

## **User manual**

### **RFID IND-U4**

### **RFID IND-U2**



Soft >= 0.12  
2017-04-28

## **Dear Customer!**

Thank you very much for choosing our product. Before its use, please read these instructions carefully. There are given here the most appropriate ways of dealing with this device, the basic principles of safety and maintenance. Please also keep the user manual so that you can read it during later use.

### **Remember!**

**The manufacturer is not liable for any damage caused by improper use of the device for its intended purpose or improper handling, as well as fault driver resulting from improper use.**

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## 1 Preliminary informations

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**Before starting work with the device, read The User manual and follow the instructions contained therein!**

Description of visual symboles used in this user manual:



This symbol is responsible for reviewing the appropriate place in the user instructions, warnings and important information. Failure to follow warnings could cause injury or damage to the module



Important informations and guidelines



Following this guidelines makes the use of the module easier.

Attention: The appearance of the screen shots shown in this manual may differ slightly from the actual work with the module. The differences may relate to the size and font type and size of symbols. There are no differences in the content of the information.

## 2 Purpose of the device

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RFID IND U2 and U4 are readers used to read RFID Unique format tags and integration with other systems via MODBUS TCP, HTTP client / server, SNMP. The reader can also work as a standalone device.

## 3 Warranty and liability of the manufacturer

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The manufacturer provides a 2-year warranty on the module. The manufacturer also provides post-warranty service for 10 years from the date of the introducing the module on the market. The warranty covers all defects in material and workmanship

The manufacturer undertakes to comply with the contract of guarantee, if the following conditions are met::

- all repairs, alterations, extensions and device calibrations are performed by the manufacturer or authorized service,
- supply network installation meets applicable standards in this regard,
- the device is operated in accordance with the recommendations outlined in this manual
- the device is used as intended..

The manufacturer assumes no responsibility for consequences resulting from improper installation, improper use of the module, not following this manual and the repairs of the module by individuals without permission.



**This device doesn't contain serviceable parts.**

## 4 Safety guidelines

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The module has been constructed using modern electronic components, according to the latest trends in the global electronics. In particular, much emphasis was placed on ensuring optimum safety and reliability of control.

The device has a housing with a high-quality plastic.

### **4.1 Power supply**

RFID IND-U4 and RFID IND-U2 are suitable for power supply 10-24VDC or POE IEEE 802.3af (selected during production).



### **4.2 Storage, work conditions.**

The reader is equipped with a sealed IP65 enclosure which means:

- total resistance to foreign objects
- resistance to water jet directed directly to the device
- storage and operation at temperatures from -25 ° C to + 60 ° C,

### **4.3 Installation and use of the module**

**The module should be used following the guidelines shown in next part of the user manual.**



### **4.4 Utilisation of the module**

When it becomes necessary to liquidate the device (e.g., after the time of use), please contact the manufacturer or its representative, who are obliged to respond appropriately, i.e., collecting the module from the user. You can also ask the companies involved in utilization and / or liquidation of electrical or computer equipment. Under no circumstances should you place the device along with other garbage

## 5 Construction of the module

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### 5.1 General features

General view of the RFID IND-U4 and RFID IND-U2 is shown below.



General view of the RFID IND-U4 module



General view of the RFID IND-U2 module

Communication with the module is carried out by the LAN or RS485.

User can choose from the following options to access the code read from the RFID tag:

- through built-in web server, using a standard web browser (preferred browsers are Mozilla Firefox, OPERA, CHROME)
- HTTP server mode
- HTTP client mode
- MODBUS TCP
- MODBUS RTU (RS485)
- SNMP

The module, depending on the version, is equipped with an LCD display (IND-U4) or LEDs (IND-U2) that signal the power and current state of the device.

### 5.2 Technical data

Supply voltage: 10-24VDC or PoE 802.3af

Power consumption: max 2,5W ( ~200mA@12V)

Power supply: terminal block, POE 802.3af or POE passive

Communication: Lan and RS485

Maximum relay current: 1A@30VDC

Read tags standard: UNIQUE,

Tag reading distance: up to 8cm

Dimensions: height: 50.0 mm, width: 100.0 mm, length: 100.0 mm

## 6 Configuration of the device

If using the controller for the first time it is needed to configure the controller as shown below

### 6.1 Changing the PC settings for controller configuration.

After connecting the controller to the network there is a need to change the PC setting.

In order to do that navigate to: Start->Control Panel->Network connections.

Then right click on the current network connection and click „Properties”.

Choose the „Internet Protocol (TCP/IP)”, press „Properties”. Tick the box „Use the following IP address” and type as following:

IP address: 192.168.111.1

Subnet Mask: 255.255.255.0

The rest of the setting can be left blank.

Press OK to accept the changes

Start the web browser and enter the following address into address bar: **192.168.111.15**.

**(Default user and password: admin/admin00)**

Then select the menu "NETWORK"



[www.inveo.com.pl](http://www.inveo.com.pl)

- Model: RFID IND-U4
- IP: 192.168.111.15
- Name:
- Firmware: 0.12
- MAC: 00:1E:C0:F8:1F:72

- Home
- Cards
- Logs
- Text&Message
- I/O Settings
- Network
- SNMP
- Administration

### Network Configuration

This page allows the configuration of the device's network settings.

