

DT2000 Description of Operation

The Dialock DT2000 is an electronic door lock which uses RFID technology to read a key presented to it.

The block diagram below shows the main components of the DT2000.

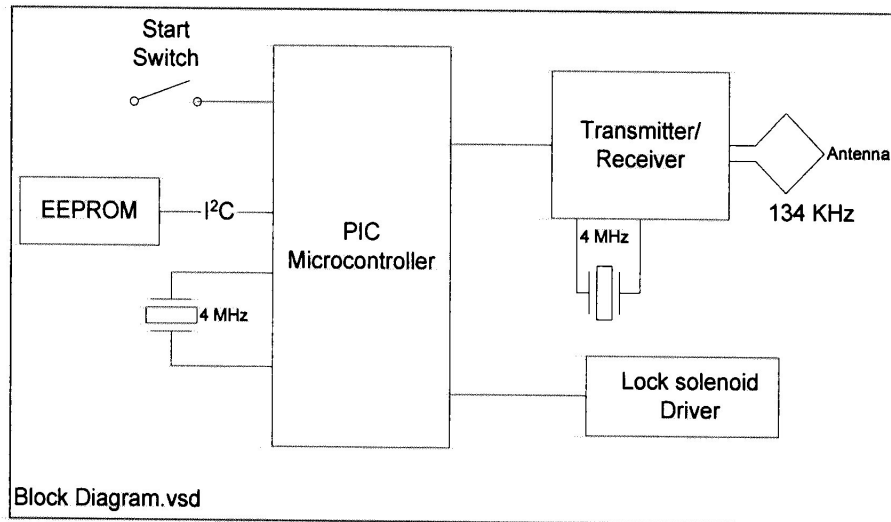


Figure 1: Block diagram of the DT2000 Tiris

The DT2000 is usually dormant, to preserve battery life. When a user wishes to gain access through the door, the Start switch is momentarily depressed. This wakes up the microprocessor and the power supply for the entire unit.

The transmitter stage starts sending bursts of energy at 134 KHz. If a compatible key is presented in close proximity to the antenna on the front of the lock, the RF energy will power an internal power circuit inside the key, and the circuitry inside the key will wake up. Following the next power burst from the lock transmitter, the key will send back its response in a digital format.

The signal will be received in the Transmitter/Receiver stage of the DT2000, be decoded and forwarded to the microcontroller. The microcontroller compares the ID of the key with the authorized list that is stored in the EEPROM. If the ID of the key matches the authorized list, the micro will operate the lock solenoid which allows the user to open the door when the handle of the lock is activated.

In certain system configurations, the DT2000 will not only read the ID of the key, but may also write some information to it.

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