

# AXS-10

## Single-Door Access Control System

# VisAccess

## Installation Guide

### 1. Introduction

The Visonic Technologies AXS-10 is an electronic access control system designed for a single access point, such as a main door in an apartment building or individual office doors. The system control unit relay activates a lock or electromagnetic strike (EMS), when a valid proximity key (tag or card) is presented to the reader located outside the protected area.

The use of a proximity (non-contact) key makes the installation of the AXS-10 system an attractive possibility in harsh environments and in places with poor lighting conditions. The proximity keys are totally sealed and are wear resistant. The reader reads the key's ID, whenever the key is presented.

A second proximity reader may be connected to the AXS-10 to control both sides of a door. An optional magnetic stripe card reader may be connected instead of a proximity reader.

The separate weatherproof readers provide added security and flexibility allowing outdoor or indoor installation.

The AXS-10 control unit (see figure 1) includes a 3-digit display, 3 visual indicators (LEDs) and 4 buttons. An internal proximity reader located in the upper right corner of the control panel allows fast and easy programming of access keys. The buttons are used for entering the password and for programming the unit.

AXS-10 controllers can be networked (see par. 4.5.).

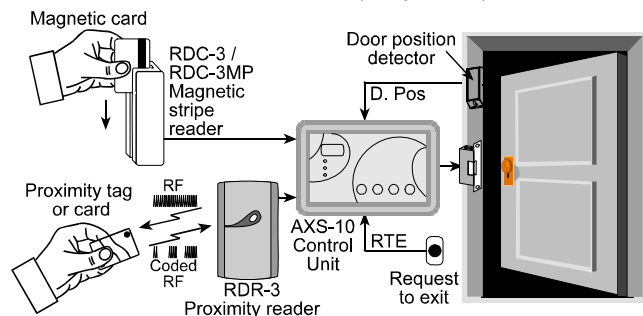


Figure 1 - System Functional Presentation

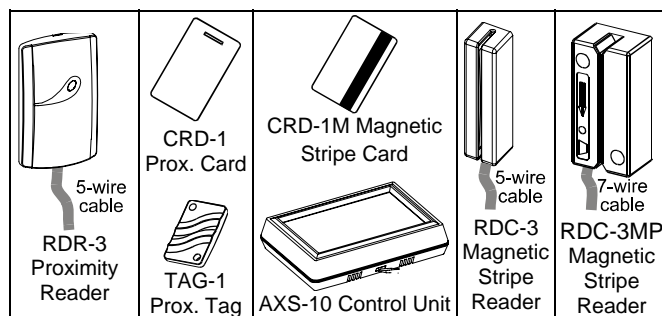


Figure 2 - System Components

The AXS-10 has a memory capacity of 300 keys. Adding keys simply involves presenting new keys to the controller while the system is in ADD mode.

The user can delete keys in the DELETE mode by presenting them to the reader or, if a tag/card is not available, by typing in its number (the same one that appears when adding the key).

When the system is in TOGGLE mode, presenting a valid tag arms/disarms an alarm system or activates/deactivates an electrical device (such as an air conditioner).

#### The AXS-10 kit includes:

- AXS-10 controller
- RDR-3 proximity reader with 1m (3 ft) 5-wire cable
- Installation instructions
- User guide
- Control unit base template, for wall installation

#### Additional tools and equipment that may be needed:

- Proximity tags or cards (ordered separately)
- Power supply for the controller - 12V AC/DC
- Electromagnetic strike (EMS) unit
- RTE (request-to-exit) push button or PIR, if required.

