



**Stand-alone
Access Control Systems
SC-03 and SC-04**

User manual



Contents

Introduction.....	3
Application and performance.....	3
Access system circuit.....	3
Controllers structure.....	4
SC-03 Controller.....	4
SC-04 Controller.....	4
Indicators.....	4
Proximity Reader.....	4
Lock control.....	6
Controller Data Base.....	6
General information.....	6
Master keys.....	6
Users.....	6
Helpful hints.....	6
System mounting.....	7
Controller installation.....	7
Controller connection.....	8
Connected equipment configuration.....	9
Power supply connection.....	9
Lock connection.....	10
Door contacts application.....	10
Request to Exit Button.....	10
Controller operation modes.....	11
Stand-by mode.....	11
Unlocking mode.....	11
Trigger mode.....	11
Open Door Mode.....	11
Open Lock Mode.....	11
Disable Mode.....	12
Controller Programming.....	13
Default parameters and values.....	13
Programming.....	13
Initial Starting.....	13
Master Key Entry.....	13

Programming Modes Switching	14
User Key Entry	15
User Keys Deletion	15
Lock Operating Time Programming	16
Open Door Time Programming	17
Replacement (Deletion) of Master Keys if available.	17
Master Key Addition.....	18
Optional Programming Mode	18
Replacement (deletion) of Master Keys when they are not available	18
Return to Factory presets	19
Technical Specifications	20
Controller Specifications.....	20
Warranty	20
Appendix 1.Programming Table.....	21

Introduction

Caution At the first switch-on of the new controller master keys entry is required. Refer to “Controllers Programming” Section

Application and performance

Stand-alone access control devices (hereinafter, stand-alone controllers or controllers) SC-03 and SC-04 are purposed for development of simple one-door stand-alone access control systems based on contactless Proximity keys. The keys may be realized in form of cards or key-tags that are more convenient for handling in a bunch of apartment or automobile keys. The key has a unique number (or code) applied in the course of manufacturing. While introducing the code to controller Data Base (hereinafter DB) the key obtains certain rights within the system, e.g. it unlocks the door. If the key is not introduced into DB it initiates light and sound read indication while being presented, but never unlocks the door or changes controller performance. Moreover, multiple presentations of such keys should be indicated by controller as an attempt to fit a code and shall result in complete key read abortion for some time (refer to Disable Mode.)

The described systems provide for two key types: master keys and user keys described in details in Controller Data Base Section.

Access system circuit

Controller based Access System circuit is shown in Figure 1. Some elements are not obligatory and can be omitted if they are not necessary. These are a Door Contact (DC) and Request to Exit Button (RTE).

The lock should be electrically controlled and can be of any type: electric strike, electromechanical or electromagnetic lock.

Door Contact (DC) is purposed for door condition control. It is recommended that DC should be installed if the lock has to be switched off after the door is unlocked or if a warning signal is necessary when the door is left open longer than the preset time.

Request to exit (RTE) button is necessary for opening the door from the inside on coming out. If an electromagnetic or another type of a lock without a handle purposed for manual door opening is used, this button should be installed as no other way to unlock the door is available.

