

Specifications

INPUT:

Magnetic Stripe Cards, high or low coercivity, EMPI I, EMPI II or ANSI format, up to 14 characters.

CARD SIZE:

CR-80, 2.125" x 3.375" x .030", Track 1, 2, and 3 (53.97 mm x 85.73 mm x 0.762 mm)

OUTPUT:

Standard Wiegand 5-wire format with optional second LED control line. Optional "Clock-and-Data" format.

DISTANCE:

200 feet (61 m) with #22 AWG wire
500 feet (53 m) with #18 AWG wire

TEMPERATURE RANGE:

-35 to +66°s C (-31 to 150° F).

POWER:

12 VDC, 0.25 W

READ SPEED:

5 to 50 IPS on withdrawal

DIMENSIONS:

Reader; 6.75" H x 5.25" W x 2.75" D.
(17.14 mm x 13.33 mm x 6.98 mm)

LED:

Two Colors - Red and Green; Optional Amber

Regulatory

FCC

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

UL

This Proximity Reader is intended to be powered from a limited power source output of a previously certified power supply. This Reader is intended to be used with UL 294 Listed Control Equipment.

CE Marking

HID Global hereby declares that this proximity reader is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

- 3110-7801 Model 780 Ruggedized P/T Reader w/keypad**
- 3110-7802 Model 780 Ruggedized P/T Reader w/Heater Bar**
- 3110-780X Model 780 Ruggedized P/T Reader w/Custom Firmware**

Installation Guide

P/N 2280-3738, Rev C

July 2, 2007

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Parts List

Card Reader kit consists of:

3110-7801

- 1-Reader assembly
- 1-Installation Kit 2270-0780
 - 6 Wire Cable Connector assembly
 - Four 6-32 x 7/8" machine screws
 - Four #6 standard washers
 - Tamper switch assembly
- 1-Instructions 2280-3738

3110-7802

- 1-Reader assembly
- 1-Installation Kit 2270-0780
 - 6 Wire Cable Connector assembly
 - Four 6-32 x 7/8" machine screws
 - Four #6 standard washers
 - Tamper switch assembly
- 1-Instructions 2280-3738
- 1-Instructions 2270-4189

General

The Model 780 is a Ruggedized pass-through card reader with a keypad. The 12-Volt powered reader is fully weatherproof. The reader accepts both EMPI and ABA format cards and reports both card and keypad data in a variety of output formats. Three LED's prompt the user for appropriate action.

A label located on the internal, rear surface carries part designations. The reader part number used when ordering is 3110-7801 or 3110-7802. Available in black only.

The Model 3110-7801 is designed for both indoor, and outdoor use.

Mounting

The card reader mounts on a single or double-gang electrical 'handy box' with conventional #6-32 machine screws. The vertical spacing of the mounting screws is 3.25" (8.25 cm) and for a double-gang handy box the horizontal spacing is 1.8125" (4.6 cm)

The reader is secured to its mounting plate with 2 tamper-proof screws, the supplied screws are #8-32 x 0.675" oval head screws. The driver is a #8 AVSAFE driver, P/N 1180-0040 and is manufactured by;

AVDEL Corporation
50 Lackawanna Avenue
Parsippany, NJ 07054

(201) 263-8100

AVDEL PN# ASMD-0080-7750

If our choice of tamper screws is inconvenient, they may be replaced by another brand or by #8 round head machine screws.



9292 Jeronimo Road
Irvine, CA 92618
Voice (800)-237-7769
Fax (949)-598-1690
email: tech@HIDcorp.com
internet: www.HIDcorp.com

Track Selection

Readers are shipped reading the track II physical location. If your card is coded on track 1, disassemble the read head assembly and rotate the reading head 180 degrees.

Setup

WARNING

To prevent damage to equipment, make all connections with the power "OFF" and the connector unplugged from the reader.

The Model 780 comes assembled from the factory. Located in the box with the reader you will find the pigtail connector, which is used to connect the reader to the external wiring.

The reader assembly is designed to be mounted vertically with the tamper resistant oval head screws facing the floor. Typically, the recommended reader height from the floor to the bottom of the reader assembly is 55 inches (1.3 m), however, user convenience is the determination factor.

The Lexan card slot which is part of the reader assembly is reversible to allow the card slot angle to match the natural angle of the wrist when holding the card during pass-through reading. As an example, if the reader assembly is mounted on the right side of a door, the card slot angle should point right or away from the door. If mounted on the left side, the slot points left.

To change the card slot angle, remove the four screws holding the back plate to the reader assembly and remove the back plate. Remove the two screws holding the lexan card slot to the reader assembly and carefully remove the slot so as not to damage the connected read head wires. Rotate the card slot and plastic shield 180° and reassemble.

