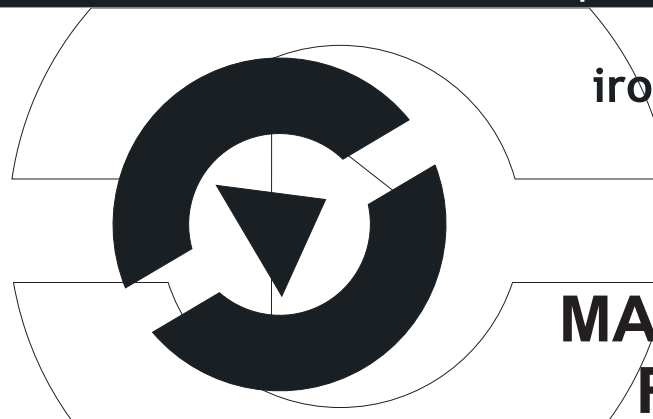iron **iL** Logic

**LLC Pulsar-Telecom**

195009, Russia, Saint-Petersburg, Bobruiskaya str.,7
Tel.: (812) 703-77-65, 542-04-80
Fax: (812) 542-11-85

105122, Russia, Moscow, Schelkovskoye Highway, 2,
office 225
Tel./fax: (495) 580-37-61, 78-77-066

**www.ironlogic.ru**

**Certificate GOST R No POCC RU.ME83.B00374**

# MATRIX-III
# RD-ALL

iron **iL** Logic

**Reader**

Table 2. *Connection. Output RS 232 (Cable No 2 ), Output RS 485 (Cable No 3 ).*

| Wire color | Purpose | |
|---|---|---|
| **RS232 (Cable No 2)** | | |
| blue | RxD (contact 2 connectors DB9 COM) | |
| yellow | TxD (contact 3 connectors DB9 COM) | |
| black | Sig Earth (contact 5 connectors DB9 COM) | |
| **RS485 (Cable No 3)** <br> (to connect to PC we recommend to use cobverter USB-485 Z-397) | | |
| blackA | A input  to "A" of converter | |
| blue | B input to "B" of converter | |
| red | A output | To connect external load 120 Ohm |
| yellow | B output | |

## 2. CHARACTERISTICS

Identification cards: cards of EM-Marine, HID (Prox Card II), MIFARE standard
Autodetection of card standard without additional settings.
Reading distance for cards/keyfobs - 2-10cm:
Output protocol: -Dallas Touch Memory -Wiegand-26  RS232, RS485
Remoteness of reader from controller in DS1990A mode, not exceeding 15m
Remoteness of reader from computer in Wiegand mode, not exceeding 100m
Remoteness of reader from computer in  standard RS 232, not exceeding 5m
Remoteness of reader from computer in  standard RS 485, not exceeding, 1200m (we recommend to use converter USB-485 Z-397)
Confirmation of card reading: buzzer signal, two-color light-emitting diode
Power voltage: 9 - 16 V DC
Current consumption in standby card mode, not exceeding: 80 mA
Operation temperature (indoor): from -40°C to + 50°C
Relative humidity, not exceding: 95 %
Size: 115x75x22 mm.
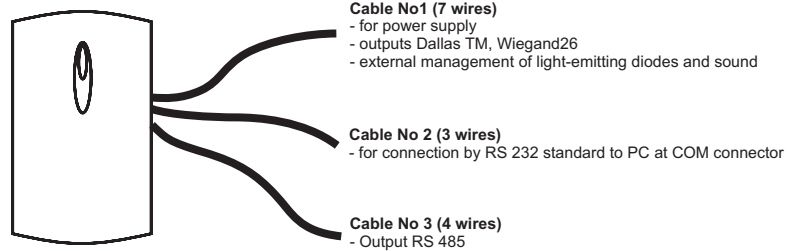Execution: attachable body frame with cover. The scheme is filled with compound.

**Cable No1 (7 wires)**
- for power supply
- outputs Dallas TM, Wiegand26
- external management of light-emitting diodes and sound

**Cable No 2 (3 wires)**
- for connection by RS 232 standard to PC at COM connector

**Cable No 3 (4 wires)**
- Output RS 485

*Fig.4. Connection diagram*

## 3. READER OPERATION

Reader operation without external indication management (internal indication):
1.When there is no card in the reader field red light-emitting diode is always on.
2. When you swipe the card red light-emitting diode is off and green diode flashes and short sound signal is given.
3.There is no light indication when the card is in the field.
External management with red, green light diode and sound is performed by short circuit to common contact (active "O").
External indication may be used together with internal indication, i.e. external management excludes only the channel managed from external devices.
Read card number is transferred to exit -Dallas Touch Memory -Wiegand-26 RS232,
RS485. When the reader is connected to PC through RS232 or RS 485 the name of card standard and number in Wiegand26 format is shown in the window of Hyper Terminal program. For serial ports you should setup the following communication parameters: speed  9600, bit -8, parity-no, stop bits-1, flow control  no.

