The RFID reader **RS-H0-05 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		4 chars ASCII		2 chars ASCII		2 chars ASCII		0x0D
	MSB	LSB	MSB	LSB	MSB	LSB	MSB	LSB	

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 is powered by inner stabilizer through a build-in resistors. The diode starts to shine after connecting a proper cathode wire to the ground of a 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. Green LED current   7mA
5. Red LED current   7mA
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 cathode
- Brown   red LED cathode