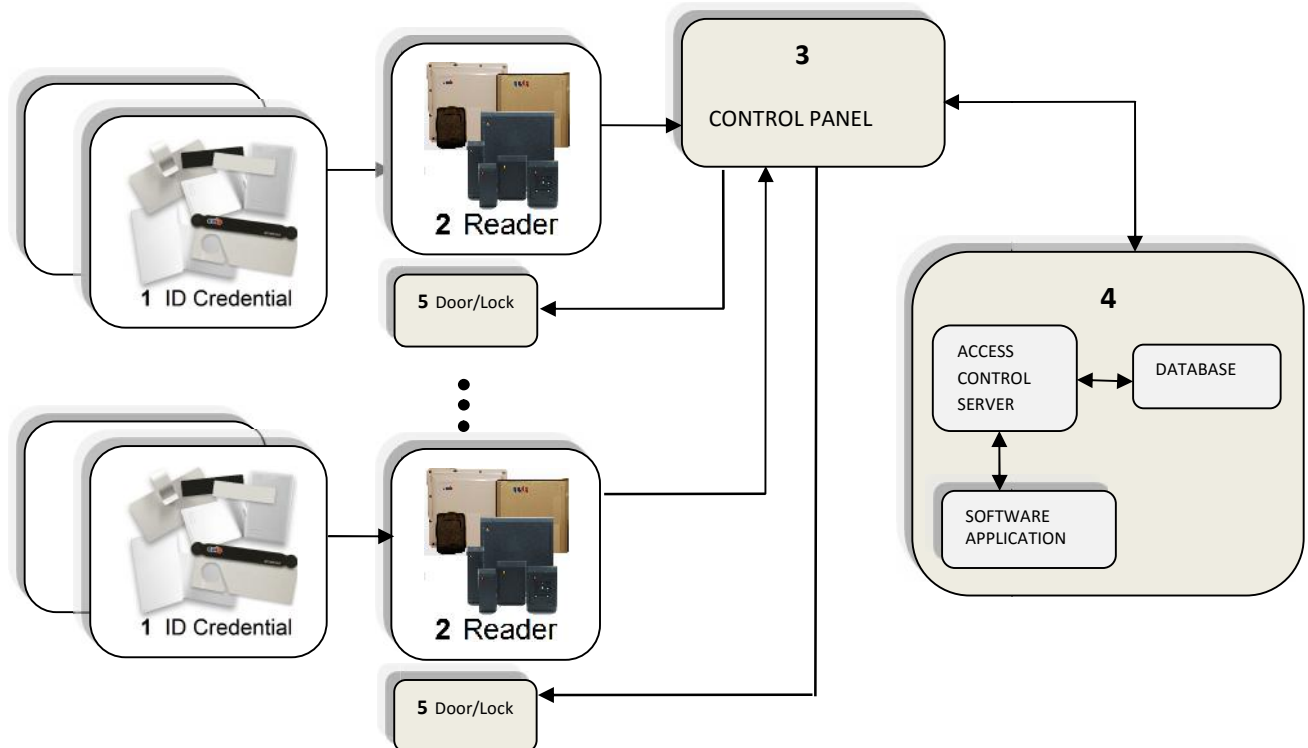


Technical Reference

Access Control Systems – Tutorial

Block Diagram

Let's draw a block diagram for an access control system that assigns an individual identification code for each user.



Block 1 is the source of the stored code (programmed or encoded data). In a keypad-input system, this is the user's memory. In a card-reader-input system, this is the card or tag that the user carries.

Block 2 is the interpreter of the code for input to the intelligent system. This is either the keypad into which the user enters the keystrokes with his code, or the card reader that strips the user's assigned code from the card's data. If the entered data are in valid and consistent form, the keypad or card reader transmits the user's code to the intelligent system.

Block 3 is the microprocessor-based digital controller that receives the user's code from the keypad or reader, compares the user's code with stored codes of authorized users, and operates an output relay for users who are authorized to enter this door or gate on this date and at this time. The relay is Form C (Normally Open – Common – Normally Closed).

Block 4 is the computer into which the system's administrator enters names, other identification, the user's code (personal identification number, or PIN), and the door numbers and days and hours for which this user is authorized for access. The combined information for all authorized users is the "database". The system downloads this information to Block 3.

Block 5 is the lock on the door, or the motor that operates the gate for vehicles. This block is wired directly to the output relay contacts in Block 3.

A typical computer-based system may support --

- thousands of **Block 1** code sources,
- hundreds of **Block 2** readers,
- tens of **Block 3** controllers,
- one networked **Block 4** computers, and
- hundreds of **Block 5** doors or gates.

There are usually one or two readers per door or gate. With two readers, they may be in different locations at the “enter” side of the door, or one outside the door for “enter” and another inside for “exit”. When the reader is only for “enter”, free-exit for people may be requested by a Request To Exit pushbutton, and for vehicles by a buried-loop detector.

AWID’s products are **Block 1** (cards and tags), and **Block 2** (card readers, and combinations of keypad with card reader). To have a working system, you need the other blocks in some form.

The simplest and lowest cost solution is a combination of Block 3 and Block 4 in a "stand-alone controller". This controller has the intelligence of a small computer built into the controller box, so that a separate personal computer is not needed. In fact, some stand-alone controllers incorporate Block 2 as well; then the controller box, mounted near the door or gate, contains the keypad or card reader, the intelligent decision making capability, the stored database about authorized users, and the relay to release the door lock or to operate the gate motor -- all in one small housing.

AWID can help you by naming some sources of Blocks 3 and 4 (and even Block 5) for you to contact. We will be pleased if you specify AWID's encoded cards or tags, and readers, or reader-keypad combinations, when you talk with the system sources.

SPECIAL NOTE: “Stand-alone” readers are *not* available. They are *not secure*. A vandal could force a “stand-alone reader” (containing Blocks 2, 3 and 4 together inside the reader) off its mounting, and open the door or gate simply by short-circuiting the contacts of the Form C relay! For a secure system, blocks 3 and 4 must be on the *secure* side of the door or gate, or inside a secure enclosure -- not accessible to the user.