Matrix II
ACS RFID EM-Marine Reader (125 kHz)
User Manual

1. OVERVIEW

Matrix II RFID Reader is used in Access Control Systems (ACS) to read EM-Marine contactless proximity cards and transmit their acquired codes via iButton (Dallas Touch Memory) protocol.

2. MOUNTING AND CONNECTION

The reader should be mounted on a flat surface, in a place allowing unimpeded token access to the reader.
To mount the reader, perform the following operations:
- Mark and drill the mounting holes (Fig. 1);
- Connect wires to the reader socket (Fig. 4);
- Remove a thin tab in the reader case from the side where the reader connecting cable must come out, and feed the cable through the resulting hole (Fig. 2);
- Mount the reader and fix it with screws.
- Close the reader holes with supplied plugs (Fig. 3).

Note 1. If the reader is located far from the controller, UTP cable must be used, such as CAT5e. See the connection scheme on Fig. 5.
Note 2. A coaxial cable can be used for connection. In this case, connect its core to D0 terminal and the shield to GND terminal.
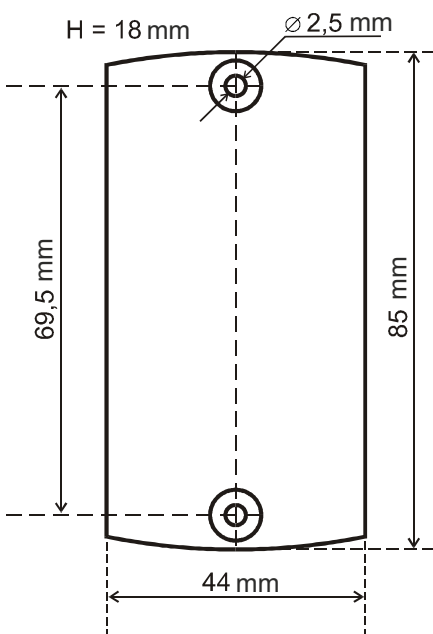Note 3.To ensure stable operation, do not install readers closer than 10 cm one from another.

H = 18 mm   ⌀ 2,5 mm

69,5 mm   85 mm   44 mm

+12V
GROUND
DATA 0
DATA 1
LED-G
LED-R
BEEP

Holes to feed the cable through

Plugs
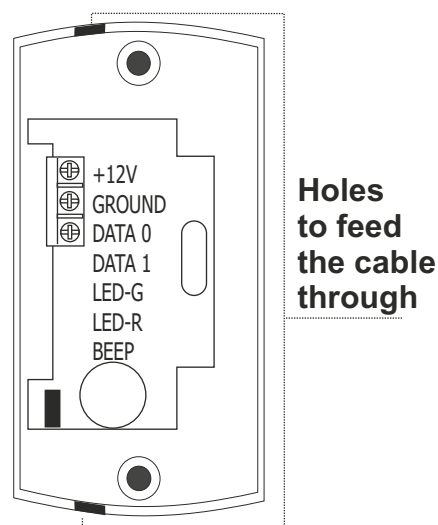
LED

Fig.1. Reader Dimensions.   Fig. 2   Fig. 3
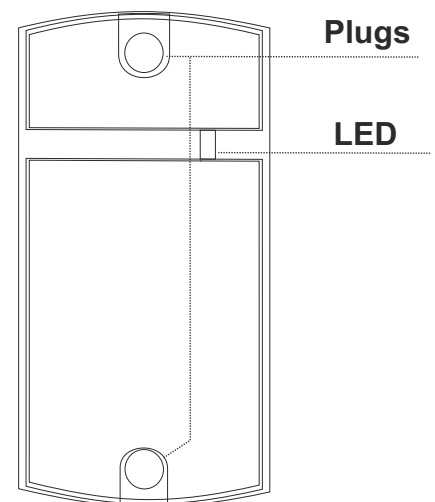
3. OPERATION

The reader provides both visual and audial indication of card reading process.
Card reading is acknowledged by a signal of the built-in buzzer, as well as short LED colour change to green. The LED shines amber while a card is within the reader working zone, and in card standby mode, the LED shines red.

