. After entering the section, you need to enter a number of signals on the keyboard and press "B", the maximum value is 60.

### Section No. 13 Enabling of common or individual code

Used to allow the work of a common or individual code. After entering the section, you need to press: "1" - to allow the work of the general code, "3" - to prohibit the work of the common code, "4" - to allow the work of the individual code, "6" - to prohibit the work of the individual code. For simultaneous work of the general and individual code it is necessary to allow the work of the general, then individual code.

### Section No. 14 Changing common code

Used to enter a new common code. After entering the section, you need to type a new common code. After dialing the 4th digit, the new code will be automatically saved.

### Section No. 15 Changing the code table number

Used to generate a new table of individual codes. After entering the section, you need to dial the table number and press "B", the maximum value is 250. Some code tables are in Appendix 1.

### Section No. 16 Changing the individual code

Used to enter a new individual code in the set individual codes table. After entering the section, you need to dial the number of the subscriber, for which you need to change the code, press "B". Next, you need to dial a new individual code. After dialing the 4th digit, the new code will be automatically saved.

**Section No. 17 Activation of subscriber notification by code or key.** Used to activate the subscriber alert mode when using the individual code or key. After entering the section, you need to dial the number of the subscriber for which you want to turn on the notification mode, press "B", then press "0" "B" - to turn off the mode, "1" "B" - to turn on the mode. If it is necessary to conduct actions for all subscribers, then instead of the subscriber number, press "0" next "B".

### Section No. 18 Test of subscriber handsets

Used to determine the position of the handset at the subscriber during installation or the failure of the outdoor panel. After entering the section, it is necessary to dial the number of the subscriber for which you need to check the handset, press "B", the connection will be established and the indicator will show the value of the tube's position in conventional units. "0 ... 150" - short circuit, "200 ... 470" -handset removed, "470 ... 670" - stand-by voltage on the line, "720 ... 999" - the pipe is leased or the line is broken . These values of the position of the handset are given for the plant threshold settings.

23	Changing the system code	«23» «B»	---	---
24	Master key recording	«24» «B»	Erasing master-key	«0»
			Master key recording	«1»
25	Factory setting	«25» «B»	---	---
26	Moving the key database	«26» «B»	Overwriting the database from the call blocks MK2007 V2	«1»
			Overwriting the base from the outdoor panel MK2007 V1	«2»
			Adding a base from call blocks MK2007 V2	«4»
			Adding a base from the outdoor panel MK2007 V1, keys TM2003 / TM2004	«5»
28	Deactivating an audio signal on the outdoor panel	«28» «B»	(D-a-llas)	---
29	Select the melody of the sound signal.	«29» «B»	---	---
30	Test line in standby mode «30» «B»	-		---

## 7.2 ENTER TO PROGRAMMING MODE

To enter the programming mode, you need to know a special master code or a programmed masterkey.

A) Enter the programming mode using the master code.

When the outdoor panel is in standby mode, you must press and hold any button, wait for 2 beeps to sound, continue to hold the button until 3 beeps sound, the green keypad will flash, then dial the master Code ("123456" - factory master code), with each press accompanied by an audible signal and the inclusion of the keyboard backlight. After that, if the code is entered correctly, the outdoor panel goes into the programming mode, the sign of finding in the programming mode is the green light of the keyboard.

B) Enter the programming mode using the master key. When the outdoor panel is in standby mode, you must press and hold any button, wait for 2 beeps, continue to hold the button until 3 beeps sound, the green keypad will flash, then type "0" 0, 0, 0, 0, 0. Then attach the master key to the reader. After the master key is identified, it will enter the programming mode.

## 7.3 DESCRIPTION OF THE SECTIONS OF THE PROGRAMMING MODE

### Section № 1 Opening the lock for the set time.

It is used to check the operation of the lock opening circuit. If you enter this point, the lock will open for the specified time.

### **Section No. 2 Set the offset of subscribers.**

Used to set the offset of subscriber numbers if the number range exceeds the maximum value of the served subscribers (the number of serviced subscribers is determined by the type and number of used commutators). After entering the section, dial the first subscriber number and press "B". A sign of the parameter is the sound signal..

