English

AXS-100, AXS-100XT

Indoor Two-Door Proximity Access Control System

VisAccess

Installation Guide

1. INTRODUCTION

The AXS-100/AXS-100XT is an electronic access control system for controlling two doors.. Eight controllers can be networked together to control a total of 16 doors. The controller relay activates a lock or an electromagnetic strike (EMS), when a valid proximity key card or tag is presented to the reader. For detailed system description, refer to the AXS-100/AXS-100XT user's guide.

The use of a proximity (non-contact) key makes the installation of the AXS-100/AXS-100XT system an attractive possibility in harsh environments and in places with poor lighting conditions.

The proximity keys are totally sealed and wear resistant. The lock reads the key ID, whenever the key is held close to the reader.

2. SPECIFICATIONS

AXS-100, AXS-100XT CONROLLER

Power Input: 14 - 16.5 VAC, 50VA
Max Current Consumption: 2.5A
Memory Capacity: 5,000 access card codes
Event Log: 1000 records per controller
Event Printout: RS-232 channel to printer or PC
System Programming: From controller #1. PC may be connected for use as supplemental monitoring only.
Time Schedules: 64 separate schedules. Each key may be assigned to 2 schedules.
Dry Contact Relay: Max 1A continuous
Doors Per Controller: Up to 2
Readers Per Controller: Up to 2 external + 1 internal (for programming)
Controllers Per Network: 8
Inputs (x 2 doors): Request-to-exit, door position, 2 programmable inputs
Outputs: 2 lock relays, NO/NC dry contact, 30VDC 2A max
1 auxiliary relay, NO/NC dry contact, 30V DC 2A max
Output power for 2 locks: 10.3 - 12VDC, 400mA max
2 readers output: 70 mA max
Anti Passback (APB) Modes:
1. Local to each controller
2. Network APB
Indicators (LEDs): 5 (see figure 5)
Operating Temperatures: 0°C to 50°C (32°F to 122°F)
Dimensions (LxWxD): 315x262x74mm (12-3/8x10-5/16x10-15/16 in)
Weight: AXS-100: 3.8 kg (8.4 lb)
AXS-100XT: 3 kg (6.6 lb)
Color: White
Compliance with standards: Complies with Part 15 of the FCC Rules and RSS-210 of Industry and Science Canada.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

READERS

Operating Temperatures: -20°C to 50°C (-4°F to 122°F)
Color: Dark brown
Minimum distance between readers: 60 cm (2 ft)
RDR-4 PROXIMITY READER
Weight: 121.5 g (4.3 oz)
Indicators: Tricolor LED (Green, Red, Amber)
Cable (to AXS-100/AXS-100XT control unit) maximum length:
22 AWG up to 60 m (200 ft)
18 AWG up to 100 m (320 ft)
Dimensions (LxWxD): 116 x 70 x 16.8 mm (4-1/2 x 2-3/4 x 5/8 in)
RDK-4 PROXIMITY READER WITH KEYPAD (optional, not evaluated by UL)
Weight: 170 g (6 oz)
Power input: 12-16V DC from the AXS-100 / AXS-100XT
Buttons: 12 (numeric keypad)
Dimensions (LxWxD): 122x82x31mm (4-13/16 x 3-1/2 x 1-1/4 in)

CARDS (*)

CRD-1SL ISO STANDARD SLOTTED AND NUMBERED PROXIMITY CARD
Card ID: One of a trillion different combinations
Dimensions (LxWxD): 85x54x1mm (3 5/16 x 2 1/8 x 1/32 in)
Weight: 2.5 g (0.1 oz)
Color: White
CRD-25SL: Package of twenty-five CRD-1SL slotted proximity cards with print
CRD-25: Package of twenty-five CRD-1 non-slotted proximity cards (optional).
CRD-25S: Slotted proximity card

TAGS (*)

TAG-1: One proximity tag
* Both cards and tags contain 40-bit code and using Manchester encoding

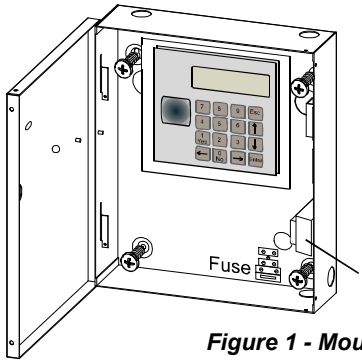
.

3. MOUNTING

3.1 Metal Box Mounting

The system must be installed indoors, within the protected premise, in accordance with the National Electrical Code (NFPA70) and the local authorities having jurisdiction.
For AXS-100XT use only the supplied plug-in transformer:
PRI 120V/60Hz @ 0.59A, SEC 16.5VAC / 50VA
BE116250CAA0040, Basler Electric, Class 2 NOT WET,

Do not connect (the transformer) to a power receptacle that is controlled by a switch.