#### IP Configuration

Name	Value	Description
Host Name	<input type="text" value="RFID-IND"/>	0..15 characters
DHCP	<input type="checkbox"/>	Enable DHCP Client
IP Address	<input type="text" value="192.168.111.15"/>	A.B.C.D
IP Mask	<input type="text" value="255.255.255.0"/>	A.B.C.D
Gateway	<input type="text" value="0.0.0.0"/>	A.B.C.D
DNS1	<input type="text" value="0.0.0.0"/>	A.B.C.D
DNS2	<input type="text" value="0.0.0.0"/>	A.B.C.D

[Configure of the network connection](#)

To change the network settings of the module, use the following fields:

**Host Name** – NETBIOS name,

**DHCP** – checking this box forces use the address assigned by the DHCP server

**IP Address** – the IP address of the module (at this address, the module will be visible on the network),

**IP Mask** – IP subnet mask,

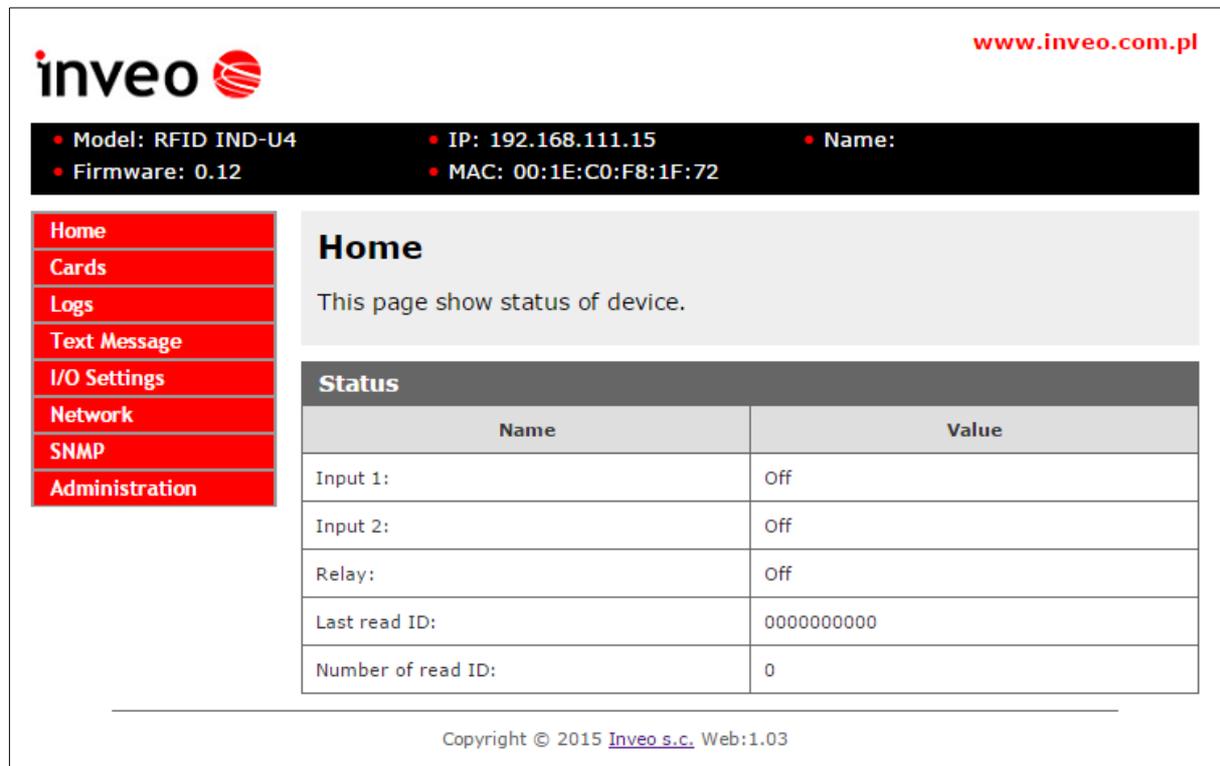
**Gateway** – network gateway,

**DNS1** – DNS servers addresses,

**DNS2** – DNS servers addresses,

After making changes, click **Save**.

## 6.2 The device status - HOME tab



The screenshot shows the Inveo web interface. At the top left is the Inveo logo, and at the top right is the URL [www.inveo.com.pl](http://www.inveo.com.pl). Below the logo is a black bar with white text displaying device information: Model: RFID IND-U4, IP: 192.168.111.15, Name: (blank), Firmware: 0.12, and MAC: 00:1E:C0:F8:1F:72. On the left side, there is a vertical menu with red buttons for Home, Cards, Logs, Text Message, I/O Settings, Network, SNMP, and Administration. The main content area is titled "Home" and contains the text "This page show status of device." Below this is a "Status" table with two columns: Name and Value.

Name	Value
Input 1:	Off
Input 2:	Off
Relay:	Off
Last read ID:	0000000000
Number of read ID:	0

At the bottom of the page, there is a copyright notice: Copyright © 2015 [Inveo s.c.](http://www.inveo.com.pl) Web:1.03

After selecting the HOME are displayed:

**Status** table:

**Input 1** – the current input status number 1 (binary input)

**Input 2** – the current input status number 2 (binary input)

**Relay** – the current status of the relay output

**Last read ID** - last read tag in the HEX format

**Number of read ID** - the number of tags read since the device reset



### Warning!

Displayed in the position Last read ID:8500c2b4a8 (**LOCK!**) marker means that the reading of next tags is blocked until cleared with the releaseid commands.

### 6.3 Card Management - CARDS tab. Add and remove cards from the browser.

In the Card tab is the ability to manually assign a USER cards and a MASTER cards that the reader will recognize.



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- Model: RFID IND-U4
- IP: 192.168.111.15
- Name:
- Firmware: 0.12
- MAC: 00:1E:C0:F8:1F:72

- Home
- Cards
- Logs
- Text Message
- I/O Settings
- Network
- SNMP
- Administration

## Card

[Download XML](#)

No	Name	Card ID	Delete
1	<input type="text" value="Master1"/> <input type="button" value="Edit"/>	04001607F5	<input type="button" value="Delete"/>
6	<input type="text" value="User1"/> <input type="button" value="Edit"/>	4C00DCC87C	<input type="button" value="Delete"/>
7	<input type="text" value="User2"/> <input type="button" value="Edit"/>	040014AF60	<input type="button" value="Delete"/>
8	<input type="text" value="User3"/> <input type="button" value="Edit"/>	4C00DCF363	<input type="button" value="Delete"/>

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To add a new user card, on the Cards tab, click the **Add User** button, and then bring the card closer to the reader. The assignment of the card will be signalled by the appropriate beep. In the same way master cards can be added, by clicking the **Add Master** button.

