HID CORPORATION

Installation Manual - 5395-901 Rev B
ThinLine II Reader - 5395B

ThinLine II Reader Installation Manual - System Overview

The ThinLine II Reader is a self contained proximity Reader frequently used in Access Control Systems. The antenna and all associated electronics are assembled in a polycarbonate housing. The Reader contains a micro-controller unit that controls an RF field that is generated at 125kHz. The Reader has a sensitive receiver circuit that detects ID card data and passes it along to the micro-controller for decoding. The Reader output is configured in the "Wiegand" style electrical interface. The Reader has a single Bicolor LED that will emit red, green or amber colors. Installation of the ThinLine II Reader consists of mounting the Reader and connecting the cable to the Host via the Pigtail cable.

Operation

Access Cards are to be presented to the front of the Reader. The LED is red when ready to read an ID card. The LED turns green when the card is read and a message is transmitted to the Host computer or interface panel. When the system is ready for another card, the LED returns to red. The is LED is flashed green and the Beeper is activated for 250 milliseconds when they are controlled by the internal micro-controller. The operation of the LED and beeper is often controlled by the Host panel. If Host controlled, the operation will deviate from Host to Host. The ThinLine II may be configured in the dual LED control line that allows individual control of both the red and green colors of the LED.

Parts List	**Quantity**
1) ThinLine II	1 (included)
2) #6-32 x 1" self tapping, Type T or 23	2 (included)
3) This Installation Sheet	1 (included)
4) Wire Splice	9 (installer supplied)
5) Grommet	1 Recommended (installer supplied)
6) DC Power Supply - +4.75 to 16VDC, 50mA	1 (installer supplied)
7) Cable, 5 conductor , 22 AWG	Up to 500ft. (installer supplied) Alpha 1295C

Installation Procedure

1. Determine an appropriate mounting position for the Reader. Drill two 7/64th (.109) Inch holes for mounting the Reader to the surface. Drill a 3/8 to 1.0 Inch hole for the cable. If mounted on metal, place a grommet around the edge of the hole. Route the interface cable from the Reader and/or power supply to the Host. Check all electrical codes for proper cable installation.

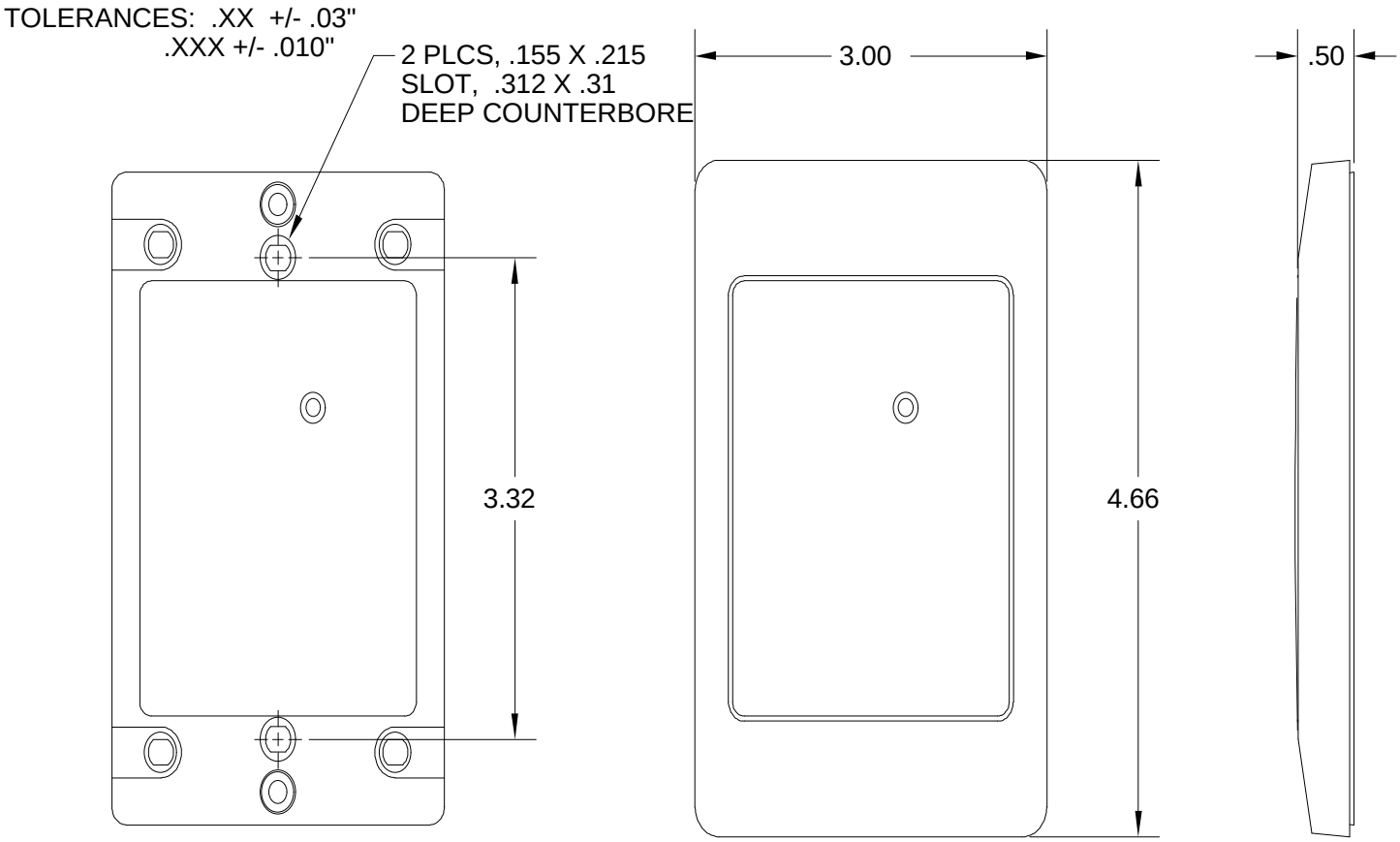
2. The ThinLine II is available with either a 15” Pigtail or a 2 meter Pigtail, as shown in the configurable options/ordering information, below. To make the cable connection, prepare the new cable by cutting the cable jacket back 1-1/4” and strip the wires ¼”. Splice the cable and the pigtail together and seal the splice if the ThinLine II will be an outdoor unit. Trim and cover all conductors that are not used.

