47 CFR Part 2 section 2.1033(a)(4) Product Description

Product Description

The Proximity Card/Reader is used to provide access control. The transmitter creates an electromagnetic field around itself in order to read an ID code from a special card when the card is placed within the field.

Several models are available, Rosslare Models AYH-10, AYJ-10, AYK-10, AYL-10, and AYM-10. The products are sold under the ADEMCO brand name. All Rosslare models are referenced under ADEMCO model numbers (OP40-FWB, OP20-FWB, OP10-FWB, OP30-FWB, OP45-FWB). All model numbers use identical electronics with the only differences being in the size of the loop antennas changing the size of the case.

Circuit Functions

The unit is modulated using amplitude modulation of the carrier signal at frequencies 12-16kHz. The unit is activated when a card is passed within its field.

The receiving section consists of an antenna coil, demodulator, filters, amplifiers, and a microcontroller. The reader needs two steps to recover the data. The first step is to demodulate the backscattering signal, and the second step is detecting the frequency (or period) of the demodulation signal. A half-wave capacitor-filtered rectifier circuit is used for demodulation. A diode detects the peak voltage of the backscattering signal. The signal is passed through a filter and signal shaping circuit before it is fed to the microcontroller.
The microcontroller decodes the data and communicates with the host computer through a weigand serial interface protocol.

The card reader operates in the voltage range of +4.75VDC to +16.0VDC.

Antenna

The transmitters operate at 125kHz using an internal loop antenna. Each model number has a different sized loop antenna.