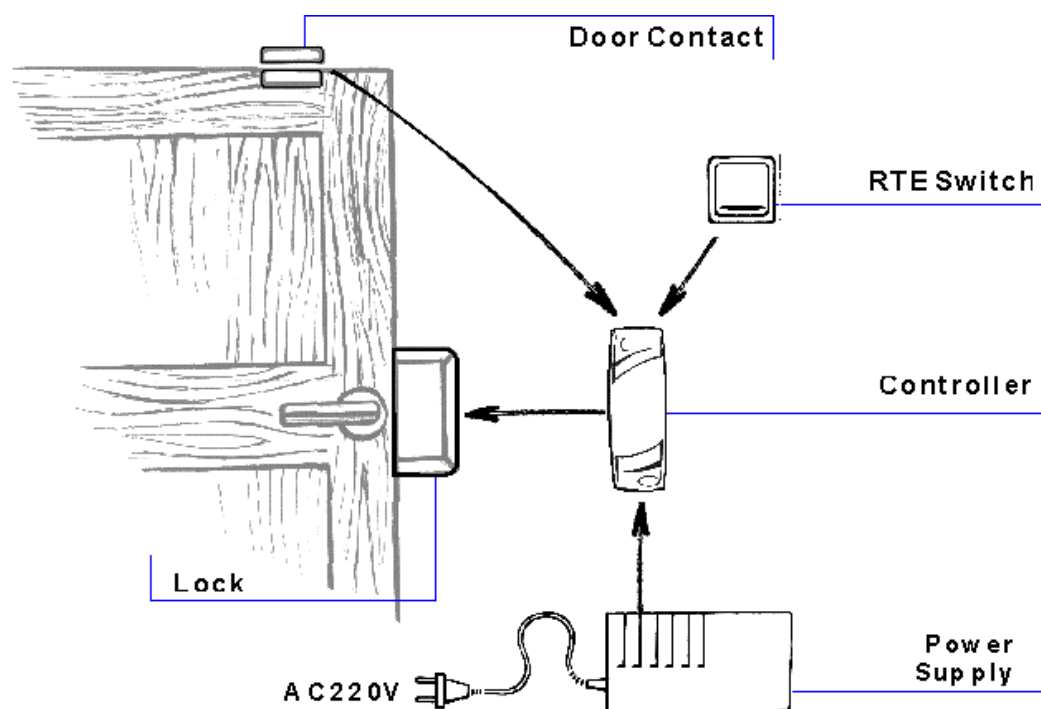


Figure 1. Access System Circuit

The entire system should be powered from the external power supply unit with voltage 12-14 V DC. It is desirable to use the power supply unit with built-in battery for system independent performance within several hours in case of power failure.

Controllers structure

SC-03 and SC-04 Controllers have similar technical features and differ only in case structure.

SC-03 Controller

Controller SC-03 is contained in a shockproof plastic case and is purposed for installation on the wall or another surface near the door. Sealed structure makes it possible to install a controller both indoors and outdoors. The controller is shown in Figure 2.

SC-04 Controller

SC-04 Controller has a stainless steel case and is extremely suitable for outdoor installations as well as for places with higher risk of vandalism. Controller is shown in Figure 3 below.

Indicators

Controllers have sound and light indication. Light indication is provided with an indicator located beyond the upper cover lens of a controller case (SC-03) or in the top part of a metal case (SC-04.) Indicator light or blinking color mode depends on a controller mode.

Proximity Reader

Proximity Reader is located inside a controller case and provides for contactless code reading from cards and key-tags. To have the code read by a controller it is necessary to bring a card

or a key-tag to the controller front side at a distance of several centimeters. The controller verifies code reading with various sound signals with regard to operation mode and key rights within Access System.

Note that in certain operating modes the controller does not inquire the reader and key presentation shall produce no response. For example, the key shall not be read during lock operating time.



Figure 2. SC-03 Controller



Figure 3. SC-04 Controller

Lock control

Controller is capable to control electric locks of the following types:

- ❑ **Type of control:** voltage-opened and voltage-closed locks.
- ❑ **Operational logic:** with latch fixation in open position after control pulse termination (the latch can be locked only after the door has been opened and subsequently closed) and without latch fixation (the latch locks after control pulse termination.)

Detailed information on locks connection and controller configuration is provided below.

Controller Data Base

General information

Controller Data Base (DB) stores information about all system users including system administrators. Each user has appropriate key (key-tag or card) code in controller DB. Unlike a common user administrator has the access to controller programming functions although administrator's card does not give the right to pass through the door. Hereinafter administrator keys are called master keys to distinguish from common user keys.

Master keys

Controller supports operation with two master keys. This is arranged in order to control the situation with the aid of second (spare) key when the first one is lost.

If both keys or a single registered administrator key has been lost, controller programming (such as entering or deleting User keys) is impossible.

Keep master key in a secure place!

Be advised that administrator with a master key has no right to pass through the door; he has access only to controller programming functions. If a person with administrator functions needs the right to pass through the door as well, he should have two keys: one for controller programming and second for common use.

Users

Controller is able to remember up to 40 users keys. Users have the right to pass through the door and have no access to controller programming. However in some situations a user key may be necessary while programming a controller. For example, the function of user code deletion from database is arranged so that specific user code (key code or key) can be deleted from the system only with the aid of the key stored in a previous cell of controller memory.

Helpful hints

1. Prior to start controller installation and programming read carefully this Manual. It will be very helpful if any problem occurs.
2. While controller installing and programming fill in the Table in Appendix 1. Be especially careful while filling in Users Section, otherwise it will be impossible to delete keys from controller database (e.g. when they are lost or stolen.) While distributing new keys and replacing old ones in the course of controller operation all changes to this Section should be done very carefully.

System mounting

Controller installation

Controller location should be selected with regard to mounting and application convenience. Most common controller location is the wall at a lock handle level on the side opposite to door hinges. Figure 4 provides for controller installation layout.