### 2. Specifications

#### AXS-10 CONTROLLER

**Power Input:** 9-12V AC/DC

**Max Current Consumption:** 150 mA (excluding EMS current)

**Memory Capacity:** 300 tags/cards

**Output Relay Contact Rating:** 1A max.; continuous current

**Display:** 3 x 7 segments and 3 LEDs

**Operating Temperatures:** 0°C to 50°C (32°F to 122°F)

**Dimensions (L x W x D):** 150 x 105 x 35 mm (5-7/8 x 4-1/8 x 1-3/8 in.)

**Color:** Dark gray

**Weight:** 250g

#### RDR-3 EXTERNAL PROXIMITY READER

**Indicators:** Tricolor LED (Green, Red, Amber)

**Tag Reading Range:** 50-100 mm (2-4 in.)

**Frequency:** 125 kHz

**Tag Code Possibilities:** 10<sup>12</sup> possible combinations

**Dimensions (L x W x D):** 116 x 70 x 16.8 mm (4-1/2 x 2-3/4 x 5/8 in.)

**Weight:** 121.5 g (4.3 oz)

**Operating Temperatures:** -20°C to 50°C (-4°F to 122°F)

**Max. Distance form Controller:** 10 meters/ 32.8 Feet

**Color:** Metallic brown

#### RDC-3 MAGNETIC STRIPE READER (optional)

**Designed for:** Indoor installation only

**Card Standard:** ISO 7811

**Track Number:** 2 (IATA)

**Reading Method:** 210BPI

**Card Thickness:** 0.76 ± 0.08 mm

**Power Supply:** 5V DC ± 5%

**Output Level:** High - 2.4V min, low - 0.8V max

**Current Consumption:** Less than 10 mA

**Card Feeding Speed:** 15 - 120 cm/sec

**Minimum Head Life:** 300,000 card passes

**Length of Supplied Cable:** 1 m (3 ft)

**Dimensions (LxWxD):** 99x31x32mm (3-7/8 x 1-3/16 x 1-1/4 in)

**Weight:** 45 g (1.6 oz) approximately

**Operating Temperature:** 0 - 50°C (32 - 122°F)

**Color:** Dark brown

#### RDC-3MP MAGNETIC STRIPE READER (optional)

**Designed for:** Indoor and outdoor installations

**Vandal Resistance:** Stainless steel

**Protocol:** AB (TTL + LED)

**Power Supply:** 4.5 - 5.5 VDC

**Current:** Less than 35mA

**Output Type:** Open-collector (pulled up internally with 4700Ω res.)

**Card Material:** Plastic

**Card Thickness:** 0.762 +/- 0.07 mm

**Operating Temperature Range:** 0 to 50°C (32 to 122°F)

**Storage Temperature Range:** -20 to +70°C (-4 to 158°F)

**Data Tracks:** Track 1, 2 (or 3, in high or low coercivity)

**Humidity:** 5 to 95%

**LED Colors:** Red/Green

**Length of Supplied Cable:** 1.5 m (16 ft)

**Cable Type:** 10 core screened.

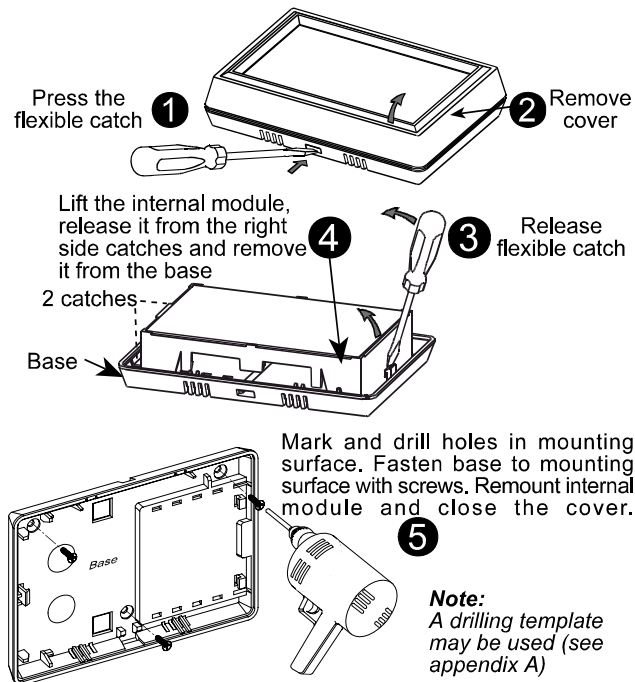
**Dimensions (L x W x D):** 104 x 49.5 x 35 mm

(4-1/8 x 1-15/16 x 1-3/8 in)

**Weight:** 380 g approx. (13.4 oz)

### 3. Installation

#### 3.1 Controller Unit Installation

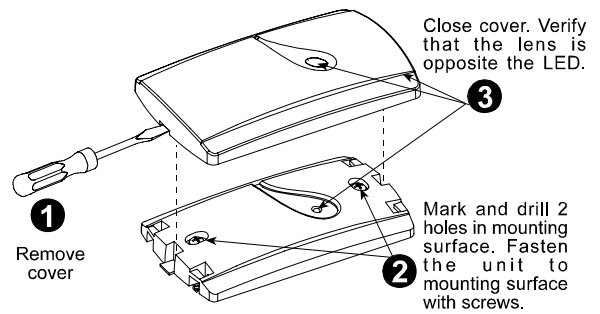


**Figure 3 - Control Unit Installation**

#### 3.2 Proximity Reader Installation

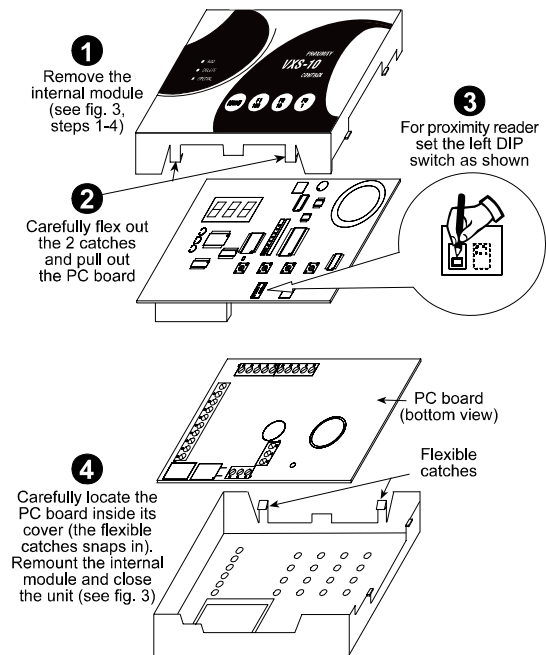
**Caution:** Do not install the RDR-3 on a metal surface or on a metal door frame, since this decreases the key reading range significantly. If you have to install the reader on a metal surface, use a spacer plate so that the reader will be at least 1 cm (3/8 in.) away from the metal. You may use RDR-BACK which is an optional spacer plate made specifically for this purpose.