Using Matrix II reader with Z-5R controller.
If the Matrix II reader is connected to a Z-5R controller via iButton (Dallas Touch Memory) protocol, it becomes possible to externally manage the visual and audial indication on the reader, without additional connections:
- If the card is present in the controller database a short beep sounds and LED colour changes to green shortly, during the time while the door is open;
- If the card is absent in the controller database two short beeps sound and the LED displays green-red colour sequence.
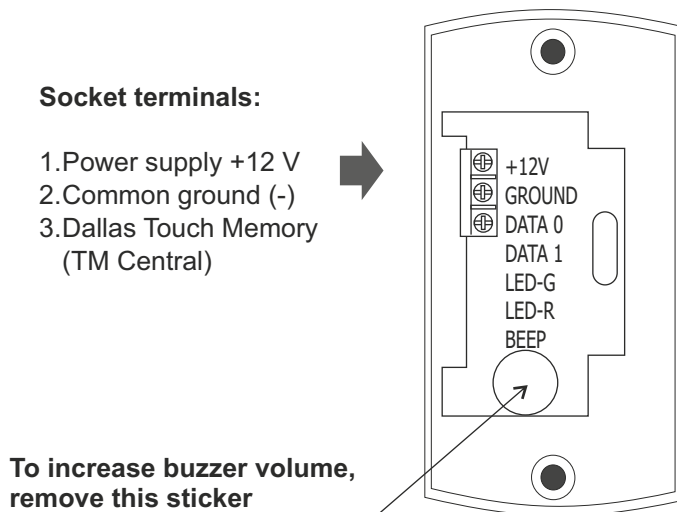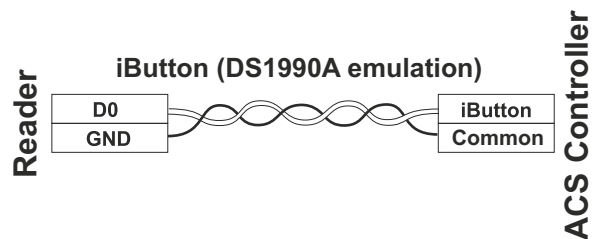
Socket terminals:

1. Power supply +12 V
2. Common ground (-)
3. Dallas Touch Memory
   (TM Central)

+12V
GROUND
DATA 0
DATA 1
LED-G
LED-R
BEEP

To increase buzzer volume, remove this sticker

Fig. 4

Reader

iButton (DS1990A emulation)

D0
GND

iButton
Common

ACS Controller

Fig. 5.
Connecting the reader to ACS controller.

4. SPECIFICATIONS

- Working frequency: ....125 kHz;
- Supported card/token standards: ....EM-Marine;
- Card reading distance: ....2…8 cm;
- Power supply voltage: ....12 V DC;
- Standby mode current: ....35 mA;
- Status indication: ....visual bicoloured LED, audial buzzer;
- Maximum line distance between the reader and the controller: ....15 m;
- Case material: ....ABS plastic;
- Output interface: ....iButton (DallasTouch Memory);
- Dimensions: ....85 x 44 x 18 mm.

5. OPERATING CONDITIONS

Ambient temperature: -30…40°C.
Humidity: ≤ 98% at 25°C.
When operating under non-recommended conditions, device parameters can deviate from specified values.

6. PACKAGE CONTENTS

- Matrix II Reader: 1
- Plugs: 2
- Screws 3*30: 2
- Wall Plugs: 2

7. LIMITED WARRANTY.

This Device is covered by limited warranty for 24 months since thepurchase date.
The warranty becomes void, if:
-   this Manual's guidelines are not followed;
-   the device has suffered physical damage;
-   the device has visible traces of exposure to moist and/or aggressive chemicals;
-   the device circuits have visible traces of tampering by unauthorised parties.
Under this warranty, the Manufacturer shall repair the device or replace any broken parts as required, free of charge, in cases where the fault is caused by a Manufacturer's defect.

8. IRONLOGIC CONTACTS

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The symbol of crossed-throught waste bin on wheels means that the product must be disposed of at f separate collection point. This also applies to the product and all accessories marked with this symbol. Products labeled as such must not be disposed of with normal household waste, but should be taken to a collection point for recycling electrical and electronic equipment. Recycling helps to reduce the consumption of raw materials, thus protecting the environment.

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