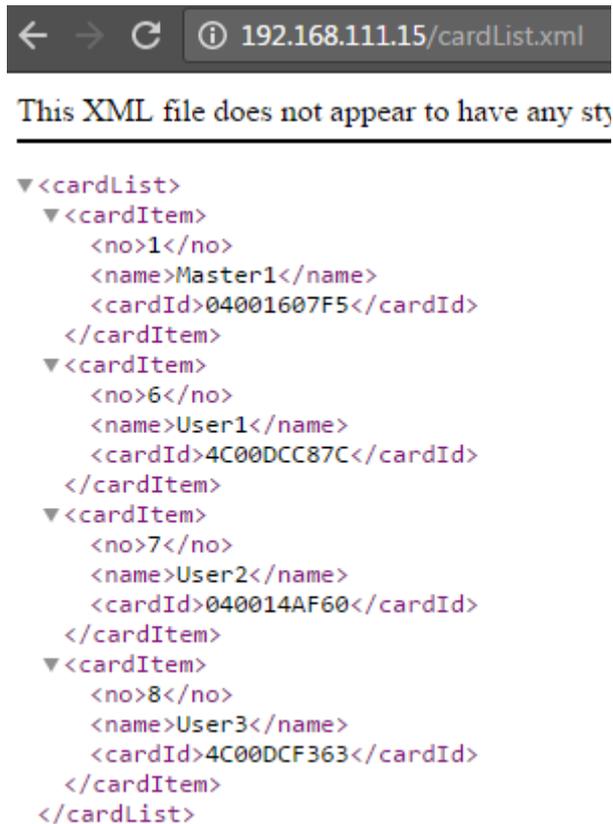
After adding the card to the reader correctly, their numbers will appear in the **List of cards**

No	Name	Card ID	Delete
1	<input type="text" value="Master1"/> <input type="button" value="Edit"/>	04001607F5	<input type="button" value="Delete"/>
6	<input type="text" value="User1"/> <input type="button" value="Edit"/>	4C00DCC87C	<input type="button" value="Delete"/>
7	<input type="text" value="User2"/> <input type="button" value="Edit"/>	040014AF60	<input type="button" value="Delete"/>
8	<input type="text" value="User3"/> <input type="button" value="Edit"/>	4C00DCF363	<input type="button" value="Delete"/>

The reader automatically adds a **User** name that can be changed by editing the **Name** field. Removing the card from the memory is done by clicking the **Delete**

All cards in the reader can be retrieved by referencing the resource **cardList.xml**

Sample screenshot:



In the **Logs** menu, the reader writes the Id of all applied rfid tags.

To save all tag usage events in the reader memory in the Administration → Logging → Log mode and select the appropriate logging mode.



**Log mode: Disabled** - login disabled;

**Log mode: Based ID-Table** – the reader in the Log table will display the name defined in the Card menu;

**Log mode: Card ID number** – the reader in the Log table will display the card number in the HEX format.

Sample logs in Based ID-Table mode:

Time status	
Name	Value
Current Time	18:01:22
Current Date	2017-04-27

[Download XML](#)

Log		
No	Name/ID	Time
1	Master1	Thu, 27 Apr 2017 18:00:52 GMT
2	User3	Thu, 27 Apr 2017 18:00:54 GMT
3	User2	Thu, 27 Apr 2017 18:01:04 GMT
4	User2	Thu, 27 Apr 2017 18:01:08 GMT

Sample logs in Card ID Number mode:

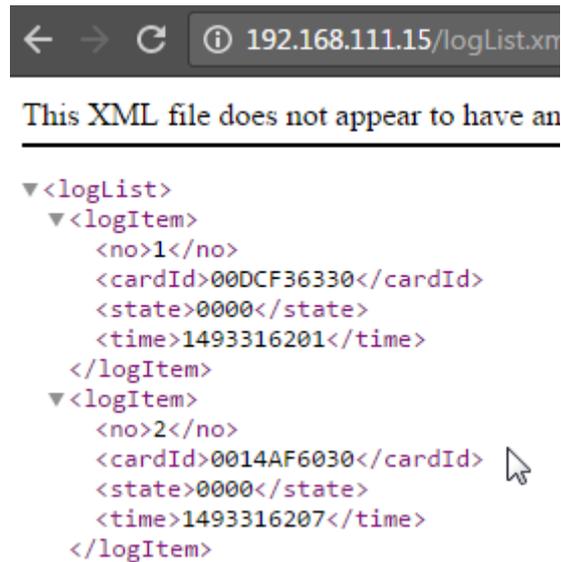
Time status	
Name	Value
Current Time	18:03:58
Current Date	2017-04-27

[Download XML](#)

Log		
No	Name/ID	Time
1	00DCF36330	Thu, 27 Apr 2017 18:03:21 GMT
2	0014AF6030	Thu, 27 Apr 2017 18:03:27 GMT
3	001607F530	Thu, 27 Apr 2017 18:03:32 GMT
4	001607F530	Thu, 27 Apr 2017 18:03:34 GMT
5	0014AF6030	Thu, 27 Apr 2017 18:03:37 GMT

The reader has a built-in real time clock. Clicking on the **Update time** button will synchronize the internal clock with the current time set in the computer. Clicking the **Remove logs** button removes all logs from the reader memory.

The user can download all logs that are in the readers memory by reference to the resource logList.xml



If using **Based ID-Table** mode - 229000 logs can be saved in the reader memory. By using **Card ID Number** mode 152000 logs can be saved.

### 6.5 Text Message

In the Text Message menu, set the text showed on the display during various actions, such as applying an active card, applying an inactive card, waiting time.

Prompt Message		
Name	Value	Description
Line 1	<input type="text" value="Touch with RFID card"/>	LCD First line 0..20 characters
Line 2	<input type="text"/>	LCD Second line 0..20 characters

Enter Accept Message		
Name	Value	Description
Line 1	<input type="text" value="Accepted!"/>	LCD First line 0..20 characters
Line 2	<input type="text"/>	LCD Second line 0..20 characters

Enter Reject Message		
Name	Value	Description
Line 1	<input type="text" value="Rejected!"/>	LCD First line 0..20 characters
Line 2	<input type="text"/>	LCD Second line 0..20 characters

In the Time table you can set the language in which the time in the first line of the display will be displayed:

```
Czw, 27 Kwi 18:23:43
Don, 27 Apr 18:23:43
Thu, 27 Apr 18:23:43
```

### 6.6 Reactions to the events - I / O Settings

In the **Input 1** table, activating the **Door unlock** option allows the output relay (bolt) to be automatically activated by activating Input 1.