When installing two readers, you may install them in close proximity to each other.



**Figure 4 - Proximity Reader Installation**

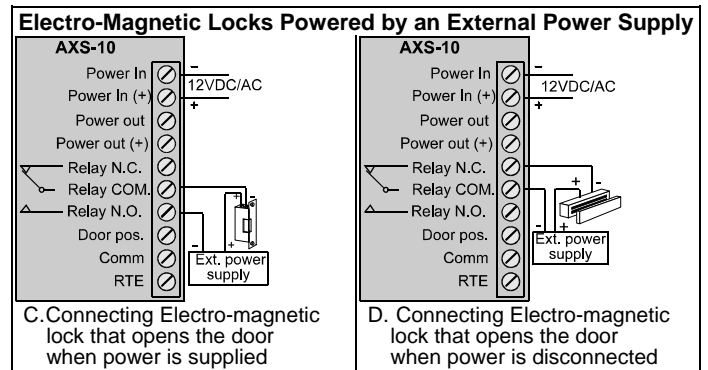
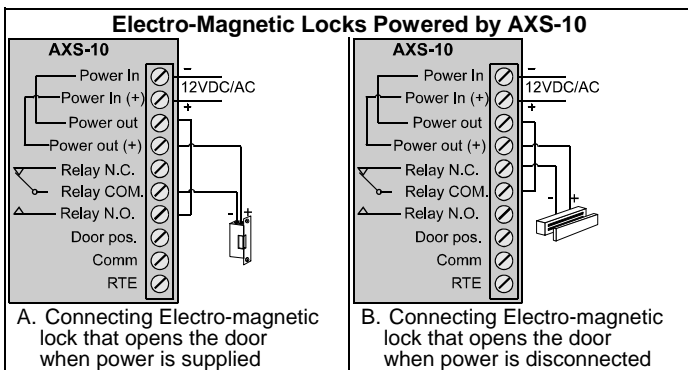
#### 3.3 Setting DIP Switch