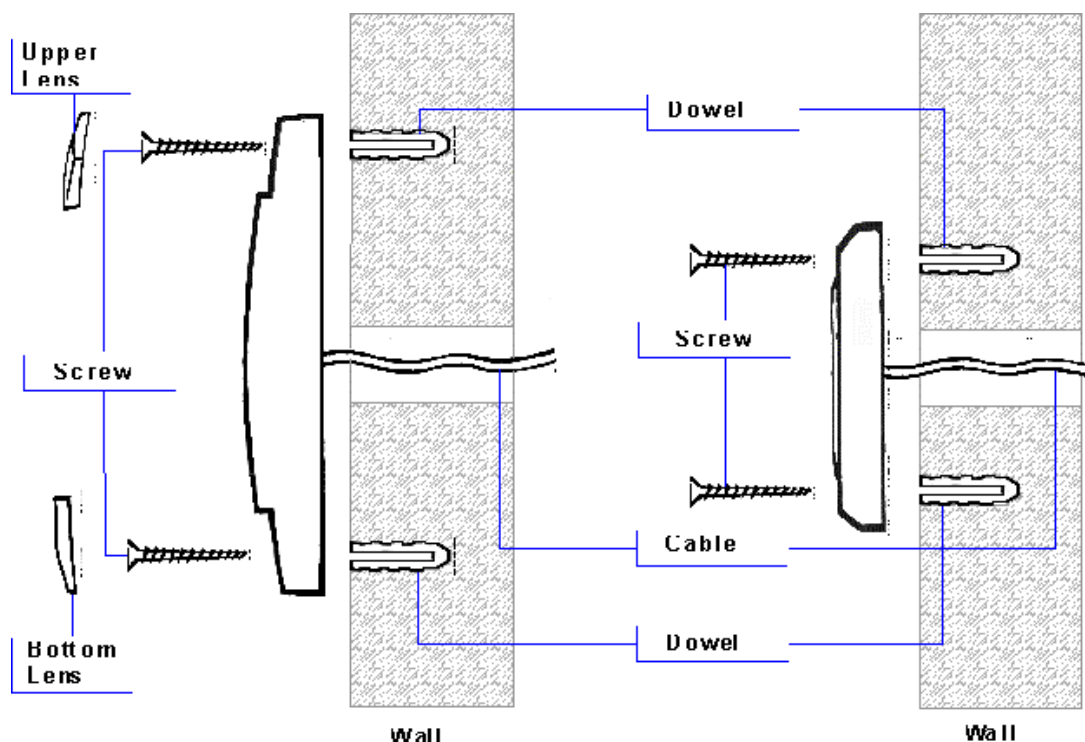


Figure 4. Controller installation

SC-03 Controller Installation Procedures:

1. Remove decorative cover lenses from the top and bottom parts of controller case. Logotype lens is the bottom one and indicator lens is the top one.
2. Drill two holes in the wall for enclosed anchors at a distance of 132 mm between hole centers.
3. Drill a hole in the wall for a cable under the central part of a controller case.
4. Connect controller to other equipment (power supply, door contact, lock, RTE button.) Next Section contains detailed information on controller connections. Pay attention to the wiring used for controller configuration (type and logics of lock performance.)
5. Attach controller case with two screws.
6. Latch the top and bottom cover lenses.

SC-04 Controller Installation Procedures:

1. Drill four holes for enclosed anchors spaced 83 mm vertically and 46 mm horizontally on the wall.
2. Drill a hole for a cable in the wall under the central part of controller case.

3. Connect controller to other equipment (power supply, door contact, lock, RTE button.) Next Section contains detailed information on controller connection. Pay attention to the wiring used for controller configuration (type and logics of lock performance.)
4. Attach controller case with four screws.

Other Access System elements should be mounted according to the instructions accompanying appropriate equipment.

All connections have to be made when power supply is switched off!

Controller connection

On the backside of the controller there is eight-wire cable for connection to all devices. Two wires are purposed for controller configuration. Controller connection to all possible devices is shown in Figure 5. Controller cable wires functions are shown in Table 1.

Table 1

Input	Function	Conductor color
+12	Controller power supply: +12-14 V, DC	Red
GND	Power supply, door contact and RTE button “Common” wire	Black
DC	Wire for normally closed door contact connection	White
RTE	Wire for normally open RTE button connection	Green
L+	Lock control	Brown
L-		Blue
Pol	Wire for lock type programming (if connected to the common wire a voltage-closed lock is used)	Orange
Log	Programming of unlocked state indication for locks with latch fixation (if connected to the common wire indication is on)	Yellow

Below there are connection descriptions for all devices.

