EZ Technical description

EZ is a non-contacting switch for opening and closing an automatic door.
EZ has a microwave Doppler (MW) detector.
When the detector detects a human, the relay output connected to the output terminal is reversed. Moreover, LED is displayed on red.

MW detector transmits and receives K-band microwave (24.125 GHz).
If there is a moving object in the detection area, it causes changes in received microwave frequency (Doppler effect). MW detector outputs signals when there are such changes.

This product is a fixed office and antennas cannot be exchanged.
The antenna is a permanent attachment type antenna.

Block diagram description

MW SENSOR
MW SENSOR transmits and receives K-band microwave (24.125 GHz).
If there is a moving object in the detection area, it causes changes in received microwave frequency (Doppler effect). MIXER outputs signals when there are such changes.
Fundamental microwave frequency is generated by OSC, and Microwave is emitted from the antenna (Wire zig-zag array antenna) through MIXER. The reflections of Microwave at objects in the detection area are received at the antenna, and mixed at MIXER with fundamental microwave frequency. If there is a human moving in the detection area, the microwave frequency is added with moving speed of the human for Doppler effect. Then MIXER outputs the Doppler signals (1～300HZ) to AMPLIFIER.

・ AMPLIFIER
The Doppler signal outputted from MIXER is amplified.

・ MICROCOMPUTER
MICROCOMPUTER judges whether the detection object is entering into detection area with the signal amplified by AMPLIFIER., and it judges whether the detection object is advancing into detection area. The judged result is outputted to RELAY DRIVE and LED DRIVE.

・RELAY　DRIVE

When a detection signal is inputted, the relay output connected to the output terminal
is reversed.

・　LED　DRIVE

When a detection signal is inputted, red is made to turn on LED for a display. Moreover,
if there is no detection signal, LED for a display will be made to turn on green.

・　DC/DC　CONVERTER

The inputted voltage (AC12-24V, DC12-30V) is changed into voltage required for each
BLOCK.