Use the box as a template to mark on the mounting surface, drill 4 holes on the mounting surface and fasten the box to the mounting surface by using 4 screws.

Transformer (AXS-100 only). In AXS-100XT there is no transformer.

Figure 1 - Mounting

3.2 Metal Box Door Lock Assembly

The door lock assembly of the system metal box is presented in figure 2 (the lock and the brass nut are supplied in the system accessories box).

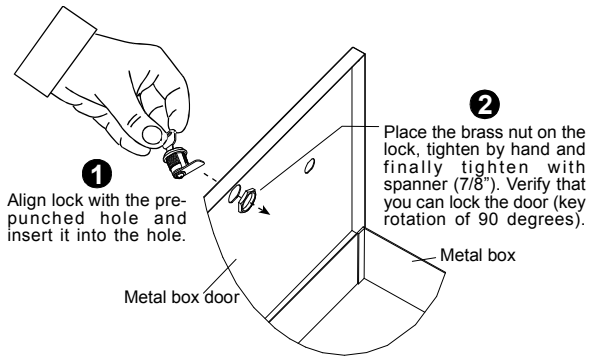


Figure 2 - Metal Cabinet Door Lock Assembly

3.3 Backup Battery Installation (Optional)

Locate the optional backup battery (12V, 7.0Ah, Lead-acid battery) in the lower left side of the system enclosure (see fig. 3).

3.4 Tamper Switch Installation & Wiring

It is necessary to protect the controller against tampering. A UL Listed Tamper switch must be installed (see fig. 4) and wired to AUXIN1 and COM of lock #3 of each controller.