Input 1		
Name	Value	Description
Door unlock	<input checked="" type="checkbox"/>	

In the **Output Relay** table can be set the operating mode of the bolt control relay.

Output Relay		
Name	Value	Description
Mode	<input type="radio"/> Disabled <input checked="" type="radio"/> 1-Pulse <input type="radio"/> Toggle	
Time-on	<input type="text" value="40"/>	x100ms
Action	<input type="text" value="None (control by protocols) ▼"/>	

O.n.	Name	Description
1	Mode	<b>Disabled</b> - Turn off relay control. <b>1-Pulse</b> - After the activation of the output, the relay is switched on for a certain time (eg the control of the bolt) <b>Toggle</b> - After activating the output, the state changes to the opposite
2	Time-on	Relay on time in <b>1-Pulse</b> mode, given in 0.1s (value 20 is 2 seconds)
3	Action	The action that causes the activation of the output. <b>None (control by protocol)</b> - The control is carried out through the protocol HTTP, SMNP, MODBUS. <b>Every Card</b> - Activation of output with each RFID tag application. <b>Recogniza Card</b> - Activation of the output after applying the active tag (stored in the reader's memory)

In the Events table, can be programmed the reaction of the reader when after applying the rfid tag.

Events		
Name	Value	Description
Sound Action	Every Card ▼	
LED/LCD Backlight Action	Every Card ▼	

O.n.	Name	Description
1	Sound Action	<p>An action that triggers a beep.</p> <p><b>None (control by protocol)</b> - The audio generator is controlled by the protocol HTTP, SMNP, MODBUS.</p> <p><b>Every Card</b> - Activation of the sound generator occurs every time the rfid tag is applied.</p> <p><b>Recognize Card</b> - Activation of the sound generator takes place after applying the active tag (stored in the reader's memory)</p>
2	LED/LCD Backlight Action	<p>An action that activates the LCD display or LEDs.</p> <p><b>None (control by protocol)</b> - The control is carried out through the protocol HTTP, SMNP, MODBUS.</p> <p><b>Every Card</b> - Signaling each time the rfid tag is applied</p> <p><b>Recognize Card</b> - Signaling after applying the active tag (stored in the reader's memory)</p>

InU4 model back lighting of the display can be controlled.

LCD		
Name	Value	Description
Backlight time	255	x1s, 0-always off, 255-always on

When the value is set on 255 the displayed lights constantly.

When the value is set on 0 the back light is off.

When the value is set, for example on 5 the display will light for 5 seconds after approaching the tag.

## 6.7 Network configuration

www.inveo.com.pl



• Model: RFID IND-U4  
• Firmware: 0.12

• IP: 192.168.111.15  
• MAC: 00:1E:C0:F8:1F:72

• Name:

- Home
- Cards
- Logs
- Text Message
- I/O Settings
- Network
- SNMP
- Administration



### Network Configuration

This page allows the configuration of the device's network settings.

#### IP Configuration

Name	Value	Description
Host Name	<input type="text" value="RFID-IND"/>	0..15 characters
DHCP	<input type="checkbox"/>	Enable DHCP Client
IP Address	<input type="text" value="192.168.111.15"/>	A.B.C.D
IP Mask	<input type="text" value="255.255.255.0"/>	A.B.C.D
Gateway	<input type="text" value="0.0.0.0"/>	A.B.C.D
DNS1	<input type="text" value="0.0.0.0"/>	A.B.C.D
DNS2	<input type="text" value="0.0.0.0"/>	A.B.C.D

#### SNTP

Server	<input type="text" value="0.0.0.0"/>	A.B.C.D (0.0.0.0 to disable)
--------	--------------------------------------	------------------------------

#### HTTP Client Configuration

Server	<input type="text" value="0.0.0.0"/>	A.B.C.D
Port	<input type="text" value="0"/>	
Resource	<input type="text"/>	HTTP pool resource ie. / or /something.php
Poll time	<input type="text" value="50"/>	x100ms, 0-send only changes

Save

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The reader is equipped in internal real time clock (RTC) which be synchronized with time server by SNTP protocol. Configuration of the settings can be done in the tab Administration → SNTP

To plug in the service of synchronization in the field Server type IP address of any time server. Typing 0.0.0.0 causes disabling the synchronization.

SNTP		
Server	<input type="text" value="0.0.0.0"/>	A.B.C.D (0.0.0.0 to disable)

If Enable HTTP Client mode is on there is a need to set the address to send the data on. It is possible in the table Network → HTTP Client Configuration

HTTP Client Configuration		
Server	<input type="text" value="0.0.0.0"/>	A.B.C.D
Port	<input type="text" value="0"/>	
Resource	<input type="text"/>	HTTP pool resource ie. / or /something.php
Poll time	<input type="text" value="50"/>	x100ms, 0-send only changes

O.n.	Name	Description
1	Server	The IP address of the server on which the reader will send data
2	Port	The port on which the server listens
3	Resource	The resource referenced by the reader, for example: /somefile.php
4	Poll time	The period of sending data to the server Poll time=0 – data is only sent when the rfid tag is applied Poll time>0 – data is sent cyclically eg.: Poll time=50 – data will be sent every 5 seconds

## 6.8 SNMP

The module is equipped with an SNMP v2c server. Enabling the feature is possible in the tab **Administration -> Services -> Enable SNMP** .

Services		
Name	Value	Description
Autonomic	<input type="checkbox"/>	
Enable MODBUS TCP	<input type="checkbox"/>	
Enable MODBUS RTU	<input type="checkbox"/>	
Enable SNMP	<input checked="" type="checkbox"/>	
Enable HTTP GET	<input type="checkbox"/>	
Enable HTTP Client	<input type="checkbox"/>	

SNMP allows to download the inputs state, set the output state and download read out tag number. MIB file describing the structure is available for download in the tab SNMP -> **Download MIB file**.