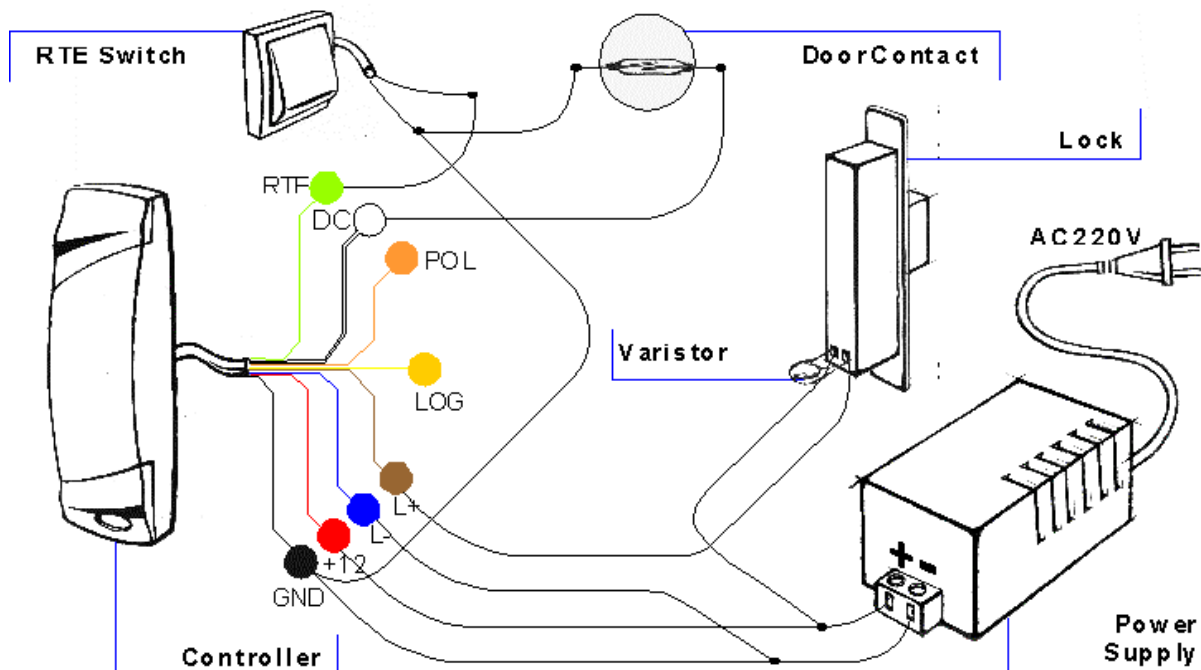


Figure 5. Controller connection

Connected equipment configuration

Controller is able to control both voltage-opened and voltage-closed locks. Input Pol (orange wire) state specifies the type of the lock to be connected. If input Pol is unconnected the door is unlocked when voltage is on. If input Pol is connected to a common wire the door is unlocked when voltage is off.

The second input Log (yellow wire) specifies lock performance logics. When the door is not equipped with latch fixation this wire has to be left unconnected. In this case lock reset (disconnection) occurs at door closing (door contacts closure.)

When the door with latch fixation is left unlocked (even if the door is shut) and controller warning beep is desirable, this input has to be connected to a common wire. If such indication is not desirable (the lock without latch fixation is used) the input should be left disconnected. This input changes DC operation logic's, let alone indication control. When connected to a common wire, the lock reset occurs at door opening (door contact breaking.)

If the door is not equipped with a door contact, input, Log input should be left unconnected.

Power supply connection

Controller power supply inputs connection should be performed only at switching off power supply unit condition. The entire system should be powered from the external constant power supply unit with voltage 12-14 V, DC. Application of a power supply unit with back-up battery is desirable to provide the system independent operation during several hours in case of power failure (service time depends on lock type and battery capacity.)

To apply the DC voltage to the controller the "+12 V" input should be connected to the power supply unit "+" lead and the "GND" input should be connected to its "-" lead.

Power supply unit loading capacity shall

comply with summary consuming current of the controller (100 mA at most) and lock

The system should be powered only when all connections are made.

Lock connection

Prior to lock connection the type of a lock has supposedly been correctly entered into controller (refer to the above section Connected equipment configuration).)

Lock is controlled via “negative” lock supply line. For this purpose connect controller input “L-” to the power supply “-” and “L+” to a minus lead of a lock supply. Plus lead of a lock supply should be connected to a power supply “+”.

Lock supply plus lead should be connected directly to a power supply. Do not use “+12” controller input for this purpose.

To provide for controller proper operation the lock should be shunted with a varistor, which suppresses pulse spikes that can be formed in the course of lock operation. If a varistor is not used controller may quite possibly fail when the lock is switched on and off.

Maximum lock current provided by controller is 1 A and 1.5 A for voltage-closed and voltage opened locks. For locks with higher current consumption it is necessary to install an additional relay with 12° V winding and appropriate dry contact current.

