



1W-H3-05_(K)*

RFID reader | 125 kHz | Unique

User manual



**The letter K refers to a common cathode that can be applied to the reader.
Specifications for this model will be explained separately.*

Before you use...



Do not open and do not try to repair the reader on your own. Doing so excludes any possibility of reclamation, service or replacement.



In case of any doubts or problems, feel free to contact us. We will do our best to assist you while troubleshooting.



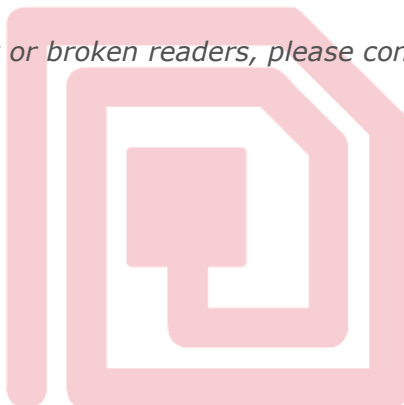
Read the information included in this manual carefully before you mount and use the product



Please note that there are certain factors that may affect the fluency of radio signal. Please pay extra attention to such aspects as metal surfaces or presence of other wireless devices. If you are not sure about the environment where the reader is used, please contact our staff. Your questions are always very welcome.



Before sending us back faulty or broken readers, please contact the staff to report a problem.



General information

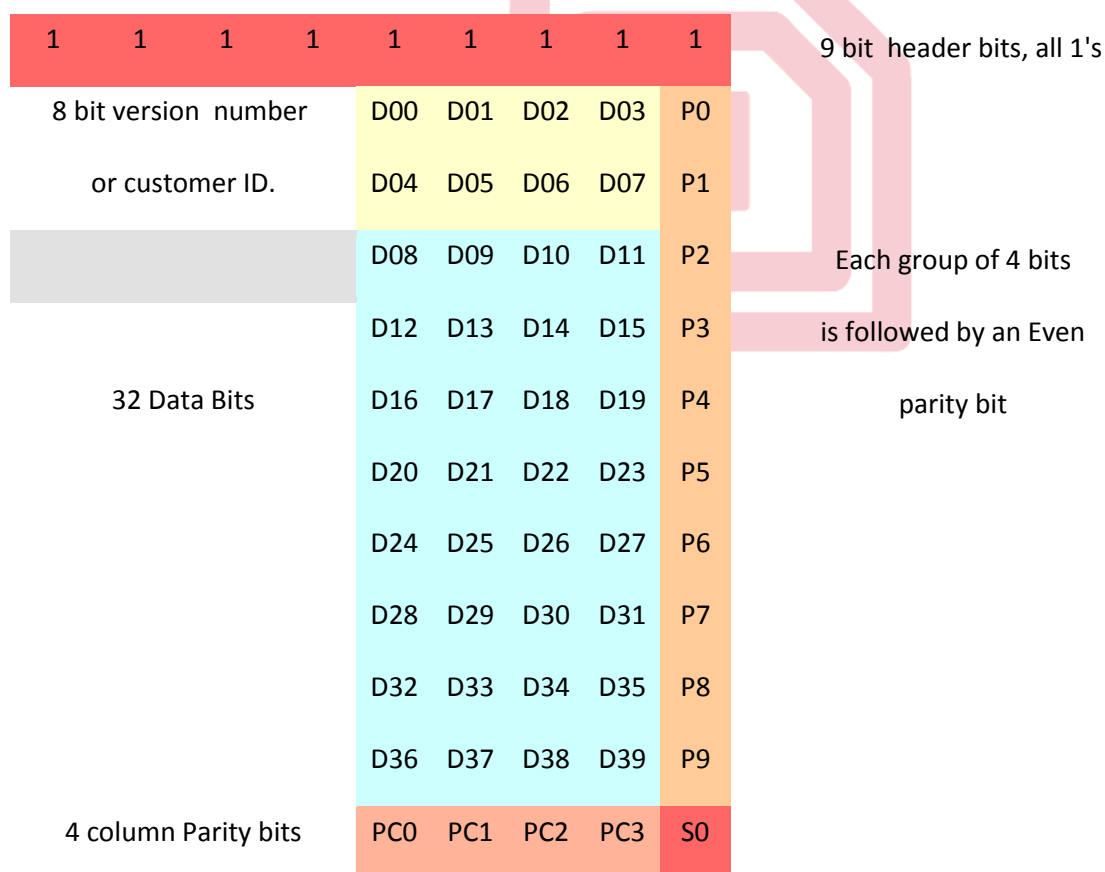
The RFID reader **1W-H3-05(K)** is dedicated for contactless reading of identification data from passive transponders (cards, tags, etc.) which work in UNIQUE system.

