LED5330 Dispenser / acceptor / validator of magnetic cards
Specifications
RS232c Protocol, V0.4

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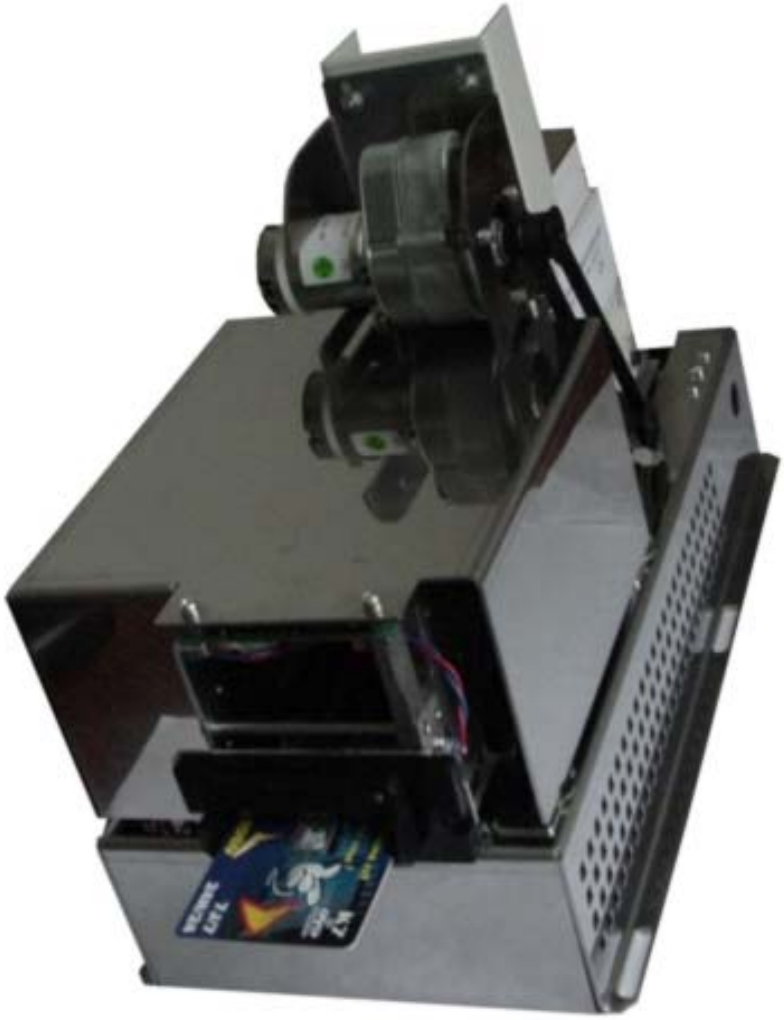

Summary

1. Overview

The LED5330 is a dispenser / acceptor / validator of magnetic cards of the newest generation, with the RS232c interface.
The LED5330 only operates under PC control

2. General specifications

Accepted cards:	Laminated Plastic PVC (non-transparent) with a thickness between 0.85 and 0.5mm
Card Transport:	Motorized at 150 mm/s by OMRON* MKW*
Read/write	3 tracks ISO 7811 Lo-Co or Hi-Co switchable.
Storage Capacity	20 0.76mm cards
Minimum card detection:	approx. 25 cards
Communication:	EIA RS232c 9600 N 8 1
Range:	15 meters
Power Supply:	110v 240v AC 50 60Hz
Consumption:	30VA
Operating Conditions:	indoor use only Temperature range: 0 – 40°C Humidity range: 30 – 80%
Dimensions:	180(L) 280(H) 350(P) (mm)
Weight:	approx 4kg

3. Functions

Front:
Slot for card entry/exit (bezel), with green LED controlled by the computer software

Left side:
Sub-D 9 female RS232c connector
Phoenix 110V to 240v power connector

Back:
Card access. The counterweight should always be on the top of the pile

NB: Plan for space allowing the passage of captured cards below the of the dispenser.

4. Physical specifications of transmission and pin out connectors

Transmission mode:asynchronous, EIA RS232c
Format: 96,N,8,1

Characters service:
Stx command : '**!**' 21hex
Stx command : '**(**' 28hex
Etx: '**cr**' 0dhex

Connexion

LED5330 9 pins Sub-D fem. PC pins Sub-D m.