Door contacts application

Door contact permits to watch the door state. It is not necessary to install the door contact, but in such a case it is impossible to indicate the door state and lock switching on at quick door closing. Both functions can be useful.

Door contact should be connected between “DC” and “GND” inputs of the controller cable. If door contact is not used it is necessary to connect “DC” input to a common wire.

Request to Exit Button

Request to exit button is not obligatory though while used with electromagnetic locks it provides for the only way to unlock the door from the inside. With electromechanical locks the door may be unlocked from the inside without this button.

As RTE button has no effect on controller operation, its availability is not programmed beforehand.

RTE button should be connected between “RTE” and “GND” inputs of the controller cable.

Controller operation modes

In the course of operation a controller may be running under one of the following modes (individually described in the next Section):

Stand-by mode

This mode is the basic for the controller as it covers most of the time. Controller is waiting for a key (a card or a key-tag) presentation, the lock is closed, and the door is locked. Red indicator is on.

Unlocking mode

Controller switches to this mode when a user key registered in DB is presented.

A lock of any control logic's gets unlocked regardless of the initial door contact position. This is purposed to provide for passage possibility in case of a door contact failure.

When a lock gets unlatched a green indicator is on during entire lock operating time as well as a beeper is on for about 0.25 second.

When door contact is disconnected this mode is terminated after the lock operating time has expired. The indicator turns red and controller returns to a standby mode.

If a door contact is installed and used in the system, the set lock operating time is terminated due to the door contact performance. The lock gets switched off/on with regard to the type of a lock applied: with or without latch fixation, respectively.

If door contact is installed, when lock is switched the controller enables an open door mode (refer below).

While the lock is open controller reads no keys.

Trigger mode

If the unlocking time is set to 31 seconds, the controller works in trigger (switching) mode. In this mode every subsequent presentation of a user key switches the lock into an opposite state: off – on – off – on. In this mode door contact state is not watched (DC is not in use).

Open Door Mode

This mode is enabled when door contact is installed and door tracking has a software support (see below.) Otherwise controller switches to a stand-by mode immediately after lock deactivation by time or by door contact.

Door closing time (or an open door period) should be counted from the moment when the lock is switched off. Indicator is yellow during counting period. If the door is not closed by the end of this period a green and a red indicators will start alternate blinking, and controller will produce interrupted beep until the door is closed or until any user key registered in DB is presented: the controller will switch to a stand-by mode irrespective of the door position.

Open Lock Mode

This mode is used **only in case if**:

- ❑ the system is equipped with a door contact;
- ❑ controller is connected to a lock with a latch fixation in open position and Log input is connected to a common wire.

The situation when the lock with latch fixation stays open occurs, if a key giving a right to pass has been presented to controller (i.e. the lock has been opened) and the user on some

reason has not passed through the door. Thus, the door was not opened and subsequently closed and a lock latch was left in an open position, so that the door is closed but not locked. In such a situation as an open door time passes controller produces an uninterrupted beep and red and green indicators blink until the door is opened and closed again.

If the door is not equipped with a door contact this mode of operation cannot be realized.

Disable Mode

If a key not available in DB is presented the controller produces a warning sound signal: three short beeps about 50 μ s long each.

If five keys unavailable in DB are presented successively to controller the latter evaluates the situation as a try to fit the code. After the fifth presentation controller switches into disable mode and cards are not read.

Disable mode does not effect RTE button.

In disable mode the red indicator blinks and an interrupted beep is produced every 5 seconds. After 1 minute controller terminates disable mode automatically.

If one card is presented five times successively disable mode does not occur.

If within a disable mode period the door is unlocked with the help of RTE button, the lock switches to a stand-by mode.

Controller Programming

Default parameters and values

In the course of controller programming a number of parameters specifying controller algorithm may be introduced in addition to the keys. This provides for flexible adaptation to various applications. All these parameters have default values as per Tables 3 and 4 below.

Table 3

Parameter	Function	Default value
Lock operating time	Specifies time during which the lock receives a signal to unlock the door. Value can be preset within a range from 1 to 30 seconds with 1 second increment. <i>31 value corresponds to a trigger mode.</i>	3
Open door time	A period starting after lock switch-off during which the door can be opened. Value can be preset within a range from 0 to 120 seconds with 5 seconds increment. <i>At 125 value door state is uncontrollable.</i>	125

Table 4

Parameter	Function	Default value
To watch the open lock (for a lock with latch fixation)	To produce a warning beep if the latch fixation lock is left open even when the door is closed.	Off (yellow wire is not connected)
Lock type	Specifies a lock type: voltage-closed or voltage-opened	Voltage-open (orange wire is not connected)

Programming

Initial Starting

When a **new controller** is powered, a yellow indicator is on and beep is not sounded because controllers DB does not contain master keys and the controller automatically switches into a key entry mode (refer to Master Keys Entry Section.)