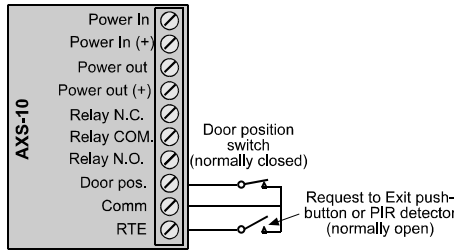
**Figure 5 - DIP Switch Setting**

### 4. Wiring

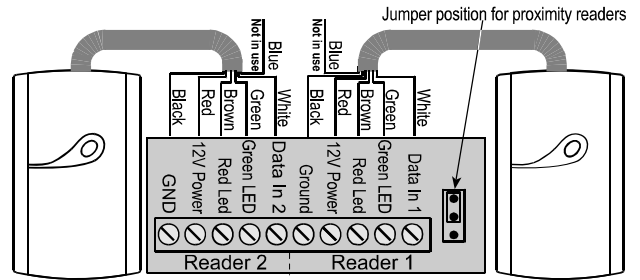
#### 4.1 Electromagnetic Strike Wiring



4.2 RTE and Door Position Wiring

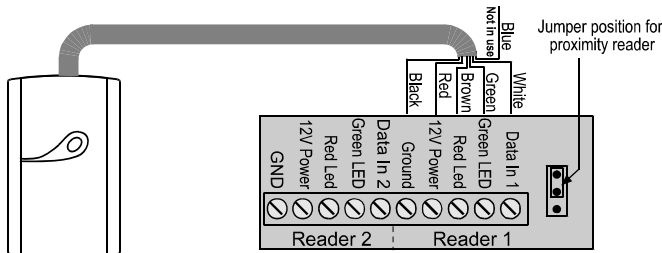


**Figure 6 - Connecting RTE and Door Position Inputs**

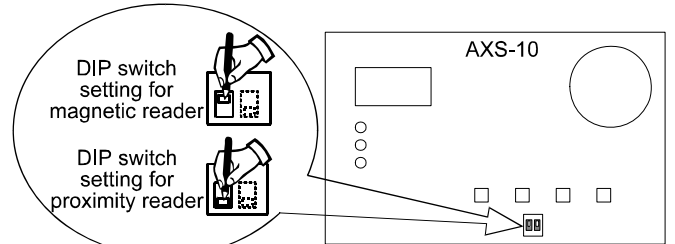


**Figure 8 - Connecting Two Proximity Readers**

4.3 Proximity Readers Wiring

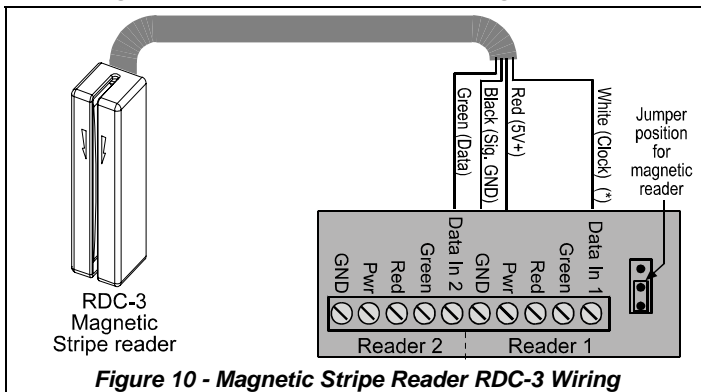


**Figure 7 - Connecting One Proximity Reader**

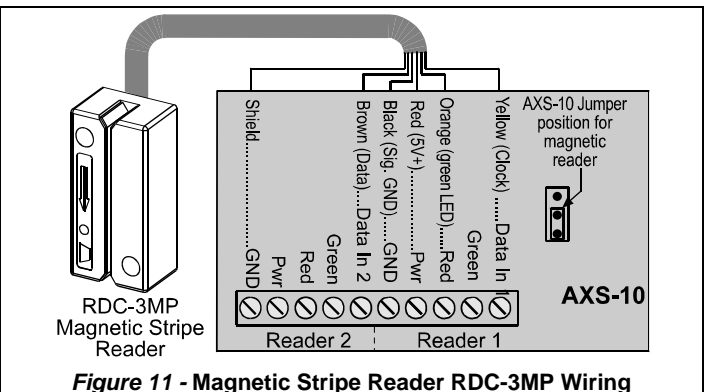


**Figure 9 - DIP Switch Setting for Proximity or Magnetic Reader**

4.4 Magnetic Stripe Readers Wiring

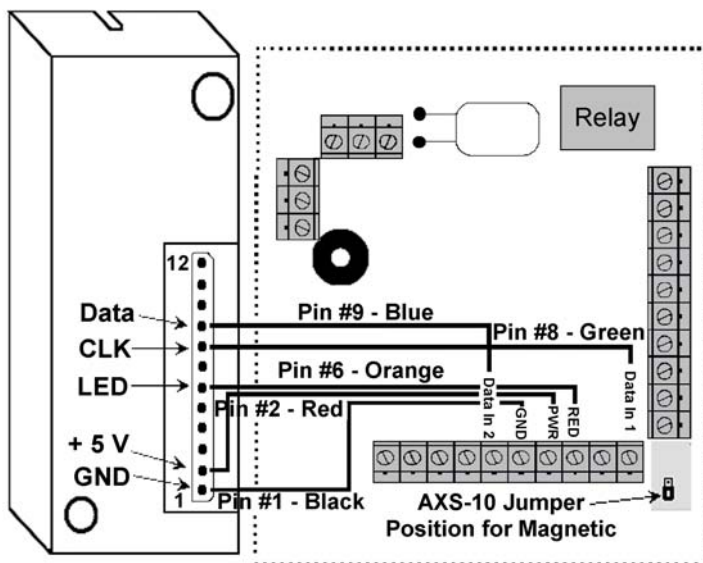


**Figure 10 - Magnetic Stripe Reader RDC-3 Wiring**



**Figure 11 - Magnetic Stripe Reader RDC-3MP Wiring**

\* Reader 1 "Data In" terminal, for RDC-3 and RDC-3MP, is used for clock signal.



**Figure 12 - Magnetic Stripe Reader RDC-3MP Wiring**

**4.5 Using AXS-10 Controllers as a Network**

Up to four AXS-10 controllers can be networked with or without PC, for use of up to 300 users (keys).

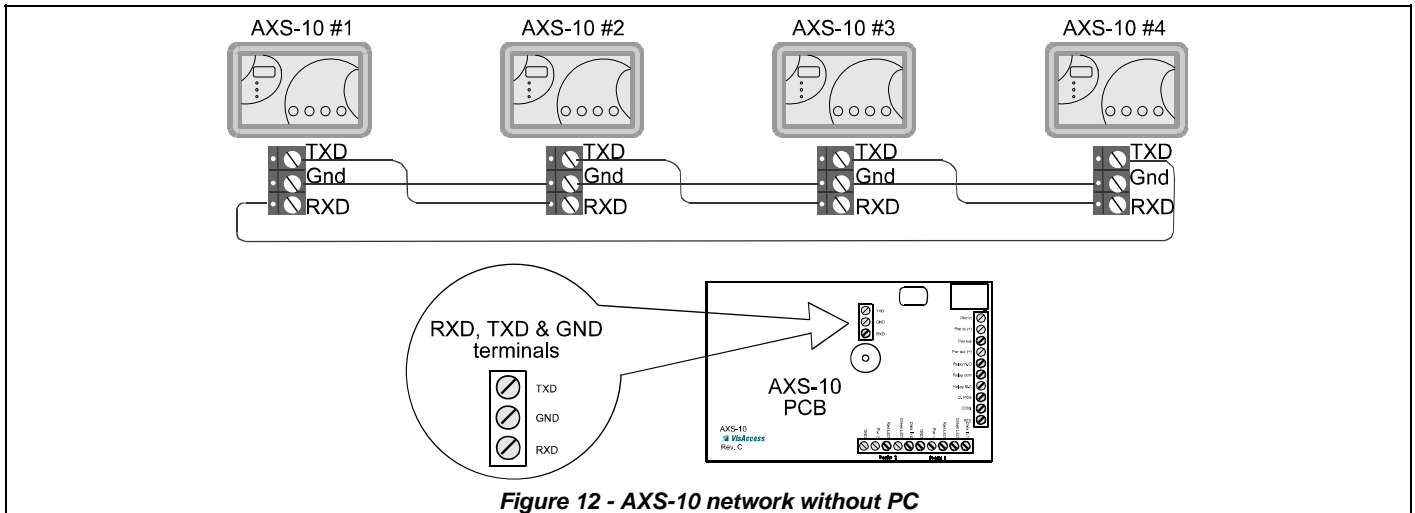
The maximum distance between adjacent AXS-10 controllers should not exceed 25 meter (75 ft.). To increase the distance (with 1200m increments), use SHM-1 modem.