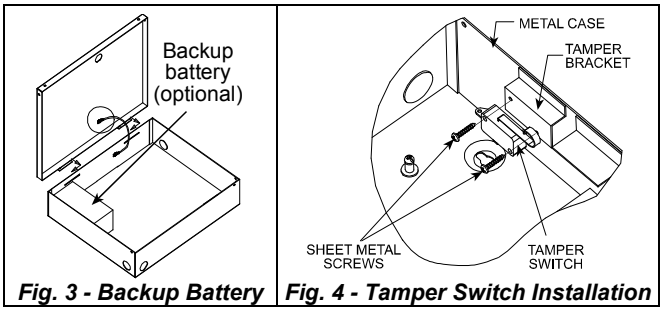


Fig. 3 - Backup Battery *Fig. 4 - Tamper Switch Installation*

4. WIRING

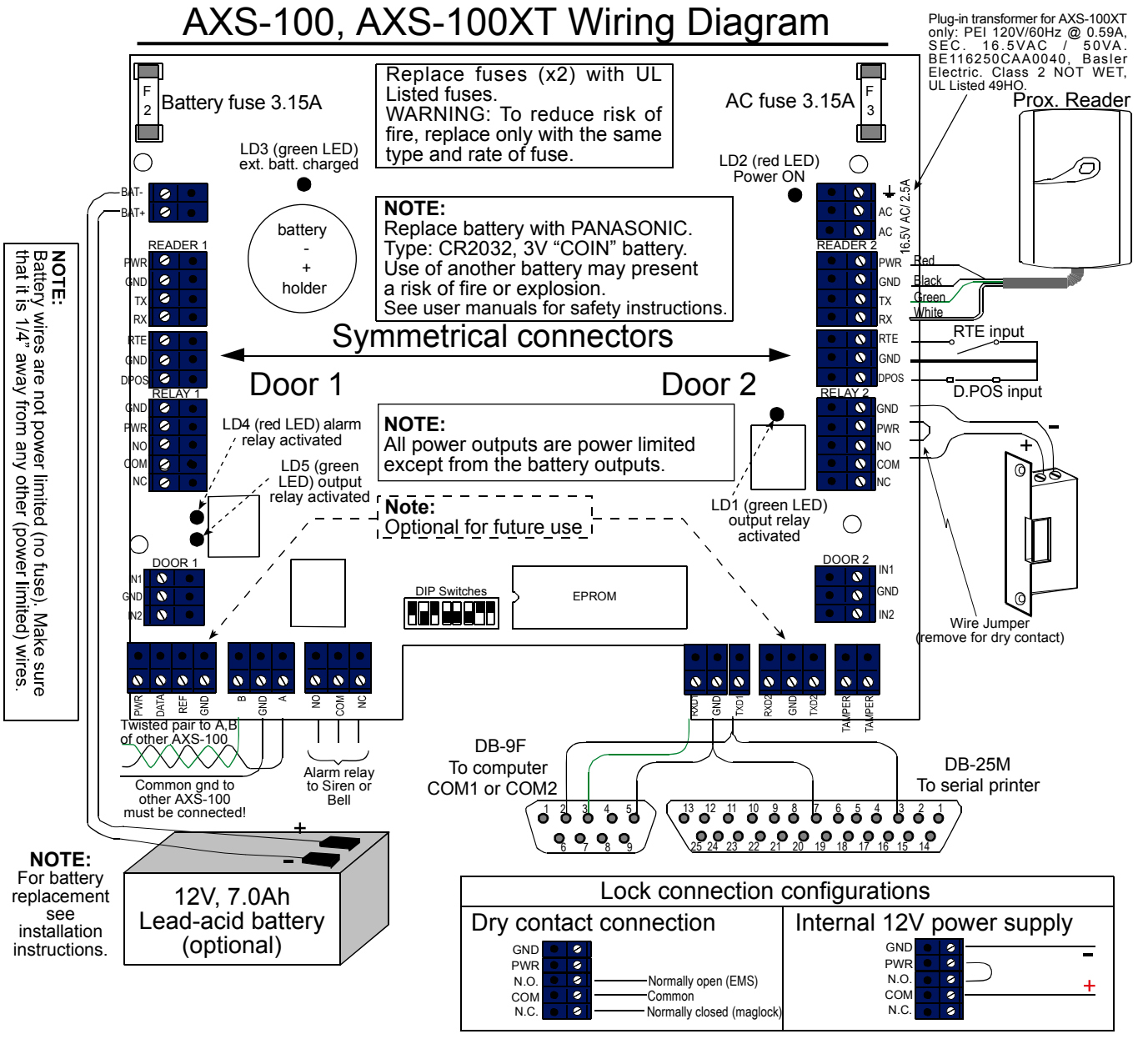


Figure 5 - Wiring

Each two-door controller connects to two proximity readers and two electric locks. It can also be connected to two inputs per door:

- Request-to-Exit (RTE) button or PIR near the door in the secure area will allow a person to open the door from within for leaving.
- Door Position micro switch installed between the door and door frame will provide the controller with door status indications.

A. Proximity Readers

Each reader is connected to the controller via a 4-wire cable. The standard cable is color coded as follows:

- RED Power +
- BLACK Power –
- GREEN TX
- WHITE RX

Use an extension cable with the same colors to avoid connection errors.

Note: Do not install the RDR-4 on a metal surface or a metal door frame, since this decreases the read range significantly. If you have to install the reader on a metal surface, use a spacer 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 optionally available spacer made specifically for this purpose

Note: When installing more than one RDR-4, the distance between them should be at least 60 cm (2 ft.), to ensure proper operation.

B. Inputs

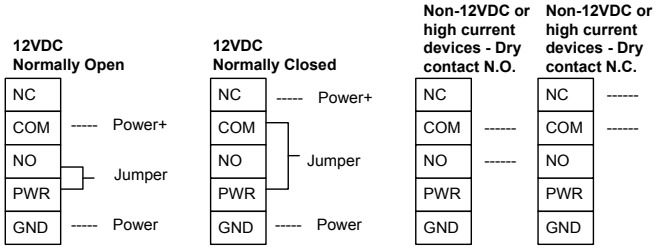
Both inputs (RTE and Door Position) can be connected to either normally open or normally closed switches. The default is a normally open RTE and normally closed Door Position (when door is shut).

C. Locks

The system can operate both electromagnetic strikes - EMS (normally open) and electromagnetic locks - EML (normally closed). Each connector block has a COMMON as well as N.O. and N.C. connectors.

If the controller is configured for one door, connect it to the EMS/EML, at the left side of the controller.

All types of connections are detailed in the next drawing.



The lock sections include also 12V power connectors. These connectors provide power to the lock with a current limit of 400mA for each lock. The controller supplies power from a backup battery if available when the AC power is down. Electromagnetic locks which constantly draw a large current, should use the dry contact ONLY without connecting the internal power supply. The same holds true for any other device, which does NOT operate at 12VDC.

If you notice problems with a controller operating an EMS that uses an internal power supply, connect the diode supplied between + and – of the EMS output (see Panel Wiring Diagram).

D. Controller Network

Up to eight system controllers can be connected together in a network. The controller provides two 3-connector blocks for daisy chaining controllers in a bus configuration.

The controllers' addresses need not be in the physical order of connection.

Connect system units with a single twisted pair cable.

Connect terminal A to A and B to B, GND to GND, this way up to eight controllers.

E. RS-232 Channel

The RS-232 channel is used for connecting the AXS-100 / AXS-100XT to either a computer or a serial printer.

The RXD and TXD notation refers to the PC's RXD and TXD

The use of PC and printer were not evaluated by UL. The PC can be used as supplemental monitoring and/or for programming and downloading only.