**This setting affects all subsequent changes in the parameters of the outdoor panel, so it must be performed at the beginning of the change of the subordinate parameters of the outdoor panel.**

### **Section No. 3 Number of subscribers served**

Used to set the number of subscribers served. After entering the section, you need to dial the number of subscribers served. Press "B". The maximum value is 255. The factory setting is 255 subscribers.

**This setting affects all subsequent changes in the parameters of the outdoor panel, so it must be performed at the beginning of the change of the subordinate parameters of the outdoor panel.**

### **Section No. 4 Disconnecting subscribers**

Used to disconnect the subscriber's service. When a disconnected subscriber is called up, an erroneous beep will sound. After entering the section, you need to dial the number of the subscriber to be switched off, press "B", then press:

"0" "B" - if it is necessary to turn off the service

"1" "B" - if you want to enable maintenance

If the input is correct, a beep will sound. If it is necessary to conduct actions for all subscribers, then instead of the subscriber number, press "0" next "B".

**This setting affects all subsequent changes in the parameters of the outdoor panel, so it must be performed at the beginning of the change of the subordinate parameters of the outdoor panel.**

### **Section No. 5 Recording of electronic keys**

Used to enter RF (MF) keys in the memory of the outdoor panel. The keys are recorded in 2 modes:

- the mode of "common" keys,
- mode of "individual" keys.

In the mode of "common" keys, RF (MF) keys are recorded in a common database without pointing to a particular subscriber, and the function of notifying the subscriber is unavailable. In the mode of "individual" keys RF (MF) - the key is written to the number of a particular subscriber. If an overflow of the number of keys occurs during the recording of RF (MF) keys, an error signal will be issued and further key recording will not be possible.

After entering the section, you need to press: "1" "B" - to write the public keys, "2" "B" - to record individual keys.

In the common key registration mode, attach the key to the reader, the key will be recorded, if the key is already written, an error signal will sound. In the mode of recording individual keys, it is necessary to dial the number of the subscriber to which the keys will be recorded, press "B" and attach the key to the reader, the key will be recorded, if the key is already recorded, then an erroneous signal will sound. If the key is correctly written, an audible signal will sound and a "running line" will appear on the indicator.

In this paragraph you can see the number of recorded keys, for this you need to press "3" "B". The number of recorded keys will be displayed. If the number of keys exceeds 999 then the display will display the value of thousands, and then the remaining values of the number of keys. Press "C" to exit.

### **Section No. 6 Erasing of electronic keys**

Used to remove RF (MF) keys from the outdoor panel memory. Removal is carried out in 3 modes: deleting "shared" keys, deleting "Individual" keys and the removal of all keys. After entering the section, you need to press: "4" "B" - to delete "common" keys, "5" "B" - delete "individual" keys, "6" "B" - delete all keys. After entering the subsection of deleting "individual" keys of the subscriber, it is necessary to enter the subscriber's number and press "B". When deleting the keys, a beep will sound and a "running line" will appear on the indicator.

### **Section No. 9 Activation of electronic key collection mode**

Used to automatically record subscriber keys when the key is attached to the reader. This opens the door. After entering the section, you must press "1" "B" to enable autosport or "0" "B" to disable autoscore.

### **Section No. 10 Time of opening the lock**

Used to set the required duration of the lock opening. After entering the section, you need to dial the opening time in seconds and press "B", the maximum time for input is 100 seconds. If you enter a value greater than 100, the type of the sound melody (short beep) will be changed when the lock is opened (for example, if the value 110 is entered, then the lock opening time will be  $110 - 100 = 10$  sec)

### **Section No. 11 Talk time**

Used to set the required duration of the caller's conversation with the subscriber. After entering the section, dial the talk time in seconds and press "B", the maximum value is 160.

### **Section No. 12 Number of ringing tones**

Used to set the number of ringing tones applied to the TCH. The call signal to the subscriber's TCH consists of an alternation of a musical fragment and a pause. This function determines the number of