3. Connect the Reader and Host together according to the wiring diagram (below) and the Host installation guide. The legend for wiring is color coded (according to the "Wiegand Standard") for the recommended cable, but marking the wires will make future maintenance easier. The color of the legend on the back label is the color of the respective wire.

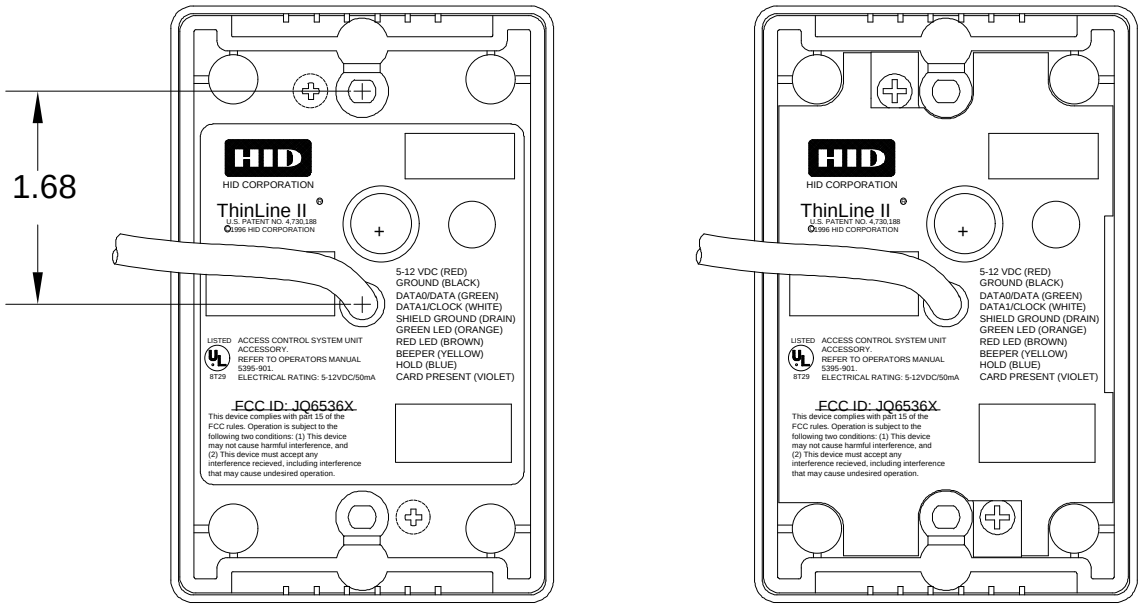
4. After wiring the Reader and power supply, the Reader is ready to be tested. Power up the Reader and the LED and Beeper will flash and beep 3 times in a sequence of two short delays and one long delay. This indicates that the micro-controller unit is working properly. Present an ID card to the Reader and the LED should momentarily turn green, indicating a read of the card. If the Reader LED is controlled by the Host refer to the Host description of the LED operation.

5. Mount the Reader with the provided screws when mounting onto spacers or junction boxes. On other materials use the appropriate fastener.