After the positive verification of parity bits, collected data (manufacturer's code and serial number) are sent with 1-Wire interface emulating Maxim (Dallas) DS1990A iButton.

Control sum	Constant value	Producer code	Serial no.	Code DS1990A
CRC	0x00	1 byte	4 bytes	0x01
MSB				LSB

Emulation process

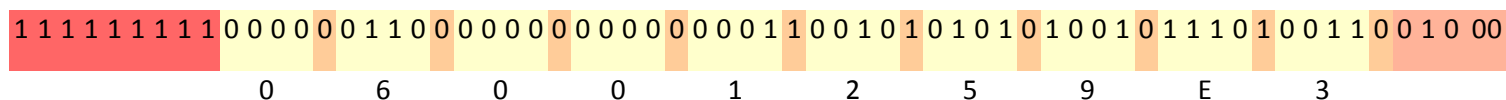
EM4100 compatible RFID transponders carry 64 bits of Read Only memory. This means that information can be read from the Tag but no data can be changed, or new data written to the card once the card has been programmed with the initial data. The format of data stored in a card is shown below.



When the Tag enters the electromagnetic field transmitted by the RFID reader it draws power from the field and will commence transmitting its data as shown above. The first 9 bits are a logic 1.

These bits are used as a marker sequence to indicate the beginning of the string. As Even parity is used throughout the data this 9 bit sequence of 1's will not occur at any other location in the string. This is followed by 10 groups of 4 data and 1 even parity bits. Finally there are 4 bits of column parity (Even) and a stop bit (0).

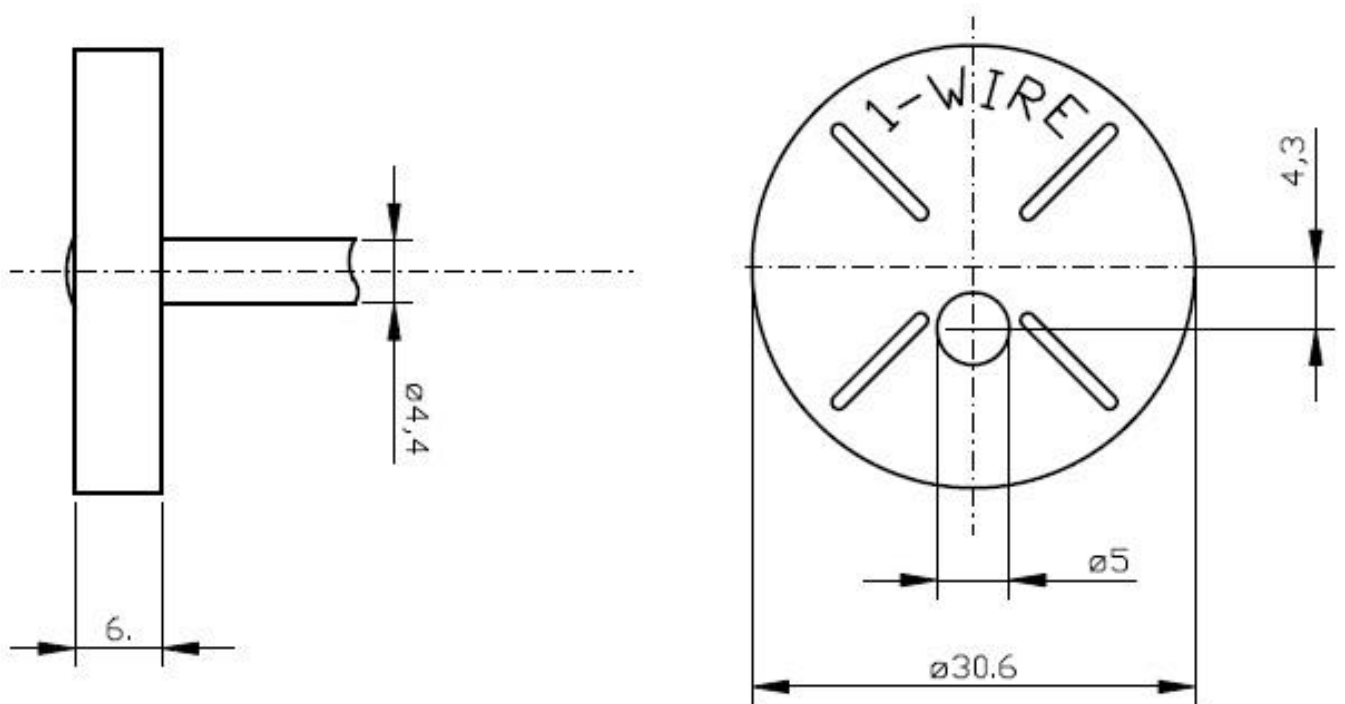
The Tag then continues to repeat this string as long as it has power. Shown here is an example string for a proximity card that has the data \$06 (version number), and \$001259E3 as a data string.



