Operation Manual

0056A01B-001 / ACCESS45-HIDP-5-232-LB-EQUITRAC

REVISION 1.0, 2006-08-06

The ACCESS45-5-232-HIDP-LB is a RFID Read-/Write-Device (short: reader) which is compatible to all HID Prox cards. It provides a serial interface RS232 to output or exchange data with a host computer (typically an Equitrac Page Counter Unit, a printer or a copy machine) and a 125 kHz inductive interface to provide power to and exchange data with the HID Prox card (or other available form-factors such as tags, key-fobs). The host computer can control a bi-colour LED and a beeper to interface with the user.

Mounting and Connection

The reader generates a magnetic field with the frequency of 125 kHz which is influenced by any electrically conductive material in close proximity to the device. When mounting the unit, a distance to any such material of minimum 10 cm is required to ensure that there will be no significant degradation of the performance in terms of read range and reliability. Mounting the unit directly to metal would result in a severe reduction of read range down to zero functionality. Care should be taken when testing the device after mounting at a problematic environment: Read ranges and performance vary from card to card and very much from card to tag or key-fob.

When mounting multiple readers, the distance between readers should be minimum 1m to avoid degradation of performance due to interference.

Computer screens or other electronic equipment can also generate noise levels in close neighbourhood which may influence the RF-interface of the reader. Please try different mounting locations in case RF performance is reduced after mounting the device at its intended position.

To connect the device to an Equitrac PageCounter, printer or copy machine, please make sure the host system provides an 8-pin Mini-DIN socket intended for connection of the reader. Alternatively, the reader can be connected to any serial RS232-interface by using a converter connector from 8-pin Mini-DIN female to D-Sub 9 female and suitable connection for a power supply. In case the LED and Beeper control lines should be operated, suitable control can be applied according to the below given specifications.

Operation

Whenever the device is connected to a proper power supply, it will switch on the internal antenna and periodically scan for a card. Once a card has been detected, the card number is read, the data converted and sent to the host system through the serial interface. To enable the device to read cards, tags and key-fobs successfully, they should be placed centred above the reader.

Technical Data

DC Electrical Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Units
Vdd	Supply Voltage		4.75	5	5.5	VDC
Idd	Supply current				200	mA
Idd1	Peak Supply current	Inrush			450	mA
Vih	Input high voltage		3.3		Vdd+0.3	V
Vil	Input low voltage		-0.3		0.8	V
Ii	Input leakage current				300	uA

Additional requirements for the supply voltage: Vripple = 50mVpp max.

RF Characteristics

Operating frequency: 125 kHz
Data transmission modulation reader to card: AM
Data transmission modulation card to reader: AM

Pinout 8-Pin Mini-DIN plug and Signal Descriptions

Pin	Name	Type	Description
1	PWR	Power	5V Power Supply
2	TXD	Output	RS232-data from reader
3	RXD	Input	RS232-data to reader
4	RED	Input	LED red (when LED green is low)
5	GRN	Inpur	LED green (when LED red is low)
6	-	-	Not connected
7	/SPKR	Input	Speaker enable (active low)
8	GND	Power	Signal and Power Ground

Serial Interface

The TXD/RXD signals are compatible with RS-232 level signals. The interface operates at 2400 baud, no parity, 8 data bits, 1 stop bit. Upon detection of a valid card swipe, the reader outputs the card number in ASCII format.

Temperature

Operating temperature range: 0…35°C
Storage temperature range: -20…+60°C
Thermal shock: 30°C/min maximum dT/dt

Humidity

Operating: 20% to 80% relative humidity; non condensing
Non-operating: 10% to 90% relative humidity; non condensing

FCC

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