Electrical Connections

Connections from the reader cable to the host cable should be crimped or made with twist-on wire nuts. Unplug the reader connector before making the following splices:

PIN	FUNCTION	WIRE COLOR
1	+12 VDC	RED
2	LED Control Line A	BROWN
3	Data "1" /Data	WHITE
4	Data "0" /Clock	GREEN
5	COMMON	BLACK
6	LED Control Line B	YELLOW

Control and data lines are normally High (+5V) when idle and pulled too common when active (less than 1V).

Two 22 AWG white wires convey the status of a tamper switch that indicates whether the reader is properly mounted or detached. The switch is CLOSED when the reader is mounted and OPEN when it is detached.

Option Switches

To set the reader options, you must know:

- Are the cards coded with EMPI or ABA data?
- Are the cards coded on Track I or Track II?
- Does the host system expect Wiegand 26 bit, Wiegand 34 bit or clock-and-data format?

A miniature Dip switch which can be accessed from the back of the reader selects the following standard options:

Standard Option Switch Settings

A	B	C	Function
off	off	off	ABA card into LinxRead panel
off	on	off	EMPI card to Wiegand 26 bit
off	on	on	EMPI card to Wiegand 34 bit
on	off	off	ABA card to Clock & Data bits
on	on	off	10 or 12 digit ABA Card to Wiegand 26 bit
on	on	on	10 or 12 digit ABA card to Wiegand 34 bit
on	off	on	ABA card to Wiegand bits

These selections cover the most common uses. If they do not serve your application, consult your system supplier for their setup method.

NOTE: If you have custom reader models 3110-7801-S, 3110-7803, or 7801-SD0XX, please refer to the table below:

Custom Option Switch Settings

Model (3110-)	Switch Position				Function
	A	B	C	D	
7801-S	X	X	ON	X	ABA Cardkey Phila. Airport
7803	X	ON	X	X	EMPI 26bit Wiegand
	ON	X	X	X	CSI 19 digit ISO Clock & Data
	ON	ON	X	X	ANSI /10 / 12 to 26 bit-Wiegand
7801-SD016	ON	ON	X	ON	26 bit output Cardlock Format
	ON	ON	ON	ON	34 bit output Cardlock Format

Installation Instructions

CAUTION

Before touching any internal reader parts, touch a grounded surface to discharge static electricity from your body.

- If not mounting to an electrical handy-box, select a suitable flat surface and use the mounting plate both as a template to establish drill hole location and as a guide to remove sufficient material to allow clearance for connection of the pig-tail to the wiring cable, and the tamper switch. The tamper switch can be found in the hardware package. If desired, it can be installed either as shown, or to the back plate with the tamper switch plunger facing the mounting plate. A hole in the back plate is provided for this purpose.
- Pull the required cable between host controller and reader mounting location. Connect the wire cable to the host.
- To install, you must first disassemble the reader assembly from the mounting plate. Use the special oval head screw driver (AVSAFE driver obtained separately) to loosen the (2) tamper resistant oval head screws from the bottom of the reader.

NOTE: It is not necessary to fully remove screws. Just loosen enough to remove the mounting plate. This will simplify re-assembly.

- Attach the provided pigtail connector to the wire cable at the mounting location. Connections can be crimped or made with twist-on wire nuts. Follow the appropriate color code and wire lead function.
- Pass the connector through the cutout in the mounting plate, and mount the plate to the mounting surface using the appropriate mounting holes in the plate. The type of mounting bolts (not provided) will be determined locally by the installer. They must provide a strong secure mounting.
- Make sure the wire nuts, or crimped connectors are located in the wall cavity, and only the pigtail connector passes through the mounting plate.
- Plug the connector into the back of the reader circuit board. The connector is designed to fit only one way. Carefully align the pin terminals of the circuit board with the corresponding holes in the connector and gently push together with a slight rocking motion. If not already accomplished, set the appropriate option switches on the back of the reader circuit board.
- Attaching the reader assembly to the mounting plate is the reverse of disassembly. Carefully align the (4) mounting tabs on the mounting plate with their corresponding slots in the back plate. Make sure the (2) oval head screws until the reader assembly is pulled firmly against the mounting surface. Do not over tighten these screws.

NOTE: This operation also depresses the tamper switch plunger.

- Test the reader as appropriate.

Powering ON & Self Test

Upon first application of power, the reader does a self-test sequence. Observe that the reader's green LED flashes four times.

If the reader does not make the above confirmation or continues with short double flashes, the self-test has failed and the reader must be replaced.

Diagnostic Tests

If the reader completes the self-test by flashing the LED but will not read cards the following steps apply:

- Check that the voltage at the red and black wires is between 8.0 and 13.0 volts DC.
- Verify wiring to the host controller.
- Test reader by exchanging with another unit.
- Do not attempt to adjust the reading head or its mount. It is factory calibrated and not field serviceable.

Internal damage or electronic failure requires replacement of the complete reader.