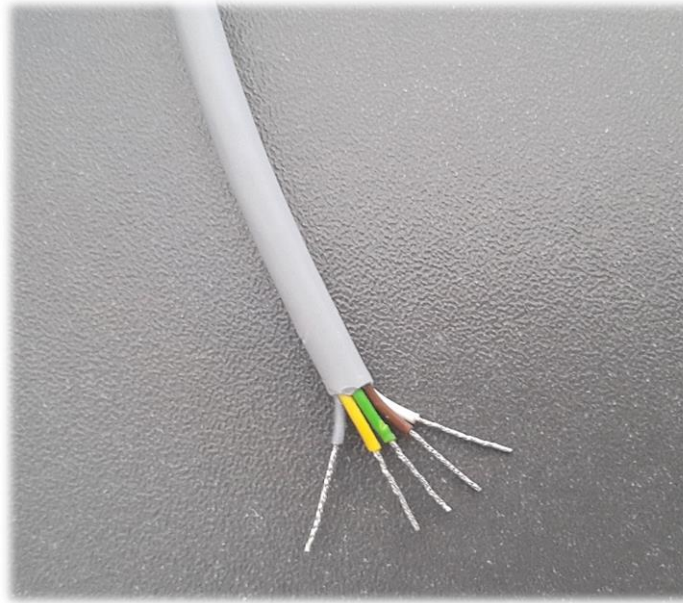
Data send by 1-wire interface of DREXIA RFID reader: Crc 00 06 00 12 59 E3 01



External dimensions



Wire description



- Gray** – power supply (-)
- Yellow** – power supply (+)
- Green** – green led cathode (green led anode for the common cathode version)
- Brown** – red led cathode (red led anode for the common cathode version)
- White** – 1-Wire

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 minus of a power supply.

For common cathode users: The LED diode with series resistor 330R 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. **In case of connecting anode to the supply higher than 5V it is advisable to use an external resistor preventing from exceeding the maximum current suitable for LED.** The minimal value of resistance is

$$R_x = \frac{(U_s - 1.6V)}{I_d - 330\Omega}$$

Where:

R_x – External resistance

U_s – LED control voltage

I_d – Current of LED diode



There is a possibility of assembling a connector with terminals to wires. Please contact the staff for more details if you need such a service.

For 1W-H3-05

Power supply	6,5-30 V DC
Receiver current	12 mA
Green LED current	10 mA
Red LED current	10 mA
Frequency	125 kHz
Data coding	Manchester, 64 cycles per bit
Reading distance	~4cm
Read-out frequency	2/s
1-Wire command support	0x33 (0x0F) - Read ROM 0xF0 - Search ROM
Proposed way of mounting	Glue, tape
Temperature tolerance	-20° C +80 ° C
ROHS	Yes

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