Without master key entry the controller is inoperable.

To check access control system operability at least one master key and one user key should be entered.

When controller with DB containing at least one master key is powered it switches to a stand-by mode.

Master Key Entry

This procedure is valid for a controller with no master keys in memory that means that controller has never been used or master keys have been deleted.

The following procedures are necessary to enter a master key:

1. Power on the controller. A yellow indicator is continuously on and a beep is sounded at about 5 seconds interval.
2. Present the key (move close to the controller) that is supposed to be a master key to the controller three times. At the first and the second key presentation the controller shall produce a short (50 μ s) beep. After the third presentation the controller produces a 0.5-second-long beep. A yellow and a green indicator start blinking alternately. The first master key has been registered. The controller is ready to register the second master key.

At the attempt to register one of the user keys stored in controller memory as a master key the controller would produce a warning signal: three 50-millisecond-long beeps and no registration would occur.

Then two options are possible:

- a) In case of two master keys application (strongly recommended!), the key that is supposed to be the second master key should be presented three times to controller. Note that the first and the second key presentation the controller shall produce a short beep (50 Ms long.) After the third key presentation the controller shall produce a 0.5-second-long beep and switches to a standby (operating) mode.
- b) If the second master key is not registered, the previously registered first master key should be presented to the controller. The controller produces a beep and switches to a stand-by mode. The second master key may be added later.

Programming Modes Switching

Access to programming modes described below is possible when at least one master key has been entered into DB.

Each master key presentation produces the next mode of the succession switching:

- Standby Mode – User Keys Entry – User Keys Deletion – Lock
Operating Time Programming – Open Door Time Programming –
Master Keys Replacement (Deletion) – Master Key Addition (if only
one master key has been registered) – Standby Mode, etc.

*While choosing any programming mode **it is strongly recommended** to make sure that controller indication complies with the selected mode prior to further steps. **Never** relay on the single fact that you have presented the master key as many times as necessary.*

After some actions in a selected programming mode (an additional key has been presented) master key presentation switches the controller **back to stand-by mode**.

The controller switches back to a stand-by mode from any programming mode if operator undertakes no actions within 15 seconds.

In all programming modes:

- A short single beep indicates that the key has been read but some other actions are necessary.

- ❑ A long single beep indicates that the process has been successfully finished.
- ❑ A short triple beep indicates that you present a wrong key.
- ❑ A long triple beep is a warning: make sure you really want to proceed.

User Key Entry

To add a user key (or several keys) the following procedures should be performed with the aid of a master key:

1. Present a master key once in a stand-by mode. Controller produces a short (50 μ s) beep, **a green indicator starts blinking**. Controller is ready to register user keys.
2. Present a user key. If the key is not registered in memory, the controller produces a 0.5-second-long beep, a green indicator is on for the same time and the card is being registered in memory.
If the key has already been registered, the controller produces three warning beeps 50 μ s each.
In case of memory overflow the controller produces three warning beeps 0.5 second each.
3. To enter several user keys one after another repeat step 2 procedures for each key.
4. Present a master key to switch back to a stand-by mode.

Notes:

- a) *If operator undertakes no actions within 15 seconds, the controller shall automatically switch to a stand-by mode.*
- b) *The **newly added** key should be registered **in the first vacant cell** of DB. Thus, for example, if Key 7 has been preliminary deleted, a new key should be registered under Number 7 even if DB contains Keys 8-22 and cells 23-40 are vacant. In this relation it is **strongly recommended** to trace all changes carefully in Users Section of Appendix 1 while deleting and adding keys.*

User Keys Deletion

To delete a user key from a controller memory two keys are required - a master key and a user key registered in DB under the number preceding the key to be deleted. So, while entering user keys it is necessary to run the list, which should be helpful for future application with a key deletion procedure as described below.

The key registered in DB before the one to be deleted should be specified as auxiliary. **Only one key can be deleted at one session.**

The following procedures are necessary to delete a user key:

1. In a stand-by mode **present a master key twice**. At each presentation controller produces a short (50 μ s) beep, after the second presentation **a red indicator starts blinking**. Controller is ready to delete a user key.
2. Present an auxiliary key. The controller produces a 0.5-second-long beep, a green indicator is on for the same time and an appropriate key is deleted from memory. The controller switches to a stand-by mode.
If a key which has not been entered into DB is used as an auxiliary key, the controller produces three warning beeps 50 μ s each and no deletion occurs.