To display the product data program (serial number) press button at the PC keyboard "I". Each reader has its own serial number used when FirmWare product is updated by user in RS232 standard.

```
The MATRIX-III RD-ALL S/N:00111 (00DE)
CopyRight (C)2006 IronLogic, Saint-Petersburg, RUSSIA
www.ironlogic.ru ph. +7(495)78-77066,+7(812)542-04-80
Please send Email: marketing@ironlogic.ru
Software version: 0001
Em-Marine[1901] 034,00032
No Card
Mifare[497F0280046CDD] UL (0144,00) 004,27869
No Card
Mifare[22C37BB0] 1K (0004,08) 195,31664
No Card
HID[0010039B] 22553
No Card
```

**Reader serial number 00111**
**Each reader has its own serial number.**
**It is required when FirmWare product**
**is updated by user in RS232 standard.**

*Fig.2.  HyperTerminal.*

## 4. INSTALLATION AND CONNECTION

Install the reader at flat surface in a place providing free swipe of PROXIMITY cards.
To install the reader "MATRIX-III"RD-ALL proceed as follows:
1. Remove upper cover.
2. Mark and drill holes to fix the reader.
3. Get cable from reader into the hole and connect wires in accordance with scheme.
   At the junctions insulate wires.
4. Install cable. Turn on power and check reader operation.
   When the power is on, red light-emitting diode at the reader turns on.
5. Install reader and fix it with bolts.
6. Install and fix upper cover.

## 5. DELIVERY SET
- Reader "MATRIX-III"RD-ALL -1 pc.
- Screw 3x30- 2pcs.
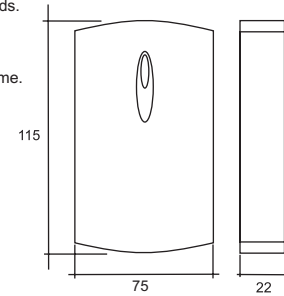- Dowel pin  2pcs.
- Operation instructions  1pc
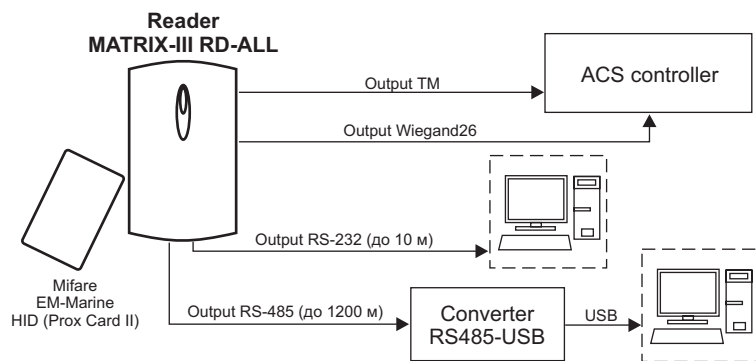
115

75

22

*Fig.3. Overall dimensions*

iron iL Logic

**Reader**
**MATRIX-III RD-ALL**

Output TM → ACS controller

Output Wiegand26

Output RS-232 (до 10 м)

Mifare
EM-Marine
HID (Prox Card II)

Output RS-485 (до 1200 м) → Converter RS485-USB → USB

*Fig.1 The connection scheme MATRIX-III-RD-ALL.*

iron iL Logic

*Table 1. Connection to controller (Cable No1)*

**Connection to controller**

| Wire color | Connection by Wiegand26 | Connection Dallas Touch-Memory (emulation) | Connection Dallas Touch-Memory (single transition) |
|---|---|---|---|
| red | +12 V | +12 V | +12 V |
| black | Common (minus) | Common (minus) | Common (minus) |
| white | DATA 0 | TM (central) | TM (central) |
| brown | DATA 1 | Common (minus) | TM (central) |
| green | LED-G (external management with green) | | |
| yellow | LED-R (external management with red) | | |
| blue | BEEP (external management with sound) | | |

## 1. GENERAL

Designed for operation in ACS, payment and other systems using non-contact cards.
Reader features:
- reads codes of cards 125Khz and 13,56MHz -EM-Marine, HID(ProxCard II),
Mifare (Muskovite's Social Card, underground and railway systems cards, etc.)
- autodetection of card standard without additional setup and number transfer by Wiegand 26,
Touch Memory, RS232, RS485
- possibility of "FirmWare" update by user by RS232, RS485.

## 6. WARRANTY

Warranty period is 18 months from the date of sale but not exceeding 24 months from date of manufacture.
Reasons for warranty termination:
· violation of these Instructions and maintenance requirements;
· mechanical damages;
· use of aggressive agents;
· unauthorized intervention into the scheme.
During the warranty period the Manufacturer repairs reader failures free of charge which appeared due to the fault of Manufacturer or replaces faulty components and blocks. Repair is performed in the Manufacturer workshop.

Date of sale: "_____" _____200____г.

Distributor_____

iron iL Logic