AXS-10
Single-Door Access Control System

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 reader may be connected instead of a proximity reader.

The separate weatherproof readers provide added security and 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 involves presenting new keys to the controller while the system is in ADD mode.

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: 10^15 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 (5 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

Press the flexible catch 1 Remove cover

Lift the internal module, release it from the right side catches and remove it from the base

Remove cover 2 Release flexible catch 3

Mark and drill 2 holes in mounting surface, fasten the unit to mounting surface with screws.

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

Electro-Magnetic Locks Powered by AXS-10

A. Connecting Electro-magnetic lock that opens the door when power is supplied

B. Connecting Electro-magnetic lock that opens the door when power is disconnected

Electro-Magnetic Locks Powered by an External Power Supply

C. Connecting Electro-magnetic lock that opens the door when power is supplied

D. Connecting Electro-magnetic lock that opens the door when power is disconnected
4.2 RTE and Door Position Wiring

4.3 Proximity Readers Wiring

4.4 Magnetic Stripe Readers Wiring

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

5. Programming

**IMPORTANT!** When using the magnetic reader RDC-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.
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 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 magnetic stripe reader RDC-3 or RDC-3MP.
- Wait 10 seconds until the AXS-10 automatically exits the programming menu.

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.

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.

```
MODE F1 F2 F3
```

Press the following sequence:

```
MODE F1 100 MODE F1 100
```

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

<table>
<thead>
<tr>
<th>Action</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move the rightmost switch down (off).</td>
<td>F3 1</td>
</tr>
<tr>
<td>Replace the PCB and remount top cover.</td>
<td></td>
</tr>
</tbody>
</table>

5.7 Setting User Password

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

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.

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Manufactured In Israel
APPENDIX - A

AXS-10 Programming Quick Reference Guide

**Adding User Key**

- Press `Mode`
- Present master key until ADD LED flashes.
- Present a key. The key number is displayed for few seconds and then the green LED starts to flash (ready for adding next key).

**Erasing All User Keys by the User**

- Press `Mode`
- Present master key until ADD LED flashes.
- Press `Mode` twice until SPECIAL LED lights.
- Type 4 step password. Verify that “Er” is displayed.
- Present master key to the internal reader, until the display blanks out and yellow LED lights constantly and then remove the key.

**Setting Door Unlock Duration**

- Enter installer password (or factory defined installer password F1, F2, F3, F1, F2, F3). The ADD LED start flashing.
- Press `Mode` several times until SPECIAL LED lights and “UL” is displayed.
- Insert duration time (seconds). Example: For 35 seconds, press “10” three times and press “1” five times (the display will show 35).
- Present master key to save the unlock time.

**Deleting User Key**

- Press `Mode`
- Present master key until ADD LED flashes.
- Press `Mode`. The DELETE LED starts flashing indicating that the system is ready to delete a key.
- Enter key number Press combination of 100/10/1 buttons (the key number you wish to delete).
- Present master key to internal reader. The key number will be displayed momentarily, the display blank and the red LED will flash.

**Erasing all User Keys by Installer**

Note: A master user key should be assigned before erasing user keys

- Press `Mode`
- Enter installer password (or factory defined installer password F1, F2, F3, F1, F2, F3). The green ADD LED flashes.
- Press `Mode` several times until SPECIAL LED starts blinking and “Er” is displayed.
- Present master key to the internal reader, until the display blanks out and the yellow LED lights constantly and then remove the key.
- Note: The ERASE ALL function does NOT erase the master key.

**Master Key Programming**

- Enter installer password (or factory defined installer password F1, F2, F3, F1, F2, F3). The ADD LED flashes.
- Press `Mode` several times until “SO” is displayed.
- Present tag (until the SPECIAL LED stops flashing)

**Setting/replacing User Password**

- Press `Mode`
- Enter new user 4-step password
- Enter master key until the green and yellow LEDs light (to confirm the password).

**Setting/replacing Installer Password**

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

AXS-10 Controller Mounting Template

AXS-10 Control Panel
Scale 1:1

Screw holes
Cable hole 10 mm

Screw hole
Cable hole 10 mm