Dimension Diagrams, front and side views



Back views



Wire Connections

1	2	3	4	5	6	7	8	9	10
+DC	Ground	Data0/ Data	Data1/ Clock	Shield Ground	Green LED	Red LED	Beeper	Hold	Card Present
Red	Black	Green	White	Drain	Orange	Brown	Yellow	Blue	---

+DC, Ground, Shield Ground, Data0 and Data1 are required for Wiegand Operation

+DC, Ground, Shield Ground, Data, Clock, and Card Present are required for Clock and Data Operation. All others (Green LED, Red LED, Beeper and Hold are optional.

Notes: 1) When using a separate power supply for the ThinLineII, the power supply and Host should have a common ground (voltage reference). 2) If the Host is controlling the beeper, Hold, or the LEDs are configured for the dual LED mode, additional conductors will be required. The recommended cables are Alpha 1295C, 1296C, 1297C, 1298C and 1299C that are five, six, seven, eight and nine conductors respectively. Larger wire gauges are acceptable. The wire is to be stranded with an overall shield, either foil or braided. 3) The Cable shield should be connected to the Shield Ground on Reader TB1- 5, and left floating at the Panel or power supply end of the cable. This configuration is the best for shielding the reader cable from external interference and reducing the likelihood of the Reader causing interference.

Product Configuration/Ordering Options

539X B X X XX - XXXX Y

- Customer Custom Artwork or Firmware Number - 1 through 9, A through Z
- Customer Custom Number
- Configuration Options - (00 standard)
- Standard Hardware Options - P = Pigtail, T = Terminal strip, *Other
- Color - B = Beige, W = White, K = Black
- Current Revision Letter - changes for upgrades
- Model Number 5395 = ThinLine II Wiegand, 5368 = ThinLine II Clock and Data

- Standard Wiegand Part Number = 5395WN00 is a ThinLine II, White, Potted and 10 conductor, 15" Pigtail.
- Standard Clock and Data Part Number = 5398WN00 is a ThinLine II, White, Potted and 10 conductor, 15" Pigtail.

Product Specifications

Read Distance

- Overall Operating Limits (12VDC - minimum) 4.00 inches (10.2 cm)
- Non-Metallic Mounting (12VDC - typical) 5.0 inches (12.7 cm)
- Mounted on Metal (12VDC - typical) 5.0 inches (12.7 cm)
- Overall Operating Limits (5VDC - minimum) 2.5 inches (6.3 cm)
- Non-Metallic Mounting (5VDC - typical) 3.0 inches (7.6 cm)
- Mounted on Metal (5VDC - typical) 3.0 inches (7.6 cm)

Regulatory Requirements (applied for)

- Underwriters Laboratories listing under UL 294 Access Control Unit Accessory
- UK and Germany National Type Approvals
- CE Mark - See letter of Conformance
- FCC certification

Environmental Characteristics

- Designed for listing under UL 294 “Standard for Access Control System Units”
- Indoor and Outdoor UL Listed
- Operating Temperature Range: -30°C to 65°C (-22°F to 150°F)
- Storage Temperature Range: -40°C to 85°C (-40°F to 185°F)
- Operating Humidity Range: 5% to 95% non-condensing
- Operating Vibration Limit: .04 g^2/Hz 20-2000Hz
- Operating Shock Limit: 30g, 11mS, Half Sine
- Potting Material: UL Recognized Filled Polyurethane
- Enclosure Material: UL Recognized Lexan Polycarbonate
- Potted Weight: 5.6oz (157gms)

Power Requirements

- Power supply: Linear type recommended
- Operating Voltage Range: 4.75VDC -16.0VDC
- Absolute Maximum (DC+ non-operating): 18.0VDC
- Maximum Average Current 5V/12V: 40mA/50mA
- Transient Protection (all terminals): 8,000 volts
- Reverse Voltage Protection: YES
- Input Voltage (maximum data-0/1 lines): 16.0VDC
- Input Voltage (maximum interface lines): 16.0VDC

Operating Parameters

- Excitation Frequency: 125KHz
- Duty Cycle (alternate power level rate): 20% @ 60mS period
- Read and Report Speed (26 bit Wiegand Card): 175mS
- Maximum Cable Distance to Host: 500 feet (152 meters)
- LED Type: Bi-colored Red/Green
- LED Operation (host control of red/green): $<$.5V on LED control line
- Beeper Operation (host control): $<$.5V on beeper line
- LED Control (default): internal/single
- Beeper Control (default): beeper enabled
- Anti-Pass Back Delay (default): 1 second
- Wiegand Data Pulse Widths (default): 40uS
- Wiegand Data Interval (default): 2mS
- Clock Bit time (default): 1.5mS
- Clock/Strobe Pulse width (default): 500uS
- Card Present Valid (default): Data Frame plus 1mS

NOTES: THE ABOVE ARE RECOMMENDED INSTALLATION PROCEDURES. ALL LOCAL, STATE AND NATIONAL ELECTRICAL CODES TAKE PRECEDENCE.