A AXS-10 network without PC enables the installer / user to control all the 4 controllers from one controller.

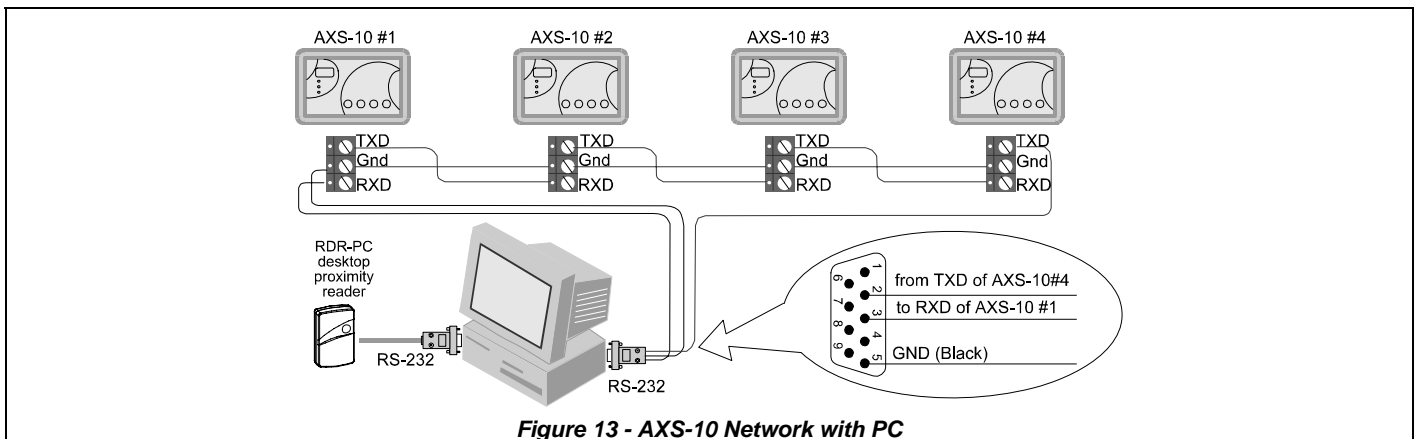
In such a configuration, every one of the 4 controller keys enables unlocking each of the network 4 doors.

AXS-10 network with PC and AXSoft-10 software provides:

- Real time recording and display of system events on the PC screen.
- Reports on users and events can be sent to a local or network printer.
- The system operator can program the unlocking duration (in seconds) of the network doors.
- Adding and deleting keys can be done easily in the organization security office, including adding user information.



**Figure 12 - AXS-10 network without PC**



**Figure 13 - AXS-10 Network with PC**

**5. Programming**

**IMPORTANT!** When using the magnetic reader RDC-3/3M/3P, the internal proximity reader is disabled. In such a case, all procedures in which the internal reader is involved should be performed with the external magnetic card reader.

**Note:** While the system is in one of the programming modes, the AXS-10 does not operate the external reader or the relay output.

**5.1 Entering Programming Menu**

The AXS-10 recognizes a 6-step installer password. Each step requires pressing a single button or a combination of two buttons.

**Note:** The “MODE” button by itself cannot be used as the first button of the password.

To enter the programming menu, press the “MODE” button and then enter the factory defined installer password “F1”, “F2”, “F3”, “F1”, “F2”, “F3”.

**Notes**

1. It is recommended to change the password during installation (see par. 5.6).
2. Inactivity for more than 10 seconds causes AXS-10 to exit the programming menu and revert to normal operation.

**5.2 Setting the Master Key**

The AXS-10 has one master key. The installer needs to assign one of the proximity keys (tag or card) as a master key and program it into the controller memory.

**To assign a master key:**

- Press the “Mode” button.
- Enter installer password. The green “ADD” LED starts flashing.
- Press “MODE” a few times until the display shows: “S0”. The system is ready to read the key. Present a tag or card to the top right corner of the controller (internal proximity reader).
- Once a key is presented, it will replace the current master key. Hold the new key until the “SPECIAL” LED stops flashing.
- To revert to normal operation, wait 10 seconds until the AXS-10 automatically exits the programming menu.
- To program the master magnetic stripe card, perform steps A, B and C. When you are instructed to present a tag or a card, present the desired magnetic stripe card to the magnetic stripe reader RDC-3 or RDC-3MP.

**5.3 Erasing ALL User Keys**

**IMPORTANT:** A user master key should be assigned before erasing user keys.

- To select the ERASE ALL mode press the “MODE” button.
- Enter installer password. The green “ADD” LED starts flashing.
- Press the “MODE” button a few times until the “SPECIAL” LED lights and the display shows “Er”.
- Present the master key to the top right corner of the controller.
- Remove the key and wait until the display blanks out.
- To erase all magnetic stripe cards, perform steps A, B and C. When you are instructed to present the master key, present the magnetic stripe card to a magnetic stripe reader RDC-3 or RDC-3MP.