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• Model: RFID IND-U4	• IP: 192.168.111.15	• Name:
• Firmware: 0.12	• MAC: 00:1E:C0:F8:1F:72	

- Home
- Cards
- Logs
- Text Message
- I/O Settings
- Network
- SNMP
- Administration

### SNMP Configuration

Configuration for SNMP agent

#### Community settings

Name	Value	Description
Read Community	<input type="text" value="public"/>	0..15 characters
Write Community	<input type="text" value="private"/>	0..15 characters

[Download MIB file](#)

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## 6.9 Communication protocols and administration

The Administration menu allows to configure services to be active and change access password.

### Module name

Each reader can be given an unique name used to identify.

Module name		
Name	Value	Description
Module name	<input type="text"/>	0..15 characters

### Password

To change the password in the field **Current Password** actual password. In the fields **New Password** and **Re-type Password** type new password and confirm with **Save Config** button.

To disable the password request leave the field **New Password** empty.

Password		
Name	Value	Description
Current Password	<input type="text"/>	0..15 characters
New Password	<input type="text"/>	0..15 characters
Re-type password	<input type="text"/>	0..15 characters

### Service setting

The device allows to select which services are to be available. Selecting the check box next to the service name activates the selected service.

**Autonomic** – set the reader to standalone mode

**Enable MODBUS TCP**– activation of MODBUS TCP service

**Enable MODBUS RTU**– activation of MODBUS RTU service

**Enable SNMP** – enabling SNMP protocol

**Enable HTTP GET** – selecting module mode as HTTP server

**Enable HTTP Client** – selecting module mode as HTTP client

**Enable TFTP Bootloader** – turn on the bootloader

Services		
Name	Value	Description
Autonomic	<input type="checkbox"/>	
Enable MODBUS TCP	<input checked="" type="checkbox"/>	
Enable MODBUS RTU	<input type="checkbox"/>	
Enable SNMP	<input type="checkbox"/>	
Enable HTTP GET	<input type="checkbox"/>	
Enable HTTP Client	<input type="checkbox"/>	
Enable TFTP Bootloader	<input checked="" type="checkbox"/>	Allow remote upgrade firmware by TFTP. For safety reasons, the option should be disabled.



**Warning:**

TFTP Bootloader should be **disabled** during normal operation. It should only be activate before the software update.

**RS485 port setting for MODBUS RTU communication.**

RS485 Parameters (Modbus RTU)		
Name	Value	Description
PDU	<input type="text" value="1"/>	
Baudrate	<input type="text" value="9600"/> ▼	bps
Parity	<input type="text" value="None"/> ▼	

O.n.	Name	Description
1	PDU	Modbus address of the device.
2	Baudrate	Data transfer rate. Available speeds: 1200, 2400, 4800, 9600, 19200, 34800, 57600, 115200
3	Parity	Parity settings. Available options: None, None and 2 Stop, Even, Odd, Mark, Space

## 7 Communication with module

### 7.1 The MODBUS Addresses

The device supports the following MODBUS RTU functions:

- 0x01 Read Coils
- 0x03 Read Holding Register
- 0x05 Write Single Coil
- 0x06 Write Single Register
- 0x0F Write Multiple Coils
- 0x10 Write Multiple Register

O.n.	Address	Type	R/W	Description
1	1000	Holding Reg	R	Transponder code [0]
2	1001	Holding Reg	R	Transponder code [1]
3	1002	Holding Reg	R	Transponder code [2]
4	1003	Holding Reg	R	Transponder code [3]
5	1004	Holding Reg	R	Transponder code [4]
6	1005	Holding Reg	R	Device Mode I (IND-U4 → 05534)
7	1006	Holding Reg	R	Software version
8	1007	Holding Reg	R	Hardware version
9	2000	Holding Reg	R/W	LCD Mode: 0-standard 1-control by MODBUS
10	2001	Holding Reg	R/W	LCD TIME: if LCD Mode=1: 0-do not show time on LCD 1-show time on LCD
11	2002	Holding Reg	R/W	LCD Clear: 1-delete content of LCD
12	2010- 2019	Holding Reg	W	First line of LCD display (only if LCD TIME = 0)
13	2020- 2039	Holding Reg	W	Second line of LCD display
14	2040- 2059	Holding Reg	W	Third line of LCD display
15	2060- 2079	Holding Reg	W	Fourth line of LCD display
16	1000	Single Coil	R	State of bolt relay (door)
17	1001	Single Coil	R	State of the input nr 1
18	1002	Single Coil	R	State of the input nr 2
19	1003	Single Coil	R	Reserve
20	1004	Single Coil	R/W	Read flag Reading: 1 - new transponder read Write: 0 - read flag reset
21	1005	Single Coil	R/W	Reset status Read: 1 - reader restarted (eg by power failure) Record: 1 - force reset of device 0 - reset flag of restart
22	1010	Single Coil	W	1-turn on the bolt relay (door)
23	1011	Single Coil	W	1-tone Accept
24	1012	Single Coil	W	1-tone Reject

25	1013	Single Coil	R/W	LED control	
26	1014	Single Coil	R/W	LED control	

**A transponder code (ID) has been read correctly, so**  
**- Single Coil 1004 (newId flag) has value: 1**  
**- Holding Registers 1000-1004 contain transponder code.**  
**To read next transponder release Coil 1004 (clear to 0)**

## 7.2 Reading the module status via HTTP GET

RFID IND modules can be controlled via http. To read the current state of the module, refer to a resource in a web browser such as <http://192.168.111.15/status.xml>. An XML resource describing basic information will be displayed:

```
<status>
<name/>
<mac>00:1E:C0:F8:1F:72</mac>
<id>0000000000</id>
<newId>0</newId>
<cnt>0</cnt>
<out0>Off</out0>
<in0>Off</in0>
<in1>Off</in1>
<resetFlag>1</resetFlag>
<enable>1</enable>
<httpClientStatus>0</httpClientStatus>
<n_logs>0</n_logs>
</status>
```

