

The RFID reader **RS-H0-05K M12** is a reader dedicated for contactless read-out of identification data (UID) from transponders ( cards, keyrings, etc.) compatible with ISO/IEC14443-3-A (for example MIFARE CARDS) . The device has a built-in bicolour LED for multipurpose adaptation.

Read out UID data are sent as a string of ASCII chars through RS-232 TTL open collector interface. In case of transponders with UID with a length of 4 bytes there is sent a string of 12 ASCII chars. For UID of 7 or 10 bytes, however, the string size is 18 or 24 bytes respectively.

For example for UID with a length of 4 bytes, the data are sent in a given order:

START	UID[3]		UID[2...1]		UID[0]		control sum CRC		STOP
0x0A	2 chars ASCII MSB	LSB	4 chars ASCII MSB	LSB	2 chars ASCII MSB	LSB	2 chars ASCII MSB	LSB	0x0D

START byte and STOP byte make the correct verification of received row of digits easier. The control sum is calculated as XOR function of data that is read from a transponder.

For example:

For cards with code UID =5425E588h

CRC= (54h) XOR (25h) XOR (E5h) XOR (88H)=1Ch

and on the output the following row will be shown:

0x0A, 0x35, 0x34, 0x32, 0x35, 0x45, 0x35, 0x38, 0x38, 0x31, 0x43, 0x0D

The bicolour LED diode with series resistors 220R has cathodes connected with minus of a power supply wire. The diode activity occurs after connecting LED anode to the plus, for example the power supply.

#### Technical data

1. Power supply voltage	5V-30V DC
2. Average reciver current	15mA (without LED)
3. Maximum reciver current	45mA (without LED)
4. Max Green LED current	10mA
5. Max Red LED current	10mA
6. Frequency of transponders	13.56 kHz
7. Transponder type	ISO/IEC14443-3-A
8. Reading distance	~ 4cm
9. Read-out frequency	2/s
10. RS-232 mode	TTL open collector, active state 0, 4800 bps, 8 bits, without parity bit 1 stop bit (8N1). On a request 9600 bps

#### 11. Colours scheme:

- Yellow power supply +
- Gray power supply –
- White 1-wire
- Green green LED anode
- Brown red LED anode