**Note:** The ERASE ALL function does NOT erase the master key.  
 • Wait 10 seconds until the AXS-10 automatically exits the programming menu.

**5.4 Setting the Door Unlock Duration**

The system default unlock duration is 5 seconds. The time can be set between 1 to 99 seconds.

**Note:** In Toggle mode, the unlock duration is unlimited (until a valid tag is presented).

**Setting Door Unlock Period:**

- Press the “MODE” button.
- Enter the installer password. The green “ADD” LED will start flashing.
- Press the “MODE” button a few times until the “SPECIAL” LED lights and the display shows “UL”.
- Press F2 (tens) and F3 (units) to set the unlock time in seconds. For example, for 35 seconds press “10” three times and “1” five times.
- The display will show the number of seconds.
- To save the unlock time and return to normal operation, present the master key to the internal reader.
- You may press “MODE” at any time to continue without saving the new unlock duration.

**5.5 Entering/Exiting Toggle Mode**

**To turn the AXS-10 into Toggle mode:**

Setting the Unlock Duration (see par. 5.4) to 100 seconds turns the AXS-10 into **Toggle** mode. If the unlock time setting is less than 100 second, the AXS-10 is in regular mode.

**To turn the AXS-10 from Toggle mode into Regular mode:**

Set the unlock duration to any number other than “100”. Then exit the “Unlock Duration” mode.

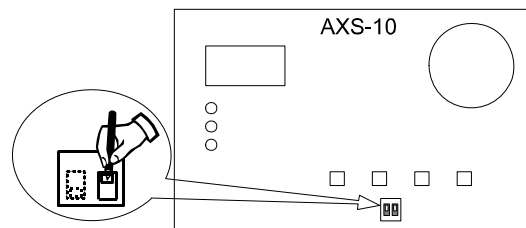
**To turn the AXS-10 into Toggle mode by using master tag:**

- While the system is in idle mode present the master tag for 5 seconds to the RDR-3 reader or present the master magnetic stripe card to the magnetic stripe reader RDC-3 or RDC-3MP.
- The LED will change to green (the lock is unlocked and the AXS-10 turns into Toggle mode).
- Presenting any valid non-master key will turn the relay to lock position.

**To turn the AXS-10 from Toggle mode to regular mode by using the master key:**


While the system is in idle mode, present the master tag card for 5 seconds or present the master magnetic stripe card. The LED will blink red, which means that the AXS-10 is in regular mode.

**5.6 Resetting the Installer's Password**

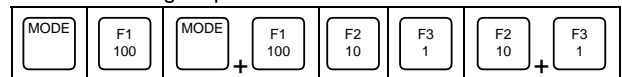


- Gain access to the DIP switches, as shown in figure 3 (steps 1-4) and figure 5 (steps 1-2).
- Move the rightmost switch up (password reset).

A password consists of six button keying sequence. Each press involves either pressing a single button or a combination of two buttons.

Press  display will show ---.

Press the following sequence:



- The display should show IP (Installer Password).
- Enter the new installer password (6 button presses). The following table shows the possible combinations:

MODE	F1 100	MODE	F1 100	MODE	F2 10	MODE	F3 1
F2 10	F3 1	F1 100	F2 10	F1 100	F3 1	F2 10	F3 1

- Move the rightmost switch down (off).
- Replace the PCB and remount top cover.

**5.7 Setting User Password**

To set the user password, see section 2.9 in AXS-10 User Guide

**Ordering Details**

AXS-10 SYSTEMS	
3-6270-0	AXS-10, Single door, 300-key memory controller (readers sold separately)
3-6271-0	AXS-10 KIT, Single door, 300-key memory controller with RDR-3 proximity reader
3-6271-2	AXS-10 Pro, Single door controller + proximity reader, 300 users
COMPATIBLE ACCESS CONTROL READERS	
3-6302-0	RDR-3, Proximity Reader (5 - 10 cm/2 - 4 inch read range)
3-6295-0	RDC-3, Indoor, Plastic, Magnetic Strip Reader
3-6308-0	RDM-3, Proximity reader (4 - 8 cm/1.6 - 3.1 inch read range), Mullion-design
3-6297-1	RDC-3MP, Metal, Outdoor, Anti-vandal Magnetic Stripe Reader

## Standards Compliance

This device complies with the essential requirements and provisions of Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio and telecommunications terminal equipment.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a circuit different from the one which supplies power to the receiver.
- Consult the dealer or an experienced radio/TV technician.

## Product Warranty

Visonic Technologies Ltd. (VT or the Company), and its affiliates, warrants its products (hereinafter referred to as "the Product") to be free of defects in materials and workmanship under normal operating conditions and use for a period of one year from the date of shipment by VT. The Company's obligations shall be limited within the warranty period, at its option, to repair or to replace the defective Product or any defective component or part thereof. To exercise this warranty, the product must be returned to the manufacturer freight prepaid and insured.