F. Power Connection

Connect the AC power cable to the power connector on the top right side of the board.

G. Backup Battery Connection

Connect backup battery to black and red wires on the left side.

5. SPECIAL INSTALLER FUNCTIONS

The AXS-100 / AXS-100XT system has a few special functions, which should not be accessible to the regular user. These functions allow the installer to initialize the system to a known state before starting to set up user data. The functions are:

- Reset passwords
- Clear key database
- Load setup defaults
- Setting address & operation mode

5.1 Reset Passwords

If password #1 is not known, it is impossible to change some system parameters. The following steps reset the passwords:

When the idle screen is displayed, repeatedly press the arrow up (↑) key until a long beep is heard. As a result, Password #1 has been reset to "**2975**". Password #2 is cleared.

5.2 Clear Keys Database

It is recommended to clear the key database before starting to program user keys for the first time.

This operation should be performed from controller #1.

Follow these steps to clear the keys database:

- Enter password #1 and log in into the system.
- In EDIT KEYS menu select DELETE KEY screen.
- Enter 9999 as the key number and press **Enter**.
- The controller will prompt you with a "Y/N". Press "1" followed by another Enter to confirm.
- The keys database will be erased. The operation will be logged and printed as "DB ERASED".

5.3 Setup Defaults

To return the system to its default setup, perform the actions that are shown in figure 6 (text in rectangles represents displayed text).

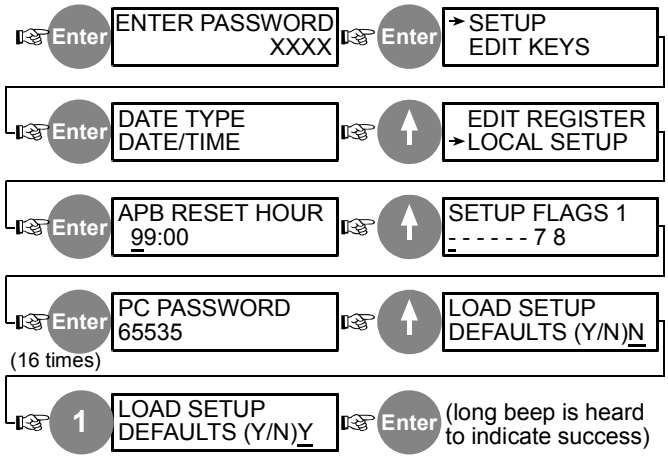


Figure 6 - Returning to Setup Defaults

5.4 Setting Address & Operation Mode

Setting the controller address and operation mode, in AXS-100 / AXS-100XT version 2.06 and above, is performed by using the controller keypad (not by using DIP switches) - see figure 7.

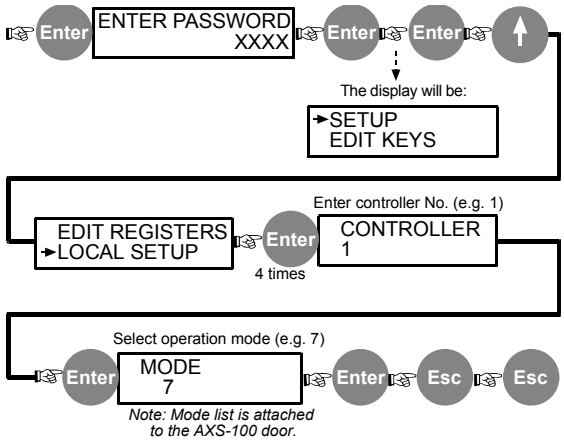


Figure 7 - Controller Address and Operation Mode Setting

6. MAINTENANCE

6.1 Replacement Parts List

1. Lithium battery 3V, cat. No. 0-9913-0.
2. CRD-1, cat. No. 0-9923-2, or 0-9923-8.
3. Proximity reader RDR-4, cat. No. 3-6304-0

6.2 Periodic Check

Once a month, the system must be checked by presenting a tag/card to the reader and verifying that the proper door is opened.

6.3 Lithium Battery Handling/Disposal

Caution: Battery may explode if mistreated, do not recharge, disassemble or dispose in fire.

Replace battery with PANASONIC Coin battery type CR2032, 3V only. Use of another battery may present a risk of fire or explosion. Dispose any used Lithium battery only in an approved disposal container.

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.

***WARNING!** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

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

VT Americas * Bloomfield, CT (USA) * Tel: 1-800-223-0020 * vta_support@visonictech.com

VT United Kingdom * Beckenham Kent BR3 90BF, U.K. * Tel: + 44-870-730-0840 * vtuk_support@ visonictech.com

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

Additional information may be found at: www.visonictech.com