Section	Description
<name></name>	Name of the module
<mac>00:1E:C0:F8:1F:72</mac>	MAC address of the module
<id>0000000000</id>	Last read code from RFID tags in hexadecimal format
<newId>0</newId>	In mode <b>Control only by HTTP GET</b> 1-The new RFID tag was read 0-The new RFID tag was not read
<cnt>0</cnt>	The number of RFID tags read from the device reset
<out0>Off</out0>	Current status of relay output
<in0>Off</in0>	The current state of the first input
<in1>Off</in1>	Current state of the second input
<resetFlag>1</resetFlag>	1-The module was reset
<enable>1</enable>	1-Radio module turned on 0-Radio module off
<httpClientStatus>0</httpClientStatus>	Current state of TCP connection in <b>Control only by HTTP Client</b> mode 1-Connected to the server – socket open

	2-Received data from server 3-Connection completed 100-No connection to the server
<n_logs>0</n_logs>	The current number of logs in the reader

### 7.3 HTTP GET Control

Controlling the module in **Enable HTTP GET** mode is to send to the module the appropriate command with http protocol.

http://192.168.111.15/status.xml?			
O.n.	Command	Name	Description
1	enable	Enable RFID	Enabling the antenna in the RFID module <a href="http://192.168.111.15/status.xml?enable=1">http://192.168.111.15/status.xml?enable=1</a> Turn off the antenna in the RFID module <a href="http://192.168.111.15/status.xml?enable=0">http://192.168.111.15/status.xml?enable=0</a>
2	resetFlag	Reset Flag	When the module is started or reset, the flag is set to 1. Delete the reset flag <a href="http://192.168.111.15/status.xml?resetFlag=0">http://192.168.111.15/status.xml?resetFlag=0</a>
3	releaseId	Release ID	Delete the read flag and wait for the RFID tag to close <a href="http://192.168.111.15/status.xml?releaseId=1">http://192.168.111.15/status.xml?releaseId=1</a>
4	ledr 	Led red control	Turn on the signaling LED led=TimeOn,TimeOff,Cnt TimeOn*0,1seconds, TimeOff*0,1 seconds <a href="http://192.168.111.15/status.xml?ledr=5,3,4">http://192.168.111.15/status.xml?ledr=5,3,4</a> Turn on the led for 0.5 seconds, turn off for 0.3 seconds and repeat the sequence 4 times Cnt=255 -Repeating endlessly Cnt=0 -Turn off the LED
5	ledg 	Led green control	Turn on the signaling LED led=TimeOn,TimeOff,Cnt TimeOn*0,1seconds, TimeOff*0,1 seconds <a href="http://192.168.111.15/status.xml?ledg=5,3,4">http://192.168.111.15/status.xml?ledg=5,3,4</a> Turn on the led for 0.5 seconds, turn off for 0.3 seconds and repeat the sequence 4 times Cnt=255 -Repeating endlessly Cnt=0 -Turn off the LED
6	buzz	Buzzer control	Controlling the sound generator Generating the sound <b>REJECT</b> <a href="http://192.168.111.15/status.xml?buzz=r">http://192.168.111.15/status.xml?buzz=r</a> Generating the sound <b>ACCEPT</b> <a href="http://192.168.111.15/status.xml?buzz=a">http://192.168.111.15/status.xml?buzz=a</a>
7	open	Relay control	Control relay output <a href="http://192.168.111.15/status.xml?open=1">http://192.168.111.15/status.xml?open=1</a>
Functions available in mode HTTP GET:			
8	takeLcd		Take control over the LCD <a href="http://192.168.111.15/status.xml?takeLcd=1">http://192.168.111.15/status.xml?takeLcd=1</a>

9	showTime		First line of LCD displays current time LCD <a href="http://192.168.111.15/status.xml?showTime=1">http://192.168.111.15/status.xml?showTime=1</a>
10	lcdClr		Deleting the contents of the LCD <a href="http://192.168.111.15/status.xml?lcdClr=1">http://192.168.111.15/status.xml?lcdClr=1</a>
11	lcd1		Text display on the first LCD line Function only available if <b>showTime</b> is equal to 0 <a href="http://192.168.111.15/status.xml?lcd1&gt;HelloWord">http://192.168.111.15/status.xml?lcd1&gt;HelloWord</a>
12	lcd2		Display text on the second LCD line <a href="http://192.168.111.15/status.xml?lcd2&gt;HelloWord">http://192.168.111.15/status.xml?lcd2&gt;HelloWord</a>
13	lcd3		Text display on the third LCD line <a href="http://192.168.111.15/status.xml?lcd3&gt;HelloWord">http://192.168.111.15/status.xml?lcd3&gt;HelloWord</a>
14	lcd4		Text display on the fourth LCD line <a href="http://192.168.111.15/status.xml?lcd4&gt;HelloWord">http://192.168.111.15/status.xml?lcd4&gt;HelloWord</a>

<a href="http://192.168.111.15/msg.php?">http://192.168.111.15/msg.php?</a>			
O.n	Command	Name	Description
1	setLog		Sets the current log index <a href="http://192.168.111.15/msg.php?setLog=x">http://192.168.111.15/msg.php?setLog=x</a> x-qantity of logs
2	removeAllCards		Remove all RFID tags from the reader <a href="http://192.168.111.15/msg.php?removeAllCards=1">http://192.168.111.15/msg.php?removeAllCards=1</a>
3	removeLog		Remove all logs from the reader <a href="http://192.168.111.15/msg.php?removeLog=1">http://192.168.111.15/msg.php?removeLog=1</a>
4	clkY		Setting in the current year in RTC <a href="http://192.168.111.15/msg.php?clkY=x">http://192.168.111.15/msg.php?clkY=x</a> x=[0-99]
5	clkM		Setting in the current month in RTC <a href="http://192.168.111.15/msg.php?clkM=x">http://192.168.111.15/msg.php?clkM=x</a> x=[0-11] 0-January, 1-February, ...
6	clkD		Setting the current date in RTC <a href="http://192.168.111.15/msg.php?clkD=x">http://192.168.111.15/msg.php?clkD=x</a> x=[1-31]
7	clkH		Setting the current hour in RTC <a href="http://192.168.111.15/msg.php?clkH=x">http://192.168.111.15/msg.php?clkH=x</a> x=[0-23]
8	clkm		Setting the current minute in RTC <a href="http://192.168.111.15/msg.php?clkm=x">http://192.168.111.15/msg.php?clkm=x</a> x=[0-59]
9	clkS		Setting the current second in RTC <a href="http://192.168.111.15/msg.php?clkS=x">http://192.168.111.15/msg.php?clkS=x</a> x=[0-59]
10	clkd		Setting the current day of week in RTC <a href="http://192.168.111.15/msg.php?clkd=x">http://192.168.111.15/msg.php?clkd=x</a> x=[0-6] 0-sunday, 1-monday
11	factory		Return to factory settings <a href="http://192.168.111.15/msg.php?factory=1">http://192.168.111.15/msg.php?factory=1</a>