Notes:

- a) *If operator undertakes no actions within 10 minutes, the controller shall automatically switch to a stand-by mode.*
- b) *User keys list is looped, i.e. the first key on the list should be deleted when the last key is presented.*
- c) *During key deletion vacant positions in the list are ignored. For example, if DB contains Keys 2, 7-12 and 35 and the other positions are vacant the following shall take place:*
 - *Key 2 presentation shall delete Key 7.*
 - *Key 10 presentation shall delete Key 11.*
 - *Key 12 presentation shall delete Key 35.*
 - *Key 35 presentation shall delete Key 2.*

Lock Operating Time Programming

For lock operating time programming a master key and an auxiliary key are necessary. The auxiliary key may be either registered in controller data base (DB) or not registered.

The following procedures should be run for lock time programming:

1. **Present a master key** in a stand-by mode **three times**. At each key presentation the controller shall produce a short (50 μ s) beep and after the third presentation **yellow, green and red indicators start blinking alternately**. The controller is ready to lock time programming.
2. Set the lock time by presentation of an auxiliary key. Note that the first presentation corresponds to 5 seconds. Each subsequent presentation of the auxiliary key increases time by 1 second, i.e. two presentations correspond to 2 seconds, three presentations correspond to 3 seconds and farther on to 31 presentations (value 32 corresponds to a trigger mode.)
3. To finish lock time programming a master key should be presented.

Notes:

- a) *At 31 and more presentations of an auxiliary key (overflow of lock time counter) the controller produces three beeps 500 μ s each. This is indicative of a trigger mode enabling.*
- b) *If operator undertakes no actions within 15 seconds, the controller shall automatically switch to a stand-by mode.*
- c) *While switching to a stand-by mode the controller stores the lock time value set within the current programming session both at master key presentation and after a 15 second period.*
- d) *In case of operator's mistake resulting in a wrong time setting it is necessary to return to a lock time programming to make correction. Note that counting shall start from 1 second.*

Open Door Time Programming

For open door time programming a master key and an auxiliary key are necessary. The auxiliary key may be either registered in controller data base (DB) or not registered.

Open door time should be controlled only in case if a door contact is installed. The latter permits the controller to watch for the door state.

The following procedures should be run for open door time programming:

1. **Present a master key** in a stand-by mode **four times**. At each key presentation the controller shall produce a short (50 μ s) beep. After the fourth presentation **a green and red indicators start blinking alternately**. The controller is ready to open door time programming.
2. Set the open door time by presentation of an auxiliary key. Note that the first presentation corresponds to 5 seconds. Each subsequent presentation of the auxiliary key increases time by 5 seconds.
Thus, to set maximum open door time of 120 seconds present the auxiliary key 24 times.
3. To finish open door time settings a master key should be presented.

Notes:

- a) *At the 25th presentation of an auxiliary key (overflow of an open door time counter) the controller produces three short beeps 500 μ s each. This is indicative of door tracing disabling.*
- b) *If operator undertakes no actions within 15 seconds, the controller shall automatically switch to a stand-by mode.*
- c) *While switching to a stand-by mode the controller stores the open door time value set within the current programming session both at master key presentation and after a 15 second period.*
- d) *In case of operator's mistake resulting in a wrong time setting it is necessary to return to an open door time programming to make correction. Note that counting shall restart from 5 seconds.*

Replacement (Deletion) of Master Keys if available.

To delete master key from the controller memory one of master keys and one auxiliary key not recorded in a controller DB are required.

The following procedures should be run to delete a master key from controller memory:

1. **Present a master key** in a stand-by mode **five times**. At each key presentation the controller shall produce a short (50 μ s) beep. After the fifth presentation **yellow and red indicators start blinking alternately**.
2. Present an auxiliary key in a stand-by mode five times. At each key presentation the controller shall produce a short (50 μ s) beep and after the fifth presentation the controller shall produce three warning beeps 500 μ s each.
3. Present an auxiliary key once again. The controller shall produce a 0.5 seconds beep and master keys shall be deleted from memory. As there are no master keys in controller memory it automatically switches to Master Key Entry mode and a yellow indicator is on.
4. Enter new master keys as per the above Master Keys Entry Section.

Note: The procedure can be interrupted (until step 3 is fulfilled) by presentation of the valid master key. Note that controller shall switch to a stand-by mode. Similar switch shall occur if an operator undertakes no actions within 15 seconds.

Master Key Addition

Controller does not switch to this mode if two master keys are available in its memory:

To add the second master key to controller memory the valid (first) master key is required.

