



## Bidirectional 13.56 MHz (Mifare®) reader/writer

### Functional characteristics

The FD-RB01 and FD-RB02 are card reader modules which can read and write data to MIFARE® contactless cards with the following characteristics:

- ◆ Able to energize MIFARE® cards at 13.56 MHz at a distance of about 2 cm from the antenna (antenna is located bottom center of the reader)
- ◆ Able to read and write data on MIFARE® cards
- ◆ Communication with cards that carry data encrypted according to the MIFARE® protocol
- ◆ Read data registration (entry/exit) by means of photo sensors on the left and right of the reader
- ◆ Visual indications through 2 multicolored LEDs (red/green/yellow/blue) in the little arrow symbols on either side of the reader
- ◆ Indication of a field present by sequential illumination of the blue wave symbols on either side of the reader
- ◆ Audible signal through an internal buzzer
- ◆ Connection to the FD-BUS using SPP (Serial Proprietary Protocol) at a speed of 115.2 Kbaud (default) or 19.2 Kbaud
- ◆ Address selection for the reader by means of a rotary switch on the back of the device
- ◆ Double connector (internally in parallel) for easy reconnection to the FD-BUS.

#### **Only FD-RB02**

- ◆ Display of alphanumeric information on an LCD display, on 2 rows of 16 characters with BLUE backlight
- ◆ Automatic disabling of the display backlight to save energy when operated from the battery

### Protection

The equipment is protected against the following events:

- ◆ polarity reversal on the cables (RJ45) connecting to the FD-BUS
- ◆ voltage surge in the power supply and data lines

### Modes of Operation

The FD-RB02 module can read MIFARE® contactless cards in registered and non-registered mode.

- ◆ In registered mode (entry/exit for attendance registration), the MIFARE® card is read by presenting the card at the luminous wave symbols on the left or right of the reader.
- ◆ In non-registered mode (access control) the MIFARE® card is read by presenting the card at the center of the reader.

### Visual indicators

The FD-RB02 module can give the user indications by means of:

- ◆ alphanumeric LCD display
- ◆ 2 multicolored LEDs located in the arrow symbols
- ◆ blue LEDs in the wave symbols
- ◆ buzzer

The most common indications are as follows:

- ◆ When switched on, the module displays the address previously set with the rotary switch.
- ◆ If there is no polling from the Field Manager, the module displays the message "No communication" and both arrows flash yellow.
- ◆ When the module receives the configuration from the Field Controller, the blue wave symbols on either side of the reader begin flashing.
- ◆ On access grant, the arrow symbol corresponding to the direction of passage is lit green. and an audible signal is given.

| Parameter             | Description  |
|-----------------------|--|
| Dimensions            | 130x70x43mm  |
| Weight                | 210g   |
| Power supply          | Through the FD-BUS connectors<br>From 8V <sub>DC</sub> to 14V <sub>DC</sub><br>200 mA nominal (at 14V <sub>DC</sub> )<br>240 mA with LEDs lit (at 14V <sub>DC</sub> )<br>100 mA with backlight off (at 14V <sub>DC</sub> ) (FD-RB02)   |
| Processor             | P89C664 Philips at 11.0592 MHz   |
| Connections           | FD-BUS (2 RJ45s in parallel) with RS485 and power supply   |
| FD-BUS communication  | Differential RS485 serial interface<br>Baud rate (nominal) 11,5000 baud  |
| Rice transmitter      | Read/write of ISO14443 and MIFARE® contactless cards at 13.56MHz<br>Excitation of transponder by pulse wave with anti collision capability<br>Typical reading distance 20mm  |
| Bidirectional reading | Direction management by 2 photo sensors  |
| Operating temperature | 0°C to 50°C  |
| Protection class      | IP55   |
| Address selector      | 0 to 15 by rotary switch selector  |
| Relative humidity     | Up to 95% without condensation   |
| Mounting              | Wall-mounted with the supplied wall bracket  |
| Indicator signals     | Alphanumeric display, 16x2 with blue backlight (FD-RB02)<br>2 multicolored LEDs (red/green/blue) in the arrow symbols on either side<br>4 wave-shaped inserts giving flashing blue signal<br>Audible signal through an internal buzzer |
| Other functions       | Protection against reversed polarity at input<br>Battery power saving by switching off the backlight   |
| Compliance            | <br>Directives 89/336/EEC, 93/68/EEC, 92/31/EEC<br>EN60950, EN 55022, EN 61000-4, ETS 300-330   |