## 7.4 Control over HTTP in Client mode

Controlling the module in **Enable HTTP Client** mode.

After correct reading of the RFID tag the reader sends to the appropriate server resource mac data=123456789012&id=1314151617 eg.

<http://192.168.111.99/rfid.php?mac=123456789012&id=1314151617>

HTTP Client Configuration		
Server	<input type="text" value="192.168.111.99"/>	A.B.C.D
Port	<input type="text" value="80"/>	
Resource	<input type="text" value="/rfid.php"/>	HTTP pool resource ie. / or /something.php
Poll time	<input type="text" value="0"/>	x100ms, 0-send only changes

In response, the server can send nothing, or send the XML resource with tags:

O.n	Command	Name	Description
1	<time>		1- Display time on LCD 0 - Do not display time on LCD
2	<clear>		1- Clear the LCD
3	<text>		Writes text on the LCD. The transition to the new line follows another 20 characters. For example, if the second line is to start with the HELLO text, the text should be preceded by 20 SPACE characters.
4	<textxy>		Writes text on the LCD display in the correct position. Syntax: xXXyYY_TEXT eg x05y02_HELLO
5	<ledg>		Turn on signaling led green Syntax: <ledg>TimeOn,TimeOff,Cnt</ledg> (like in HTTP GET)
6	<ledr>		Turn on signaling led red Syntax: <ledr>TimeOn,TimeOff,Cnt</ledr> (like in HTTP GET)
7	<open>		1- Relay activation (bolt control)
8	<buzz>		1-turn on beep (ACCEPT sound) 2-turn on the beep (REJECT sound)

The xml file can contain fields (the example triggers the accept sound signal, opens the door and displays the text on the LCD):

```
<buzz>1</buzz>
<clear>0</clear>
<text>Enter please</text>
```

```
<open>1</open>
```

Turning the green diode on for 2 seconds:

```
<ledg>20,0,1</ledg>
```

Red flashing 2 times with time 0.5 / 0.5 seconds:

```
<ledr>5,5,2</ledr>
```

The syntax of the XML file is not checked. Only information between known tags is searched.

Example of php server support:

```
<?php
```

```
if( $_GET["id"] ) {      // module send id and MAC - $_GET["mac"]

    // you can check id in DB and do some action
    echo "<buzz>1</buzz>"; // sound signal
    echo "<clear>1</clear>"; //clear lcd
    echo "<text>Card ID:  ".$_GET["id"]; // print ID on LCD
    echo "<open>1</open>"; // door open
}
else { // no id - default state polling
    echo "<clear>0</clear>"; // clr LCD
    echo "<text>Hello</text>"; //print prompt text
}
}
```

## 7.5 Integration with own software

RFID IND modules can be integrated with Customer own software. They can work as a server (select **Administration -> Enable HTTP Get**) or as a client (select **Administration -> Enable HTTP Client** ).

Server mode (**HTTP GET**):

In this mode, the external host connects to the module and manages it through the http protocol.

The management host must periodically read the status.xml resource from the module and, depending on the state read from the xml file, call the appropriate functions.

After approaching the tag to the field of reading, in the resource status.xml the appropriate fields will be filed and the module will block the ability to read until calling the function *Released*, wich turns the module to the waiting for the tag approaching state.

By using appropriate functions the Led can be light up, the signaling sound can be generate, the LCD display can be controlled, etc.

The disadvantage of this solution is the need to read the status.xml resource cyclically

**Client mode (HTTP Client):**

In this mode after reading the tag the module automatically connects to the server and sends the data about the tag to the proprietary server resource (by HTTP GET). Ad the answer can be retrieved information about the state of the LED, buzzer, LCD, etc. The advantage of this mode of operation is that immediately after reading the card the module itself sends the code to the server or control application. An example might be writing to the database or file on the server the read rfid tag, the reader MAC number, and read time.

**7.6 Communication with a module from an external network**

If the module is on a different LAN than the computer connecting to it, then port forwarding is required.

Depending on the used method of communication with the module, it is necessary to contact the network administrator and port forwarding:

**Web site support and http:**

- port TCP/IP 80

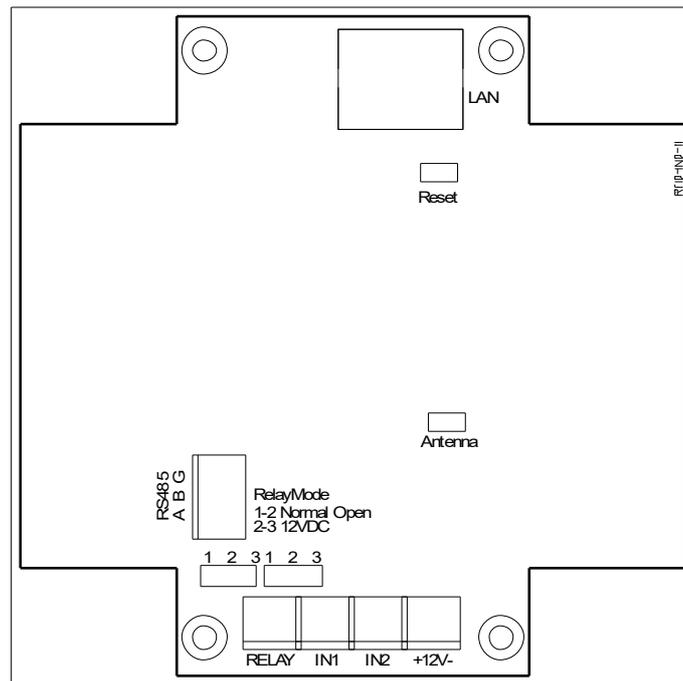
**Operation via MODBUS TCP:**

- port TCP/IP 502

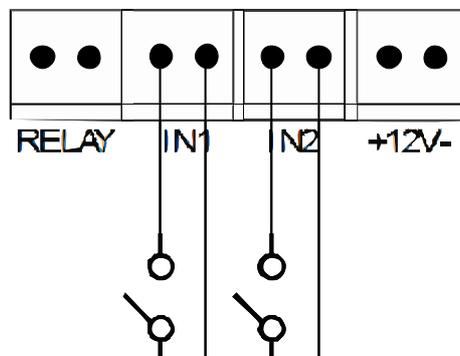
**SNMP support:**

- port UDP 161

## 8 Connector Description

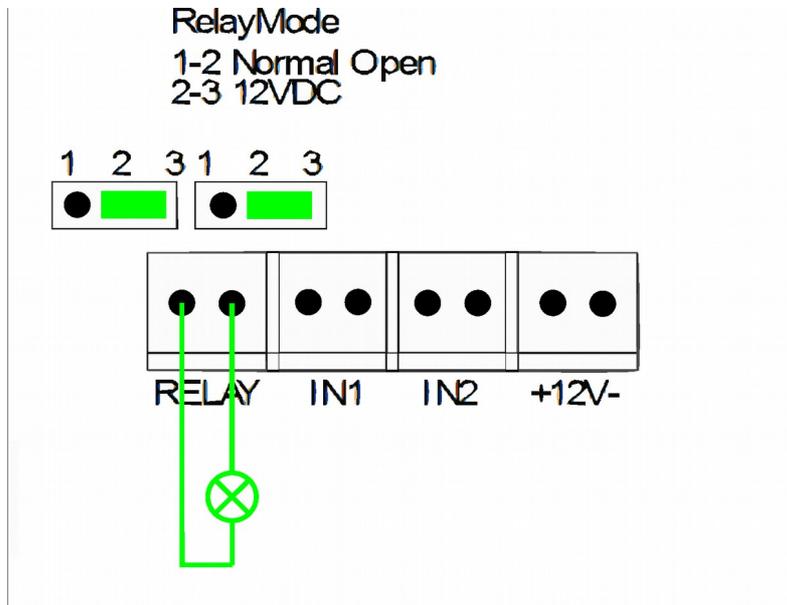


O.n.	Name	Description
1	LAN	LAN connection socket
2	Reset	RESET jumper Shortening the pins for a period of 10-15 seconds returns the device to factory settings.
3	Antenna	Antenna connector
4	RS485	RS485 connector - modbus
5	RelayMode	Jumper to set the relay operating mode. In positions 1-2- potential free, in position 2-3 - 12V output
6	Relay	Relay connector
7	IN1	General purpose input
8	IN2	General purpose input
9	+12V-	12-24VDC power input

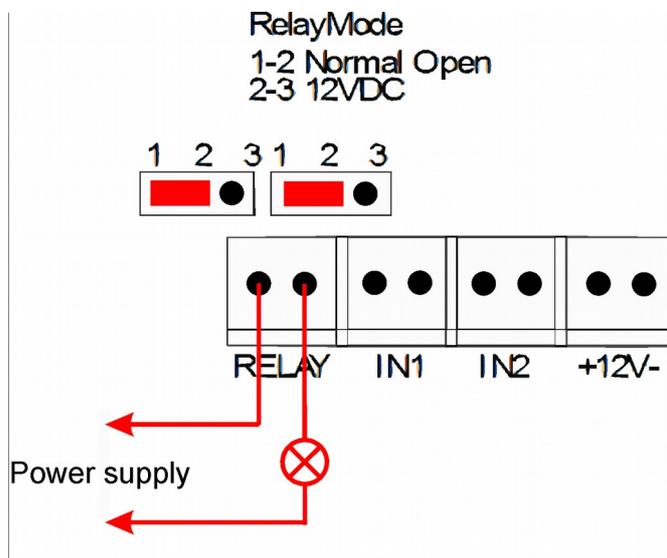


The output RELAY can work in two modes:

- **12VDC mode** - the configuration jumpers set to 2-3 (see the picture below). In this mode, after the activation of the relay, the output voltage of the reader, eg 12VDC. If the reader is powered from 24VDC then the voltage will be 24VDC.



- **NORMAL OPEN mode** - the configuration jumpers set to 1-2 (see the picture below). In this mode, an external power source is required.



## 9 DHCP

To enable / disable DHCP support, select the appropriate value in the DHCP field on the Network configuration tab.

## **10 Restore factory settings**

---

To reset the device to factory settings:

1. Turn on the device.
2. Shorten the RESET jumper for 10 and 15 seconds
3. During the sound, open the RESET jumper

After performing the above steps, the device will set the following parameters:

- IP Address: 192.168.111.15
- IP Mask: 255.255.255.0
- User: admin
- Password: admin00

## **11 Software update**

---

The module is equipped with the ability to update the program. The program is provided as a .bin file

**Warning!** Incorrect use of the programming update feature may damage the module.

To perform programming operations, go to the Windows command line (Start->Run-> type 'cmd' and confirm with Enter).

Then go to the directory where the .bin file is located and enter the command:

```
tftp -i <adres_ip_modulu> PUT plik.bin
```

where: <adres\_ip\_modulu> is the IP Address of the module  
*plik.bin* – file with the program to update

Programming takes 1-2 minutes. End of programming confirms the message 'File Transferred'.

**The latest instructions and software are available on the site [www.inveo.com.pl](http://www.inveo.com.pl)**

