**Summary**

1. Overview	page 1
2. General Specifications	page 2
3. Functions	page 2
4. Physical Specifications	page 3
5. Definition of orders in function mode	page 4
6. Status and version firmware	page 4
7. Transmission Protocol	page 5,6
8. Dimensions	page 7

1. Overview

The MR CR-DPL is a dispenser / acceptor / validator of RFID cards of the newest generation, with the RS232c interface.

The MR CR-DPL only operates under PC control

The MR CR-DPL does not contain its own RFID coupler. A polycarbonate support allows the integrator to install his own.

2. General specifications

Accepted cards:	Laminated Plastic PVC (non-transparent) with a thickness between 1 and 0.4mm
Card Transport:	Motorized at 150 mm/s
Storage Capacity	210 0.76mm cards
Minimum card detection:	approx. 25 cards
Communication:	EIA RS232c 9600 N 8 1
Range:	15 meters
Power Supply:	24v DC +/- 10%
Consumption:	250mA 1.2A peak
Operating Conditions:	indoor use only Temperature range: 0 – 40°C Humidity range: 30 – 80%
Dimensions:	110(L) 280(H) 250(P) (mm)
Weight:	approx 1.5kg

3. Functions

Front:

Slot for card entry/exit (bezel), with a shutter and green led controlled by the computer software

Left side:

Sub-D 9 female RS232c connector
24V Molex 392 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 front 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: '!' 21hex

EtX: 'cr' 0dhex

Connection Com.

LED pins Sub-D fem.

Pin 2: receive data ←
Pin 3: transmit data →
Pin 5: Signal Gnd <----- >

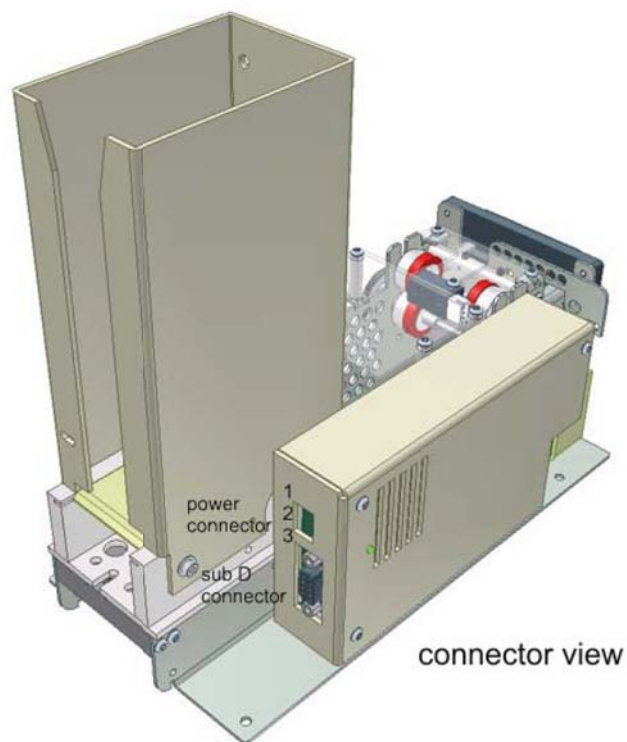
PC pins Sub-D m.

3
2
5
4---
|
6 ---
7 ---
|
8 ---

Power connector Molex 3069 3 pins

- 3 = + 24v

- 1 = Gnd



5. Command definitions and status word

Command	definition
ASCII	hex
! A cr 21h 41h 0Dh	asks for status word
! B cr " 42h "	dispenses a card and presents it under antenna
! C cr " 43h "	presents a card on the bezel
! D cr " 44h "	internal capture of card
! E cr " 45h "	accepts a card presented from exterior and carry it under antenna.
! F cr " 46h "	reserved
! G cr " 47h "	reserved
! H cr " 48h "	green led on
! I cr " 49h "	green led off
! N cr " 4dh "	clean rollers procedure
! V cr " 56h "	asks for firmware version
! S cr " 53h "	status
X 58h	clear any accept a card pending command

After executing a command, the MRCR-DPL always sends the status word

6. Status and Firmware Version

(s) status word (1 byte)

- Bit 0: = 1, indicates that a card is present under the RFID antenna
- Bit 1: = 1, indicates that a card is present on the bezel
- Bit 2: = 1, indicates that there are less than 25 cards left in the hopper
- Bit 3: = 1, indicates an error . *
- Bit 4: = 1, indicates a mechanical problem, or jam.

* a function error is generated if an order cannot be executed due to the present situation.:
Example: dispensing command if a card is already placed under the antenna.
The bit error is automatically erased after being transmitted.

The firmware version allows the software application to know the n°. of the firmware version of the dispenser.

7. Transmission protocol

Principe.

The Host sends commands, then the MRCD-DPL executes and automatically sends the status word.

The Host cannot send a new command before receiving the status word, which is the acknowledgment of the previous command.

If the next command is sent before, it's lost.

Dispense a card

MRCD-DPL dispenses a card and places it under the antenna.

Host		MRCD-DPL
! B cr	→	
	←	ack cr
Dispenses a card from the stack and places it under the antenna RFID	←	! [s] cr

Card on bezel

MRCD-DPL transfers card to bezel.

Host		MRCD-DPL
! C cr	→	
	←	ack cr
Moves the card from the antenna to the exit bezel. The shutter is automatically lifted. It closes as soon as the card is taken or captured.	←	! [s] cr

Capture a card

Internal card capture

Host		MRCD-DPL
! D cr	→	
	←	ack cr
DE 5240 captures ejected card underneath.	←	! [s] cr

Acceptor

Acceptance of card from exterior and carry it under antenna:

Host		MRCD-DPL
! E cr	→	
	←	ack cr
Waits for card and places it under antenna. Automatic shutter function. If the card is not presented within 15 seconds or if the host sends the cancellation code, the operation is cancelled. Cancellation code: X (58 hex) When card is under the antenna or if the card isn't present after 15s, MRCD-DPL return:	←	! [s] cr

Clean rollers

It is recommended to clean the rollers every 100 000 passes (1 pass is a round trip)
Use solvent preimpregnated card, like Cardclene* card.

Host MRCR-DPL

! N cr →
← **ack cr**

After receive 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**

Status word

Ask for status word

Host MRCR-DPL

! A cr →
MRCR-DPL return ← **! [s] cr**

This command can be send at any time, except when DE5240 process an opération.
Then, the command is lost.

Led turn on/off

MRCR-DPL can turn on and turn off a green led present on the bezel.
This led is used like an information for the user indicate when he must take out the card, or introduce it.

Host MRCR-DPL

Green led on: **! H cr** →
Green led off: **! I cr** →
← **ack cr**

No return status word for these commands.

Firmware version

MRCR-DPL can send his firmware version

Host MRCR-DPL

! V cr →
MRCR-DPL return ← **! text ASCII cr**

9 Dimensions

