



RBH
ACCESS

INSTALLATION GUIDE

RBH FK-640 PROXIMITY READER/KEYPAD

This Installation Guide is intended for experienced installing technicians. It is a basic reference to ensure all connections are properly made. See the appropriate Product Manual for detailed information on installing RBH Proximity Reader/Keypad. These documents may be downloaded from the RBH Access Technologies, Inc. website found at www.rbh-access.com; under Downloads.

Cable Requirements

All readers operate at up to 500 feet (152 m) of cable, using six-conductor (single LED) or seven-conductor (dual LED), shielded, stranded cable. Per the Security Industry Association's Wiegand specification, AWG 24 (such as Belden 9537) is the minimum gauge required for data transfer in a 500-foot run length. However, the proper wire gauge to use must be determined by the current draw requirements of the reader, the length of the cable run, and the voltage applied to the reader.

If the reader is to be operated at 5 VDC, 5 VDC must be available at the reader (long cable runs have a voltage drop due to the resistance in the cable). A larger gauge of wire (having less resistance) or a separate power supply near the reader may be required to ensure 5 VDC is available at the reader.

Output Formats

Reader: Industry standard 26-bit Wiegand and other Wiegand formats

Keypad: Field configurable 8-bit Wiegand (default) or 26-bit Wiegand

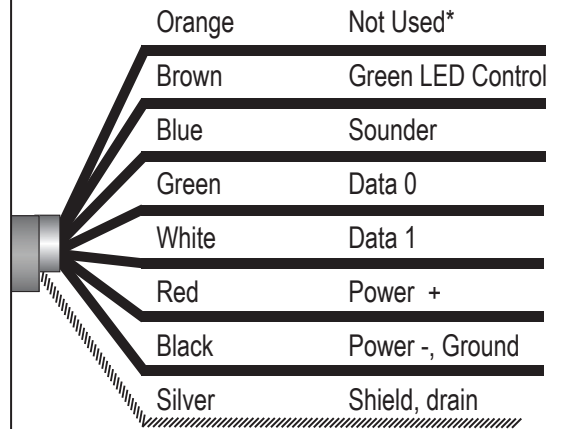
Grounding

Shield (drain) continuity must run from the reader to the access panel. Shield (drain) and reader ground must be tied together at the access panel and connect to an earth ground at one point.

Power

A reader may be powered by the access panel, so the reader is powered on when the access panel is powered on. However the best case is to power the reader by a separate, linear power supply. Voltage: typically 5 to 14 VDC

WIEGAND INTERFACE COLOR CODE



*See "Dual LED Control" document

Keypad Operation

Depress several keys. Each keystroke will generate a beep and an LED flash. **You must press the # key after entering a PIN to send data to the access panel** (some access control systems do not require # key in 8-bit mode).

FK-640 ships with 8-bit mode enabled!

To turn on 26-Bit Wiegand mode of operation:

1. Cycle power to the reader, verify it is on.
2. Present the Wiegand Keypad Data Mode control card to the reader. The reader will beep four times indicating that programming mode was activated.
3. Enter the Facility code to be applied to the keypad. The site code may be set anywhere from 0 and 255 (one long beep is sounded if a facility code greater than 255 is entered). The default is usually set at 0.
4. Press the # key. The reader will beep four times to indicate programming mode has ended.

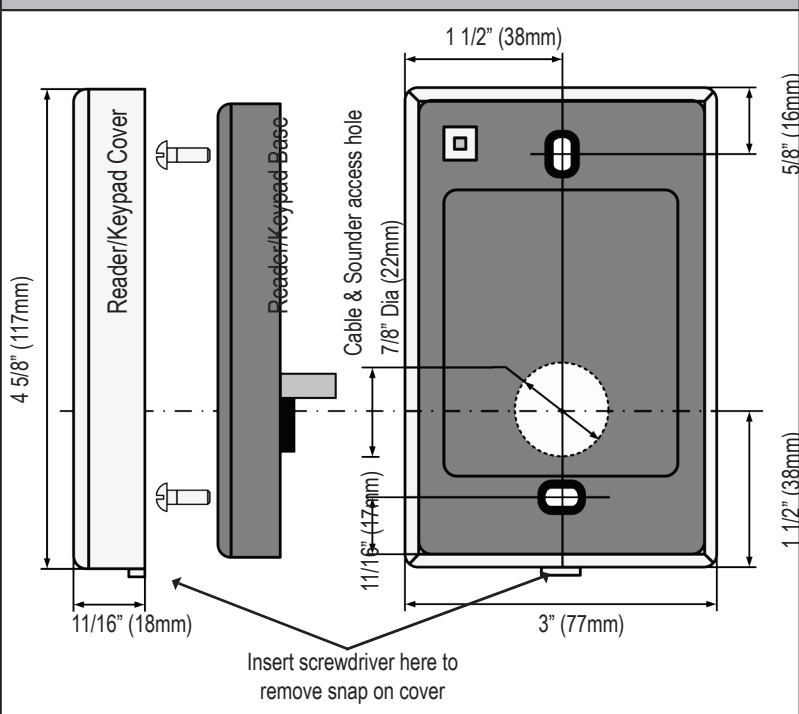
NOTE: Operation in the 26-Bit Wiegand mode:

- The # key must be pressed to transmit the 26-Bit Wiegand code (Card number) to the panel.
- Pressing the * key clears previously entered keys and keypad beeps four times.
- If there are no key presses within 5 seconds, previously entered keys are cleared and keypad beeps four times.

To return FK-640 to the 8-Bit mode of operation:

1. Cycle power to the reader, verify it is on.
2. Present the Wiegand Keypad Data Mode control card to the reader. The reader will beep four times indicating that programming mode was activated.
3. Press the # key. The reader will beep four times to indicate programming mode has ended.

FK-640 SWITCH PLATE MOUNT PROXIMITY READER/KEYPAD



Keypad Error Code (26-bit Mode ONLY):

Error code 65535 is transmitted if:

- If number 65535 or any greater number is entered
- The # key is pressed without any preceding digits
- Any number of 0s are pressed before the # key

Card number 65535 must be reserved for use as an error code. For security reasons RBH recommends programming the code 65535 into the access control system (under the name "KEYPAD ERROR CODE" or something similar), assigning this code to an access group that never allows access anywhere.

If an access panel is programmed to accept 65535 as a valid entry code any error condition at the keypad will allow entry!

Troubleshooting:

Problem: The reader/keypad does not recognize a card/tag (no beep, no LED flash)		
	Possible cause:	Corrective action:
1	One or more of the reader's wiring connections are incorrect	Power down the reader/access panel and verify the wiring connection are correct for the reader/access panel combination.
2	The reader is not receiving proper power	Verify the voltage supplied to the reader is between 5 and 14 VDC
3	The reader is mounted too close to a device that radiates electromagnetic interference	Devices such as computer monitors radiate electromagnetic interference that affects read range. When possible, relocate either the reader or the device to provide greater separation between them
4	You are using an incorrect type of card	Make sure you are using an access card that is compatible with the reader

Problem: The reader/keypad has a short read range		
	Possible cause:	Corrective action:
1	The reader/access panel is not properly grounded	Ensure there is a quality earth ground connection made to the access panel. Refer to the access panel's documentation for information regarding the earth ground connection
2	The reader cable's shield wire has opened somewhere between the reader and the access panel	Verify the shield line from the access panel to the reader is one continuous, connected line. Check the access panel's manual to verify the shield line is correctly connected to the access panel
3	The reader is mounted too close to a device that radiates electromagnetic interference	Devices such as computer monitors radiate electromagnetic interference that affects read range. When possible, relocate either the reader or the device to provide greater separation between them
4	The power supply is generating electromagnetic interference	The power supply on the access panel must be a regulated, linear supply. Do not use switching supplies as they are often sources of electromagnetic interference

Problem: Nothing happens when a key is pressed		
	Possible cause:	Corrective action:
1	The reader is not receiving proper power from the access panel	Verify the voltage supplied to the reader is between 5 and 14 VDC

Problem: Nothing happens after a PIN is pressed		
	Possible cause:	Corrective action:
1	The # key (send) was not pressed after the code was entered	Re-enter the code and then press the # key

NOTE: The user is cautioned that making changes not approved by RBH Access Technologies may void the user's authority to use this equipment. Design and specifications are subject to change without notice. Products covered by patent number 6,611,198, 6,411,199 and D417,443. Other patents pending may apply.

NOTE: Installation and performance of a RBH Proximity Reader with HID compatibility (on operational features) is identical to standard RBH Proximity Readers. Read range of HID credentials may differ from RBH analogues.

All RBH Proximity Readers are compliant with following regulations    Industry Canada Industrie Canada  (FCC ID # RBH-125PROXFR)

FCC Compliance Statement: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CE (0984) Compliance Statement:

Product can be used without license conditions or restrictions in all European Union countries, including Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Portugal, Spain, Sweden, and the United Kingdom, as well as other non-EU countries, including Iceland, Norway, and Switzerland

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