Summary

1. Overview

The MRCR-II is a motorized RFID cards reader of the newest generation, with the RS232C interface.
The MRCR-II only operates under PC control
The MRCR-II 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)x 280(H)x 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:
Electronic board with:
Sub-D 9 female RS232C connector
Tb1: 24V terminal block power connector
Tb2: command by contact
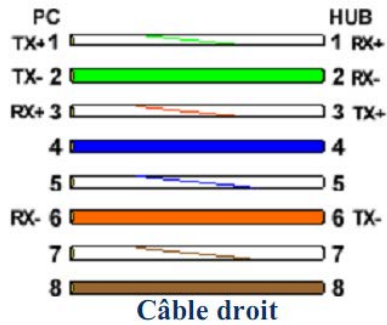Tb3: output contact   (see §8)

4. Physical specifications of transmission and pin out connectors

Transmission mode: asynchronous, EIA RS232c
Format: 9600, N, 8, 1

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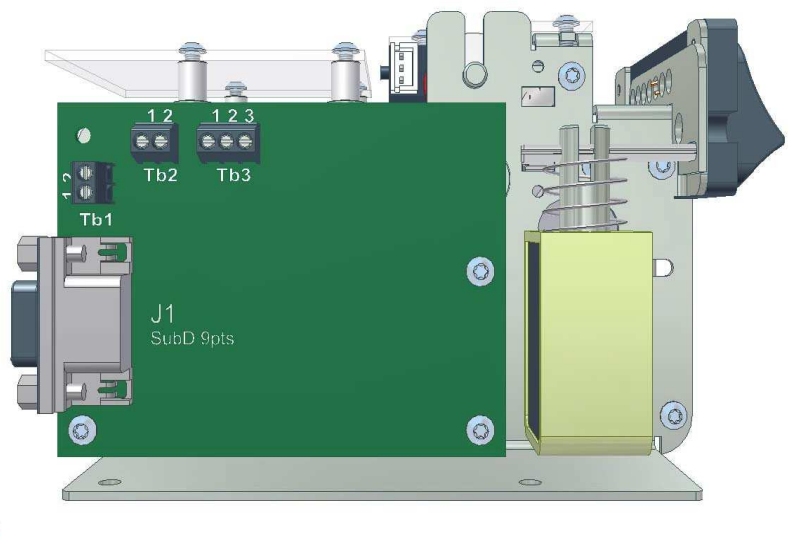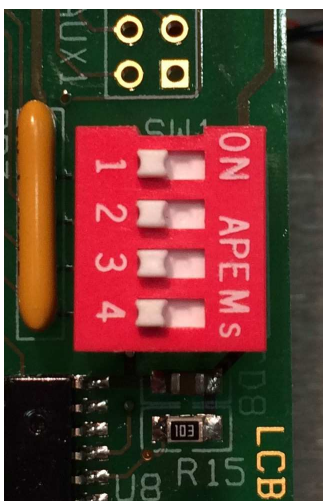Etx: '**cr**' 0dhex

Connection Com.

Câble droit

Power connector:

Terminal block TB 1
- 1 = + 24v
- 2 = Gnd

SW 4: on > RS232 protocol

SW 4: off > by contact

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5. Command definitions and status word

Command		definition
ASCII	**hex**	

Command		definition
! A cr	**21h 41h 0Dh**	asks for status word
! C cr	**" 43h "**	presents a card on the bezel from antenna
! D cr	**" 44h "**	internal capture of card
! E cr	**" 45h "**	accepts a card presented from exterior and carry it under antenna.
! 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 "**	asks for status word
X	**58h**	clear any accept a card pending command

After receiving a command, the MRCR-II sends ack cr
After executing a command the MRCR-II 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: = always 0
Bit 3: = always 0
Bit 4: = 1, indicates a mechanical problem, or jam.

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

MRCR-II

Principe.

The Host sends commands, then the MRCR-II sends ack, executes the operation requested 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.

Card on bezel

MRCR-II transfers card to bezel.	
Host	MRCR-II
! 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	MRCR-II
! D cr	
	ack cr
MRCR-II captures ejected card underneath.	
	! [s] cr

Acceptor

Acceptance of card from exterior and carry it under antenna:	
Host	MRCR-II
! 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 is not present after 15s, MRCR-II return:	
! [s] cr	

Clean rollers

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

Host   MRCR-II

! N cr

                                      ack cr

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

The MRCR-II return   **! [s] cr**

Status word

Ask for status word

Host   MRCR-II

! A cr

MRCR-II return   **! [s] cr**

This command can be send at any time, except when MRCR-II process an operation. Then, the command is lost.

Led turn on/off

MRCR-II 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-II

Green led on: **! H cr**
Green led off: **! I cr**
                                      ack cr
No return status   word for these commands.

Firmware version
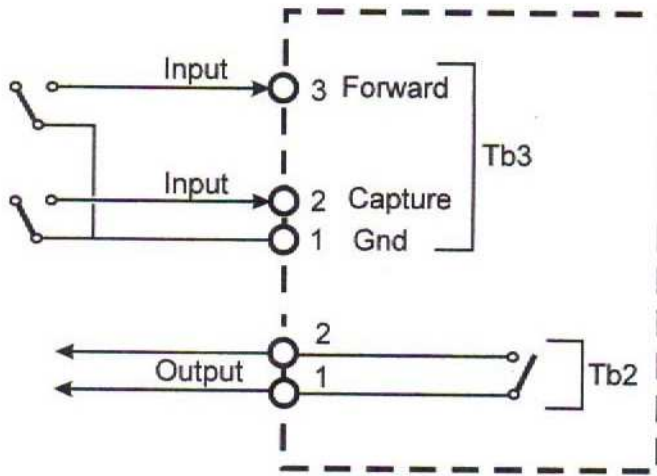
MRCR-II can send his firmware version

Host   MRCR-II

! V cr
MRCR-II   return   **! text ASCII cr**

8 Command by contacts

- "forward" or "capture" contact must be closed during more than 100mS
- output contact closed when the card is inside the reader

9 Dimensions