Pin 2: receive data ← 3
Pin 3: transmit data → 2
Pin 5: Signal Gnd _____ 5
4---
|
6 ---
7---
|
8---

A power cable and serial cable are provided with each LED5330

5. Command definitions and status word

Command	definition
! @ cr 21h 40h 0dh	process of a complete autotest and sends status word
! S cr 21h 53h 0dh	status word request
! H cr 21h 48h 0dh	Hi-Co mode
! B cr 21h 42h 0dh	Lo-Co mode
! Q [x] cr 21h 51h 31h 0dh	Set up of emulation track 3 [x]= '1' Vingcard emulation (ask the special specifications for this mode) [x]= '2' Tesa emulation (ask the special specifications for this mode) [x]= '3' ISO3 Thrift emulation [x]= '4' binary emulation (ask special specifications for this mode)
! E [x] [data] cr 21h 45h 0dh	dispenses a card and writes the data [data] on specified track [x] [x]= '1' track 1 [x]= '2' track 2 [x]= '3' track 3 [data] see ISO 781x compliances
! X A cr 21h 58h 41h 0dh	presents the card on the bezel
! X T cr 21h 58h 54h 0dh	Full eject the card through the bezel
! X R cr 21h 58h 52h 0dh	internal capture of card
! L [x] cr 21h 4Ch 31h 0dh	accepts the card presented on the bezel, read the specified track [x] and transmits data
! Z cr 21h 5Ah 0dh	green led on
! Y cr 21h 59h 0dh	green led off
! V cr 21h 56h 0dh	asks for firmware version
! N cr 21h 4Eh 0dh	clean magnetic head and rollers procedure
C 43h	clear any read or write pending command

After executing a command, the DE 5240 sends the status word **! [s] cr**
Except Z and Y commands.

6. Status and Firmware Version

(s) status word (1 byte)

Bit 0: = 1, if writing has been successful.
Bit 1: = 1, if reading has been successful
Bit 2: = 1, if a card is detected on the bezel
Bit 3: = 1, if a card in the R/W mechanism
Bit 4: = 1, if the card level inside the stacker is < 30
Bit 5: = 1, if no more card inside the stacker
Bit 6: = 1, indicates a mechanical problem, or jam.

The firmware version allows the software application to know the no. of the firmware version of the dispenser.

7. Transmission protocol

Principe
The host sends commands, then the LED executes and sends automatically the status word (+ data with read command)
The Host cannot send a new command before receive the status word, which is the acknoledge of the previous commande.
In this case, the next command is lost.

Init command

LED5330 sends a status word completion of the autotest

Host LED5330

! @ cr →

After complete operation, LED5330 sends:

← **! [s] cr**

The bit # 6 is set to 1 if mechanical status is ok

Dispenses a card and writes data

LED5330 dispenses a card introduce it in R/W mechanism, writes the data on specified track, and then executes a read after write to verify if writing has been successful
.

Host LED5330

! E 3 12345678901234567890 cr(track 3) →

After complete operation, LED5330 sends:

← **! [s] cr**

The bit # 0 is set to 1 if writing operation is a success.

Read and sends data

LED5330 read a card. The card can be introduce on bezel, or can already be inside the R/W mechanism.

Host LED5330

! L 3 cr (in the example: track 3) →

After complete operation, LED5330 sends:

← **! [s] [data reading] cr**

if the read operation has been successful, the bit #1 of status word is set to 1
If an error occurs, the bit # 1 of status word is set to 0, and the data field is not sent.

Emulation set-up

LED5330 have several emulation for the the track 3 (see above)

Host LED5330

! Q [X] cr →

After compete operation, LED5330 sends:

← **! [s] cr**

Emulation of track 3 doesn't affect tracks 1 and 2, wich are ISO standard.

Card ejection command

LED5330 can carry the card present inside the R/W mechanism in several modes:

Host LED5330

- Present the card on the bezel
! X A cr →

- Capture the card inside
Host LED5330

! X R cr →

- Full ejetect the card through the bezel:
Host LED5330

! X T cr →
LED5330 return:

← **! [s] cr**

Status request

LED5330 can sends his status word on a host request at any time, exept if LED is executing a operation. Then, the command is lost.

Host		LED5330
! S cr	→	
LED return		
	←	**! [s] cr**

Cleaning command

It is recommended to clean the magnetic drive every 50 000 passes (1 pass is a round trip)
This cleaning process involves rollers, carry belts and magnetic head.
Use solvent preimpgnatedt card, like Cardclene* card.

Host

! N cr

After receiving this command, the user must introduce a Cardclene*, and then the LED will make 16 passes and return the card. After cleaning, wait 1 minute to continue operation.

The LED return	←	**! [s] cr**

Green led ON/OFF

LED5330 can turn on and turn off a green led present on the bezel.
This led indicates to the user when he must take out or introduce the card.

Host

Green led on:	**! Z cr**	→
Green led off:	**! Y cr**	→

There no retun status word for these commands.

Firmware version

LED can send its firmware version

Host		LED5330
! V cr	→	
LED5330 return	←	**! text ASCII cr**

8. Dimensions