APPLIED WIRELESS ID

Technical Reference
Proximity (LF) Readers
LED Status Indicators

There is a variety of meanings in the three colors of the LED on AWID's low-frequency (125 kHz) readers. This memo follows a typical reader through its operations and conditions, and translates the messages from the LED.

1. **Power Up** -- When DC power is first applied to the reader, its LED is amber (actually a dimmed combination of red and green, which appears at a distance as amber). In AWID's proximity readers produced in the past several years, the reader proceeds immediately to the "initialization" phase (item 2). In older readers, the user presented a compatible AWID card or tag ("credential") to the reader to initialize the reader (that is, to enable the reader to read a credential).

2. **Initialized** -- The LED is steady-red indicating "Standby" mode.

3. **Successful Read with Internal Control Only** -- If the reader's brown wire is not connected to the controller panel of the access control system, presenting a compatible credential to the reader causes the LED to change to amber for 1/2 second, and then revert to steady-red for "Standby".

4. **Successful Read with External Control, Credential's Code Not Recognized** -- If the reader's brown wire *is* connected to the panel's "LED" terminal or "Green LED" terminal on the reader port for this reader, the LED's sequence is the same as in item 3.

5. **Successful Read with External Control, Credential's Code Recognized and Accepted** ("Access granted") -- The LED changes from red to steady-green for the length of time that the host system is programmed for this LED condition or for the door lock to be actuated. The LED then reverts to steady-red for "Standby".

6. **"Door Unlocked"** -- If the host system has this door unlocked (either by automatic time control, or by emergency command), the reader's LED is steady-green for as long as the door remains unlocked.

7. **Read Complete; Remove Card or Tag** -- Under any of the conditions in items 2 through 5, if the credential is held in the reader's RF field longer than necessary for the reader to recognize presence of a compatible credential, the LED alternates green-red-green-red . . . until that credential is removed from the reader's field.

8. **"Alarm" Condition** -- AWID proximity readers have an "Alarm" mode. If the reader's yellow wire is connected to the reader port's "Beeper" or "Buzzer" terminal, *and* if that terminal is grounded for an extended time (longer than normal brief grounding), the reader enters its "Alarm" mode. The reader is disabled (it does not read credentials), and the LED does not change color. Releasing the yellow wire from ground returns the LED to normal operation.

9. **Non-Compatible Credential** -- Presenting a non-compatible credential to the reader causes no reaction from the reader. It remains in "Standby" mode.

10. **Compatible Credential** -- Starting in 2014 AWID's proximity readers all are able to read almost all HID proximity credentials (those with 8 different bit-counts in the credential's code), and also all AWID proximity credentials. Earlier production versions of AWID's proximity readers may be able to read only AWID's credentials.

Error Conditions -- Under certain conditions, the LED colors may differ from the items above.

(a) If the brown wire is connected to an incorrect terminal on the reader port, even a different LED terminal, the reader's LED colors will be wrong.

(b) Rarely the reader may have its red/green colors reversed. This can occur if wiring changes are made while the reader is powered on. If the "Basic Tests" (see the "Reference" memo) prove this color reversal, AWID can provide an "LED Color Changer" card that corrects the LED to normal state.

(c) Malfunction of the host system can cause abnormal conditions in the reader's LED.

(d) If the brown wire is shorted to ground by error, the LED shows steady-green.

Reader's Beeper -- Whether or not the reader's yellow wire is connected to the panel's "Beeper" terminal, the reader emits a short beep each time that a compatible credential is read.

Tests to Prove Correct LED Operation – AWID's memo "Basic Tests" memo shows means of testing reader performance, using the LED and beeper as indicators. These readers are self-testing – they do not need to be interfaced to a system to test their operation.

Controllable Reader Features – AWID's memo "Controllable Functions" explains the three reader features that are controlled by wiring to the host access control system's panel.

References

● Product sheet and Installation Sheet for the reader model

● Technical Reference, "Proximity Readers – Basic Tests"

● Technical Reference, "Proximity Readers – Controllable Functions"