The following procedures should be run to add the second master key to controller memory:

1. **Present a master key** in a stand-by mode **six times**. At each key presentation the controller shall produce a short (50 μ s) beep. After the fifth presentation **a green and yellow indicators start blinking alternately**.
2. **Present a key** which supposedly should be the second master key **three times**. At each key presentation the controller shall produce a short (50 μ s) beep and after the third presentation the controller shall produce a long 0.5 second beep; simultaneously a green indicator is on. After this the second master key is registered in the memory and the controller switches to a stand-by mode.
At trial to record a key, which has been previously recorded in DB as a user key, the controller produces a short triple beep and the key is not recorded.

Optional Programming Mode

The further procedures may be necessary only in case of incorrect system administration or purchasing of a secondhand controller when DB contents is unknown. Thus, these procedures are **inaccessible** with the aid of master keys.

Replacement (deletion) of Master Keys when they are not available

For unavailable (lost) master keys replacement or deletion one auxiliary key is required. The latter should not be recorded in a controller DB neither as a user key (as it cannot be designated as a master key), nor as a master key (because if it is available this procedure is not required.)

The following procedures should be run to replace a master key in a controller memory:

1. Switch controller off.
2. Push and hold RTE button (or connect RTE input to a common wire).
3. Switch controller on. Red indicator shall start blinking, no sound signal is produced.
4. Hold on RTE button for 15 seconds. After 15 seconds controller shall produce a long (500 μ s) beep and **green, yellow and red indicators start blinking alternately**.
5. Release RTE button and disconnect RTE input from a common wire.
6. Present an auxiliary key five times. At each presentation controller shall produce a short (50 μ s) beep; after the 5th presentation the controller shall produce three short warning beeps 50 μ s each.
7. Present auxiliary key once again. Controller shall produce a 500 μ s long beep and master keys shall be deleted from controller memory. As there are no master keys in controller memory it automatically switches to master keys recording mode, note that a yellow indicator is on and controller produces a beep at about 5 s intervals.

Return to Factory presets

If a master key (or keys) is unavailable or wrong programming makes it uncontrollable it is possible to return to factory presets.

Note that return to factory presets shall completely clear controllers DB and it will be necessary to enter all user and master keys.

The procedure shall require an auxiliary key, which may be recorded or not recorded into controller DB.

The following procedures should be run to return to factory presets:

1. Switch controller off.
2. Connect DC (green wire) and RTE (white wire) inputs; do not connect them to other circuits.
3. Switch controller on. A red indicator shall start blinking, no beep is produced.
4. Present an auxiliary key five times. At each key presentation the controller shall produce a short (50 μ s) beep and after the fifth presentation of auxiliary key controller shall produce three short warning beeps 50 μ s each
5. Present an auxiliary key once again. The controller shall produce a 500 μ s beep, then a continuous beep and automatically returns to factory presets.
Note that both master keys and user keys should be deleted, 3 seconds lock time should be set and open door control should be switched off.
6. Switch controller off for 1 second minimum and disconnect DC and RTE wires.
After controller is switched on it switches to a Master Key Entry mode that should be verified with a yellow indicator light and periodical beep.

Technical Specifications

Controller Specifications

Supplied voltage	12-14° VDC
Consumption current	120 mA max., from 12 V power supply
Lock control	Electronic key, dc voltage commutation to 16 V at maximum current 1 A and 1.5 A for voltage-closed and voltage-opened locks, respectively.
Quantity of keys:	
master keys	2
user keys	40
Operating temperature, °C	from – 10° to +55° for SC-03 from -30° to +55° for SC-04
Lock type	Unlocked by voltage and locked by voltage (programmable)
Lock-opening time	Programmable from 1 to 30 seconds, 1 second increment, reset by a door contact or default reset after 3 seconds.
Open door time	Programmable from 0 to 120 seconds, 5 seconds increment. Default value 125 seconds (switched off.)

Warranty

Manufacturer guarantees trouble proof operation of the device during 12 months from the date of sale.

Warranty is not applicable to devices used with violation of operating rules and modes, as well as to devices having mechanical damage.

Warranty is not effective without a note about a date of sale or documents verifying the fact of sale.

Consult you Vendor on after-sale service.

Appendix 1. Programming Table.

Lock type (unlocked or locked by voltage)			
Lock-opening time, second			
Open door time, second			
Door contacts (yes/no)			
Request to exit button (yes/no)			
Master keys			
1		2	
User keys			
1		21	
2		22	
3		23	
4		24	
5		25	
6		26	
7		27	
8		28	
9		29	
10		30	
11		31	
12		32	
13		33	
14		34	
15		35	
16		36	
17		37	
18		38	
19		39	
20		40	

Note: Empty User Keys cells of the Table should be filled with last names of users provided with the keys.