This warranty does not apply to repairs or replacement caused by improper installation, Product misuse, failure to follow installation or operating instructions, alteration, abuse, accident, tampering, repair by anyone other than VT, external causes, and failure to perform required preventive maintenance. This warranty also does not apply to any products, accessories, or attachments used in conjunction with the Product, including batteries, which shall be covered solely by their own warranties, if any. VT shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, resulting from a malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Product.

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VT shall have no liability for any death, personal injury, property damage, or other loss whether direct, indirect, incidental, consequential, or otherwise, based on a claim that the Product failed to function. However, if VT is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin

VT's maximum liability shall be limited to the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive liability of VT.

VT shall not, under any circumstances whatsoever, be liable for any inaccuracy, error of judgment, default, or negligence of VT, its employees, officers, agents, or any other party, or of the purchaser or user, arising from any assistance or communication of any kind regarding the configuration, design, installation, or creation of security system involving the Product, that being the responsibility of the purchaser or user.

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VT shall have no liability for any damages, including without limitation, any direct, indirect, incidental, special, or consequential damages, expenses, costs, profits, lost savings or earnings, or other damages arising out of the use of the Product or the removal, installation, reinstallation, repair or replacement of the Product or any related events. In the event that there is any liability against VT, such liability shall be limited to the purchase price of the Product which amount shall be fixed as liquidated damages.

The purchaser and user understand that this Product may be compromised or circumvented by intentional acts; that the Product will not in all cases prevent death, personal injury, property damage, or other loss resulting from burglary, robbery, fire or other causes; and that the Product will not in all cases provide adequate warning or protection. The purchaser and user also understand that a properly installed and maintained alarm may reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such events will not occur or that there will be no death, personal injury, property damage, or other loss as a result of such events.

By purchasing the Product, the purchaser and user shall defend, indemnify and hold VT, its officers, directors, affiliates, subsidiaries, agents, servants, employees, and authorized representatives harmless from and against any and all claims, suits, costs, damages, and judgments incurred, claimed, or sustained whether for death, personal injury, property damage, or otherwise, because of or in any way related to the configuration, design, installation, or creation of a security system involving the Product, and the use, sale, distribution, and installation of the Product, including payment of any and all attorney's fees, costs, and expenses incurred as a result of any such events.

The purchaser or user should follow the Product installation and operation instructions and test the Product and the entire system at least once each week. For various reasons, including but not limited to changes in environmental conditions, electric, electronic, or electromagnetic disruptions, and tampering, the Product may not perform as expected. The purchaser and user are advised to take all necessary precautions for the protection and safety of persons and property.

This statement provides certain legal rights. Other rights may vary by state or country. Under certain circumstances, some states or countries may not allow exclusion or limitation of incidental or consequential damages or implied warranties, so the above exclusions may not apply under those circumstances and in those states or countries.

VT reserves the right to modify this statement at any time, in its sole discretion without notice to any purchaser or user. However, this statement shall not be modified or varied except by VT in writing, and VT does not authorize any single individual to act on its behalf to modify or vary this statement.

Any questions about this statement should be directed to VT. 3/07

**VT World Headquarters** \* Tel Aviv, Israel \* Tel: + 972 3 768-1400 \* support@visonictech.com

**VT Americas** \* Bloomfield, CT (USA) \* Tel: 1-860-243-0833 or 1-860-243-0020 \* vta\_support@visonictech.com

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**Visonic GmbH** \* D-40215 Düsseldorf, Germany \* Tel: + 49-0-211-600-696-0 \* support@visonictech.de

Additional information may be found at [www.VT-Partners.com](http://www.VT-Partners.com)



**Manufactured In Israel**



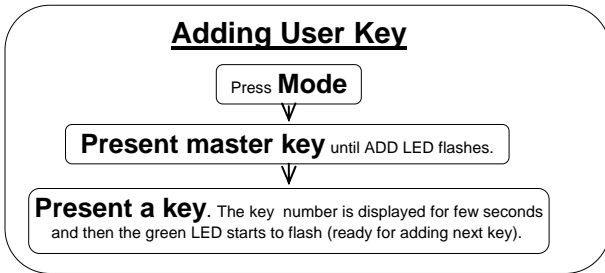
### W.E.E.E. Product Recycling Declaration

For information regarding the recycling of this product you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. This product is not to be thrown away with everyday waste. Directive 2002/96/EC Waste Electrical and Electronic Equipment.

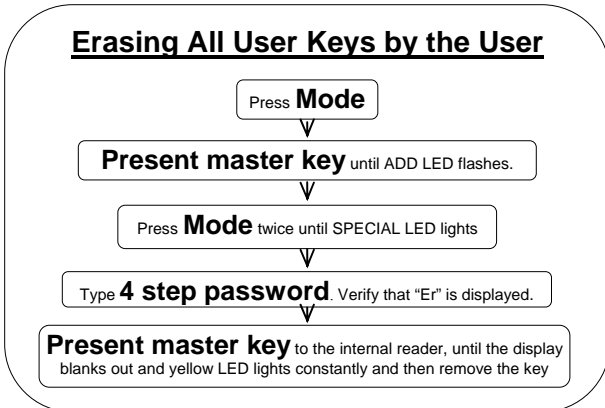
# APPENDIX - A

## AXS-10 Programming Quick Reference Guide

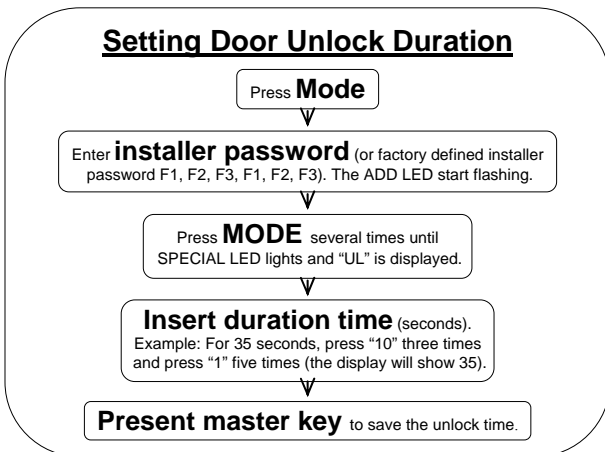
### Adding User Key



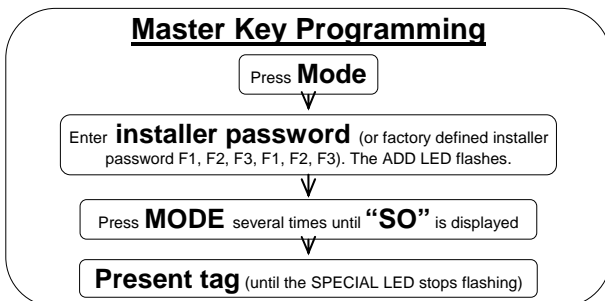
### Erasing All User Keys by the User



### Setting Door Unlock Duration



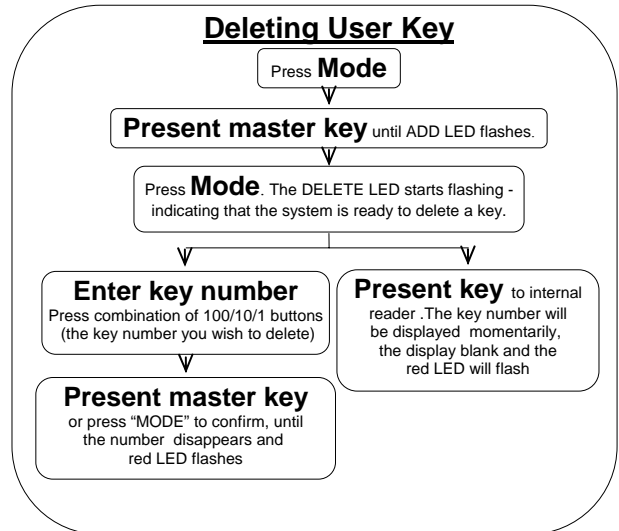
### Master Key Programming



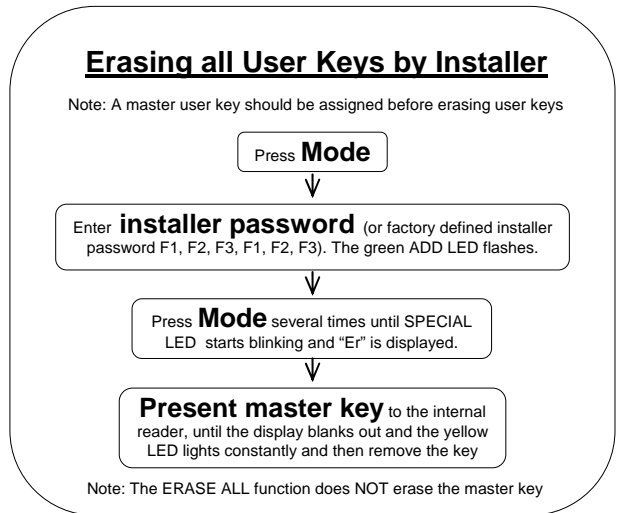
### Setting/replacing Installer Password

(Refer to the installation instructions document, par. 5.5)

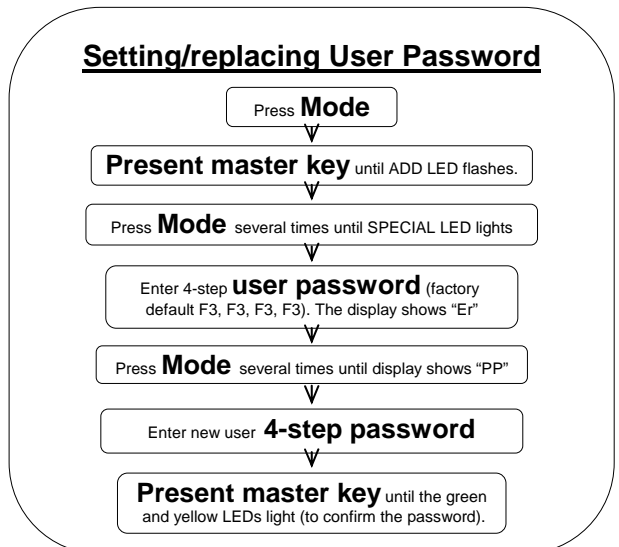
### Deleting User Key



### Erasing all User Keys by Installer



### Setting/replacing User Password



## APPENDIX - B

### AXS-10 Controller Mounting Template

